Social Prescribing and its role in Type 2 Diabetes prevention in communities at high risk: a complexity-informed research study

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Statement of Originality

I, Sara Calderón Larrañaga, confirm that the research included within this thesis is my own work or that where it has been carried out in collaboration with, or supported by others, that this is duly acknowledged below and my contribution indicated. Previously published material is also acknowledged below.

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Abstract

Background. Social Prescribing (SP) typically involves linking patients in primary care with services provided by the voluntary and community sector. Preliminary evidence suggests that SP may offer a means of delivering community-based health promotion activities, potentially contributing to the prevention of long-term conditions, such as type 2 diabetes (T2D). This thesis aimed to investigate the possible role of SP in T2D prevention and inform the design, implementation and evaluation of SP initiatives relevant to communities at high risk.

Methods. This thesis was informed by complexity science and drew on multiple, theoretically rich methodologies. It was conducted over three interconnected stages. In Stage 1, I undertook two literature reviews on primary care-based SP to investigate SP practices (using realist synthesis) and understandings (using discourse analysis) across different health domains. Building on review findings, Stage 2 investigated the possible contribution of SP to T2D prevention in a multi-ethnic, socioeconomically deprived population at high risk using realist mixed-methods evaluation. Stage 3 built on previous stages and used qualitative case study informed by practice theory to investigate how SP relevant to T2D prevention was accomplished in everyday practice.

Results. This thesis illustrated how (and why) accessible, holistic, sustained and integrated SP practices in primary care contributed to individual-level T2D preventative approaches relevant to patients in greatest health and social need. Practicing SP proved highly complex as it involved customising the intervention to the specific context and the patient in a constant process of re-negotiation. Providers’ capacity to be inventive and co-create SP in patients’ best interest varied, conditioned by the dynamic interplay of their own personal beliefs, knowledge and experience, organisational arrangements, and wider financial and regulatory constraints.

Conclusion. My thesis suggests that SP may offer an opportunity for accessible, holistic, sustained, and integrated T2D preventative approaches where specific individual, interpersonal, organisational, and policy resources are ensured. Such approaches have the potential to reach patients at high risk of T2D with greatest health and social need, who are typically not referred to existing NHS diabetes prevention schemes.

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Chapter I. Introduction to social prescribing and its possible role in the prevention of type 2 diabetes in primary care

1.1. Background

Social prescribing (SP) can be understood as a means of enabling health professionals to refer people to a range of local, community-based, non-clinical services (1). Activities offered, referral mechanisms, target groups and the intensity and duration of support provided may vary across different SP schemes. Examples of community-based activities include cookery, sports, weight management, befriending, volunteering, gardening, arts activities, as well as welfare advice programmes related to employment, housing, or financial advice, depending on patients' needs and local availability. Activities are typically provided by voluntary and community sector (VCS) organisations but may also be delivered by local authorities (e.g., libraries, sports centres) or the healthcare system (e.g., health coaches, patient support groups organised within general practice (GP) surgeries). Alternative definitions of SP have also been proposed to account for different ways of accessing community-based sources of support, including referrals by community organisations, statutory services, friends and family, or even self-referrals (2). Some authors, however, suggest using different terms for non-primary care-based arrangements, such as community referral, to avoid misunderstandings (3).

It is difficult to pinpoint the precise origins of SP in primary care. Assessment of patients' broader psychological and social needs, and attempts to connect them with broader sources of support (also referred to as biopsychosocial approaches to healthcare (4)) are (and have been) ubiquitous in general practice. Efforts to strengthen or 'formalise' such connections often emerged from locally embedded partnerships between individual GP surgeries and community initiatives, with varying degrees of resilience and sustainability. These programmes were typically initiated in areas of great socioeconomic need, as a way of providing additional non-medical support to patients facing an increased social and disease burden (5). Services were often developed as a response to the 'inverse care law'(6) and aimed to provide GP surgeries and practitioners serving deprived areas with additional means, support and practical options for their patients (7,8). The Bromley-by-Bow Centre, a community-developed SP centre established in East London in 1984 is often cited as one of the earliest examples, but many other local-scale non-clinical initiatives emerged during the 1980s and 1990s in the UK (9). The acknowledgment of the importance of these community-based approaches to health and well-being within health policy has been a more recent development (as explained in more detail in section 1.1.1.).

In the realm of SP services, three key actors stand out, each carrying out distinct (though complementary and often overlapping) responsibilities and facing specific challenges, as follows:

A. *Primary (and secondary) healthcare*. Healthcare professionals often initiate a referral to SP when they identify wellbeing needs that can potentially be addressed or supported by wider VCS services. SP mostly takes place in primary care, hence referrals typically come from general practice (GPs, nurses, health care assistants, physiotherapists, admin team) (10). However, there are increasing initiatives of SP in secondary care (e.g. elderly outpatients clinics (11,12)) and alternative community settings too (e.g. community pharmacies (13,14), mental health teams (15)). Exploring and gaining understanding of patients' wider needs (beyond the specific reason for consultation) is critical to initiating a referral, but can be hampered by some of the challenges faced by practitioners in current general practice (including, decreasing levels of continuity of care (16), workforce pressures (17), amongst others).

B. *Link workers (or 'social prescribers').* The connection between the health sector and the VCS is essential to many SP models and is often (though not always) facilitated through dedicated members of staff, such as link workers or social prescribers. Their fundamental characteristic is being knowledgeable of the local assets and GP teams involved. The extent of their involvement with the patient referred, where the link worker is based, and who employs them may, however, vary across different SP schemes (18). The training and resourcing provided to link workers is highly heterogeneous as well, though being critical for the implementation and good functioning of the service (2).

C. The voluntary and community sector (VCS) organisation. The range of activities, community embeddedness and history of the VCS vary within and across SP programmes. Funding arrangements are also mixed (19). While some organisations are commissioned to provide services for SP users, others are totally self-funded and do not receive any additional commissioning to cover the costs associated with increased demand (20). The VCS is often seen as mere service providers or the destination of referral pathways, instead of active partners and co-producers of SP (3). This rather limited perception of VCS organisations' functions often means that their experiences and challenges remain poorly understood, despite their central role in facilitating and delivering support via SP (21). VCS organisation representatives have raised concerns as to their limited capacity to address patients' wellbeing needs within the localities they operate amidst unprecedented pressures, such as the narrowing or closing of funding streams, high staff turnover, the closure of community spaces and facilities, amongst others (2).

The literature also distinguishes different models of SP depending on the referral mechanisms between primary care and the VCS and the amount and intensity of support delivered. I provide a brief description of the different types of SP below and in table 1.1, adapted from the classification proposed by Kimberlee (22) and the Health Observatory of Asturias, Spain (23,24):

A. *Social Prescribing as Signposting.* In this model, primary care clinicians share information about available community-based activities that might be relevant to a patient's specific situation. This approach is often prioritised with patients who may not be familiar with or have an initial reluctance to community-based activities. It allows to open an initial discussion about community-based health promotion, without actioning any formal referral process that might burden or overwhelm the patient. It requires an updated and readily available repository of community-based activities in primary care.

B. *Social Prescribing Light.* This has been described as the most common form of SP in general practice, whereby primary care clinicians recommend a specific community-based programme to address a specific wellbeing concern or need. Activities are typically lifestyle-related (e.g., exercise on prescription), but may also be aimed at welfare problems (e.g., social welfare support services). *Social Prescribing Light* is recommended when patients acknowledge that community-based services can be beneficial for their situation and are keen to participate. Formal links and communication between primary care and the VCS may facilitate monitoring patients' progress and feedback across providers. It also requires repositories of community-based activities in primary care.

C. *Social Prescribing Medium.* This model is being widely adopted in the UK. Its most distinctive feature is the deployment of a link worker, responsible for facilitating patients' journey from general practice to the VCS. After assessing patients' needs and agreeing on a community-based approach, clinicians refer a patient to a link worker. The link worker can guide patients to activities or offer more intensive support, such as regular follow ups, coaching, motivational interviewing or the development of new VCS activities where gaps exist. *Social Prescribing Medium* may be especially suitable for those patients who recognise the potential benefit of community-based activities but require additional support to participate. It requires solid and bidirectional systems of communication between health professionals, link workers and the VCS.

D. *Social Prescribing Holistic.* Interventions conforming this model are less common and typically evolve from previous approaches (signposting, light and medium) over time. *Social Prescribing Holistic* is characterised by a joint and embedded SP provider which draws on local knowledge of VCS services and networks to connect patients to different sources of support. Instead of focusing exclusively on the reason for referral, interventions explore and address patients' coexisting and emerging concerns in an integrated (*holistic*) and personalised way. There are no limits to the number of times a patient is seen on a SP intervention and referrals target different sectors (primary care or the VCS) depending on patients' changing needs. This SP model has been suggested in areas of high socioeconomic deprivation, where patients' increased burden of disease is related to underlying socioeconomic factors. It requires strengthened, sufficient, and varied VCS networks, integrated within the local primary care infrastructure. Such models, however, are often developed as processes of collective work overtime, enacted within (and shaped by) a particular history and ethos of social engagement and provider innovation.

Table 1.1. Social Prescribing models, adapted from the classification proposed by Kimberlee (22) and the Health Observatory of Asturias, Spain (23,24).

	What is it?	*Coordination GP - VCS*	*When is it suitable?*	*Requirements*
Social Prescribing as Signposting	Initial discussion about community-based activities	There is no formal link or systems of communication	To open an initial discussion with patients not familiar with SP interventions	Updated, user friendly and relevant repository
Social Prescribing Light	Recommendation of a specific community-based activity	There may be formal links and systems of communication	Patients who recognise the potential benefit of SP intervention and are keen to participate	Updated, accessible and relevant repository
Social Prescribing Medium	Referral to a link worker for further assessment and support	Solid, bidirectional systems of communication with link workers and VCS	Patients who recognise the potential benefit of SP but need additional support to participate	A link worker, linked to a GP and local VCS networks
Social Prescribing Holistic	Joint, embedded SP provider which addresses patients' needs holistically	Solid, bidirectional, integrated systems of coordination with link workers and VCS	Particularly relevant in areas of high socioeconomic deprivation	Strengthened, sufficient, sustained, varied VCS

1.1.1. International and UK Social Prescribing context

SP is growing internationally, with initiatives in United States, New Zealand, Australia, Spain, Sweden and elsewhere (24–28). *Morse and colleagues* provide an overview of SP developments and implementation efforts globally, drawing on examples from 17 countries (29). They describe significant differences with regards to workforce roles, financing, as well as information governance and health technology arrangements. While some countries have created specific SP roles (known by different names in different contexts, such as 'wellbeing coordinators' in Singapore (30), 'wellbeing coaches' in the Netherlands (31)), others have repurposed existing healthcare staff to administer social prescriptions (e.g., Portugal (32)). Similarly, many programmes have received additional, specific funding (for salaries, management, infrastructure in England or Australia (1,33)) while others have operated by rearranging existing staff and infrastructure (34), amongst other differences.

United Kingdom, however, seems to be leading the way in establishing formal, national SP pathways, with explicit mentions in subsequent policy reports, such as the NHS Five Year Forward View (2014), the General Practice Forward View (2016) and, more recently, the NHS Long-Term Plan (35), which marked a step change in ambition. The Long-Term Plan considered SP into its *"comprehensive model of personalised care"* and set a target of recruiting enough link workers to make the service available in every NHS England GP practice by 2023/2024 (36). The recruitment of link workers happened via Primary Care Networks (PCNs): groups of GP practices typically serving natural communities of between 30,000 to 50,000 people (with some flexibility) (35). As part of the national plan, PCNs received additional funding to recruit at least one SP link worker for their population (one full-time equivalent and more for PCNs with populations of more than 100,000) (37). By autumn 2020 national NHS bodies were reporting that more than 1,200 link workers were in post.

Although there is no professional registration for SP link workers at present, England and Wales have made substantial progress in developing competency frameworks and training curricula (38,39). Training typically includes behaviour change and motivational interviewing approaches, reflective practice, understanding the wider social determinants of health, community partnership and networking, social welfare advice and benefits, impact, evaluation and reporting, amongst others (40). A professional membership body called the National Association of Link Workers[1] has also been created to ensure continuing professional development and partnership opportunities for link workers across the country.

Alongside funding link workers, UK government has shown interest in growing the infrastructure that supports SP. In 2019, the Department of Health and Social Care promoted the creation of the National Academy of Social Prescribing[2] through £5 millions of government funding. The academy was officially formed as an independent charity in 2020, with support from various partner organisations, including NHS England, NHS Improvement and Sport England. It seeks to increase awareness of the benefits of SP by developing the evidence base, sharing examples of good practice, supporting VCS organisations engaged in SP as well as developing SP training and accreditation. Similarly, the government's strategy to tackle loneliness published in 2018 aligned with the nation-wide expansion of SP by stressing the importance of connecting people at risk of experiencing loneliness to sources of support within the community through SP. In 2020, the Department for Environment, Food and Rural Affairs announced a £4 million investment for a cross-government project called green social prescribing, aimed at strengthening the connection of patients with nature as a way of preventing and tackling mental ill health.

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[1] National Association of Link Workers https://www.nalw.org.uk

[2] The National Academy of Social Prescribing https://socialprescribingacademy.org.uk

Further investments in SP include the creation of the Social Prescribing Observatory[3], developed by the Royal College of General Practitioners (RCGP) and Nuffield department of Primary Health Care Science (University of Oxford), in collaboration with NHS England. The observatory provides weekly updates on SP referrals and declines (broken down by different sociodemographic features and geographic areas) across England using data from the RCGP Research & Surveillance Centre (RCGP RSC). It consists of a network of over 1,800 GP practices in England covering a population of around 8 million people, who are broadly representative of the English population. Drawing on this dataset, the Observatory provides an England-wide view of SP activity, allowing for greater understanding of the characteristics of people taking up the service and variations across practices and regions.

1.1.2. Social prescribing evidence base

SP schemes in and outside the UK are highly diverse and have a conflicting evidence base regarding their impact on patients and service providers. A systematic review published by Public Health England, for instance, found no clear evidence that GP consultation frequency and/or physical or mental health were improved among SP participants. The review included 8 UK studies (one cluster Randomised Controlled Trial (RCT) and 7 pre/post-test studies, of which only one study had a control group) on SP programmes involving referrals from healthcare professionals in primary care to a SP link worker (*SP medium* according to the classification offered in table 1.1) (41). In an earlier systematic review of SP programmes involving link workers (*SP medium*), *Bickerdike and colleagues* did not find enough evidence to prove differences in well-being and/or health service utilisation either, in part, due to the low quality and high risk of bias of 15 studies included (42). The systematic review and meta-analysis by *Pavey and colleagues* on the effectiveness of SP programmes involving referrals to physical activity in primary care (*SP light*) reported inconsistent findings in relation to physical activity levels, fitness, clinical outcomes, health related quality of life, and adverse events. The study included 8 RCTs and identified substantial heterogeneity across SP exercise referral schemes (43). *Pescheny and colleagues* reported mixed outcomes in relation to wellbeing, health-related behaviours, self-concept and social contacts following participation in SP programmes involving link workers (*SP medium*), and high heterogeneity in the quality of the 16 studies included (44). A quasi-experimental cluster-RCT assessing the effect of a primary care–based SP programme involving 16 full-time link workers across 16 GP practices in a socioeconomically deprived area of Glasgow, UK, (SP medium) found no difference on patients' quality of life and well-being either (45).

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[3] Social Prescribing Observatory https://orchid.phc.ox.ac.uk/index.php/social-prescribing-observatory-prod/

Further systematic reviews and RCTs on SP have also failed to report consistent health, service utilisation or cost results (46–49).

Authors suggest that the evidence gap on SP may be, in part, due to inadequate methodological approaches to gathering, assessing and/or synthesising data (1). SP interventions have fuzzy boundaries, multiple and inter-related components and are extremely sensitive to the context. Frequently, they respond to diverse and conflicting interests, expectations, and priorities, all of which shape the delivery and evaluation of SP (50). Conventional research designs (namely RCTs and/or previous systematic reviews) may fail to capture these critical nuances and therefore could be inappropriate to guide service evaluation and implementation (51,52). Although RCTs would allow to compare the effectiveness of different variations of SP programmes, methodological requirements often impede the analysis of the interplay between the implementation process, individuals involved, programme's context and the wider social and cultural environment (and expectations) that shape SP delivery (53). Qualitative studies and novel methodological approaches are, conversely, better placed to facilitate an in-depth understanding of 'why', 'for whom', and 'in what circumstances' interventions might (or might not) work (21,54–56).

The realist review by Tierney and colleagues represents an interesting example. According to the study, 'buy in' to the service and strengthened connections between link workers and other stakeholders (mainly, clinicians and the VCS) were key to producing intended outcomes (e.g., trust, sense of belonging, practical support) (54). The realist review by Husk and colleagues showed that patients were more likely to engage in (and gain benefit from) SP if activities were accessible (in time, cost and distance) and the transit to the first session was supported by the link worker (55). According to the realist evaluation by *Bertotti and colleagues*, short and busy GP consultations seemed to constrain the referral process (57). *Chng and colleagues* found that shared, collaborative leadership among key members of staff (including lead GPs, practice managers and link workers) helped to integrate SP into routine general practice (7). Training of link workers and workforce support have also been reported as key enablers for successful SP implementation elsewhere (58,59). Further qualitative studies have contributed to a better understanding of the role of SP in strengthening the collaboration between primary care and the VCS (60), including how this partnership can be undermined by insufficient community funding (21) and imbalance of power between healthcare professionals and third sector organisations (61).

Ethnographic studies have also played a key role in illuminating the multiple contexts that shape providers' practices and patients' experience (and expectations) within SP. *Gibson and colleagues* explored how classed inequalities shaped patients' engagement (62). Authors challenged the assumption that patients are homogenously predisposed to invest in their future health and demonstrated the importance of scrutinising patients' contexts and life circumstances during and prior to referrals. While patients who were familiar with the process of cultural health capital accrual fared well, most disadvantaged participants experienced multiple points of tension and disjuncture. Similarly, and based on 11 months of in-depth ethnographic research with link workers delivering SP, *Griffiths and colleagues* demonstrated that existing organisational priorities and predefined managerial targets made it harder for link workers to engage with complexity and offer the support that patients required (63). Authors identified different understandings of SP, which ultimately shaped link workers' daily practice and their capacity to deliver care.

Drawing on theoretically grounded and diverse methodologies, the examples above illustrate and unravel the complex nature of SP interventions. My thesis builds on this complexity-informed evidence base to further investigate what 'good practice' in SP looks like (and means) and identify relevant resources, conditions and tensions that may shape routine service delivery.

1.1.3. The potential of Social Prescribing in type 2 diabetes prevention

SP is expected to advance the prevention and management of long-term conditions, by encouraging healthier lifestyle, self-management, and personalised care (64–68) However, the current evidence base for SP and its role in specific areas of health need, such as T2D, is scarce. This thesis uses T2D prevention as an exemplar and investigates the possible role of SP in people at high risk of the condition based on the following considerations.

First, T2D is a major public health concern; it is common (and increasingly so) and is associated with reduced quality of life, life expectancy, and considerable socioeconomic consequences (69–71). *Lin and colleagues* estimated a gradual increase in the global burden of diseases associated with diabetes across 195 countries over 28 years (71). In the UK, around 4.6 million people are diagnosed with diabetes, and the number is expected to increase up to 5 million by 2025. It is estimated that approximately 12.3 million people are at risk of developing T2D in the future. While individual behavioural risk factors such as physical inactivity and poor nutrition are important determinants of T2D risk, these seem to be heavily influenced and constrained by higher-level (also referred to as upstream) factors (including socio-economic deprivation, obesogenic environments), which appear to be major driving forces behind escalating T2D epidemics and health inequalities (72,73).

Second, the existing NHS Diabetes Prevention Programme (NDPP) has shown low uptake and high attrition rates, especially amongst socio-economically deprived and racially minoritised groups (74–76). NDPP targets individuals at high risk of T2D, demonstrated by a diagnosis of non-diabetic hyperglycaemia or previous gestational diabetes. The core NDPP intervention consists of group-based sessions offering behavioural change content intended to achieve improvements in diet, physical activity levels and weight. The course consists of a minimum of 16 hours of contact time over at least 9 months (77). Unlike SP, NDPP is privately delivered and commissioned by NHS England. General practice involvement is limited to the identification and referral of patients, enhanced through various incentives and support strategies.

The evidence-base for NDPP is strong for efficacy among trial participants. Results from the Finnish Diabetes Prevention Study (FDPS) (78) and US Diabetes Prevention Programme (79), for instance, demonstrated a significant reduction in the cumulative incidence of T2D: by 58% over 3.2 years and 2.8 years, respectively. The first T2D prevention RCT in England was based on the FDPS protocol and demonstrated a similar T2D risk reduction of 55% in the intervention compared to the control group (80). A recent Cochrane systematic review and meta-analysis of 11 RCTs including 4511 participants demonstrated a 43% reduction in risk (95% CI 36–50) over a mean follow-up of 3.8 years (81). Three of the landmark RCTs have also described successful longer-term outcomes in diabetes incidence (82–84). However, subsequent translation of these findings into large-scale community-based programmes produced less effective interventions (85,86). Effect attenuation is attributable to many factors. Participants in trials have shown higher motivation compared to those in real-world settings (87). Similarly, community-based interventions have proven to be less intense (e.g., shorter and comprising group, instead of one-to-one, sessions) (88) and face significant recruitment and retention challenges following translation (89). An independent cohort study of engagement and dropout among the first 100,000 referrals into NDPP showed that only 56% of patients referred started the programme, of which 22% completed the full course (75). Additionally, a social gradient exists in those engaging with and gaining benefit from NDPP. Retention has proven to be less likely amongst all minoritised ethnicities compared to white groups, and to increase with socio-economic affluence (75).

In the case of SP, many community-based activities accessed through the programme focus on healthy lifestyle, including weight management, dietary recommendations and physical activity programmes (1,18,90,91), which also underpin NDPP (77). However, according to the data provided by the national SP Observatory, a large number of referrals are also (and likely concurrently) linked to mild mental health concerns, social support and benefits advice (92). By also acknowledging people's underlying social constraints, SP may offer a means of providing contextually sensitive and holistic health promotion to those with greatest health and social vulnerability (93), in line with best practice recommendations for individual-level T2D prevention (94).

The table below offers a summary of the main differences between SP and NDPP.

Table 1.2. A summary of the key features of SP and NDPP

Main differences	**Social Prescribing**	**NDPP**
Target group	Any adult patient with an active GP registration. A **medical diagnosis is not required**	Any patients diagnosed with non-diabetic hyperglycaemia or history of gestational diabetes. A **medical diagnosis is required**
Intervention	**Flexible** depending on patients' needs and local availability. It may include lifestyle, welfare advice, community engagement, among others	**Consistent** group-based lifestyle sessions offering behavioural change content aimed at improving diet, physical activity levels and weight
Duration	**Varied**. Programs may set a limit on the number of appointments, or provide ongoing, unrestricted support	**Fixed**. A minimum of 16 hours of contact time (online or face to face) spread across 9 months
Delivered by	**Local** VCS and primary care teams	**External** private providers
Role of primary care	**Central** to SP, as referrers, patient advocates, hosting or organising activities, among other roles	**Limited** to the identification and referral of patients, enhanced through incentives and support strategies

1.2. PhD aims, objectives and research questions

This thesis focuses on the following aims, objectives and research questions:

PhD overall aims:

1. To investigate the possible role of SP in T2D prevention in a multi-ethnic, socioeconomically deprived population.
2. To inform the design, implementation and evaluation of SP initiatives relevant to the prevention of T2D.

PhD overall objectives:

1. To evaluate whether (and to what extent) SP meets the complex health and social needs of people at high risk of T2D in a multi-ethnic, socio-economically diverse population.
2. To investigate what ‘good’ practice in SP relevant to T2D prevention might look like.
3. To identify the main conditions and mechanisms that might explain the success or failure of SP programmes in the prevention of T2D in primary care.

Research questions:

1. To what extent might SP meet the complex health and social needs of people at high risk of T2D in multi-ethnic, socioeconomically diverse populations?
2. What does ‘good’ practice in SP relevant to people at high risk of T2D look like and what are the main conditions (‘active ingredients’) for achieving this?
3. How do existing SP programmes address questions of implementation and evaluation, and what are the knowledge gaps critical to understanding their success or failure in primary care?

1.3. Structure of the thesis

This thesis includes seven separate chapters. **Chapter I** introduces the research topic by defining SP, providing an overview of its international and UK context, and outlining main evidence gaps and opportunities for research. It highlights the appropriateness of complexity-informed research approaches and the potential (and opportunity) to investigate the role of SP in areas of specific health need, using T2D prevention as an exemplar. This chapter also sets overall PhD aims, objectives and research questions, while outlining the structure of the thesis. **Chapter II** provides an overarching background to the different theoretical perspectives and methodologies used in this research, by first summarising the main paradigms available in science to then situate this study (and myself as researcher) within a complexity informed scientific paradigm. I argue for the opportunity and potential of combining (and learning from) different disciplinary traditions and methodologies, as a way of providing a comprehensive, in-depth account of SP and its role in the prevention of T2D in primary care.

Chapters III-VI are structured in three different stages as represented in Figure 1.1. Each stage informed the development of the next one, guided by discussions with the supervisory team and a wider stakeholders' advisory group, which was created during the initial phases of the PhD. Members of the group were selected based on their knowledge on SP and potential capacity to confirm, falsify and refine research hypotheses and preliminary programme theories. I consulted a total of 9 members throughout the PhD, including lead social prescribers, representatives of the VCS, primary care workers involved in SP implementation, national charitable organisations (SP Network, National Academy for Social Prescribing) and health institutions (Public Health England, NHS England/NHS Improvement). Consultations with group members were carried out at regular intervals via individual or group online meetings, which usually started with a presentation of the study (typically preliminary findings) and questions for discussion. Meeting notes and conclusions were used to guide the direction of the research and ground it in the practical reality and challenges experienced by participants.

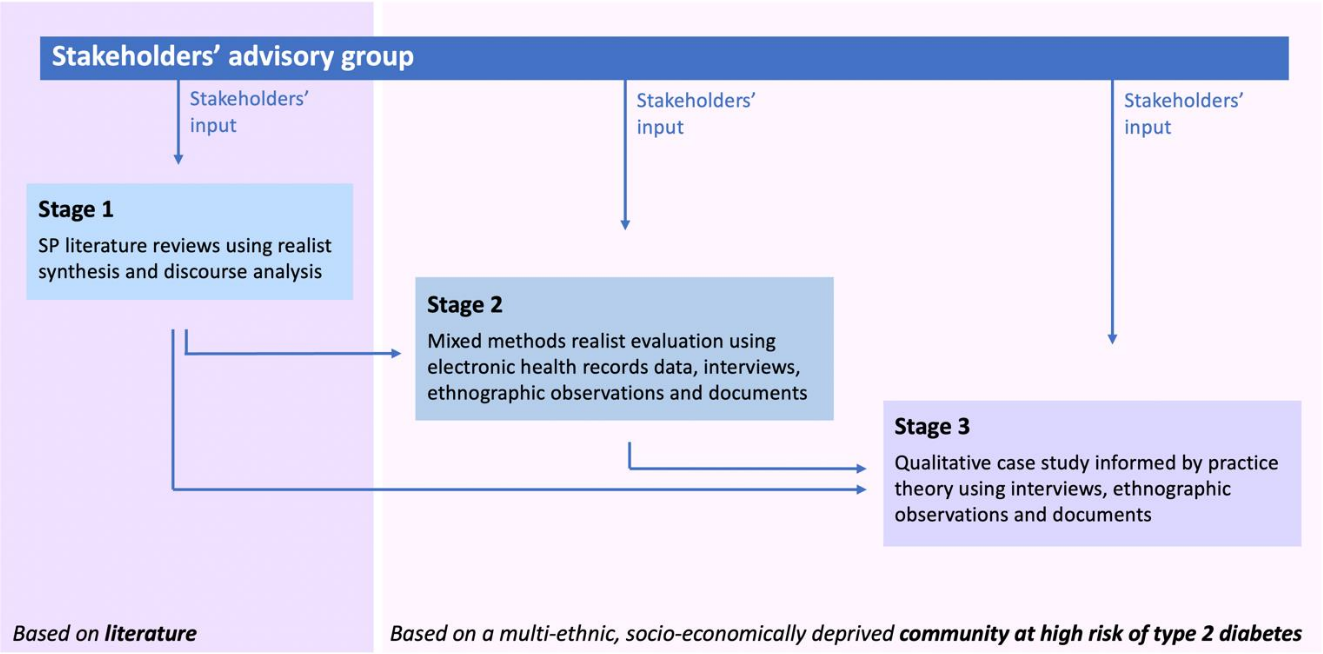
Stage 1 involved reviewing and synthesising relevant literature on primary care-based SP. I used two different methodological approaches, namely realism and discourse analysis, to illuminate contrasting and complementary aspects (and tensions) of SP implementation and delivery. Given the scarcity of primary studies specifically addressing T2D prevention, I decided to investigate SP practices (using realism) and understandings (using discourse analysis) across different health domains. This allowed me to develop broad, preliminary programme theories, which were then tested, refined, and applied to T2D prevention empirically in stages 2 and 3. The realist review is developed in **Chapter III** and involved defining 'good' practice in SP based on its varying degrees of potential to meet patients' complex health and social needs in primary care (overall objectives 1 and 2). It also explored the conditions and resources across sectors (general practice, link workers, VCS) and systems (micro, meso, macro) that contribute to intended outcomes (overall objective 3) and developed a preliminary framework to inform SP implementation and evaluation. The critical literature review using discourse analysis is developed in **Chapter IV** and adopted a more interpretative approach to explore how SP is conceptualised and understood in the scientific literature. It also investigated how these understandings relate to larger overarching discourses within a broader socio-historical and political context, and its implications for the implementation and delivery of SP. Building on the realist synthesis, the critical literature review further characterised the conditions for 'good' practice in SP (overall objective 3) by focusing on the discursive (or cultural) dimensions that shape service delivery.

Stage 2 built on findings from stage 1 and iterative discussions with the supervisory team and stakeholders' advisory group and is developed fully in **Chapter V**. It involved investigating the possible contribution of SP to individual-level prevention of T2D in a multi-ethnic, socioeconomically deprived population at high risk, while making comparisons with NDPP where relevant and possible. Using mixed methods realist evaluation, I defined what 'good' practice in SP relevant to T2D prevention looks like by exploring its potential to meet the complex health and social needs of patients at high risk (overall objectives 1 and 2). I analysed anonymised primary care electronic health record data of 447,360 people eligible for SP and diverse qualitative data, including 43 interviews with primary care clinicians, social prescribers, community organisations and SP users at high risk of T2D; 36 hours of ethnographic observations of SP and NDPP sessions; and relevant documents. The study unravelled the role of SP in T2D prevention by demonstrating its potential to deliver holistic, accessible, sustained, and integrated health promotion in primary care.

Stage 3 built on findings from stages 1 and 2 and further discussions with the supervisory team and stakeholders' advisory group and is developed fully in **Chapter VI**. It involved investigating what 'good practice' in SP relevant to T2D prevention actually involves (and how it is accomplished) in real practice, including resources, tensions and competing interests at different (and interconnected) levels that might shape routine service delivery (overall objective 3). Informed by theories of social practice, this qualitative case study drew on the qualitative data collected in Stage 2 (including, 43 semi-structured interviews, ethnographic observations and documents). It characterised different kinds of contextualised SP practices, conditions for their enactment, and their varying degrees of potential in supporting patients at high risk of T2D. The study revealed that practices circulated unevenly, and were squeezed and stretched in relation to each other, depending on the changing and generally unequal distribution of resources operating at different, inter-connected levels. Defection and continued participation in different types of practices were in tension and often alternated as critical individual, interpersonal, organisational, and institutional thresholds were passed.

Chapter VII presents the summary findings of stages 1-3 (Chapters III-VI) in the context of existing, available scientific literature. It discusses the strengths and limitations of the thesis and its implications for future research, policy and clinical practice, while also developing the overall thesis conclusions.

Figure 1.1. Study overview



Chapter II. Theoretical background: a complexity-informed approach to research

When trying to understand and explain reality (be this specific health interventions, institutions or the wider society), researchers bring a number of assumptions concerning the nature of the study object or reality itself (ontology), the kinds of knowledge considered to be possible, adequate and legitimate (epistemology), and the best strategy and plan of action to fulfil the task (methodology) (95,96). These assumptions are often referred to as philosophical stances or knowledge paradigms, and shape both the remit and characteristics of research in science (97).

This chapter aims to provide an overarching background to the different theoretical perspectives and methodologies used in this thesis. First, I present an overview of the primary paradigms that exist in science. Subsequently, I position this study within a theoretical perspective that is informed by complexity science. I explain the importance of complexity-informed research in studying SP and T2D prevention. Additionally, I provide a rationale for the pragmatic use of complexity-informed research within this thesis as an overarching umbrella encompassing a number of other theoretical approaches and sensitising concepts, including critical realism, realist evaluation, discourse analysis and theories of social practice. Each specific methodology and methods are described in more detail separately within corresponding findings chapters (realist synthesis in Chapter III, discourse analysis in Chapter IV, realist evaluation in chapter V and theories of social practice in Chapter VI).

2.1. Positions on the philosophical spectrum

Following the classification proposed by Lincoln and Guba (95), at least four overarching philosophical positions or paradigms can be outlined, as summarised in Table 2.1. and described in more detail below:

Table 2.1. Basic Beliefs of Alternative Inquiry Paradigms (adapted from Denzin and Lincoln)

Issue	Positivism	Post-positivism	Constructivism	Critical Theory et al.
Ontology	Naïve realist – 'reality pre-exists and is apprehendable'	Critical realist – 'reality exists but is only imperfectly and probabilistically apprehendable'	Relativist – 'reality as specific and situated constructions'	Historical realist – 'virtual reality shaped by social, political, cultural, economic, ethnic and gender values reified over time'
Epistemology	Objectivist – 'there are objective means leading to true findings	Modified objectivist – 'there are fallible means leading to probably true findings'	Subjectivist – 'there are no such things as truths, only created findings'	Subjectivist – 'there are no such things as truths, only value-mediated findings'
Methodology	Experimental – 'relationships between cause and effect are empirically verifiable'	Critical multiplist – 'relationships between cause and effect are understood through multiple, heterogeneous approaches'	Hermeneutic/dialectic – 'knowledge is created in the interaction between subjects and objects'	Dialogic/dialectic – 'knowledge as a dynamic, dialectical and transformative process of historical revision'

Positivism encapsulates the spirit of the Enlightenment and the self-proclaimed Age of Reason, by offering assurance of unambiguous and accurate knowledge of the world. It assumes an external reality which (pre-)exists independently of any consciousness of it and provides the means to 'objectively' apprehend and understand it. Knowledge equates to empirically verified causal explanations, assuming predictive relationships between causal factors and effects (also referred to as 'determinisms'). Such causal hypotheses are deductively formulated, tested and verified using empirical data and experimental (generally quantitative) research designs (also referred to as 'empiricism'). In positivism, experimentation creates a context-free situation to try to minimise all the differences (except one) between experimental and control groups, assuming that the observed occurrences in the particular phenomenon under study will also happen elsewhere (known as 'generalisability'). Quality in research is assessed by conventional benchmarks of 'rigour', such as the extent to which the conclusions of the study can be applied in different contexts ('external validity') and degree of confidence that the causal relationships observed are not influenced by any other factors ('internal validity') (95,96,98).

Post-positivism still assumes an objective reality but grants that it can be apprehended only imperfectly and probabilistically, because all observation is fallible and every observer is inherently 'biased' by their subjectivity, cultural standing and worldview ('there is no possible view from nowhere') (99). Intrinsically meaningful social phenomena require 'understanding' on the part of the researcher (beyond counting or measuring), which always entails interpretative or hermeneutic elements. This relates to a fundamental distinction made by Bhaskar between the 'intransitive' nature of the objects of science and the 'transitive' (always refutable) means for apprehending them (100). Causal narratives are also central to post-positivism but have a wider conception that goes beyond the criterion of observability to also account for those non-physical and unobservable causes (101). To capture as much reality as possible and understand its causal dynamics (both observable and unobservable), post-positivism relies on (and triangulates across) multiple methods (including emic viewpoints to capture the meanings and purposes people ascribe to their actions) (95). Rigour, in this case, is also critical to ensure the most accurate, reliable and valid representation of reality.

Constructivism suggests that human beings 'construct' the world through their perceptions, experiences and interpretations on phenomena. 'Reality' becomes the sum of these subjective, socio-historically situated constructions and lacks any inherent characteristic or pre-existing structure(96). While for (post)positivists reality predates our interpretations and interactions, from a constructivist point of view, reality is relative and emanates from the very interaction between subject and objects. The researcher and the object of investigation are interactively linked in the creation of both reality and knowledge (the conventional distinction between ontology and epistemology disappears). As defined by Michael Crotty:

'All knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context.' (96).

It follows that there are no better or worse constructions in terms of their proximity to 'reality'. Knowledge accumulates (and reality exists) through the formation and integration of additional (more or less informed and/or sophisticated) constructions (102), whose quality is assessed in terms of trustworthiness and authenticity (as opposed to rigour or validity) (103).

Under *Critical Theory*, reality is understood as the concurrence of social, political, cultural, economic, ethnic and gender values, reified over time into structures that are (inappropriately) taken as natural (and immutable) (104). Yet, as pointed out by Guba and Lincoln, these historically situated structures are, in the absence of insight, "*as limiting and confining as if they were real*" (105). Critical social theory is therefore interested in understanding and revealing how these hidden structures and power struggles shape and construct a social system. The investigator and the investigated object are assumed to be interactively linked within this structured context, with the values of the investigator (and of situated 'others') inevitably influencing the inquiry. In critical research, not only the position ('situatedness') but also the purpose of inquiry become central, which is overtly committed to challenging the status quo in the pursuit of greater justice and emancipation(104). Quality, this time, is determined by the historical situatedness of the research and its ability to raise awareness and enact transformation (95).

Although these paradigms have been presented separately, as exclusive and independent from one another, the limits between and within them are rather blurry and dynamic. Each paradigm is itself internally diverse, there is potential for new philosophical stances, and different ways of classifying and conceptualising them (95,96). They may also "*interbreed*", such that two different theoretical perspectives can appear, under a different theoretical rubric, informing one another's arguments. In fact, much of the research in health sciences (and more broadly) do not fall neatly into one or other of these paradigms, but rather combine (and merge) competing and overlapping perspectives (106). Reality (and any attempt to apprehend it) seems to elude and exceed overtly rigid classifications.

The conceptualisation of social reality as ‘open’, ‘inter-related’ and ‘complex’, and the need for pluralistic approaches to apprehend it, has been framed as a paradigm in itself by some authors - referred to as “paradigm of complexity” (see table 2.2. for further detail). A more detailed account of this stance, including its potential in the study of SP and T2D prevention is provided below.

Table 2.2. Basic Beliefs of Alternative Inquiry Paradigms Updated from Denzin and Lincoln

Issue	Positivism	Post-positivism	Constructivism	Critical Theory et al.	Complexity Science
Ontology	Naïve realist – ‘reality pre-exists and is apprehendable’	Critical realist – ‘reality exists but is only imperfectly and probabilistically apprehendable’	Relativist – ‘reality as specific and situated constructions’	Historical realist – ‘virtual reality shaped by social, political, cultural, economic, ethnic and gender values reified over time’	Complex – ‘reality as open, dynamic, interconnected and unpredictable system(s)’
Epistemology	Objectivist – ‘there are objective means leading to true findings	Modified objectivist – ‘there are fallible means leading to probably true findings’	Subjectivist – ‘there are no such things as truths, only created findings’	Subjectivist – ‘there are no such things as truths, only value-mediated findings’	Performative – ‘a focus on what becomes possible through action’
Methodology	Experimental – ‘relationships between cause and effect are empirically verifiable’	Critical multiplist – ‘relationships between cause and effect are understood through multiple, heterogeneous approaches’	Hermeneutic/dialectic – ‘knowledge is created in the interaction between subjects and objects’	Dialogic/dialectic – ‘knowledge as a dynamic, dialectical and transformative process of historical revision’	Pluralistic, theoretically grounded, conjunctive – ‘knowledge as connection of different concepts”

2.2. Complexity science: the need for a new paradigm

Complexity has been described as "*a dynamic and constantly emerging set of processes and objects that not only interact with each other, but come to be defined by those interactions*" (107). Complexity science suggests that social reality is comprised of numerous interconnected and overlapping systems (108). Individuals can belong to multiple systems concurrently and exert influence within them. Their responses to the environment and interactions with others are characterised by creativity and adherence to internalised rule sets, which may not always be predictable. This gives rise to different levels of uncertainty as systems and their components adapt and co-evolve over time (109–111). Crucially, complexity is a feature of the system(s), not merely a characteristic of interventions(51,107,112). As pointed out by Greenhalgh and Papoutsi, "*whether an intervention is simple (one active component, unchanging) or complex (multiple interacting components), the 'system' in which the intervention is implemented will almost invariably need to adapt in some way to accommodate it*"(51).

Despite the lack of detailed predictability, systems and interactions may follow patterns susceptible to research, thus offering scope for making practical and generally true statements about reality and interventions, such as SP (108). Social patterns, processes and practices are best captured through a double process of acknowledging situational particularity and individualised experience, while also recognising the interconnections and embeddedness of phenomena within and across systems - "*to distinguish without disjoining, to associate without identifying or reducing*" (113). In 'attending to', rather than 'controlling for', complexity, researchers need to respond flexibly to emerging service delivery patterns, embrace effective adaptation and tailoring to context, work closely with local stakeholders, and make use of different forms of knowledge (51,114,115). Such a perspective highlights the need for complex forms of inquiry that generate rich pictures of interventions by integrating concepts and bringing together different kinds of data, sources and experience, also referred to as 'conjunctive theorising' (116). Complexity science, therefore, supports the use and combination of different theoretical and methodological perspectives to develop rich, in-depth understandings of social reality and phenomenon. Knowledge, however, will always be in transition and contingent. The ontological open-endedness of the world is also reflected in the open-endedness of the concepts developed, which are unescapably dynamic, flexible and contestable. Quality is ensured through continuous revision and a commitment to questioning and assessing one's own assumptions and methods.

2.3. The role of complexity science in health services research

The role of complexity science in health care research is gradually gaining relevance. Recent publications and relevant research institutions have contributed to providing insights (both empirical and theoretical) and make the study of complexity in medicine and healthcare accessible and relevant to researchers, end users and wider stakeholders (51,117–119).

In 2001, the British Medical Journal published an extensively cited series of articles introducing the topic (108) and providing examples of its application to clinical care (120), leadership and management (121), and education and training (122). In the same year, the Medical Research Council (MRC) begun providing guidance for the development and testing of complex interventions in healthcare with the publication of a framework (123), which was subsequently updated in further editions (118,119). In 2017, following an international workshop called "*We Need to Talk about Complexity*" held in Oxford, UK (124), Greenhalgh and Papoutsi launched an open call for articles in BMC Medicine that addressed (theoretically and/or empirically) the topic of complexity science and its application to health care systems (117). They published a widely cited article providing further guidance and standards of research quality (namely, rich theorising, generative learning, and pragmatic adaptation to changing contexts), while proposing an agenda for future research (51).

To date, complexity science has been used in different fields of study. *Rigoli and colleagues*, for instance, applied a complex systems approach to spatial interaction methods in a cross-sectional study to investigate the displacement of pregnant women crossing municipal borders for birth-related hospitalisations in a region of São Paulo, Brazil (125). These patients' movements were interpreted as emergent behaviours limited by regional administrative boundaries and further top-down constraints. *McNab and colleagues* used a structured participatory design to develop an in-depth understanding of primary care system interactions and functioning relevant to sepsis management (126). Drawing on multiple stakeholder interviews and records of patients admitted from primary care to hospital with possible sepsis, authors explored how system conditions influenced everyday sepsis management, identified key work functions for best practice, and developed a multi-component improvement intervention. Complexity-informed research has also been used to address the value and usefulness of routinely collected quantitative datasets in health care. Using an empirical example in UK child mental healthcare and drawing on complexity theory, *Wolpert and colleagues* provided recommendations for using incomplete and contested data as sensitising and interrogative devices for developing insight and mobilising uncomfortable knowledge in health services research (127). More recently, complexity science has been advocated to improve the understanding of the COVID-19 pandemic by drawing attention to the broader vulnerabilities and interconnections that relate to virus transmission and the effects of the pandemic (128).

2.4. The potential of complexity-informed research to investigate social prescribing relevant to type 2 diabetes prevention

SP and T2D prevention can also be defined through a complexity lens as dynamic and continuously evolving systems of processes that interact with each other and become defined by these interactions (107). As introduced in Chapter I, various stakeholders, settings and systems can be identified throughout the SP pathway, including: 1) primary care and SP referrers, comprising multi-disciplinary teams who offer regular care and services (including, advice on and referral to SP) to registered patients; 2) link workers, managed by individual surgeries, PCNs, and/or broader structures; 3) VCS organisations with different (and often decreasing) sources of funding, degrees of community embeddedness and remits (such as, exercise, weight management, healthy diet, welfare and legal advice, food insecurity, housing problems, training and employment, and so on); and 4) SP commissioners, in charge of prioritising, funding and monitoring SP services. Central to this model is the patient, in this case, at high risk of T2D, who is referred into SP due to a range of circumstances and reasons, not necessarily in relation to T2D prevention. Patients at high risk of T2D may suffer from additional co-morbidities, live with specific social, cultural and economic needs and have different priorities and expectations, all of which condition how they interact with (and respond to) available SP and T2D prevention programmes.

To add complexity, boundaries between systems are fuzzy, with participants often belonging to and exerting influence in multiple systems simultaneously. For example, in addition to being referred into SP, many patients may also attend NDPP sessions, volunteer in the VCS and visit general practice due to reasons other than SP or T2D prevention. Similarly, link workers constantly navigate and negotiate the limits between health and third sectors and may participate and run VCS activities themselves. Power (and control) is distributed, with link workers and clinicians showing some degree of autonomy to customise the service to their values and preferences, VCS members holding responsibility over the running of activities, and managers and commissioners making policy and funding decisions that affect the operating context and the delivery of the intervention. Changes in SP implementation and roll-out also seem unpredictable and non-linear. The link worker workforce, for instance, increased (even doubled) in 2019 as a consequence of the national NHS Long Tern Plan (see Chapter I, section 1.1.1., for further detail). This led to a period of staff training, recruitment and restructuring across PCNs that influenced programme delivery in ways that were not foreseen at its inception.

To comprehend how SP operates and its significance in T2D prevention, one must, therefore, pay attention to all these factors, including emerging SP patterns, the dynamic and varied contexts in which it operates, and the experiences and understandings of stakeholders. To achieve this comprehensive understanding, complexity science suggests employing complex forms of inquiry that draw on diverse theoretical perspectives, methodologies, and research approaches. Each approach has the potential to address different unanswered questions, shedding light on the various aspects of SP implementation and delivery.

2.5. The use of complexity-informed, theoretically rich methodologies in this thesis

In line with complexity science, this thesis drew on pluralistic, theoretically rich methodologies to address such complex reality and enable rich and in-depth understanding of SP delivery in communities at high risk of T2D. Complexity science served as an overarching umbrella, encompassing a number of other theoretical approaches and sensitising concepts. These, in turn, informed specific methods and analysis in each of the chapters discussing thesis findings.

For instance, I used realist methodology to determine what constitutes 'good' practice in SP with regards to T2D prevention and identify the relevant conditions and resources, referred to as 'mechanisms', that contribute to successful outcomes (Chapters III and V). The study of causal explanations are central to realist evaluation, which allowed for the development of detailed program theories exploring how SP might work, for whom, under what circumstances, and why. Realist evaluation encourages the utilisation of multiple research methods to gain a comprehensive understanding of these causal dynamics. This approach is evidenced in the consideration of various study designs within the realist synthesis (Chapter III) and the utilisation of both quantitative data from electronic clinical records and qualitative data gathered from interviews and observations in the empirical realist evaluation (Chapter V). This blending of research methods helped to gain deeper insights into the complexities of SP and its potential role in T2D prevention.

I also used discourse analysis to explore how SP is framed, conceptualised, and used in the scientific literature, and to examine its implications for service delivery and evaluation (Chapter IV). Discourse analysis approaches acknowledge the significance of social contexts and how individuals subjectively experience and interpret them. This approach allowed the thesis to focus on understanding what SP means for different people and in different situations, as well as how these meanings are constructed. There exists a wide range of approaches to discourse analysis, which may differ based on the specific focus, data sources, or level of analysis (131,132). In this thesis, I drew on diverse discourse analytical approaches (as detailed in Chapter IV), while adopting an overtly critical perspective to illuminate the contradictions, paradoxes, and dilemmas within the SP literature. This critical perspective helped to challenge the validity of some of these understandings and expose their potential consequences for SP implementation and delivery.

Lastly, in Chapter VI of this thesis, I used theories of social practice to further investigate how service providers, in their efforts to deliver SP in high-risk T2D communities, either resisted or embraced organisational routines. Practice theories place a strong emphasis on understanding how things unfold in real world, highlighting the dynamic interactions between practitioners and the broader social reality that influence routines. By employing these practice theories, the thesis centred on understanding what constitutes 'good practice' in SP relevant to T2D prevention in everyday scenarios. It shed light on the resources, tensions, and competing interests that influenced routine service delivery. Similar to discourse analysis, practice theories cover a wide and diverse range of scholarship. In this thesis, I drew on various theoretical approaches, as explained in Chapter VI, including theories of organisational routine, which helped to unravel the creative and emergent nature of SP practice.

In essence, this thesis serves as a prime example of complexity-informed research, wherein various perspectives and research methods are reflectively and coherently combined and integrated to develop an in-depth understanding of a social phenomenon that is complex, open and dynamic.

2.6. Positionality statement

It is key for researchers to analyse critically and recursively their positionalities with reference to the research process. In this section, I aim to introduce my personal and professional background relevant to this study. I explore how these aspects may have influenced the research and outline the steps I took to acknowledge and accommodate any potential challenges that may have arisen as a result.

I completed my GP training in 2017 in Spain, where I actively participated in various primary care advocacy groups and initiatives. Throughout my training, the UK general practice and the NHS were highly regarded and frequently cited as a point reference. The literature and texts authored by NHS practicing GPs and academics, such as Ione Health (129), Julian Tudor Hart (130), Trish Greenhalgh (131), Christopher Dowrick (132), amongst others, significantly influenced my understanding of general practice and shaped my professional aspirations. This understanding likely led me to place emphasis on specific questions related to care quality, community health, and health equity in primary care, and shaped and converged with the methodological choices and knowledge claims concerning 'good' practice in SP – which will be made explicit throughout the thesis.

I moved to the UK in 2018 to gain first-hand understanding of the NHS primary care and general practice. Since then, I have been working as a salaried GP in the same GP partnership in Tower Hamlets, which is also where this study is based. In 2019, I started my PhD and have been balancing my clinical responsibilities with research activities ever since.

Being a local GP while also having trained and worked previously in Spain positioned me both as an ‘insider’ and ‘outsider’, with various implications for the research process. Working as a GP in Tower Hamlets granted me prior knowledge about the setting and the topic of the study since I had been using the service I was evaluating as a clinician. This insider perspective might have allowed me to address certain topics more easily and be aware of which aspects needed attention. Additionally, I possessed valuable insights and a deeper understanding of implied content, which could have made me more attuned to certain dimensions of the data. Moreover, being a local practitioner provided easier access to the field. Respondents were likely more willing to share their experiences with someone they perceived as sympathetic to their situation, and my familiarity with the area and resources enabled me to engage with potentially helpful and informative resources.

However, it is essential to acknowledge that being an insider also carries certain risks. There is a potential for blurred boundaries, the imposition of personal values, beliefs, and perceptions, and the projection of biases. Furthermore, being introduced as a local GP during fieldwork (both in interviews and observations) may have influenced some interactions due to power dynamics with patients and other NHS and VCS staff.

Despite being a local GP, the fact that I had trained and worked in Spain before relocating to the UK could have made me more receptive to potentially relevant variations between health systems. This cross-cultural perspective could have enabled me to identify tensions more effectively. As an outsider in this context, I might have experienced a sense of freedom from specific expectations, which could have encouraged me to pose innovative questions and challenge conventional or ‘taken for granted’ explanations.

Thoughtful consideration of the epistemological, conceptual, and methodological aspects of insider-and-outsiderness is crucial in navigating the complexities of developing trustworthy and ethical knowledge. Reflexivity played a significant role in identifying and explaining how personal, contextual, and circumstantial factors could have influenced the process and outcomes of the study. While the interpretation of findings is always done through the eyes and cultural standards of the researcher, reflexivity helped to monitor these effects and maintain the ethics of the relationship between myself and the research (133). Various strategies were employed to uphold reflexivity. These included engaging in iterative discussions of preliminary findings with the advisory team of wider stakeholders, seeking external peer review of findings by reputable journals, and maintaining an ongoing dialogue with the broader research and supervisory team.

Chapter III. ‘Good’ practice in social prescribing and its enablers at individual, relational, organisational and policy levels. A realist review

3.1. Introduction

In this review, I adopted a realist approach to synthesise the existing evidence on the implementation and delivery of SP. Realist reviews offer a unique opportunity to delve deeper into understanding the 'why,' 'for whom,' and 'in what circumstances' interventions may or may not be effective. It allows us to move beyond decontextualised data and gain comprehensive insights into complex phenomenon while following a systematic process (134).

The utilisation of realist reviews in health services research and the evaluation of complex interventions, including SP, has been increasingly prevalent (100,101,135). *Husk and colleagues*, for instance, undertook a realist review of SP literature to identify programme characteristics associated with enhanced patient enrolment, engagement and/or adherence (55). Drawing on 109 SP studies, authors investigated whether different methods of SP referral and supported uptake could influence attendance. Study findings revealed that patients were more likely to agree to a referral if this was presented in an acceptable way and matched their needs and expectations. Attending to at least the first session depended on service accessibility issues and the intensity of support provided. Ongoing attendance often relied on the quality of community-based activities (e.g., having a skilled and knowledgeable activity leader). A second realist review by *Tierney and colleagues* focused more specifically on the SP link worker role, by exploring what their work entailed in practice and conditions to enhance their impact and contribution to primary care (54). Authors concluded that the support provided by link workers increased patients’ confidence, motivation, connections, knowledge and skills to manage their own well-being, thereby reducing their reliance on GPs. They also provided detailed, context-specific recommendations for successful link worker role implementation. More recently, *Elliot and colleagues* published a third realist review that focused on the evaluation of SP interventions, including recommendations for good practice and areas for improvement (136). According to the authors, the involvement of a mixed stakeholders’ teams, alignment between the intervention and evaluation design, agency to make decisions concerning the execution of the study, sequential and iterative study deigns and integration of multiple sources of data contribute to best practice in the evaluation of SP interventions.

These studies illustrate the potential of realist synthesis to investigate specific intervention components (including its evaluation), while also acknowledging the context(s) in which programmes and research take place. The realist review presented here takes, however, a more nuanced and critical view of context to unravel its multi-layered nature and the interconnected mechanisms that shape service implementation and delivery. To date, no previous studies have investigated SP in the context of complex (and often conflicting) interpersonal, organisational, social and policy relationships, nor their influence on routine service delivery.

Building on available literature, this realist review sought to define ‘good’ practice in SP by identifying context-specific enablers and tensions that may hinder efforts. Findings were also synthesised in a comprehensive, complexity-informed framework for theorising and evaluating SP in primary care. As there were limited primary studies directly addressing T2D prevention, this review focused on examining SP practices and context-specific enablers across various health domains. Subsequent stages of this PhD delve into empirical research conducted in a high-risk community and explore the relevance of the review findings specifically in T2D prevention (refer to Chapters V and VI for more detail).

3.2. Realist review aims and objectives

This realist review focused on the following aims and objectives:

Review aims:

1. To define ‘good’ practice in SP by identifying context-specific enablers and tensions
2. To develop a realist, evidence-based framework for theorising and evaluating SP in primary care

Review objectives:

1. To investigate what ‘good’ practice in primary care-based SP might look like
2. To identify the main conditions and resources that might contribute to ‘good’ practice in SP
3. To synthesise review findings in a realist, evidence-based framework

3.3. Methods

3.3.1. Theoretical and conceptual framework

This review drew on realism, a theory-driven methodology that seeks to facilitate deep understanding of how complex interventions, such as SP, work and in what circumstances (101). While there are different approaches to realism, a common tenet is the acceptance of a "*reality*" which is independent of our consciousness of it. Realism states that any attempt to investigate this reality will be biased by our own subjectivity and can, therefore, only be apprehended imperfectly (99). This relates to a fundamental distinction made by Bhaksar between the "*intransitive*" and "*transitive*" dimensions of knowledge (100). The "*intransitive*" dimension pertains to the objects of science, such as physical processes or social phenomena, which exist independently of our observations. On the other hand, the "*transitive*" dimension includes the theories, explanations, and resources we employ to understand reality. These elements are shaped by personal, cultural, and social perspectives and are subject to refutation. Critically, by acknowledging the existence of both independent 'real' structures and subjective knowledge and reasoning, realism offers an understanding of the social world whereby both social structure and agency find a place (137).

Causal narratives are also central to realist evaluation but have a wider conception that go beyond the criterion of observability to also account for the non-physical and unobservable—for example, the conscious or unconscious reasoning which drives individuals' decisions and actions (100). Realism takes the view that "*what causes something to happen has nothing to do with the number of times we observe it happening*" (101). Instead, casual associations rely on the identification of 'generative' mechanisms of action and explanations of how they work, whether they have been activated, and if so under what conditions. As a result, causal associations are seldom universal; instead, they are contingent on specific factors. Mechanisms, in isolation, do not provide a complete explanation for how and why events unfold. They rely on other structures and conditions (contexts) to be triggered. This means that a mechanism may not consistently produce the same outcome in different contexts, a concept termed "*contingent causality*" by Smith (138). Given strict regularities are less likely to occur, realism proposes the identification of demi-regularities, which can be understood as "*expected*" patterns in specific given contexts (140,141).

In order to explore causal explanations, realist methodology proposes the identification of context-mechanism-outcome configurations (CMOC) (141). A CMOC is a hypothesis that the programme works (or does not work) (O) because of the action of some underlying mechanisms (M), which only come into operation in particular contexts (C). '*If* the right processes operate in the right conditions *then* the programme will prevail' (135). These kinds of theoretical explanations, sufficiently abstract to draw transferable lessons but closed enough to the observable data to enable empirical testing and refinement, are referred to as 'programme theories' (142). See box 3.1. for further definitions of realist concepts.

Box 3.1. Definition of realist concepts

Context: Refers to the background of a programme. Pawson suggests that contexts can be understood and illustrated diagrammatically as a set of concentric ovals surrounding the intervention. He distinguishes the following 4 contextual layers: 1) individual characteristics and capacities of the various stakeholders involved; 2) interpersonal relationships between the stakeholders; 3) the institutional (or organisational) rules, norms and routines local to the intervention; 4) the wider social, cultural, policy infrastructure. Some aspects of these contexts might enable (or hamper) particular mechanisms to be triggered. (135)

Mechanism: Refers to the resources and conditions, which operate in particular contexts to generate outcomes of interest. They are the 'agents of change', usually hidden and sensitive to variations in the context.

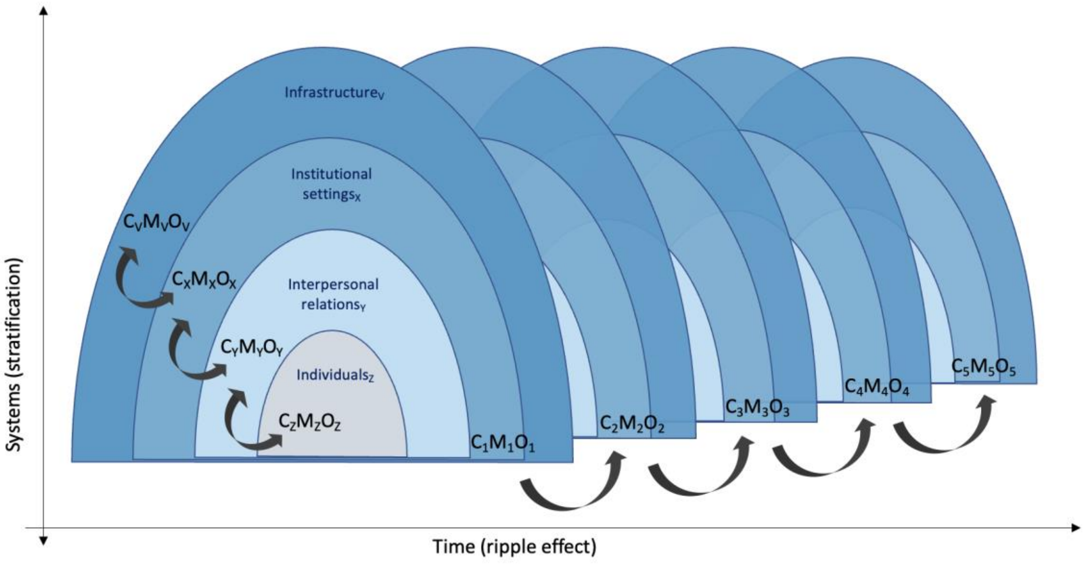
Outcome: Refers to the intended, unintended or unexpected impact or behaviours resulting from the interaction between mechanisms and contexts.

Context-mechanism-outcome configuration (CMOC): It is a hypothetical explanation that the intervention works (or does not work) (O) because of the action of some underlying mechanisms (M), which only come into operation in particular contexts (C).

CMOCs may link to each other over time, with the outcome of one phase becoming the context of the next configuration in the chain of implementation steps (known as "*ripple effect*") (143). Yet, CMOCs may also be organised concentrically according to individual, interpersonal, institutional and infrastructure settings, as described by Pawson and defined in box 3.1 (135). Mechanisms and outcomes specific to a certain level can stablish the groundwork for the emergence of new mechanisms at higher or lower levels, resulting in new possibilities (101).

Building upon Pawson's contextual layers, I developed a multi-layered and dynamic realist framework (figure 3.1.) to address the objectives of this study. This framework allowed me to identify context-specific explanations, leading to a more nuanced understanding of what constitutes 'good' practice in SP (objective 1). A multi-layered understanding of context, facilitated by realism, enabled the identification of interconnected tensions, constraints, and enablers at individual, interpersonal, organisational, and policy levels (objective 2), enhancing the understanding of the complexities involved in SP delivery. Moreover, the realist framework shown in figure 3.1 served as a useful platform for the development of an evidence-based framework for theorising and evaluating SP (objective 3), building a strong foundation for future research and the study of SP practices in primary care settings.

Figure 3.1. Multi-layered and dynamic realist framework.



3.3.2. Realist review stages according to RAMESES

The review followed the Realist and Meta-narrative Evidence Syntheses-Evolving Standards (RAMESES) (134,144) and was registered with PROSPERO (CRD 42020196259). It was undertaken between September 2019 and May 2020 and followed a detailed review protocol published in BMJ Open (145). Throughout, I shared and discussed the study objectives and emerging findings with the stakeholder advisory group (see Chapter I, section 1.3. for further details). Members of the stakeholders group included lead social prescribers, representatives of the VCS, primary care workers involved in SP implementation, national charitable organisations (SP Network, National Academy for Social Prescribing) and health institutions (Public Health England, NHS England/NHS Improvement). Input from the advisory group proved particularly relevant at later stages (‘data synthesis and conclusions’) to contrast and further refine the literature-based, theory informed propositions with their practical real-world experience.

3.3.2.1. Stage 1: data searches

I carried out two distinct literature searches, under the guidance of a specialist librarian, as follows:

A. Main search (September 2019). The final search strategy included combinations of search terms for the concepts 'social prescribing', 'primary health care' and 'community referral, and was informed by previous reviews on SP (41,42,65) and further developed in MEDLINE (Ovid) using an iterative process of adding, removing and refining search terms. In September 2019, I searched the following databases: MEDLINE (Ovid), EMBASE (Ovid), PsycINFO (Ovid), Scopus (Elsevier), Web of Science (Clarivate Analytics), CINAHL Plus (EBSCO), PubMed (NCBI), International Bibliography of the Social Sciences - IBSS (ProQuest), The Cochrane Database of Systematic Reviews (The Cochrane Library), Campbell Collaboration, Open Grey (INISR-CNRS), King's Fund Database and LILACS (BIREME). Search results were exported to Rayyan QCRI for de-duplication using manual checking. Database searching and de-duplication were reproduced by a second reviewer (YM) for consistency and discrepancies were solved by discussion. The search strategies for each database are reproduced in full in Appendix 1. In addition, I manually retrieved citations contained in the reference lists of relevant articles included in the review and searched for grey literature in websites of national charitable organisations related to SP. Database alerts were set up to identify studies published between October 2019 and March 2020.

B. Additional search (February-March 2020). One of the distinctive features of realist reviews is its iterative and dynamic nature, which involves searching for additional targeted studies as data from of the main search are analysed and preliminary programme theories take shape. During the course of the review, and through consultations with the stakeholder group, I identified policy-level dimensions (including drivers and contractual agreements) as in need of further exploration and refinement. I undertook a second search in February-March 2020 to focus on these specific dimensions, by manually searching citations contained in the reference lists of relevant articles, including reports recommended by members of the stakeholders' group.

3.3.2.2. Stage 2. Study selection and quality assessment

I included all studies published in English, French or Spanish on interventions linking adults (>18) in primary care with VCS organisations delivering activities and services relevant to patients' situation, regardless of study design (quantitative, qualitative and mixed methods) and including all SP related outcome measures. I excluded studies focusing on specific (sub)populations with special needs (e.g., learning disabilities, sensory impairment, cognitive impairment).

A second reviewer (YM) and I screened the titles and abstracts of all articles using Rayyan QCRI. If compliance with the above-mentioned inclusion/exclusion criteria could not be ascertained, the full text was obtained. I read the full text of all remaining articles and assessed their degree of relevance, conceptual richness and rigour. For the main search, study relevance was accorded upon the involvement of link workers within the SP intervention. For the additional search, I classified studies as highly relevant if they explored the organisational and policy environment within which interventions were commissioned and delivered. I also assessed the extent of conceptualisation of programme theories that a source could potentially provide and their methodological rigour using study design specific validated tools. Box 3.2. provides more details on the quality appraisal criteria used to assess relevance, richness and rigour of studies included. A 10% random subsample was appraised by a second reviewer (YM) for consistency and any differences were discussed and amended accordingly.

Box 3.2. Literature review quality appraisal criteria

Relevance	Main search: • High relevance: studies that evaluated an intervention comprising a comprehensive assessment of patients' circumstances and needs by a link worker or social prescriber. • Low relevance: studies evaluating an intervention that did not comprise an assessment by a link worker or social prescriber and where the activities 'prescribed' in general practice were pre-defined from the outset, such us, Arts on Prescription or Exercise on Referral Schemes.
	Additional search: • High relevance: studies that focused on the organisational and policy environment within which SP interventions are commissioned and delivered. • Low relevance: studies that did not focus on the organisational and policy environment within which SP interventions are commissioned and delivered.
Richness*	• Conceptually rich: studies with well-grounded and clearly described theories and concepts. • Conceptually thick: studies with rich description of a programme, but without explicit reference to the theory underpinning it. • Conceptually thin: studies with weak programme description where discerning theory would have been problematic.
Rigour	• Critical Appraisal Skills Programme (CASP) for qualitative studies, systematic reviews, randomised controlled trials (RCT), case control studies, cohort studies and economic evaluations. • National Institutes of Health (NIH) quality assessment tool for before-and-after studies with no control group and cross-sectional studies. • Mixed Methods Appraisal Tool (MMAT) for mixed methods studies.

*based on the criteria proposed by Ritzer (146) and Roen et al (147)

3.3.2.3. Stage 3. Data extraction and analysis

During an initial familiarisation stage, I developed conceptual diagrams and preliminary codes, giving priority to the conceptually richest sources of information (as per the classification presented in box 3.2.). To define the study outcomes and understand 'good' practice in SP, I engaged in a reflexive process, transitioning from data to theory. I used archetypes as a sensitising tool to create explanations of what 'good' practice might involve for clinicians, link workers, and the VCS. These archetypes represented a spectrum, encompassing the various SP practices observed in the reviewed literature. By drawing on relevant theory, I identified the potential risks, tensions, and opportunities associated with each of these different ways of practicing SP. Employing a realist logic of analysis, I then examined how these archetypical representations of 'good' practice responded to specific conditions and available resources (mechanisms) in distinct environments (contexts). This analytical process was replicated throughout the review, leading to the construction of context-mechanism-outcome configurations (CMOCs). These configurations comprised detailed explanations of how and why 'good' practice in SP was achieved. Subsequently, I transferred the coding framework into NVivo 10 (QSR International) and further tested and refined it. This involved applying the framework deductively to the remaining papers and adjusting it as needed to accommodate any new findings that emerged during the data analysis (inductively).

Alongside the analytic process, I extracted the descriptive characteristics of all included studies into an excel spreadsheet, including the study design, settings and sample, characteristics of the intervention and main outcome measures. Both the coding and the extraction of descriptive data were reproduced in a 10% random subsample by a second reviewer (YM) for consistency. Disagreements were solved by discussion.

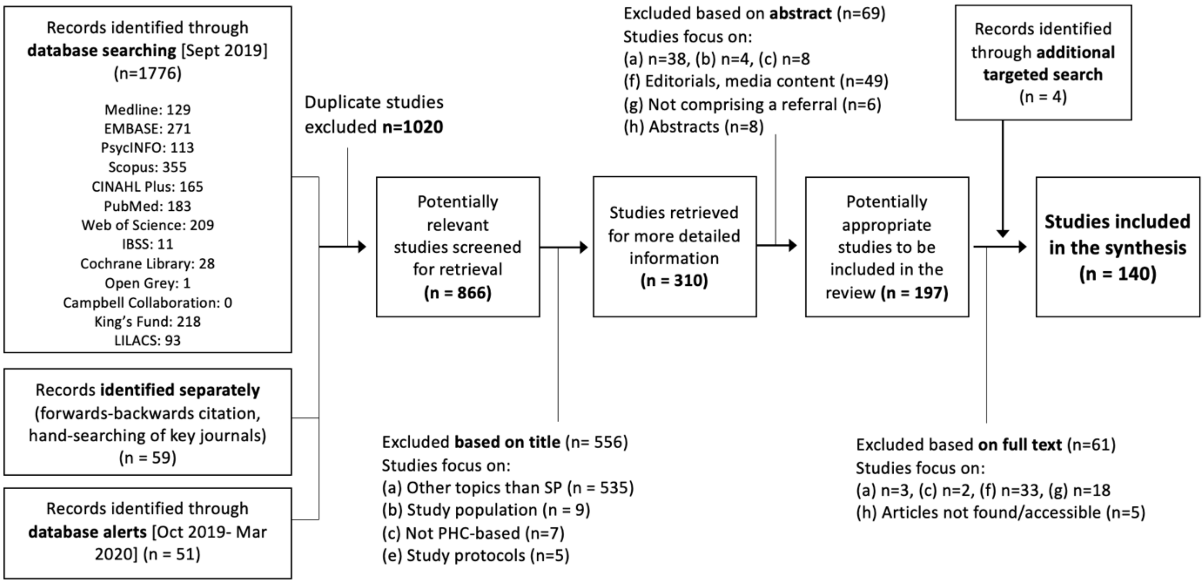
3.3.2.4. Stage 4. Data synthesis and conclusions

Text excerpts coded under specific categories in NVivo were exported into Microsoft Word documents, which provided a more appropriate format to elaborate on CMOCs and develop the narrative of the synthesis. I inferred and wrote down explanations of why certain SP practices occurred (abductive reasoning), which involved comparing and contrasting data from different studies (juxtaposition of data sources). Where findings across studies differed, further data were sought to identify explanations for why these differences occurred (reconciliation of disconfirming data). When findings across sources were consistent enough to develop patterns, they were incorporated into CMOCs (consolidation of sources of evidence) (135,148). I further refined the CMOCs by re-scrutinising those already-included studies classified as highly relevant, conceptually rich and rigorous. CMOCs were then synthesised in an initial framework that was further developed through iterative discussions with the supervisory team.

3.4. Results

The PRISMA diagram (figure 3.2.) illustrates the screening and selection process in the evidence synthesis. Of the 140 references included in the review, 40 used qualitative methods, 37 used quantitative methods, 36 were mixed-methods studies, 25 were literature reviews and there were also a SP research-based toolkit and an evaluability assessment study. The quality appraisal resulted in 21 papers being classified as highly relevant, conceptually rich and rigorous. The characteristics and quality of the studies included are further described in appendix 2 and 3, respectively.

Figure 3.2. Realist review PRISMA flow diagram



3.4.1. Study outcomes: 'good' practice in Social Prescribing

The data analysis process (as detailed in section 3.3.2.3. Stage 3) led to the identification of the following explanations concerning what 'good' practice might entail for clinicians, link workers, and the VCS:

Holistic (vs Fragmental) Social Prescribing in general practice. Holistic SP in general practice involved acknowledging patients' wider social needs and recommending relevant community resources during routine clinical care within multi-disciplinary teams (e.g., with the collaboration of link workers). By contrast, fragmental SP involved dissociating patients' 'social' and 'medical' needs while expecting SP to exclusively focus on patients' 'social' constraints. Clinicians risked becoming less aware of patients' wider social and community context, and hence unable to provide integrated, contextualised, high-quality clinical care (149,150).

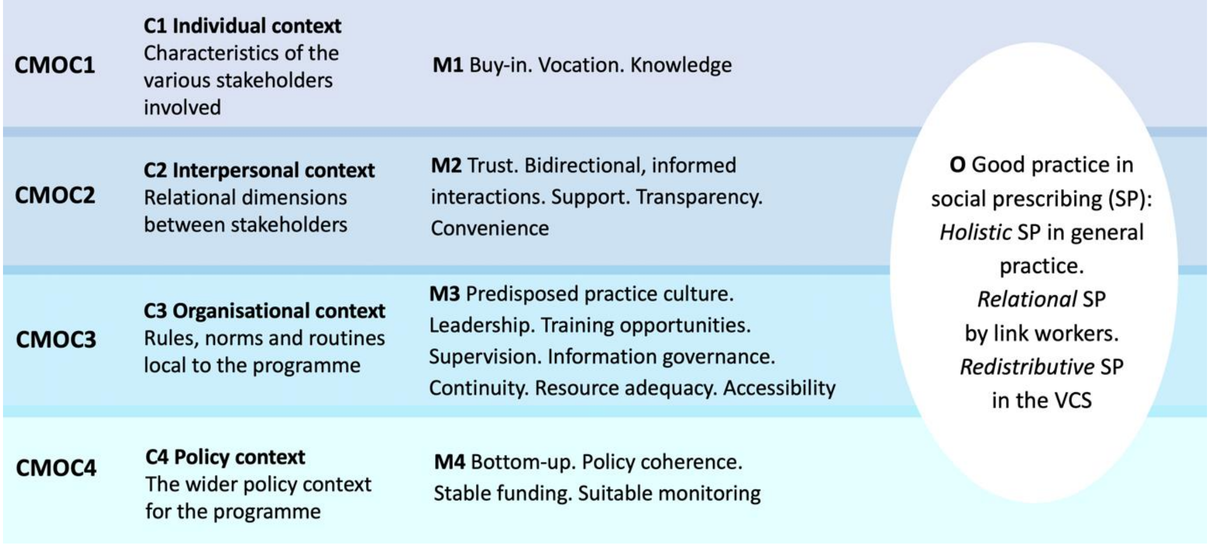
Relational (vs Transactional) Social Prescribing by link workers. Relational SP involved assessing, adapting and responding iteratively to patients' ever-changing needs through ongoing and open-ended interactions with link workers. By contrast, pre-defined service limits (e.g., a maximum of 6 sessions with a ‘Wellbeing Coordinator’ (151)) made SP more transactional by limiting link workers’ flexibility and capacity to co-produce and customise care provision (152,153).

Redistributive (vs Non-Redistributive) Social Prescribing by the Voluntary and Community Sector. Redistributive SP involved the delivery of relevant and tailored VCS services to patients in greatest health and social need. SP interventions, however, risked exacerbating health inequalities when access was contingent on privileged social or economic circumstances (6,154). Murphy et al, for instance, showed how uptake and adherence to an Exercise on Prescription scheme was systematically lower in deprived areas, as car ownership was a predictive factor for participation (155).

3.4.2. Contexts and mechanisms: context-specific resources and conditions for ‘good’ practice

In this section, I present findings on how the availability of resources and conditions (mechanisms) in specific individual, interpersonal, organisational, and policy environments (contexts) influenced the likelihood of achieving 'good' practice (outcome, as per the definitions offered in section 3.4.1.). The corresponding Context-Mechanism-Outcome Configurations (CMOCs) are represented in figure 3.3. and elaborated with data extracts in boxes 3.3-6.

Figure 3.3. Context (C) mechanism (M) outcomes (O) identified in the literature reviewed.



CMOC1	**C1 Individual context** Characteristics of the various stakeholders involved	**M1** Buy-in. Vocation. Knowledge	**O** Good practice in social prescribing (SP): *Holistic* SP in general practice. *Relational* SP by link workers. *Redistributive* SP in the VCS
CMOC2	**C2 Interpersonal context** Relational dimensions between stakeholders	**M2** Trust. Bidirectional, informed interactions. Support. Transparency. Convenience	
CMOC3	**C3 Organisational context** Rules, norms and routines local to the programme	**M3** Predisposed practice culture. Leadership. Training opportunities. Supervision. Information governance. Continuity. Resource adequacy. Accessibility	
CMOC4	**C4 Policy context** The wider policy context for the programme	**M4** Bottom-up. Policy coherence. Stable funding. Suitable monitoring	

3.4.2.1. Individual characteristics (C1)

People were not ‘passive recipients of innovations’ (156). Rather, they had values, preconceptions, allegiances, commitments that influenced their response to innovations. If general practice workers had significant ‘buy-in’ towards SP and believed that link workers and VCS organisation could play a role in addressing patients’ needs, it was more likely that they would engage in collaborative work and undertake holistic SP practices (157–159). Likewise, link workers’ and community stakeholders’ previous life and work experience equipped them with valuable skills that facilitated SP delivery, such as knowledge of available resources, communication and a person-centred approach (160). Their vocation also increased the dedication and commitment towards the service (161).

General practice and link workers’ understanding of patient’s circumstances, the SP scheme and the local community organisations seemed key in prompting informed discussions with patients and appropriate referrals (21,56,60,159,162–165) . Link workers’ area of expertise often involved welfare support services, which contributed to widen the scope of the intervention by potentially addressing socioeconomic concerns (instead of narrowly focusing the intervention on lifestyle recommendations) (67). Through the understanding (and acknowledgement) of the specific contexts and challenges that different stakeholders faced, link workers seemed to be able to ‘negotiate the communication’ across sectors and bring them closer (21).

Box 3.3. Individual-level CMOC (CMOC1) and corresponding data extracts.

CMOC1. Stakeholders’ individual characteristics (C), such as enhanced buy in, vocation and knowledge (M), make holistic, relational and redistribute SP more likely (O).

- Buy-in. *“Another barrier to collaboration was negative perceptions of VCS organisations and their role in addressing health inequalities held by GP staff”* (166)
- Vocation. *“I just love working with people. It's quite a privilege to be part of someone's journey, even if it's very subtle […]. It's just about helping someone build confidence and having faith, and giving some hope to someone, and saying this is possible.”* (161)
- Knowledge. *“GPs also discussed concerns about referring due to limited knowledge and understanding of the pathway […]”* (167)

3.4.2.2. Interpersonal relations

Trust was developed through sustained, unhurried and non-judgmental relationships, and proved a key mechanism for patient engagement, satisfaction and partnership sustainability (56,165). Personalised interactions enabled the design of interventions tailored to patients’ needs, enhancing service appropriateness (54,167). Although informed discussions with patients (concerning the referral process and the characteristics of the activities on offer) helped accommodate expectations (54,168) and temper the ‘fear of the unknown’ (55), additional emotional and practical support was often needed to overcome (or cope with) the barriers that prevented uptake and engagement (22,31,164,165,168–170). Patients were more likely to participate when link workers contacted them directly after receiving the referral, made regular follow up phone calls, or even came along with them to the planned activities (167,171). In the community, ongoing supervision by activity leaders was identified as a relevant factor promoting service users’ interest and participation (172–176). Support from peers in similar circumstances also enhanced patients’ motivation by providing positive exemplars of progress and contributed to validating their personal experiences (177–179).

Across sectors, collaboration was often threatened by lack of trust, especially where link workers and the VCS were not considered an appropriate route to addressing patients’ needs, or when one party interacted with the other for an ulterior and/or covert motive (also referred to as ‘strategic action’ (180)) (61,181). Regular feedback to referring clinicians provided reassurance, encouraged further referrals and improved the way in which the service was used (182,183). Additionally, if the initial contact with the SP programme was easy and simple for primary care workers (e.g. IT integration, lack of red tape, single point of contact, physical co-location), it was more likely that they would initiate collaborative work and share relevant information on patients’ needs and background with link workers and community organisations (22,181). Customising referral systems in accordance with existing practice routines and preferences made them more convenient and suitable for workplace-specific needs (184).

Box 3.4. Interpersonal-level CMOC (CMOC2) and corresponding data extracts.

CMOC2. The development of trustful, supportive, convenient, bidirectional, informed and transparent (M) interactions between stakeholders (C), make holistic, relational and redistribute SP more likely (O).

- Trustful. *“If, I mean, even if possibly another doctor would have recommended it, the thing is I know [name of GP]. We know each other for so long, I trust him. And I trust him that he knows me well enough, so I said "yeah okay".” Service user* (185). *Relationships were “the thing that makes [GP- VCS collaborations] work” (VCS staff). Knowing someone’s name, although a small detail, was thought to make collaborative working much more likely. For example, clinicians described referring patients more often to a named person that they know and trust […]* (166)
- Informed. *‘(…)* [information on] *the specifics on the particular activity on offer were felt to be important to patients’ receptiveness (…). An example of a mechanism to ensure fear of the unknown is overcome might be a printed resource’* (55). ‘Clear information about the role and remit of link workers should avoid misunderstandings and unrealistic expectations.’ (54)
- Supportive. *“I just expected the Link Worker to introduce me to the gym, […] if it had just been [that] I would have turned round and […] gone the opposite direction. But because of the way it was so gradually and really professionally linked into different things, I just felt as though I’d floated into it.”* Service user (67). ‘There’s people doing better than you and there’s people doing worse than you and you’re on some kind of continuum … but I think when you meet people … who also have had problems, it kind of reminds you that you’re not alone and that there’s hope because … you’re all in it together …’ (171)
- Transparent. *‘Shared understanding among clinical and non-clinical staff of what can be expected by each partner, the scope of the SP service, (…) facilitates the implementation […] of SP services. […] Lack of shared understanding may result in the lack of mutual trust […] and prevent effective partnership’* (181)
- Bidirectional. *“What I’d really like is link workers to come along on an occasional basis (…) to join the team meeting (…) and maybe at that point bring a list of people that the practice have referred […] and perhaps giving us a little bit of feedback on … […] “this person we’ve not actually managed to meet face to face” or “this person’s really engaging, they seem to be doing really well”* (186)
- Convenient. *‘The main point is that the referral systems were developed over time by practice staff themselves, and thus were able to fit into practice routines’* (184)

3.4.2.3. Organisational contingencies

Shared beliefs, priorities and values within the primary care team (practice culture) influenced the attitude of individual members (183). Some primary care workers were more strategically placed than others, and hence had greater capacity to drive SP forward. The endorsement of the programme by GPs, for instance, gave credibility to the scheme and increased other professionals’ engagement given their *“professional and social standing”* (166). Training opportunities within primary care organisations also increased workers ‘*capability*’ to successfully incorporate SP into daily practice (181,187). Efforts to combine the concrete and practical experience with discussion with peers made learning purposeful and applicable to day-to-day work(41). An environment offering supervision and peer support allowed link workers, for instance, to discuss and learn from challenging situations (160,161). The training of the VCS staff was seen as a measure of programme quality by primary care practitioners and increased their trust in the service (55,61).

Across sectors, integrated information governance strategies and ongoing access to regular care providers facilitated connected and coherent SP services (158,166). The availability of named link workers connected to single practices enhanced their embeddedness in primary care (91) and their knowledge of (and engagement with) support services within the local community (166). SP users valued knowing that support was available *'for when it was needed'* (171). This 'open door' nature of the SP service allowed link workers to provide ongoing care, witness patients' changing circumstances and needs, and adapt relevant services accordingly (184).

Conversely, increased workload and time pressures in primary care led health professionals to prioritise patients' specific reasons for consultation and/or incentivised activities, making it difficult to focus on alternative community-based approaches (164,188). Insufficient link worker staffing levels often involved long waiting times to be assessed (189). Within a context of resource scarcity, link workers ended up in prioritising immediate and urgent demands (*'fire-fighting' approach* (21)*)* and lacked capacity for innovative community engagement initiatives or to support individuals with enduring and complex health and social needs (54). As for the VCS, when resource availability was not aligned with service demand, SP activities risked becoming congested and/or less accessible (164,190). Access to the VCS was also determined by the cost (191), timing (178), location (56), variety (151) and social and cultural appropriateness (192) of the activities, and was both a condition for equity and a service quality component (25).

Box 3.5. Organisational-level CMOC (CMOC3) and corresponding data extracts.

CMOC3. Organisational contingencies(C), including continuity of care, resource adequacy, training opportunities, information governance, a predisposed practice culture and leadership and accessibility (M), make holistic, relational and redistribute SP more likely (O).

- Predisposed practice culture. *'It was recognised that there was already a level of existing congruence within the primary care teams with the social ethos of SP and it was this commonality across partners that fostered interdisciplinary non-hierarchical working and early implementation.'* (183)
- Leadership. *'General practitioners were thought to be key leaders in collaborations because of their professional and social standing. Other potential leaders were GP practice managers, VCS (…) managers, senior clinicians and commissioners in positions to be gatekeepers and facilitate a hospitable environment.'* (166)
- Training opportunities and supervision. *'Training for referrers on how to explain SP to patients, i.e. words and examples they can use, is likely to encourage referrals to SP services.'* (181). *Peer support was appreciated as the work could leave Link Workers feeling isolated and they enjoyed being part of a team; however, the most important form of support was that of clinical supervision and the safe space it provides to offload and discuss difficult patients and challenging situations.'* (160)
- Information governance. '*Survey respondents suggested that a directory of services be developed and made accessible to all. This would allow clinicians to be constantly updated with what services the SP team are referring into. […] They felt it could also be used as a resource […] to explain to patients what the SP service can offer […]'* (91)
- Continuity of care. *"[…] you can have a really good relationship with an organisation, and then a worker leaves and it completely changes the dynamic." Link worker* (184). *'There was something about the un-conditionality and continuity of support from [link workers] that was valued by patients.'*(184)
- Resource adequacy. *"In ten-minute consultation, you have to go through whatever they (patients) came up with, medication review and something else and then you haven't much time for this [SP]. (…) we have to ask for smoking because it is in QOF points but not drinking or exercise (…)" GP2* (188). *"[…] there is huge demand for the SP services and workload is quite high […]. Time is spent case managing with no protected time to engage with the services that are referred into." Link worker* (91)
- Accessibility. *"Well, I was enthusiastic about this, because I anyway wanted to start exercising. But a fitness centre will cost you around 45, 55, 65 euros, and I can't pay that.* (191). *"The recipes she gave us were the type of food we wouldn't have eaten anyway. We've realised we can't change our food. We can't. I've tried"* (56).

3.4.2.4. Policy context

Bottom-up policymaking approaches enhanced participation, making it easier for local communities to raise their concerns, prioritise goals and select the means of achieving them (193). This increased ownership and the 'embedded' nature of change (91,183). Likewise, mutually reinforcing policy actions undertaken across different departments and agencies were more likely to create synergies towards ‘holistic’, ‘relational’ and ‘redistributive’ SP. This involved developing policy strategies targeted at strengthening both primary care and the VCS. Representatives from the VCS, however, often raised concerns over the ‘*unprecedented’* level of budget deficits for community organisations, which affected the sustainability and capacity of their services (57,164). Similarly, general practice workers often highlighted underinvestment in primary care and resulting increased workload as main barriers to appropriate service delivery (166,184). The often short-term nature of contracts and the constant threat of funding withdrawal or reduction led to significant turnover of the workforce (181) and the activities being delivered (57) with a consequential negative impact on stakeholders’ expectations and commitment towards the service (173,184).

Payments to SP providers, as well as service evaluation, often relied on monitoring metrics that had to be relevant (so they could be used to improve local services and not just to enforce the contract), flexible (so they could be negotiated and adapted to local circumstances and emerging approaches) and feasible (so they could be attained and provided without excessive administrative burden). However, Lowe T. et al provided evidence on how processes of generating data to meet the performance indicators often distorted practice, were resource intensive, stressful and encouraged ‘creaming’ of clients (working with certain patient groups considered easiest to help) (194). Further studies highlighted that excessive administrative burdens could create challenges particularly for smaller organisations and those with limited capacity (195,196). Where payments were tightly linked to the achievement of predefined targets (e.g., related to health service utilisations, numbers of people recruited onto the programme, the speed with which referrals are seen, etc.) and provider success defined by such metrics, it was more difficult to develop trustful relationships across sectors (196) and use data for reflective learning and discussion (197).

Box 3.6. Policy-level CMOC (CMOC4) and corresponding data extracts.

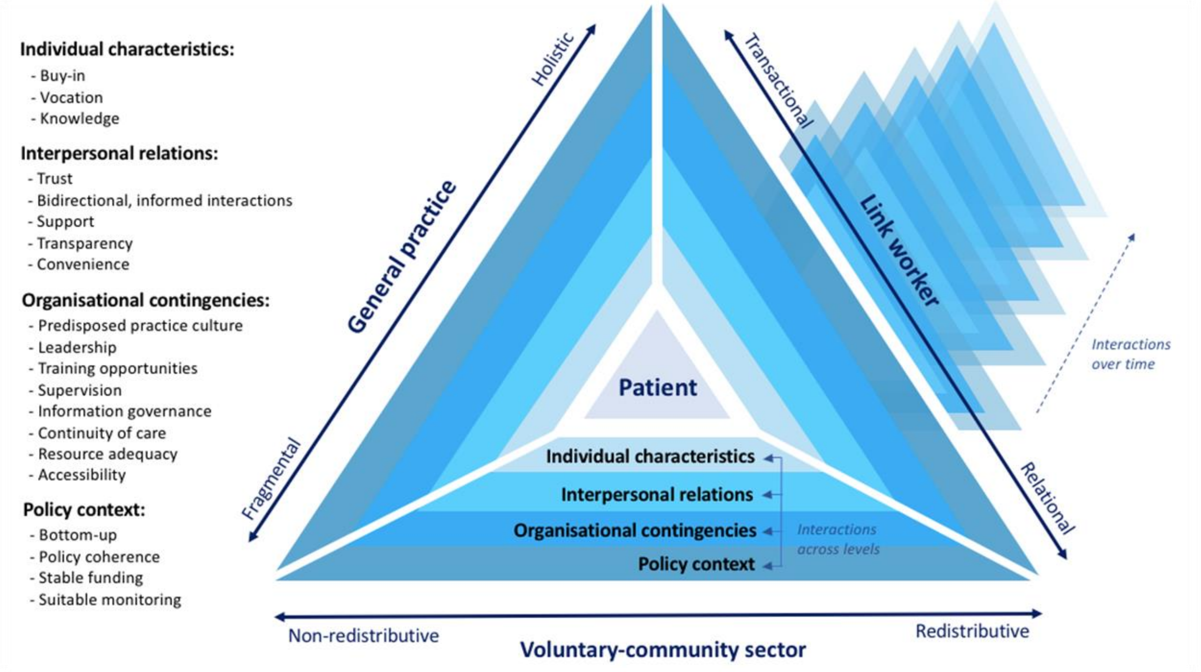
CMOC4. A policy context (C) that sustains bottom-up and coherent policymaking, stable funding and suitable monitoring (M), leads to holistic, relational and redistribute SP (O).

- Bottom-up policymaking. *'Being built around a local community and local need, drawing on the skills of the community, was thought to be essential for successful GP- VCS collaborations. […] "Start off small, link yourself to a practice, talk to your workers first so they have got a good idea who to work with, engage yourself with that GP, don't promise them anything just slowly and gradually build that relationship, institute bits of work […] and just grow it from there" (1, VCS staff)'* (166)
- Policy coherence. *There was an expectation that the third sector had significant spare capacity and would be able to accommodate for all the referrals, regardless of their number. However, in their responses, representatives from the third sector drew attention to the 'unprecedented' level of funding cuts for social care as a major problem for continued and sustainable delivery of social prescribing services. (…)* (57)
- Stable funding. *'(…) effective partnerships are adversely affected by the short term nature of funding: Its harder to get people to invest time in it to develop it as they're always thinking 'is it just going to stop in nine months', we have spent all this time and it is stopping anyway, so people may not invest time in it, as viewed as one of those things that will "stop again".'* (198)
- Suitable monitoring. *'Providers also reported that, if they were free to choose how to use the recording tools given to them, they would use them differently. For example, they would use a well-being metric to record client progress at time intervals chosen by the worker, based on their understanding of client need, rather than at the rigid time-intervals demanded by the (…) performance indicators* (194).

3.4.2.5. Synthesis: developing a multi-layered, dynamic and usable SP Framework

The SP archetypes and four CMOCs described above were synthesised in a Framework for Theorising and Evaluating SP in Primary Care. As shown in figure 3.4. the Framework comprises three main stakeholders (general practice, link workers and the VCS) and the previously described 20 mechanisms (Buy-in, Vocation, Knowledge, Trust, Bidirectional and Informed interactions, Support, Transparency, Convenience, Predisposed practice culture, Leadership, Training opportunities, Supervision, Information governance, Continuity of care, Resource adequacy, Accessibility, Bottom-up policymaking, Policy coherence, Stable funding and Suitable monitoring) across four interconnected contextual layers (individual, interpersonal, organisational and policy), leading to the aforementioned 'good' practice SP archetypes (*Holistic*, *Relational* and *Redistributive*).

Figure 3.4. A Framework for Theorising and Evaluating Social Prescribing in Primary Care.



The four interlinked arrows highlight the dynamic nature of the framework by illustrating how different mechanisms may relate to each other and mutually reinforce one another within and across contexts. The existence of a 'social ethos of SP' within the practice (referred to as 'predisposed practice culture' at the organisational level), for instance, seemed to foster acceptance and enthusiasm amongst general practice workers ('buy in' at the individual level) (183). Similarly, general practice workers' understanding of the scheme ('knowledge' at the individual level) was enhanced by the availability of accessible and updated directories of VCS resources ('information governance' at the organisational level) and regular feedbacks from link workers ('bidirectional and informed interactions' at the interpersonal level) (61).

The overlap of the triangle represents the adaptation of and interaction between the different mechanisms over time. Primary care workers' 'knowledge', for instance, was nurtured through the accumulation of episodic encounters that provided clinicians and link workers with relevant personal information about the patient and their context (56,187,199). The range of activities available through SP ('accessibility' at the organisational level) also widened over time, as link workers iteratively adapted existing resources to patients' needs and developed new activities where gaps had been identified (200). The progression of the Framework over time cannot, however, be predicted in advance and remains necessarily open. This is illustrated using indistinct shadows to represent its nonlinear nature and potential unintended consequences.

3.5. Discussion

Building on the reviewed literature, I developed a new framework that allowed for the characterisation of different (and often conflicting) SP practices and the identification of conditions and resources at individual, interpersonal, institutional and infrastructure levels that contributed to good SP practice in primary care and the VCS.

Previous studies have explored the role of SP in enhancing patients' wellbeing and collaboration across sectors, and identified relevant preconditions to intended outcomes (54,57,151,166,168,181). This realist review builds on available literature to critically understand what 'good' practice in SP looks like and how and in what contexts this might be best achieved. While holistic, relational, and redistributive SP practices have the potential to provide valuable support to patients with the most significant health and social needs, their effectiveness depends on the availability of specific individual, relational, organisational, and policy resources. In the absence of these resources, study findings revealed that such interventions could potentially result in the fragmentation of primary care services, transactional approaches, and increased health inequalities.

I identified relevant individual-level dimensions, such as the degree of knowledge, 'buy in', training and motivation, that influenced not only stakeholders' attitude towards SP, but also the way in which they used, reinforced, or even modified the intervention. Review findings also highlighted that SP did not happen in a vacuum but was rather developed and shaped by a dynamic set of interactions across and within sectors. Mutual reliance and the development of trustful, supportive and ongoing relationships proved central to the success of SP interventions (56,61,67,164,184,185). This idea of interdependence seems to contradict widespread representations of SP as unidirectional and linear referral pathways towards patient's 'activation' or 'independence' (57,201). The multi-layered triangle-shaped framework presented here suggests that SP could rather be understood as a network comprising multiple kinds of relationships (therapeutic, administrative, professional) linking stakeholders (general practice workers, link workers, members of the VCS) with one another in the overall and ongoing work of caring for the patient being referred. Findings may help explain why evaluative approaches that conceptualise and measure effectiveness in terms of reduced service utilisation (as a proxy for patients' independence) often fail to prove the value and potential impact of SP.

The identified institutional and infrastructure dimensions highlighted that neither SP nor the individuals who delivered and used the service could be studied effectively in isolation from the complex organisational, social and policy contexts in which they were embedded. Previous studies on SP have consistently recognised relevant organisational resources for effective service implementation, such as the availability of a resourced VCS, information governance arrangements, or a conducive institutional ethos (164,166,183,202). The input from the stakeholder's group and the additional literature search allowed me to expand on these dimensions by also identifying higher-level policy contexts, priorities, and decisions ('bottom-up policymaking', 'stable funding', 'suitable monitoring' and 'policy coherence') that shaped SP delivery.

3.5.1. Strengths and limitations

The review and framework were developed systematically, following rigorous methodological guidance for realist reviews as described in the RAMESES quality standards (20). The iterative nature of the realist approach enhanced the scope and practical relevance of the review by incorporating relevant studies that would not have been identified through predefined search strategies. In addition, the consideration of different and interrelated contexts allowed the analysis of SP practices in all their complexity and divergence, potentially increasing the applicability and transferability of findings. Limitations included being reliant on the evidence that was available. Some studies narrowly focused on intervention effectiveness (and magnitude of effect), without providing enough detail on how these results had been achieved, and therefore could not contribute to programme theory development or refinement. Additionally, exemplars of 'good' practice were defined based on relevant theory and available literature. Further research will be key to ascertain whether, and if so, to what extent they may contribute to improved patient outcomes and their consequences and implications for service providers.

3.6. Conclusions

This review contributed to defining 'good' practice in SP by identifying 'how' and 'under what circumstances' it might best be considered. Conducive individual characteristics (buy-in, vocation, and knowledge), interpersonal relations (trustful, bidirectional, informed, supportive, and transparent and convenient interactions within and across sectors), organisational contingencies (predisposed practice cultures, leadership, training opportunities, supervision, information governance, resource adequacy, accessibility, and continuity of care) and policy structures (bottom-up and coherent policymaking, stable funding, and suitable monitoring strategies) increased the potential of SP in primary care and the VCS by facilitating holistic, relational and redistributive practices. The study also generated an actionable framework for SP implementation and evaluation, readily available for end users and policymakers. It built on a burgeoning body of evidence on complex-system approaches to evaluation, by identifying outcomes and potential actions across settings and systems (51,52,203).

3.7. Integration of findings with overall PhD research objectives and questions and remaining thesis Chapters

The findings from the realist review are pivotal in responding to the PhD’s overall objectives. Objectives 1 and 2 are addressed by defining 'good' practices in SP based on their potential to meet patients' complex health and social needs in primary care and the VCS. The study revealed that holistic, relational, and redistributive SP practices are best suited to address these needs effectively. Furthermore, the findings contribute to objective 3 by exposing the key conditions and mechanisms that may contribute to explaining the success or failure of SP programs in primary care.

The review findings also provided valuable insights in response to research questions 1 and 2 of the PhD. They showed how holistic, relational, and redistributive SP practices can effectively support patients with significant health and social needs, but only if specific individual, relational, organisational, and policy resources are ensured. In addressing PhD research question 3, the different archetypical representations of SP revealed its complex and contested nature. It becomes evident that SP is not inherently advantageous, as its outcomes heavily rely on the presence of relevant conditions and resources at different levels. In their absence, SP could lead to the fragmentation of primary care services, transactional approaches, and increased health inequalities.

This realist review serves as a foundation for the remaining thesis chapters. Chapter IV uses discourse analysis to explore how the archetypical representations of 'good' practice defined in this Chapter may relate to different ways of framing and understanding SP. Importantly, this review provides the theoretical underpinning for the empirical work presented in Chapters V and VI. These chapters investigate and test the generalisability of review findings by applying them to the specific area of T2D prevention, using mixed-methods realist evaluation (Chapter V) and theories of social practice (Chapter VI). While Chapter V builds on the archetypes identified in this review to define good practice in SP relevant to T2D prevention, Chapter VI further develops the realist multi-layered framework to explore the resources and conditions for achieving this in a community at high risk.

Chapter IV. The discursive context of Social Prescribing. A critical literature review using discourse analysis

4.1. Introduction

The realist review in Chapter III contributed to a better understanding of ‘why’, ‘for whom’, and ‘in what circumstances’ SP might (or might not) work (21,54–56). It critically explored what ‘good’ practice in SP looked like and how this could be best achieved by identifying relevant individual, relational, organisational and policy resources and conditions (93). This Chapter expands upon the findings of the realist review to explore how SP interventions are framed, conceptualised, and ‘used’ in the scientific literature. It also investigates whether these different understandings may make the representations of ‘good’ practice defined in Chapter III more (or less) likely.

As noted in Chapter I, SP has gained significant attention from the general public, practitioners, national organisations and policy-makers in recent years, with explicit mentions in policy reports, such as the NHS Five Year Forward View (204), the General Practice Forward View (205) and, more recently, the NHS Long-Term Plan(35). This proliferation of SP initiatives has brought about different and sometimes conflicting expectations and priorities among various stakeholders.

For example, under the NHS Long Term Plan, SP link workers are expected to provide “*personalised care”* by taking a “*holistic approach*” (206). They are also meant to address health inequalities by targeting the “*wider determinants of health*” and improve the efficient use of primary care by “*empowering patients to take control of their health*” (206). The systematic review carried out by *Rempel and colleagues* reveals an even broader range of goals linked to the SP programmes they studied. These encompass cost savings, resource reallocation, reduced referrals to emergency and secondary care, or improved patients’ mental, physical or social well-being (50).

Questions, therefore, need to be asked about how such wide array of claims and concerns become seemingly rational and coherent. Critically, these different understandings of SP may lead to different reasonings about what is ‘good’ in SP, and shape how services are delivered and evaluated as stakeholders strive for achieving or attempt to put ‘good’ into practice. It is, therefore, key to investigate how meaning and expectations around ‘good’ SP are constructed and their role in shaping service design, implementation, and evaluation. By contrasting different understandings of

SP and their consequences, suggestions for the best possible framing and practice may be argued for.

4.2. Literature review aim and objectives

This review focused on the following aims and objectives:

Review aim:

1. To analyse how meaning and expectations around SP are constructed and reproduced in the scientific literature.

Review objectives:

1. To investigate how SP is represented and understood in the scientific literature.
2. To explore the implications of these different understandings for the development and implementation of SP in primary care.
3. To interrogate how these understandings relate to larger overarching discourses within a broader socio-historical and political context.

4.3. Methods

4.3.1. Theoretical position: constructing meaning from discourse patterns

As Dryzek puts it, discourses can be understood as "*shared ways of apprehending the world*" (207). Each discourse rests on certain assumptions, judgements and claims that can be analysed in relation to specific social and historical contexts. Different social understandings of the world lead to different social actions. Discourse analysis is, therefore, not only interested in how meaning is constructed, but also in its wider social consequences (208).

There is a wide range of approaches to discourse analysis, depending on the focus, sources of data or level of analysis (209,210). Some approaches prioritise the 'content' of the language being used (e.g., themes or issues being discussed), while others pay more attention to the 'structure' of language (grammar) and how it functions to create meaning. Along a micro-macro axis, some approaches (e.g., post-structural discourse theory) seek to explain the production, transformation and sedimentation of practices or regimes (though this investigation usually requires the analysis of particular texts) while others (e.g., proponents of rhetorical political analysis and the conversational analysis variant of discursive psychologists) tend to investigate everyday life and avoid general theory. There are also differences with regards to the ‘purpose’ of analysis. ‘Descriptive’ (or ‘non-critical’) approaches seek to provide explanations of how language works and why. ‘Critical’ approaches, conversely, go beyond the description of discursive practices to also show “*how discourse is shaped by relations of power and ideologies, and the constructive effects discourse has upon social identities, social relations and systems of knowledge and belief*” (211).

In this study, I drew on diverse discourse analytical approaches to explore the conceptual framings of SP in the scientific literature. The study adopted a critical approach (in the sociological sense) to existing literature on SP that went beyond a methods-focused critical appraisal. I sought to question the way in which the scientific literature framed its object of study (namely, SP) and the nature of the assumptions on which it drew. Following the classification of critique within the discourse-historical approach proposed by Reisigl and Wodak, I focused on the contradictions, paradoxes and dilemmas in the text or discourse (immanent critique), while also revealing the underlying “*belief* (and knowledge) *systems*” in and by which these discourses operate (socio-diagnostic critique) (212).

All discourses are populated and constituted by elements of other texts, generating dynamic discourse systems linked across time and space (213). Within the SP literature, for instance, authors constantly quote and refer to previous texts in a dialog that generates meaning (‘horizontal intertextuality’ (214)). Yet, as Fairclough emphasises, any given text is not only *built out of* texts from the past, but also transformed and emphasised in a manner which is socially and politically constrained (211). It is at this level that discourses come to be considered in light of broader ‘systems of knowledge’ or ‘ways of thinking’ (also referred to as ‘political rationalities’ (215)). This study sought to illuminate this *dialectical* relationship between discourses within particular scientific texts (‘micro-’ or ‘little d’ discourse) and broader discursive patterns within a wider socio-historical and political context (‘macro-’ or ‘big D’ Discourse) (216).

Discourse analysis is also concerned with the way in (and extent to) which certain behaviours or phenomena become a problem. The object of problematisation is, however, different across different discourse analysis approaches. In keeping with the discourse-historic approach in critical discourse analysis, this review went beyond the identification of the contradictions and tensions within (and between) discourses, to also challenge the validity of these claims and their potential consequences (210).

These varied theoretical discourse analysis approaches proved well-suited to effectively address the review objectives. By analysing the assumptions, judgments, and claims that form the basis of discourses, I was able to characterise the various representations and understandings of SP in the literature (objective 1). The focus on broader 'systems of knowledge' (or ‘big D’ as introduced by Gee (216)) allowed me to investigate how these understandings relate to larger overarching discourses within a broader socio-historical and political context (objective 3). Lastly, by problematising the existing representations of SP in the scientific literature I could critically explore their implications for SP implementation and evaluation in primary care (objective 2).

4.3.2. Methodological approach

I applied critical discourse analysis to the studies included in the realist review. The search strategy, study selection, screening, and quality assessment are reported in detail in Chapter III. Briefly, the search strategy combined a protocol driven database search with additional manual searches between September 2019 and May 2020, as per best practice recommendations for systematic reviews of complex evidence (217). The review included all studies published in English, French or Spanish on interventions linking adults (>18) in primary care with VCS organisations, regardless of study design (quantitative, qualitative and mixed methods) and including all SP related outcome measures. The relevance, rigour, and richness of all studies included were assessed. Further information about the literature searchers and specific quality appraisal criteria applied can be found in appendix 1 and box 3.2. (see Chapter III), respectively.

Data analysis was guided by the stages proposed by Potter and Wetherell in their book "*Discourse and Social Psychology*" (218). I used their framework in a flexible manner to structure and organise the analysis process, which was conducted over five stages: reading, coding, analysis, validation and writing (see box 4.1. for further detail). In practice, these stages did not adopt a clear sequential order, but rather merged together in a dynamic and iterative process. I first read and reread all the studies included in the realist review during an initial familiarisation stage to gain an overview of the data and explore the construction and function of texts. Using the research questions as the basis for selection, I considered each article in its ‘wholeness’ and identified recurring and dominant themes across all article section. Unlike the realist review, where most of the coded information was extracted from the results sections, this review made use of the information available across all sections of the articles. For example, the introduction proved key to exploring how authors justified the relevance and rationale for studying SP. The methods section helped understand the meaning of success in SP by analysing how interventions were measured and analysed, and the theoretical frameworks used to interpret data. The results sections focused on study findings, while the discussion provided relevant information about how authors contextualised them with existing literature and drew conclusions.

The identified themes were coded and grouped together following an ‘inclusive’ approach that avoided setting limits to the data. All studies coded as containing relevant instances of data and the preliminary coding frame were then uploaded to Nvivo, which provided a platform to manage, organise and further analyse data (see appendix 4 for further detail on the coding frame and data extracts). Analysis involved careful reading and rereading of the coded data to identify relevant discursive patterns, both in terms of variation (differences and contradictions in the content of accounts) and consistency (similar features across accounts). I explored the potential function of texts, paying attention to the arguments being articulated and ‘pushed’ within (and across) discourses. I investigated the extent to which the identified discursive patterns embedded, entailed and presupposed other discourses, both in relation to previous texts and to broader systems of knowledge (also referred to as *discursive affinity* (219)).

At this stage, I also explored the relation of discourses to power and dominance and their contextualisation within a wider socio-historical and political context. To do this, I employed Hajer’s concepts of *discourse structuration* and *institutionalisation* introduced in his book chapter titled "*Doing discourse analysis: coalitions, practices, and meaning*" (219). According to Hajer, *discourse structuration* occurs when a discourse starts to dominate how a social unit perceives the world. *Discourse institutionalisation* happens when a discourse solidifies within specific institutional arrangements. I applied these criteria to contextualise the identified discourses and measure their influence and dominance within the SP discursive landscape. I validated the analysis iteratively by testing the *coherence* and *fruitfulness* of findings, and through discussion with the supervisory team. The process of writing helped clarify analytic issues and was therefore undertaken ongoingly. It involved writing down detailed explanations of the reasoning process and documenting the analytic claims and conclusions with specific examples and extracts from the data.

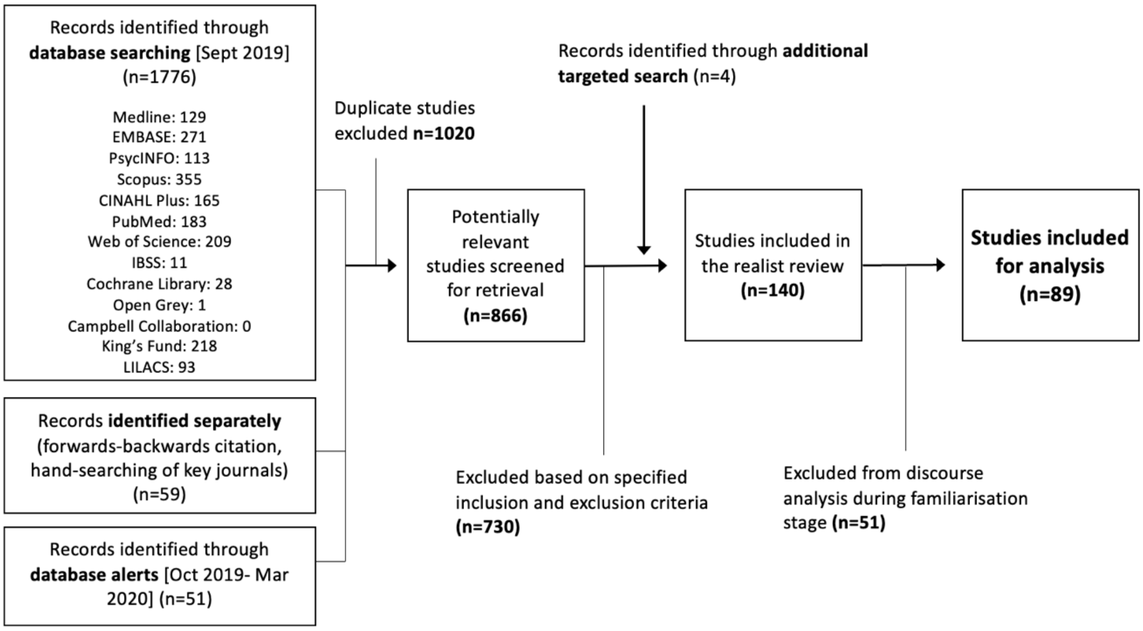
Box 4.1. Components of the discourse analysis, adapted from other sources (218,219)

Reading	• Familiarisation with the topic area • Underlining and marking of sections of text with surprising, contradictory data • Reading while ‘looking beyond the literal meanings of language’
Coding	• Selection and organisation of data in preliminary ‘broad’ categories relevant to the research questions • ‘Pragmatic’ (rather than an ‘analytic’) orientation • ‘Inclusiveness’ during data selection (e.g., data which seemed only vaguely related to the research questions were also included)
Analysis	• Identification of systematic patterns within the coded data in the form of both ‘variability’ (differences and contradictions in the content of accounts) and ‘consistency’ (similar features across accounts) • Development of hypothesis about the functions of texts and the arguments being articulated and ‘pushed’ within (and across) discourses • Identification of ‘discursive affinities’ across texts and broader systems • Assessment of the relation of discourses to power and dominance (‘discourse structuration and institutionalisation’)
Validation	• Analytic techniques for the validation of study findings included: • Coherence: the capacity to explain how the discourse fits together and its identified effects and functions. • Fruitfulness: the scope of our analytic scheme to facilitate understanding of new kinds of discourses and explain new phenomena. • Investigator triangulation: convergence of findings across different evaluators through ongoing discussion within the research team.
Writing	• Ongoing clarification and development of the analysis and findings • Detailed descriptions of data analysis and conclusions in order to allow the reader to assess and understand researchers’ interpretations (e.g., I linked our analytic claims to specific parts and aspects of the data providing a representative set of examples)

4.4. Results

Figure 4.1. illustrates the screening and selection process for the critical literature review. The above-specified search strategy and inclusion criteria led to 140 studies. Following a familiarisation and coding stage, 89 references were included in the review for analysis. Of these, 28 were mixed-methods studies, 26 used qualitative methods, 19 used quantitative methods, 15 were literature reviews and there was also an evaluability assessment study. 62 articles were published in peer-reviewed journals, while the remaining 27 were publicly available reports produced by different academic companies and organisations (grey literature). Of these 89 texts, 83 were from UK, 4 from elsewhere in Europe, one from New Zealand and one from Australia. The characteristics of the studies included are further described in appendix 5.

Figure 4.1. Discourse analysis review PRISMA flow diagram



I identified three main discourses within the SP scientific literature (summarised in table 4.1.). Discourse 1 (*SP as helping to overcome the social determinants of health*) emphasised the influence of underlying social and structural factors on patients' health outcomes and proposed SP as a response to the social determinants of health. Discourse 2 (*"From dependence to independence": SP as supporting patients' journey towards self-activation*) depicted SP as a means ('temporary', 'limited') of supporting patients become 'independent' and reducing their reliance on overstretched health and social services. Discourse 3 (*SP as enhancing personalised care in general practice*) presented SP as shared, open-ended and personalised care practices, capable of restoring person-centredness in primary care. Discourses were distributed unevenly across different type of studies and article sections within the literature reviewed (see appendix 5 for further detail). Although each discourse made distinct arguments and claims, they shared a tendency towards framing SP in terms of ‘solution’ delivered though individual patient care to address complex and contentious social and health system problems.

Table 4.1. Summary of different discourses in the SP scientific literature

	Discourse 1. SP as helping to overcome the social determinants of health	**Discourse 2. SP as supporting patients' journey towards self-activation**	**Discourse 3. SP as enhancing personalised care in general practice**
What is the rationale for SP?	Growing health and social inequalities	Growing demand and use of healthcare resources	Declining human and relational dimensions in general practice
What is the main aim of SP?	To address the social determinants of health	To reduce health service utilisation	To provide personalised, empathetic care
What does SP look like?	A referral pathway to community-based services (related to employment, welfare advice, housing, etc.)	Coaching, activation, motivational interventions, time-bound	Ongoing, dynamic, shared, open-ended care networks and relationships
What arguments and claims are being made?	That SP will contribute to redressing health and social inequalities by addressing the social determinants of health	That SP will contribute to reducing health service utilisation and ease pressure on the system by enhancing self-care	That SP will contribute to restoring person-centeredness through un-hurried, personalised, empathetic care
Assumed characterisation of general practice	Biomedical, clinical, at risk of 'over-medicalising' patients' 'social' dimensions	Overstretched, overused, unsustainable	Impersonal, instrumental, fragmented, devoid of affective or socio-emotional components
Assumed characterisation of SP users	Individuals with social needs (social isolation, unemployment, housing problems)	Individuals with 'capacity' to choose and overcome problems ('clients')	Individuals with enduring and complex health needs ('patients')
What is considered to be of value?	Service model, organisational rearrangements	Efficiency, cost-effectiveness	Human dimensions, relationships, experiences, reciprocities
Distribution within papers	Introductory sections, to define the rationale and potential of SP	Methods and results sections, to design, measure, interpret the potential of SP	Qualitative verbatims within results sections, to understand the reality of patients and providers involved
Typical research design	Epidemiological, population-based, observational. Emphasis on describing social and health inequalities	Randomised controlled trial (hypothesis-driven, deductive), emphasis on size, scale, generalisability	Ethnography, in-depth interview, focus group (qualitative, inductive), emphasis on individuals' lived experience

4.4.1. Discourse 1. Social Prescribing as helping to overcome the social determinants of health

SP interventions were often framed within a broader body of literature that emphasised the influence of wider "*social, economic and cultural factors*" on health outcomes (162). 'Unhealthy' behaviours and subsequent higher risk of disease among study populations were often explained in terms of unequal distribution of opportunities and socio-economic disadvantage. Health and community sectors were identified as key actors in addressing social inequalities, which meant that the 'solution' was often reframed in terms of health and social service provision (e.g., social prescribing, community-centred approaches to health): *"Evidence that people's education, income, housing and other social issues have a major impact on their health and wellbeing is well established. Given this important relationship, there is growing international interest in the role of healthcare systems in addressing patients' social (i.e. non-medical) needs"* (44).

References to the social determinants of health were also present when characterising access and healthcare usage patterns in primary care. Growing pressures in general practice were explained in terms of the increasing number of patients contacting a healthcare professional for "*non-medical*" reasons (91). This time, however, 'social' and 'medical' dimensions were not depicted as mutually determined (e.g. adverse social circumstances lead to poor health and greater healthcare need), but rather as separate (even dichotomised) reasons for consultation (*"20% of people attend GP surgeries for social problems"* (220)): *"GPs spend nearly a fifth of their consultation time dealing with non-medical issues at a cost of £395 million per annum, equivalent to the salaries of 3,750 full-time GPs. Almost three-quarters of GPs state that the proportion of time they spend dealing with non-health issues as part of consultations has increased"* (91).

SP users were depicted as individuals facing mainly *"social problems"*, such as *"social isolation, loneliness, housing issues or bereavement"* (44). General practice was presented as unable to adequately address these 'non-medical' concerns (for instance, as not having enough time to acknowledge patients' social circumstances, at risk of over-medicalising patients' illnesses) and, consequently, in need of a structural change. Social prescribing was then framed as a means to addressing both existing failures of the health system and patients' wider social determinants of health: *"… [name of the SP scheme] illustrates how social prescribing can offer the opportunity to address social needs through individual consultations. An added bonus may be the reduction of workload and more capacity to focus on medical problems. […] A claim can be made that social prescribing, through addressing the wider determinants of health, represents a reorientation of health services […]"* (60).

References to the social determinants of health were mainly present in the introductory sections of the articles when defining the rationale and potential of SP interventions. Few studies acknowledged the value of link workers' advice (and support) for problems related to housing, employment or welfare benefits referencing patients' experience in the results section (44,67). In the remaining cases, the impact of SP interventions on socio-economic dimensions was either not measured (mostly) or not demonstrated (26).

4.4.2. Discourse 2. "From dependence to independence": Social Prescribing as supporting patients' journey towards self-activation

Within this discourse, SP was contextualised in a medical-social reality characterised by people's increasing use of and reliance on public services that were depicted, consequently, as being overstretched. SP was then presented as an alternative potentially capable of enhancing patients' capacity to self-manage and reducing their reliance on health and social services: *"In the UK, an ageing population combined with a growing number of people living with long term medical conditions is increasing demand and cost pressures on the acute, primary and social care services […] A key demand has been for services to become more integrated to better serve the complex needs of the older, frail population and to be more focused on encouraging supported self-management, as a means to reduce demand on primary and secondary care services, making them more sustainable"* (221).

As outlined by the title of the Rotherham SP evaluation report, *"From dependence to independence"* (201), patients were meant to overcome a status of 'dependency' (also referred to as 'lack of control', 'vulnerability') and move towards a state of 'self-efficacy' (or 'independence', 'activation') with the help of appropriate techniques and community-based interventions: *"The [SP programme] endeavours to signpost and provide the person with the information and support they require in order to help them to remain independent in their own homes for as long as possible and reduce their future reliance on health and social services"* (165). Lack of 'self-perception', 'motivation' or 'confidence' was considered a barrier for successful 'engagement' and 'behavioural change'. Interventions, therefore, comprised and prioritised "*coaching*" and "*motivational*" strategies for achieving intended outcomes (55). Training of link workers (also referred to as "*well-being coaches*" (31)) often involved motivational interviewing or goal-setting techniques (56).

Within this discourse, ‘independence’ was equated with self-management and reduced utilisation of services, whereas ‘dependency’ was deemed problematic. Being (or becoming) ‘too’ reliant on others did not only need to be overcome (potentially with SP), but could also represent a threat to SP implementation and delivery: *“There is a danger of patients becoming dependent on a link worker as the source of support; this should be tempered if individuals create new and meaningful connections within the community, which may include reconnecting with friends and family because of a more positive outlook on life. Such an improved outlook may encourage those with existing health conditions to actively engage in self-care”* (54). SP schemes, consequently, developed different ‘boundary setting’ strategies to prevent or address ‘dependency’. This led to rather ‘transactional’ SP approaches, as described in the realist review (see Chapter III). Certain schemes, for instance, offered a limited pre-established number of appointments (*“up to three appointments of approximately up to 40 min each”* (60)) to discuss patients’ needs and identify relevant community-based resources. Further approaches identified by Wildman and colleagues included *“regularly reminding clients of the limits of the link worker role, creating distance by doubling-up, swapping link workers or running group activities and reasserting the importance of empowerment rather than dependency”* (164). Support (or care) was conceptualised either as a menu from which referred patients were encouraged to ‘choose’ or as a means (‘temporary’, ‘limited’) of helping patients become free from further needing it.

Both behavioural and social determinants of health were often framed as matters that could be addressed through individual action. The focus was placed on the individual (as opposed to on the structural constrains) and their capacity to ‘engage’ with (as opposed to ‘access’) the ‘prescribed’ advice, support and/or activities. This discourse reframed the ‘solution’ in terms of inner rearrangements (e.g., “*change in attitude*”, “*raise of expectations*”, “*self-confidence*”, “*re-activation*” (57,165)), assuming that a rational decision making and behavioural change would follow: *“Improvements in confidence, self-esteem, independence, and motivation enabled clients not only to set new goals, but also to actively pursue them”* (171). Constrains were also often depicted as belonging to the private or personal sphere (of their *“own”* (57)), rather than structural and hence shared by those in similar socio-economic positions. ‘Empowerment’ was equated with patients’ capacity to take *“ownership of their problems”* (168), successfully overcome them, and lessen any reliance on health services: *“Socially orientated approaches delivered through [SP] may broaden community capacity and empower patients to better manage their own health and make more appropriate use of health services”* (166). This discourse reinforced the idea of ‘positive change’ (‘advancement’ ‘improvement’ ‘progress’) as a single endeavour by placing the responsibility in the individual: *“while a link worker could ‘encourage and support’, long-term change was about ‘taking responsibility for yourself…nobody else is going to do it’”* (56).

The way authors measured and made sense of their study outcomes was heavily influenced by this discourse. Researchers often drew on theoretical references and frameworks that emphasised individual agency, resilience, and self-efficacy. *Morton and colleagues*, for instance, sought to investigate whether an exercise on prescription scheme could foster self-determined motivation and subsequent behavioural change (222). *Hanlon and colleagues* explored whether *Self Determination Theory* could be used to understand the change (or lack thereof) in behaviour and well-being resulting from patients’ involvement in a Links Worker Programme (172). Tierney and colleagues drew on *Patient Activation Theory* to conceptualise and analyse the role of link workers in SP interventions (54). Other studies drew on *Salutogenesis Model* (165,223) and its focus on *“people’s resources, capabilities and the mechanisms that create and sustain health*” (224). Bertotti and colleagues referenced self-efficacy within *Social Cognitive Theory* to explain behavioural change when evaluating the conditions and mechanisms that facilitated (or hampered) the implementation of a SP intervention (57). The *Social Cure* perspective was also used to explain how social group membership developed within a SP programme enhanced participants’ confidence building and wellbeing (167).

Interventions were evaluated and deemed successful based on their potential to enhance participants’ self-concept, self-management and/or behavioural change. Mental wellbeing questionnaires (such as, the Warwick-Edinburgh Mental Well-being Scale), which involved the assessment of participants’ self-perception (e.g., confidence in themselves), were widely used amongst studies included in the sample. Physical health and behavioural questionnaires were also often employed. Many primary and secondary studies chose social and healthcare service utilisation indicators, including primary care attendance, secondary care referrals and/or contacts with community-based NHS services and Accident & Emergency as outcome variables to monitor effectiveness (see appendix 5 for further detail). Different SP interventions identified in the literature review targeted patients who frequently visited their GP or other primary care providers. Loftus and colleagues, for instance, focused on patients over 65 with long term conditions who attended their GP frequently or had multiple medications (225). Brandling and House evaluated a SP programme aimed at patients defined as “*high resource users*” (226). In all cases, researchers assessed the capacity of the intervention to reduce service utilisation or primary care workload, generally through the enhancement of self-management or ‘activation’ strategies.

4.4.3. Discourse 3. Social Prescribing as enhancing personalised care in general practice

This third discourse emphasised the dearth of human and relational dimensions in general practice. Clinical consultations were depicted as ‘rushed’, ‘hurried’, ‘impersonal’ and hence unable to accommodate patients’ needs and expectations. Within this context, clinicians were often characterised as unable and/or unwilling to explore and listen to patients’ wider psychosocial concerns, leading to ‘judgmental’, ‘prescriptive’ and ‘un-empathetic’ encounters: *“I am stuck in this wheelchair and have a lot of problems. I knew that my GP just wanted to get rid of me out of the door. I knew she didn’t want to open up the can of worms that were in my head and forcing me to talk to the Samaritans”* (200).

SP was then framed as an alternative capable of counteracting these shortfalls, by removing ‘time bound’ appointments and providing a *holistic* and *relational* care, in line with the ‘good’ practice SP archetypes identified in the realist review (Chapter III). Time and space for “*feeling listened to and valued*” (185) were considered key program components and preconditions for ‘good’ practice: *“I knew what was going on in my head, but I couldn’t always, I didn’t always want to tell anyone. It seemed, with the link-worker, it seemed as though I could get over that more quickly. He wasn’t demanding. He was very quiet and very gentle with it, and that is the way that I needed somebody to be, to maybe listen to me, really listen to me, and hear what I was saying […]”* (167). Rather than a provisional transaction, SP was conceptualised as an ongoing ‘practice’ which required perseverance and attentiveness. Care was understood as a ‘need’, rather than a ‘choice’ (*“I will always need somebody to help me”* (56)), refined and reinvented dynamically over time depending on its results and patients’ fluctuating needs: *“[…] another [link worker] suggested that it takes time to develop relationships because of people’s complex problems […]: ‘it took time, you know, to build up that relationship with the individual, but you can see just the difference it's made, you know, he knows I'm there and you know I guess it's like chiselling away, each time that I see him, you know, he'll tell me something else’”* (184).

SP was no longer articulated as a linear referral pathway towards a predefined destination, but as a care network comprising different actors, in line with the triangle-shaped Framework presented in Chapter III. Patients moved back and forth across settings and sectors depending on their changing needs, which required ongoing and bidirectional coordination between care providers. A caring and supportive SP was deemed necessary to ensure successful outcomes. Patients, for instance, were more likely to participate when link workers contacted them directly after receiving the referral, made regular follow up phone calls, or even came along with them to the planned activities. Emotional and practical support seemed to allow patients to overcome (or cope with) the barriers that often prevented them from engaging: *"I just expected the Link Worker to introduce me to the gym, and that would have been it. And I think, if it had just been [that] I would have turned round, and I would have gone the opposite direction. But because of the way it was so gradually and really professionally linked into different things, I just felt as though I'd floated into it, rather than getting shoved from behind. I just felt as though I was gradually moved into it"* (67).

Support and encouragement not only prevented dropouts, but also enabled people to push themselves harder than they would have by themselves. Similarly, patients were more likely to progress when feeling committed to a regular service provided (*"If you build up a relationship with somebody like Mary you're not going to let her down"* (159)). Yet, care was not only considered a means towards 'engagement', but also an outcome in itself. Knowing that support was available, as well as feeling listened to and cared for were sufficient and relevant endpoints (*"it is very comforting to know that you are not by yourself, that you can ring someone"* (165)). SP users were depicted as 'patients' (as opposed to 'clients') facing enduring and complex health issues and hence in need of continuous and open-ended care for when things went wrong again: *"I mean with me, I'd still want to be in contact somewhere along the line, which I think they will do. If something happened to me, […] I think I would need them full time all the time then"* (56).

As the verbatims above reveal, this discourse mostly drew on patients', link workers' and community stakeholders' lived experience and accounts gathered through qualitative interviewing. Questions related to the provision of enhanced, ongoing care were not, however, addressed explicitly in study aims nor informed by relevant theoretical references. Within the discussion sections, findings were either included as recommendations for improved SP delivery (55,160,168), problematised in the context of an overstretched primary care system (184) or treated as 'unintended' (and hence to be prevented) for potentially implying an increased patients' reliance on health services and running counter initial expectations (227).

4.5. Discussion

This study, based on argumentative discourse analysis of 89 references, identified three main ways of understating the scope and potential of SP interventions. As summarised in table 4.1., discourses differed in their rationale, claims and the characterisation of SP and social reality. Discourses circulated unevenly across different type of studies and article sections within the literature reviewed. While discourse 1 was mainly present as a rationale for SP, discourse 2 was consistently used to design, measure, and interpret existing interventions. Discourse 3 was mostly stressed by participants in qualitative studies and often criticised by study authors. The review also identified a shared tendency across discourses, whereby SP initiatives were consistently framed in terms of ‘solutions’ to complex and contentious problems. The extent to which this SP discursive landscape is shaped (and reinforced) by a wider political rationality and the consequences of these alignments are discussed below.

4.5.1. Tackling structural inequalities through health service innovation

The first discourse exposed a tension whereby SP interventions tended to acknowledge structural injustice but then offered health service innovations and individualised strategies as ‘solutions’ for them. This critical distance between a starting upstream claim and an ultimate downstream denouement has already been acknowledged in the scientific literature (referred to as *“lifestyle drift”* (228,229) or “*neoliberal justice narratives”* (230)). This study highlights that this ‘drift’ often happens through a process which enhances the role and responsibilities of individuals, health services and communities. I argue that this may prove problematic on the following basis.

Growing health inequalities in the UK (and globally) are highly conditioned by underlying structural inequalities (231–233). Maldistribution of power, wealth and resources operate through a wide range of social and economic pathways (including employment, income, housing and education) to generate unequal health outcomes (234). As pointed out by the WHO Commission on Social Determinants of Health, individual and community-level interventions, such as SP, are well-placed to ‘reduce the consequences’ of such inequalities through the provision of enhanced care and support. However, they fail to tackle the system which generates (and reproduces) maldistribution, for which system-level interventions would prove more appropriate (235). Presenting SP as ‘the solution’ may hamper a broader understanding of and response to the social determinants of health, which also addresses its fundamental structural causes and asserts policy-level responsibilities (62,236).

Discourse 1 also depicted social determinants of health as definite (even computable) reasons for consultation in general practice, easily detachable from the more ‘medical’ ones. However, health and social dimensions tend to form a continuum, be mutually determined and appear intertwined in consultations (129). As pointed out by *Stange and colleagues,* the acknowledgement and understanding of these inter-relations has proven to be a precondition for the provision of personalised, high quality clinical care in general practice (150). Presenting SP as a strategy capable of addressing the ‘non-medical’ needs, may risk exacerbating this contrived dichotomy (‘social’ vs ‘medical’) while eroding primary care clinicians’ responsibility to explore, understand and integrate patients’ wider social needs and circumstances in routine consultations (also referred to as ‘*holistic SP’* and defined as best practice in the realist review (Chapter III).

4.5.2. Easing pressure on the system through the enhancement of self-care

The review identified a dominant discourse around patients’ ‘independence’, which depicted SP as a means of enhancing their capacity to self-manage and easing pressure on the system. Despite lack of consistent health economic evidence on reduced health care utilisation, these expectations seem to have *solidified* in specific institutional arrangements. NHS England and Improvement, for instance, encourages the use of the Patient Activation Measure tool to assess the *“knowledge, skills and confidence of a person to manage their own health and care”*, as a proxy for reduced service utilisation when evaluating SP programmes (237). The embeddedness of this discourse into specific institutional and organisational practices (also referred to as “*discourse institutionalisation”* (219)) highlights its consistency and dominance across the SP arena. I argue that this may be problematic on the following basis.

This discourse assumedly linked self-management with ‘independence’ and reduced reliance on further care. Yet, as highlighted by *Hinder and colleagues*, self-management is rarely an individual, isolated endeavour (238). Rather, it is often enabled (or constrained) by economic, material and socio-cultural conditions within the family, community and health services (238). Shifting the work of (‘self’-) care away from clinic risks placing additional demands and burdens on ‘informal’ care providers (family and community), raising ethical and sustainability issues (especially where sufficient or strengthened material and relational resources are not ensured) (239). VCS organisations and local authorities operating in deprived communities, for instance, have reported an increased demand for services as a result of patients’ underlying socio-economic circumstances, along with ongoing funding deficits, which affect the sustainability and capacity of their services (240,241).

Critically, the notion of a capable, self-sufficient and independent individual might prove unrealistic for some patients, and lead to significant frustration and guilt when unattained (242). For some patients and in certain circumstances, accepting personal boundaries (“*relinquishing control*” or “*letting go*”) and the need for help is beneficial and empowering (243). Besides, there are cases where trustful and personalised relationships with link workers and/or the VCS made patients feel safe to disclose problems which often required further clinical input (54). In such cases, patients were referred 'back' to general practice, enhancing access to (and utilisation of) health services. 'Good' practice in SP may not necessarily involve reduced service utilisation. A SP whose main aim is to ease pressure on the system risks obscuring (and hence not strengthening) principles of interdependence, collaboration and mutual responsibility, which are relevant endpoints for patients and predict 'good' practice in SP (93).

Lastly, pressures in general practice have resulted from an increasing workload over the last decades, without a matched growth in either funding or workforce (244). While work has become more complex and intense in the UK general practice, funding for primary care as a share of the NHS overall budget has gradually fallen (244). Framing SP (and the enhancement of self-care) as the 'solution' to overstretched health services, may hinder the consideration and tackling of system factors and supply-side deficiencies which highly contribute to explaining increasing pressures in primary care.

4.5.3. Restoring person-centredness in general practice through Social Prescribing

Discourse 3 depicted patient-clinician interactions within general practice as overtly instrumental (oriented to preventing, diagnosing or treating disease – 'cure' talk) and devoid of any type of affective or socio-emotional component ('care' talk) (180). SP was then presented as a strategy capable of restoring this imbalance, by creating a new role (link workers) in charge of providing a caring, person-cantered, empathetic approach.

This discursive reality is reinforced by a general practice where the reason for consultation, rather than the relationship with the patient, shapes the organisation of service provision(153). Triaging and task distribution have gradually replaced relationship continuity of care (understood as *"the relationship between a single practitioner and a patient that extends beyond specific episodes of illness or disease"* (245)) despite being associated with better clinical outcomes and reduced all-cause mortality (presumably in relation to improved clinical responsibility, physician knowledge, and patient trust) (246). Clinicians are increasingly meant to deal with diseases efficiently, while all the rest (including relationship competence (153)) is no longer recognised as a vital professional asset and may therefore be shifted to other members of staff (usually less specialised and resourced (247)). Objective and definable processes ('cure' talk) are more easily monitored, owned and regulated than the numerous intangibles in routine consultations ('care' talk), which are more prone to be overlooked and transferred (247). However, both 'talks' are required in order for clinical care to reach its full potential. Framing SP as a 'solution' risks disregarding existing trends, their consequences, and the need to ensure therapeutic relationships across disciplinary boundaries (including in general practice).

4.5.4. Rethinking Social Prescribing beyond a 'solutionist' paradigm

As Peter Miller's and Nikolas Rose's work revealed, there tends to be a reciprocal interaction between language (*'linguistic features'*) and wider systems of knowledge, where discourses act as means through which (and in which) specific political rationalities are reproduced, consolidate and influence human action ('*govern*') (248). A wider neoliberal rationality resonates with a (dominant) understanding of SP which focused on patients' knowledge and resilience (via informed discussions with link workers and motivational coaching) as a means of consolidating positive lifestyle choices and reducing their reliance on further care. Similarly, a shared "*solutionist*" (249) approach to SP also contributed to enhancing the role and responsibilities of individuals, communities and health services in tackling structural and contentious problems (such as, social inequalities, overstretched health services, or increasing fragmentation in general practice). While end users and providers were expected to invest themselves with new skills and 'ways of doing' (250), the context of possibilities and constrains in which these actions may (or may not) happen was frequently overshadowed (251,252).

The relationship between discourses, practices and wider political rationalities is, however, far from linear. As Brown points out, even when one political rationality becomes hegemonic, it carves itself against a range of other possibilities – "*tacitly arguing with them, keeping them at bay, or subordinating them*" (253). There are different ways of understanding and practicing SP which challenge (while co-exist with) neoliberalism. My realist review (Chapter III) and realist evaluation (Chapter V), for instance, identified SP practices which contributed to enhancing GPs' understanding of patients' wider needs and their capacity to provide 'holistic' and accessible care. Link workers and community organisations provided sustained, open-ended care to better respond to patients' enduring and complex needs. Critically, this often involved going beyond what was expected, or even disregarding and questioning the way in which services had been designed and commissioned (as evidenced in Chapter VI).

These examples allow for the configuration of an alternative 'care-based' framing of SP, which sees the provision of holistic, sustained and accessible primary care not so much as a means to an end, but as an end in itself (152,254). I speculate that these dissenting (and inspiring) practices contribute to enacting an alternative ‘belief system’ whose main rationale is meeting patients’ primary care needs through publicly accountable and collaborative services (of which SP would constitute an example). This conceptualisation of SP necessarily shifts the attention of research from *measuring* impact (via service utilisation indicators) to *evaluating* the extent to which SP may (or may not) succeed to support people in greatest need while contributing to stronger, fairer health care systems.

4.5.5. Strengths and limitations

To my knowledge, this is the first study employing a discourse analysis approach to SP, which is of major relevance given the rapid expansion and implementation of SP. Diverse and relevant theoretical references allowed me to explore the meanings and expectations around SP in the scientific literature, while highlighting the conditions of possibility and legitimacy for certain discourses to become dominant. Using a critical approach, the review unravelled existing tensions and taken-for-granted assumptions, and problematised what these assumptions meant and entailed for the implementation and delivery of SP. The main limitation of this study is its reliance on a predefined literature search (as opposed to an iterative literature search strategy). As specified in the methods section, I applied a critical discourse analysis approach to the references included in the previous realist review on SP (see Chapter III). The exhaustive realist review search strategy (which combined searches in 13 databases and additional manual searches, leading to the inclusion of 140 studies, included scientific articles and grey literature) proved sufficiently comprehensive to allow for the description and validation of the identified discursive axes. However, additional discourses would have likely been found if alternative literature had also been considered, such as policy documents and/or media content. The identified discourses are not, therefore, exclusive and may be complemented by alternative understandings and interpretations.

4.6. Conclusions

This review identified three main ways of understanding SP and unravelled overlaps between them. Discourse 1 emphasised increasing social inequalities behind escalating health problems, while presenting SP as a response to the social determinants of health. Discourse 2 problematised people’s increasing use of health and social services and depicted SP as a means of enhancing self-management and reducing patients’ reliance on further care. Discourse 3 stressed the dearth of human and relational dimension in general practice, while presenting SP as an alternative capable of restoring person-centeredness. Discourses circulated unevenly in the scientific literature, conditioned by a wider political rationality, which emphasised individual responsibility and framed SP in terms of ‘solution’ to complex and contentious problems. I speculate that this contributed to oversimplifying both the realities and problems being addressed, while also constraining the way interventions are delivered. Critically, once the “*solutionist*” narrative is exposed as a cover-story, a range of different narratives and evaluative frameworks become possible. I conclude that these alternative framings broaden our political imagination to rethink (and enhance) the scope and possibilities of SP interventions within stronger and fairer primary health care systems.

4.7. Integration of findings with overall PhD research objectives and questions and remaining thesis Chapters

Discourse analysis review findings contribute to addressing overall PhD objective 3. Building on the realist synthesis presented in Chapter III, this review further characterises the conditions for ‘good’ practice in SP by focusing on the discursive (cultural) dimensions that shape service delivery. It challenges the framing of SP as a 'solution' to contentious problems and suggests an alternative 'care-based' framing to support the delivery of holistic, relational, and accessible services.

Furthermore, the review offers valuable insights in addressing PhD research questions 2 and 3. It unveils how the perception and conceptualisation of SP can shape both its delivery and evaluation. The findings prompt us to collectively grasp SP by developing a shared understanding of its potential, which includes a realistic assessment of its limitations. The study contends that challenging unrealistic “*promises*” does not diminish the worth of SP. Instead, by reframing SP “*beyond a solutionist paradigm*”, providers may be better placed to thoroughly explore patients’ needs and appreciate alternative outcomes and methods of support.

This review is closely connected to Chapter III, as it demonstrates the association between various understandings of SP and specific SP practices (archetypes). For example, discourses that emphasised SP's role in improving 'independence' and reducing reliance on healthcare (discourse 2) led to 'boundary setting' strategies aligned with 'transactional' SP approaches. Presenting SP as a strategy to address 'non-medical' needs (discourse 1) risked neglecting patients’ wider social needs during routine clinical consultations, resulting in ‘fragmental SP’. Framing SP as a care network and emphasising its role in delivering person-centred, empathetic care (discourse 3) made ‘relational’ archetypes more likely, in line with the triangle-shaped framework presented in Chapter III.

Additionally, the review findings provide the theoretical foundation for the empirical work in Chapter VI, which investigates and tests the generalisability of the findings in the context of T2D prevention. Using theories of social practice, Chapter VI draws on the discourse analysis review findings to further interrogate whether different ways of understanding SP and T2D prevention influence the way primary care and VCS practitioners deliver (and *practice*) SP in a community at high risk.

Chapter V. Unravelling the potential of Social Prescribing in individual-level Type 2 Diabetes prevention. A mixed methods realist evaluation

5.1. Introduction

SP is expected to advance the prevention and management of long-term conditions by encouraging healthier lifestyle, self-management, and personalised care (64–68). However, no previous studies have evaluated the potential of SP in a disease prevention context. This thesis uses T2D as an exemplar by investigating the possible role of SP in people at high risk of the condition. The rationale for focusing on T2D prevention over alternative long-term conditions is presented in detail in Chapter I. Briefly, T2D represents a major public health concern, associated with reduced quality of life, life expectancy, and considerable socioeconomic consequences (69–71). Both individual behavioural risk factors and socioeconomic determinants appear to be major driving forces behind escalating T2D epidemics and health inequalities (72,73). Many community-based activities accessed through SP focus on healthy lifestyle, including weight management, dietary recommendations and physical activity programmes (1,18,90,91), which also underpin existing T2D prevention behavioural programmes, such as the NHS Diabetes Prevention Programme (NDPP) (77). However, by also acknowledging people's underlying social constraints, SP may offer a means of providing contextually sensitive and holistic health promotion (93), in line with best practice recommendations for individual-level T2D prevention (94). Lastly, NDPP focuses purely on the promotion of behaviour change in patients at high risk of developing diabetes. Delivered at scale through (mostly private) independent providers, NDPP has shown low initial attendance and programme completion rates, especially amongst socio-economically deprived and diverse ethnic groups (74–76). There is thus a need for T2D prevention strategies to increase attention to patients' wider social context and improve their reach to those in greatest need.

While promising results have been published on the effectiveness of SP in improving glycaemic control (HbA1c levels) among patients living with T2D (64), no previous studies have focused on people who have not yet developed the condition but who are at high risk. This study contributes to addressing this evidence gap by investigating the possible role of SP in T2D prevention and the extent to which it may complement and inform existing preventative approaches (e.g., NDPP). The study hypothesised that the reach and equity of access of SP and NDPP across high-risk patients within a multi-ethnic, socio-economically deprived population could differ and sought to understand why (and how) possible differences could occur.

5.2. Realist evaluation aims and objectives

This realist mixed-methods evaluation focused on the following aim and objectives:

Study aim:

1. To investigate the role of SP in people at high risk of T2D and whether it may complement existing preventative approaches within a multi-ethnic, socio-economically deprived population.

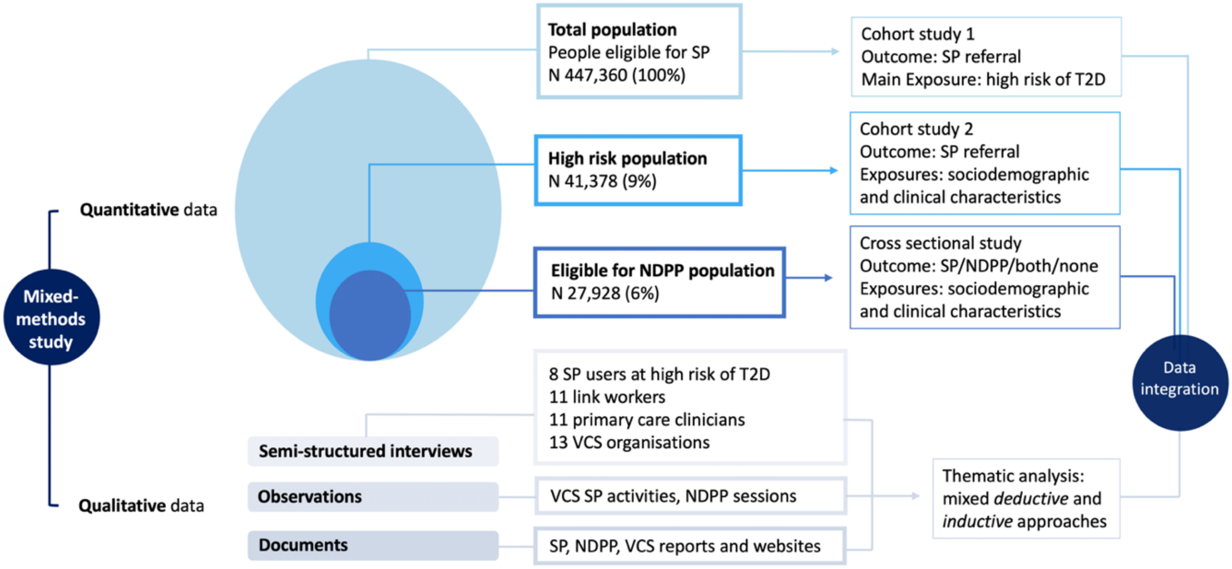
Study objectives:

1. To investigate whether (and the extent to which) SP might reach high risk patients in greatest health and social need.
2. To explore what 'good' practice in SP relevant to people at high risk of T2D might look like.
3. To investigate whether (and the extent to which) SP may complement and inform NDPP.

5.3. Methods

Quantitative and qualitative data were collected and analysed concurrently between November 2020 and March 2022. Figure 5.1. shows an overview of data sources and analysis. Throughout, I followed RAMESES reporting standards for realist evaluations (255).

Figure 5.1. Overview of study data sources and analysis



5.3.1. Theoretical approach: realist evaluation

This study used mixed-methods realist evaluation (145), informed by a previous realist synthesis presented in Chapter III. The significance and implications of realist methodology in the study of SP have been discussed in detail in Chapter III. Briefly, realist evaluation has the potential to facilitate deep understanding of how complex interventions, such as SP, work and in what circumstances (101). Causal narratives are central to realist evaluation but have a wider conception that also accounts for contextual and unobservable factors (100). According to realism, casual associations rely on the identification of 'generative' mechanisms of action and explanations of how they work, whether they have been activated, and if so under what conditions. In order to explore these underlying causal explanations, realist methodology is designed to tease out what are known as context-mechanism-outcome configurations (CMOCs) (135). These causal explanations (also referred to as programme theories (256)) are made explicit and tested, confronted and refined iteratively throughout the research using a range of empirical data (255).

Realist evaluation also provides a useful framework for mixed-methods research, whereby quantitative data may help to identify patterns of SP practice that are then explored and elaborated further using rich qualitative insights from SP users and service providers (and vice versa) (257). More broadly, the findings from both approaches may stimulate "*retroductive reasoning*", a process that involves the construction of hypothetical explanation as a way of uncovering the real structures, contexts, and mechanisms that are presumed to produce empirical phenomena (140). Quantitative and qualitative data are used to supplement, confirm, disprove and, above all, refine the developing theory - explanations about how, why and in what circumstances interventions may (or may not) work.

Realist evaluation is, therefore, a powerful approach that can provide clear and context-specific explanations of what makes for 'good practice' in SP relevant to T2D prevention, which is one of the key objectives of this study (objective 2). It also allows to dive deep into the intricacies of SP delivery and gain a thorough understanding of how interventions may best reach patients with significant health and social needs (objective 1) and/or complement alternative T2D prevention strategies (NDPP), under what specific conditions, for whom, and why (objective 3).

5.3.2. Study setting and intervention

The study was based in Tower Hamlets, a multi-ethnic inner-city borough in east London, UK, with an estimated population of 310,300. Tower Hamlets is one of the most deprived boroughs in the UK, with two major ethnic population: white British and British Bangladeshi. Overall and T2D-related health outcomes are significantly poorer than the national average despite high-quality primary and secondary care (258–260). Local health intelligence data suggest that age-adjusted deaths directly attributable to diabetes are 8.93 per 100 000, compared with 5.06 across London and 5.06 across England (258). Rates of T2D in Tower Hamlets are significantly higher among those with the lowest socioeconomic status and South Asians (259–261). For instance, South Asians have a risk of developing T2D that is twofold greater than the local white population (262) and suffer from faster chronic kidney progression when they have diabetes (263).

There are 35 GP practices in Tower Hamlets, arranged in 8 Primary Care Networks (PCNs) and commissioned by the Tower Hamlets clinical commissioning group (CCG). The borough is at the forefront of two health service innovation programmes, namely, SP and NDPP, which were first made available to local registered patients in 2016, ahead of most other regions in the UK. This empirical research focuses primarily on the local SP scheme (and its impact on T2D prevention), but also investigates the delivery of NDPP to learn from any potential comparisons and interactions. A description of these two interventions and its local implementation in Tower Hamlets is provided below.

5.3.2.1. Social Prescribing in Tower Hamlets

Isolated SP schemes have existed in Tower Hamlets since the 80s, partially self-funded and/or commissioned by the local Clinical Commissioning Group (CCG) – see the example of the Bromley-by-Bow Community Centre founded in 1984 introduced in Chapter I. Building on the structure and experience developed in these pre-existing SP initiatives, a borough-wide roll-out of SP was funded in December 2016, with the local GP federation, Tower Hamlets GP Care Group (THGPCG), acting as lead organisation (91). The CCG recruited nine full time equivalent link workers, one for each of the eight PCNs and an additional post to support two specific networks expected to face higher demand. In 2019, the NHS Long Term Plan (35) was announced, which included funding to recruit 10 additional SP link workers via PCNs (37). This doubled the number of link workers available in Tower Hamlets to 19, two per PCN plus three additional posts linked to pre-existing SP schemes. Those link workers ascribed to PCNs were line managed by their network and expected to serve 2 or 3 surgeries, depending on the size of the GP practice list. Link workers ascribed to pre-existing SP schemes were mainly managed by their surgery and faced lower workload (a single surgery instead of half PCN).

All patients registered with a Tower Hamlets GP, aged over 18 and expressing a ‘non-clinical’ support need were eligible for the local SP programme. People could self-refer or be referred by any local primary care professional to their named link worker, who was usually located in the GP practice with full access to patients’ medical records (68). Based on the identified needs, link workers offered signposting or referral to relevant VCS resources, and/or further face to face or telephone follow up appointments. While some PCNs and surgeries applied a guide to the maximum number of consultations a patient could have with a link worker (ranging from 4 to 6), others placed no specific restrictions. Link workers ascribed to PCNs were expected to complete performance and monitoring questionnaires with every referred patient (excluding those who required direct signposting) as part of the service commissioning contract. These included the Measure Yourself Concerns and Wellbeing (MYCaW) questionnaire (264), the Patient Activation Measure (PAM) (265) and Personalised Support Plans (PSP) (266). Most VCS activities accessed through SP were related to lifestyle (such as exercise, healthy eating and weight management) or welfare advice (such as, debt, benefits, housing issues), while the duration of activities and support varied across different organisations (91). VCS services were not funded by the SP scheme, and hence relied on donations, public contracts, national grants, amongst other sources. During the early months of the COVID-19 pandemic, the service had to adapt its working practices to factors such as remote-by-default policies for GP access, working from home and local VCS agencies providing limited or restricted services.

5.3.2.2. NHS Diabetes prevention programme in Tower Hamlets

Tower Hamlets was one of the 27 areas across the country chosen to be part of the first wave roll-out of the national NHS Diabetes Prevention Programme (NDPP). Unlike SP, NDPP was commissioned nationally by NHS England, implemented locally in Tower Hamlets by a regional team, and delivered by a private organisation. General practice involvement was limited to screening/identification and referral of patients, which was enhanced through a range of incentives and support strategies (89). The programme targeted individuals with a diagnosis of non-diabetic hyperglycaemia or ‘pre-diabetes’ (defined by the National Institute for Health and Care Excellence as glycated haemoglobin (HbA1c) of 6.0%–6.4% (42–47 mmol/mol) or fasting plasma glucose (FPG) level of 5.5–6.9 mmol/L) and/or history of gestational diabetes. Eligible patients were identified through primary care patient registers and NHS Health Checks which are offered every 5 years to

40–74-year-olds, and then referred to the NDPP by their GP (77). The core NDPP intervention consisted of group-based sessions offering behavioural change content to achieve modifications in diet, physical activity levels and body weight. The course involved a minimum of 16 hours of contact time over at least 9 months (267). During the pandemic, sessions were held online or over the phone, depending on patients' preference.

5.3.3. Quantitative evaluation

The quantitative evaluation presented in this chapter aimed to estimate the reach and equity of access of SP among patients at high risk of T2D in a multi-ethnic, socio-economically deprived population. Electronic health record data were accessed from all 35 primary care practices within Tower Hamlets CCG via the Clinical Effectiveness Group, Queen Mary University of London (268) and pseudo anonymised at source under NHS and local information governance and data security policies.

5.3.3.1. Study design and population

The study population was all adults (18+ years) without diabetes, registered with a GP in any of 35 practices in Tower Hamlets, east London, between 1st December 2016 and 14th February 2022. I undertook three different studies to estimate the reach and equity of access of SP across three different study populations (the inclusion and exclusion criteria of each study are presented in detail in Appendix 6):

- First, I conducted a cohort study [1] of people eligible for SP (18+ and with an active GP registration in Tower Hamlets) to investigate the independent association between being at high risk of T2D and being referred into SP. This population was selected using the latest date of GP registration or the study period start date.

- Second, I conducted a cohort study [2] of people at high risk of T2D to investigate the clinical and socio-demographic features associated with being referred into SP across this high-risk study population. This sample was selected as all those in a T2D high risk state, using the latest of: date of diagnosis, date of GP registration or study period start date (refer to section 5.3.3.2. for a detailed definition of high risk of T2D status). In both cohort studies (1 and 2), participants who had been diagnosed with diabetes within the follow-up period were excluded. People were censored at the earliest date of the coded referral into SP (primary outcome), death, deregistration with the practice or the study end date.

- Third, I undertook a cross-sectional study of people eligible for NDPP to investigate the clinical and socio-demographic features associated with a referral into SP, NDPP, both services or neither. In this cross-sectional study, NDPP eligibility was determined as: age between 18 and 79, history of gestational diabetes, fasting blood glucose 5.5-6.9 mmol/L, HBA1c 42-47 mmol/mol or diagnosis of non-diabetic hyperglycaemia or pre-diabetes.

5.3.3.2. Study variables

I used the codes proposed by the Quality and Outcome Framework (QOF), which is a voluntary annual reward and incentive programme for all GP practices in NHS England. Under the QOF program, practices are measured against a set of coded indicators across a range of clinical areas, such as diabetes, hypertension, mental health. GP practices are awarded points for meeting these indicators, and these points translate into financial incentives, which are paid out to practices on an annual basis. The programme aims to monitor and improve the quality of care provided by GP practices and has been found to enhance the accuracy of clinical data recording and coding (269,270). For those variables not included on the QOF register, I used the code lists provided by the Clinical Effectiveness Group.

A detailed list of study variables and their characteristics is provided in Appendix 7: Table 7.1. Briefly, outcome variables were defined as referral into SP and/or NDPP, while exposure variables (and potential risk factors) included varied sociodemographic and clinical data presented in Box 5.1.

Box 5.1. Exposure variables and potential risk factors

- **T2D high risk status,** determined as
    - history of gestational diabetes, Q Diabetes risk calculator score (QDiabetes®-2018(271)) equal or above to 20, fasting blood glucose 5.5-6.9 mmol/L, HBA1c 42-47 mmol/mol, diagnosis of non-diabetic hyperglycaemia and/or pre-diabetes, or history of referral into NDPP.
- **Sociodemographic data,** including
    - age at enrolment, gender, ethnicity (using the Government Statistical Service 18 ethnic categories (GGS-18)) and Index of Multiple Deprivation (based on patients' Lower-layer Super Output Area).
- **Clinical data**, including
    - cardio-vascular disease (ischaemic heart disease, peripheral arterial disease and/or stroke and transient ischaemic attack), hypertension, chronic kidney disease, respiratory condition (including asthma and/or COPD), mental health condition (including depression and anxiety, and/or severe mental health diagnosis, including schizophrenia, bipolar affective disorder and/or other psychoses), learning disability, current smoker, obesity (considering ethnicity specific BMI cut-offs(272)) and multimorbidity (determined as two or more of the conditions listed above).

5.3.3.3. Quantitative data analysis

The exposures and outcomes for each of these three studies were described using percentages (categorical variables) or median and IQR (continuous variables). Poisson fixed effect models were used to calculate all rate and rate ratios (RR) (95% CI) in cohort studies 1 and 2. Fixed effect multinomial regression models were used to calculate all odds and odd ratios (OR) (95% CI) comparing referral into SP with referral into NDPP (baseline category) in the cross-sectional study. Given variables in both cohort and cross-sectional studies were assumed to have fixed levels or categories (and the model outcome was considered to apply only to the variables and categories included), fixed-effect models were considered most appropriate. Potential confounders were included in the multivariate models to calculate the independent association of the different risk factors with being referred to SP and/or NDPP. Models were constructed based on previous assumptions on causality (represented using a direct acyclic graph (DAG) (273), Appendix 7: Figure 7.1) and assessment of the correlation between independent variables (collinearity). I assessed for collinearity observing potential changes in standard errors (SEs) in the log scale of RRs (cohort study 1 and 2) and ORs (cross-sectional study) for each variable when other variables were added to the model. Increases in estimated SEs of 50% or more (crude vs adjusted) were considered indicative of collinearity. All analyses were conducted using Stata (version 17).

Considering that 2% of the population receives SP and 1 in 11 people in Tower Hamlets are at high risk of developing T2D (as determined by QDScore >20%), I anticipated having sufficient power (0.8) to detect a 0.7% absolute difference (35% relative difference) in the likelihood of receiving SP among diabetes risk groups, using a type 1 error rate of 0.05.

5.3.4. Qualitative evaluation

The qualitative evaluation aimed to provide rich explanations on why (and how) quantitatively observed differences in SP referrals occurred, and their relevance for people at high risk of T2D. Preliminary programme theories of what 'good' practice in SP relevant to T2D prevention might look like drew on realist review findings presented in Chapter III and were further refined and tested using different types of qualitative data. This section provides further detail on the data sources, their contribution to the study and the analysis process.

5.3.4.1. Qualitative data collection

The study drew on semi-structured interviews with 8 SP users at high risk of T2D, 11 primary care clinicians, 11 link workers and 13 members of the VCS to investigate participants' personal experiences, attitudes and perceptions in relation to SP and T2D prevention (274,275). A number of community-based SP activities, NDPP sessions, and VCS meetings were systematically observed to investigate how practices and activities unfolded in 'naturally occurring' community contexts(276). Observations revealed more information than individuals often recalled, were aware of or chose to report, and provided valuable data about contextual factors (277,278). Documents about local VCS organisations and activities on offer, as well as evaluation and policy reports were also accessed and analysed, providing additional information and historical insight as to how the local SP service had been rolled out, commissioned and delivered in the local area (279). Qualitative data sources and sample characteristics are shown in detail in Table 5.1. and Appendix 8.

Table 5.1. Qualitative data sources and their contribution to the study

Data source(s)		**Sampling**	**Purpose**
Semi-structured interviews	8 SP users at risk of T2D	Purposive: age, gender, ethnicity, diabetes risk status, degree of participation in SP	To investigate personal experiences, attitudes and perceptions in relation to SP and T2D prevention
	11 primary care clinicians	Purposive: professional profile, workplace, type of contract, seniority, sociodemographic characteristics (age, gender, ethnicity)	
	11 link workers	Purposive: workplace, type of contract, time worked as link worker in local area, demographic characteristic (age, gender, ethnicity)	
	13 VCS organisations	Purposive: source of funding, type of activities, community embeddedness	
Observations	VCS physical activity programme (12 hours)	Purposive: uptake and potential relevance for T2D prevention	To investigate how practices and activities unfolded in 'naturally occurring' community contexts
	VCS weight management programme (8 hours)		
	VCS meetings (10 hours)	Monthly VCS meetings held by local VCS organisations, LWs and community navigators	
	NDPP sessions (6 hours)	Privately delivered NHS T2D prevention programme	
Documents	Related to the SP scheme, NDPP programme and VCS organisations (descriptions of activities on offer, target population, eligibility criteria, and evaluation reports).		To provide historical and contextual insight about SP and NDPP

SP: Social Prescribing. NDPP: NHS Diabetes Prevention Programme. T2D: type 2 diabetes. VCS: Voluntary and Community Sector. HCA: Health Care Assistants.

Interviews and observations were initially conducted remotely (online or over the phone) and later shifted to face to face in compliance with Covid19 safety measures. While online methods contributed to enhancing participation and increasing the likelihood of obtaining the desired sample (by reducing the burdens of time and cost of participating in research), they also risked excluding participants with limited digital literacy or access (280). Remote data collection methods also raise privacy challenges and presume the availability of a private and quiet space (281). A recent scoping review also highlighted that online methods may reduce the richness of data gathered and influence relational satisfaction and consensus development (282). I tried to mitigate these potential barriers through mindful and consultative technological and logistical choices. I prioritised participants' preferences and took the lead from them (and their suggestions) to maximise inclusion.

5.3.4.1.1. Semi-structured interviews with Social Prescribing users at high risk of Type 2 Diabetes

Eight SP users at high risk of T2D were purposively selected and interviewed based on their age, gender, ethnicity, and degree of participation in SP activities (see Appendix 8 for further detail). A patient recently diagnosed with T2D was also interviewed, as they were thought to be able to provide relevant information about their known previous high-risk state and diagnosis. Link workers identified eligible participants, explained the purpose of the study and shared written information with those interested. All potential participants were offered as much time as they wished to consider their involvement in the study. If they were agreeable, the interview mode (online or over the phone) and date were decided according to participants' preference and availability.

Box 5.2. shows a summary of the interview structure. Further details on the qualitative interview guides, participant information sheets and consent forms are provided in Appendix 9. One participant requested to be interviewed with a Bengali interpreter. Following best practice recommendations for qualitative cross-cultural interviewing (283), the interpreter was informed about the research topic, interview technique and questions beforehand. They were asked to avoid interruptions and translate as literally as possible (verbatim translation) while also focusing on the essential meanings of the spoken words.

Box 5.2. Summary of the interview structure with SP users

- **Introduction to the interview,** mentioned that
    - interviews were to be audio-recorded; how the recordings were to be used, transcribed and stored; assurance of anonymity and confidentiality; and participants' right to interrupt or withdraw from the interview.
- **Interview schedule,** covered the following thematic domains
    - participants' personal experience with SP and different actors involved (e.g., general practitioners/referrers, LWs and community resources),
    - patients' understanding of T2D and their personal struggles and strategies in preventing the condition, and
    - perceived impact of the 'SP experience' on their wellbeing and care needs (including those related to T2D).
- **Interview closure**, included
    - clarification questions
    - interviewees were offered a £30 voucher in appreciation for their participation

5.3.4.1.2. Semi-structured interviews with link workers

Eleven link workers were purposively selected based on their type of contract, time in the job post, time worked in Tower Hamlets and demographic characteristic, including age, gender and ethnicity (see Appendix 8 for further detail). The backgrounds and working conditions of link workers were found to influence SP delivery in meaningful ways in the realist review (Chapter III). A sample with individuals from these different target groups was, therefore, considered key to exploring these underlying dimensions.

The study was presented at an internal meeting that link workers held with their managers fortnightly. Following that presentation, link workers were contacted directly by email with an invitation letter and further written information about the study. If they were agreeable, the interview mode (online or over the phone) and date were decided according to participants' preference and availability. Box 5.3. offers a summary of the interview structure (refer to Appendix 9 for further details). While similar questions were asked in every interview, the sequence as well as the level of probing for information varied. As the level of understating about the research topic increased (including unexpected findings), the initial topic guide was modified and/or expanded with additional questions.

Box 5.3. Summary of the interview structure with link workers

- **Introduction to the interview,** mentioned that
    - interviews were to be audio-recorded; how the recordings were to be used, transcribed and stored; assurance of anonymity and confidentiality; and participants' right to interrupt or withdraw from the interview.
- **Interview schedule,** covered the following thematic domains
    - link workers' role and practical implications,
    - their experiences, expectations and attitudes towards SP and their interactions with patients and different actors involved,
    - their understanding of T2D risk and its high prevalence in the local area, and
    - their experience with (and reflections on) patients at high risk of T2D referred into SP
- **Interview closure**, included
    - clarification questions and acknowledgements

5.3.4.1.3. Semi-structured interviews with primary care clinicians

Eleven primary care clinicians were purposively selected to ensure variety in terms of professional profile, workplace, type of contract, seniority and sociodemographic characteristics, such as age, gender and ethnicity (see Appendix 8 for further detail). Sampling drew on existing evidence showing significant variation in referral rates across different professional backgrounds in Tower Hamlets (91). Similarly, primary care workers' involvement in T2D prevention and healthy lifestyle varies depending on their role (e.g., nurses and health care assistants tend to be more involved in lifestyle advice as part of long term condition annual reviews) (284). I also drew on realist review findings (Chapter III) suggesting an association between practitioners' type of contract and their opportunities to become aware of patients' underlying social circumstances and provide holistic SP.

Potential participants were contacted directly via email with an invitation letter and written information about the study aim, characteristics, and interview process. The interview mode (online or over the phone) and date were arranged according to their preference and availability. Box 5.4. offers a summary of the interview structure (refer to Appendix 9 for further details).

Box 5.4. Summary of the interview structure with primary care clinicians

- **Introduction to the interview,** mentioned that
  - interviews were to be audio-recorded; how the recordings were to be used, transcribed and stored; assurance of anonymity and confidentiality; and participants' right to interrupt or withdraw from the interview.
- **Interview schedule,** covered the following thematic domains
  - referrers' experiences, expectations and attitudes towards SP,
  - their relationship with the different actors involved,
  - their understanding of T2D risk and its high prevalence in the local area, and
  - the actual and potential role of SP in T2D prevention, including any comparisons and/or interactions with NDPP.
- **Interview closure**, included
  - clarification questions and acknowledgements

5.3.4.1.4. Semi-structured interviews with VCS organisations

Thirteen different VCS members were purposively recruited based on the organisations' source of funding, types of activities on offer and seniority in Tower Hamlets (see Appendix 8 for further detail). The sampling strategy was based on available literature suggesting that the source of funding can influence the quality and potential of SP activities (194,196). Similarly, I was guided by realist review findings (Chapter III), revealing how the variety of services provided and the level of community involvement of organisations (in terms of knowledge and understanding of the needs, dynamics and priorities of the local population) can influence the relevance, appropriateness and accessibility of SP schemes in primary care(93). A list of VCS organisations accessed through SP since service roll-out was obtained from an internal evaluation report (91). Organisations were then emailed directly with an invitation letter and a summary of the study. The interview mode (online or over the phone) and date were decided according to participants' preference and availability. Box 5.5. offers a summary of the interview structure (further details are provided in Appendix 9).

Box 5.5. Summary of the interview structure with VCS organisations

- **Introduction to the interview,** mentioned that
    - interviews were to be audio-recorded; how the recordings were to be used, transcribed and stored; assurance of anonymity and confidentiality; and participants' right to interrupt or withdraw from the interview.
- **Interview schedule,** covered the following thematic domains
    - the characteristics and scope of the organisation and activities,
    - their experience with SP and relationship with the different actors involved (including primary care clinicians, link workers, rest of VCS organisations and commissioners),
    - their understanding of T2D risk and its high prevalence in the local area, and
    - their experience with (and reflections on) patients at high risk of T2D referred into their organisation.
- **Interview closure**, included
    - clarification questions and acknowledgements

5.3.4.1.5. Observation of Social Prescribing community-based activities, NDPP and VCS meetings

The study also drew on 36 hours of ethnographic observations of community-based SP activities (including a holistic weight management and a physical activity programme), privately delivered NDPP sessions, and VCS meetings. Further details on the characteristics of the activities observed are provided in Appendix 8. Observations were arranged in advance with the selected VCS organisations and NDPP provider. Before the sessions commenced, the activity instructors introduced the study and myself as a local GP and main researcher to all the attendees. The introduction mentioned that sessions would be observed by myself, that I would likely make field notes relevant to the research study; how the field notes were to be used and stored; assurance of anonymity and confidentiality; and participants' right to withdraw from the study at any point and without giving a reason. Participants were also given the opportunity to ask any further questions about the study before continuing.

During fieldwork, I was involved in the activities taking place while also observing them ("*participant as observer*" (285)). Observations of community-based SP activities and NDPP sessions focused on participants' behaviours, characteristics of activities, segments of dialogues between actors and contextual features. As for the VCS meetings, special attention was paid to the interaction between participants and their roles and behaviours within self-organised (potentially 'informal') group settings. The approach, however, remained open to unexpected dimensions and was redefined iteratively as data were gathered and analysed (277). Observations were recorded initially as handwritten detailed verbatim field notes with time markers. These notes were supplemented with post-observation summaries generated immediately after the observations and comprised reflections on my own feelings and the situations observed (103). I also kept a field diary to detail events, personal reactions to events, and changes in my views over time.

5.3.4.1.6. Documents

Written information about local VCS organisations was also sought, including descriptions of the activities on offer, intended audience, eligibility criteria and accessibility issues. Documents provided relevant context to the research inquiry and allowed for the identification of patterned similarities and differences across VCS organisations and the delivery (and commissioning) of SP at different points in time. I was invited to join a local VCS mailing list in January 2021, where information on available activities and services was regularly shared. Websites of the local VCS organisations, as well as SP and NDPP evaluation reports and policy documents were also reviewed.

5.3.4.2. Qualitative data analysis

The interview transcripts, fieldnotes, and documents were initially analysed thematically as they were collected to allow for iterative modifications to the interview guide and sampling strategy. The data analysis followed six iterative stages guided by Braun and Clarke's framework: repeated reading, development of initial codes, generation of themes, review and naming of themes, and writing (286).

To ensure accuracy, all transcriptions were read along with the original audio recordings. The entire data set was actively examined, searching for meanings, patterns, and connections. Initial codes were manually generated by highlighting significant features of the data related to the research objectives, including explanations of what 'good' practice in SP relevant to T2D prevention entailed and how it compared to the NDPP service. I first organised the data to identify patterns in its semantic content. Then, I explored the meaning and significance of these patterns by relating them to available literature, gradually progressing from description to interpretation.

The analysis followed a broadly deductive approach to test and refine previous realist review findings. This included testing the applicability of the SP archetypes identified in Chapter III to the specific context of T2D prevention. The analysis also combined a more inductive analysis to explore new and unexpected findings related to the specific intervention and local contexts (286). Contradictory findings and inconsistencies were carefully examined, while maintaining an inclusive approach to preserve context. Further analysis involved organising codes into potential themes and identifying relationships between codes, themes, different levels of themes, and the wider context. Writing was an integral part of the analysis, providing evidence of how data supported, refuted, or refined program theories. NVivo V.10 software supported data management.

5.3.5. Integration of quantitative and qualitative findings

Data were integrated using visual means (*joint display integration*), which enabled drawing new insights beyond the information gained from the separate quantitative and qualitative results (287,288). Referral patterns and practices were further contextualised in light of rich qualitative data to develop explanations of how and why they occurred and their meaning for people at high risk of T2D. At this point, a realist logic of analysis was applied, which involved making inferences about whether different components of the data were functioning primarily as context, mechanism or outcome (and the relationships between them) (141). Using CMOCs as a sensitising device, I formulated context-specific explanations of what constituted good practice in SP for T2D prevention, the reasons behind it, who it was suitable for, and under what circumstances, including its potential to inform and complement NDPP.

5.4. Ethical considerations

The study was approved by London - Bromley NHS Research Ethics Committee (REC) and Health Research Authority (HRA) (reference: 20/LO/0713). All participants signed a written informed consent to participate in the study. Although the quantitative study did not require NHS REC approval given the anonymised nature of data, a detailed protocol was included in the ethics application for transparency.

5.5. Results

The extent to which patients at highest risk of T2D were referred to SP (quantitative findings) and the mechanisms by and contexts in which this occurred (qualitative findings) are explained below.

5.5.1. Referral and non-referral to Social Prescribing in a population at high risk of Type 2 Diabetes: quantitative findings

A total of 447,360 people eligible for SP were enrolled during December 2016 and February 2022. Over a median follow-up period of 4.5 years, 15,450 referrals into SP were observed (1,604,194 person-years). As shown in table 5.2, people referred into SP were more likely to be female (RR 1.74 (95% CI 1.68–1.80)), socio-economically deprived (RR 2.18 (95% CI 1.97–2.40)), black (RR 2.02 (95% CI 1.90–2.15), south Asian (RR 2.27 (95% CI 2.18–2.36) or Arab (RR 2.54 (95% CI 2.07–3.13)) than the general population eligible for the service. Those at high risk of T2D were four times more likely to be referred to SP (RR 4.31 (95% CI 4.17-4.46)), with adjustment for socio-demographic variables attenuating the association (RR 1.33 (95% CI 1.27–1.39)). Similarly, people living with long-term conditions (including cardiovascular diseases (RR 4.67 (95% CI 4.35-5.01)), obesity (RR 3.15 (95% CI 3.05-3.26)), mental health conditions (RR 4.70 (95% CI 4.54-4.85))) and multimorbidity (RR 5.53 (95% CI 5.35-5.71)) were at higher risk of SP referral, which also attenuated with adjustment for socio-demographic variables (see figure 5.2.a and Appendix 10: table S2).

Of the total population eligible for SP, 41,378 (9.2%) were identified as high risk of T2D and were, therefore, included in cohort study 2. The median follow-up period for these high T2D risk individuals was 5.2 years, which resulted in 5,226 referrals into SP (164,614 person-years). The pattern of findings for high-risk patients was similar to the general population. As shown in table 5.3, those referred into SP were more likely to be female (RR 1.54 (95% CI 1.46–1.64)), socio-economically deprived (RR 1.83 (95% CI 1.53–2.19)), and south Asian (RR 1.16 (95% CI 1.08–1.25)). Similarly, living with cardiovascular disease (RR 1.43 (95% CI 1.31-1.55)), obesity (RR 1.30 (95% CI 1.23-1.37)), mental health conditions (RR 2.31 (95% CI 2.18-2.45)) or multimorbidity (RR 1.98 (95% CI 1.88-2.10)) significantly increased the risk of being referred into SP. Adjustment for confounders, however, resulted in a lower attenuation, suggesting greater homogeneity in terms of socio-demographic features across this high-risk sample (figure 5.3.b and Appendix 10: table S3). In all cases referral rates were higher at older ages and during the first year of service roll-out (December 2016-December 2017) (Appendix 10: tables S4 and S5).

Sixty-seven percent (27,928) of people at high risk of T2D met the eligibility criteria for NDPP and were, therefore, included in the cross-sectional study. Of these people, 11% (3,015) had been referred to SP, 10% (2,899) to NDPP and 2% (518) to both services. As shown in table 5.4, patients referred into SP were significantly more likely to be female (OR 1.99 (95% CI 1.78–2.24)) and socioeconomically deprived (OR 2.12 (95% CI 1.56–2.88)) than those referred into NDPP, but less likely to be south Asian (OR 0.48 (95% CI 0.41–0.56)), black (OR 0.46 (95% CI 0.37-0.56)) or Chinese (OR 0.14 (0.07-0.27)). Supporting the findings from previous cohort studies, people diagnosed with mental health conditions (OR 3.25 (95% CI 2.86-3.69)) or multimorbidity (OR 1.80 (95% CI 1.63-2.00)) were also more likely to be referred into SP. Adjustments for the covariates identified in the DAG did not alter the results substantially (Figure 5.3.c and Appendix 10: table S6).

Table 5.2. Cohort study 1: Distribution of sociodemographic characteristics within the total study population and their association with referral into SP.

Variables		Total N 447,360 (n.%)	Events (SP) N 15,454 (n.%)	Rates per 1000 P/Y (95% CI)	RR (95% CI)	p value	RR* (95% CI)	p value (adj)
Gender	Male	219,795 (49.1)	5,990 (38.8)	7.5 (7.3-7.7)	1	<0.001	1	<0.001
	Female	227,498 (50.9)	9,462 (61.2)	11.8 (11.5-12.0)	1.57 (1.52-1.62)		1.74 (1.68-1.80)	
	Missing	67 (0.01)	2 (0.01)					
Age	Median (IQR)	33 (28, 42)	43 (33, 57)					
Ethnicity	White	184,631 (41.3)	5,031 (32.6)	7.5 (7.3-7.7)	1		1	
	South Asian	93,722 (21.0)	5,513 (35.7)	15.5 (15.1-15.9)	2.07 (1.99-2.15)	<0.001	2.27 (2.18-2.36)	<0.001
	Chinese	16,191 (3.6)	77 (0.5)	1.4 (1.1-1.8)	0.19 (0.15-0.24)	<0.001	0.25 (0.20-0.32)	<0.001
	Black	18,298 (4.1)	1,290 (8.4)	19.1 (18.1-20.2)	2.55 (2.40-2.72)	<0.001	2.02 (1.90-2.15)	<0.001
	Arab	1,931 (0.4)	91 (0.6)	16.6 (13.6-20.4)	2.22 (1.81-2.73)	<0.001	2.54 (2.07-3.13)	<0.001
	Mixed/ other	23,491 (5.3)	694 (4.5)	9.1 (8.5-9.9)	1.22 (1.23-1.32)	<0.001	1.37 (1.26-1.48)	<0.001
	Missing	109,096 (24.4)	2,758 (17.9)					
IMD quintiles	1st and 2nd (most deprived)	371,964 (83.2)	14,167 (91.7)	10.6 (10.4-10.8)	2.13 (1.98-2.28)	<0.001	2.18 (1.97-2.40)	<0.001
	4th and 5th (least deprived)	31,064 (6.9)	462 (3.0)	4.1 (3.6-4.5)	1		1	
	Missing	3,372 (0.8)	15 (0.1)					

*Adjusted (adj) by the remaining sociodemographic variables (gender, ethnicity, IMD) and time variables (age, year). IMD: Index of Multiple Deprivation. IQR: Interquartile Range.

Table 5.3. Cohort study 2: Distribution of sociodemographic characteristics within the study population at high risk of type 2 diabetes and their association with referral into SP.

Variables		Total N 41,378 (n.%)	Events (SP) N 5,226 (n.%)	Rates per 1000 P/Y (95% CI)	RR (95% CI)	p value	RR* (95% CI)	p value (adj)
Gender	Male	20,419 (49.4)	2,127 (40.7)	25.5 (24.5-26.7)	1	<0.001	1	<0.001
	Female	20,957 (50.8)	3,099 (59.3)	38.1 (36.8-39.5)	1.49 (1.41-1.58)		1.54 (1.46-1.64)	
	Missing	2 (0.0)	0 (0.0)					
Age	Median (IQR)	52 (43, 64)	55 (45, 66)					
Ethnicity	White	11,253 (27.2)	1,494 (28.6)	32.0 (30.4-33.6)	1		1	
	South Asian	19,406 (46.9)	2,469 (47.2)	32.7 (31.4-34.0)	1.02 (0.96-1.09)	0.489	1.16 (1.08-1.25)	<0.001
	Chinese	533 (1.3)	23 (0.4)	10.6 (7.1-16.0)	0.33 (0.22-0.50)	<0.001	0.36 (0.24-0.64)	<0.001
	Black	3,275 (7.9)	469 (9.0)	35.1 (32.0-38.4)	1.10 (0.99-1.22)	0.080	1.10 (0.99-1.23)	0.069
	Arab	142 (0.3)	24 (0.5)	43.8 (29.3-65.3)	1.37 (0.92-2.05)	0.126	1.49 (0.99-2.24)	0.053
	Mixed/ other	1,352 (3.3)	177 (3.4)	33.9 (29.3-39.3)	1.06 (0.91-1.24)	0.460	1.11 (0.95-1.30)	0.178
	Missing	5,417 (13.1)	570 (10.9)					
IMD quintiles	1st and 2nd (most deprived)	37,283 (90.1)	4,878 (93.3)	32.9 (32.0-33.9)	1.90 (1.59-2.27)	<0.001	1.83 (1.53-2.19)	<0.001
	4th and 5th (least deprived)	1,813 (4.4)	127 (2.4)	17.4 (14.6-20.6)	1		1	
	Missing	31 (0.1)	3 (0.1)					

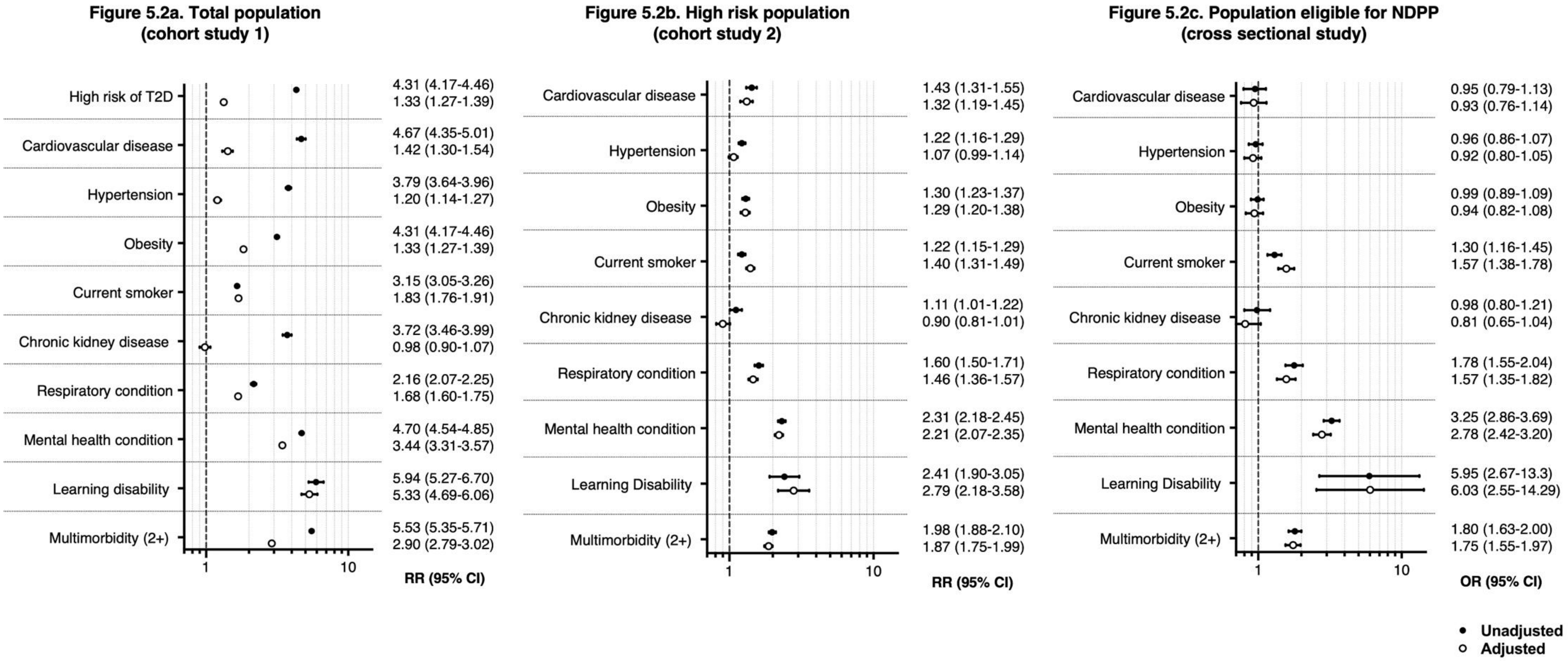
* Adjusted (adj) by the remaining sociodemographic variables (gender, ethnicity, IMD) and time variables (age, year). IMD: Index of Multiple Deprivation. IQR: Interquartile Range.

Table 5.4. Cross sectional study: Distribution of sociodemographic characteristics amongst patients eligible for NDPP and their association with referral into SP compared to NDPP.

Variables		No referral 21,483 (n.%)	Only SP 3,028 (n.%)	Only NDPP 2,899 (n.%)	Both 518 (n.%)	OR (95% CI)	p value	OR* (95% CI)	p value (adj)
Gender	Male	10,006 (46.6)	1,182 (39.0)	1,587 (54.7)	213 (41.1)	1		1	
	Female	11,476 (53.4)	1,846 (61.0)	1,311 (45.2)	305 (58.9)	1.38 (1.28-1.50)	<0.001	1.99 (1.78-2.24)	<0.001
	Missing	1 (0.01)	0	1 (0.1)	0				
Age median (IQR)		49 (39, 60)	53 (43, 63)	52 (44, 61)	54 (46, 64)	1.00 (0.99-1.01)	0.129	0.99 (0.99-1.01)	0.590
Ethnicity	White	5,689 (26.5)	831 (27.4)	490 (16.9)	92 (17.8)	1		1	
	South Asian	9,873 (46.0)	1,465 (48.4)	1,542 (53.2)	266 (51.4)	0.56 (0.49-0.64)	<0.001	0.48 (0.41-0.56)	<0.001
	Chinese	342 (1.6)	12 (0.4)	46 (1.6)	6 (1.2)	0.15 (0.08-0.29)	<0.001	0.14 (0.07-0.27)	<0.001
	Black	1,664 (7.8)	259 (8.6)	289 (10.0)	58 (11.2)	0.53 (0.43-0.65)	<0.001	0.46 (0.37-0.56)	<0.001
	Arab	76 (0.4)	13 (0.4)	7 (0.2)	2 (0.4)	1.10 (0.43-2.76)	0.848	1.03 (0.41-2.62)	0.944
	Mixed/other	775 (3.6)	104 (3.4)	81 (2.8)	18 (3.5)	0.76 (0.55-1.03)	0.080	0.68 (0.50-0.93)	0.017
	Missing	3,064 (14.3)	344 (11.4)	444 (15.3)	76 (14.7)				
IMD quintiles	1st and 2nd (most deprived)	19,092 (88.9)	2,838 (93.7)	2,631 (90.7)	477 (92.1)	1.78 (1.33-2.39)	<0.001	2.12 (1.56-2.88)	<0.001
	4th and 5th (least deprived)	1,115 (5.2)	74 (2.4)	122 (4.2)	17 (3.3)	1		1	
	Missing	19 (0.1)	3 (0.1)	4 (0.1)	0 (0.0)				

OR comparing referral into only SP with referral into only NDPP (baseline category). * Adjusted (adj) by the remaining sociodemographic variables (gender, age, ethnicity, IMD). IMD: Index of Multiple Deprivation. IQR: Interquartile Range. NDPP: NHS Diabetes Prevention Programme.

Figure 5.2. Distribution of clinical features and their association with referral into SP amongst the total study population (figure 5.3.a), people at high risk of T2D (figure 5.3.b) and those eligible for NDPP (figure 5.3.c).



5.5.2. How did Social Prescribing contribute to meeting the complex health and social needs of people at high risk of Type 2 Diabetes? Qualitative findings

Qualitative data analysis led to the identification of four mechanisms that contributed to higher SP referral rates among patients at high risk of T2D with the greatest health and social vulnerability. Findings were informed by preliminary programme theories presented in Chapter III, which were further refined, tested and developed using rich empirical data:

5.5.2.1. Accessible Social Prescribing: Type 2 Diabetes prevention as an inclusive and proactive care process

Unlike NDPP, SP had broad eligibility criteria (any patient 18+ and registered with a local GP could be invited). Lack of requirements for tests or medical assessments prior to a referral made the service easier to consider by referrers during routine consultations: "*there's no restrictions. We don't have like; your blood pressure has to be this. Your weight has to be this. We can just refer*." [nurse 01.8]. Yet, although patients were not necessarily referred based on their T2D risk, they often ended up accessing services relevant to its prevention: *"[…] he was pre-diabetic and he was very, very overweight, which wouldn't surprise me because often these conditions go together. Through [name of physical activity programme] and the support he got, he lost a lot of weight. His sugar levels were much more normal, things like that. I think that's a good example of where he wasn't actually there for the diabetes side but actually it really helped him more generally." [VCS 03.9].*

Qualitative findings also revealed that patients often lacked confidence, felt guilty or helpless to reach out and access the services they required. As expressed by a patient referred into SP: *"I know how to contact her* [the link worker] *but you know, […] I don't want to feel that you know – I feel a bit guilty really that I didn't follow up on a lot of the information that she gave me." [SPU 04.1].* Additional support was often needed to help them navigate and reach SP. Strategies included scheduling regular follow ups with link workers, filling in referral forms in primary care (instead of signposting or encouraging self-referrals) or creating friendly and welcoming environments in the VCS with the help of volunteers, buddy systems and/or information packages, amongst others. However, the relationship between the provision of support and patients' access or engagement was non-linear and hence unpredictable. Patients often failed to respond, did not turn up to sessions or refused to carry on despite these supportive environments. Making services accessible in such situations often relied on providers' capacity and willingness to be tenacious and attentive: *"She* *persevered, even though there would have been times when I did not pick up that phone and I did not want to talk to [name of link worker] or anyone. Yet again she would try and she would always inform me that 'I could not get hold of you today, I will try in another five or six days' time' and she always kept her promise." [SPU 04.3].* Accessibility was no longer a static service attribute, but rather a proactive (*creative* and *ongoing*) process through which providers tried to overcome existing barriers and find ways to bring services closer to the patient.

5.5.2.2. Holistic Social Prescribing: Type 2 Diabetes prevention as a dynamic and personalised practice

Providers throughout the SP referral pathway proactively explored patients' wider socio-economic circumstances in search of concerns influencing their wellbeing and clinical presentations. Open conversations led to diverse courses of action, depending on the identified priorities. This broadened the scope and understanding of T2D prevention beyond lifestyle recommendations to also include services related to employment, housing or welfare advice, amongst others: *"It's not just about 'I want to change my diet', it will be looking at the barriers to them changing the diet. We might refer for the diet and exercise classes, but we'll also refer to English classes and things like that." [nurse 01.8]*. Providers tried to widen and diversify the remit of available services to better accommodate patients' multiple, intertwined needs (e.g., by providing in-house legal advice alongside physical activity programmes, up-skilling link workers on relevant domains (such as, health coaching, welfare advice) or even bringing welfare advisors and lifestyle programmes into GP practices): *"for example on a Thursday it'd be the advisor here and the receptionist would say, come and see the advisor in the surgery at that time. They'd make an appointment with them in the same way you'd make an appointment with the nurse. That's excellent service." [VCS 03.9].*

Instead of adhering to stablished, pre-defined ways of working, the study identified joint attempts to work around patients' complex life circumstances and adapt services accordingly. This involved prioritising patients' context and the provision of support over the specific content and consistency of lifestyle recommendations: *"It's not specifically saying, this is what you must do for cholesterol. This is what you must do for diabetes. Very often the advice is the same anyway. […] the issue is not about the actual specific condition, it's more about getting that peer support to help that person manage whatever's going on for them in their life. [VCS 03.9]*. Some patients needed "*taking*" ("*I took patients on walking groups [...], just so that they go. […] I've taken a patient to an ESOL class because she didn't want to go alone. So, I just took her to the first one."* [LW 02.5]), while others needed to be listened to (*“Sometimes also we receive referrals where they do not want any help; all they want is someone to listen to them.” [LW 02.8])* or somebody to whom they could feel accountable (“*I just needed somebody in a way to whom I could be answerable, if that sounds strange”* [SPU 04.4]). Some patients preferred medicalised preventative approaches (where information about disease risks and anthropometric measurements were considered), while others responded better to “*subtle*” (opportunistic) lifestyle recommendations or regular follow-ups by health care assistants in primary care (instead of being referred into community-based lifestyle programmes).

5.5.2.3. Sustained Social Prescribing: Type 2 Diabetes prevention as an ongoing and unpredictable struggle

Patients reported that their capacity to follow a ‘healthy’ lifestyle fluctuated over time, highly conditioned by the amount and consistency of support they received. Many patients had tried different weight management or physical activity programmes, managed to lose wight while being supported and then relapsed as the intensity of interventions decreased. Critically, the lack of a long-lasting response was interpreted by patients as a personal failure rather than a deficiency of the services in place or a consequence of underlying structural constrains (e.g., poverty, food insecurity, obesogenic environments, etc): *“when I did the [name of weight management programme] I’d gone down to 97kgs and that’s the best I ever did in my entire life. In the entire 35 years of my life that was the best I’d done and I felt great and I was a good size 18 and I was so happy. Then within stopping that programme because it’s again, for me, I think I lack and I don’t think it’s the services, for me I start something but […] I never sustain that, I never maintain anything. So, […] within a year I put all that back on plus more. So, it’s been very difficult.” [SPU 04.3]*

Regular services, conversely, allowed for the provision of ongoing support. Patients could build on previous work and share the burden of (and, hence, better cope with) critical social and health constrains: *“I just felt a little bit better that I’m not dealing with this on my own” [SPU 04.3]*. Continuity of care allowed providers to monitor patients progress (or lack thereof) and adapt their approach and next steps accordingly. “*Testing and trying”* involved making the erratic nature of prevention, as well as the limitations of existing interventions explicit beforehand. Acknowledging that interventions could fail, be insufficient or inappropriate prevented unrealistic expectations and shifted the responsibility of any potential failure from the individual to the intervention: *“So, I think what the prescriber was saying was ‘my resources are limited and you could go to this walk-in* *therapy and hate it and that's okay, you'd come back and tell me'. But I think so often people are referred to a social prescriber and they take up one offer and that doesn't work and so they think nothing will work."* [SPU 04.4]

Ongoing services allowed for the development of meaningful ("*therapeutic*", "*trustful*") relationships with patients, across sectors and among attendees in group sessions: *"a lot of people have been coming for 10 plus years, so they've built up these really good bonds with each other. So, not only are we looking out for them but they're looking out for each other" [R1 VCS 03.2].* Patients were made aware that *"there [was] somebody there for them" [LW 02.5],* which proved reassuring and had therapeutic effects by itself: *"just knowing that there's people available for us" [SPU 04.2].* It counteracted feelings of helplessness and mistrust towards a system that had previously let them down *("if [the service] stops it's like, 'oh they're the same as everyone'." [VCS 03.8])* and provided some stability within a context of great service and staff turnover (both within the health sector and the VCS): *"with many services in the community coming and going, […] even in the NHS as well, programmes with different names each year, I think there's real benefit in having someone stable, by having a known person in a GP surgery that they can come to whenever there is a change in their life situation because that often provides that window of opportunity to really change something." [LW 02.2]*

5.5.2.4. Integrated Social Prescribing: Type 2 Diabetes prevention as a locally embedded and joint endeavour

Bidirectional communication across sectors and professional boundaries allowed providers to develop greater knowledge on patients' needs, "*build on other's work*" and deliver consistent care. Clinicians became increasingly aware of patients' "*underlying story*" and able to adapt care practices accordingly because of the information that link workers had shared: *"I quickly realised how much the GPs are really struggling to know what the story is behind the medical record and […] just by sharing a few lines, […] 'well actually this person had an accident last year or lost their job', just very simple things that make us able to humanise people and their choices." [LW 02.2].* Patients' medical notes provided link workers with "*a two-sided approach*" and relevant "*context*" ("*background information")* over which they could build their assessment and recommendations. Similarly, VCS organisations often received key information with or prior to a referral on how best to support a patient by avoiding specific "*triggers*" that had already been disclosed. Communication channels across and within sectors were also used to flag those patients requiring closer, urgent attention

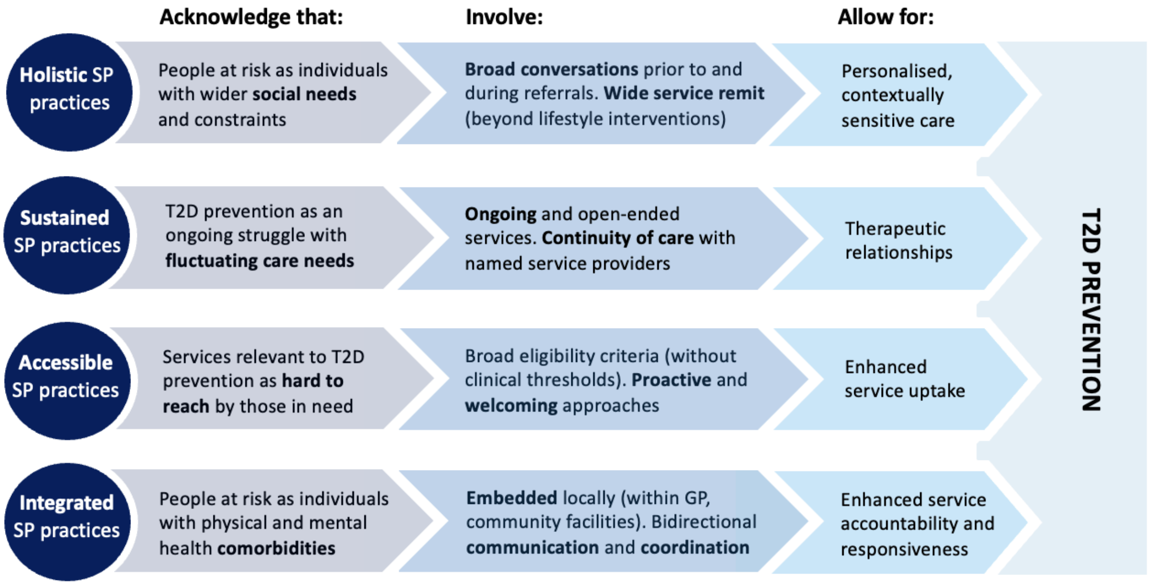
(*"Usually, they give us one- or two-lines feedback […] There's also something on the records […] and, for very specific people that I'm maybe a bit more worried about, I may just ask them to let me know what has happened"* [GP 01.1]) and/or reach out if they had not been contacted. Service providers became effective advocates by ensuring patients were not left behind and received the support they required: *"When I felt depressed about my weight and not getting any contact from the weight management programme, [name of link worker] was right on it sending emails and making telephone calls, whilst I was on the phone by the way, and getting in touch with them and saying 'look, I've got a patient here named… she's waited for that number of weeks, why has nothing come through?' So, I felt like the support was first-hand" [SPU 04.3]*

Integration (and embeddedness) within the local community and primary care system also enhanced the scope and responsiveness of services. Patients at risk of T2D ended up accessing physical activity programmes that would have been difficult to locate had it not been for the SP network ("*any kind of exercise programmes that we have running or any health sessions we try and send out to the GPs and that's where a lot of our referrals came from*" [VCS 03.2]). Link workers informed the development of VCS activities (e.g., lifestyle programmes, physical activity sessions) by sharing relevant information on identified needs and priorities and facilitated their development in local GP practices (*"we would often run services at GP surgeries to increase accessibility. For example, [name of GP practice] has a room, we'd meet in there"* [VCS 03.9]). Clinicians and link workers often worked together (and learnt from each other) to support patients with complex needs: "*if you're having any difficult patients, challenging, you can bounce off or you can say, 'How are you dealing with that patient?' Maybe in a different way and you see whether you can make sense of it or not*." [LW 02.4]. This not only led to greater service appropriateness but also strengthened the local community by creating new partnerships and opportunities: *"there's an opportunity here for us to develop physical and social activities together. So it's about doing things together and one of the – we use local residents who've become qualified instructors, we try to keep everything local [VCS 03.8]*.

5.5.3. Integration of quantitative and qualitative findings: primary care-based Social Prescribing as a means for successful individual-level Type 2 Diabetes prevention

Figure 5.3. brings together quantitative and qualitative findings by illustrating why and how primary care-based SP contributed to individual-level T2D prevention approaches relevant to patients in greatest social and health need. The four dimensions (represented as four horizontal lines) summarise the final CMOCs, which are described in more detail in Appendix 11.

Figure 5.3. Synthesis of study findings. How SP operates to deliver T2D prevention to those in greatest health and social need



Quantitative findings showed that more people at risk of T2D were referred to SP than to NDPP, which may be explained by highly supportive (*proactive*, *welcoming*) environments and broad (*inclusive*) referral criteria for SP as reported by interviewees and observations (CMOC1). Quantitative data also clearly showed that high risk patients referred into SP faced greater health and social vulnerability than the background eligible population. *Holistic* practices involved gaining understanding of these underlying health and social constraints (including what they meant for people at high risk) and providing tailored care and services accordingly. This was often achieved by holding broad conversations with patients and widening the scope and remit of available services (CMOC2). Following a 'healthy' lifestyle proved highly demanding for patients at high risk (especially where underlying drivers persisted) and hence benefitted from *sustained* (ongoing and open-ended) support by known and trustful service providers (CMOC3). Quantitative data also revealed that people at risk of T2D with multiple physical and mental health morbidities were more likely to be referred to SP than to NDPP and the qualitative data suggests that this likely reflects the integrated delivery of SP including cross-referrals, connected and seamless care within primary care and across sectors (CMOC4).

The identified *mechanisms* were interconnected and mutually dependent, meaning that they only became possible (and led to significant outcomes) when the remaining dimensions were present.

Holistic practices, for instance, were more than a set of questions asked in one consultation prior to a referral. They came about only over time (through *sustained* practice) as providers got acquainted with (and gained understanding of) the local population, their community and the specific patient involved. Similarly, providers were able to deliver proactive care and make sure services were *accessed* only through regular follow ups and timely feedback from other practitioners (*"I know she started because the [name of VCS organisation] updated me, so she has started." [LW 02.11])*. *Integrated* SP facilitated greater understanding of patients' circumstances, enhanced service responsiveness and allowed practitioners to address patients' needs *holistically*. Yet, far from representing a static structural dimension, it relied on trustful interpersonal relations and hence required time (*sustained* encounters) to be developed: *"I've built such a good relationship with* [VCS organisations], *and it's because you've been doing it for so long, you get to know people on the team as well because you're backwards and forwards with emails." [LW 02.5].*

5.6. Discussion

This mixed-method study, in a multi-ethnic, inner-city locality with high levels of deprivation, systematically illustrated how accessible, holistic, sustained and integrated SP practices in primary care contributed to higher SP referral rates among individuals at high risk of T2D with greatest health and social vulnerability.

Study findings suggest that community-embedded, highly supportive and inclusive SP approaches (without disease or diabetes-specific referral criteria) increased referral rates of high-risk patients to relevant health promotion and wellbeing activities (CMOC1). Reaching patients at greatest risk of T2D did not, therefore, depend on medical screening strategies to identify them. Instead, ensuring culturally appropriate, welcoming, locally accessible services conditioned the observed higher referral rates among those in greatest need. These findings align with a body of literature questioning "*screen and treat*" policies in T2D prevention (289). Screening strategies used in NDPP (HbA1c and fasting glucose) have shown low sensitivity and accuracy, which means that patients may receive an incorrect diagnosis while others are falsely reassured and not offered any intervention (85). Besides, healthy lifestyle promotion is likely to benefit most patients in multiple aspects of health and may, therefore, be offered to the whole population, while ensuring mechanisms to prioritise those in greatest need (also referred to as proportionate universalisms (290)). This research suggests that *accessibility* in T2D prevention (and SP) can be best understood as a twin process of identifying patients' needs and conditions (instead of risk levels) while finding ways to make services readily available to them, which often entailed ensuring highly supportive environments.

The study showed how patients' health-related behaviours (and consequent T2D risk) are contingent and socially patterned (291,292), and therefore amenable to change insofar as interventions are within patients' material reach, familiar to their existing social world and relevant to their life circumstances (293) (CMOC2). The literature has also shown mixed responses to similar T2D preventative strategies. For example, while some studies found that regular feedback regarding risk level prompted attendance to lifestyle interventions and successful behavioural change (294), others reported the opposite reaction, whereby obtaining new knowledge specific to patients' own risk elicited negative feelings and prevented further attendance (295,296). These inconsistencies confirm that different strategies work for different people and suggest (in line with study findings) that a personalised (*holistic*) approach which takes into consideration patients' specific (and changing) characteristics, priorities, expectations, and circumstances might be better suited to deliver effective individual-level T2D prevention (94,297).

The benefit of *sustained* approaches in T2D prevention (CMOC3) has been widely acknowledged in the literature (94,297). Participating in interventions often acts as a relevant motivator for change and may provide '*relief*' (and sense of fulfilment) for being committed and striving towards betterment, regardless of the outcome (298). Following healthy lifestyle recommendations may also be lived as an ongoing "*struggle*" (given underlying, persistent constraints) and hence benefit from continuous support (298). Trustful relationships with service providers (enabled through and within ongoing interventions) have also been found to help patients make informed decisions about their health and contribute to healthy lifestyle maintenance. Critically, short-term interventions may lead to feelings of "*frustration*", "*failure*", or "*guilt*" amongst participants for not achieving the intended (though arguably unrealistic) outcomes (293,299).

This study, in line with published literature, revealed that high-risk patients often suffered from co-morbidities (and multimorbidity), which made them require (and access regularly) primary health care (CMOC4). *Integrating* SP and T2D prevention into routine primary care allowed for opportunistic health promotion advice to those who might have contacted the GP regarding a different (yet, coexistent) concern (297,300). The study suggests that health promotion in primary care can be best understood and practiced as an ongoing and incremental process, instead of one-off interventions (301). Lastly, relying on community-based, local organisations (as opposed to external private providers, as was the case in NDPP) contributed to strengthening the local community (295,302). Services became "*more than a place*" in which patients were seen or referred into to be also conceived as "*community spaces*" in which meaningful social connection and community action could be engendered, whose benefits may transcend T2D prevention (303).

This study suggests that SP may offer an opportunity for individual-level type 2 diabetes prevention to become more inclusive, personalised and long term. Interestingly, this was achieved through the very same interlinked mechanisms that define the strength and essence of primary care (namely, comprehensiveness, continuity of care, contact accessibility and coordination, as defined by Starfield (304)). This parallelism reminds us that SP relevant to T2D prevention both requires and results in a strengthened primary care system. Such practices, however, did not happen in a cultural or historical vacuum. They were enacted within (and shaped by) an environment characterised by a long (and proud) history of partnership between the health sector and local voluntary, community and faith groups. In adapting and accommodating practices together (over time), SP became recognisable and relevant to all concerned.

5.6.1. Strengths and limitations

To my knowledge, this is the first study exploring the potential of SP in the context of preventative healthcare. I identified key ingredients that contributed to explaining how (and why) SP achieved higher SP referral rates among high-risk patients with greatest health needs and social vulnerability, while overcoming some of the limitations described in existing T2D prevention programmes. Another key strength of this study is the theoretically grounded, methodologically pluralistic design (51), derived from a previous realist (93) reviews of primary-care based SP literature (Chapters III). The use of a realist approach and the combination of qualitative and quantitative methodologies allowed me to define rich, concrete, context-dependent exemplars of 'good' practice in SP and T2D prevention.

The study has limitations. It was confined to a single locality with a particular history and ethos of social engagement and provider innovation. Findings might not, therefore, be applicable elsewhere—in particular the close and productive working relationships between public and third-sector organisations in this study site cannot be expected to occur everywhere. Quantitative data were restricted to referrals into SP (and/or NDPP) and did not, therefore, capture the extent to which patients actually engaged with SP or NDPP, the type and duration of activities accessed, subsequent actions or clinical outcomes. Qualitative findings, however, helped to mitigate these constraints by providing rich context and in-depth explanations, including the key ingredients for potentially successful individual-level T2D prevention and provided detailed accounts of how (and why) programmes may (or may not) work. The quantitative dataset also showed 24% of missing ethnicity data. Although this may have altered the real ethnic distribution of the cohort, the proportion of missing data is comparable to what has been reported in published studies involving electronic health records (305). Lastly, pandemic restrictions involved adaptations of both the intervention(s) (e.g., remote SP and NDPP sessions) and data collection strategies (e.g., holding some of the ethnographic observations and qualitative interviews remotely). This might have biased the sample towards less deprived and digitally literate participants. I sought to mitigate this by offering phone as well as video interviews and adapting interview schedules to meet individual circumstances, and by undertaking face to face interviews as soon as it was permissible and safe to do so.

5.7. Conclusions

People at high risk of T2D were more likely to be referred into SP than the eligible general population. Critically, more people at risk of T2D were referred to SP than to NDPP, which could be explained by the broad referral criteria for SP and highly supportive (proactive, welcoming) environments. Holistic and sustained SP allowed acknowledgement of patients' wider socio-economic constraints and the provision of long-term personalised services accordingly. The fact that SP was embedded within the local community and primary care infrastructure facilitated timely exchange of information and cross-referrals across providers, resulting in enhanced service responsiveness. This research revealed that SP may offer an opportunity for individual-level T2D prevention to shift away from standardised, targeted and short-term strategies to approaches that are increasingly personalised, inclusive and long-term. Primary care-based SP seems most ideally placed to deliver such approaches where practitioners, providers and commissioners work collectively to achieve holistic, accessible, sustained and integrated services.

5.8. Integration of findings with overall PhD research objectives and questions and remaining thesis Chapters

This realist mixed methods evaluation contributes to addressing PhD objectives 1 and 2 by defining what 'good' practice in SP relevant to T2D prevention looks like and its potential to meet the complex health and social needs of patients at high risk. Study findings clearly show that SP approaches that are holistic, sustainable, integrated and accessible are better placed to deliver individual-level T2D prevention approaches that are relevant (and available) to high-risk patients with greatest health and social vulnerability, who are typically not referred to existing T2D prevention programmes (NDPP).

The study findings also offer valuable insights into research questions 1 and 2 of the PhD by unravelling the key ingredients that make SP a potentially relevant T2D prevention strategy for high-risk patients with significant health and social needs. The study also directly addresses PhD objective 3 by highlighting that the effectiveness of SP is not inherent; instead, it depends on the collective efforts of practitioners, providers, and commissioners to achieve holistic, accessible, sustained, and integrated services.

This study builds upon the archetypical SP practices identified in the realist review (Chapter III) and refines them by applying them to the specific context of T2D prevention in a community at high risk. The *holistic* SP archetype remains relevant in the context of T2D prevention, offering insights into addressing patients' complex health and social needs effectively. The *relational* archetype, emphasising ongoing and open-ended interactions, has been further developed in this study to highlight the importance of continuity of care in *sustained* SP programs. The *redistributive* archetype has also been redefined as *accessibility*, considering proactive efforts to identify patients' needs and provide readily available services in supportive environments. Additionally, the realist evaluation revealed a new dimension not captured in the realist review: *Integrated* SP, explaining the importance of responsive and seamless care across providers. The individual, interpersonal, organisational and policy conditions and resources for good practice identified in the realist review are addressed, and further refined and applied to T2D prevention in the following Chapter. Building on the findings presented in this study, Chapter VI investigates context-specific barriers and enablers for the delivery of accessible, holistic, sustained and/or integrated SP practices in primary care.

Chapter VI. What does Social Prescribing relevant to Type 2 Diabetes prevention look like in practice? A qualitative case study informed by practice theory

6.1. Introduction

This chapter builds on the previous literature review and realist evaluation findings (Chapters III-V) to investigate how SP practices relevant to T2D prevention were enacted during routine service delivery. The realist mixed methods evaluation in Chapter V showed how (and why) accessible, holistic, sustained, and integrated SP practices in primary care contributed to T2D preventative approaches relevant (and available) to those in greatest health and social need. Building on this knowledge, Chapter VI was designed to investigate how such SP approaches relevant to T2D prevention were accomplished and enacted in everyday practice, including the negotiation and alignment of resources and conditions that might shape routine service delivery. Particular attention was paid to the individual, interpersonal, organisational, and institutional experiences and conditions that underpinned such enactments.

Although there is a growing body of literature investigating the effectiveness of SP in improving healthcare outcomes (including relating to T2D management (45,64,306)), its role in preventive healthcare has rarely been addressed. Questions also remain about how such outcomes are achieved within dynamic, emergent and contested health care and community contexts (63). Existing work on SP risks characterising the intervention as a "*black box*" where inputs and outcomes are measured without examining the processes of care and system conditions involved in achieving them (307). However, as argued in Chapter II, understanding the complex nature of routine service delivery is key to producing grounded explanations and rich theorisations, which have a greater potential to inform both local and transferable practice (51).

The triangle-shaped framework developed in Chapter III (figure 3.4.) suggested that SP could be best understood as a web of relational, dynamic, and situated '*practices*', where different stakeholders (with varied backgrounds, values and priorities) interact to achieve a range of outcomes, some of which are hard to predict (308). The discourse analysis review in Chapter IV highlighted how different ways of understanding and conceptualising SP influence the way stakeholders '*practice'* SP. The realist evaluation in Chapter V also contributed to unravelling the potential of holistic, sustained, integrated and accessible SP *practices* in supporting patients at high risk of T2D. Building on this knowledge, this study further interrogates the particularities and situatedness of everyday SP *practices*, how they are materially constrained or enabled, and their meanings and implications for both practitioners and patients at high risk of T2D (309).

6.2. Qualitative case study aims and objectives

This qualitative case study focused on the following aims and objectives:

Study aims:

1. To understand how SP practices relevant to people at high risk of T2D were enacted in a primary care and community setting serving a multi-ethnic, socioeconomically deprived population.
2. To theorise SP as a social practice and locate it within a body of theoretical literature including its individual (e.g. identity), interpersonal (relational), organisational and institutional dimensions.

Study objectives:

1. To explore the variety of practices on which the delivery of SP in Tower Hamlets depended.
2. To investigate the differential role of these SP practices in contributing to T2D prevention in the Tower Hamlets setting.
3. To identify the understandings, intentions and material arrangements allied to SP practices relevant to T2D prevention.

6.3. Methods

6.3.1. Theoretical background: Social Prescribing routines as practices

An organisational routine can be defined as "*a repetitive pattern of interdependent actions, involving multiple actors*" (310). Routines are the way organisational life is patterned, which makes them a fruitful and increasingly relevant unit of analysis in healthcare research (311–313), including that which explores SP. This study applies a practice theory lens to investigate SP routines, understand the principles that underpin (and explain) action and create opportunities for theoretical generalisations that might inform practice elsewhere (314). Practice theories emerge from a range of disciplinary traditions but share a common focus on individual action and judgements in context. They seek to understand the ways in which people engage in, negotiate and transform everyday activities shaped by specific social, cultural and material arrangements (315). Although practice theories cover a broad, non-unified area of scholarship, they are connected by a web of historical and conceptual similarities with specific implications for the study of organisational routines, such as SP (308,316).

First, a practice-based approach suggests that the basic units of analysis for understanding organisational phenomena are practices (309,316). This allows us to move beyond accounts that privilege individuals, interactions, institutions, structures, or systems in defining social reality. A practice theory orientation suggests that these phenomena can only be understood through the analysis of everyday life and activity, including how they are accomplished, enabled or constrained in practice (317). Second, practices are interconnected in various ways, constituting "*seamless assemblage, nexus or confederation of practices"* (316). For example, *Holistic SP* practices defined in Chapter V came about only over time (through *sustained* practice) as providers got acquainted with (and gained understanding of) the local population, their community and the specific patient involved. Practices are, therefore, mutually dependent. However, relations of mutual constitution do not imply equal relations, as not all practices have the same relevance, legitimacy, and opportunities to thrive and endure (314). Practice theories are, therefore, also interested in power asymmetries and conflict, and how they play out in specific organisational contexts (318). Third, and related to the above, the notion of mutual constitution implies that social orders (structures, institutions, routines, etc.) cannot be conceived without understanding the role of agency in producing them. Theories of social practice carve a specific space for individual initiative and performance, so that practicing is neither mindless repetition nor complete invention (319). Individuals create, resist, engage in conflict or acquiesce to domination to varying degrees within specific institutional, organisational, interpersonal and individual contexts (320,321). These different forces shape the enactment of routines, while creating scope for change and improvement (310,321).

This leads to another key concept proposed by Feldman and Pentland in their work on organisational routines to distinguish the abstract understanding of a practice (ostensive routine) and the creative and emergent nature of routines in practice (performative routine) (322). The ostensive aspect cannot encompass specific performances, "*because there are always contextual details that remain open—and must remain open—for the routine to be carried out*" (317). Similarly, performances of routines (specific actions taken by specific people in specific times and places) create, maintain and modify the script (or the ostensive aspect) while relying on it to guide, refer to and account for their performances (314). The interplay between the ostensive and performative aspects of routines presents a continual possibility for the emergence, selection, and retention of new practices, allowing routines to generate a wide range of outcomes, "*from apparent stability to considerable change*" (322). In investigating SP though a practice theory lens, this study sought to analyse the convergence and divergence between ostensive and performative routines, and the factors and forces involved in explaining variations. These potential variations allowed me to explore the scope (and conditions) for emergent practice, organisational learning, and innovation in SP. It also helped identify constraints, tension and potential for error in routine SP delivery.

Theories of social practice are well placed to illuminate the variety of practices on which the delivery of SP depends, including their differential role in supporting patients at high risk of T2D, which are key objectives of this study (objectives 1 and 2). The focus of practice theory on everyday life and activity also allows us to investigate how SP relevant to T2D prevention is accomplished, enabled or constrained in practice, including its meanings for the practitioners and patients involved (objective 3).

6.3.2. Study setting, intervention and data sources

This study applies a practice theory lens to the qualitative data collected and presented in Chapter V. As a reminder, I provide a summary of the study setting, characteristics of the local SP service and qualitative data sources in boxes 6.1 and 6.2.

Box 6.1. Summary of study setting and characteristics of SP service

- **Study setting.** Tower Hamlets, London, characterised by:
  - Great ethnic diversity, socio-economic deprivation, and poor overall and T2D-related health outcomes, despite high-quality primary and secondary care.
- **Characteristics of the local SP service:**
  - Eligibility criteria: all patients aged over 18, registered with a Tower Hamlets GP practice, and expressing a 'non-clinical' support need.
  - Link workers are either ascribed to (and managed by) single GP surgeries or Primary Care Networks (PCNs). Some PCNs and surgeries apply a guide to the maximum number of consultations a patient may have with a link worker (4 to 6), others place no restrictions.
  - Most VCS activities accessed through SP are related to lifestyle (such as exercise, healthy eating, and weight management) or welfare advice (such as, debt, benefits, housing issues). The duration of activities and support varies across different services.
  - During COVID-19 pandemic, the service adapted to factors such as remote-by-default policies for GP access and local agencies providing limited or restricted services.

Box 6.2. Qualitative data sources

- **Semi-structured interviews*,** with:
    - 11 primary care clinicians (GPs, nurses, a physiotherapist and health care assistant), 11 link workers and 13 local VCS organisations accessed through SP, 8 SP users at high risk of T2D.
- **Observations*** of:
    - community-based SP activities (including holistic weight management and physical activity programmes), VCS meetings and NDPP sessions (36 hours in total).
- **Documents** about**:**
    - the local SP scheme and VCS organisations, including descriptions of activities offered, target population, eligibility criteria, and evaluation reports.

*Interviews and observations were initially conducted remotely (online or over the phone) and later shifted to face to face in compliance with COVID-19 safety measures. Given the focus of this study on SP delivery routines, findings mostly drew qualitative data concerning SP service providers (including clinicians, link workers and VCS organisations). Semi-structure interviews with SP users contributed to a minor extent to data analysis.

6.3.3. Qualitative data analysis

The analysis of interview transcripts, fieldnotes, and documents was conducted thematically, drawing from theories of social practice (316) and Feldman's concept of organisational routines (322). Data analysis followed six iterative stages, as guided by Braun and Clarke's framework (286): repeated reading, development of initial codes, generation of themes, review and naming of themes, and writing.

The entire data set was actively read and re-read to identify meanings, patterns, and connections. Initial codes were manually generated by highlighting significant features of the data related to the research objectives, including meaningful variations in SP delivery, its relevance to T2D prevention, and context-specific enablers and constraints. I followed Nicolini’s Toolkit to Study and Represent Practice, which involved a reiteration of two analytic movements: *zooming in* on the details of specific practices and *zooming out* to examine their relationships in space and time (316). This approach allowed for a comprehensive characterisation of individual practices and an understanding of their interconnections and context-specific enablers, tensions, and constraints. A broadly deductive analytic approach was used to investigate whether the conditions, resources, and discourses identified in both literature reviews (Chapters III and IV) explained variations in routine SP delivery in a community at high risk of T2D. Concurrently, an inductive approach was applied to identify the specific practices on which the delivery of ‘good’ SP depended. To achieve this, I drew on Feldman's classification of organisational routines (*ostensive* vs. *performative*) to assess the degree of emergence and creativity of practices and their relevance to T2D prevention.

The iterative process of *zooming in* and *out* continued until a compelling explanation of available practices and existing variations was reached. I sought negative cases, contradictory findings, and inconsistencies within the data and discussed findings with the research team to enhance validity and rigour. Writing was an integral part of the analysis, and it was undertaken throughout the process to provide evidence of how data were used to develop, support, refute, or refine research themes. The NVivo V.10 software was used to facilitate efficient data management and storage.

6.4. Results

I identified three different, overlapping ways of *practising* SP, which showed varying degrees of potential in supporting patients at high risk of T2D (summarised in table 2). First, reflective reinvention (‘*I do what´s best’*) involved customising (and negotiating) new ways of delivering SP to fit local, context-specific needs and patients’ characteristics. Second, constrained provision (‘*I do what I can’*) implied resigning to available (often suboptimal) ways of delivering SP despite knowing they were neither ideal nor sufficient for patients at high risk. Third, acritical adoption (‘*I do as I’m told’*) meant conforming with established and expected ways of practising SP and not questioning these, regardless of whether they were aligned with patients’ best interests. Practices were shaped by providers’ beliefs, experience, and wider organisational and material constraints as explained in more detail below.

6.4.1. *‘I do what’s best’.* Reinventing Social Prescribing to accommodate patients’ needs

Providers shaped and co-created SP to adapt to new contexts and the needs of referred patients. This led to a highly creative and personalised practice, which seemed to evolve depending on providers’ situated judgements. As a VCS provider told me: *“[…] because we’re doing a lot more than what’s on the job description… it’s kind of evolved. The role has evolved. We always […] look at new ways of working”* [VCS 03.2]. This form of SP practice involved reflecting on patients’ needs and preferences, identifying (or even anticipating) potential barriers, weighting alternatives, and accommodating (reinventing) the intervention accordingly. Building on what already existed, providers imagined and attempted new ways of practicing, which often required “*going beyond*” what was available and expected. They showed great commitment to service betterment by setting high quality standards, revisiting stablished ways of working (including their own practice) and taking practical steps for improvement. Take the example of a link worker who kept (re)assessing his role after joining a new GP practice: *"So it was more about me trying to introduce myself […] see whether the approach that I'm taking or the approach that I inherited from my previous social prescriber* [is] *fit for purpose"* [LW 02.4].

The willingness and capacity to '*do what's best'* seemed to be bound to (and shaped by) providers' understanding of their profession, the remit of the wider SP service and the needs and realities of patients at high risk of T2D. They often opposed pre-established limits to their role and were indeed willing to expand its boundaries to better accommodate patients' needs. As one link worker told me: *"[…] for me, if someone said, you're doing health coaching, and would you like some additional training around prevention? Great"* [LW 02.7]. Some clinicians also assumed it was their own "*responsibility*" to assess patients' wider social needs and follow up to ensure they received the support they required. The scope and potential of SP was believed to transcend the limits of "*just referring*" or "*signposting*" patients into available services. SP was rather seen as an opportunity to strengthen links with the local community (*"[…] so they feel also that we are closer to them. That we are there to look after their needs"* [GP 01.1]), increase attention to (and knowledge of) patients' wider social circumstances (*"[…] by spending more time with people to find out what their complexities are"* [LW 02.2]) and/or ensure the holistic support that some patients (especially those at highest risk of T2D) required.

Patients at high risk of T2D were often described (situated) within a wider social and cultural context, which was thought to condition their opportunities and capacity to "*access*" a heathier lifestyle. Take the example of a GP who said: *"You know a lot of our population they do difficult jobs […] it's not easy to access, […] to do exercise if you're working unsociable hours […] Diet is part of it as well. […] lots of people going to food banks and things and buying healthy food is not cheap. So it's a combination of all of those things."* [GP 01.7]. The focus tended to be on the social constrains (and possibilities) instead of on individuals' own capacity (or "responsibility"), which shaped the way some practitioners approached and delivered T2D prevention, as exemplified by a link worker: *"And so, it's being able to unpick some of that and go, 'okay, so, would you be able to have someone sit with your father say for half-an-hour while you go for a walk', because even a 10-minute walk is better than nothing, and think of it as your timeout […] a little bit of enjoyment, and I think the* *psychology of that then doesn't feel like, there's just another thing I need to do to sort myself out"* [LW 02.7].

The capacity to reflectively reinvent SP also derived from grounded, accumulated knowledge, including learnings from what had worked, or not, in the past. Many practitioners alluded to real patients and examples they witnessed to account for their decisions and the way they practiced (*"it's my experience…"* [LW 02.11], *"what we found is…"* [VCS 03.4]"). Knowledge of what it meant to develop T2D and the importance, challenges and opportunities for prevention was often built upon their experiences as patients, carers, or relatives of people at high risk or diagnosed with T2D (*"[…] to try and help people who are border line diabetes to not go down that whole insulin and checking your blood, because I see my sister-in-law do it and it's horrible"* [VCS 03.7]), shared ethnic heritage (*"I'm from a South Asian country, I know […] the way we cook food and the food we eat, when, how, how often, how much."* [LW 02.8]) or their professional (and personal) background in the local area (*"I was a health trainer as well […] so you got to know the community centres, you got to know the area, and I live in the area as well"* [LW 02.5]).

Interactions among the multidisciplinary team also facilitated exchange, acquisition, and production of practical know-how. Co-location of link workers in general practice and regular attendance to clinical meetings, for instance, allowed them to reflect on working routines and suggest improvements, feedback on patients' progress and determine the best course of action by "*making use of each other's expertise"* [LW 02.2]. Monthly meetings with VCS representatives and link workers in the community provided opportunities to showcase available activities, "*get to know each other*" [LW 02.2] and ensure patients accessed the services they required, as explained by a VCS provider: *"And then we get back to* [the link workers] *and say 'yes we've done it' cause it's the follow-up that's important isn't it otherwise we know that sometimes we refer someone and never hear any more so has it worked and if it hasn't worked then what else can we do"* [VCS 03.5]. Critically, such connections often derived from previous networks and affiliations. Many link workers had worked in primary care or the VCS before and exploited those pre-existing connections to forge current practice, as exemplified by the previous link worker [LW 02.5].

Acting upon the identified needs and customising SP accordingly also required autonomy at organisational level. A link worker, for instance, decided to give out his work phone number to patients instead of instructing them to contact the GP practice, which was the stablished norm. He argued: *"I think it opens up more access, it's a quicker route to accessing […] Sometimes you may not* *be at the same practice every single day, every single week. Sometimes our rota changes. Sometimes we're in emergency meetings or sometimes we're on trainings, so things become a little bit more difficult." [LW 02.4].* This example illustrates that practitioners were indeed able to exercise their own criteria, by making sense of existing constraints and adjusting services in patients' best interest. The extent to which they were recognised and valued for these actions also contributed to reinforcing the way they practiced. There seemed to be a shared understanding of what 'good practice' meant (and looked like) within the organisation, which validated providers contributions. As a link worker told me: *"Feeling appreciated for that has really made me feel --, I think that's the reason why I haven't left the practice, the work is quite demanding […] But that feeling of trying to provide a human service to quite vulnerable people, to get together as a team is really --, and I feel very much supported in that"* [LW 02.2]. The commissioning of services also contributed to shaping practice in different ways. In-house link workers (ascribed to a single surgery instead of the whole PCN), for instance, faced lower workload and seemed to have greater capacity and autonomy to engage in multidisciplinary collaboration and deliver *"proactive"* care to patients at high risk of T2D, including regular follow ups. Stability and long-term approaches (as opposed to one-off interventions) led to trustful relationships, greater knowledge on patients' needs and capacity to respond efficiently, as a link worker explained: "*I feel like the investments from years ago where I spent a lot of time with them, getting to know their story, now they come and see me and within 20 minutes we've got a lot sorted because I know them and they know me and they trust me"* [LW 02.2].

6.4.2. 'I do what I can'. Constrained capacity to accommodate patients' needs

The capacity to be creative in customising SP to fit patients' needs was often constrained by circumstances or factors outside of providers' control. Despite being aware of patients' main concerns and care needs, some practitioners felt powerless and unable to satisfy them. As one GP explained: *"a lot of their problems are actually people that they live with or their living situation or their kind of domestic setup and so you try and help them […] but it's really difficult"* [GP 01.3]. Along the same line, a link worker argued that patients would often face "*problems like money and finance […] that are systematic things that us regular people can't really control*" [LW 02.1]. Patients' problems were considered a consequence of underlying structural constraints and hence beyond the scope of action of individual practitioners. There seemed to be a tension between practitioners' initial expectations of SP (as a service that would 'solve' patients' problems, regardless of their nature) and its potential in practice. Critically, services were deemed insufficient whenever this initial (though arguably unrealistic) expectation was not met, which led to significant frustration but also self-resignation. This enactment of SP is exemplified in the following extract from an interview with a link worker: *“it doesn’t matter how many things I throw at them […] and so managing their expectations of me but also managing my own expectations of me and what theoretically – I mean, practically what I can do for them is very limited”* [LW 02.10].

Lack of capacity to meet patients’ care needs and deliver ‘*what’s best’* were also often a consequence of service-related constraints, including poor integration within and across sectors. As a link worker told me, “*because it gets quite busy most of the time, I don’t have a chance to speak with my colleagues quite regularly” [LW 02.9],* which hindered case discussion and collaborative work. Lack of opportunities to liaise with VCS representatives also made it difficult to learn about available services and tailor SP recommendations. Both VCS representatives and link workers raised concern as to the limitations of the performance metrics used for SP monitoring and recommissioning - they were resource intensive, failed to capture the full breath of their jobs and risked disrupting rapport with patients, as a link worker explained: *“a lot of time goes into monitoring and measuring outcomes […] it’s sometimes really hard to establish that trust* [when] *you come with this questionnaire that is not important to them at all, so that’s quite difficult.”* [LW 02.2]. Lack of service continuity and stability were also perceived as relevant barriers to delivering ‘*what’s best’*. As an example, I interviewed a VCS organisation who had been managing a consortium of welfare advice workers in GP practices for several years. When asked why the service had been discontinued, I was told that: *“the commissioning remit has changed. They want a total overhaul of all the advice services that are commissioned by the council. It’s now going to be part of a much, much bigger contract. […] As I say, the advice service is going to be much larger scale, including operating a telephone advice service and things across the borough. Wider than just the advice in the surgeries. That service has been fantastic because what it’s done it’s taken off quite small local project. It’s allowed these really small specific groups to be providing that service in their local GP surgery.* [VCS 03.9]. There were concerns that the new service would not leverage the networks and expertise developed in previous years: *“I hope that whoever they’ve commissioned can build onto our work. But we’ll have to see”* [VCS 03.9].

SP commissioners also applied a guide to the maximum number of consultations a patient could have with a link worker (ranging from 4 to 6). This guideline proved, however, hard to follow in practice. Take the example of a link worker who ended up providing ongoing support due to lack of available VCS services where patients could be referred to: “*I think a large part of our work is to find those services in the community that can facilitate longer-term support and sometimes they’re just not there and if those services are not there […] then I feel the need to take on that role. Does that* *make sense?"* [LW 02.9]. Patients at high risk of T2D often experienced multiple needs and hence benefitted from "*extra*" (ongoing) support by regular service providers, as felt by a link worker, who said that: "*this extra help makes a huge difference in their lifestyle. […] I understand we are making our commissioner happy, we are meeting our target; this is great but from my position I think if you get more time, we could do an even better job"* [LW 02.8]. These examples reveal a clear gap between what 'good' practice meant at organisational level (used to manage and commission services) and its everyday implications in practice, where providers were confronted with patients' complex needs and the limited, often inadequate, means available. Critically, when practitioners raised their concerns, service managers and commissioners did not always acknowledge or act upon their demands, meaning that the identified organisational barriers for good practice often persisted: "*we asked the commissioners […] but were told no"* [VCS 03.9].

Failure to '*do what's best'* was also a consequence of resource scarcity. Time constraints and excessive workload in general practice, for instance, prevented clinicians from "*following patients up*", as exemplified by a GP: *"we sort of persuade them or sometimes they agree, and then we don't know what happens. […] I just think it's kind of a resource thing isn't it. […] call and recall just takes so much time and you know there isn't the funding to support that"* [GP 01.7]. Similarly, link workers reported not having dedicated means to organise activities relevant to T2D prevention, despite being ideally placed to deliver them: *"if we had it in our budget to have a cook and eat session or have an exercise session run by the social prescriber team. […] Because from being health trainers, we know all the local people. We worked with them all. […] at first, they were going to give us a bit of funding to do things like that, but then they withdrew it" [LW 02.5]*. Professional boundaries became less flexible and dynamic as a consequence of these constraints. Take the example of a VCS provider who *"became extremely tired"* due to increasing workload pressures. This made her limit her involvement as a way of protecting her wellbeing: "*then I had to put a cap on it that I couldn't see so many clients because it was getting too much for myself"* [VCS 03.7].

6.4.3. 'I do as I'm told'. Reproducing Social Prescribing regardless of patients' needs

Some providers conformed with established and expected ways of practising SP, regardless of their potential impact or limitations. Centrally managed link workers, for instance, were expected to address a maximum of three "*priorities*" per patient, through three different "*interventions*". As a link worker explained: "*So, the maximum we can do is like three priorities, and then we have like three interventions […] But because we usually have about only three interventions, unless they're re-referred through the GP again, we don't hold onto cases you see. […] we're not a floating support* *service […] It's let's identify your priorities and then I'll link you up with other services"* [LW 02.7]). The fact that this approach may have prevented him from providing the sustained care and support that some patients (especially those at high risk of T2D) required was not reflected upon. Instead, providers aligned with the overriding understanding of SP as a referral or signposting pathway for redirecting demand. Patients' need for ongoing support was considered detrimental (a failure) and hence to be prevented. Take the example of a link worker, who told me: *"if, at the end of six sessions they're like, 'Oh, I don't know how I'm going to cope without this.', that's not actually a sign of a good job because what you've done is got them dependent; rather than dependent on themselves, you've got them dependent on you and we're not aiming for that"* [LW 02.10]. In an attempt to prevent 'dependency', some link workers risked making services less accessible to those in need: *"some social prescribers choose not to give out their work mobile number, because they see that as creating dependency"* [LW 02.4]) The provision of proactive and sustained support by VCS was also considered unnecessary. Patients were believed to be able to "*manage the situation themselves*" and seek support "*out of dependency*" and not because they needed it or could benefit from it. A VCS provider told us: *"they rely on us to do it for them. I think they got into this system"* [VCS 03.4].

Link workers were also expected to use patient activation questionnaires to measure the success of their interventions and assess patients' motivation level, as a link worker explained: *"it depends on the scale of somebody's motivation and where they are at. So if somebody is engaged or active or inactive – we try to find out where they are"* [LW 02.3]. Some complied with this measure, which also involved aligning with specific ways of understanding patients' needs. Patients' capacity to 'engage' (as opposed to 'access') was, for instance, explained in terms of their degree of 'activation', instead of being a consequence of wider constraints, including service deficiencies. They were expected to make rational, positive lifestyle choices following the advice and motivational support they received and take 'responsibility' and ownership of their situation, as exemplified by a physiotherapist: *"I think people have to take a bit of responsibility and have to want to engage in it so you can only guide them and explain the benefits to them"* [PHYSIO 01.4]. Failure to respond as expected was considered a consequence of their own decisions or 'choice'. A link worker told me: *"You can give them the right tools to do it, but whether they choose to or not"* [LW 02.6].

'*Doing as told'* seemed more prevalent amongst those who recently joined SP or primary care, who would describe their role using a rather technical language, highlighting service features instead of personal experiences with patients. Take the example of a link worker, who described his role as follows: *"it's an exploration. It's called information and advice and guidance [IAG], you know, what* *we're doing is IAG and through the IAG we will find out what their needs are; where they want to be yeah? […] and then obviously we'll book out to review for a six-weeks to two months review, I think? I'm not sure exactly, but there is something when you refer your patient to follow up"* [LW 02.3]. Lack of experience often involved limited awareness of patients' complex circumstances and the need to go beyond initial prescriptions to satisfy their care needs.

Poor integration within and across sectors also compromised providers' capacity to learn the real impact of (and patients' response to) their actions: *"it just depends like sometimes […] we don't get any feedback saying this person's engaged or hasn't. Sometimes the person just comes back and says, 'look, I finished that course', but lots of patients don't, so we don't know how they get on"* [LW 02.7]. Unidirectional communication (usually *from* primary care *to* the VCS) hampered intersectoral participation and deliberation on existing challenges, including what good practice meant and entailed for patients at high risk. Service fragmentation also contributed to reinforcing a bounded understanding of professional roles. Clinicians, for instance, considered that exploring patients' life circumstances was beyond their remit, instead of being a shared responsibility across providers. They saw themselves as 'referrers', while outcomes beyond that point (including service accessibility issues) were not considered their responsibility. Take the example of a nurse who told me: "*I don't know how many people responded to the social prescribers whenever I've referred, I don't have that data. So I don't know whether they were positive when the social prescriber contacted them, but nobody's declined for me to refer them to a social prescriber"* [nurse 01.10]. Link workers' involvement in providing lifestyle recommendations to patients at high risk of T2D was also questioned: *"I don't have the knowledge. I don't have the confidence to talk about X Y and Z condition, […] It's certainly not in my remit and comfort zone, and I don't feel right to be giving any information'"* [LW 02.7]. Yet, reframing lack of experience and knowledge in terms of 'competence boundaries', restrained providers' opportunities to train (or request relevant training) and widen service remit as necessary.

Link workers and VCS providers were recognised for (and hence often satisfied by) conforming to the contract (e.g., reaching referral targets, using available questionnaires, staying within the expected number of appointments) regardless of whether this sufficed or not. There was an emphasis on guidelines and pre-defined targets, instead of on providers' capacity (and responsibility) to be inventive and co-create the best course of action. Insufficient resources and increasing pressures also shaped providers' attitudes and practices. They became less flexible about their role and more prone to legitimise, and even implement, SP practices which proved less beneficial for patients at high risk (e.g., short-term, one-off interventions). Questioning of patients' concerns as worthwhile of support or not was also intensified in a context of resource scarcity, where providers were made to decide ("*triage*") which patients would end up making use of the limited available services.

Table 6.1. Summary of the identified SP practices and their individual, interpersonal, organisational, and institutional conditions

Practice type	***I do what's best***	***I do what I can***	***I do as I'm told***
Involves	Creating new ways of delivering SP to accommodate the needs of patients at high risk of T2D	Resigning to existing ways of delivering SP despite knowing they are not aligned with the needs of patients at high risk of T2D	Agreeing with stablished ways of delivering SP regardless of whether they are aligned with patients' best interests
Views on SP	As a support service, a way of making GP more accessible and connected to the local community	Insufficient to 'solve' patients' problems	As a signposting/referral service to encourage autonomy, activation, independence
Views on patients at risk	Needs are conditioned by wider social constraints	Needs are too complex and beyond the remit of SP	'Needy', too reliant, at risk of becoming dependent
Professional boundaries	Flexible, dynamic 'I can't say no'	A consequence of wider constraints 'you can only do what you can'	Pre-stablished, static 'It's not my role'
Interactions across and within sectors	Collaborative work, allows for feedback, reflection and transformation of practices involved	Insufficient integration, prevents fulfilling the standards of best practice	Service fragmentation, prevents becoming aware of and hence overcoming poor practice
Decision making autonomy	*Dispersed*, practitioners are able to act upon identified needs and customise practice	*Centralised*, practitioners are unable to exercise their own criteria to navigate constraints	*Relegated*, practitioners delegate their criteria to become passive receptors of ideas
Organisational rationality	*Coherent*, shared understanding of what 'good' practice involves	*Contested*, limited understanding of what good practice involves	*Irrelevant*, good practice equates to conforming to the contract
Knowledge management	*Absorptive*, able to capture new knowledge and redefine good practice	*Unresponsive*, unwilling to embrace new ideas and interpretations	*Prescriptive*, emphasis on guidelines and pre-defined targets
Monitoring strategy	*Reflexive*, practice is understood and assessed by implicated practitioners	*Pre-defined*, fails to acknowledge the emergence and essence of daily SP practice	*Constitutive*, creates and organises the practice it seeks to unravel
Service commissioning	Ongoing, stable, includes "*slack recourses*" to support innovation	Short-term, insufficient, prevent fulfilling the standards of best practice	Short-term, one off, encourages bounded practice and involvement
Leads to	Satisfaction, "*internal goods*"	Frustration, guilt, moral injury	False reassurance, credulity, complacency

6.5. Discussion

For many providers in this study, practicing SP involved customising the intervention to the specific context and the patient in a constant process of re-negotiation. Individuals were actively involved in making judgements (and compromises) by balancing and weighting different factors. Decisions were shaped by human relationships and situated knowledge, including what had worked (or not) in the past, for whom and under what circumstances. Providers managed to resist or go beyond initial prescriptions (the ostensive routine) to ensure their criteria prevailed, creating new standards and innovative practice (performative routine). As organisational and material constraints grew providers capacity to be creative and engage with complexity shrank. The bounds of possibility were tight (instead of fuzzy and open-ended), leaving providers with little flexibility to negotiate and modify the intervention to fit local, context-specific needs. At the other end of the spectrum, the ostensive and performative routines overlapped. Providers internalised, legitimised and, in doing so, standardised their work in accordance with pre-set organisational expectations. ‘Adopters’ became passive receptors of ideas, making SP a rather inflexible (more predictable) activity.

As this study illustrates, practices circulated unevenly, and were squeezed and stretched in relation to each other, depending on the changing and generally unequal distribution of resources operating at different, inter-connected levels. Defection and continued participation in different types of practices were in tension and often alternated as critical individual, interpersonal, organisational, and institutional thresholds were passed (309).

6.5.1. Providers as active adopters – individual characteristics

Providers were “*active creators and interpreters of meaning*” (323), which shaped point-of-care decisions in accordance with their own deliberations concerning quality of care in SP and T2D prevention. The role of providers’ values, past experience and pre-existing attitudes in facilitating (or preventing) effective adoption of innovations has been widely described in the literature (156,324). This research contributes to knowledge by also exposing the variability of practices associated with these different understandings. Specifically, flexible and dynamic views on SP and their own professional role made it easier to accommodate patients’ complex needs and be creative in (and open to) finding new ways of supporting them. Providers aligned with self-transcendence values (also referred to as “*internal goods*” (325)) and SP discourses emphasising the open-ended and unpredictable nature (or logic) of care (66,326). On the other end, an understanding of SP as a means to encourage independence and reduce reliance on healthcare made short-term and motivational approaches prevail over sustained, holistic and open-ended practices (which have shown to benefit patients at high risk of T2D, as presented in Chapter V). Providers aligned with SP discourses emphasising patients' responsibility, which in turn legitimised their bounded involvement ('it's not my role') (66). This research exposed the ambiguity and elasticity of SP as a term, whereby it adopted multiple and overlapping meanings. While such ambiguity has been argued to deploy a functional role in driving policy change (323), it can make service delivery and practice challenging. As pointed out by *Cutler and colleagues* in their work about personalisation of public sector services, high level of abstraction may lead to difficulties in defining a coherent approach to implementation (327). Critically, and in line with research findings, ambiguity gave legitimacy to a range of practices with substantial differences in their potential to support patients at risk.

Providers' knowledge and experience also shaped how they made sense of and implemented SP. Previous professional roles and life experiences, including shared circumstances and affiliation (referred to as "*homophily"* in diffusion of innovations theory (156)) equipped them with useful skills to relate to (and better understand) patients' issues, navigate situations of uncertainty and adapt (reinvent) SP as needed. This knowledge was yet further transformed and produced over time through its application and interpretations in local context (328). As highlighted by Shove, "*new tricks and techniques arise from the embodied experience of participation*" (309). The lack of such resources, conversely, made providers reliant on the ostensive routine (*'I do as I'm told'*) with limited capacity to deal with emergent problems. Innovations that require such underlying capacity (also referred to as "*competence*" in practice theory (309)) for their enactment cannot, therefore, *"roll out readily*" (329). Beyond formal training, practical skills (acquired through relevant personal and professional background(s)) and ongoing opportunities for reflection and shadowing are needed to transfer and produce knowledge effectively (58,164).

6.5.2. Opportunities for sensemaking – interpersonal relations

In line with published literature, this study revealed that strong and organic interpersonal and interorganisational networks facilitated the development of shared meaning, transfer of tacit knowledge and monitoring (156,330). Existing formal ties provided practitioners with feedback on outcomes and past performance, contributing to the persistence, transformation or decay of the practice concerned (309). Service fragmentation (characterised by strict professional boundaries and lack of collaborative work), on the other end, limited providers' capacity to deliver what they deemed ideal ('*I do what I can'*) or made them unaware and hence unable to overcome poor practice ('*I do as I'm told'*). This study identified relevant opportunities for interprofessional teamwork, such as locally grown 'VCS breakfast meetings' or assigning link workers to a single surgery. Additional strategies, including IT integration for regular and easy feedback on patients' journeys or protected time and resources for networking and team building purposes have also been recognised in the literature (93,181). While approaches might vary across sites to fit into context-specific routines and preferences, this study confirmed the need to "*establish and maintain connections*" as a precondition for 'good practice' in SP (54).

The ties through which practices developed and circulated did not, however, necessarily map onto (inter)organisational structures. This research revealed how practitioners in effect belonged to alternative communities that shaped practice in significant ways, despite having no formal organisation (e.g., as neighbours, members of a minoritised ethnic group or patients or carers of people at high risk of T2D). As reported by Brown and Duguid, relevant bonds seem to be formed through, and as an outcome of, previous and present tacit experience (331). This is useful in explaining why top-down initiatives often run into trouble as they fail to recognise (and build onto) co-existing, locally embedded communities of practice (309). Beyond formally structured opportunities for exchange and interconnection, this research confirmed the importance of nurturing and relying on existing infrastructure, connections, and affiliations for effective SP implementation.

6.5.3. The norms, routines and expectations that shape practice – organisational contingencies

The rationalities that shaped the organisational structure were also key in enabling (or constraining) creative SP practices relevant to patients at high risk. The study revealed how organisations often reproduced or failed to challenge an overarching narrative which depicted SP as a strategy aimed at 'solving' patients' needs or reducing their '*reliance*' on health services. Providers either internalised and in doing so reinforced this rationality ('*I do as I'm told*') or proved incapable of delivering such expectations, which led to frustration and self-resignation ('*I do what I can*'). Critically, the wider potential of SP in advocating, witnessing, validating, or *tinkering* (332) (as opposed to 'solving') the experiences of patients in greatest need remained unexplored or unpractised. This research confirmed the extent to which organisations contribute to legitimising and reinforcing certain practices (while contracting or displacing others) depending on what they consider to be of value (309). It, therefore, seems critical to make collective sense of the innovation in the organisational setting and build a shared vision of its potential (including a realistic assessment of what the innovation cannot do) - a process which May and Finch called "*coherence work*" (333). As highlighted in the critical literature review (Chapter IV), challenging unrealistic "*promises*" at organisational level does not necessarily detract SP (334). Neither should it imply self-resignation. Conversely, framing the innovation "*beyond a solutionist paradigm*" may allow providers to explore patients' needs and contexts in their full complexity, and value alternative outcomes and ways of supporting those in need (from emotional to appraisal, instrumental or informational support) (66,334).

Allowing frontline staff with flexibility and authority to make adjustments and suggestions also proved key to developing creative, locally adapted solutions (59). Literature in medical professionalism also situates autonomy as a relevant enabling feature for continuous acquisition and innovation of knowledge (326). Practitioners were able to adapt the intervention and working environments in patients' best interest, or to resist (even subvert) the script if it was considered inappropriate. However, the extent to which organisations used this new knowledge to redefine what good practice looked like and put it to appropriate use (also referred to as "*absorptive capacity*" (335)) varied. While some organisations proved more receptive, others failed to acknowledge providers' suggestions or ways of practicing if they were not aligned with their provisions. Literature suggests that for organisations to embrace new ideas and 'absorb' knowledge effectively, they need to have some prior knowledge with which to relate to it (and with which make sense of it) (156,336). This might explain why those organisations who understood the complex, highly unpredictable nature of SP were better placed to tap into new knowledge and assimilate innovations (156).

6.5.4. Financial and regulatory requirements – institutional context

While sustained and open-ended services have shown greater potential in supporting patients at high risk of T2D (as reported in Chapter V), these were not always ensured by commissioners. Service models approved for funding were usually short-term and restricted (e.g., a maximum of 6 appointments with link workers, 8-week weight management programme). Some providers found their own pragmatic ways to resist such constraints by "*breaking*" (337) or "*reshuffling*"(338) the rules. As also reported elsewhere, compromises in the performance of certain practices seemed to allow for the 'proper' enactment of others in settings where organisational pressures compromised best practice and/or front-line workers' professional values (315,337,339) – a process referred to as "*cross-practice trade-offs*" in practice theory (309). There were, however, limits to the ability to resist without putting the quality of services and providers' well-being at stake (337,340). In line with published literature and realist review findings (Chapter III), busy consultations in primary care made it difficult for GPs to engage with complexity and provide the personalised (usually more intensive) support that patients at high risk of T2D required (93). Funding cuts and dwindling third sector capacity also limited VCS providers' opportunities to co-produce the best course of action (58,59,63,340). Similarly, link workers without protected caseloads (e.g., ascribed to PCNs instead of a single surgery) had less autonomy to adapt their agenda and provide ongoing support to patients, amongst other constraints (341,342). These findings contribute to explaining why SP has often failed to prove its value as a strategy to save costs and resources. Instead, it seems to require strengthened (well-funded) systems to function, including spare capabilities to channel into new ideas (also referred to as "*slack resources*" (156)).

Measures of quality for auditing purposes and re-commissioning also shaped and structured practice in different ways. They increased the administrative burden and relied on predefined targets (e.g., referral numbers, patient activation questionnaires) which failed to acknowledge the emergence and essence of daily SP practice. Key notions of quality (including particular forms of knowledge, commitment, judgement, human relationships) were not necessarily captured and hence risked being devalued. As reliance upon objective measures (as a mechanism of management) became stronger, providers struggled to deliver (and felt troubled by) the personalised, undifferentiated support that some patients (especially those at high risk of T2D) required. Critically, little consideration was given to the everyday ethical and practical dilemmas providers experienced as a result of these competing demands (also referred to as "*moral injury*" in healthcare (343)). These findings support a shift in quality improvement and monitoring towards approaches that pay greater attention to how things are worked out in practice, instead of how things ought to be (344,345) – a process referred to as "*reflexive monitoring*" in normalisation process theory (333). These rather informal modes of evaluation, characterised by practitioners' judgements about the utility and effectiveness of new practice, are associated with successful, routine embedding of innovations (333).

6.5.5. Strengths and limitations

The main strength of this research is its theoretically grounded study design, which allowed me to draw conclusions that are both locally useful and transferable. Using practice theories, I characterised different kinds of contextualised SP practices, conditions for their enactment, and their varying degrees of potential in supporting patients at high risk of T2D. The study has limitations: it was conducted mostly remotely during the pandemic. A commitment to a practice lens requires deep engagement in the field, observing or working with practitioners as they go about their work(316). This study, however, relied mostly on remote interviews, and hence on practitioners' accounts of their practices, instead of on direct observations. I tried to overcome this limitation by following a practice-oriented interview approach, whereby I asked interviewees to 're-present' practice at different levels and in different situations. I also explored practitioners' discursive accounts of expertise, as well as their notions of success and failure. This was complemented with documentation on the ostensive aspects of the practices involved, which were further interrogated in interviews.

6.6. Conclusions

Practitioners' capacity to be creative in accommodating patients' needs ('I do what's best'), resign to delivering insufficient SP services ('I do what I can') or uncritically adhere to existing conventions ('I do as I'm told') represented different types of SP practices at the of a continuum. This study revealed that practices circulated unevenly, and were squeezed and stretched in relation to each other, depending on the changing and generally unequal distribution of resources operating at different, inter-connected levels. Defection and continued participation in different types of practices were in tension and often alternated as critical individual, interpersonal, organisational, and institutional thresholds were passed.

Conceptualising SP as a social practice allowed me to unravel its scope and conditions for organisational learning and service innovation. This study suggests that practitioners will engage with 'best practice' in SP while it has meaning and purpose for them. Yet, this may be facilitated by formal training, practical skills (acquired through relevant personal and professional background(s)) and ongoing opportunities for reflection. Beyond formal arrangements for collaborative work ('VCS breakfast meetings', adscription of link workers to a single surgery, IT integration), this research confirmed the importance of nurturing and relying on existing connections and affiliations. At organisational level, it seems critical to make collective sense of SP and its role in T2D prevention by building a shared vision of what 'good practice' entails in practice. Frontline staff should, however, be allowed with flexibility and authority to make adjustments, while organisations remain receptive to new interpretations and emergent solutions. This study also confirmed the central role of strengthened (well-funded) primary care and VCS in ensuring SP practices relevant to communities at high risk. Commissioning should be stable and sufficient, while including spare capabilities to support innovation.

6.7. Integration of findings with overall PhD research objectives and questions and remaining thesis Chapters

This qualitative case study, informed by practice theory, contributes to addressing PhD objectives 2 and 3 by defining what constitutes good practice in SP relevant T2D prevention and identifying the key conditions and mechanisms for achieving this. This study reveals that delivering holistic, sustained, accessible, and integrated SP requires highly creative and innovative approaches, shaped by critical individual, interpersonal organisation and institutional conditions and resources.

Furthermore, the study provides valuable insights into the second research question of the PhD by highlighting the significance of creative and situated care decisions to effectively accommodate the needs of patients at high risk of T2D. It also emphasises the role of providers' beliefs, experiences, and the wider organisational and material constraints in shaping ‘good’ practice. The study also directly addresses the third PhD research question by unravelling the complex and contested nature of SP delivery, and its varying degrees of potential to support patients at high risk of T2D. Understanding and acknowledging the inherent complexity of SP seems key for its successful implementation and evaluation in primary care.

The study builds on both literature reviews (Chapters III and IV) to further characterise the conditions for ‘good’ practice in SP relevant to T2D prevention. This study aligns with realist review findings highlighting the significance of training, practical skills, interpersonal connections and shared affiliation, flexibility, autonomy, stable and sufficient commissioning arrangements, as well as relevant, flexible, feasible and reflexive monitoring strategies to support ‘good’ practice. In keeping with discourse analysis review findings, this study further characterises the variability of practice associated with different understandings of SP and T2D prevention. For instance, viewing SP as providing empathetic, personalised care (matching discourse 3 in the literature review) fostered creative practice to accommodate the unique and changing needs of patients at high risk. On the other end, an understanding of SP as a means to encourage independence and reduce reliance on healthcare (aligned with discourse 2 in the literature review) legitimised providers’ bounded involvement (‘it’s not my role’). Critically, these different understandings gave legitimacy to a range of practices with substantial differences in their potential to support patients at risk.

The study also draws on realist evaluation findings (Chapter V) to demonstrate the importance of creative and innovative practice in delivering holistic, sustained, integrated and accessible SP relevant to T2D prevention. It further defines what good practice entails by focusing on providers' capacity and readiness to adapt, try, negotiate, and ultimately reinvent SP to suit the specific and changing needs of patients at high risk.

Chapter VII. Overall discussion and conclusions

7.1. Summary of main findings

This thesis aimed to investigate the possible role of SP in patients at high risk of T2D and inform the future design, implementation, and evaluation of SP initiatives relevant to the prevention of the condition. The overall objectives included evaluating whether (and to what extent) SP might meet the complex health and social needs of people at high risk of T2D in a multi-ethnic, socio-economically diverse population. I also sought to investigate what ‘good’ practice in SP relevant to T2D prevention looks like and identify the main conditions and mechanisms that might explain the success or failure of SP programmes in the prevention of T2D in primary care.

7.1.1. Primary care-based Social Prescribing literature findings (Chapters III and IV)

I first reviewed and synthesised relevant literature on primary care-based SP. I used two different methodological approaches, namely realism and discourse analysis, to illuminate contrasting and complementary dimensions of SP implementation and delivery (Chapters III and IV, respectively). Given the scarcity of primary studies specifically addressing T2D prevention, I adopted an inclusive approach and investigated SP practices (using realism) and understandings (using discourse analysis) across different health domains. This allowed me to develop broad, preliminary programme theories, which were then tested, refined, and applied to T2D prevention empirically in Chapters V and VI.

The realist review in Chapter III contributed to unravelling the potential of SP in delivering *holistic*, *relational,* and *redistributive* care, and identified relevant enablers in primary care and the VCS. The way practitioners delivered SP was influenced by various individual-level factors, such as their knowledge, level of investment, training, and motivation. The literature review also highlighted the importance of dynamic interactions between and within the health and VCS sectors. The success of SP interventions depended on the establishment of mutual reliance, trust, and supportive relationships among service providers. The review also clearly showed that understanding how SP work requires acknowledging the intricate organisational, social, and policy contexts in which it operates. The availability of a well-resourced VCS, appropriate information governance arrangements, a conducive institutional ethos, and supportive higher-level policy contexts, priorities, and decisions (including stable commissioning and suitable monitoring strategies) all played a critical role in facilitating ‘good’ practice in SP.

The discourse analysis review in Chapter IV helped to uncover how SP is framed, conceptualised and 'used' in contemporary society and explore the impact of existing discourses on the way services are developed, implemented and evaluated. It identified three different, but complementary ways of understanding SP. Discourse 1 emphasised increasing social inequalities behind escalating health problems and presented SP as a response to the social determinants of health. Discourse 2 problematised people's increasing use of health and social services and depicted SP as a means of enhancing self-management and reducing patients' reliance on further care. Discourse 3 stressed the dearth of human and relational dimensions in general practice, while presenting SP as an alternative capable of restoring person-centeredness. Discourses circulated unevenly in the scientific literature, conditioned by a wider political rationality which emphasised individual responsibility and framed SP in terms of a 'solution' to complex and contentious problems. The review suggested an alternative 'care-based' framing of SP, which saw the provision of *holistic*, *relational,* and *redistributive* primary care not so much as a means to an end, but as an end in itself.

7.1.2. Unravelling the potential of Social Prescribing in Type 2 Diabetes prevention. A mixed methods realist evaluation (Chapter V)

Building on the knowledge gained from the realist and discourse analysis reviews, the realist mixed-methods evaluation in Chapter V was designed to investigate the possible contribution of SP to individual-level prevention of T2D in a multi-ethnic, socioeconomically deprived population at high risk. Preliminary programme theories of what 'good' practice in SP relevant to T2D prevention could look like drew on the SP archetypes identified in the realist review (available in Chapter III), which were further refined and tested using rich and diverse empirical data. This realist mixed methods evaluation drew on anonymised primary care electronic health record data of 447,360 people eligible for SP and diverse qualitative data, including 43 interviews with primary care clinicians, social prescribers, community organisations and SP users at high risk of T2D; 36 hours of ethnographic observations of SP and NDPP sessions; and relevant documents.

The study found that people at high risk of T2D were more likely to be referred into SP than the eligible general population. Critically, more people at risk of T2D were referred to SP than to the NDPP, which could be explained by the broad referral criteria for SP and highly supportive (proactive, welcoming) environments. Holistic and sustained SP practices helped acknowledge patients' wider socio-economic constraints and deliver long-term personalised care. The fact that SP was embedded within the local community and primary care infrastructure facilitated timely exchange of information and cross-referrals across providers, resulting in enhanced service responsiveness. This research revealed that SP can offer an opportunity for individual-level T2D prevention to become more personalised, inclusive, and long-term, by focusing on the whole population (while paying special attention to those in greatest need) and encouraging community action and involvement.

7.1.3. What does Social Prescribing relevant to Type 2 Diabetes prevention look like in practice? A qualitative case study informed by practice theory (Chapter VI)

Building on the literature review and realist evaluation findings, Chapter VI was designed to investigate how SP relevant to T2D preventions was accomplished in everyday practice, including the negotiation and alignment of resources and conditions that shaped routine service delivery. Preliminary explanations and hypothesis of enabling and constraining factors for SP practices relevant to T2D prevention drew on realist and discourse analysis review findings. These were further tested and refined using rich qualitative data (as specified in Chapter V) and theories of social practice.

The study identified three different, overlapping ways of *practising* SP, which showed varying degrees of potential in supporting patients at high risk of T2D. Reflective reinvention (‘*I do what´s best’*) involved customising (and negotiating) new ways of delivering SP to fit local, context-specific needs. Constrained provision (‘*I do what I can’*) implied resigning to available (often suboptimal) ways of delivering SP despite knowing they were neither ideal nor sufficient for patients at high risk. Acritical adoption (‘*I do as I’m told’*) meant conforming with established and expected ways of practising SP and not questioning these, regardless of whether they were aligned with patients’ best interests.

Practices were shaped and constrained by providers’ beliefs, experience, and wider organisational and material contexts. For example, practitioners engaged with ‘best practice’ in SP while it had meaning and purpose for them. Yet, this was facilitated by formal training, practical skills (acquired through relevant personal and professional background(s)) and ongoing opportunities for reflection. The study also releveled the importance of strengthening interprofessional connections and communication. At organisational level, there was a need to make collective sense of SP and its role in T2D prevention by building a shared vision of what ‘good practice’ entailed in practice. Frontline staff also required flexibility and authority to make adjustments, while organisations remained receptive to new interpretations and emergent solutions. The study also confirmed the central role of stable and sufficient VCS and primary care commissioning arrangements, including spare capabilities to support innovation.

7.2. The contribution of the thesis to PhD research questions

The summarised findings presented above make a significant contribution in answering the research questions established in the Introduction of the thesis (Chapter I). This section aims to organise and structure the findings to directly address each research question, as follows.

7.2.1. To what extent might SP meet the complex health and social needs of people at high risk of T2D in multi-ethnic, socioeconomically diverse populations?

This thesis illustrates that SP approaches that are accessible, holistic, sustained, and integrated can contribute to individual-level T2D preventive approaches capable of addressing the complex health and social needs of patients at high risk in multi-ethnic, socioeconomically diverse populations. This conclusion is based on the following considerations.

Community-embedded, highly supportive and welcoming SP services with broad and inclusive eligibility criteria (without disease or diabetes-specific clinical thresholds) contributed to explaining higher SP referral rates among high-risk patient with the greatest health and social vulnerability. Broad conversations with patients prior to and during referrals allowed practitioners to understand what these wider health and social constraints meant for people at high risk and develop personalised services relevant to their specific circumstances and needs. Sustained (ongoing, and open ended) services allowed patients to share the burden of (and hence better cope with) these critical underlying structural drivers and were, therefore, better placed to support people at high risk. Service continuity also facilitated the development of meaningful (“*therapeutic*”, “*trustful*”) relationships, which were found to help make informed and supported decisions and contribute to healthy lifestyle maintenance. The fact that SP was embedded within the local community and primary care infrastructure facilitated timely exchange of information and cross-referrals across providers, resulting in enhanced service responsiveness.

7.2.2. What does ‘good’ practice in SP relevant to people at high risk of T2D look like and what are the main conditions (‘active ingredients’) for achieving this?

This thesis clearly shows that SP approaches that are holistic, sustainable, integrated and accessible are better placed to deliver individual-level T2D prevention approaches that are relevant (and available) to high-risk patients with the greatest health and social vulnerability, who are typically not referred to existing T2D prevention programmes (NDPP). However, delivering such SP approaches proved highly complex as it involved customising the intervention to the specific context and the patient in a constant process of re-negotiation. Providers’ capacity to be inventive and co-create holistic, sustained, integrated and accessible SP approaches in patients’ best interest varied, conditioned by the dynamic interplay of their own personal beliefs, knowledge and experience, organisational arrangements, and wider financial and regulatory constraints.

Particularly, practitioners demonstrated engagement with ‘good’ practice in SP when they found it meaningful and purposeful. This engagement was facilitated through formal training, practical skills acquired from relevant personal and professional backgrounds, and continuous opportunities for reflection. This thesis also highlighted the significance of strengthening interprofessional connections and communication. At the organisational level, there was a need to collectively understand the role of SP in T2D prevention by establishing a shared vision of what constitutes ‘good’ practice in their context. Frontline staff required flexibility and authority to make adjustments, while organisations needed to remain open to new interpretations and emerging solutions. The thesis also confirmed the central importance of stable and sufficient VCS funding and primary care commissioning arrangements, including spare capabilities to support innovation.

7.2.3. How do existing SP programmes address questions of implementation and evaluation, and what are the knowledge gaps critical to understanding their success or failure in primary care?

This thesis examines existing SP programs and their approach to implementation and evaluation in primary care settings. It underscores the complexity and contested nature of SP practices relevant to T2D prevention, shaped by critical individual, interpersonal, organisational, and institutional constraints.

I identified various ways of practicing SP, which often overlapped and differed in their approaches. Some practitioners engaged in highly creative, reflective, and adaptive practices ("I do what's best"), while others showed more constrained ("I do what I can") or compliant ("I do as I'm told") attitudes. Importantly, these different approaches showed varying potential in supporting patients at high risk of T2D. Successful adoption and implementation of SP were facilitated by providers' capacity and readiness to adapt, try, negotiate, and ultimately reinvent SP to meet the unique needs of high-risk patients ("I do what's best"). However, the ability of providers to be innovative and co-create SP in the best interest of patients was influenced by their subjectivity, experience, and broader organisational and policy factors. The thesis uncovers knowledge gaps in understanding the creative and innovative aspects of ‘good’ practice in SP and the significant influence of providers' beliefs, experiences, and organisational and material constraints in explaining successful program implementation and evaluation.

7.3. Results in the context of relevant literature

7.3.1. Unravelling the potential of Social Prescribing in Type 2 Diabetes prevention

The quantitative analysis of this thesis showed that more people at risk of T2D were referred to SP than to the existing preventative programme specifically aimed at patients at high risk, NDPP. Importantly, patients referred into SP faced significantly greater health and social vulnerability (including socioeconomic deprivation, mental health conditions or multimorbidity) than those referred into NDPP. Qualitative findings revealed that this was likely due to the community-embedded, highly supportive, and welcoming approach of SP services, as well as their broad and inclusive eligibility criteria (without disease or diabetes-specific clinical thresholds). Reaching patients at greatest risk of T2D did not, therefore, depend on medical screening strategies to identify them. Instead, it was achieved by delivering culturally appropriate, highly supportive, locally accessible services. These findings align with a body of literature questioning “*screen and treat*” policies in T2D prevention (289), including their use in the NDPP. Screening strategies used in NDPP (HbA1c and fasting glucose) have shown low sensitivity and accuracy, which means that patients may incorrectly be labelled as high risk status while others be falsely reassured and not offered any intervention (85). Besides, healthy lifestyle promotion is likely to benefit most patients in multiple aspects of health and may, therefore, be offered to the whole population, while ensuring mechanisms to prioritise those in greatest need (also referred to as proportionate universalisms (290)). This research suggests that *accessibility* in T2D prevention (and SP) can be best understood as a twin process of identifying patients’ needs and conditions (instead of risk levels) while also finding ways to make services readily available to them, which often entailed ensuring highly supportive environments.

Quantitative data also showed that high risk patients referred into SP were more likely to face complex health and social needs (such as, socio-economic deprivation, be racially minoritised, live with mental health conditions or multimorbidity) than the background eligible population. Broad conversations with patients prior to and during referrals allowed practitioners to understand what these wider social, health and material constraints meant for them and develop personalised services relevant to their specific circumstances and needs. These findings align with a body of literature showing how patients' health-related behaviours (and consequent T2D risk) are contingent and socially patterned (291,292), and therefore amenable to change insofar as interventions are within patients' material reach, familiar to their existing social world and relevant to their life circumstances (293). In line with published literature, this thesis suggests that a personalised (*holistic*) approach which takes into consideration patients' specific (and changing) characteristics, priorities, expectations, and circumstances is better suited to deliver effective individual-level T2D prevention (94,297).

Similarly, the fact that patients at high risk of T2D were affected by wider socioeconomic, material, and cultural constraints made following healthy lifestyle recommendations highly challenging (an "*ongoing struggle*"). However, sustained (ongoing, and open ended) T2D prevention approaches allowed patients to share the burden of (and hence better cope with) these critical underlying structural drivers and were, therefore, better placed to support people at high risk (94,297,298). Service continuity also facilitated the development of meaningful ("*therapeutic*", "*trustful*") relationships with patients, which have been found to help make informed and supported decisions and contribute to healthy lifestyle maintenance (94). At community level, continuity was also needed for organisations and activities to become embedded locally and develop synergies and opportunities for community action and transformation (346).

This thesis also found that patients at high risk of T2D referred to SP were more likely to live with co-morbidities, including mental health conditions or multimorbidity, than those referred into NDPP. Qualitative data revealed that co-existing health conditions made patients require (and access regularly) additional community, primary and/or secondary care services. Findings contribute to explaining the importance of integrating SP (and health promotion in general) into routine primary care delivery, instead of relying on external private providers, as is the case in NDPP. Primary care allows for opportunistic health promotion to those who might have contacted the GP regarding a different (yet, coexistent) concern (297,300). Healthy lifestyle advice becomes an ongoing and incremental process (instead of a one-off intervention), where practitioners can take advantage of every routine contact to reinforce and/or adjust their recommendations, "*endlessly tinkering*" (301).

In summary, this research suggests that SP involves embracing a 'health promotion' approach to T2D in communities at high risk, by emphasising a positive and holistic view of health, focusing more inclusively on the whole population (while paying special attention to those in greatest need) and encouraging community action and involvement (347). Findings confirmed that community-based health promotion is ideally placed to develop more acceptable, culturally appropriate, and hence effective ways to address the risks to health that communities face (348). Importantly, indirect positive health and social benefits may also arise from participating in collective health promotion, such as increased social cohesion (349) and/or greater awareness of shared, structural constraints (also referred to as "*critical health literacy*" in health promotion literature (350)). By relying on local, grassroots organisations (as opposed to external private providers, as is the case in NDPP) SP offers an opportunity to strengthen local communities. To quote *Baum and colleagues*, services become "*more than a place*" to which patients are referred, to be also "*community spaces*" in which meaningful social connection and community action can be engendered (whose benefits may transcend T2D prevention) (303).

7.3.2. Understanding how Social Prescribing practices relevant to Type 2 Diabetes prevention are enacted, enabled and constrained in practice

The second main finding of this study is that SP practices relevant to T2D prevention were a rather complex and contested endeavour, shaped by critical individual, interpersonal, organisational, and institutional constraints. This thesis identified different, overlapping ways of *practising* SP: from highly creative, reflective and adaptative ('I do what's best'), to more constrained ('I do what I can') or compliant ('I do as I'm told') approaches. Critically, these different practices showed varying degrees of potential to support patients at high risk of T2D. The importance of creative and innovative practice in supporting patients referred into SP has been acknowledged in the literature (63,341). More broadly, the capacity and readiness to adapt, try, negotiate, and ultimately reinvent innovations to suit individuals' own needs is known to facilitate their adoption and successful implementation (156,324,329). Yet, providers' capacity to innovate and co-create SP in patients' best interest proved to be shaped by their own subjectivity, experience and wider organisational and policy influences.

As reported by *Greenhalgh and colleagues* in their systematic literature review of diffusion on innovations in service organisations, practitioners' values, feelings, attitudes towards the innovation (in this case, SP) influence its adoption and delivery (156):

"People are not passive recipients of innovations. Rather (and to a greater or lesser extent in different persons), they seek innovations, experiment with them, evaluate them, find (or fail to find) meaning in them, develop feelings (positive or negative) about them, challenge them, worry about them, complain about them, "work around" them, gain experience with them, modify them to fit particular tasks, and try to improve or redesign them—often through dialogue with other users" (156).

Building on the discourse analysis literature review (Chapter IV) and qualitative case study (Chapter VI), this thesis identified a repertoire of attitudes and understandings which shaped the way providers practiced. An understanding of SP as a means to encourage independence and reduce reliance on healthcare made short-term and motivational approaches prevail over sustained, holistic and open-ended practices (which have shown to benefit patients at high risk of T2D, as evidenced by the realist evaluation in Chapter V). Conversely, discourses emphasising the open-ended and unpredictable nature (or logic) of care (66,326) led to more reflective and adaptative approaches.

This study also found that provider's capacity to understand patients' concerns, navigate situations of uncertainty and adapt (reinvent) SP relied on previous professional and personal experiences and knowledge. These findings relate to a body of literature highlighting the role of both formal training and tacit knowledge (acquired through informal, lived experience) in ensuring care quality (58,164,328). Chapter VI also clearly revealed examples of "*homophily*", whereby shared backgrounds (as patients, neighbours, members of ethnic groups) placed providers in a better position to empathise with the patient's perspective, communicate their needs and advocate in their best interest (156).

This knowledge was further transferred and reproduced through strong and organic intra and interorganisational networks (156,330). The literature identifies relevant strategies to "*establish and maintain connections*" as a precondition for 'good practice' in SP (54). These include IT integration for regular and easy feedback on patients' journeys, protected time (and resources) for networking and team building purposes, adscription of link workers to single surgeries for greater integration and locally grown 'VCS breakfast meetings' where organisations can showcase services and liaise (93,181). Yet, the ties through which practices developed and circulated did not only map onto formal organisational arrangements and structures. Relevant bonds were also formed through, and as an outcome of, previous and present tacit experience (331).

At organisational level, predominant beliefs and ideas (about the meaning, uses and utility of SP) contributed to legitimising and reinforcing certain practices (while contracting or displacing others) (309). Chapter VI revealed how organisations often reproduced (or failed to challenge) an overarching narrative which depicted SP as a strategy aimed at '*solving'* patients' needs or reducing their '*reliance'* on health services. This shaped practice by prioritising aligned approaches and overlooking alternative outcomes and ways of supporting those in need (from emotional to appraisal, instrumental or informational support) (66,334). This research confirmed the importance of building a shared vision of the potential of SP while framing the innovation "*beyond a solutionist paradigm*" (66). This may allow providers to explore patients' needs and contexts in their full complexity, and value alternative outcomes and ways of supporting those in need (from emotional to appraisal, instrumental or informational support) (66,334).

This thesis also revealed the role of autonomy in enabling continuous acquisition and innovation of knowledge (326). While emphasis on guidelines and pre-defined targets constrained providers' capacity (and responsibility) to be inventive, autonomy fostered creative, locally adapted solutions (59,351). Practitioners were able to exercise their best judgment in adapting SP in patients' best interest. Critically, this often involved resisting (even subverting) guidelines if they were considered inappropriate. Chapter VI identified examples of daily resistance whereby providers found pragmatic ways of "*breaking*" (337) or "*reshuffling*" (338) the rules. As also reported elsewhere, compromises in the performance of certain practices allowed for the 'proper' enactment of others in settings where organisational pressures compromised best practice and/or front-line workers' professional values (315,337,339) – a process referred to as "*cross-practice trade-offs*" in practice theory (309).

However, the extent to which organisations used new knowledge to redefine what good practice looked like and put it to appropriate use (also referred to as "*absorptive capacity*" (335)) varied. While some organisations proved more receptive, others failed to acknowledge providers' suggestions or ways of practicing if they were not aligned with their provisions. Literature on diffusion of innovations suggests that for organisations to embrace new ideas and 'absorb' knowledge effectively, they need to have some prior knowledge to which relate it (and with which make sense of it) (156,336). As reported in Chapter VI, this might explain why those organisations who understood the complex, highly unpredictable nature of SP were better placed to tap into new knowledge and assimilate innovations (156).

Measures of quality for public reporting and re-commissioning also shaped (and structured) practice in different ways. Building on realist review findings (Chapter III), the qualitative case study (Chapter VI) confirmed the importance of relevant, flexible and feasible quality and performance monitoring strategies, so they can be used to improve local services, negotiated to adapt to local contexts and attained without excessive administrative burden. Study findings suggest prioritising informal modes of evaluation, where practitioners' judgements about the utility and effectiveness of new practice are considered (344,345) – a process referred to as "*reflexive monitoring*" in normalisation process theory (333).

Primary care providers' working conditions also influenced their capacity (and willingness) to "*do what's best*". In line with published literature, busy consultations, for instance, made it difficult for clinicians to engage with complexity and provide the personalised (usually more intensive) support that patients at high risk of T2D required (93). Similarly, link workers without protected caseloads (e.g., ascribed to PCNs instead of a single surgery) showed less flexibility to adapt their agenda and provide ongoing support to patients, amongst other constraints (341,342). Funding cuts and short-term contracts also limited VCS providers' opportunities to co-produce the best course of action and deliver the ongoing, open-ended support that patients at high risk of T2D required (58,59,63,340). These findings contribute to explaining why SP has often failed to prove its value as a strategy to save costs and resources. Instead, it seems to require strengthened (well-funded) systems to function, including spare capabilities to channel into new ideas (also referred to as "*slack resources*" (156)).

7.4. Thesis strengths and limitations

As far as I am aware, this is the first study exploring the potential of SP in the prevention of T2D. While there is increasing literature investigating the impact of SP in managing long term conditions (including T2D (64)), no previous studies have addressed SP in a specific context of preventative health. Building on exiting published literature, this thesis identified key ingredients that contribute to explaining how (and why) SP may succeed in supporting people at high risk of T2D with greatest health needs and social vulnerability, while overcoming some of the limitations described in existing T2D prevention programmes. This thesis also helped to gain further understanding of the conditions and resources that need to be in place for achieving "best practice" in SP relevant to communities at high risk.

In the UK, around 4.6 million people are diagnosed with diabetes, and the number is expected to increase up to 5 million by 2025 (70). People of lowest socio-economic status and racially minoritised groups are at higher risk of developing the condition but have shown lower uptake and higher attrition rates in existing T2D preventative programs (such as NDPP) (74–76). This timely thesis contributes to addressing this gap by focusing on T2D prevention approaches that are relevant and available to patients with greatest health and social vulnerability within a socio-economically deprived, multi-ethnic locality at high risk (258–260).

Critically, findings may also be relevant to other long-term conditions, including mental health or multimorbidity as revealed by the quantitative analysis. The practices, resources and conditions identified in this thesis could help reduce healthcare inequalities more broadly, by developing health promotion approaches relevant (and available) to those with greatest health and social vulnerability.

Another key strength of this study is its theoretically grounded, methodologically pluralistic approach, informed by complexity science (51). I used realist methodology (including a realist review and evaluation in Chapters III and V, respectively) to explore what 'good' practice in SP relevant to people at high risk of T2D might look like. Discourse analysis (Chapter IV) helped to uncover how SP is framed, conceptualised and 'used' in contemporary society and explore the impact of existing discourses on the way services are developed, implemented and evaluated. A critical perspective was used to illuminate the contradictions, paradoxes, and dilemmas in the SP discursive context, and challenge the validity of these claims and their potential consequences. I also drew on practice theory (Chapter VI) to better characterise different kinds of contextualised SP practices, conditions for their enactment, and their varying degrees of potential in supporting patients at high risk of T2D. The use of diverse and synergic theoretical and methodological perspectives enabled a rich and in-depth understanding of SP delivery by drawing together different kinds of data (including qualitative and quantitative) from multiple sources. In keeping with complexity science, this research also followed a 'pragmatic' (applied) approach to SP, focusing on the practical and achievable (rather than the theoretical or ideal) to generate useful knowledge for daily practice, service innovation and quality improvement (112).

Another distinctive feature of this thesis is my own role and background both as main researcher and practicing primary care clinician (GP) in the local area. Shared identity and experiential base with study participants afforded access, entry, and a common ground from which collect and analyse data. On the other hand, it is important to note that being a GP could have influenced some of the interviews due to power dynamics with both patients and other NHS and VCS staff. Additionally, there is a risk of overemphasising shared experiences while overlooking any discrepancies during the process of data collection and analysis. Analytic reflexivity and ongoing dialog with the research team allowed me to manage potentially biasing factors while maintaining sensitivity to the data.

The thesis has limitations. First, I identified the characteristics (key ingredients) of SP that may contribute to T2D prevention in communities at high risk but did not investigate the actual impact of such practices in reducing patients' overall risk of developing the condition. Further research will be critical to ascertain whether (and if so, to what extent) holistic, accessible, integrated and sustained SP succeeds in preventing T2D amongst high-risk patients with greatest health and social need.

Second, quantitative data in Chapter V were restricted to referrals into SP (and/or NDPP) and did not, therefore, capture the extent to which patients actually engaged with SP or NDPP, the type and duration of activities accessed or subsequent actions. Insufficient quantitative characterisation of the interventions meant that it was not possible to investigate possible differences in the type or duration of activities accessed by high-risk patients with greatest health and social need. Qualitative findings, however, helped to mitigate these constraints by providing rich context and in-depth explanations, including the key ingredients for potentially successful individual-level T2D prevention and detailed accounts of how (and why) programmes may (or may not) work.

Third, pandemic restrictions involved adaptations of both the intervention(s) (e.g., remote SP and NDPP sessions) and data collection strategies (e.g., holding some of the ethnographic observations and qualitative interviews remotely). This could have biased the sample towards less deprived and digitally literate participants and prevented a deeper immersion in the field - in line with best practice recommendations in practice-theory informed research (316). I sought to mitigate these limitations by offering phone as well as video interviews, adapting interview schedules to meet individual circumstances, and undertaking face to face interviews and observations as soon as it was permissible and safe to do so. I also adopted a practice-oriented interview approach, which involved ‘re-presenting’ practice during interviews and contrasting participants’ accounts with available documentation on service characteristics and evaluation reports.

Lastly, this thesis focused mainly on identifying individual-level impacts and capabilities, while community-level processes and synergies remained less explored. As highlighted by *Ponsford and colleagues*, it is critical to identify capabilities that emerge at the level of the collective where community-level processes (such as, SP) are concerned (352). In order to capture the full potential of community health promotion initiatives, further research should move beyond individual-level behaviours and lifestyles to also explore the dynamics of interactions within and between community groups, including their contribution to social transformation and political change for greater equity (236,353).

7.5. Implications for policy and practice

In this section, I summarise evidence-based practice and policy recommendations for the development, implementation, and evaluation of SP programs relevant to the prevention of T2D in communities at high risk. Recommendations are aimed at individual primary care and VCS practitioners, GP practices and VCS organisations, SP commissioners, PCNs and national policymakers, as follows:

7.5.1. Recommendations about SP delivery aimed at individual primary care and VCS practitioners

- Understanding patients’ wider cultural and socioeconomic context is key to providing personalised care and effective SP. It is recommended that practitioners **engage in open conversations** with patients (both prior to and during referrals and activities) to explore wider issues affecting their life and provide services relevant and appropriate to their specific situation.

- Patients at high risk of T2D often encounter difficulties in accessing and navigating healthcare and community services, including SP. To address this issue, it is recommended that practitioners **schedule follow-up appointments** to ensure that patients have successfully accessed the recommended services. By doing so, practitioners can identify potential barriers to accessing care and implement strategies to overcome them.

- Available SP interventions may not always be effective, adequate, or suitable for patients at high risk of T2D, especially where complex health and social needs co-exist. To manage patients' expectations and prevent them from feeling responsible for any potential setbacks, practitioners should explicitly communicate that they are collaboratively ***testing and trying*** different approaches while monitoring progress and adapting next steps accordingly.

7.5.2. Recommendations about SP implementation and delivery aimed at individual GP practices and VCS organisations

- Patients at high risk of T2D often face multiple health and social needs that can impact their access and response to SP. To address these overlapping needs, this research suggests **widening and diversifying the remit** of available services. This may be achieved by providing in-house legal advice alongside physical activity programs in community settings, up-skilling link workers on relevant domains such as health coaching and welfare advice or bringing in welfare advisors and lifestyle programs into GP practices.

- To facilitate the access of patients at high risk of T2D to SP, it is recommended that GP practices and VCS organisations **create welcoming environments** with the support of trained volunteers and buddies, easy-to-understand information packs, amongst other strategies. By doing so, organisations can help address the social and psychological barriers that may be preventing patients from accessing essential health and community services.

- Organisations are recommended to build a **collective understanding** of the role that SP plays in preventing T2D by developing a shared vision of what 'good practice' looks like in practice. It is also essential to reframe SP beyond a solutionist paradigm to help providers explore patients' needs in their full complexity and consider alternative outcomes and ways of supporting those in need. This can range from emotional to appraisal, instrumental, or informational support.

- To ensure the successful implementation of SP relevant to T2D prevention, organisations must be able to effectively assimilate and utilise new knowledge. To accomplish this, they should establish or strengthen **communication channels with frontline staff**, enabling them to identify and address their concerns, suggestions, and solutions. This new knowledge should be leveraged to iteratively redefine and improve upon "good practice" and create conditions that facilitate its effective enactment.

- Granting **flexibility and autonomy** to frontline staff can facilitate the development of creative and locally adapted SP practices that are relevant to patients at high risk of T2D. Organisations should trust frontline workers to exercise their own judgement and criteria, enabling them to navigate existing constraints and customise practices and services accordingly.

7.5.3. Recommendations about SP commissioning aimed at local commissioners and Primary Care Networks

- To ensure that patients at high risk of developing T2D with the greatest health and social vulnerability can access SP easily, this research recommends the commissioning of services that are inclusive. This involves **removing the requirement for tests or medical assessments** such as BMI or diabetes-related blood tests to access SP services and/or VCS activities.

- Commissioners are recommended to prioritise **ongoing and open-ended** community activities and remove any restrictions on the number of consultations a patient may have with a link worker. Providing sustained care is key to fostering therapeutic relationships between SP providers and patients, support patients in maintaining a healthy lifestyle, and enabling the monitoring of their progress.

- Individuals who are at risk of developing T2D often have complex health and social needs that require additional support from various healthcare services, including primary, secondary, and community care. It is crucial to ensure that these services are well-connected and work in tandem to provide integrated care and address the overlapping needs of patients. To facilitate this, SP commissioners are advised to rely on and collaborate with **local providers**, such as GP practices and existing VCS organisations, instead of external private organisations. In addition, commissioners should prioritise the development of infrastructure and opportunities for **interprofessional partnerships and communication**. Examples of effective strategies include IT integration for regular feedback, locally organised VCS breakfast meetings, and the invitation of link workers to GP clinical meetings.

- The training and professional background of SP providers can significantly enhance their ability to understand and effectively address patients' concerns. SP commissioners are advised to ensure **formal training opportunities and peer discussion forums** where practitioners can reflect on the relevance and implications of their practice. In addition, commissioners should value the **practical skills and knowledge** that providers have acquired through their personal and professional backgrounds. For instance, relying on practitioners with local work experience and shared ethnic or cultural backgrounds can be highly beneficial.

- When commissioning local SP services, priority should be given to **informal modes of evaluation** that incorporate practitioners' judgments about the effectiveness and utility of interventions. Monitoring strategies should be **individualised and negotiated** with local providers to ensure they are responsive to local contingencies and implemented without undue administrative burden. A special focus should be on **monitoring the reach and equity of access** of SP services to ensure they are used by patients in greatest need and contribute to reducing health inequalities.

7.5.4. Recommendations for successful nation-wide SP roll-out aimed at national policymakers

- Strong, diverse, and locally grown VCS organisations are essential to supporting patients with great health and social vulnerability in communities at high risk of T2D. To ensure the long-term sustainability and capacity of VCS activities, SP roll-out must prioritise the **funding of VCS organisations**. This will ensure that patients receive effective support and that VCS organisations are able to sustain their activities over time.

- As a recommendation for national policymakers, it is essential to prioritise the full integration of link workers in GP teams and provide them with sufficient time and resources to develop their role. To accomplish this, SP roll-out should mandate the **assignment of link workers to individual GP practices** rather than primary care networks. This will also contribute to protecting their workload, enabling them to provide ongoing care, engage in community health promotion, and participate in networking activities.

- Primary care clinicians need sufficient time to assess patients' wider health and social care needs and monitor their progress during SP delivery. Accompanying the roll-out of SP services, policies should be implemented **to protect GP workload** and incentivise **continuity**

of care with named clinicians, especially in areas of high socioeconomic deprivation and risk of T2D where higher SP referral rates are to be expected.

- In order to ensure equitable access and scale up best practice in SP, a national **quality benchmarking strategy** should be incorporated in the SP roll-out. The strategy should focus on collecting routine data on SP delivery and access, informal evaluations with end-users including GP practices and VCS organisations operating in socio-economically deprived areas, and the ongoing use of this data to inform policy decisions and improve service delivery.

7.6. Future research recommendations

While this thesis has identified the characteristics of SP that may contribute to reaching patients at high risk of T2D with greatest health and social vulnerability, its role in reducing their overall risk of developing the condition is to be determined. It is my expectation that this study will offer valuable insights into selecting the most suitable study design for exploring the effectiveness of SP in T2D prevention.

This thesis confirmed that SP is a highly complex practice, shaped by multiple, interrelated factors. The primary potential of SP lies in its capacity to continuously evolve and adapt to emergent needs and situations, which makes it highly unpredictable. This study also found that the conditions that may contribute to this highly creative practice are often processes in themselves, and hence require time to be developed. VCS activities, for instance, became accessible because of locally grown contacts, affiliations and partnerships, forged over time. Link workers could effectively navigate daily constraints thanks to grounded knowledge of what was possible and relationships developed through, and as an outcome of, previous and present tacit experience.

In order to effectively study the effectiveness of SP, researchers must acknowledge and embrace its inherent complexity, rather than trying to control it. Capturing and interpreting this complexity requires relying on study designs that are grounded in theory and methodologically diverse, incorporating multiple sources of data, both qualitative and quantitative. This will likely require a more detailed quantitative characterisation of the intervention that goes beyond access/referral into

SP to also consider the types of activities and duration of support offered. The SP Observatory[4] has made considerable progress by including and reporting codes for non-medical interventions accessed through SP (e.g., health education, arts therapy services, benefits agency, physical activity, metal health services). More accurate coding systems will be critical to also capture organisational dimensions (e.g., characteristics of the VCS organisations accessed), workforce measures (e.g., number of link workers per population) and attendance indicators (e.g., total number of General Practice, link worker and VCS visits per patient). This routinely collected observational data will allow to generate real-world evidence on SP delivery, including its potential in contributing to T2D prevention if appropriate causal inference analyses are undertaken. Observational data will also be key in economic evaluation studies to calculate the costs and effects of SP over alternative health interventions, such as NDPP.

Additional qualitative research should also contribute to achieving greater immersion in the field site, hence overcoming some of the limitations of this thesis. Greater commitment to an observational research orientation will be key to appreciating practice as it happens and identifying daily (often taken for granted) tensions, challenges and opportunities for innovation in SP. Adopting such an approach will enable researchers to pay more attention to the practices, processes, and factors that facilitate (or hinder) the achievement of significant outcomes.

Further research will also be critical to test the generalisability of study findings to other conditions and areas of health need, beyond T2D. This research suggests embracing a 'health promotion' approach to T2D prevention in communities at high risk, by emphasising a positive and holistic view of health, focusing on the whole population (while paying special attention to those in greatest need) and encouraging community action and involvement through SP. Study findings are, therefore, expected to be applicable to areas of health need and populations where health promotion and healthy living are crucial factors. Further research will, however, be critical to develop a more nuanced understanding of what community-based health promotion looks like for SP users and providers across different health domains.

Lastly, further research will also be key to unravelling the full potential of SP in contributing to social transformation and equity by also exploring community-level processes enabled by the intervention. Beyond individual level impacts and capabilities, SP may hold considerable promise in strengthening collective control in disadvantaged communities. Additional research will be critical to ascertain

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[4] Social Prescribing Observatory: https://orchid.phc.ox.ac.uk/index.php/social-prescribing-observatory-prod/

whether (and if so, how) SP may strengthen the collective power that communities need to contribute to political change for greater equity.

7.7. Overall conclusions and summary

This thesis revealed the need (and merit) of an alternative framing of individual-level T2D prevention: as personalised, long term and inclusive *practices* rather than standardised, short-term and targeted *interventions*. SP involved embracing a health promotion approach to T2D prevention in communities at high risk, by emphasising a positive and holistic view of health, focusing on the whole population (while paying special attention to those in greatest need) and encouraging community action and involvement. Findings confirmed that community-based health promotion is ideally placed to develop more acceptable, culturally appropriate, and hence effective ways to addressing the risks to health (and T2D) that communities face.

Delivering such services proved, however, a rather complex and contested endeavour, shaped by providers' own subjectivity, experience and wider organisational and policy influences. This thesis identified different, overlapping ways of practising SP: from highly creative, reflective and adaptative ('I do what's best'), to more constrained ('I do what I can') or compliant ('I do as I'm told') approaches. Critically, these different practices showed varying degrees of potential in supporting patients at high risk of T2D. Opportunities to adapt, try, negotiate, and ultimately reinvent SP to suit individuals' own needs facilitated adoption and successful SP implementation, but were shaped by critical individual, interpersonal, organisational, and institutional constraints.

Practitioners engaged with 'best practice' while it had meaning and purpose for them. This was facilitated by formal training, practical skills (acquired through relevant personal and professional background(s)) and ongoing opportunities for reflection. The study also releveled the importance of strengthening interprofessional connections and communication. At organisational level, there was a need to make collective sense of SP and its role in T2D prevention by building a shared vision of what 'good practice' entailed in practice. Frontline staff also required flexibility and authority to make adjustments, while organisations remained receptive to new interpretations and emergent solutions. The study also confirmed the central role of stable and sufficient VCS and primary care commissioning arrangements, including spare capabilities to support innovation.

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Appendix

Appendix 1. Literature searches

The final search strategy included combinations of search terms for the concepts ‘social prescribing’, ‘primary care’, ‘community referral’. It was informed by previous related reviews on SP and further developed in MEDLINE (Ovid) using an iterative process of adding, removing and refining search terms.

In September 2019, the following databases were searched: MEDLINE (Ovid), EMBASE (Ovid), PsycINFO (Ovid), Scopus (Elsevier), Web of Science (Clarivate Analytics), CINAHL Plus (EBSCO), PubMed (NCBI), International Bibliography of the Social Sciences - IBSS (ProQuest), The Cochrane Database of Systematic Reviews (The Cochrane Library), Campbell Collaboration, Open Grey (INISR-CNRS), King’s Fund Database and LILACS (BIREME).

Database alerts were set up to identify studies published between October 2019 and March 2020.

Database: MEDLINE

Host: Ovid.

Date searched: 27 September 2019.

Searcher: Sara Calderón, Yasmin Milner.

Hits: 129.

Strategy:

1. (social prescri* and type 2 diabetes).mp.
2. (social prescri* or community referral).mp.
3. (social prescri* or community referral or non medical referral).mp.
4. (social prescri* and primary health care).mp.
5. (social prescri* and primary care).mp.
6. (social prescri* or community referral or referral scheme).mp.
7. ((((social prescri* or community referral) and primary care) or primary health care) and diabetes).mp.
8. ((social prescri* or community referral) and primary health care and diabetes).mp.
9. 1 or 2 or 3 or 4 or 5 or 8

Database: EMBASE

Host: Ovid.

Date searched: 27 September 2019.

Searcher: Sara Calderón, Yasmin Milner.

Hits: 271.

Strategy:

1. (social prescri* and type 2 diabetes).mp.
2. (social prescri* or community referral).mp.
3. (social prescri* or community referral or non medical referral).mp.
4. (social prescri* and primary health care).mp.
5. (social prescri* and primary care).mp.
6. (social prescri* or community referral or referral scheme).mp.
7. ((((social prescri* or community referral) and primary care) or primary health care) and diabetes).mp.
8. ((social prescri* or community referral) and primary health care and diabetes).mp.
9. 1 or 2 or 3 or 4 or 5 or 8

Database: PsycINFO

Host: Ovid.

Date searched: 27 September 2019.

Searcher: Sara Calderón, Yasmin Milner.

Hits: 113.

Strategy:

1. (social prescri* and type 2 diabetes).mp.
2. (social prescri* or community referral).mp.
3. (social prescri* or community referral or non medical referral).mp.
4. (social prescri* and primary health care).mp.
5. (social prescri* and primary care).mp.
6. (social prescri* or community referral or referral scheme).mp.
7. ((((social prescri* or community referral) and primary care) or primary health care) and diabetes).mp.
8. ((social prescri* or community referral) and primary health care and diabetes).mp.
9. 1 or 2 or 3 or 4 or 5 or 8

Database: Scopus

Host: Elsevier.

Date searched: 29 September 2019.

Searcher: Sara Calderón, Yasmin Milner.

Hits: 355.

Strategy:

1. TITLE-ABS-KEY ("Social Prescri*" OR "community referral" AND "type 2 diabetes")

2. TITLE-ABS-KEY ("Social Prescri*" OR "community referral")
3. TITLE-ABS-KEY ("Social Prescri*" OR "community referral" AND "diabetes" AND "primary health care")
4. TITLE-ABS-KEY ("Social Prescri*" OR "community referral" AND "primary health care")
5. TITLE-ABS-KEY ("Social Prescri*" AND "primary health care")

Database: CINAHL Plus

Host: EBSCO.

Date searched: 30 September 2019.

Searcher: Sara Calderón, Yasmin Milner.

Hits: 165.

Strategy:

1. "Social prescri*" OR "community referral"

Database: PubMed

Host: NCBI.

Date searched: 30 September 2019.

Searcher: Sara Calderón, Yasmin Milner.

Hits: 183.

Strategy:

1. (((((((social prescri*) OR "community referral")) AND "primary health care")) OR ((social prescri*) OR "community referral"))) OR ((((social prescri*) OR "community referral")) AND diabetes)
2. (((((social prescri*) OR "community referral")) AND "primary health care")) OR ((social prescri*) OR "community referral")

Database: Web of Science

Host: Clarivate Analytics.

Date searched: 30 September 2019.

Searcher: Sara Calderón, Yasmin Milner.

Hits: 183.

Strategy:

1. ("social prescri*")
2. ("social prescri*" OR "community referral")
3. ("social prescri*" OR "community referral") *AND* (diabetes)

4. ("social prescri*" OR "community referral") *AND* ("primary health care")
5. #4 OR #3 OR #2 OR #1

Database: IBSS

Host: ProQuest.

Date searched: 30 September 2019.

Searcher: Sara Calderón, Yasmin Milner.

Hits: 11.

Strategy:

1. noft("community referral") OR noft("social prescri*")

Database: Cochrane Library

Host: Cochrane Collaboration.

Date searched: 30 September 2019.

Searcher: Sara Calderón, Yasmin Milner.

Hits: 28.

Strategy:

1. "social prescri*" in Title Abstract Keyword OR "community referral" in Title Abstract Keyword AND "primary care" in Title Abstract Keyword
2. "social prescri*" in Title Abstract Keyword OR "community referral" in Title Abstract Keyword AND diabetes in Title Abstract Keyword
3. "social prescri*" in Title Abstract Keyword OR "community referral" in Title Abstract Keyword

Database: Open Grey

Host: INISR-CNRS.

Date searched: 30 September 2019.

Searcher: Sara Calderón, Yasmin Milner.

Hits: 1.

Strategy:

1. "social prescribing" OR "community referral"

Database: LILACS

Host: BIREME.

Date searched: 30 September 2019.

Searcher: Sara Calderón, Yasmin Milner.

Hits: 93.

Strategy:

1. (tw:("community referral"))
2. (tw:("community referral")) AND (tw:("social prescribing"))

Database: King's Fund

Host: The King's Fund.

Date searched: 3 October 2019.

Searcher: Sara Calderón, Yasmin Milner.

Hits: 218.

Strategy:

1. "social prescribing"
2. "community referral" AND "social prescribing"

Appendix 2. Quality appraisal of studies included in the realist review

Table 2a. Quality appraisal main search (n=68)
Table 2b. Quality appraisal of papers identified separately (n=59)
Table 2c. Quality appraisal additional search (n=4)
Table 2d. Quality appraisal of papers identified through database alerts (n=9)

Table 2a. Quality appraisal main search (n=68)

Authors (year)	Country	Type of paper	Study Design	Relevance	Richness	Rigour
Rempel ES, et al. (2017) (50)	UK	Research (published paper)	Literature Review	Low relevance	Conceptually thick	Good (CASP)
Woodall J, et al. (2018) (151)	UK	Research (published paper)	Mixed Methods Study	High relevance	Conceptually rich	Good (MMAT)
Darnton P, et al. (2018) (199)	UK	Research (web-based report)	Mixed Methods and Economic Evaluation	Low relevance	Conceptually thick	Poor (MMAT)
Pescheny J, et al. (2018) (185)	UK	Research (published paper)	Qualitative Study	High relevance	Conceptually thick	Good (CASP)
Bickerdike L, et al. (2017) (42)	UK	Research (published paper)	Literature review	High relevance	Conceptually thick	Good (CASP)
Ferguson K (2018) (354)	UK	Research (web-based report)	Cross-sectional survey study	High relevance	Conceptually thick	Poor (NIH)
Loftus AM, et al. (2017) (225)	UK	Research (published paper)	Before-and-after study	High relevance	Conceptually thin	Good (NIH)
Prior F, et al. (2019) (355)	UK	Research (published paper)	Before-and-after study	Low relevance	Conceptually thin	Fair (NIH)

Stewart EE, et al. (2014) (356)	USA	Research-based toolkit (published paper)	Case Study	High relevance	Conceptually thin	Fair
Kilgarriff-Foster A, et al. (2015) (189)	UK	Research (published paper)	Literature review	High relevance	Conceptually thick	Fair (CASP)
Chatterjee HJ, et al. (2018) (48)	UK	Research (published paper)	Literature review	High relevance	Conceptually thin	Fair (CASP)
Chesterman D, et al. (2018) (357), linked to Mistry B, et al.	UK	Research (published paper)	Action Research Study	Low relevance	Conceptually rich	Fair (CASP)
Dayson C (2017) (193)	UK	Research (published paper)	Mixed Methods Case Study	High relevance	Conceptually rich	Fair (MMAT)
Ferguson K, et al. (2018) (91), linked to (354)	UK	Research (web-based report)	Mixed Methods Evaluation Study	High relevance	Conceptually rich	Fair (MMAT)
Blickem C, et al. (2013) (190)	UK	Research (published paper)	Qualitative interview and focus group study	Low relevance	Conceptually thick	Good (CASP)
Elston J, et al. (2019) (221)	UK	Research (published paper)	Before-and-after study	High relevance	Conceptually thin	Good (NIH)
Whitelaw S, et al. (2017) (183)	UK	Research (published paper)	Qualitative Case Study	High relevance	Conceptually rich	Good (CASP)
White JM, et al. (2017) (61)	UK	Research (published paper)	Qualitative Interview Study	High relevance	Conceptually rich	Good (CASP)
Polley M, et al (2017) (46)	UK	Research (web-based report)	Literature review	High relevance	Conceptually thin	Poor (CASP)
Dayson C, et al. (2018) (358)	UK	Research (web-based report)	Before-and-after study	High relevance	Conceptually thin	Poor (NIH)
Martín-Borràs C, et al. (2018) (174)	Spain	Research (published paper)	Randomized Controlled Trial	Low relevance	Conceptually thin	Good (CASP)

Husk K, et al. (2019) (55)	UK	Research (published paper)	Realist Review	High relevance	Conceptually rich	Good (CASP)
Pescheny JV, et al. (2019) (359)	UK	Research (published paper)	Before-and-after study	High relevance	Conceptually thin	Fair (NIH)
Pescheny JV, et al. (2019) (44)	UK	Research (published paper)	Systematic Review	High relevance	Conceptually rich	Good (CASP)
Carnes D, et al. (2017) (360)	UK	Research (published paper)	Mixed Methods Study	High relevance	Conceptually thick	Good (MMAT)
Thomson LJ, et al. (2015) (361)	UK	Research (web-based report)	Literature review	High relevance	Conceptually thick	Poor (CASP)
Moffatt S, et al. (2017) (67)	UK	Research (published paper)	Qualitative Interview Study	High relevance	Conceptually rich	Good (CASP)
Pons-Vigués M, et al. (2019) (187)	Spain	Research (published paper)	Descriptive Qualitative Research	Low relevance	Conceptually rich	Good (CASP)
Wigfield A, et al. (2015) (198)	UK	Research (web-based report)	Mixed Methods Study	High relevance	Conceptually thin	Poor (MMAT)
Arsenijevic J, et al. (2017) (362)	The Netherlands	Research (published paper)	Systematic Review and meta-analyses	Low relevance	Conceptually thin	Good (CASP)
Campbell F, et al. (2015) (157)	UK	Research (published report)	Systematic Review and Economic Evaluation	Low relevance	Conceptually thick	Good (CASP)
Lindau ST, et al. (2016) (170)	USA	Research (published paper)	Before-and-after Study (including cross-sectional surveys)	Low relevance	Conceptually thin	Poor (NIH)
Hamilton-West K, et al. (2019) (158)	UK	Research (published paper)	Evaluability Assessment Study	Low relevance	Conceptually thick	Good (CASP)
Wildman JM, et al. (2019) (56) linked to (67)	UK	Research (published paper)	Qualitative Follow-up Study	High relevance	Conceptually rich	Good (CASP)

Hanlon P, et al. (2021) (172)	UK	Research (published paper)	Qualitative Interview Study	High relevance	Conceptually rich	Good (CASP)
Wildman JM, et al. (2019) (164) linked to (56)	UK	Research (published paper)	Qualitative Interview and Focus Groups Study	High relevance	Conceptually rich	Good (CASP)
Swift M (2017) (224)	UK	Research (published paper)	Mixed Methods Study	High relevance	Conceptually rich	Poor (MMAT)
Wessex Academic Health Science Network (2017) (363)	UK	Research (web-based report)	Mixed Methods Study	High relevance	Conceptually thin	Poor (MMAT)
Beech R, et al. (2017) (165)	UK	Research (published paper)	Realist Evaluation (mixed methods design)	High relevance	Conceptually rich	Good (MMAT)
Coan J (2016) (220)	UK	Research (web-based report)	Mixed Methods Research	High relevance	Conceptually thick	Poor (MMAT)
Bertotti M, et al. (2015) (202)	UK	Research (web-based report)	Mixed Methods Study (including an Economic Evaluation)	High relevance	Conceptually thick	Poor (MMAT)
Skivington K, et al. (2018) (21)	UK	Research (published paper)	Qualitative Interview Study	High relevance	Conceptually rich	Good (CASP)
Dayson C, et al. (2019) (197)	UK	Research (published paper)	Qualitative Case Study	High relevance	Conceptually rich	Good (CASP)
Southby K, et al. (2018) (166)	UK	Research (published paper)	Qualitative Case Study	High relevance	Conceptually rich	Good (CASP)
Heijnders ML, et al. (2018) (31)	The Netherlands	Research (published paper)	Qualitative Interview Study	High relevance	Conceptually rich	Good (CASP)

Centre for Reviews and Dissemination. University of York (2015) (364)	UK	Research (web-based report)	Rapid Review	High relevance	Conceptually thin	Fair (CASP)
Tierney S, et al. (2019) (365)	UK	Research (published paper)	Cross-Sectional Study	High relevance	Conceptually thin	Good (NIH)
Pescheny JV, et al. (2018) (181)	UK	Research (published paper)	Literature Review	High relevance	Conceptually rich	Good (CASP)
Pilkington K, et al. (2017) (65)	UK	Research (published paper)	Scoping Review	High relevance	Conceptually thin	Good (CASP)
South et al. (2008) (60)	UK	Research (published paper)	Qualitative Case Study	High relevance	Conceptually thick	Fair (CASP)
Bertotti M, et al. (2018) (57) linked to (202) (360)	UK	Research (published paper)	Realist Evaluation (Mixed Methods Study)	High relevance	Conceptually rich	Good (MMAT)
Bragg R, et al. (2017) (366)	UK	Research (web-based report)	Evidence Synthesis	High relevance	Conceptually rich	Poor (CASP)
Bungay H, et al (2010) (162)	UK	Research (published paper)	Evidence Synthesis	Low relevance	Conceptually thin	Poor (CASP)
Grant C, et al. (2000) (367)	UK	Research (published paper)	Randomized Controlled Trial	High relevance	Conceptually thin	Good (CASP)
Jensen A, et al. (2019) (223)	Denmark	Research (published paper)	Qualitative Study	Low relevance	Conceptually thin	Fair (CASP)
Jensen A, et al. (2017) (368)	Sweden, Norway, Denmark, UK	Research (published paper)	Rapid Review	Low relevance	Conceptually thin	Fair (CASP)
Maughan DL, et al (2016) (369)	UK	Research (published paper)	Observational Study	High relevance	Conceptually thin	Poor (CASP)

Redmond M, et al. (2018) (370)	UK	Research	Qualitative Follow-up Study	Low relevance	Conceptually thick	Fair (CASP)
Age Concern Support Services (2011) (371)	UK	Research (web-based report)	Mixed methods (Qualitative case studies, before-and after survey)	High relevance	Conceptually thin	Poor (MMAT)
Stickley T, et al. (2013) (179)	UK	Research (published paper)	Qualitative follow-up study	Low relevance	Conceptually thick	Good (CASP)
Stickley T, et al. (2012a) (177)	UK	Research (published paper)	Qualitative Interview Study	Low relevance	Conceptually thick	Good (CASP)
Stickley T, et al. (2012b) (372)	UK	Research (published paper)	Qualitative Interview Study	Low relevance	Conceptually thick	Good (CASP)
Sumner RC, et al. (2019) (373) linked to (370)	UK	Research (published paper)	Before-and-after Study	Low relevance	Conceptually thin	Fair (NIH)
Thomson L, et al. (2018) (374)	UK	Research (published paper)	Mixed-Methods Study	Low relevance	Conceptually thin	Poor (MMAT)
Creative Alternatives (2009) (375)	UK	Research (web-based report)	Before-and-after Study	Low relevance	Conceptually thin	Poor (NIH)
Whelan G, et al. (2016) (376) linked to (375)	UK	Research (web-based report)	Mixed Methods Study	Low relevance	Conceptually thin	Poor (MMAT)
Alarcón-Belmonte, et al. (2019) (377)	Spain	Research (published paper)	Case Study	Low relevance	Conceptually thick	Fair (CASP)
Formento Marín N, et al (2019) (378)	Spain	Research (published paper)	Case Study	Low relevance	Conceptually thick	Fair (CASP)

Table 2b. Quality appraisal of papers identified separately (n=59)

Authors (year)	**Country**	**Type of paper**	**Study Design**	**Relevance**	**Richness**	**Rigour**
Faulkner M (2004) (168)	UK	Research (published paper)	Qualitative Pilot Study	High relevance	Conceptually rich	Good (CASP)
Stirrat, S (2014) (159)	Ireland	Research (Thesis)	Mixed-Methods Evaluation Study	Low relevance	Conceptually rich	Good (MMAT)
Ackermann RT, et al. (2005) (379)	USA	Research (published paper)	Cluster randomized controlled trial	Low relevance	Conceptually thin	Good (CASP)
Roessler K (2011) (380)	Denmark	Research (published paper)	Qualitative Follow-up Study	Low relevance	Conceptually rich	Good (CASP)
Baines A (2015) (381)	UK	Research (web-based report)	Mixed-Methods Evaluation Study	Low relevance	Conceptually thick	Poor (MMAT)
Harrison RA, et al. (2005) (382)	UK	Research (published paper)	Cross-Sectional Study	Low relevance	Conceptually thin	Good (NIH)
Edmunds et al. (2007) (383)	UK	Research (published paper)	Before-and-after Study	Low relevance	Conceptually thin	Poor (NIH)
Jones et al. (2005) (384)	UK	Research (published paper)	Before-and-after Study	Low relevance	Conceptually thin	Fair (NIH)
Murphy et al. (2012) (155)	UK	Research (published paper)	Pragmatic randomised controlled trial with nested economic evaluation	Low relevance	Conceptually thin	Good (CASP)
Gidlow C, et al. (2005) (172)	UK	Research (published paper)	Literature Review	Low relevance	Conceptually thick	Good (CASP)

Rahman R, et al. (2011) (385)	UK	Research (published paper)	Before-and-after Study	Low relevance	Conceptually thin	Poor (NIH)
Morton K, et al (2008) (222)	UK	Research (published paper)	Before-and-after Study	Low relevance	Conceptually thin	Poor (NIH)
Munro JF, et al. (2004) (386)	UK	Research (published paper)	Pragmatic, cluster randomised community intervention trial	Low relevance	Conceptually thin	Fair (CASP)
Edwards R, et al. (2013) (387) Linked to (155)	UK	Research (published paper)	Economic Evaluation	Low relevance	Conceptually thin	Good (CASP)
Kimberlee RH (2013) (388)	UK	Research (web-based report)	Mixed methods (Literature Review and Qualitative Study)	High relevance	Conceptually thick	Poor (MMAT)
Harrison R, et al. (2005) (389)	UK	Research (published paper)	Randomized controlled trial	Low relevance	Conceptually thin	Good (CASP)
Pavey T, et al. (2011) (43)	UK	Research (published paper)	Systematic review and meta-analysis	Low relevance	Conceptually thin	Good (CASP)
Williams NH, et al. (2007) (390)	UK	Research (published paper)	Systematic review and meta-analysis	Low relevance	Conceptually thick	Good (CASP)
Public Health England (2019) (41)	UK	Research (web-based report)	Evidence Synthesis (rapid review)	High relevance	Conceptually thick	Good (CASP)
Duda J, et al. (2014) (391)	UK	Research (published paper)	Cluster randomised controlled trial	Low relevance	Conceptually thin	Good (CASP)
Kok M, et al. (2016) (392)	UK	Research (web-based report)	Before-and-after Study	Low relevance	Conceptually thin	Fair (NIH)
Mercer S, et al. (2017) (184)	UK	Research (web-based report)	Mixed-methods study	High relevance	Conceptually rich	Good (MMAT)

Isaacs AJ, et al. (2007) (393)	UK	Research (published report)	A parallel-group, randomised controlled trial	Low relevance	Conceptually thin	Fair (CASP)
Flannery O, et al. (2014) (394)	UK	Research (web-based report)	Mixed Methods Study	Low relevance	Conceptually thick	Fair (MMAT)
Mills H, et al. (2012) (395)	UK	Research (published paper)	Mixed Methods Study	Low relevance	Conceptually thick	Good (MMAT)
James D, et al. (2009) (396) linked to (395)	UK	Research (published paper)	Prospective Population-based Longitudinal Study	Low relevance	Conceptually thin	Fair (CASP)
Penn L, et al. (2013) (175)	UK	Research (published paper)	Mixed Methods Pilot Study	Low relevance	Conceptually thin	Poor (MMAT)
Dayson C, et al. (2016) (397)	UK	Research (web-based report)	Mixed Methods Study and Economic Evaluation	High relevance	Conceptually thick	Fair (MMAT)
Kimberlee RH (2016) (200)	UK	Research (web-based report)	Mixed Methods Study and Economic Evaluation	High relevance	Conceptually thick	Fair (MMAT)
Wormald H, et al. (2004) (173)	UK	Research (published paper)	Qualitative Focus Group Study	Low relevance	Conceptually rich	Good (CASP)
Jepson R, et al. (2010) (398)	UK	Research (web-based report)	Mixed Methods Study	Low relevance	Conceptually rich	Good (MMAT)
Graham RC, et al. (2005) (182)	UK	Research (published paper)	Mixed Methods Study	Low relevance	Conceptually thick	Fair (MMAT)
Din NU, et al. (2015) (188)	UK	Research (published paper)	Qualitative Study	Low relevance	Conceptually rich	Good (CASP)
Rouse O, et al. (2011) (399)	UK	Research (published paper)	Cross-Sectional Study	Low relevance	Conceptually thin	Fair (NIH)
Brandling J, et al. (2007) (226)	UK	Research (web-based report)	Mixed Methods Pilot Study	High relevance	Conceptually thick	Poor (MMAT)

Dinan S, et al (2006) (400)	UK	Research (published paper)	Prospective cohort study	Low relevance	Conceptually thin	Poor (CASP)
Moore GF, et al. (2013) (176)	UK	Research (published paper)	Mixed Methods Study	Low relevance	Conceptually rich	Good (MMAT)
Wormald H, et al (2006) (227)	UK	Research (published paper)	Qualitative Focus Group Study	Low relevance	Conceptually rich	Fair (CASP)
Penn L, et al. (2013) (178) linked to (175)	UK	Research (published paper)	Qualitative Substudy	Low relevance	Conceptually thick	Good (CASP)
Kier Business Services Limited (2016) (401)	UK	Research (web-based report)	Mixed Methods Evaluation	High relevance	Conceptually thin	Poor (MMAT)
See Tai S, et al. (1999) (402)	UK	Research (published paper)	Cross-sectional Study	Low relevance	Conceptually thin	Fair (NIH)
Penn L, et al. (2014) (192) linked to (175)	UK	Research (published paper)	Qualitative Study	Low relevance	Conceptually thick	Good (CASP)
Mistry B, et al. (2017) (403)	UK	Research (web-based report)	Mixed Methods Study	High relevance	Conceptually thin	Poor (MMAT)
Steadman K, et al. (2016) (404)	UK	Research (web-based report)	Qualitative interview and Case Study	High relevance	Conceptually thick	Poor (CASP)
Price S, et al. (2017) (405)	UK	Research (web-based report)	Literature Review	High relevance	Conceptually thick	Fair (CASP)
Impetus Community Navigation (2018) (406)	UK	Research (web-based report)	Before-and-after Study	High relevance	Conceptually thin	Poor (NIH)
Jones T, et al. (2009) (407)	UK	Research (web-based report)	Mixed Method Study	High relevance	Conceptually thick	Poor (MMAT)
Gidlow C, et al. (2007) (408) linked to (409)	UK	Research (published paper)	Cross-sectional Study	Low relevance	Conceptually thin	Good (NIH)

Crone D, et al. (2004) (409)	UK	Research (published paper)	Case Study			
Johnston L, et al (2005) (410) linked to (408) and (409)	UK	Research (published paper)	Cross-sectional Case Study	Low relevance	Conceptually thin	Good (NIH)
Crone D, et al. (2008) (411) linked to (410)	UK	Research (published paper)	Cross-sectional Study	Low relevance	Conceptually thin	Good (NIH)
Pavey T, et al (2011) (412)	UK	Research (published report)	Systematic review and economic evaluation	Low relevance	Conceptually thin	Good (CASP)
Tava'e N, et al. (2011) (27)	New Zealand	Research (published paper)	Qualitative Study	Low relevance	Conceptually thick	Fair (CASP)
Martin C, et al. (1999) (413)	UK	Research (published paper)	Mixed Methods Study	Low relevance	Conceptually thick	Fair (MMAT)
Schmidt M, et al. (2008) (191)	The Netherlands	Research (published paper)	Mixed Methods Study	Low relevance	Conceptually thick	Good (MMAT)
Kimberlee R, et al (2015) (22) linked to (388)	UK	Research (published paper)	Qualitative Study	High relevance	Conceptually thick	Fair (CASP)
ERS Research and Consultancy (2013) (186)	UK	Research (web-based report)	Mixed Methods Study	High relevance	Conceptually thick	Poor (MMAT)
Grayer J, et al. (2008) (414)	UK	Research (published paper)	Before-and-after Study	High relevance	Conceptually thin	Good (NIH)
Friedli M, et al. (2012) (415)	UK	Research (web-based report)	Mixed Methods Study	High relevance	Conceptually thick	Poor (MMAT)

Table 2c. Quality appraisal additional search (n=4)

Authors (year)	**Country**	**Type of paper**	**Study Design**	**Relevance**	**Richness**	**Rigour**
Lowe T, et al. (2019) (194)	UK	Research (published paper)	Case Study	High relevance	Conceptually rich	Good (CASP)
Harlock J. (2014) (195)	UK	Research (web-based report)	Qualitative Study	Low relevance	Conceptually rich	Good (CASP)
Fraser A, et al. (2018) (416)	UK	Research (published paper)	Literature review	Low relevance	Conceptually rich	Good (CASP)
Milbourne L. (2019) (196)	UK	Research (published paper)	Case Study	Medium/High relevance	Conceptually rich	Good (CASP)

Table 2d. Quality appraisal of papers identified through database alerts (n=9)

Authors (year)	**Country**	**Type of paper**	**Study Design**	**Relevance**	**Richness**	**Rigour**
Aggar C, et al (2020) (26)	Australia	Research (published paper)	Before-and-after Study	High relevance	Conceptually thin	Poor (NIH)
Beardmore A (2020) (161)	UK	Research (published paper)	Qualitative Study	High relevance	Conceptually thick	Fair (CASP)
Tierney S, et al (2020) (54)	UK	Research (published paper)	Realist review	High relevance	Conceptually rich	Good (CASP)
Kellezi B, et al (2019) (167)	UK	Research (published paper)	Mixed Methods Study	High relevance	Conceptually thick	Good (MMAT)
Jensen B, et al (2020) (417)	Denmark	Research (published paper)	Qualitative Study	Low relevance	Conceptually thick	Fair (CASP)
Wallace c, et al (2020) (418)	UK	Research (published paper)	Mixed Methods Study	High relevance	Conceptually thin	Good (MMAT)
Frostick C, et al (2019) (160)	UK	Research (published paper)	Qualitative Study	High relevance	Conceptually thick	Fair (CASP)
Mercer SW et al (2019) (45) linked to (184)	UK	Research (published paper)	Quasi-experimental cluster-RCT	High relevance	Conceptually thin	Good (CASP)
Payne K, et al (2020) (171)	UK	Research (published paper)	Qualitative Study	High relevance	Conceptually rich	Good (CASP)

Appendix 3. Characteristics of studies included in the realist review

Table 1a. Study characteristics main search (n=68)
Table 1b. Study characteristics of papers identified separately (n=59)
Table 1c. Study characteristics additional search (n=4)
Table 1d. Study characteristics of papers identified through database alerts (n=9)

Table 1a. Study characteristics of papers identified via database main search (n=68)

Authors (year)	**Country**	**Type of paper**	**Study Design**	**Sample/Setting**	**Intervention**	**Objective**	**Outcome measures**
Rempel ES, et al. (2017) (50)	UK	Research (published paper)	Literature Review	41 studies	A referral programme linking patients in health services with community-based activities	To identify the aims of social referral initiatives and identify the measures used to evaluate	• Cost savings • Resource reallocation • Mental, physical and social well-being (Warwick-Edinburgh Mental Well-being Scale - WEMWBS)
Woodall J, et al. (2018) (151)	UK	Research (published paper)	Mixed Methods Study	Patients (N 342) referred to a SP programme operating in an area within a large city	Referral to a 'Well-being Coordinator' (link worker) who offered support and advice on local community-based groups and services (e.g. counselling, physical fitness classes, finance/debt advice)	To understand the outcomes of a SP service and the processes which supported SP delivery	• Quant: Mental wellbeing (WEMWBS), EQ-5D (which covers mobility, self-care, usual activities, pain/discomfort and anxiety/depression), social networks (Campaign to End Loneliness Measurement Tool), use of GP services • Qual: SP staff and users' perspectives on the service
Darnton P, et al.	UK	Research (web-	Mixed Methods and	Patients (N 595) referred to a SP service	Referral to a 'Making Connection Coordinator' (link worker) who undertook a	To evaluate health- and cost-related	• Quant: Questionnaires measuring health status, health confidence, personal wellbeing, experience.

(2018) (199)		based report)	Economic Evaluation	provided by a voluntary sector partnership across five localities	guided conversation and provided advice on community-based resources over 3 months (e.g. finance/debt advice, befriending services, physical activity) (*Making Connection SP*)	outcomes of a SP service	• Qual: strength of relationships, practical assistance, match between client and service, service infrastructure
Pescheny J, et al. (2018) (185)	UK	Research (published paper)	Qualitative Study	Patients (N 10), GPs (N 3) and navigators (N 2) involved in a SP programme delivered across 4 general practices	Referral to a navigator (link worker), who contacted primary care patients to arrange an initial appointment held in surgeries. Navigators could refer service users onwards to a maximum of 12 free community sessions.	To explore stakeholders' views on factors influencing uptake and adherence to SP	• Factors affecting uptake and adherence: patients' trust in GPs and navigators, service accessibility, service support, patients' expectations, etc.
Bickerdike L, et al. (2017) (42)	UK	Research (published paper)	Literature review	15 studies	Programmes linking patient in primary care setting with a link worker or facilitator of SP	To assess evidence for SP effectiveness	• Uptake and attendance • Health and well-being (WEMWBS, HADS, GAD-7, PHQ-9, CORE-OM, WSAS, GHQ-12, COOP/ WONCA) • Healthcare usage outcomes • Patients', referrers' experience • Costs
Ferguson K (2018) (354)	UK	Research (web-based report)	Cross-sectional survey study	47 voluntary and community sector organisations involved in a local SP service	Initial assessment by a Social Prescriber (link worker) (telephone or in-person) and onwards referral to community-based sources of support (e.g., exercise,	To inform the evaluation of a local SP service by exploring the experiences of the local VCS	• Number of referrals • Service awareness • Communication between stakeholders • Challenges delivering SP

					weight management, learning and employment)		
Loftus AM, et al. (2017) (225)	UK	Research (published paper)	Before-and-after study	Patients (N 68) 65 + with a chronic condition who attended their GP frequently, referred to SP in an urban GP	Referral to a SP coordinator (link worker) for assessment and selection of a 12-week community-based programme (e.g social clubs, counselling, exercises classes, etc.)	To evaluate the impact of SP on general practice workload and polypharmacy	• Participants' contacts with GPs • Number of repeat prescriptions per patient
Prior F, et al. (2019) (355)	UK	Research (published paper)	Before-and-after study	Participants (N273) in EoP in a deprived urban area	6-month exercise scheme, with 4 routine contact points, hosted within local leisure centres. Consultations were delivered by exercise professionals.	To evaluate the long-term impact (12 mo) of an EoR scheme on self-reported physical activity and health-related outcomes	• Physical activity level (IPAQSF) • Health-related quality of life (EQ-5D-3L, EQ-5D VAS) • Mental well-being (WEMWBS) • Clinical data (BMI, BP, alcohol consumption, and smoking status)
Stewart EE, et al. (2014) (356)	USA	Research-based toolkit (published paper)	Case Study	Primary care practices (N unknown) that participated in a pilot project	A toolkit for identifying and evaluating accessible and affordable community resources, establishing productive, bidirectional relationship and referral processes from primary care, and enhancing engagement of patients with obesity and/or prediabetes.	To inform the development and implementation of community referral/SP programmes relevant to obesity and prediabetes	• An evidence-based toolkit for enhancing and evaluating inter-sectoral partnership between primary care and the VCS in the management of obesity
Kilgarriff-Foster A, et al. (2015) (189)	UK	Research (published paper)	Literature review	24 studies	Short-term intermediary services facilitating the engagement of patients with psychosocial needs with	To explore the key components and potential impact of SP programmes	• Health and well-being (WEMWBS, HAS, GHQ) • Health service use • Cost-effectiveness • Feasibility, acceptability

					community-based non-clinical support services		
Chatterjee HJ, et al. (2018) (48)	UK	Research (published paper)	Literature review	86 studies	Schemes linking patients in primary care with community non-clinical interventions (including arts, education, exercise)	To evaluate the effectiveness of UK SP schemes	• Mental well-being (GAD-7, GHQ, PHQ-9, WEBWMS, SWEBWMS, HADS) • Health and well-being (CO-OP/WONCA, SF-36, DTFS) • Social support • Cost effectiveness • Health service use
Chesterman D, et al. (2018) (357), linked to Mistry B, et al.	UK	Research (published paper)	Qualitative Action Research Study	Users and practitioners involved in commissioning or providing a SP pilot available in 4 urban general practices	Assessment by a Community Support Coordinator (link worker) and referral to community-based services (e.g. physical activities, counselling, advice around debt, housing, etc.) (Prescription Plus)	To evaluate and strengthen a local SP initiative, taking a 'learning through doing' approach	• Participants' concerns and experiences • Co-operation between stakeholders • Service sustainability
Dayson C (2017) (193)	UK	Research (published paper)	Mixed Methods Case Study	Users (N 108), commissioners (N 7) and providers (N 20) involved in a SP pilot covering a local authority area	Referral to an 'Advisor' (link worker) for assessment of patients' support needs and onwards referral to pump-primed or wider voluntary and statutory services	To shed light on the epistemological and methodological challenges of social innovations, such as SP	• Quant: use of hospital resources (inpatient admissions, A&E Attendance, Outpatient appointments) • Qual: patient well-being and independence, sustainability of the VCS, collaboration
Ferguson K, et al. (2018) (91), linked to (354)	UK	Research (web-based report)	Mixed Methods Evaluation Study	Stakeholders involved in a borough-wide SP service covering 37	Initial assessment by a Social Prescriber (link worker) (telephone or in face-to-face) and onwards referral to community-based sources of	To assess the impact of a SP roll-out in service users, general practices and	• Quant: health and wellbeing (MYCaW), service-level data (number of referrals, etc.), users' profile, costs data

				general practices	support (e.g exercise, weight management, learning and employment)	community organisations	• Qual: service awareness, coordination, users' wellbeing, service sustainability
Blickem C, et al. (2013) (190)	UK	Research (published paper)	Qualitative interview and focus group study	People with long term conditions attending health-related support groups and community centres in a local authority area	A community referral tool (PLANS) to tailor community-based resources to referred patients with long term conditions	To assist the development of a SP intervention designed to promote engagement and improve access to health-relevant resources	• Experiences and priorities of people with long term conditions (isolation, safety, linking to support, potential roles of the VCS, access to health education, practical support, lifestyle concerns, etc.)
Elston J, et al. (2019) (221)	UK	Research (published paper)	Before-and-after study	Older patients (>50) (N 86) with multiple long-term conditions referred to a SP programme operating across 3 localities	Referral to a Well-being Co-ordinator ('holistic' link-worker) for a 12-week support intervention, including resilience-focused coaching and practical support to navigate and access local services.	To evaluate the impact of link-workers on service users' well-being, activation and frailty, as well as service utilisation and associated costs.	• Health and wellbeing (Well-being Star, WEMWBS, RCFS) • Self-management (Patient Activation Measure) • Health and social care service • Costs data
Whitelaw S, et al. (2017) (183)	UK	Research (published paper)	Qualitative Case Study	The steering group (N 12), wider primary care team (N 10) and members of VCS (N 8) across 2 GPs	Referral to a link worker for patients' assessment and onwards referral to available community resources	To conduct a process-based evaluation of the inception and early implementation of a SP initiative	• Primary care perspectives: information governance, coordination between stakeholders, resource sufficiency, etc. • VCS perspectives: service quality, accessibility, training needs, etc.

White JM, et al. (2017) (61)	UK	Research (published paper)	Qualitative Interview Study	18 health professionals and 15 representatives of VCS in socio-economically diverse, and mix of rural and urban locations	SP schemes linking patients in primary care with different community-based services (e.g. a 'lifestyle referral' scheme, support for carers, etc.)	To analyse the quality of the relationships between primary healthcare professionals and VCS practitioners drawing on social capital theory	• Prescribers' views: service awareness, professional roles, accountability • Providers' views: barriers and facilitators to collaborative working
Polley M, et al (2017) (46)	UK	Research (web-based report)	Literature review	14 studies	Referral pathways connecting patients in primary care with a 'link worker' and relevant non-medical services in the third sector	To appraise the current evidence as to whether SP reduces the demand for health services and is cost effective	• Health service use • Social and economic impact of SP (value for money assessments, SROI calculations)
Dayson C, et al. (2018) (358)	UK	Research (web-based report)	Before-and-after study	Patients referred by their GP to a SP service delivered in an urban area	Referral to a 'community connector' (link worker) for assessment of patients' needs and interests, and identification of relevant local services and activities (*Community Connectors SP*)	To evaluate the early stages of a SP service measuring its impact on patients' health and demand for primary and secondary care services	• Health and mental wellbeing (EQ-VAS, EQ-5D, SWEMWBS) • Social connectedness • Self-care • Primary and secondary care service use
Martín-Borràs C, et al. (2018) (174)	Spain	Research (published paper)	Randomized Controlled Trial	Patients aged 18–85 with at least one chronic disease, referred to VCS exercise programmes by	A 12-week standardised exercise on referral scheme with mechanisms to enhance social support (*Exercise on Prescription – EoP*)	To assess the effectiveness of an exercise referral scheme in establishing adherence to physical activity	• Self-report physical activity (International Physical Activity Questionnaire) • Stages of change • Social support to physical activity practice

				primary care workers in 10 practices			
Husk K, et al. (2019) (55)	UK	Research (published paper)	Realist Review	109 studies in the first phase, 34 studies in the second phase	Any referral pathway linking patients in primary care with activities undertaken in the community	To explore whether different methods of SP referral and supported uptake do (or do not) 'work'	• Barriers and facilitators to Enrolment, Engagement and Adherence
Pescheny JV, et al. (2019) (359)	UK	Research (published paper)	Before-and-after study	Patients in primary care referred to a SP programme (12 sessions) provided by third sector organisations	Referral to a link worker for initial assessment, identification of non-medical needs, motivational interviewing, continuous personalised support and referral to community-based activities (12 sessions, free of charge)	To assess the change in energy expenditure levels of service users after participating in a SP programme	• Changes in energy expenditure levels using the International Physical Activity Questionnaire (IPAQ)
Pescheny JV, et al. (2019) (44)	UK	Research (published paper)	Systematic Review	16 studies	Services in primary care linking patients with non-medical needs to sources of support provided by the community and voluntary sector	To assess the evidence base for SP programmes based on primary care and involving navigators	• Health and wellbeing (WEMWBS, SWEMWBS, HADS, PHQ9, GAD7, MYMOP, GHQ-12, COOP/ WONCA) • Health-related behaviours • Self-concepts • Social contacts (Friendship Scale score, Duke-UNC FSSS) • Day-to-day functioning
Carnes D, et al. (2017) (360)	UK	Research (published paper)	Mixed Methods Study	Socially isolated patients referred to a SP programme delivered across 22	Referral to a SP coordinator ('link worker') for assessment, mutual agreement of a well-being plan over a maximum of 6	To investigate whether a SP service could be implemented in a general practice setting and evaluate	• Quant: mental wellbeing, primary health care resource use • Qual: patients' satisfaction with the service, appropriateness and timing of referrals, barriers and facilitators

				primary care general practices in a mixed socio-economic, multi-ethnic area	sessions and linkage into VCS services.	its effect on patients' well-being and primary care service utilisation	to engagement, relationship between link workers and patients.
Thomson LJ, et al. (2015) (361)	UK	Research (web-based report)	Literature review	35 studies	Any referral mechanism linking patients with non-medical sources of support within the community	To provide definitions, models and notable examples of SP schemes and to assess whether and how they have been evaluated	• Self-esteem, confidence, motivation • Mental wellbeing • Lifestyle • Primary care service use • Sociability, communication skills
Moffatt S, et al. (2017) (67)	UK	Research (published paper)	Qualitative Interview Study	Adults with long-term conditions referred to a SP prescribing programme delivered in a socio-economically deprived area across 17 general practices.	Link Worker SP programme comprising personalised support to identify meaningful health and wellness goals, ongoing support to achieve agreed objectives and linkage into appropriate community services (e.g. welfare rights advice, walking groups, physical activity classes, arts) (*Ways to Wellness*)	To describe the experiences of patients with long-term conditions referred to a SP programme and identify its impact on patients' health and well-being	• Self-confidence, self-reliance, resilience, personal responsibility • Health related behaviours (weight management, exercise, diet) • Mental wellbeing • Long term condition management
Pons-Vigués M, et al.	Spain	Research (published paper)	Descriptive Qualitative Research	Healthcare attendees and health professionals	Individual lifestyle recommendations by primary care clinicians, and referral to	To evaluate the implementation and development of a complex intervention	• Acceptability • Appropriateness • Feasibility • Sustainability

(2019) (187)				from 7 different primary care centres involved in the intervention	groups sessions and community-based activities	(involving SP) and its impact in health-promoting behaviours	• Penetration (changes implemented) • Suggestions for improvement
Wigfield A, et al. (2015) (198)	UK	Research (web-based report)	Mixed Methods Study	Referrers from primary care and older patients (N 247) referred to a SP programme delivered across 3 localities	A SP scheme linking older patients in primary care with community activities delivered by third sector organisations (*Fit For the Future SP*)	To evaluate the potential impact of a SP initiative in the outcomes of older people	• Quant: mental wellbeing (WEMWBS), lifestyle (physical activity, diet, alcohol, cigarette), clinical data (BMI, waist circumference), social networks, satisfaction with life, self-management. • Qual: health care professionals' expectations of SP, suggestions for improvement, lessons learned.
Arsenijevic J, et al. (2017) (362)	The Netherlands	Research (published paper)	Systematic Review and meta-analyses	37 studies	Schemes linking patients in primary care with exercise professionals organising physical activity programmes in the community (*Exercise on Prescription - EoP*)	To outline the differences in the design of EoP schemes, and in the adherence rate and self-reported level of physical activity between users.	• Adherence to programme • Self-reported physical activity (using 7-day Physical Activity Recall questionnaire)
Campbell F, et al. (2015) (157)	UK	Research (published report)	Systematic Review and Economic Evaluation	8 studies	Referral to exercise professionals providing supervised exercise training in the community (*EoP*)	To assess the clinical effectiveness and cost-effectiveness of exercise referral schemes compared with usual care.	• Clinical effectiveness (self-reported physical activity) • Cost-effectiveness
Lindau ST, et al.	USA	Research (published paper)	Before-and-after Study (including	Participants and providers involved in a	A community referral system, consisting of: a youth workforce that conducted an	To evaluate the implementation of a community referral	• Resource referral patterns • Characteristics of the resources accessed

(2016) (170)			cross-sectional surveys)	pilot community referral system operating across 33 clinical sites	annual community resource census; Community Health Information Specialists who supported cross-sector resource navigation; and a health information technology for prescribing community resources.	system, examining process-based outcomes	• Participants' and providers' experience • Providers' attitudes towards patients' social needs (RWJF survey)
Hamilton-West K, et al. (2019) (158)	UK	Research (published paper)	Evaluability Assessment Study	Stakeholders involved in two SP schemes in primary and secondary care settings.	Two SP services linking patients from health services with community-based resources (*Community Wellbeing Service, Encompass SP Service*)	To inform the design and evaluation of SP schemes through an Evaluability Assessment approach.	• Recommendations to allow for future service evaluation (e.g., related to data monitoring systems, information governance, etc.)
Wildman JM, et al. (2019) (56) linked to (67)	UK	Research (published paper)	Qualitative Follow-up Study	Users (N 24) of a link-worker SP service delivered in a socio-economically deprived area across 17 GPs	Link Worker SP programme comprising personalised support to identify meaningful health and wellness goals, ongoing support to achieve agreed objectives and linkage into appropriate community services (e.g. welfare rights advice, walking groups, physical activity classes, arts) (*Ways to Wellness*)	To explore experiences of SP among people with long-term conditions one to two years after their initial engagement with the service.	• Service users' relationships with link workers • Factors involved in making progress in behaviour change and long term condition management • Setbacks and barriers to maintaining change • Fluctuating levels of engagement
Hanlon P, et al. (2021) (172)	UK	Research (published paper)	Qualitative Interview Study	Patients (N 12) referred to a Links Worker SP Programme in areas of high	Referral to a community link worker for one-to-one assessment, support and linkage into relevant community resources (*'Deep-*	To explore the utility of Self-Determination Theory in understanding the impact of a Links	• Overall perceived improvement in daily life • Barriers and facilitators to improvement (related to relatedness,

				socioeconomic deprivation	*End' Links Worker Programme*)	Worker SP Programme in patients' wellbeing	competence, autonomy, beneficence and regulation of behaviour)
Wildman JM, et al. (2019) (164) linked to (56)	UK	Research (published paper)	Qualitative Interview and Focus Groups Study	Link workers (N 41) involved a SP scheme operating in a socioeconomically deprived area across 17 GPs	Link Worker SP programme comprising personalised support to identify meaningful health and wellness goals, ongoing support to achieve agreed objectives and linkage into appropriate community services (e.g. welfare rights advice, walking groups, physical activity classes, arts) (*Ways to Wellness*)	To explore link workers' own definitions of their role in SP and the skills and qualities identified by themselves as necessary for effective patient linkage	• Realities and complexities of the link worker role • Barriers to performing the role (referral challenges, onward referral challenges, boundary setting).
Swift M (2017) (224)	UK	Research (published paper)	Mixed Methods Study	Stakeholders involved in a community-centred model of health delivered across 17 GPs	A co-created community-centred model of health, including a pathway to link patients with community-based activities and services (Community Wellbeing Practices model SP)	To describe and reflect on the co-design and implementation of a community-centred model of health (including SP)	• Quant: mental wellbeing (SWEMWBS, PHQ9, GAD7), health status (EQ5D) • Qual: health-related goals, satisfaction levels, social connectedness, etc.
Wessex Academic Health Science Network (2017) (363)	UK	Research (web-based report)	Mixed Methods Study	Stakeholders involved in 8 different SP programmes covering a population of 1 million people	8 SP schemes linking patients in primary care with community-based resources and services	To evaluate the impact of a SP programme in patients' wellbeing and service utilisation, and support its development and spread	• Quant: patient reported outcomes (health status, health confidence, wellbeing, experience of service), staff reported outcomes (work wellbeing, job satisfaction), health service use, costs. • Qual: social connectedness, continuity of care, satisfaction levels, etc.

Beech R, et al. (2017) (165)	UK	Research (published paper)	Realist Evaluation (mixed methods design)	SP users, carers, link workers and providers involved SP delivered in a urban GP and a community specialist centre	Assessment by a link worker at the GP surgery or hospital. Onward referral to community services and provision with relevant information and support (*The Wellbeing Coordinator service*)	To assess the outcomes of the SP service in terms of benefits experienced by recipients and carers and to understand how care processes are perceived by link workers and other service providers	• Quant: mental wellbeing (SWEMBS, ONS) • Qual: users', carers', service providers' and health workers' perspectives on the service (satisfaction, perceived strengths and limitations, expectations, etc.)
Coan J (2016) (220)	UK	Research (web-based report)	Mixed Methods Research	SP users, link workers, GP workers and VCS providers involved in a SP programme delivered across 6 GPs	Referral to a SP coordinator (link worker) for patient assessment and provision of onwards supported referral to relevant community-based services (e.g. lifestyle support, social groups, social welfare)	To describe a SP programme and explore stakeholders' perception on its potential impacts	• Quant: satisfaction level (end-of-service questionnaire to patients and healthcare workers'), mental wellbeing (SWEMWBS) • Qual: feedback from patients and community service providers (satisfaction, perceived strengths and limitations, expectations, etc.)
Bertotti M, et al. (2015) (202)	UK	Research (web-based report)	Mixed Methods Study (including an Economic Evaluation)	Participants in SP across 23 GPs and 85 VCS groups in a deprived urban area	Referral to a trained SP coordinator (link worker) for assessment and supported, personalised linkage into community-based resources	To evaluate the impact of a SP programme in patients' wellbeing, health service utilisation and associated costs	• Quant: general health and wellbeing, mental wellbeing (anxiety and depression), active engagement in life, A&E visits, costs. • Qual: users' experience with the service (satisfaction, expectations, etc.)
Skivington K, et al. (2018) (21)	UK	Research (published paper)	Qualitative Interview Study	VCS providers (N 30) and link workers (N 6) involved in SP	Referral to a trained community link worker to support patients in accessing community organisations (*Links Worker Programme*)	To investigate potential factors associated with successful	• The role and capacity of link workers • Contextual factors that affect SP implementation • Benefits and challenges to collaborative working

				in a deprived urban area		implementation of a SP programme	
Dayson C, et al. (2019) (197)	UK	Research (published paper)	Qualitative Case Study	Public health commissioners, VCS providers, investment managers and investors in 2 SP schemes	2 SP interventions. One financed through a Social Impact Bond (New Public Management model) and the other one financed in a more conventional way (New Public Governance)	To compare the design and implementation of 2 SP programmes with different financing mechanisms	• Focus and emphasis of each model • Relationship between the state and external stakeholders • Resource allocation • Governance and accountability mechanisms
Southby K, et al. (2018) (166)	UK	Research (published paper)	Qualitative Case Study	Primary care workers and VCS providers engaged in collaborative programmes in socio-economically deprived urban areas	4 SP schemes linking patients in primary care with activities provided by the voluntary and community sector (e.g. weight management, diet, exercise, employability)	To add to the knowledge base around collaborative practice between general practices and voluntary and community sector organisations by examining the factors that aid or inhibit such collaboration	• Modes and outcomes of GP- VCS collaboration • Facilitators to GP-VCS collaboration (equitable relationships, communication stability, etc.) • Barriers to GP-VCS collaboration (policy contingencies, misconceptions, etc)
Heijnders ML, et al. (2018) (31)	The Netherlands	Research (published paper)	Qualitative Interview Study	Patients (N 10) with psychosocial problems referred from 4 GPs to a social well-being organisation	Referral to social well-being organisation, followed by a 'holistic', personalised assessment by a well-being coach based on social activation theory. Onwards linkage into VCS activities (e.g. cooking classes)	To determine what happens in the chain of the SP and what changes the participant experiences in terms of social participation.	• Participants' life events • Insights on the referral and intake process • Personal strength and responsibility • Self-reliance • Social activation/participation
Centre for Reviews and	UK	Research	Rapid Review	22 studies	SP schemes linking patients in primary care with sources of	To review the effectiveness and cost	• Mental and physical wellbeing (WWQ, PHQ9, GAD7, IPAQ, HAD,

Dissemination. (2015) (364)		(web-based report)			support within the community	effectiveness of SP programme	COOP chart, WEMWBS, WSAS, Dynamic Observation scale) • SROI analysis • Cost-effectiveness
Tierney S, et al. (2019) (365)	UK	Research (published paper)	Cross-Sectional Study	162 CCGs across England	Schemes linking patients into activities or organisations that can help address non-medical needs	To determine how 'care navigation' (SP) is interpreted and currently implemented by clinical commissioning groups	• Provision of care navigation • Characteristics of patients for whom the service is available • Referral method • Service evaluation and monitoring
Pescheny JV, et al. (2018) (181)	UK	Research (published paper)	Literature Review	8 studies	Referral schemes that link patients in primary care with local services and activities provided by the third sector (community, voluntary, and social enterprise sector)	To identify factors that facilitate and hinder the implementation and delivery of SP services based in general practice and involving navigators	• Facilitating factors: implementation approach, organisation and management, attitudes, support and supervision, communication, organisational readiness, staff engagement, infrastructure • Barriers: leadership, implementation approach, economic climate and funding, shared understanding, staff engagement and turnover, patient engagement, infrastructure, quality appraisal
Pilkington K, et al. (2017) (65)	UK	Research (published paper)	Scoping Review	40 studies	SP schemes linking primary care patients (including those with type 2 diabetes or prediabetes) to nonmedical community services	To characterize, collate, and analyse the evidence from evaluation of SP for type 2 diabetes in the United Kingdom and Ireland	• Overview of projects • The range of interventions • Project evaluation and outcomes (related to health behaviours, general and mental wellbeing, disease risk, health education, etc.)

South et al. (2008) (60)	UK	Research (published paper)	Qualitative Case Study	Primary care workers (N 8) and patients (N 10) referred to SP across 2 GPs in deprived urban areas	Up to 3 appointments with a link worker to discuss needs and identify appropriate sources of local support (e.g. volunteering, debt advice, luncheon clubs, etc.)	To explore the concept of SP and discuss its value as a public health initiative embedded within general practice	• The potential of SP on (1) Extending primary care, (2) Addressing public health issues, (3) Building health alliances
Bertotti M, et al. (2018) (57) linked to (202) (360)	UK	Research (published paper)	Realist Evaluation (Mixed Methods Study)	SP users, commissioners, and GP workers involved in SP in 23 GPs in a deprived urban area	Referral to a trained SP coordinator (link worker) for assessment and supported, personalised linkage into community-based resources	To evaluate a SP pilot, by unpacking the contextual factors and mechanisms that might influence its implementation and development	• Relevant contextual factors and mechanisms related to (1) GP referral process, (2) Consultation with the link worker, (3) Interaction with VCS organisations
Bragg R, et al. (2017) (366)	UK	Research (web-based report)	Evidence Synthesis	12 England-based SP services	SP services that are well established, have a good track record in terms of numbers of patients involved, have been evaluated, are operating at scale (e.g. with at least one CCG) and show the diversity of SP models.	To develop an understanding of the use of nature-based-interventions within social prescribing services and provide suggestions for good practice	• Characteristics of SP services (including referral and funding mechanisms) • Characteristics of service users • Evidence of effectiveness and cost effectiveness (general wellbeing, health service use, SROI)
Bungay H, et al (2010) (162)	UK	Research (published paper)	Evidence Synthesis	Grey literature on UK-based Arts on Prescription (AoP)	SP schemes linking patients in health services with community-based art initiatives facilitated by artists (*AoP*)	To review current AoP initiatives in the UK and reflect on the challenges of providing evidence for their effectiveness	• Policy context for AoP • Evidence on effectiveness: mental well-being (WEMWBS, HADS), quality of life, social inclusion • Existing challenges for AoP
Grant C, et al. (2000) (367)	UK	Research (published paper)	Randomised Controlled Trial	161 patients identified by their GP as	Referral to a liaison organisation for assessment	To compare wellbeing and resource utilisation among	• Primary outcomes: psychological wellbeing (HAD scale), social support (Duke-UNC FSS questionnaire)

				having psychosocial problems in 26 GPs	of patients' needs and linkage into voluntary organisations	patients referred to a SP scheme, with patients receiving routine general practitioner care.	• Secondary outcomes: quality of life (COOP/WONCA, delighted-terrible faces scale), costs (service use, prescribing, referrals)
Jensen A, et al. (2019) (223)	Denmark	Research (published paper)	Qualitative Study	Patients (N 7) with mild-moderate mental health problems referred to AoP	Referral from a health service to a 10-week project offering a variety of arts and cultural activities averaging 2 hour sessions 2.5 times a week (Culture Vitamins – AoP)	To evaluate and explore the impact of an AoP programme in participants' mental health wellbeing	• Mental wellbeing (sense of coherence, sense of meaning) • Capacity to overcoming challenges (motivation, self-esteem, resilience, ability to socialize) • Moving from self-critical to self-caring
Jensen A, et al. (2017) (368)	SwedenNorwayDenmark, UK	Research	Rapid Review	34 studies	Referral from a health service to community-based arts activities (Arts on Prescription – AoP)	To provide an overview of how AoP is delivered in Scandinavian countries and the UK	• Institutional context: political support and recognition, existence of specific research centres • Evidence for AoP effectiveness: quality of life, work ability, self-confidence, motivation, social and communication skills
Maughan DL, et al (2016) (369)	UK	Research (published paper)	Observational Cohort Study	Patients diagnosed with common mental health conditions referred to SP in an urban GP	Referral to a 'link worker service' aimed at connecting people with community organisations. Patients were discharged when they were engaged in the community (maximum of 20 appointments) (Connect Project)	To assess the effects of a SP service on healthcare use and the subsequent economic and environmental cost	• Number of GP appointments • Prescriptions of psychotropic medications • Number of secondary-care referrals
Redmond M, et al.	UK	Research	Qualitative Follow-up Study	Individuals (N 1297) referred to AoP from GP	Referral to an 8- or (formerly) 10-week course of creative activities, led by a local artist.	To explore the impact of an arts referral	• Social connectedness • Physical and mental well-being • Self-management

(2018) (370)						programme in service users' well-being	
Age Concern Support Services (2011) (371)	UK	Research (web-based report)	Mixed methods (Qualitative case studies, before-and after survey)	Older people with mild-moderate depression or socially isolated referred to SP across 12 GPs	In-depth assessment of the older person's social, emotional and practical support needs, and onwards referral to Age UK services (including befriending, social groups, benefit checks and Fit as a Fiddle classes)	To assess the effectiveness of social prescribing for older people with mild to moderate depression or who are lonely and socially isolated	• Quant: mental well-being (WEMWBS) • Qual: users' experience with the service (satisfaction, expectations, etc.)
Stickley T, et al. (2013) (179)	UK	Research	Qualitative follow-up study	10 SP users	Referral to a 8- or (formerly) 10-week course of creative activities, which are led by a local artist in community locations. There are usually no more than 10 participants per group. (AoP)	To explore the long-term effects of an 'Arts on Prescription' SP service	• Self-confidence, feelings of self-worth, self-perception • Social and communication skills • Motivational and aspirational changes
Stickley T, et al. (2012a) (177)	UK	Research	Qualitative Interview Study	10 referrers from primary care, secondary mental health care and VCS providers	Referral to a 10-week blocks of art sessions led by professional artists in community locations. Usually with no more than 10 participants per group (AoP)	To investigate the views of referrers to AoP regarding the quality and effectiveness of the service	• Perceived impact of AoP on service users (personal benefits, social benefits) • Contextual views (policy environment, practical concerns)
Stickley T, et al. (2012b) (372)	UK	Research	Qualitative Interview Study	Patients with mental health conditions referred to SP activities led by artists	Referral to a the 10-week blocks of art sessions led by professional artists in community locations. There are usually no more than 10 participants per group (AoP)	To explore the experiences of people who have engaged with AoP programmes	• Social: sense of social belonging, peer support, etc. • Psychological: self-awareness, self-discovery, etc. • Occupational: meaningful occupation and vocation

Sumner RC, et al. (2019) (373) linked to (370)	UK	Research	Observational Study	Patients (N 1297) referred to an AoP SP programme by GP professionals	Referral to an 8- or (formerly) 10-week course of creative activities (ranging from painting, to ceramics, playwriting, and mosaics), led by a local artist.	To identify potential factors associated with attendance, engagement and wellbeing change of patients referred to AoP.	• Wellbeing (WEMWBS) • Programme attendance and engagement
Thomson L, et al. (2018) (374)	UK	Research (published paper)	Mixed-Methods Study	Participants (N 115) aged 65–94 at risk of loneliness and social isolation referred to museum-based SP	A museum-based intervention consisting of 10-week programmes of engaging, creative and socially interactive sessions, of around 2 hours each, comprising curator talks, behind-the-scenes tours, object handling and discussion, and arts activities inspired by the exhibits.	To assess psychological wellbeing in a novel SP intervention for older adults called Museums on Prescription and to explore the extent of change over time	• Quant: Psychological wellbeing (Museum wellbeing Measure for Older Adults - MwM-OA) • Qual: perceptions and experiences of the participants and their carers where present, museum facilitators and volunteers.
Creative Alternatives (2009) (375)	UK	Research (web-based report)	Before-and-after Study	Patients (N 187) with mild to moderate depression, stress/anxiety referred to AoP in an urban area	A free programme of creative activities over six months, comprising weekly core workshops on expressive work in the visual arts, creative writing, storytelling, photography, pottery, etc. (*Creative Alternatives - AoP*)	To assess the effectiveness of an AoP scheme in participants' health and wellbeing	• Mental wellbeing (HAD Scale, The Dartmouth COOP Chart) • Lifestyle modification (The Creative Alternatives Lifestyle Questionnaire)
Whelan G, et al. (2016) (376)	UK	Research (web-based report)	Mixed Methods Study	Patients (N 90) with mild to moderate mental health problems	12 weekly sessions, two hours each, consisting of a Welcome Meeting, 10 creative workshops (including woodwork, creative writing,	To assess the effectiveness of an AoP scheme in participants' health	• Mental wellbeing (SWEMWBs) • Lifestyle modification (The Creative Alternatives Lifestyle Questionnaire) • Social return on investment (SROI)

linked to (375)				referred to AoP in an urban area	mandalas, painting and textiles) and a Moving Forward session at the end.	and wellbeing, and calculate its SROI	
Alarcón-Belmonte, et al. (2019) (377)	Spain	Research (published paper)	Case Study	One patient (N1) referred to VCS by her GP	Assessment in primary care by a regular primary care practitioner and onwards referral to a community-based centre offering exercise activities for older people	To describe how SP may be undertaken in primary care and identify relevant preconditions	• In-depth report of patient's assessment in primary health and the referral process into the community
Formento Marín N, et al (2019) (378)	Spain	Research (published paper)	Case Study	A socio-economically divers urban locality connected to two primary care centres	• Analysis of population characteristic • Identification of population health needs • Community health asset mapping • Organisation of assets according to socio-demographics • Description of the SP process and evaluation in primary care	To provide an in-depth description of a community health asset mapping process for enhancing social prescribing practices in primary care	• A detailed account on the steps and processes required to undertake SP in primary

Table 1b. Study characteristics of papers identified separately, main search (n=59)

Authors (year)	**Country**	**Type of paper**	**Study Design**	**Sample/Setting**	**Intervention**	**Objective**	**Outcome measures**
Faulkner M (2004) (168)	UK	Research (published paper)	Qualitative Pilot Study	Patients with psychosocial issues (N 11) and VCS advisors (N 8) involved in a SP scheme in an urban GP	Appointments with 2 volunteer link workers responsible for leading discussions and arranging appointments with community-based services (over 150 organisations)	To describe and analyse the key features of a SP scheme, its perceived effectiveness, and any barriers to effective service provision.	• Key features of the SP scheme • Perceived effectiveness (social connectedness, distress levels, primary care service use) • Barriers to effective service provision
Stirrat, S (2014) (159)	Ireland	Research (Thesis)	Mixed-Methods Evaluation Study	Programme participants, primary care professionals and VCS leaders involved in EoP delivered in 8 different urban and rural areas	A community-based, supported, walking-on-referral programme delivered over 12 weeks (*Green Prescription Programme*)	To determine the feasibility and acceptability of an EoP programme, and investigate its impact in participants well-being, referring health professionals and community groups involved	• Quant: physical activity, mental wellbeing (WEMWBS, WHO Wellbeing IS), clinical data (BP, resting HR, waist circumference, BMI) • Qual: stakeholders' experience with the service (satisfaction, expectations, etc.)
Ackermann RT, et al. (2005) (379)	USA	Research (published paper)	Cluster randomized controlled trial	Referrers from a GP health clinic and patients referred to a VCS exercise programme	A 10-minute individualized training session with primary care workers about available community-based physical activity resources, including a booklet with resource details	To determine whether a physical activity promotion intervention in primary care can lead to more community-based exercise referrals and higher exercise motivation in patients	• Health behaviour assessment and primary care provider advice • Exercise stage-of-change (PACE) • Proportion of participants reporting regular physical activity.

Roessler K (2011) (380)	Denmark	Research (published paper)	Qualitative Follow-up Study	Patients referred from a primary care centre to a community-based exercise programme delivered in an urban area	4 months of twice weekly supervised community-based physical training in groups (*Exercise on Prescription - EoP*)	To examine psychological aspects of intra- and interpersonal learning for patients with diabetes, hypertension, dyslipidaemia referred to EoP	• Motives and barriers in exercise participation • Characteristics of the 'non-completers' • Characteristics of the 'completers'
Baines A (2015) (381)	UK	Research (web-based report)	Mixed-Methods Evaluation Study	Primary care referrers, link workers and patients referred to a SP programme delivered across 4 mixed urban and rural practices	Referral to volunteer link workers ('Navigators', 'Health Buddies') for assessment adn supported referral to community-based services (e.g. dancing, volunteering, housing/homelessness, yoga, etc.) (*ConnectWELL SP Programme*)	To evaluate the impact and cost-effectiveness of a SP programme and identify potential gaps and barriers	• Quant: mental well-being (WEMWBS), costs • Qual: SP users', link workers', primary care workers', VCS representatives' experience with the service (satisfaction, expectations, etc.)
Harrison RA, et al. (2005) (382)	UK	Research (published paper)	Cross-Sectional Study	GP referrers and patients referred to a district-wide EoP programme delivered in 125 GPs	Appointment with an exercise officer for assessment and referral to a suitable physical activity programme in and outside of the leisure centre, over 12 weeks (EoP)	To examine the factors associated with the uptake of an EoP service	• Service access (attendance at first appointment)
Edmunds et al. (2007) (383)	UK	Research (published paper)	Before-and-after Study	Participants aged 16-73 and diagnosed as overweight or obese, referred by their GP to an	Referral to an advisor (i.e., a health and fitness instructor with specialized training to deliver exercise prescriptions) for a 3-month exercise routine suited to	To examine perceived autonomy support, psychological need satisfaction, self-determined motivation, exercise behaviour,	• Perceived autonomy support • Psychological need satisfaction • Motivational regulations for exercise (BREQ-2) • Exercise behaviour (GLTEQ)

				EoP programme delivered in an urban area	each patient's condition (EoP)	exercise-related cognitions and general well-being amongst overweight/obese individuals referred to EoP	• Self-efficacy • Commitment • Behavioural intention to exercise • Subjective vitality • Satisfaction with life
Jones et al. (2005) (384)	UK	Research (published paper)	Before-and-after Study	Participants (N 119) diagnosed with high blood pressure, weight or stress related conditions referred to an EoP in 7 sports centres across different localities	24 exercise sessions spread over 12 weeks. The exercise sessions consisted of gym-based, structured physical activity. Programme specification regarding equipment, intensity, duration was designed for each individual on the basis of an initial fitness assessment (*EoP*)	To investigate the role of participant expectations, self-efficacy, stage of change and psychological well-being in adherence to EoP, and assess the impact of failure to adhere on self-efficacy and psychological well-being	• Physical assessment (weight, BP) • Psychological measures (present level of activity, assessment of stage of change, exercise self-efficacy, expectations and achievement of change, psychological well-being)
Murphy et al. (2012) (155)	UK	Research (published paper)	Pragmatic randomised controlled trial with nested economic evaluation	Participants (N 1080) diagnosed with coronary heart disease risk, mild to moderate depression, anxiety/stress referred to EoP scheme in 12 local areas	16-week tailored exercise programme supervised by a qualified exercise professional and delivered at leisure centres. The scheme included motivational interviewing, goal setting and relapse prevention (*National Exercise Referral Scheme - NERS*)	To assess the effectiveness and cost effectiveness of an EoP programme in increasing physical activity and reducing anxiety and depression	• Physical activity (7D-PAR, Baecke) • Health-related quality of life (EQ-5D) • Mental well-being (hospital anxiety and depression scale – HADS). • Costs
Gidlow C, et al. (2005) (172)	UK	Research (published paper)	Literature Review	9 studies	Interventions based in primary care and involving	To explore attendance of UK EoP schemes and compare evaluations of	• Referral uptake and attendance • Reasons for dropout

					referrals to an exercise professional (*EoP*)	existing schemes with randomised controlled trials	
Rahman R, et al. (2011) (385)	UK	Research (published paper)	Before-and-after Study	Patients (N 293) identified by their GP as inactive and referred to EoP in 6 council owned leisure centres	An induction followed by twice weekly exercise classes supervised by an exercise leader. Exercise schemes were individually tailored to suit referral conditions and delivered free of charge (*EoP*)	To examine psychological need satisfaction and motivational regulations as predictors of psychological and behavioural outcomes in EoP programmes	• Motivation (BREQ-2) • Mental wellbeing (HADS, Satisfaction with Life Scale) • Health-related quality of life (SF-36v2) • Physical activity level (Baecke's Questionnaire of Habitual Physical Activity) • Adherence
Morton K, et al (2008) (222)	UK	Research (published paper)	Before-and-after Study	Patients (N 30) referred from primary care to an EoP scheme delivered in a local leisure centre	Twice weekly exercise sessions over 6 weeks (*EoP*)	To examine whether self-determined motivation is fostered through an exercise referral scheme, and the extent to which patient motives are related to their exercise adherence	• Motivation (BREQ-2, self-determination score)
Munro JF, et al. (2004) (386)	UK	Research (published paper)	Pragmatic, cluster randomised community intervention trial	Patients (N 2283 intervention group) aged 65+ in the least active quintile referred to EoP	Locally organised, free, twice weekly exercise classes provided for up to two years. Activities were led by a qualified exercise leader (*EoP*)	To assess the cost effectiveness of a community-based exercise programme as a population wide public health intervention for older adults	• All cause and exercise related cause specific mortality • Hospital service use • Health status (SF-36) • Cost utility
Edwards R, et al. (2013) (387) Linked to (155)	UK	Research (published paper)	Economic Evaluation	798 individuals (55% of the RCT sample (155))	16-week tailored exercise programme supervised by a qualified professional	To assess the cost-effectiveness of an EoP scheme and explore the effects of medical	• Health-related quality of life (EQ-5D) • Health care services use • Costs

				referred to EoP (*NERS*)		diagnosis, gender, age, inequalities, referral route and adherence on effectiveness and cost-effectiveness	• Willingness to pay
Kimberlee RH (2013) (388)	UK	Research (web-based report)	Mixed Methods Study	Service users, practitioners and commissioners involved in SP programmes delivered across 7 GPs in an urban area	Different referral pathways to community resources (SP as signposting, SP light, SP medium, SP holistic)	To provide an outline of different SP models and assess their impact, effectiveness and cost-effectiveness	• Characterisation of existing SP models • Quant: SP effectiveness (Inventory for Brokerage Service Outcomes Star (IBSO)) • Qual: SP users', link workers', primary care workers', VCS representatives' experience with the service (satisfaction, expectations, etc.)
Harrison R, et al. (2005) (389)	UK	Research (published paper)	RCT	Patients (N 545) defined as sedentary by a GP practitioner, referred to EoP across 3 locality groups	A one-hour consultation with an exercise officer, followed by a subsidized 12-week leisure pass, with reduced entrance fees to any council-run physical activity facilities (*EoP*)	To assess the effectiveness of a primary care referral scheme on increasing physical activity at 1 year from referral	• Physical activity at 6 months and 12 months (7-Day Physical Activity Recall (7dPAR) questionnaire)
Pavey T, et al. (2011) (43)	UK	Research (published paper)	Systematic review and meta-analysis	8 studies	Referrals by primary care professionals to third party service providers to increase physical activity (*EoP*)	To assess the impact of exercise referral schemes on physical activity and health outcomes	• Physical activity (as a self-report or objectively monitored) • Physical fitness • Clinical outcomes • Health related quality of life • Adverse events

Williams NH, et al. (2007) (390)	UK	Research (published paper)	Systematic review and meta-analysis	18 studies	Referral by a primary care clinician to a tailored programme of increased physical activity with an initial assessment, and monitoring and supervision throughout (*EoP*)	To assess whether exercise-referral schemes are effective in improving exercise participation in sedentary adults	• Physical activity • Anthropometric, biochemical outcomes • Psychological outcomes • Costs data • Patients' satisfaction
Public Health England (2019) (41)	UK	Research (web-based report)	Evidence Synthesis (rapid review)	8 studies	Referral from healthcare professionals in primary care settings to a link worker or SP facilitator	To investigate the effectiveness of SP in the UK	• Contact with primary health care services • Changes in physical and/or mental health (WEMWBS, HADS, HRQL EQ-5D5L, ICECAP-A)
Duda J, et al. (2014) (391)	UK	Research (published paper)	Cluster randomised controlled trial	Individuals (N 347) referred from 13 GPs to EoP in 13 leisure centres in a large city	Exercise referral intervention grounded in Self Determination Theory over 3 months, including motivational interviewing, goal setting and a self-management exercise promotion booklet (*EoP*)	To test the feasibility and impact of a Self Determination Theory-based (SDT) exercise referral consultation	• Self-reported physical activity (7-day PAR) • Physical health outcomes (BMI, BP) • Health status (Dartmouth CO-OP Chart Scales) • Mental wellbeing (HADS, SVS) • Motivation-related processes of change measures (HCCQ, PNSES, BREQ-2)
Kok M, et al. (2016) (392)	UK	Research (web-based report)	Before-and-after Study	Patients (N 811) at risk of or recently diagnosed with T2D referred to a community-based diabetes prevention	A 12-month programme that starts with a GP surgery invitation letter and eligibility check; followed by a 4-week group course with trained facilitators, follow-on one-to-one contacts, and referral to selected healthy	To evaluate the effectiveness and cost-effectiveness of a community-based type 2 diabetes prevention programme	• Biometric measures (weight, HbA1c, BMI, waist circumference, BP) • Questionnaire on quality of life (EQ-5D), overall life satisfaction (LSS), mental wellbeing (SWEMBS, CESD-7), physical activity (IPAQ), diet

				programme in 2 urban and rural localities	lifestyle activities (*Living Well, Taking Control*)		(FFQ), motivation to behavioural change
Mercer S, et al. (2017) (184)	UK	Research (web-based report)	Mixed-methods study	All practice staff (such as GPs, practice nurses, receptionists and health care assistants) in 7 GPs involved in SP and patients (N 288)	The provision of a Community Links Practitioner and a practice development fund to support patients' referrals to community services (*'Deep-End' Links Worker Programme*)	To assess the implementation and impact of a Links Worker SP Programme at patient, practice and community levels	• Quant: quality of life (EQ-5D-5L), mental wellbeing (ICECAP-A, HADS), work-social functioning, life-style behaviours (alcohol, smoking, exercise), healthcare utilisation. Practice level: team climate, job satisfaction, morale, burnout • Qual: barriers and facilitators to program implementation
Isaacs AJ, et al. (2007) (393)	UK	Research (published report)	A parallel-group, randomised controlled trial	Patients (N 943) not currently physically active referred to EoP delivered in leisure centres throughout an urban borough	2 possible interventions: a 10-week programme of supervised exercise classes, 2-3 times weekly in a local leisure centre; a 10-week instructor-led walking programme, -3 times weekly (*EoP*)	To evaluate and compare the effectiveness and cost-effectiveness of a leisure centre-based exercise programme, an instructor-led walking programme and advice-only in patients referred for exercise by their GPs	• Primary: Self-reported exercise, BP, total cholesterol and lipid subfractions • Secondary: Changes in anthropometry, cardiorespiratory fitness, flexibility, strength, power, lifestyle behaviour, mental health (HAD, SF-36), quality of life, health service usage
Flannery O, et al. (2014) (394)	UK	Research (web-based report)	Mixed Methods Study	Health professionals, VCS staff and participants (N 2,505) involved in EoP in a authority area	Supervised, personalised activity programme over 12 weeks. The scheme was tailored to patients' health status and aimed to match their desires and realistic expectations (*EoP*)	To investigate the impact of an EoP scheme in the physical activity levels and well-being of participants, and explore stakeholders' views on the service	• Quant: self-reported exercise, health measures (BMI, BP, waist measurement), mental well-being (WEMWBS) • Qual: patients' and health professionals' experiences

Mills H, et al. (2012) (395)	UK	Research (published paper)	Mixed Methods Study	Patients (N 1,315), exercise providers and GP professionals involved in EoP in 5 urban local leisure centres	Referral to a patient-centred physical activity program over 26 weeks, including individual and group exercise sessions in gyms, exercise studios and swimming pools (*EoP*)	To explore and reveal the constituents of ‘‘success’’ in exercise referral schemes through comparison, contradiction, and integration of qualitative and quantitative research findings	• Qual: the perception of success according to participants, referrers, and exercise providers • Quant: programme completion, weight loss, mean arterial pressure reduction
James D, et al. (2009) (396) linked to (395)	UK	Research (published paper)	Prospective Population-based Longitudinal Study	Patients (N 1,315) referred from primary care to EoP in 5 leisure centres	Referral to a patient-centred physical activity program over 26 weeks (specified by Mills H et al. (395) (*EoP*)	To investigate patients’ socio-demographic characteristics and referral reason in relation to completion and health outcomes in an EoP scheme	• Programme completion • BMI reduction • BP reduction
Penn L, et al. (2013) (175)	UK	Research (published paper)	Mixed Methods Pilot Study	Patients (N 218) at high risk of T2D referred to a prevention programme delivered in leisure and community settings	A 10-week supported programme to promote increased physical activity, healthy eating and weight loss, delivered by fitness trainers as twice-weekly group sessions, each followed by behavioural counselling (‘*New life, New you*’)	To assess the feasibility, acceptability and outcomes at a 12-month follow-up of a behavioural intervention for adults at risk of T2D	• Quant: self-reported physical activity, weight, waist measurement, dietary assessment • Qual: participants’ views on acceptability of the intervention
Dayson C, et al. (2016) (397)	UK	Research (web-based report)	Mixed Methods Study and Economic Evaluation	VCS members (N 7), volunteers (N 2) and patients (N 939) referred from primary	Referral to a link worker (advisor) for assessment of support needs before referring to appropriate VCS services (e.g advice and	To provide an updated assessment of the social and economic impact of a SP programme	• Quant: Demand for urgent hospital care, well-being and positive functioning, economic and social cost-benefit

				care to SP in a metropolitan borough	information, leisure-social activities, exercise, etc.) (*Rotherham SP*)		• Qual: staff members’, volunteers’ and users’ experiences
Kimberlee RH (2016) (200)	UK	Research (web-based report)	Mixed Methods Study and Economic Evaluation	Referring GPs, link workers, members of VCS and patients (N 2047) referred to SP operating across a county	Referral to a link worker for assessment of support needs before referring to VCS services (e.g. welfare services, exercise activities, arts classes) (*Gloucestershire SP*)	To evaluate the impact of an expanded SP scheme in patients’ well-being and service use	• Quant: mental wellbeing (WEMWBS), hospital and primary care attendance • Qual: stakeholders’ views and experiences
Wormald H, et al. (2004) (173)	UK	Research (published paper)	Qualitative Focus Group Study	Patients (N 30) referred from primary care to EoP delivered in 4 urban leisure centres	A 10-week exercise programme (*EoP*)	To explore patients’ perceptions of primary care-based EoP schemes	• Participants’ views on the role of the primary care staff; the exercise programme, environment and staff; and perceived effects of the scheme
Jepson R, et al. (2010) (398)	UK	Research (web-based report)	Mapping Review	94 scheme co-ordinators and providers	Schemes comprising an aspect of outdoor physical activity and some type of referral mechanism from health care practitioners (*Green prescriptions*)	To identify existing outdoor physical activity schemes, including green prescriptions, and to identify factors leading to successful models.	• Quant: main characteristics of local ‘green prescription’ schemes • Qual: scheme providers’ perception on the referral process
Graham RC, et al. (2005) (182)	UK	Research (published paper)	Mixed Methods Study	Referring primary health care professionals (N 144) of 52 GPs	Schemes linking patients in primary care with community-based physical activity programmes (*EoP*)	To investigate EoP from the health professional’s perspective, examining perceived barriers to referral, importance of their role and priorities	• Priority of physical activity promotion by health workers • Health professionals’ barriers to referral and perceived role in promoting physical activity • Identification methods of referral

Din NU, et al. (2015) (188)	UK	Research (published paper)	Qualitative Study	Referring GP professionals (N 46) across 6 local health board areas	16-week tailored exercise programme supervised by a qualified professional and delivered at leisure centres (NERS)	To explore health professionals' perceptions of their role in promoting physical activity and experiences of an EoP scheme	• Beliefs and attitudes of health professionals to EoP • Barriers to referral • Facilitators to referral
Rouse O, et al. (2011) (399)	UK	Research (published paper)	Cross-Sectional Study	Patients (N 347) referred from primary care to EoP in a large city	Referral to an EoP scheme (*EoP*)	To explore the role of autonomy support on the motivation, mental health and intentions of EoP participants	• Emotional well-being: subjective vitality (SVS) and depressive symptoms (HADS-D) • Physical activity intentions
Brandling J, et al. (2007) (226)	UK	Research (web-based report)	Mixed Methods Pilot Study	VCS, GP workers and patients defined as 'high resource users' linked to 3 GPs	A SP service, to be designed based upon the finding of the study	To explore the feasibility of developing a SP service to reach a significant proportion of primary care high resource users	• Quant: health resource use • Qual: opinions on potential SP users, benefits and drawbacks of SP, barriers to accessing the service
Dinan S, et al (2006) (400)	UK	Research (published paper)	Prospective cohort study	Patients (N 242) referred from 14 urban GPs to EoP	A targeted, tailored exercise programme for frail older people delivered in group sessions, once weekly over 8 weeks (EoP)	To assess the feasibility and effectiveness of a tailored exercise referral programme for frail elderly patients	• Functional gain (Timed Up and Go test – TUG)
Moore GF, et al. (2013) (176)	UK	Research (published paper)	Mixed Methods Study	Participants (N 1080) referred by a GP worker to EoP operating in 12 local health board areas	16-week tailored exercise programme supervised by a qualified professional and delivered at leisure centres (NERS)	To quantify the fidelity and dose of core components, and patterning in uptake and adherence of an EoP scheme. To qualitatively explore how EoP might facilitate adherence to physical activity	• Quant: fidelity, dose of core components of the scheme, patients' uptake and adherence • Qual: experiences around entering the scheme, undertaking activities and leaving the programme

Wormald H, et al (2006) (227)	UK	Research (published paper)	Qualitative Focus Group Study	16 participants referred to EoP delivered in socio-economically deprived urban areas	Referral to an advisor for ongoing support in the form of up to 6 monthly progress consultations and optional ongoing referred to VCS activities (*Active Lifestyles – EoP*)	To explore participants' perceptions of the operation and effectiveness of a community-based physical activity service	• Participants' views on the referral process, operational aspects of the service, and perceived benefits
Penn L, et al. (2013) (178) linked to (175)	UK	Research (published paper)	Qualitative Substudy	Adults (N 15) at high risk of T2D referred to a lifestyle programme delivered in leisure and community settings in a deprived local authority	An individual assessment and referral to a 10-week supported programme consisting of twice weekly sessions. Activities were mostly physical, such us gym-based activities and walks, but also included cookery sessions and dietary advice ('New life, New you')	To elicit participants' perspectives on making and maintaining behavioural changes in a lifestyle intervention for type 2 diabetes prevention	• Participants' experiences around intentions and goals; reinforcement; knowledge; social role and identity; capabilities and skills; behavioural regulation; attention and decision processes; memory and emotion; and environmental context and resources.
Kier Business Services Limited (2016) (401)	UK	Research (web-based report)	Mixed Methods Evaluation	Referring GP workers, patients, link workers and VCS providers involved in SP operating scross 37 GPs	Referral to a link worker for assessment of patients' needs and linkage into third sector, statutory services or community-based activities (*Patient Empowerment Project*)	To evaluate effectiveness and cost-effectiveness of a SP programme focused on individuals with long-term conditions	• Quant: patients' health and wellbeing (clinical data, SWEMWBS, EQ-5D-5L), self-efficacy and management, (ONS items), healthcare utilisation • Qual: stakeholders' perceptions about the service
See Tai S, et al. (1999) (402)	UK	Research (published paper)	Cross-sectional Study	Patients (N 152) referred from 10 GPs to EoP operating in local	Initial assessment by trained personnel at a leisure centre, followed by a tailored exercise	To explore whether the cost of exercise programmes in leisure centres is a barrier to	• Completion of the exercise programme (adherence)

				urban leisure centres	programme of 20 sessions over 10 weeks (*EoP*)	uptake in a British population	
Penn L, et al. (2014) (192) linked to (175)	UK	Research (published paper)	Qualitative Study	Pakistani female participants (N 20) at high risk of T2D referred to a lifestyle programme delivered in leisure and community settings	8-week programme of weekly sessions delivered to groups of 10-20 women. Sessions comprised 60 min of supervised physical activity followed by 30 min of reflection and advice centred on dietary information and action planning (*Culturally adapted version of 'New life, New you'*)	To investigate Pakistani women's perspectives of their behaviour change and salient features of a culturally adapted lifestyle intervention for T2D prevention	• Participants' experiences around intentions; reinforcement; knowledge; social role; capabilities and skills; behavioural regulation; decision processes; memory and emotion; environmental context and resources; collateral health and social benefits.
Mistry B, et al. (2017) (403)	UK	Research (web-based report)	Mixed Methods Study	Patients (N 28) referred from primary care to a SP programme delivered across 4 urban GPs	Assessment by a Community Support Coordinator (link worker) and referral to community-based services (e.g. physical activities, counselling, advice around debt, housing, etc.) (*Prescription Plus*)	To assess the impact of a SP scheme in patients' wellbeing and service utilisation	• Quant: patients' wellbeing, health services use, • Qual: stakeholders' experiences and perceptions about the service
Steadman K, et al. (2016) (404)	UK	Research (web-based report)	Qualitative interview and Case Study	Members (N 40) of the SP Network, GPs, Link Workers, commissioners, managers and patients in 4 SP programmes	Schemes that link patients in primary care with community-based services and activities	To understand the current use, and the implications of use, of SP as a mechanism for achieving work-related outcomes	• Stakeholders' views on the impact of SP on work-related outcomes

Price S, et al. (2017) (405)	UK	Research (web-based report)	Literature Review	62 studies/reports	Targeted, non-clinical, community-based interventions, services or programmes (e.g. link worker schemes, exercise referral programmes, etc)	To explore how, why and in what circumstances SP might benefit the health and well-being of individuals and families with social, emotional or practical needs.	• The intervention and model characteristics • Intended and actual beneficiaries • Anticipated and demonstrated outcomes • Intervention design and implementation lessons
Impetus Community Navigation (2018) (406)	UK	Research (web-based report)	Before-and-after Study	Patients (N 549) referred to a SP scheme operating across 2 urban localities	Initial telephone assessment for triage, meeting with community navigator and onward supported referral to community-based services (e.g. lifestyle activities, benefits and debt advise, etc) (*Impetus community navigation*)	To describe the functioning of a SP scheme and evaluate its impact on users' well-being and participation	• Health and community service use • Evidence of progress: satisfaction, social support, self-management, perceived wellbeing
Jones T, et al. (2009) (407)	UK	Research (web-based report)	Mixed Method Study	Project staff (N 28) and service users (N 40) involved in SP	SP programmes offering physical exercise, healthy eating, mental well-being and general well-being activities (*South West Well-being*)	To evaluate a SP programme in the first year of delivery and identify emerging themes across the programme.	• Quant: general health, physical activity, diet related behaviour, mental and social well-being • Qual: service staff and users' experiences on the service
Gidlow C, et al. (2007) (408) linked to (409)	UK	Research (published paper)	Cross-sectional Study	Participants (N 3568) referred to a countywide EoP scheme during a 3-year period	Initial assessment by an accredited exercise scientist, and onward referral to leisure providers (*Somerset Physical Activity Group – EoP*)	To gain insight into factors associated with referral, uptake and attendance in EoP schemes.	• Referral update and completion

Crone D, et al. (2004) (409)	UK	Research (published paper)	Case Study	A multiagency alliance involved in the implementation and delivery of a countywide EoP scheme	Initial assessment by an accredited exercise scientist, and onward referral to leisure providers (*Somerset Physical Activity Group – EoP*)	To provide insight into how a multiagency strategic group can address the implementation of recommendations for improving a local EoP scheme	• Lessons learnt from the development of an EoP programme and proposals for the future
Johnston L, et al (2005) (410) linked to (408) and (409)	UK	Research (published paper)	Cross-sectional Case Study	Patients (N 458) removed from a countywide EoP scheme for being deemed unsuitable.	Initial assessment by an accredited exercise scientist, and onward referral to a leisure provider (*Somerset Physical Activity Group - EoP*)	To evaluate the impact of a centralised referral mechanism upon the number and type of 'inappropriate referrals' made to a countywide EoP scheme.	• Reasons for removal from the EoP scheme (psychosocial, socio-demographic, medical factors)
Crone D, et al. (2008) (411) linked to (410)	UK	Research (published paper)	Cross-sectional Study	Patients (N 2901) referred from primary care to a countywide EoP scheme	Initial assessment by an accredited exercise scientist, and onward referral to a leisure provider (Somerset Physical Activity Group - EoP)	To compare outcomes of uptake, attendance, and completion between two different patient groups in an EoP scheme.	• Programme uptake, attendance and completion
Pavey T, et al (2011) (412)	UK	Research (published report)	Systematic review and economic evaluation	7 studies	Schemes linking patients in primary care with physical activity services in the community (EoP)	To assess the clinical effectiveness and cost-effectiveness of EoP for people with a diagnosed medical condition known to benefit from physical activity	• Self-reported physical activity (7-Day PARQ) • Physical fitness • Clinical factors • Psychological well-being (HADS, PSW, EQ-5D) • Health-related quality of life (HRQoL) • Costs

Tava'e N, et al. (2011) (27)	New Zealand	Research (published paper)	Qualitative Study	Pacific women (N 20) aged 40+ referred from GP to EoP and discharged as independently active	Referral to a supported, tailored exercise programme comprising education workshops covering topics such as nutrition, healthy lifestyle, etc. (EoP)	To investigate the experience of Pacific women referred to a Green Prescription programme	• Past history of physical activity • Views and experiences about the programme • Influences on programme adherence or dropout rates • Health perception
Martin C, et al. (1999) (413)	UK	Research (published paper)	Mixed Methods Study	Patients (N 77) referred from GP to an EoP scheme operating across a county	Initial assessment by an adviser and onward referral to an exercise programme of 20 sessions over 10-week (EoP)	To examine the characteristics of individuals referred to an EoP scheme and compare those who completed the programme with those who failed to complete.	• Quant: programme completion • Qual: attitude towards the and the programme, reasons for continuity of exercising and non-completion
Schmidt M, et al. (2008) (191)	The Netherlands	Research (published paper)	Mixed Methods Study	Female patients (N 523) referred from GP to EoP operating in 5 deprived neighbourhoods	Initial assessment by a sport advisor and onward referral to an exercise group (swimming, gymnastics, cardio-fitness or dancing) of paid weekly sessions over 20 weeks.	To explore the socio-demographic and psychosocial characteristics of female participants in EoP and determine which elements of the intervention affect participation	• Quant: demographic features, goals of the participants, physical activity in leisure time (SQUASH) • Qual: appealing elements of the intervention
Kimberlee R, et al (2015) (22) linked to (388)	UK	Research (published paper)	Qualitative Study	SP providers, council/Public Health, GPs and patients participating in SP	Different referral pathways to community resources (SP as signposting, SP light, SP medium, SP holistic)	To explore the meaning and definition of SP, and describe different programme types	• Different SP models based on their community embeddedness

ERS Research and Consultancy (2013) (186)	UK	Research (web-based report)	Mixed Methods Study	Service users, GP workers, steering group members of SP in a socio-economically diverse city	Referral to one of the 5 collaborating Linkwork Organisations. Initial assessment and onward referral to community-based activities	To provide an assessment of the impact and achievements of a SP scheme, and document lessons learned to inform future practice.	• Quant: number for referrals, reason for referral, primary goals set, mental wellbeing (SWEMWB, mean confidence scores) • Qual: stakeholders' views and experiences around SP
Grayer J, et al. (2008) (414)	UK	Research (published paper)	Before-and-after Study	Patients with psychosocial problems referred by GP practitioners SP across 13 urban GPs	Initial assessment by a graduate primary care mental health worker and onwards referral to community resources with different, personalised levels of support	To evaluate the acceptability and effectiveness of a SP programme facilitating access of patients with psychosocial problems in primary care to VCS services	• Mental wellbeing (GHQ-12, COREOM) • Social outcomes (WSAS) • Patient satisfaction (CSQ, community link evaluation) • Use of primary care resources
Friedli M, et al. (2012) (415)	UK	Research (web-based report)	Mixed Methods Study	GPs (N 123), link workers (N 3) and patients (N 12) involved in a SP scheme delivered in a socioeconomically deprived area	GP referral followed by contact from a link worker and up to 4 consultations to assess patient needs and identify appropriate community-based information, support and/or activities (Sources of Support - SOS)	To establish whether and how a SP scheme might work	• Quant: mental wellbeing (WEMWBS), social outcomes (WSAS) number for referrals, reason for referral • Qual: stakeholders' views and experiences around the programme

Table 1c. Study characteristics additional search (n=4)

Authors (year)	**Country**	**Type of paper**	**Study Design**	**Sample/Setting**	**Intervention**	**Objective**	**Outcome measure**
Lowe T, et al. (2019) (194)	UK	Research (published paper)	Case Study	Key stakeholders (N 22) involved in the development of a SP programme located in Northern England	A Social Impact Bond (SIB) funded SP programme comprising referral to and assessment by a link worker ('Care Connector')	To analyse how Social Impact Bond-type funding mechanisms influence the rules, norms and decisions of key actors	Dominant discourses and tensions around SIB implementation
Harlock J. (2014) (195)	UK	Research (web-based report)	Qualitative Study	Local adult social care commissioners and officers (N 8) in six local authorities in England	Local authorities commissioning third sector organisations to provide a range of social care and support services to older people and disabled adults	To understand how social value is being applied in commissioning processes with the third sector	Common experiences and cross-cutting key issues and challenges in evidencing the social value of the VCS in social care commissioning processes
Fraser A, et al. (2018) (416)	UK	Research (published paper)	Literature Review	101 studies	Studies analysing Social Impact Bond-type funding mechanisms	To explore the main themes and concepts within the emergent literature on Social Impact Bonds	Cross-cutting themes and narratives on private versus public values, outcomes contracting and risk allocation.
Milbourne L. (2019) (196)	UK	Research (published paper)	Case Study	Representatives of VCS organisations, local council and local authority service managers (N 50) in a deprived locality	VCS organisations providing services for children and young people commissioned by a large inner-city public authority	To examine changes in policy and inter-agency relationships affecting community-based organisations	Common threads of experience around outcome-based competitive commissioning of community-based organisations

Table 1d. Study characteristics of papers identified through database alerts (n=9)

Authors (year)	Country	Type of paper	Study Design	Sample/Setting	Intervention	Objective	Outcome measure
Aggar C, et al (2020) (26)	Australia	Research (published paper)	Before-and-after Study	13 patients with mental health conditions referred from primary care to a SP scheme delivered in an urban setting	Referral to a link worker for assessment and discussion on available community-based resources, and provision of weekly arts and crafts group sessions (2-3h for 10 weeks)	To evaluate whether a SP pilot program can improve participants' quality of life, and social and economic participation.	• Quality of life (WHOQoL) • Welfare needs and support (CANSAS) • Health Status and self-efficacy (EQ5D) • Psychosocial distress (Scale K10) • Loneliness and social participation (UCLA) • Economic participation • Hospital admission
Beardmore A (2020) (161)	UK	Research (published paper)	Qualitative Study	8 primary care and VCS workers involved in a SP scheme delivered in an urban and suburban area	'Medium' and 'Holistic' SP schemes, as specified by Kimberlee (22)	To explore who works in SP and how they experience their role	• Narrative accounts of those working in SP
Tierney S, et al (2020) (54)	UK	Research (published paper)	Realist review	118 studies	Primary care-based SP schemes focusing in adults (+18)	To understand how SP might work, for whom, in what circumstances and how to optimise delivery within primary care	• A refined programme theory on how connector roles, especially link workers, work in practice

Kellezi B, et al (2019) (167)	UK	Research (published paper)	Mixed methods	GPs, SP providers and patients experiencing loneliness referred to a SP scheme delivered in the English East Midlands.	Initial meeting and needs assessment by a health coach. Onwards prescription of self-care management or referral to a link worker for linkage into VCS groups	To determine social factors central to the understanding of SP and how SP is experienced among stakeholders. To evaluate the effects of SP on patients' health-service use.	• QuaL: stakeholders' perceptions of social (dis)connection, and the potential of SP to address it. • QuanT: service use, number of group memberships, community belonging, loneliness (ULS-8).
Jensen B, et al (2020) (417)	Denmark	Research (published paper)	Qualitative Study	Members (n=8) of culture institutions participating in an AoP project in Denmark	A range of arts and cultural activities (including choir singing, classical music, nature walks, guided reading, etc.) for participants with stress, anxiety, depression (AoP)	To explore the views and experiences of cultural institutions involved in an AoP programme	• Cultural institutions' perspectives on the participation in an AoP programme.
Wallace C, et al (2020) (418)	UK	Research (published paper)	Mixed Methods Study	A group of (n=18) geographically spread link workers in Wales and 85 participants with SP components in their work role	SP schemes involving assessment and support by a link worker	To develop an education and training needs conceptual framework for SP in Wales	• QuanT: Sociodemographic characteristics, statements in response to agreed focus prompts • QuaL: prioritisation of learning needs, identification of appropriate timelines of training delivery
Frostick C, et al (2019) (160)	UK	Research (published paper)	Qualitative Study	Link Workers (n=13) actively working in one of three London-based SP schemes	Three SP schemes involving assessment and support by link workers	To identify the training, skills and experience that link workers working with patients with long-term	• Link workers' prior expectations, training and experience, as well as perceived challenges

						conditions require to carry out their role	
Mercer SW et al (2019) (45) linked to (184)	UK	Research (published paper)	Quasi-experimental cluster-randomized controlled trial	Adult patients (n=288) referred to SP in 7 intervention practices, compared with a random sample of adult patients (n= 612) from 8 comparison practices	Referral to a link worker for assessment of patient's most pressing problems, and ongoing supported referral to local community resources	To assess the effect of a primary care–based community links practitioner intervention on patients' quality of life and well-being	• Primary outcome: health-related quality of life (EQ-5D-5L) • Secondary outcomes: well-being (ICECAP-A), depression (HADS-D), anxiety (HADS-A), and self-reported exercise.
Payne K, et al (2020) (171)	UK	Research (published paper)	Qualitative Study	Adults (n=17) involved in socially prescribed activities delivered in an urban locality	Initial assessment by a link worker and onwards referral to relevant community groups or in-house support services	To explore the ways by which SP may be beneficial to individuals undertaking socially prescribed activities	• Participants' recalled and narrated accounts of their experience participating in socially prescribed activities

Appendix 3. Coding frame, data extract, article sections coded

Appendix 3 provides further detail on the coding frame, data extracts and the article sections coded. The article section for each data extract is provided at the end of the quote and highlighted in different colours (introduction/background in red; methods section in green; results section in blue; and discussion in yellow).

Discourse 1. SP as helping to overcome the social determinants of health

Code 1.1. Aim and rationale related to SDH and health inequalities
Code 1.2. SP as able to address non-medical needs (characterisation of SP)
Code 1.3. Social vs medical types of demands (characterisation of general practice)
Code 1.4. Patients as facing mainly "social" problems (characterisation of SP users)
Code 1.5. Empirical references to the impact of SP on socio-economic domains

Discourse 2. SP as supporting patients' journey towards self-activation

Code 2.1. Rationale related to health care utilisation
Code 2.2. SP aimed at reducing health service utilisation
Code 2.3. SP aimed at enhancing self-care, activation, independence, control, motivation, personal responsibility
Code 2.4. Intervention characteristics: coaching/motivational approach, lifestyle-related, time-bound, led by coaches trained in motivational techniques
Code 2.5. Characterisation of SP users: at risk of being/becoming dependent, lacking control, lacking motivation, frequent attenders
Code 2.6. Evaluation approaches in line with Discourse 2

- Code 2.6.1. Theoretical frameworks
- Code 2.6.2. Outcomes related to self-concept, self-management, behavioural change, independence, activation
- Code 2.6.3. Outcomes related to social and healthcare service utilisation

Code 2.7. Lifestyle drift – references to "choice", "empowerment"

Discourse 3. SP as enhancing personalised care in general practice

Code 3.1. Impersonal, rushed, stretched general practice (characterisation of general practice)
Code 3.2. SP as able to deliver empathetic, person-cantered care (characterisation of SP)
Code 3.3. Impact of empathetic, supportive, person-cantered care on adherence, behavioural change, satisfaction
Code 3.4. Patients as individuals with enduring and complex health issues in need on ongoing care (characterisation of SP users)

Discourse 1. SP as helping to overcome the social determinants of health

Code 1.1. Aim and rationale related to SDH and health inequalities

[…] Given the impact on practice, it would seem logical that primary care plays a part in addressing the wider determinants. (60) – *Results section*

*[…] Until more recently, preventative health initiatives have focussed on "downstream" lifestyle interventions in spite of the strength of evidence challenging such approaches (Scott-Samuel and Smith, 2015). However, the publication of Sir Michael Marmot's "Fair Society, Healthy Lives" Report in 2010 has strengthened the call to focus on the **"causes of the causes"** of poor health which he and others attribute to the "social inequalities in the conditions in which people are born, grow, live, work and age" (Marmot, 2010). Consequently, it has been argued that efforts to improve the nation's health must also consider the social determinants of health and this has spawned a growing interest in community-centred health approaches (Rippon and Hopkins, 2015; Finnis et al., 2016).* (224) - *Introduction*

*It has long been recognized that health is influenced by a broad range of social, economic and cultural factors, and indeed the current political emphasis appears to be on the wider community and the sociocultural factors that may impact on health and well-being. This is a more **holistic** approach to care which takes account of wider social factors impacting on the individual and their specific illness or condition.* (162) - *Introduction*

As an influential factor, the Marmot Review (Marmot, 2010) highlighted the social deter- minants of health inequity and although it did not refer overtly to social prescribing, it recommended the creation and development of sustainable communities, and strengthening the role and the impact of ill health prevention; key areas that social prescribing seeks to address. (48) - *Introduction*

As demonstrated by the Marmot Review on health inequalities, there is a close association between socio-economic factors and health outcomes. Other research has shown that in England, GPs spend nearly a fifth of their consultation time dealing with non-medical issues at a cost of £395 million per annum, equivalent to the salaries of 3,750 full-time GPs. Almost three-quarters of GPs state that the proportion of time they spend dealing with non-health issues as part of consultations has increased. (91) - *Introduction*

Health inequalities are a global problem, resulting from a fundamental inequity in the distribution of income, power, and wealth. This inequity limits opportunities across the life course, including In addition, people of low socioeconomic status experience multiple health problems and a concentration of risk factors,3 exacerbated by poor access to resources to manage them.4 (45) – *Introduction*

Academic research demonstrates that social well-being is closely tied to physical health, a well-known example being the impact of socioeconomic positioning on mortality as demonstrated in the Whitehall Studies, as well as other more recent work by Michael Marmot.2 3 Though this common understanding has not fully translated into clinical practice and public health. (50) – *Introduction*

Lifestyle and the physical, economic and social environment are among factors that determine individual health,4 and access to and use of healthcare services has less of an impact,5 accounting for approximately 10% of population health and well-being.6 UK GPs report that 20% of consultations are related to patient psychosocial needs. (418) – *Introduction*

Creative Alternatives operates as part of a network of social prescribing programmes within Sefton that also includes Active Sefton (physical activity), Relax and Revive (physical activity, including yoga and tai chi), Active Reading (bibliotherapy) and the Citizens Advice Health Outreach scheme. These programmes recognise the importance of social, economic and cultural factors on well-being […] (375) – *Introduction*

Mental illness is affected by biological, psychological, and social factors, and treatments targeting a range of these factors, including the wider determinants of health, are more likely to be effective (WHO 2005). Social prescribing programs address these biopsychosocial factors via care coordination and linkage where individuals with mental illness are referred to local community-based social care services and structured social activities (Knapp et al. 2012). (26) – *Introduction*

The Marmot Review highlighted the value of providing social prescribing services, presenting a direct correlation between health inequalities and social, environmental and economic factors (Marmot et al., 2010), and promotes social prescribing as a model to address the wider health determinants (Wilson, 2015). (366) – *Introduction*

Central to our proposed theory of change was a recognition that health problems are caused or exacerbated by social problems (Marmot, 2010), and so we felt it was important to offer social solutions to respond to such challenges that would complement medical treatments. In respect of this, we reviewed the available literature looking at community wellbeing interventions and chose to focus on three core offers: community navigation, social prescribing and social action (South, 2015). (224) – *Methods*

Code 1.2. SP as able to address non-medical needs (characterisation of SP)

The potential for primary care to 'rediscover' a 'social' model of practice (Olesen et al., 2000) and contribute to addressing social determinants of health (British Medical Association (BMA), 2011) and health inequalities (Marmot, 2008), respectively, is gaining increasing policy prominence. (183) - *Introduction*

Living Well, Taking Control acts at a local institutional or community level. In this sense the programme is one part of a wider group of agencies, programmes and social practices that may impact on diabetes prevention and management. The role of the programme in contributing to a partnership and strategic agenda can be understood through policy and social change theory such as the Socio-Ecological Model (Glanz et al., 2008) (392) - *Introduction*

Examples of psychosocial problems are social isolation, loneliness, housing issues, bereavement and poor wellbeing. However, it is clear that the relationship between psychosocial factors and health is *bidirectional. Evidence that people's education, income, housing and other social issues have a major impact on their health and wellbeing is well established.3 Given this important relationship, there is growing international interest in the role of healthcare systems in addressing patients' social (i.e. non-medical) needs.*(44) – *Introduction*

Supporting people whose health problems are exacerbated or created by complex socioeconomic factors is a challenge to healthcare systems, especially for GPs and other primary care staff.1 Patients in these contexts can also be dissatisfied with the support they receive.2–6 However, GP practices in the UK are in a unique position, providing universal coverage free at the point of care in the community as part of the NHS, allowing continuity and trusting relationships to be fostered. They, therefore, provide an ideal setting to implement interventions with the potential to mitigate the impact of the social determinants of health,7 necessary for primary health care.8,9 (21) - *Introduction*

In essence, the underlying model of care needs to change to a biopsychosocial model, considering, in addition to biological factors and medical interventions, the wider determinants of health and coordination and integration of care across professionals and disciplines.(359) – *Introduction*

The Links Worker Programme (LWP) is a social prescribing initiative in areas of high deprivation in Glasgow, Scotland, that is designed to mitigate the negative impacts of the social determinants of health. […] GP practices in the UK […] provide an ideal setting to implement interventions with the potential to mitigate the impact of the social determinants of health,7 necessary for primary health care. (21) – *Introduction*

The CHAT scheme illustrates how social prescribing can offer the opportunity to address social needs through individual consultations. An added bonus may be the reduction of workload and more capacity to focus on medical problems. […] A claim can be made that social prescribing, through addressing the wider determinants of health, represents a reorientation of health services […] (60) – *Introduction*

Purpose – A community-centred approach to health called Community Wellbeing Practices (CWP) is being offered to patients at all 17 GP practices in Halton in order to respond more appropriately to patients' social needs, which are often an underlying reason for their presentation at primary care services. (224) – *Introduction*

Social prescribing interventions benefit patients by supporting them to address the wider psychosocial determinants of health, enabling better health-condition management and the adoption of healthier behaviours (Mossabir, Morris, Kennedy, Blickem, & Rogers, 2015) (164) – *Introduction*

'Holistic' social prescribing interventions seek to address the wider social determinants of health and, therefore, go beyond the neoliberal standpoint of viewing individual health behaviours as the personal failings […] (56) – *Introduction*

In the last few years there has been an emergence of interventions focusing on the social component of care, such as social prescribing, art on prescription, exercise/physical activity on prescription, walking groups and the introduction of health trainers, with some evidence for behaviour change [2–4]. These aim to help people manage their chronic condition, prevent more serious health problems developing, and contribute to addressing health inequalities […] (360) – *Introduction*

Mental illness is affected by biological, psychological, and social factors, and treatments targeting a range of these factors, including the wider determinants of health, are more likely to be effective (WHO 2005). Social prescribing programs address these biopsychosocial factors via care coordination and linkage where individuals with mental illness are referred to local community-based social care services and structured social activities (Knapp et al. 2012). (26) – *Introduction*

Therefore, a tool to increase social contact and promote community support and engagement within deprived populations has potential to address some of these factors and hopefully reduce the impact of social deprivation. (190) - *Discussion*

The Marmot Review highlighted the value of providing social prescribing services, presenting a direct correlation between health inequalities and social, environmental and economic factors (Marmot et al., 2010), and promotes social prescribing as a model to address the wider health determinants (Wilson, 2015). (366) – *Introduction*

Social prescribing is viewed as a means of addressing mental, psychosocial, or socioeconomic issues, and enhancing community well-being and social inclusion (Scottish Development Centre for Mental Health, 2007). As such, it is an emerging strategy for tackling health inequities through partnerships between primary care and third sector organisations (48) – *Introduction*

Here, the PSS was set up to act as a voluntary advisory/referral agency for patients whose problems were perceived to stem from underlying psychosocial issues. It was argued that these patients would benefit from a support network that would help them to explore their problems, advise them and, where necessary, refer them to appropriate community-based services. Consequently, it was envisaged that a patient's psychosocial state may be prevented from deteriorating by attending to and hopefully resolving the root cause(s) of their problems, e.g. relationship problems, financial difficulties, housing problems. (168) - *Methods*

Recognising that an individual's health is primarily determined by a range of social, economic and environmental factors, social prescribing strives to address the individual's need in a holistic way. (223) – *Introduction*

*Social prescribing can therefore strengthen the links between health care providers and community, voluntary and local authority services. In these services there are potential solutions to the wider determinants of mental health, for example, leisure, welfare,
education, culture, employment and the environment (Scottish Development Centre for Mental Health, 2003:5).* (388) - *Results*

Objectives: Social prescribing has emerged as a useful tool for helping patients overcome some of the social and behavioural determinants of poor health (225) - *Introduction*

A common policy response to health inequalities in recent years has been the introduction of various social prescribing programs. Social prescribing aims to link patients to nonmedical sources of support within a community, thus expanding options and resources beyond those traditionally provided in primary health care (45) - *Introduction*

The Links Worker Programme (LWP) is a social prescribing initiative in areas of high deprivation in Glasgow, Scotland, that is designed to mitigate the negative impacts of the social determinants of health. […] Greater collaboration between the healthcare sector and community-based provision of health and social care, with involvement of community, voluntary, and third-sector organisations (hereafter referred to as community organisations), has been promoted to help mitigate the effects of the social determinants of health.10,11 One such model is social prescribing, which encompasses a range of approaches. […] These forms of social prescribing provide the potential for primary care teams to respond more effectively to the social determinants of health and to widen the support network accessible to people presenting at their GP practice.18 This approach could also potentially ameliorate some of the effects of the inverse care law operating in deprived areas.6,19,20 (21) - *Introduction*

A claim can be made that social prescribing, through addressing the wider determinants of health, represents a reorientation of health services, albeit one limited in scale and scope. (60) *C2* – *Results*

Purpose – A community-centred approach to health called Community Wellbeing Practices (CWP) is being offered to patients at all 17 GP practices in Halton in order to respond more appropriately to patients' social needs, which are often an underlying reason for their presentation at primary care services. The paper aims to discuss these issues. (224) – *Background/purpose*

In recognition of these wider determinants of wellbeing, social prescribing has become a core component of current and future National Health Service (NHS) policy and practice to deliver person-centred care [3] and reduce GP workload [4]. […] Consequently, the United Kingdom (UK) has been at the forefront of formalising the use of social prescribing alongside traditional medical treatment within primary care, to address the environmental, economic, social and psychological issues affecting people's well-being (54) - *Background*

Social prescribing is underpinned by a social model of health, which recognises that common mental health problems are often psychological manifestations of social problems. Non-medical interventions are thought to offer social and individual solutions by increasing social contact and improving access to services (South et al. 2008). (61) – *Introduction*

Central to our proposed theory of change was a recognition that health problems are caused or exacerbated by social problems (Marmot, 2010), and so we felt it was important to offer social solutions to respond to such challenges that would complement medical treatments. In respect of this, we reviewed the available literature looking at community wellbeing interventions and chose to *focus on three core offers: community navigation, social prescribing and social action (South, 2015).* (224) – *Methods*

In brief, the participatory arts have been widely used in the promotion of health for many years, and the social value of engagement with the arts has been endorsed by the World Health Organization,5 who call for partnerships between health and other sectors to address social and economic problems – *Introduction* (179)

Social prescribing interventions have ranged from physical exercise (e.g. exercise referral, green gyms) to personal study (e.g. books on prescription, education on prescription) and creative activities (e.g. arts on prescription including dance, film, music and painting). Schemes that have sought to address the social determinants of health include information prescriptions (e.g. debt advice, housing, welfare); healthy living initiatives (e.g. smoking cessation, healthy eating, health checks); social enterprise schemes or social firms (e.g. community businesses, co-operatives, credit unions); and time banks, which are mutual volunteering schemes where people deposit time helping others and withdraw time when they need help. (374) - *Introduction*

It runs from April 2012 to March 2014 as part of a wider GP-led Integrated Case Management Pilot and aims to increase the capacity of GP practices to meet the **non-clinical needs** of their patients with long term conditions (LTCs)(201)

Code 1.3. Social vs medical types of demands (characterisation of general practice)

Primary care in the United Kingdom currently faces a number of key challenges including: (i) About 20% of people attend GP surgeries for problems that are primarily social rather than medical (Torjesen, 2016). (ii) A rising tide of long-term conditions which is set to grow by 5 million in the next 10 years (DoH, 2013). (iii) Growing health inequalities which result in long-term medical conditions disproportionately affecting people in deprived areas (Hutt and Gilmour, 2010; Marmot et al., 2010; Cawston, 2011). (57) - *Introduction*

It is estimated that around 20% of patients consult their health care professional (HCP) for what is primarily a social problem. A large proportion of health outcomes, estimated at 70%, are the result of social and economic determinants of health including employment, financial security, housing, diet and exercise, familial and social networks(220) - *Introduction*

Up to one in five cases seen by a general practitioner (GP) are for difficulties that could be classed as 'non-medical' (e.g. inadequate housing, financial issues, bereavement, loneliness) (54) - *Introduction*

Lifestyle and the physical, economic and social environment are among factors that determine individual health,4 and access to and use of healthcare services has less of an impact,5 accounting for approximately 10% of population health and well-being.6 UK GPs report that 20% of consultations are related to patient psychosocial needs. (418) – *Introduction*

Social prescribing interventions are often targeted at people in socioeconomically deprived areas, expanding options available to primary-care practitioners when patients present with needs related *to wider social determinants of health [8]. Social, rather than health, problems place considerable burdens on primary care, with 20% of patients consulting their general practitioner (GP) for primarily social problems and 15% of patients visiting for welfare-benefits advice [9]. A common criticism of public health interventions is their tendency to focus on individual-level health behaviours and overlook the structural determinants of health [10].* (56) – *Background*

As 20% of patients may consult their general practitioners (GPs) for a social problem,2 social prescribing has attracted increasing interest among GPs, social scientists, allied health professionals, the voluntary sector and commissioning stakeholders. (225) – *Background*

As demonstrated by the Marmot Review on health inequalities, there is a close association between socio-economic factors and health outcomes. Other research has shown that in England, GPs spend nearly a fifth of their consultation time dealing with non-medical issues at a cost of £395 million per annum, equivalent to the salaries of 3,750 full-time GPs. Almost three-quarters of GPs state that the proportion of time they spend dealing with non-health issues as part of consultations has increased. (91) - *Introduction*

Code 1.4. Patients as facing mainly "social" problems (characterisation of SP users)

Examples of psychosocial problems are social isolation, loneliness, housing issues, bereavement and poor wellbeing. However, it is clear that the relationship between psychosocial factors and health is bidirectional. Evidence that people's education, income, housing and other social issues have a major impact on their health and wellbeing is well established.3 Given this important relationship, there is growing international interest in the role of healthcare systems in addressing patients' social (i.e. non-medical) needs.(44) – *Introduction*

Purpose – A community-centred approach to health called Community Wellbeing Practices (CWP) is being offered to patients at all 17 GP practices in Halton in order to respond more appropriately to patients' social needs, which are often an underlying reason for their presentation at primary care services. (224) – *Introduction*

Here, the PSS was set up to act as a voluntary advisory/referral agency for patients whose problems were perceived to stem from underlying psychosocial issues. It was argued that these patients would benefit from a support network that would help them to explore their problems, advise them and, where necessary, refer them to appropriate community-based services. Consequently, it was envisaged that a patient's psychosocial state may be prevented from deteriorating by attending to and hopefully resolving the root cause(s) of their problems, e.g. relationship problems, financial difficulties, housing problems. (168) - *Methods*

Recognising that an individual's health is primarily determined by a range of social, economic and environmental factors, social prescribing strives to address the individual's need in a holistic way. (223) – *Introduction*

Social prescribing interventions are often targeted at people in socioeconomically deprived areas, expanding options available to primary-care practitioners when patients present with needs related *to wider social determinants of health [8]. Social, rather than health, problems place considerable burdens on primary care, with 20% of patients consulting their general practitioner (GP) for primarily social problems and 15% of patients visiting for welfare-benefits advice [9]. A common criticism of public health interventions is their tendency to focus on individual-level health behaviours and overlook the structural determinants of health [10].* (56) – *Background*

As demonstrated by the Marmot Review on health inequalities,i there is a close association between socio-economic factors and health outcomes. Other research has shownii that in England, GPs spend nearly a fifth of their consultation time dealing with non-medical issues at a cost of £395 million per annum, equivalent to the salaries of 3,750 full-time GPs. Almost three-quarters of GPs state that the proportion of time they spend dealing with non-health issues as part of consultations has increased. (91) – *Introduction*

Code 1.5. Empirical references to the impact of SP on socio-economic domains

where possible, took practical action to maximise income, reduce debt and assist service users navigating the welfare benefits system: 'Whatever money I owed like electricity and TV licence was in my mind always eating me from inside. I sorted out that and it just changed so many things … It changed my attitude, it changed my behaviour and it changed my mood … I am not depressed like before … I feel better about everything … I go out almost every day … I play more, I write, I do jobs at home … I read more … yes, a big change.' (P30, female, 45–49 years) 'Because of my language barrier some things I could not sort things out so easily, but she could. Even though I didn't know about Attendance Allowance she applied for that … I didn't know which benefit I could get. She said, 'I can try this one.' She tried it and she was successful and it helped me a lot.' (P16, female, 65–69 years) For those of working age, health-related unemployment was a major problem. Steps to assist with finding paid or volunteer work, returning people to work or having reasonable adjustments to work settings were undertaken and highly appreciated: 'I felt 100% better after talking to [Link Worker], she was just excellent … She put us in contact with people [to] do a new CV and look for a new job, [and] found information out for us … which has given me the confidence to go back to my company … things were put in place at work, so that I could take my breaks when I needed them … It made a massive difference to me, personally … I was getting on board with [mental health condition], and now, I'm at work with renewed vigour.' (P9, male, 55–59 (67) – *results*

To address wider economic and social issues, navigators provided advice and information, or made referrals into services to address debt, welfare, employment and housing issues.14,32,37 Numerous qualitative studies found that SP helped service users to find a job or to go back to work after illness or accident, through employment assistance (e.g. curriculum vitae writing), motivation, and support from navigators and referred services. […] Another important aspect of SP services was to help service users to understand their situation and to access a range of welfare benefits they are entitled to but often not aware of.14,16,37 Moreover, navigators took practical action to solve daily problems and worries of service users.16 Service users reported that due to SP they felt able to better cope with day-to-day activities (44) – *results*

Discourse 2. SP as supporting patients' journey towards self-activation

Code 2.1. Rationale related to health care utilisation

The United Kingdom's (UK's) National Health Service (NHS) faces increasing pressure on its resources […] Consequently, voluntary organisations and charities as third sector organisations are increasing their role in providing an adjunct to primary care services (Coid, Williams, & Crombie, 2003; Secretary of State for Health, 2006)(48) – introduction

There are 15 million people with long-term conditions, and over two million with multiple long-term conditions (Department of Health 2012). As the population ages, this figure is likely to grow. This population accounts for 55 per cent of GPs appointments and 77 per cent of inpatient bed days (House of Commons Health Committee 2014).(357) *C2*– introduction

In the UK, an ageing population combined with a growing number of people living with long-term medical conditions is increasing demand and cost pressures on the acute, primary and social care services (Wanless et al., 2006; Licchetta and Stelmach, 2016). […] A key demand has been for services to become more integrated to better serve the complex needs of the older, frail population and to be more focused on encouraging supported self-management, as a means to reduce demand on primary and secondary care services, making them more sustainable (Dyson, 2014; NHS England, 2014, 2016a, 2016b).(221) – introduction

The pressures faced by General Practice are highlighted by the growing complexity of managing multiple long-term conditions33 and greater collaboration between health professionals is needed to improve outcomes for patients. (160) – *discussion*

"Now what's happening is within the NHS, the stress is so much on 'Don't get people entrenched within the services, move them on, find them some mainstream opportunities which are part of the community rather than keep them within your day services, within the NHS', so certainly, there is more scope for partnership working in the future, I would say." (R9) (177) - *results*

Code 2.2. SP aimed at reducing health service utilisation

The objectives of the social prescribing pilot in City and Hackney included (City and Hackney CCG, 2013): · Enable individuals to ***feel more in control*** *and improve health and well-being · Reduce social isolation · Increase GP awareness of what is happening in the community and vice versa · Reduce GP visits and A&E attendance* (57) – introduction

The WBC endeavours to signpost and provide the person with the information and support they require in order ***to help them to remain independent in their own homes for as long as possible and reduce their future reliance on health and social services.***(165) – introduction

[…] social prescribing may represent a way to ***manage increasing demands on both the NHS and GPs' time*** *(Buck, 2016).*(366) – introduction

As many countries grapple with developing ***cost-efficient methods*** *to manage LTCs and tackle the gap between the social and healthcare sector, SP offers a potential* ***solution*** *and our findings present some of the opportunities and challenges in its implementation and evaluation.* (44) – discussion

It was assumed that SP would not only improve patients' mental well-being and ***'activate' them to better self-manage their health****, but would also lead to reduced demand on primary and acute health care and social care services.* (221) – introduction

The primary hypothesis was that the intervention would improve health and social wellbeing, patient activation and frailty levels, and that this would lead to less use of primary, social and acute care services and reduced costs. (221) – introduction

The aims are to increase patients' illness ***self-management****, address their psychosocial and health needs, and through this to reduce primary healthcare usage.* (167) – introduction

Surgeries may also benefit through a reduction in GP attendance, the result of patients gaining support from alternative sources.(168) – introduction

These approaches, often labelled 'social prescribing', can range from financial advice to walking groups and enable healthcare providers to respond to a broad range of patient needs, as well as potentially reducing GP and emergency department service demand (Polley, Bertotti, Kimberlee, Pilkington, & Refsum, 2017).(55) – introduction

Socially orientated approaches delivered through GPVCS collaborations may broaden community capacity (Friedli et al., 2012) and empower patients to better manage their own health and make more appropriate use of health services.(166) – introduction

The Department of Health (HM Government, 2006) has advocated social prescriptions for almost ten years whilst more recently NHS England (2014) has promoted non-clinical interventions from the voluntary and community ***sector as a way of making general practice more sustainable***(193) - introduction

Similarly, the welsh NHS Confederation found that the 'range of social prescribing projects and initiatives have the potential to make real progress towards improving population health and well-being and reducing demand on NHS wales' (p. 1). (374) – introduction

Code 2.3. SP aimed at enhancing self-care, activation, independence, control, motivation, personal responsibility

Strength and responsibility […] Even though the researchers did not bring them up during the interviews, subjects such as the participant's own strength and responsibility were frequently mentioned. The term 'own strength' refers to the power to find one's own solutions to problems. (31) – results

Evaluation of Living Well, Taking Control A community-based diabetes prevention and management programme (392) – *title*

'a means of enabling GPs and other frontline healthcare professionals to refer patients to a link worker – to provide them with a face-to-face conversation during which they can learn about the possibilities and ***design their own personalised solutions****, i.e. "co-produce" their "social prescription"– so that people with social, emotional or practical needs are* ***empowered to find solutions*** *which will improve their health and wellbeing, often using services provided by the voluntary and community sector'*(57) – introduction

Scaled-up versions of individual social prescribing initiatives could be used to counter the social determinants of health inequity, in offering ***purposeful activities that build resilience*** *in the face of mental and physical ill health, encourage social interaction, self-esteem and* ***confidence****, and develop individual and community resources.* (48) - *background*

Information derived from EA indicated that CWS was conceived as a programme to reduce health inequalities by improving ***awareness*** *of factors influencing mental and physical health, increasing uptake of support services and (consequently) enhancing* ***self-efficacy, coping skills, empowerment and confidence*** (158) – *results*

People's health is determined primarily by a range of social, economic or environmental factors and social prescribing seeks to address people's needs in a holistic way, allowing them to take greater control of their own health. (41) – *introduction*

It has emerged as a tool to help clinicians to persuade suitable patients to ***engage*** *in a new and helpful change in behaviour.*(225) - *introduction*

one-to-one signposting and individual support were expected to result in patients being more able to acquire and use available skills, information and support which was expected to lead, in turn, to patients better self-management of health conditions, better ability to navigate systems, avert crises and adapt to challenges, which was also expected to lead to improved relationships with professionals and a sense of being valued as a 'whole person'. All of these together were expected to lead to improved wellbeing (184) - *methods*

Participants use this action strategy ***to manage the challenges/barriers*** *that may obstruct success. When faced with problems such as low levels of confidence or environmental barriers, the action strategy may be to avoid and drop out of the scheme. The dimension of the strategy allows a gradient of responses. For example, the participant may only attend the minimum required of the scheme protocol when faced with a barrier. In practice, this could result in a participant attending the initial appointment, reassessments, and the minimum of exercise sessions. However, if the participant has* ***sufficient levels of confidence and motivation*** *they can respond with attendance to all that the scheme has to offer for them; Hanna: ''I find this is my level now I can come to aqua twice a week I find I am comfortable with this'' (FG4, 260). The consequences of the scheme are shown (Figure 1 and Table 1) as the ''physical and psychological outcomes,'' alongside ''scheme* *development,'' such as the expansion and refinement of the schemes protocols and objectives.* (395) - *results*

shows that those likely to benefit from seeing a link worker are patients able to change their outlook on life, who can build and sustain their social capital. This may only happen when motivation and engagement are present.(54) - *results*

*The objectives of the social prescribing pilot in City and Hackney included (City and Hackney CCG, 2013): · Enable individuals to **feel more in control** and improve health and well-being · Reduce social isolation · Increase GP awareness of what is happening in the community and vice versa · Reduce GP visits and A&E attendance* (57) - *introduction*

*However, it has subsequently become recognised that social prescribing could provide new opportunities and a chance for **patients to take responsibility** and be more creative (Branding and House, 2009b) whilst also increasing self–esteem and providing social support to both individuals and communities.* (370) *C 2.3.* – *Introduction*

*The PSS may also be seen as empowering patients to **take control** over their lives. For example, a recent factor analysis of empowerment in healthcare outlines components of care that are similar to those provided by the PSS [14], such as providing patients with information and **choices** concerning their future care. The concept of Empowerment has been empirically linked to **learned mastery** theory [15] whereby patients who are given control over their lives become increasingly **motivated**.* (168) – *discussion*

The overall hypothesis underpinning the realist evaluation of social prescribing in City and Hackney is that social prescribing improves well-being outcomes for patients suffering from isolation, and mild mental health problems. It provides a mechanism of support that enables each individual participant to consider a set of actions they may be willing to take, and thus embark on the journey to socially re-activate themselves, change their behaviour and, ultimately, their health. (57) – *results*

From a more conceptual point of view, when the relationship between SPC and patient develops successfully, the patient develops a strong sense of self-efficacy, feeling of control and a willingness to take on and persist with new and difficult tasks (Coulter and Ellins, 2006). The motivation and support offered by SPCs creates the basis for behaviour change such as greater willingness to participate in chosen community activities. (57) – *discussion*

Creative Alternatives operates as part of a network of social prescribing programmes within Sefton that also includes Active Sefton (physical activity), Relax and Revive (physical activity, including yoga and tai chi), Active Reading (bibliotherapy) and the Citizens Advice Health Outreach scheme. These programmes recognise the importance of social, economic and cultural factors on well-being and provide Sefton residents with a 'menu' of treatment options that encourage levels of self-help, personal responsibility and social and community engagement. (375) – *introduction*

*Social prescribing interventions benefit patients by **supporting them** to address the wider psychosocial determinants of health, enabling better health-condition management and the* *adoption of healthier behaviours (Mossabir, Morris, Kennedy, Blickem, & Rogers, 2015)* (164) – *introduction*

*In the last few years there has been an emergence of interventions focusing on the social component of care, such as social prescribing, art on prescription, exercise/physical activity on prescription, walking groups and the introduction of health trainers, with some evidence for behaviour change [2–4]. **These aim to help people manage their chronic condition**, prevent more serious health problems developing, and contribute to addressing health inequalities by building social support networks.* (360) – *background*

Social prescribing programs can be broadly focussed, for example the Expert Patients Program, where participants attended self-management groups to improve self-efficacy, confidence, and QoL (Rogers et al. 2008). (26) – *introduction*

*The NHS 'Five year Forward View' (NHS 2014) calls for the development of new and innovative approaches to help people living with long-term conditions **to independently manage their conditions**. One such approach is social prescription.*(357) – *introduction*

*In contrast to the 'light-touch' approach (typically reported in UK studies), which could increase dependency on primary care for addressing social problems and welfare needs (Cawston, 2011), the 'holistic' model aims to improve a **patient's self-efficacy and capacity to maintain or improve their health and well-being over the longer term**.* (221) – *introduction*

*It was assumed that SP would not only improve patients' mental well-being and **'activate' them to better self-manage their health**, but would also lead to reduced demand on primary and acute health care and social care services.* (221) – *introduction*

The primary hypothesis was that the intervention would improve health and social wellbeing, patient activation and frailty levels, and that this would lead to less use of primary, social and acute care services and reduced costs. (221) – *introduction*

*The Patient **Empowerment** Project (PEP) was an intervention developed by NHS Leeds West Clinical Commissioning Group (CCG) to address unmet patient needs by increasing signposting to, and knowledge about, local services and voluntary groups that could provide appropriate support. PEP was also particularly focussed on the improvement of wellbeing **and self-management** for individuals with one (or more) of four long-term health conditions; depression, diabetes, chronic obstructive pulmonary disease (COPD) or cardiovascular disease (CVD).* (401) – *introduction*

Developed with the aim of encouraging self-care and behaviour change, 'social prescribing' interventions (sometimes called 'community referral interventions') allow health-care practitioners to refer patients with LTCs to non-clinical services, primarily in the community and voluntary sectors. (56) – *introduction*

Social prescribing has been defined as: "harness[ing] assets within the voluntary and community sectors to improve and encourage self-care and facilitate health-creating communities."(151) – *background*

Socially orientated approaches delivered through GPVCS collaborations may broaden community capacity (Friedli et al., 2012) and empower patients to better manage their own health and make more appropriate use of health services.(166) – *introduction*

SP Holistic projects are adopting a holistic and preventive approach and aim to work with beneficiaries with long-term conditions. They encourage beneficiaries to play a central role in ***managing their own care****.* (388) – *introduction*

Social prescribing has been defined as: '….options that make available new life opportunities that can add meaning, form new relationships, or give the ***patient a chance to take responsibility*** *or be creative. Usually these services need to be available locally and often within the voluntary, community, and social enterprise sector ('third sector')'. (p. 454)* (177) - *Introduction*

From dependence to independence: emerging lessons from the Rotherham Social Prescribing Pilot (201) - *title*

Code 2.4. Intervention characteristics: coaching, motivational strategies, health education/lifestyle-related, time-bound, led by coaches trained in motivational techniques

Given that the WBCs focus on wellbeing represents an asset-based approach, they perceive a key benefit of supporting clients and carers to be facilitating a ***change in their attitude and raising expectations about what they can do*** *to remain well.* (165) – *results*

The service comprises: (A) individual assessment, motivational interviewing and action planning; (B) completion of an initial 'Well-being Star' assessment and subsequent Well-being Star assessments every 6 months thereafter for the duration of the patient's involvement; (C) help to access community services (eg, welfare rights advice, walking groups, physical activity classes, arts groups, continuing education); (D) promotion of volunteering opportunities, and; (E) promotion of improved self-care and sustained behaviour change related to healthier lifestyle choices.(67) – *introduction*

home or at the clinic to be conducted as a face-to-face encounter held in private. On completing the assessment, achievable goals were agreed in terms of any actions or changes in lifestyle that the client would undertake, specific support that the WBC intended to provide and a realistic timeframe (165) – *methods*

• Individually-tailored lifestyle advice, enhanced through peer support, and evidence-informed behaviour change techniques • Specialist nutrition, healthy eating, and physical activity advice • Support for promoting wellbeing and managing stress, anxiety and depression(392) – *methods*

Features of the Connect service: An 'Asset Mapping' exercise was undertaken to identify available services across third, public and private sectors, self-help, self-management resources, educational, leisure and recreational facilities and fitness-, health- and exercise-related(369) – *methods*

The "Ways to Wellbeing" social prescribing service provides opportunities for patients to learn life skills-based cognitive behavioural approaches, mindfulness, self-care strategies, sleep hygiene and relaxation techniques alongside hobby and interest groups such as singing, dancing and knitting clubs. […] All the social prescriptions have a core educational component focussing on problem solving skills, goals setting and developing an awareness of the Five Ways to Wellbeing (Aked et al., 2008). The courses are delivered at community venues across the borough as a means of reconnecting patients with community assets that can bolster a sense of wellbeing. All patients complete a "moving forward" plan towards the end of their intervention in which they map out assets of people and place that can help them to stay engaged and active in the community so they are able to maintain their progress (see Box 6).(224) – *methods*

Participants were 'linked' to a wide range of community groups and services, including gyms, walking groups and exercise classes; weight-loss and healthy eating groups; and LTC management groups such as breathing exercises for people living with respiratory conditions. (56) – *results*

All participants attended a weekly arts and crafts group (2–3 h for 10 weeks); groups were led by a practicing artist/instructor and co-facilitated by a mental health social worker who maintained communication with participants throughout the program, and provided additional supports and adjustments pre- and post-activities (26) – *methods*

Wellbeing co-ordinators dealt with a range of needs from straightforward sign-posting to, what was in essence, a more intensive coaching-style intervention. Some of the most positive outcomes reported by patients resulted from experiencing sessions which allowed them the time to explore their situation more fully and work collaboratively to set realistic goals for the future. (360) – *results*

Thus, social prescribing seems to work for all those patients who need support and ***motivation*** *to act upon improving their own health and well-being, particularly if their needs are non-clinical or have a non-clinical component.* (57) – *discussion*

It often involved patient referral from primary care services to a link worker or 'navigator' who ***helps empower them to make changes*** *to their lives through accessing community support interventions* (161) – *results*

The level of intervention offered by the SPC may vary considerably from straightforward signposting, requiring a detailed knowledge of local organisations available to the patient, to a more intensive coaching-style intervention for those patients needing to overcome barriers before moving on to the next step. (57) – *results*

The coordinator uses motivational interviewing and coaching-based skills to identify issues and challenges, manage anxiety and help patients identify possible steps forward. Patients are then referred into appropriate services that can support their health and wellbeing. Some, where relevant, *are offered further face-to-face sessions, up to six (level 3) to provide further coaching-based support to help identify goals and develop personal action plans.* (220) – *methods*

The Co-ordinator then works with the individual for up to 12 weeks to enable them to take action to achieve their goals. This includes resilience-focused coaching and practical support and advocacy to navigate and access local health, social and economic services. This study focuses just on those participants receiving the more intensive 'holistic' intervention. (221) – *methods*

To ensure clients can make the most of onward referrals and sign-posting Social Prescribers use a range of motivational interviewing, goal-setting and coaching skills in their discussions with clients. (91) – *methods*

The well-being coach then contacts the patient and schedules an appointment for a one-on-one intake session lasting 1 h. The intake session takes place either at the participant's house or in the community well-being centre. During the intake session, a well-being coach uses a strengths-based approach to evaluate the participant's life in a holistic manner. The patient's sources of positive energy and strength are systematically identified. Additionally, possible barriers to thriving are also explored so that they can be addressed throughout the process. The well-being coach uses a step-by-step approach that focusses on what the participant enjoys doing. For example, the coach may ask 'What were you good at previously?' The coach aims to reinforce the patient's self-efficacy and self-reliance through social activation.(31) – *introduction*

***The use of cognitive-behavioural, motivational and 'persuasive' techniques** by activity leaders was linked to Adherence, and participants' relationship with the leader also acted as a motivating factor.* (55) – *results*

Following a referral, navigators then contacted referred patients to arrange an initial appointment held in surgeries. The role of navigators involved an individual assessment to identify the non-medical needs of service users, motivational interviewing, continuous personalised support and to link service users with non-medical sources of support, to help improve their health and well-being.(359) – *introduction*

All Co-ordinators are non-health care staff (although some previously worked in the health service) and all received training in goal setting, use of tools and outcome measures, and in how to engage with users in a strengths-based way, co-produce a plan and manage risk. Key aspects of the role included: listening skills, emotional support, advice and practical assistance and coaching.(221) – *methods*

Following extensive consultation with patients and healthcare professionals over an 8-year period, Ways to Wellness provides a 'hub' model of social prescribing in which a Link Worker trained in behaviour change methods offers a holistic and personalised service.(67) – *introduction*

In the WtW model, patients are referred by a primary-care practitioner to a link worker trained in behaviour change methods.(164) – *introduction*

All of the Social Prescribers are required to undertake the following training as part of their contract: • Motivational Interviewing • Making Every Contact Count • Information Governance • Basic Life Support • Safeguarding (91) – *methods*

There was an appreciation of the (often very basic) level of training they had received such as safeguarding and Mental Health First Aid and for those who had experienced it, training in behaviour change techniques such as Motivational Interviewing was valued.(160) – *results*

We offered brief interventions training to health professionals to help them to respond more effectively to patients' social needs. The training provided insights into the Five Ways to Wellbeing (Aked et al., 2008), motivational interviewing and the BATHE technique (Stuart and Lieberman, 2008). Feedback from staff about this training showed that they found it useful in their consultations with patients.(224) – *results*

Link workers are trained in behaviour change methods, such as motivational interviewing techniques, that help service users identify which areas of their lives they wish to change and how. These techniques emphasis service users' choice and control over their decisions and behaviours. (56) – *introduction*

Building self-confidence, self-reliance and independence was another facet of the Link Workers' approach, managed through ongoing support and persistence in finding the right motivational tools for the individual, while conveying the need for personal responsibility and resilience. This enabled service users to make changes to their lives, engage with other organisations and manage their long-term conditions. (67) – *results*

In some SP pathways, health coaches (HCs) receive these referrals and provide patients with practical and emotional support, as well as opportunities to better manage their own health.(167) – *introduction*

Once recruited onto the pathway, patients have an initial meeting and needs assessment with an HC, who either prescribes self- care management or refers to an LW, who in turn connects the patient with relevant third-sector groups.(167) – *introduction*

The best example of this approach could be found outside of the CCG area. It was developed by senior partner who had been a GP in his town for 26 years. Like other SP initiatives their intervention included the employment of a Health Facilitator based in the practice. This role developed out of an exercise on prescription scheme developed by the local surgeries and the local Council ten years before. The health facilitator sees referred patients. Using Life Check and other tools the facilitator provided advice on exercise, nutrition, diet etc. They promote self-care using an on line Thought Field Therapy programme (rather like CBT) and also signpost to voluntary organisations or self-help groups for specific disease areas (22) *– results*

Features of the Connect service An 'Asset Mapping' exercise was undertaken to identify available services across third, public and private sectors, self-help, self-management resources, educational, leisure and recreational facilities and fitness-, health- and exercise-related(369) – *introduction*

The "Ways to Wellbeing" social prescribing service provides opportunities for patients to learn life skills-based cognitive behavioural approaches, mindfulness, self-care strategies, sleep hygiene and relaxation techniques alongside hobby and interest groups such as singing, dancing and knitting clubs.(224) – *design/methodology/approach*

In both phases of the study, link workers reflected that the intense support required by some clients meant that it was vital to set boundaries around expectations of the nature of support on offer. Perhaps the trickiest and most sensitive aspect of boundary-setting was managing clients' expectations around relationships. A strong, supportive link worker/client relationship is vital for successful social prescribing (Moffatt, Steer, Penn, & Lawson, 2017). Nevertheless, relationship boundaries were not always easy to set and required careful management, with link workers describing "a bit of a balancing act" between being a "friend but not a friend" (P13, Interview, Phase 1). A useful strategy for managing client dependency involved referring clients to specialist services and utilising the multi-agency approach suggested in the link worker training. By follow-up, link workers had established relationships with some clients over a period of months. Dependency continued to be identified as an issue, with link workers expressing concerns both over the risk of client dependency and of themselves becoming "too emotionally involved" with clients who "are not seeing you as their professional worker but as their friend" (P2, FG3, Phase 2). Additional strategies for maintaining appropriate boundaries had been developed over time, including regularly reminding clients of the limits of the link worker role, creating distance by doubling-up, swapping link workers or running group activities and reasserting the importance of empowerment rather than dependency. (164) – *results*

*To ensure **clients** can make the most of onward referrals and sign-posting Social Prescribers use a range of motivational interviewing, goal-setting and coaching skills in their discussions with clients.* (91) – *results*

The client is then contacted within seven days to arrange an appointment. Although people are encouraged to come to their local general practice surgery, it is possible for home visits to be arranged. Up to three appointments of approximately up to 40 min each are held with clients to discuss their needs and to then identify an appropriate source of local support. The CHAT worker facilitates access to local organisations, predominately from the voluntary and community sector (60) – *introduction*

After assessment, service users can potentially access a range of community and voluntary sector support. To avoid dependency on the social prescribing service, individuals are encouraged to 'exit' the service or are referred to other health and social care providers after 6 sessions.(151) – *background*

*The service **extended choice** for a wide range of patients, represented a viable alternative to CBT and medication and represented a suitable option for those experiencing isolation and frequent attenders.*(369) – *introduction*

Code 2.5. Characterisation of SP users: at risk of being/becoming dependent, lacking control, lacking motivation, frequent attenders

Thus, social prescribing seems to work for all those patients who need support and ***motivation*** *to act upon improving their own health and well-being, particularly if their needs are non-clinical or have a non-clinical component.* (57) – *discussion*

Prior to the project participants expressed their inability to engage with people or have thoughts about the future, suggesting a lack of a ***sense of coherence****. On completion of the project, the feelings that participants expressed about themselves and their surroundings put forward positive changes for themselves and a step towards creating meaning in their lives and connecting with other people.*(223) – *results*

There is a danger of patients becoming dependent on a link worker as the source of support; this should be tempered if individuals create new and meaningful connections within the community, which may include reconnecting with friends and family because of a more positive outlook on life. Such an improved outlook may encourage those with existing health conditions to actively ***engage in self-care.*** (54) – *results*

In contrast to the 'light-touch' approach (typically reported in UK studies), which could increase dependency on primary care for addressing social problems and welfare needs (Cawston, 2011), the 'holistic' model aims to improve a ***patient's self-efficacy and capacity to maintain or improve their health and well-being over the longer term****.* (221) – *introduction*

The CW service was available to anyone aged over 75 years and frequent attenders at the practice(165) – *methods*

The target group for Welzijn op Recept comprises patients who frequently visit their GP or other primary care provider about psychosocial problems for which no medical cause can be found (trouble sleeping, worrying a lot, feeling depressed, etc.).(31) – *introduction*

Several studies reported that social isolation and low mood due to life circumstances such as unemployment were the key reasons for referral to social prescribing (The Care Forum, 2012). Social prescribing was considered suitable for frequent attendees to health services or those with inexplicable symptoms (NESTA, 2013).(189) – *results*

As individuals feel more socially included and self-confident through joining groups and receiving helpful outside advice, ***they become less reliant on their GP****.* (54) *C2.5.* – *results*

While not all participants were asked about this issue, as it only arose during one discussion group, those who were asked felt very strongly that the service and support should be ongoing. This issue should be explored and the implications of offering the service on a continuing basis should be identified. While on the one hand the participants clearly felt that this was important, and that without it they might fall back into old habits, there is also a need to encourage people to take responsibility for themselves and their health, and not become too dependent on health staff or *services. This issue has been previously raised by Hunt and Hillsdon [18]. Furthermore, if participants were able to continue seeing the AL advisor it would increase demand and time pressure on an already stretched service.* (227) – *discussion*

The dependency that a lot of participants clearly have for health services and staff was apparent during discussions regarding other aspects of the service. Some participants suggested that having their measurements taken by the AL advisor at consultation, such as blood pressure and body weight, helped them to stay motivated, and that without this they would not have stuck to their goals (227) – *results*

There is a danger of patients becoming dependent on a link worker as the source of support; this should be tempered if individuals create new and meaningful connections within the community, which may include reconnecting with friends and family because of a more positive outlook on life. (54) – *results*

Reflecting on the CHAT experience, for some the initial appointment is all that is needed, as this can give the necessary space for reflection as individuals benefit from the process of being listened to and starting to voice their aspirations. It is not suitable for those who require an intensive package of support ***and the limit on number of appointments prevents dependency****. The evaluation found that the longer appointment time in comparison to clinical consultations was valued, as was the offer to accompany the client to a new group.*(60) – *results*

In both phases of the study, link workers reflected that the intense support required by some clients meant that it was vital to set boundaries around expectations of the nature of support on offer. Perhaps the trickiest and most sensitive aspect of boundary-setting was managing clients' expectations around relationships. A strong, supportive link worker/client relationship is vital for successful social prescribing (Moffatt, Steer, Penn, & Lawson, 2017). Nevertheless, relationship boundaries were not always easy to set and required careful management, with link workers describing "a bit of a balancing act" between being a "friend but not a friend" (P13, Interview, Phase 1). A useful strategy for managing client dependency involved referring clients to specialist services and utilising the multi-agency approach suggested in the link worker training. By follow-up, link workers had established relationships with some clients over a period of months. Dependency continued to be identified as an issue, with link workers expressing concerns both over the risk of client dependency and of themselves becoming "too emotionally involved" with clients who "are not seeing you as their professional worker but as their friend" (P2, FG3, Phase 2). Additional strategies for maintaining appropriate boundaries had been developed over time, including regularly reminding clients of the limits of the link worker role, creating distance by doubling-up, swapping link workers or running group activities and reasserting the importance of empowerment rather than dependency. (164) – *results*

After assessment, service users can potentially access a range of community and voluntary sector support. To avoid dependency on the social prescribing service, individuals are encouraged to 'exit' the service or are referred to other health and social care providers after 6 sessions.(151) – *background*

*Specifically, **clients** identified a close client/link worker relationship and link worker continuity as important factors in service engagement and in making and maintaining lifestyle changes (Moffatt et al., 2017; Wildman et al., in press). In this study, we identify a risk of dependency arising from this close relationship, with link workers sharing a range of strategies developed over time to mitigate this risk.* (164) – *discussion*

Code 2.6. Evaluation approaches in line with Discourse 2:

- **Code 2.6.1. Theoretical frameworks**

- Salutogenesis/asset-based model. Used by (165), (223), (224), (407)
- Learned mastery theory. Used by (168)
- Social cognitive theory. Used by (57), (392)
- Self-determination theory. Used by (383), (169) (222), (385), (399), (392)
- The social cure theory. Used by (167)
- Patient Activation Theory. Used by (54)
- Control Theory. Used by (392)
- Theory of Planned Behaviour. Used by (392)

*The programme targets factors identified by various social cognitive models, for instance the **Theory of Planned Behaviour**, as being important in motivating people to change their behaviour (e.g., risk perceptions, pros and cons of behaviour change, self-efficacy). The programme also adopts motivational approaches from **Self-determination Theory** (Deci & Ryan, 2000), such as supporting intrinsic motivation, engaging social support/encouraging connectedness and building competence. The core intervention is based around use of behaviour change processes and techniques that derive from self-regulation theories, such as **the Social Cognitive Theory** (Bandura, 1985) **and Control Theory** (Carver et al., 2000). These include goal setting, action planning, self-monitoring, feedback on progress, problem solving, and reviewing goals, which are suggested to be important in translating motivations into action, and supporting longer-term maintenance of behaviour change (e.g. Michie & Johnson, 2012). The intervention providers have been trained to use patient-centred counselling approaches (e.g., motivational interviewing) in the delivery of these techniques, which appear to enhance weight loss in overweight and obese participants (Armstrong et al., 2011).*(392) – *methods*

*The Salutogenesis model represents a humanistic philosophy with a person- centred approach. Antonovsky's focus is on resources, competences and promoting of the 'healthy' (Salutogenesis) contrary to an emphasis on diseases, malfunctions and risk factors (pathogenesis). In this way, Salutogenesis is a health practice that is oriented towards what already exists and what makes someone healthier and works from the perspective that people are always somewhere on a continuum between sick and healthy, and while, for example, at the more 'sick' end of the continuum, there will also be some 'healthy' dimensions in life.17 […] Meaningfulness. **Meaningfulness, which Antonovsky sees as the single most important factor to survive, adopt and overcome difficulties, is linked to how much an individual feels that life makes sense**, and if challenges are worthy of commitment.17 Some of the participants commented that prior to the* *project they had lacked a sense of meaning and purpose for getting up in the morning and engaging in the wider world.*(223) – *methods*

We invested a considerable amount of time in the early stages developing and refining a theory of change that would describe the way that the CWP model would bring about improvements in health. Key concepts that informed our theory were: salutogenesis – developed by Aaron Antonovsky (1979), which focusses on the determinants of good health with a particular focus on people's resources, capabilities and the mechanisms that create and sustain health. We also incorporated asset-based approaches to health (Foot and Hopkins, 2010; Rippon and Hopkins, 2015) and insights into how people are able to build a sense of control and autonomy in their lives (Sen, 1999; Whitehead et al., 2016).(224) – *methods*

The PSS may also be seen as empowering patients to ***take control*** *over their lives. For example, a recent factor analysis of empowerment in healthcare outlines components of care that are similar to those provided by the PSS [14], such as providing patients with information and* ***choices*** *concerning their future care. The concept of Empowerment has been empirically linked to* ***learned mastery*** *theory [15] whereby patients who are given control over their lives become increasingly* ***motivated****.* (168) – *discussion*

Social cognitive theory is one of the chosen conceptual models that underpins the process of behavioural change (Bandura, 1986). In social prescribing, behavioural change leads to improved mental and physical well-being in three key ways: first, the combined effect of one-to-one interaction between the patient and SPC in the form of coaching, motivation and listening (Prochaska and Norcross, 2009); second, the social interaction between the patient and the group of people involved in running community activities; and third, the social interaction within other community activities. Through the support received from SPCs and social interaction in the community, patients move through different stages, ultimately finding themselves empowered to change their own circumstances (Hibbard and Gilburt, 2014) – *methods*

We have used ***NPT*** *to guide the development of PLANS in a way in which incremental changes could be made on the bases of feedback at different stages from patients, and with reference to the technological, primary care and community settings, the tool was orientated to operate within. Of particular, salience is patient normalization. That is, to be an optimal candidate for normalization, a new tool (such as the one proposed here) should seek a 'fit' with the actual or realizable set of roles within patients' division of labour and be capable of integration within existing or realizable patterns of self-management and service contact with professionals. It follows from this that the advantage to patients must be tangible and evident to their everyday illness work and contact with services is crucial to the evaluation of new interventions and practices.*(190) – *methods*

Self-Determination Theory (SDT; Deci & Ryan, 1985, 2000) appears to hold considerable promise for elucidating the social psychological processes influencing exercise participation. SDT postulates that an autonomy supportive context will foster the satisfaction of three basic psychological needs (i.e., the needs for autonomy, relatedness and competence). When these needs are satisfied, it is assumed that self-determined forms of motivational regulation guide behaviour (i.e., intrinsic motivation and integrated and identified regulation) and adaptive behavioural (e.g., exercise engagement), cognitive *(e.g., commitment) and well-being (e.g., vitality) outcomes are postulated to ensue. In contrast, diminished need satisfaction elicits less or non self-determined motivation (i.e., introjected and external regulation and amotivation), which in turn, results in maladaptive outcomes. […] The main objective of the current study was to examine whether overweight/obese individuals who adhered more to their exercise prescriptions reported greater levels of autonomy support, psychological need satisfaction and self-determined motivational regulations, versus those who adhered less. Moreover, given that motivational processes are expected to impact a multitude of cognitive, affective and behavioural outcomes (Vallerand, 1997, 2001), this study also examined whether those individuals that adhered more reported greater levels of exercise behaviour, exercise-related cognitions (i.e., self-efficacy, commitment and behavioural intention) and general well-being (i.e., positive and negative affect, subjective vitality and satisfaction with life). We hypothesized that those individuals who adhered more would report higher levels of autonomy support, psychological need satisfaction, self-determined motivation and positive behavioural, cognitive and affective outcomes at 3-months, as well as a greater increase in these constructs over time, compared to those who adhered less. Secondly, we explored the motivational sequence embedded in SDT by testing autonomy support as a predictor of need satisfaction, autonomy support and need satisfaction as predictors of the motivational regulations, and autonomy support, need satisfaction and the motivational regulations as predictors of behavioural, cognitive and well-being outcomes. We hypothesized that, over time, perceived autonomy support would emerge as a positive predictor of psychological need satisfaction. Autonomy support and psychological need satisfaction were hypothesized to predict self-determined motivation. […] Further, autonomy support, need satisfaction and self-determined regulation were hypothesized to predict adaptive behavioural and cognitive exercise-related outcomes, as well as well-being, over the course of the 3-month exercise prescription. In this way, we aimed to garner a better understanding of how different facets of SDT impact upon different components of the exercise experience. Such information can be used by practitioners to more effectively facilitate each of these consequences in exercise settings.*(383) – *Introduction*

Self-Determination Theory (SDT) is a psychological theory concerning human wellbeing, motivation and behaviour change,9,10 which has been applied to understanding how new behaviours can be achieved and sustained in people's lives.11 SDT argues that this requires the satisfaction of three innate needs: autonomy (a sense of control over one's own activities and behaviours), competence (a sense of ability to influence outcomes) and relatedness (a sense of connection to and interaction with others) (Figure 1). Proponents of SDT argue that satisfaction of all three needs is necessary for an individual's actions to be 'self-determined', and that actions which are more self-determined are likely to be maintained and to lead to greater wellbeing.[…] We use SDT to explore participants' experience of the Links Worker Programme. This study aims to investigate if SDT can be used to understand the change, or lack of change, resulting from patients' involvement in the Links Worker Programme[…] (169) – *introduction*

Participants accounts covered a range of categories of regulation described within the SDT framework. Motivation relating to different aspects of life, and at different time points, was expressed in different terms. As such, regulation was not a fixed state. There was variation within and between participants, regardless of the assessed impact of the intervention (Figure 2). However, in patients who described significant change resulting from the Links Worker Programme, there was a contrast between their descriptions of regulation of behaviours before and after seeing the CLP. […]

Circumstances before referral were often described in terms of amotivation or external regulation, whereas circumstances following the intervention often described identified or integrated regulation (Figure 3). (169) – *results*

Research applying SDT to health behaviours has shown that satisfaction of the psychological needs for relatedness, competence and autonomy is associated with more purposeful, consistent and sustained behaviour change. (169) – *discussion*

According to self-determination theory (SDT),4 intrinsic motivation represents the most self-determined form of motivation and, in addition to predicting exercise adherence, has been found to be related to positive self-evaluation.5 When people are motivated for extrinsic reasons (e.g. guilt, rewards), they are said to be less self-determined and are described as being extrinsically motivated.4 Finally, when people can no longer identify any reason for engaging in a given behaviour, they are said to be amotivated.4 Intrinsic motivation is unlikely to be prevalent at the beginning of an exercise programme6 and typically has to be fostered, as the enjoyment and stimulation from the activity itself may not be sufficient to encourage adherence.7 Patients are often inactive when they are referred to these programmes, and so in order for them to accrue the necessary physical and mental health benefits that may stem from their sustained involvement in exercise, it is first important to understand the key mechanisms that may support their early involvement in such schemes. This requires an understanding of whether the ERS actually fosters self-determined motivation, and subsequent exercise behaviour(222) – *introduction*

Boosting autonomy, relatedness and competence are key components for increasing self-determined motivation.4 Specifically, by observing the (competent) exercise behaviours of an exercise partner (with a similar history of ill health), it was thought that patients' beliefs that they too could succeed in the programme could be fostered, thus enhancing self-efficacy. (222) – *results*

One such framework is Self-Determination Theory (SDT; Deci & Ryan, 1985) which considers behavioural regulation and factors affecting this. According to SDT, behavioural regulation can be amotivated, extrinsically or intrinsically motivated, differing in their degree of self-determination. Amotivation is the relative absence of motivation (Deci & Ryan, 2000). Extrinsic motivation refers to the motivation to engage in a behaviour because it leads to a separate consequence, such as a reward (Deci & Ryan, 2008), and is comprised of four increasingly self-determined regulations (Ryan & Deci, 2000). External regulation is when an individual's behaviour is controlled by external rewards or the threat of external punishments which undermine self-determined motivation (Deci, Koestner, & Ryan, 1999). Introjected regulation occurs when an individual acts out of internal pressure or guilt or to satisfy self-worth. Identified regulation reflects the individual's acceptance of the value of a behaviour, even if it is not enjoyable. Integrated regulation reflects a valued behaviour that is integrated into other life roles (Deci & Ryan, 2000). Intrinsic motivation is fully self-determined and represents the motivation to participate in inherently enjoyable behaviours without external rewards (Deci & Ryan, 2002. […] Cognitive Evaluation Theory (CET; Deci & Ryan, 1985, 2002), a sub-theory of SDT, deals with the factors that undermine or facilitate intrinsically motivated behaviour. It results from satisfying three innate psychological needs: the need for autonomy (feeling self-determined in one's actions and not controlled by external factors; deCharms, 1968), competence (perceiving one has the ability to deal effectively with the environment and to effect outcomes) and relatedness *(feeling connected to others and having supportive relationships; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). If social and/or environmental factors fail to satisfy any of these needs, diminished motivation and well-being are likely (Wilson, Rodgers, Blanchard, & Gessell, 2003).*(385) – *introduction*

SDT (Deci & Ryan, 2000) is concerned with why we engage in specific behaviours and focuses on the degree to which people's motivation towards engagement in activities, such as PA, are more or less self-determined or controlled by external or internal pressures. SDT proposes that when an activity is not intrinsically motivating, behaviour is guided by a variety of extrinsic regulations which are assumed to lie on a self-determination continuum (Ryan & Deci, 2002). External regulation is the least autonomous and indicates a behaviour that is conducted for tangible and intangible rewards, externally referenced reinforcement or as an outcome of pressure from external sources. As we progress along the continuum, introjected regulation represents the motive to perform a behaviour to avoid guilt and shame or attain feelings of contingent self-worth and social approval. Identified regulation reflects engagement due to an understanding, acceptance and valuing of the benefits associated with participating in the behaviour. The most self-determined regulation, intrinsic motivation, reflects an inherent interest in the activity in hand and does not necessitate any operationally separable consequences (Deci & Ryan, 2000). Deci and Ryan (2000) indicate that these regulations cluster to form autonomous (intrinsic and identified) versus controlled (introjected and external) regulations. SDT further proposes an amotivated state in which an individual lacks any intention or desire to conduct the behaviour.(399) – *introduction*

The pathway evaluation reported here is underpinned by an appropriate psychosocial framework: the social identity approach to health and well- being, aptly named 'The Social Cure' (SC44 45). This approach posits that our social group memberships (eg, family, community, volunteering group) are consequential for our social life, health and well- being, but only if we identify with them (ie, feel a subjective sense of group belonging46). Group identification is believed to enhance social life and well- being through numerous benefits, such as reduced loneliness, enhanced self- esteem and the belief that social support will be available during crisis. (167) – *introduction*

The term corrective emotional experience (Alexander & French, 1946) is introduced to designate learning or more precisely behavioral change during an intervention. Originally it describes the crucial process that takes place during psychotherapy, whereby the therapeutic setting is seen as a context in which patients are re-exposed in a secure environment – made up, for example, by the empathy and awareness of the therapist (Streeck, 2007; Streeck & Leichsenring, 2009) – to emotional situations that they could not handle in the past. In order to be helped, the patient must undergo a corrective emotional experience that can repair the traumatic influence of previous experiences. In this the therapist adopts a holding attitude (Winnicott, 1964), which makes it possible for the patient first to undergo a therapeutic regression, then to have a corrective emotional experience, and afterwards to try out new behavior, initially in the secure environment and later in daily life. The idea of a possible correction of emotions by using certain experiences has been adapted to health science, for example to affect a moderation of dental anxiety among adults (Eli, Uziel, Blumensohn & Baht, 2004) or to conceptualize responsiveness of the nursing staff in health services (Rafferty, 2000). The corrective emotional experience in the context of an exercise program is understood as a re-education of emotions that is linked to physical activity. […] The first research aim question the role *of existential aspects such as suffering and fear of death in order to understand personal motives for adopting an active and healthy lifestyle. The second research aim questions the role of a corrective emotional experience for the change of exercise behavior. The third research aim, questioning whether the experience of other relevant individuals, such as the group or the physiotherapist in an Exercise on prescription program, will support behavioral change, receives particular attention* (380) – *introduction*

Patient activation is defined as people's confidence, motivation and ability (skills/knowledge) to manage their health [27]. Patient activation brings into focus attitudes and beliefs as well as behaviours and knowledge [28]. The problem, according to Hibbard [29], is many providers just give patients information without understanding where they are in terms of believing they can control their health situation. This may be unsuccessful in assisting individuals with low activation levels, as they can feel overwhelmed by and have limited confidence in managing their health [27]. It is argued that by tailoring an intervention to someone's activation levels, they are more likely to encounter small successes, which propels them forward rather than leaving them deterred due to a lack of achievement [27]. A patient activation measure (PAM) has been developed to gauge how motivated and able someone is to manage their health [30, 31]. People identified as activated on this measure appear more likely to adopt healthy behaviours (e.g. diet and exercise) and to have less hospital use [27]. Intervention components linked to increasing patient activation scores include those that help with skills development, problem-solving, peer support or engender change in beliefs and social norms [32]. Link workers can cover these components (e.g. encouraging patients to think of assets and solutions to their problems when co-producing an action plan, linking them to networks that can foster connections). Through feeling more activated, a patient may be motivated to invest in self-care, prompting them to visit a GP for advice.(54) – *results*

Williams et al. (2006b) conceptualised autonomy support as features of the social environment created by significant other(s), such as eliciting and acknowledging perspectives, supporting self-initiative, offering choice, providing relevant information and minimising pressure and control. For example, a health and fitness advisor who creates an autonomy supportive environment offers his/her client the opportunity to choose the activity that he/she will engage in (Pelletier et al., 2001b; Williams, Cox, Kouides, & Deci, 1999), acknowledges positive and negative feelings towards becoming physically active in an empathetic manner (Edmunds et al., 2007), understands the client's perspective (Pelletier et al., 2001b; Reeve & Jang, 2006) and encourages ownership and self-initiative towards becoming physically active (Deci & Ryan, 2000). SDT proposes that when an autonomy supportive environment is created, the reasons for conducting a behaviour become more self-determined or autonomous over time. Previous study in the physical domain has provided evidence for this assumption (Edmunds et al., 2008; Hagger et al., 2009; Tessier et al., 2008).(399) – *introduction*

In particular, the relationship between patient and SPC deserves further attention as it appears to translate into practice some of the theories underpinning social cognitive theory, self-efficacy (Coulter and Ellins, 2006), motivation (Hibbard and Gilburt, 2014) which have been discussed in the previous section. (57) – *discussion*

Future research in this area should concentrate on testing these theories by measuring quantitatively the impact of the SPC on patients, in addition to measuring changes in patients' health outcomes across the pathway as a whole. A suitable comparison group with no access to SPC should be identified, possibly through randomised selection. This exercise would finally provide us with greater understanding of the role of SPCs in patients' health and well-being and enable us to test social cognitive theory and develop a more precise framework for patient activation (Hibbard and Gilburt, 2014). (57) – *discussion*

The assets-based model brings together the three main strands of the South West Well-being programme. Personal well-being assets underpin these strands and emphasise the central role of psychological resources such as confidence, self esteem and autonomy. Similarly in this model, social well-being assets - such as community engagement, belonging, trust and social support – act as mediators for the promotion of physical activity, healthy eating and mental health. (407)

- **Code 2.6.2. Outcomes related to self-concept, self-management, behavioural change, independence, activation**

Studies with outcome variables in line with code 2.6.2, such as:

- WEMWBS (methods/results): (50), (151), (42), (189), (48), (221), (358), (44), (198), (224), (165)**,** (220), (364), (162), (371), (373), (381), (41), (200), (401), (186)
- Other questionnaires/outcomes about self-confidence, self-efficacy, activation, motivation, independence (methods/results): (199), (221), (44), (361), (198), (363), (202)**,** (367), (368), (375), (383), (384), (385), (222), (391), (392), (399), (401), (26)

With the support of new social networks, improvements in self-perception enabled clients to ***become more confident, independent, and resilient despite*** *the challenges they continued to face in everyday life. Improvements in communication and social skills allowed clients to be* ***confident and assertive****, and practical, life-based skills contributed to increased resilience and Independence. […]* ***Improvements in confidence, self- esteem, independence, and motivation*** *enabled clients not only to set new goals, but also to actively pursue them. This was also facilitated by hope and optimism for the future, with regard to a client's potential to succeed: '… since I've lost weight I feel a lot better in my health so I've got to carry on … I don't want to be in that predicament again … I've got a lot of work to do, I've got to lose some weight and get healthier, and I'm hoping when we get swimming and things it'll give me motivation.' (Pamela)*(171) - *results*

The overall hypothesis underpinning the realist evaluation of social prescribing in City and Hackney is that social prescribing improves well-being outcomes for patients suffering from isolation, and mild mental health problems. It provides a mechanism of support that enables each individual participant to consider a set of actions they may be willing to take, and thus embark on the journey to socially ***re-activate themselves****, change their behaviour and, ultimately, their health. […] As a result of one or more consultations, the SPC helps the patient in accessing relevant activities available from statutory and community sectors which could contribute to the 'activation' of the patient. The mechanism underpinning this stage of the intervention is the interaction between SPC and patient.* (57) – *results*

Thus, when patients are given agency and control over their time with non-imposing support from qualified SPCs who are empathetic and have a good knowledge of the social support infrastructure available locally, social prescribing is likely to have a beneficial impact on service users, […] From a more conceptual point of view, when the relationship between SPC and patient develops successfully, the patient develops a strong sense of ***self-efficacy****,* ***feeling of control*** *and a willingness to take on and persist with new and difficult tasks (Coulter and Ellins, 2006).* (57) – *results*

As one interviewee put it, 'it's all about focusing on what you can still do, not what you can't'. The obstacles people talked about and how they overcame them were less to do with money, or transport, or pills, much more to do with building the confidence (357) – *results*

Through these techniques, volunteers were able to generate a detailed picture of a patient's circumstances and gauge the root cause(s) of their problems. This was vital in assessing the patient's needs and in deciding upon the most appropriate community services to refer them to. Volunteers also felt that this increased patient self-awareness and ***ownership of their problems****, an important step towards them finding a solution. […] The PSS may also be seen as empowering patients to* ***take control*** *over their lives. For example, a recent factor analysis of empowerment in healthcare outlines components of care that are similar to those provided by the PSS [14], such as providing patients with information and* ***choices*** *concerning their future care. The concept of Empowerment has been empirically linked to learned mastery theory [15] whereby patients who are given control over their lives become increasingly motivated [16].* (168) – *results*

The term self-concept refers to the mental representations that individuals use to reason about themselves. Self-concepts include self-beliefs, self-appraisal of abilities, behaviours and characteristics. In contrast to health, wellbeing and health-related behaviours, changes in perceived self-concepts and feelings were explored in qualitative and descriptive research exclusively. Multiple qualitative studies found that participating in SP improved the self-esteem, self-value, and hope of service users and made them feel useful and worthwhile.16,27,29–31,37 Another commonly reported outcome for service users is an improvement in self-confidence. […] Qualitative findings show that SP has the potential to develop and enhance self-confidence and independence of service users, so that they feel able to travel with public transport, leave their house, get involved in new activities in their community, take control over their health and to manage their conditions.(44) – *results*

Many participants felt confident they could continue with the ***coping strategies and changes they had*** *made earlier in their engagement with the intervention, or at least were growing in confidence now that they were "better at putting myself right" (P18, female, age 65–69)* (56) – *results*

''Empowerment'' integrates concepts relating to taking part; not only referring to attending the scheme but to the ***patients' engagement with*** *what the scheme has to offer. Empowerment involves connecting with both the scheme protocols and the people. This core category refers to both the desire and the ability to take part; ''Kate ... I feel proud of myself and that to me is my success'' (FG2, 94).* (395) – *results*

Through these techniques, volunteers were able to generate a detailed picture of a patient's circumstances and gauge the root cause(s) of their problems. This was vital in assessing the patient's *needs and in deciding upon the most appropriate community services to refer them to. Volunteers also felt that this increased patient self-awareness and ownership of their problems, an important step towards them finding a solution.*(168) – *results*

From a more conceptual point of view, when the relationship between SPC and patient develops successfully, the patient develops a strong sense of self-efficacy, feeling of control and a willingness to take on and persist with new and difficult tasks (Coulter and Ellins, 2006). The motivation and support offered by SPCs creates the basis for behaviour change such as greater willingness to participate in chosen community activities. (57) – *discussion*

Prior to the project participants expressed their inability to engage with people or have thoughts about the future, suggesting a lack of a ***sense of coherence****. On completion of the project, the feelings that participants expressed about themselves and their surroundings put forward positive changes for themselves and a step towards creating meaning in their lives and connecting with other people.*(223) – *results*

The range of self-reported behaviour changes reported in the earlier study [20] were also reported at follow-up and comprised achieving and maintaining positive changes in diet, physical activity and smoking cessation; improvements in mental health and self-confidence; decreased social isolation; and increased engagement in community activities. (56) – *results*

Short to medium-term outcomes included were improvements in social isolation, ***resilience*** *and* ***self-care*** *and reductions in use of services.*(158) – *results*

Building self-confidence, self-reliance and independence was another facet of the Link Workers' approach, managed through ongoing support and persistence in finding the right motivational tools for the individual, while conveying the need for personal responsibility and resilience. This enabled service users to make changes to their lives, engage with other organisations and manage their long-term conditions. (67) – *results*

The principle behind social prescribing is that as service users become 'linked' back into their communities, the intervention can be withdrawn. (56) – *results*

The sample group comprised 20 Pacific women aged 40 years old and over who had been members of a GRx programme and had been discharged as independently active. The length of time from being discharged from the programme to interviews ranged from three weeks to two years. Being discharged as ***'independently active'*** *means that these women are also 'graduates' of the programme. This signifies that they have achieved, or are on their way to achieving, the goals that they had set when they started the GRx programme.*(27) – *methods*

The promotion of ***patient self-management and resilience*** *is crucial to SP. It endeavours to ensure that they have skills to look after themselves.* (388) – *results*

One item assessed health self-efficacy: "I am confident in my ability to take action when my health status changes", rated 1 (strongly disagree) to 5 (strongly agree) (Herdman et al. 2011). Hospital

Admissions One item measured number of hospital admissions (for any reason) in the previous 6 months. Note that due to small sample sizes and low incidence, this measure is not reported in the finding(26) – *methods*

The best example of this approach could be found outside of the CCG area. It was developed by senior partner who had been a GP in his town for 26 years. Like other SP initiatives their intervention included the employment of a Health Facilitator based in the practice. This role developed out of an exercise on prescription scheme developed by the local surgeries and the local Council ten years before. The health facilitator sees referred patients. Using Life Check and other tools the facilitator provided advice on exercise, nutrition, diet etc. They promote self-care using an on line Thought Field Therapy programme (rather like CBT) and also signpost to voluntary organisations or self-help groups for specific disease areas (22) *– results*

There was an almost universal belief among participants that willpower was vital in maintaining changes over the long term. While a link worker could "encourage and support" (P5, female, age 65–69), long-term change was about "taking responsibility for yourself…nobody else is going to do it" (P18, female, age 65–69) (56) *– results*

For each of the 10 participants, a lengthy attendance of Arts on Prescription had acted as a catalyst for positive change. Participants reported increased self-confidence, improved social and communication skills, and increased motivation and aspiration.(179) *– abstract/results*
Attendance at Arts on Prescription gives people the opportunity for engagement with meaningful activities. People may develop skills and improve their confidence (177) – *results*

People had the opportunity to re-build and re-establish themselves, and to re-evaluate past negative experiences. New skills were developed and these skills created confidence (372) – *results*

Participants described their sense of confidence as having been brought out through being part of a group, feeling a sense of belonging and acceptance as well as learning skills that are transferable to other areas of their lives. Such skills may be described as being a combination of personal, social and vocational, not only recognized by themselves but also by others. (372) - *discussion*

- **Code 2.6.3. Outcomes related to social and healthcare service utilisation**

Studies with outcome variables in line with code 2.6.3, such as:

- Cost savings, cost-effectiveness (methods/results): (50), (42), (189), (48), (91), (221), (46), (202), (364), (367), (381), (155), (388), (397)
- Health service utilisation(methods/results): (42), (225), (189), (48), (193), (91), (221), (46), (358), (360), (361), (202), (366), (369), (41), (184), (397), (200), (226), (401), (403), (414), (26), (167)

Participants demonstrated improved perceived physical health, QoL, health self-efficacy, and reduced healthcare utilisation and costs (Rogers et al. 2008). (26) – *introduction*

In terms of burden on the health system, social prescribing can decrease the number of hospital admissions, outpatient visits, mean length of hospital stay, number of GP visits, allied health appointments and prescription medication usage (Kimberlee et al. 2014; Loughren et al. 2014; Rogers et al. 2008; Windle et al. 2009). The financial impact of these savings is also demonstrated (Kimberlee et al. 2014; Windle et al. 2009). A meta-analysis of social prescribing studies by Knapp et al. (2012) concluded that relatively low cost investments in community capital-building initiatives can result in sizeable public savings. (26) – *introduction*

There is scope for providing new and innovative interventions to ***promote the self-management of chronic conditions potentially reducing the need for physician led care****. The aim of the social prescribing service was to improve patient well-being* ***and increase personal self-efficacy*** ***<u>shown by</u>*** ***a reduction in primary health care resource use.*** (360) – *introduction*

Short to medium-term outcomes included were improvements in social isolation, ***resilience*** *and* ***self-care*** *and reductions in use of services.*(158) – *results*

[…] we hypothesise that possessing group memberships will positively predict a psychological sense of community belonging, which in turn will be associated with lower levels of loneliness. In turn, we propose that this serial mediation pathway will then predict service usage which, if supported, would constitute a particularly strict test of our SC model. Based on previous SP literature and the social identity approach, the two variables we expected to change during the pathway were patients' service use (decrease) and participants' number of group memberships (increase). (167) – *methods*

one-to-one signposting and individual support were expected to result in patients being more able to ***acquire and use available skills, information and support which was expected to lead, in turn, to patients better self-management of health conditions****, better ability to navigate systems* (184) – *methods*

One item assessed health self-efficacy: "I am confident in my ability to take action when my health status changes", rated 1 (strongly disagree) to 5 (strongly agree) (Herdman et al. 2011). Hospital Admissions One item measured number of hospital admissions (for any reason) in the previous 6 months. Note that due to small sample sizes and low incidence, this measure is not reported in the finding(26) – *methods*

The economic evaluation assessed costs and potential savings due to SP.(202) – *results*

Primary and secondary outcome measures: Primary outcomes of interest were any measures of health and well-being and/or usage of health services. […] The primary outcomes of interest were any measures of health and well-being, including self-reported measures (eg, levels of physical activity or depression scores) and/or measure of usage of health services. We also considered any other outcomes (eg, health service usage) reported in the included evaluations. (42) – *abstract/ methods*

The aim of the evaluation was twofold: i) to assess the effect of the service on mental wellbeing and primary health care resource use and ii) to assess the whether the service could be implemented as intended […] Primary health care resource use. Primary health care use data were collected electronically and anonymously from patient health care records. All GP referrals into the social prescribing scheme were flagged by a unique identification code. (360) – *methods*

Key outcomes of the reviewed studies revealed […] • Reduction in visits to general practitioners, referring health professionals and primary or secondary care services(48) – *results*

The economic evaluation method, analyses and models clients attendance at A&E and rate of emergency admissions to hospital.(199) – *results*

Data sources and variables. The analysis presented in this chapter is based on pseudonymised patient-level hospital episode data for Social Prescribing Service users provided by the NHS Data Management and Integration Centre (DMIC). Data linkage was made using the NHS numbers of Social Prescribing Service users provided by Voluntary Action Rotherham. Following exploratory analysis of all the data provided a series of outcome variables were created to provide the basis of the headline analysis presented in this report: The number of non-elective inpatient episodes (FCEs)10 in the 12 months before and after the first contact with Social Prescribing. The number of non-elective continuous inpatient spells 11 in the 12 months before and after the first contact with Social Prescribing. The number of bed days as a non-elective inpatient in the 12 months before and after the first contact with Social Prescribing. The number of Accident and Emergency attendances in the 12 months before and after the first contact with Social Prescribing. (397) – *methods*

Primary Care Utilisation. Information on the number of GP and other primary care consultations, number of consultations that were about psychosocial problems, number of prescriptions of psychotropic medication, and of mental health related referrals (i.e. to psychiatrists, psychologists, counsellors, community metal health teams) were obtained from patient medical records for the three month period prior to the date of referral to the Community Link service and for the three month period following the patient's first appointment with the GPCMHW (414) – *methods*

At the end of 2014, we performed a mixed-methods study to assess the impact of the Welzijn op Recept programme on healthcare costs, GP attendance rates, health outcomes and patient well-being. (31) – *introduction*

Bespoke self-efficacy items: A single item assessed all respondents' confidence that they could manage their own health on a five point Likert scale where higher scores indicated higher confidence. A further five self-efficacy items were designed to assess respondents who had indicated that they had one or more of the four target long term conditions ability to manage their long term condition(s). These were also assessed on a five point Likert scale where higher scores were indicative of greater levels of confidence. (401) – *methods*

Changes in health service use. Health professionals in qualitative interviews reported that social prescribing reduced demand on primary care services (Involve North East, 2013). Other studies found that 82 per cent of patients decreased their number of health professional consultations (Popay et *al., 2007) and there was a reduction in medical prescriptions (Age UK, 2012). However, Grant et al. (2000) reported little decease in primary care use. Cost-effectiveness. Social prescribing is promoted as potentially cost saving (NHS Tayside, 2011). However, the only cost-effectiveness analysis found social prescribing to be on average £20 more expensive per patient compared with usual care over a four month period (Grant et al., 2000)* (189) – *results*

Importantly the SP project is also able to report on GP attendance and prescription data at one referring GP practice. Although the analysis of the prescription data is still on-going, preliminary results reveal a clear drop in GP attendance for most SP beneficiaries.(388) – *results*

The impact on the use of GP health care was measured in the 12 weeks prior to the social prescribing activity and for the 12 weeks of the activity. Where a patient failed to start the social prescribing activity, the analyses were dichotomised into the 12 weeks before and 12 weeks after the social prescribing referral date. Measured use ofGP health care included: patient visits to GP surgery, home visits by a GP and telephone calls to the GP surgery. The number of new repeat medications was recorded for the same 12-week periods. (225) – *methods*

Outcome measures included the number of GP appointments, prescriptions of psychotropic medications and the number of SCR. The financial and environmental impacts were calculated for each outcome using national averages or accepted conversion factors (see Table 1). The exception to this was the financial cost of medications, which was obtained from the British National Formulary (www.bnf.org). The cheapest cost for each medication was taken. Data regarding how frequently the patient was reviewed following an SCR were not available; therefore, it was assumed that the patient was seen the minimum number of times per referral – that is, once. (369) – *methods*

Primary: contact with primary health including measures such as frequency of GP consultations (either face-to-face or telephone) Secondary: changes in physical and/or mental health(41) – *methods*

Table 1 outlines the aims of the programmes described in the empirical studies. The stated aims were those listed in the individual studies, while the core aims were derived by grouping together similar aims across programmes. The core aims were then grouped in relation to the level at which the intervention was aimed: individual or system. The core individual aims identified included improved mental well-being, improved physical well-being, and improved social well-being. The core system-level aims included optimised health service use and decreased health service cost. Only nine studies stated a single aim. The majority of studies thus stated multiple aims: 16 stated two, 10 stated three, four stated four and one study stated five aims. Nineteen studies focused on both individual-level and system-level outcomes (see online supplementary appendix 2 for full details). Improved mental well-being was the most common core aim, with 25 of 41 studies. Physical wellbeing, social well-being, and optimised service use were also frequently cited with 16, 21 and 23 studies, respectively. Six studies addressed the least common core aim of cost savings(50) – *results*

It appears that Health Buddy ***clients*** *interviewed for this evaluation gained the most benefit and anticipate needing to see their GPs less in the future.* (381) – *executive summary/results*

Code 2.7. Lifestyle drift – references to "choice", "empowerment"

The CHAT scheme illustrates how social prescribing can offer the opportunity to address social needs through individual consultations.(60) – *results*

Social prescribing interventions benefit patients by ***supporting them*** *to address the wider psychosocial determinants of health, enabling better health-condition management and the adoption of healthier behaviours (Mossabir, Morris, Kennedy, Blickem, & Rogers, 2015)* (164) – *introduction*

In the last few years there has been an emergence of interventions focusing on the social component of care, such as social prescribing, art on prescription, exercise/physical activity on prescription, walking groups and the introduction of health trainers, with some evidence for behaviour change [2–4]. ***These aim to help people manage their chronic condition****, prevent more serious health problems developing, and contribute to addressing health inequalities by building social support networks.* (360) – *background*

[…] a major element of social prescribing remains individual behaviour change through 'empowerment' of service users to make better choices [11]. (56) – *introduction*

social isolation, but it does mitigate the impact on individual health and enable people with social needs to make positive ***choices****.* (60) – *results*

For these patients, the PSS not only provided information, both verbally and through leaflets, but also offered advice about which services patients would find the most useful. Wherever possible, attempts were made to present patients with referral ***choices*** *[…]* (168) – *results*

The PSS may also be seen as empowering patients to ***take control*** *over their lives. For example, a recent factor analysis of empowerment in healthcare outlines components of care that are similar to those provided by the PSS [14], such as providing patients with information and* ***choices*** *concerning their future care. The concept of Empowerment has been empirically linked to learned mastery theory [15] whereby patients who are given control over their lives become increasingly motivated [16].* (168) – *discussion*

These programmes recognise the importance of social, economic and cultural factors on well-being and provide Sefton residents with ***a 'menu' of treatment options*** *that encourage levels of* ***self-help****, personal responsibility and social and community engagement.* (375) – *introduction*

A major focus of the work was to empower the patient to ***make their own choices*** *and even if there was no further progression onto support in the community, having the space and time to explore the context* (160) – *results*

The service ***extended choice*** *for a wide range of patients, represented a viable alternative to CBT and medication and represented a suitable option for those experiencing isolation and frequent attenders.*(369) – *introduction*

So link workers are skilled case workers with a great deal of local knowledge. Social prescribing ***schemes have "menus" of support*** *activities often including specifically funded activities that are bought in to support patients. […] Secondly it brings the whole set of support mechanisms available in the wider community - and especially in voluntary and community sector - to the patient. Thirdly social prescribing schemes refine and improve the care* ***and support "market".*** *As social prescribing schemes get bigger more referral is made to the more effective and popular ways of supporting people. So, over time,* ***the market for support and care*** *can thus be more streamlined to the needs and preferences of patients*(403) – *introduction*

Link workers are trained in behaviour change methods, such as motivational interviewing techniques, that help service users identify which areas of their lives they wish to change and how. These techniques emphasis service users' choice and control over their decisions and behaviours [17]. (56) – *introduction*

Discourse 3. SP as enhancing personalised care in general practice

Code 3.1. Impersonal, rushed, stretched general practice (characterisation of general practice)

Service users reported that they engaged with further navigator appointments because they felt listened to and valued. In addition, service users reported that appointments with navigators felt less rushed and, unlike with GPs, they felt able to discuss their non-clinical needs without being pointed to a medical solution to deal with the consequences of the non-medical problems: "Social needs, mental needs, you know, just general back-up in life in general. I never felt that I had that before this [. . .] I was able to open up to [navigator]. [. . .] If you go to the GP and you say 'I am having trouble at home', they say 'oh take this tablet or take this pill, oh you will be fine in a couple of weeks', or you know, 'see what it is like and come back in a week time if it is not better'. I am on enough tablets, the last thing I want is more tablets!" (Service user 2)(185) – *results*

"There's a huge difference [between a link worker and a nurse or doctor]. The practice nurse just wants to stick the jab in your arm, and let them get on with it, and that's it. Doesn't ever really have time to do the in-depth analysis of where you're at and what you're doing. The 'Ways to Wellness' person has that concern. I don't want people going home and having sleepless nights over me, but it's nice to think that they do care, and I really feel that they do." (P18, female, age 65–69) (56) – *results*

"I am stuck in this wheel chair and have a lot of problems. I knew that my GP just wanted to get rid of me out of the door. I knew she didn't want to open up the can of worms that were in my head and forcing me to talk to the Samaritans." (200) – *results*

The Link Worker role is pivotal to the success of this bridge and their role needs to be properly resourced and understood. Failure to provide Link Workers with adequate training and support could endanger both the Link Workers themselves and their patients. At its best, social prescribing can offer a uniquely tailored, truly person-centred intervention in an over-stretched health service, where patients or clients are given the space and time needed to explore their options and make sustainable behavioural changes in their lives. (160) *c 3.2. and 3.1. - discussion*

Primary care staff may feel overwhelmed and not equipped to handle the psychosocial problems that primary care patients present with [2, 3]. The commonly available options for patients presenting psychosocial problems are medication, psychotherapy (cognitive behavioural therapy), and counselling [4]. (181)- *Introduction*

Code 3.2. SP as able to deliver empathetic, person-cantered care (characterisation of SP)

"One of the main things about talking to them is they feel confident, and that gives you confidence. It makes you feel that all is not lost, that you will be fine and that you can do things. And every little problem gets ironed out. And it is very comforting to know that you are not by yourself, that you can ring someone" (CHA interview 1, and reiterated in her daily diary).(165) – *results*

Patients spoke positively of being given the time and space to discuss their needs, feeling heard, and the proactive focus of the intervention(202) – *results*

Clients highlighted the personal qualities that they valued "very genuine, very caring", the closeness of the bond that had developed, the understanding and support that had been provided and how enjoyable the contact had been(199) – *results*

"[Link Worker] epitomises the word, wellbeing, because that's what she's got in mind for you, your wellbeing. Nothing else, she gives the impression that you're the only one that she's looking after, at that time, in that moment in time, you're the only one that matters to her." (P9, male, 55–59 years) (67) – *results*

Service users reported that they engaged with further navigator appointments because they felt listened to and valued. In addition, service users reported that appointments with navigators felt less rushed and, unlike with GPs, they felt able to discuss their non-clinical needs without being pointed to a medical solution to deal with the consequences of the non-medical problems: "Social needs, mental needs, you know, just general back-up in life in general. I never felt that I had that before this [. . .] I was able to open up to [navigator]. [. . .] If you go to the GP and you say 'I am having trouble at home', they say 'oh take this tablet or take this pill, oh you will be fine in a couple of weeks', or you know, 'see what it is like and come back in a week time if it is not better'. I am on enough tablets, the last thing I want is more tablets!" (Service user 2)(185) *C3.2. and 3.1. – results*
"There's a huge difference [between a link worker and a nurse or doctor]. The practice nurse just wants to stick the jab in your arm, and let them get on with it, and that's it. Doesn't ever really have time to do the in-depth analysis of where you're at and what you're doing. The 'Ways to Wellness' person has that concern. I don't want people going home and having sleepless nights over me, but it's nice to think that they do care, and I really feel that they do." (P18, female, age 65–69) (56) – *results*

*" She gives you, '… give it a go,' and she'll explain… and if you don't go she doesn't get disappointed or anything like that, she just says, 'Oh, right, well, we'll sort something else out for you.**"** (P11, male, 45–49 years).* (67) – *results*

One CLP reported being pleased at being able to help a particularly challenging patient group, in this case older men with addiction to alcohol, for whom few local services were available. The CLP reported that some of these men had started to engage with support after a long history of disengagement. When prompted about the likely cause for the reengagement: "I think it was the time given to them, it was the listening to them, empathising with their situation and being openly honest with them, but also being persistent and letting them know 'no, I'm not going away, I'm going to be here to support you'." CLP 4. (184) – *results*

The Link Worker role is pivotal to the success of this bridge and their role needs to be properly resourced and understood. Failure to provide Link Workers with adequate training and support could endanger both the Link Workers themselves and their patients. At its best, social prescribing can offer a uniquely tailored, truly person-centred intervention in an over-stretched *health service, where patients or clients are given the space and time needed to explore their options and make sustainable behavioural changes in their lives.* (160) - *discussion*

However, whilst the Arts on Prescription programme engages people with arts activities, it is the quality of the human relationships and the atmosphere that is created by the service providers that was of most significance to the participants. (372)- *discussion*

Code 3.3. Impact of empathetic, supportive, person-cantered care on adherence, behavioural change, satisfaction

In cases where patients had agreed to seek help from a community-based service, volunteers would seek their permission to make an appointment on their behalf. Five of the volunteers indicated that if appointments were not made during the consultation, there would be a strong doubt as to whether patients would make appointments on their own.(168) – *results*

The original rationale for the Programme was that if individuals feel supported in their lives, they will be more likely to respond to information on ways to improve their health and to live well.(184) – *methods*

Link workers paced the level of support they offered, particularly in the initial stages: "I just expected the Link Worker to introduce me to the gym, and that would have been it. And I think, if it had just been [that] I would have turned round, and I would have gone the opposite direction. But because of the way it was so gradually and really professionally linked in to different things, I just felt as though I'd floated into it, rather than getting shoved from behind. I just felt as though I was gradually moved into it." (P2, female, 70–74 years)(67) – *results*

"I actually got first health referral and I didn't go … ya know when you don't talk to people and that you can't make yourself go anywhere on your own. So anyway this time … [health trainer] met me, took me to [sports centre], took me to the gym, took me to meet the [swimming instructors] and … now they've given me that confidence, he didn't have to take me every day, he only had to take me that once and I'm getting round more and more … like I say I'm meeting people in the street now what go to the social café and 'How do! All right!' and who knows I can spend ten, fifteen minutes chatting to them …"(171) – *results*

Service users identified the meetings with navigators and the establishment of a supportive and trust relationship as major enablers to behaviour change.(44) – *results*

The supportive function of the feedback on structured exercising was particularly highlighted by participants. Five of the eight male participants were thrilled by the possibility of being able to compete with the rowing machine. The ''objective'' information given by the machine, reporting distance, time or just burned kilojoules, had the effect of an external feedback. The physiotherapist was given the role of a strict (''tough – but caring'') parent, while the group members became encouraging siblings. ''Most of us don't have the backbone to exercise on our own and we will stay *home if it is raining. But knowing that four idiots will give you a telling-off if you didn't show up – well, that's enough to make me show up'' (male, 61 years).*(380) – *results*

By follow-up, link workers' experiences supported the contention that simply signposting to activities (the principle underlying 'light' social prescribing (Kimberlee, 2015)) would be ineffective in engaging clients and much more intensive support was required: "The work that we do is quite in-depth with the client … Some people say, "Well we should just be signposting and that's it." But actually we know that our clients, if we did that, they're not going to engage … So really we are quite intense. (P2, FG1, Phase 2)" – results

However, over the period of engagement, some participants expressed negative views primarily due to personnel changes among link workers that resulted in lost continuity. These accounts highlighted the importance of the link worker/service user relationship and how changes to this highly-valued and often therapeutic relationship could be upsetting and lead to disengagement: "Well, I don't get as much support now. My first worker left, I used to see her a lot. I was put onto another one, who I've only seen about two or three times. Now she's left and they've put me onto somebody else who I've never seen or been contacted by. I feel a bit let down because my first one was brilliant. She was on the phone, talking, we used to meet up and it was great. I just feel as though I've been let down now…I just feel as though I've been pushed to one side. I don't know what's going on with the leaving and stuff like that. I just can't understand why the new one hasn't phoned up to introduce herself to me." (P4, female, 55-59). (56) – *results*

Some participants suggested that having their measurements taken by the AL advisor at consultation, such as blood pressure and body weight, helped them to stay motivated, and that without this they would not have stuck to their goals: "It makes you feel more positive about it, when you've got somebody there. If you could see someone regularly you know you're going on the scales, because if you try to diet for yourself you just cheat and you're only cheating yourself."(227) – *results*

Underpinning the above was a belief in the importance of networks to facilitate and increase the likelihood of a successful social prescription, with the assumption that the converse would be true: patients who are simply given information about an opportunity will not necessarily take it up without some hand-holding' (Brandling & House, 2009). Thus, 'having someone to encourage or support' (ERS Research & Consultancy, 2013) was considered central to successful referrals.(55) – *results*

Service users emphasised that feeling supported from service providers was a key factor determining their adherence to onward referrals. When service users haven't received a response from service providers, they didn't engage with referred services(185) – *results*

The lack of a follow-up session could be a reason to drop out, as shown in the following example (this woman did not return to the activity): "I missed the so-called 'big stick'. It was hard for me to attend the activity the first time. I went, but people did not say much to me and that made it harder for me to go back the next time. That's a problem for me. The wellbeing coach called me to ask how I felt, but in the meantime, my problems got worse. The wellbeing coach told me on the phone to look on the internet for other options. But going there alone is difficult. That is not funny to say. I know I can *look it up and that they can make an appointment for me. They suggested asking my neighbour to accompany me to the activity, but … to ask something like that … it's difficult. I feel like I cannot do that by myself." (Interview 2)*(31) – *results*

"Yes, so I knew someone was waiting for me [. . .] Yes, I would just sit and waited at the table, and she picked me up." (Service user 1) Ongoing support and motivation, especially during physical activities, were identified as another factor promoting service user adherence to the SP programme.(185) – *results*

One CLP reported being pleased at being able to help a particularly challenging patient group, in this case older men with addiction to alcohol, for whom few local services were available. The CLP reported that some of these men had started to engage with support after a long history of disengagement. When prompted about the likely cause for the reengagement: "I think it was the time given to them, it was the listening to them, empathising with their situation and being openly honest with them, but also being persistent and letting them know 'no, I'm not going away, I'm going to be here to support you'." CLP 4, (184) – *results*

Although current PSS policy suggests that patients should not be followed up, there seem to be many advantages to this strategy. For example, follow up appointments would: (a) aid the identification of patients whose initial referrals have collapsed; (b) provide feedback to volunteers as to the appropriateness of a referral for a given patient problem thus assisting them in managing similar cases in the future; (c) support the PSS in dealing with patients with multiple problems without feeling pressured to manage these in a single session; and (d) patients would not be required to make a GP or nurse appointment simply to be re-referred to the PSS, thus reducing the workload on these resources.(168) – *discussion*

Code 3.4. Patients as individuals with enduring and complex health issues in need on ongoing care (characterisation of SP users)

"I found it very interesting that people with long-term health issues didn't feel they needed or wanted a huge solution – no one asked for a cure! What they did want was smaller and more supportive outcomes. It's the small things that mean the most" (357) – *results*

All clients feel that it would help to have a longer period of interaction with the scheme.(381) – *executive summary/results*

Unlike counsellors, where there is often a limit to how many times a patient can see them, this patient felt that the CLP was there if support was needed again. […] There was something about the un-conditionality and continuity of support from CLPs that was valued by patients. (184) – *results*

Participants appreciated the flexibility and 'open door' nature of Ways to Wellness, although this could be limited for those who were working. Of particular value was the potential to be engaged with the service for up to 2 years. Due to the long-term and complex nature of conditions which often fluctuated, participants recognised that a shorter-term approach would be inadequate, particularly *when accounting for wider life events such as job loss or bereavement: "Well, I think you can dip in and dip out. It's the kind of thing if you need them, you phone them and they'll get straight back to you. They're there, I know they're there … if something happens to me now." (P13, male, 60–64 years)*(67) – *results*

Following this bridging, however, participants found it valuable to know that support was still there, in the background, for when it was needed(171) – *results*

While some participants felt they would be content with two years' contact, others facing particular challenges (for example, poor mental health or homelessness) wished to continue long-term with the social prescribing programme, feeling "I will always need somebody to help me" (P16, female age 65–69). The fluctuating and chronic nature of LTCs resulted in an almost universal feeling that the opportunity to re-contact their link worker and, if needed, re-enter the programme "for a second bite of the cherry" (P18, female, age 65–69) would be desirable: "I mean they can extend it. I mean it depends what people's needs are at the time I suppose. I mean with me, I'd still want to be in contact somewhere along the line, which I think they will do. If something happened to me, if I had an angina attack or something I think I would need them full time all the time then. I know if I have a bad angina attack I'm not going to recover that well." (P12, male, age 55–59) (56) – *results*

If necessary, and acceptable to the client, long-term follow-up support was arranged and a personal wellbeing plan completed.(165) – *methods*

In cases where patients had agreed to seek help from a community-based service, volunteers would seek their permission to make an appointment on their behalf. Five of the volunteers indicated that if appointments were not made during the consultation, there would be a strong doubt as to whether patients would make appointments on their own.(168) – *results*

The level of support that some service users required in order to engage with services, particularly those involving physical activity, appeared to be considerable. – *results*

"[We are] ***support workers more than link workers*** *… I think you find when you go in with a client and they've got massive problems, like they've got no money for food, you can't just say, 'Do you fancy going to the gym?' We have to look at the problem that's affecting them at the moment. (P2, FG4, Phase 2)"*(164) – *results*

Whilst initial expectations for some Link Workers were of the work being a predominantly signposting role, it soon became clear that for many patients a more intensive approach was necessary. […] "the service was very much in development as we were delivering, you know, so we didn't have a really, really clear model at the beginning so we were finding our feet a bit and maybe at the beginning it was more containable you know to be about this is about signposting, but as we started to work with people you realise that actually they need more time and more input really. (LW1, Scheme 2)(160) – *results*

One CLP reported being pleased at being able to help a particularly challenging patient group, in this case older men with addiction to alcohol, for whom few local services were available. The CLP *reported that some of these men had started to engage with support after a long history of disengagement. When prompted about the likely cause for the reengagement: "I think it was the time given to them, it was the listening to them, empathising with their situation and being openly honest with them, but also being persistent and letting them know 'no, I'm not going away, I'm going to be here to support you'." CLP 4,* (184) – *results*

"And also the complex nature of… Or the complex issues that the people face cannot be solved overnight. And sometimes you need kind of more intensive work. You need to work with them for over…" CLP 5, (184) – *results*

Although another CLP suggested that it takes time to develop relationships because of ***people's complex problems*** *which did not reduce attendance but is worthwhile: "it took time, you know, to build up that relationship with the individual, but you can see just the difference it's made, you know, he knows I'm there and you know I guess it's like chiselling away, each time that I see him, you know, he'll tell me something else" CLP 8,* (184) – *results*

"The time wasn't really enough. I wish the time was a bit extended. I requested more time. It's not enough time to sort out everything that a person would actually want to do. What I wanted we couldn't really sort out everything." (151) – *results*

A number of interviewees, however, stated that it would be useful to have a greater number of one to one sessions should they need to: "I think it probably could have been longer. I think it should be more like help until they think they are done. Cos when I first met her I was really down, but towards the end I was much better but I still could have done with one or two more." (Male client: interview 4, aged under 50 years. Referred to the social prescribing service by GP) (151) – *results*

One interesting finding from the discussion was that many of the participants felt that the service should be ongoing, and not limited to a certain number of consultations or a specific time period. While very few had needed six consultations, they were not in favour of the service being limited and being unable to see the AL advisor for 'check-ups': "But after the sessions I wouldn't like to think that it is finished full stop, and that you're in the filing cabinet. I would like to think that you could go at least twice a year ... as you would to a doctor for a check-up. To go back to 'Sarah' just to see whether you had lapsed in anything, if you have forgotten anything, or if there is anything new on the market so to speak." […](227) – *results*

While not all participants were asked about this issue, as it only arose during one discussion group, those who were asked felt very strongly that the service and support should be ongoing. This issue should be explored and the implications of offering the service on a continuing basis should be identified. While on the one hand the participants clearly felt that this was important, and that without it they might fall back into old habits, there is also a need to encourage people to take responsibility for themselves and their health, and not become too dependent on health staff or services. This issue has been previously raised by Hunt and Hillsdon [18]. Furthermore, if participants were able to continue seeing the AL advisor it would increase demand and time pressure on an already stretched service. (227) – *results*/*discussion*

The evidence examined here indicates the level of complexity necessary for robust implementation, and so services need to better understand what it is that patients need in terms of complex care. Signposting at the point of presentation for individuals with mental health needs, for example, is not likely to be sufficient. (55) – *discussion*

Appendix 5. Characteristics of the studies included in the critical literature review

Authors (year)	Country	Type of paper	Study Design	Sample/Setting	Intervention	Objective	Outcome measures
Rempel ES, et al. (2017) (50)	UK	Research (published paper)	Literature Review	41 studies	A referral programme linking patients in health services with community-based activities	To identify the aims of social referral initiatives and identify the measures used to evaluate	• Cost savings • Resource reallocation • Mental, physical and social well-being (Warwick-Edinburgh Mental Well-being Scale - WEMWBS)
Woodall J, et al. (2018) (151)	UK	Research (published paper)	Mixed Methods Study	Patients (N 342) referred to a SP programme operating in an area within a large city	Referral to a 'Well-being Coordinator' (link worker) who offered support and advice on local community-based groups and services (e.g. counselling, physical fitness classes, finance/debt advice)	To understand the outcomes of a SP service and the processes which supported SP delivery	• Quant: Mental wellbeing (WEMWBS), EQ-5D (which covers mobility, self-care, usual activities, pain/discomfort and anxiety/depression), social networks (Campaign to End Loneliness Measurement Tool), use of GP services • Qual: SP staff and users' perspectives on the service
Darnton P, et al. (2018) (199)	UK	Research (web-based report)	Mixed Methods and Economic Evaluation	Patients (N 595) referred to a SP service provided by a voluntary sector partnership across five localities	Referral to a 'Making Connection Coordinator' (link worker) who undertook a guided conversation and provided advice on community-based resources over 3 months (e.g. finance/debt advice,	To evaluate health- and cost-related outcomes of a SP service	• Quant: Questionnaires measuring health status, health confidence, personal wellbeing, experience. • Qual: strength of relationships, practical assistance, match between

					befriending services, physical activity) (*Making Connection SP*)		client and service, service infrastructure
Pescheny J, et al. (2018) (185)	UK	Research (published paper)	Qualitative Study	Patients (N 10), GPs (N 3) and navigators (N 2) involved in a SP programme delivered across 4 general practices	Referral to a navigator (link worker), who contacted primary care patients to arrange an initial appointment held in surgeries. Navigators could refer service users onwards to a maximum of 12 free community sessions.	To explore stakeholders' views on factors influencing uptake and adherence to SP	• Factors affecting uptake and adherence: patients' trust in GPs and navigators, service accessibility, service support, patients' expectations, etc.
Bickerdike L, et al. (2017) (42)	UK	Research (published paper)	Literature review	15 studies	Programmes linking patient in primary care setting with a link worker or facilitator of SP	To assess evidence for SP effectiveness	• Uptake and attendance • Health and well-being (WEMWBS, HADS, GAD-7, PHQ-9, CORE-OM, WSAS, GHQ-12, COOP/ WONCA) • Healthcare usage outcomes • Patients', referrers' experience • Costs
Loftus AM, et al. (2017) (225)	UK	Research (published paper)	Before-and-after study	Patients (N 68) 65+ with a chronic condition who attended their GP frequently referred to SP	Referral to a SP coordinator (link worker) for assessment and selection of a 12-week community-based programme (e.g social clubs, counselling, exercises classes, etc.)	To evaluate the impact of SP on general practice workload and polypharmacy	• Use of GP Health Care (participants' contacts with GPs) • Number of repeat prescriptions per patient
Kilgarriff-Foster A, et al. (2015) (189)	UK	Research (published paper)	Literature review	24 studies	Short-term intermediary services facilitating the engagement of patients with psychosocial needs with	To explore the key components and potential impact of SP programmes	• Health and well-being (WEMWBS, HAS, GHQ) • Health service use • Cost-effectiveness • Feasibility, acceptability

					community-based non-clinical support services		
Chatterjee HJ, et al. (2018) (48)	UK	Research (published paper)	Literature review	86 studies	Schemes linking patients in primary care with community non-clinical interventions (including arts, education, exercise)	To evaluate the effectiveness of UK SP schemes	• Mental well-being (GAD-7, GHQ, PHQ-9, WEBWMS, SWEBWMS, HADS) • Health and well-being (CO-OP/WONCA, SF-36, DTFS) • Social support • Cost effectiveness • Health service use
Chesterman D, et al. (2018) (357), linked to Mistry B, et al.	UK	Research (published paper)	Qualitative Action Research Study	Users and practitioners involved in commissioning or providing SP in 4 urban GPs	Assessment by a Community Support Coordinator (link worker) and referral to community-based services (e.g. physical activities, counselling, advice around debt, housing, etc.) (Prescription Plus)	To evaluate and strengthen a local SP initiative, taking a 'learning through doing' approach	• Participants' concerns and experiences • Co-operation between stakeholders • Service sustainability
Dayson C (2017) (193)	UK	Research (published paper)	Mixed Methods Case Study	Users (N 108), commissioners (N 7) and providers (N 20) involved in a SP pilot covering a local authority area	Referral to an 'Advisor' (link worker) for assessment of patients' support needs and onwards referral to pump-primed or wider voluntary and statutory services	To shed light on the epistemological and methodological challenges of social innovations, such as SP	• Quant: use of hospital resources (inpatient admissions, A&E Attendance, Outpatient appointments) • Qual: patient well-being and independence, sustainability of the VCS, collaboration
Ferguson K, et al. (2018) (91)	UK	Research (web-based report)	Mixed Methods Evaluation Study	Stakeholders involved in a borough-wide SP service covering 37 GPs	Initial assessment by a link worker (telephone or in face-to-face) and onwards referral to community-based sources of support (e.g exercise, weight management, learning and employment)	To assess the impact of a SP roll-out in service users, general practices and community organisations	• Quant: health and wellbeing (MYCaW), service-level data (number of referrals, etc.), users' profile, costs data • Qual: service awareness, coordination, users'

							wellbeing, service sustainability
Blickem C, et al. (2013) (190)	UK	Research (published paper)	Qualitative interview and focus group study	People with long term conditions attending health-related support groups and VCS in a local authority area	A community referral tool (PLANS) to tailor community-based resources to referred patients with long term conditions	To assist the development of a SP intervention designed to promote engagement and improve access to health-relevant resources	• Experiences and priorities of people with long term conditions (isolation, safety, linking to support, potential roles of the VCS, access to health education, practical support, lifestyle concerns, etc.)
Elston J, et al. (2019) (221)	UK	Research (published paper)	Before-and-after study	Patients 50+ (N 86) with multiple long-term conditions referred to a SP programme operating across 3 localities	Referral to a Well-being Co-ordinator ('holistic' link-worker) for a 12-week support intervention, including resilience-focused coaching and practical support to navigate and access local services.	To evaluate the impact of link-workers on service users' well-being, activation and frailty, as well as service utilisation and associated costs.	• Health and wellbeing (Well-being Star, WEMWBS, RCFS) • Self-management (Patient Activation Measure) • Health and social care service use • Costs data
Whitelaw S, et al. (2017) (183)	UK	Research (published paper)	Qualitative Case Study	The steering group (N 12), wider GP team (N 10) and members of VCS (N 8) involved in SP across 2 Gps	Referral to a link worker for patients' assessment and onwards referral to available community resources	To conduct a process-based evaluation of the inception and early implementation of a SP initiative	• Primary care perspectives: information governance, coordination between stakeholders, resource sufficiency, etc. • VCS perspectives: service quality, accessibility, training needs, etc.
White JM, et al. (2017) (61)	UK	Research (published paper)	Qualitative Interview Study	18 health professionals and 15 representatives of VCS in socio-economically	SP schemes linking patients in primary care with different community-based services (e.g. a 'lifestyle referral' scheme, support for carers, etc.)	To analyse the quality of the relationships between primary healthcare professionals and VCS	• Prescribers' views: service awareness, professional roles, accountability

				diverse, rural and urban locations		practitioners drawing on social capital theory	• Providers' views: barriers and facilitators to collaborative working
Polley M, et al (2017) (46)	UK	Research (web-based report)	Literature review	14 studies	Referral pathways connecting patients in primary care with a 'link worker' and relevant non-medical services in the third sector	To appraise the current evidence as to whether SP reduces the demand for health services and is cost effective	• Health service use • Social and economic impact of SP (value for money assessments, SROI calculations)
Dayson C, et al. (2018) (358)	UK	Research (web-based report)	Before-and-after study	Patients referred by their GP to a SP service delivered in an urban area	Referral to a 'community connector' (link worker) for assessment of patients' needs and interests, and identification of relevant local services and activities (*Community Connectors SP*)	To evaluate the early stages of a SP service measuring its impact on patients' health and demand for primary and secondary care services	• Health and mental wellbeing (EQ-VAS, EQ-5D, SWEMWBS) • Social connectedness • Self-care • Primary and secondary care service use
Husk K, et al. (2019) (55)	UK	Research (published paper)	Realist Review	109 studies in the first phase, 34 studies in the second phase	Any referral pathway linking patients in primary care with activities undertaken in the community	To explore whether different methods of SP referral and supported uptake do (or do not) 'work'	• Barriers and facilitators to Enrolment, Engagement and Adherence
Pescheny JV, et al. (2019) (359)	UK	Research (published paper)	Before-and-after study	Patients in primary care referred to a SP programme (12 sessions) provided by VCS organisations	Referral to a link worker for initial assessment, identification of non-medical needs, motivational interviewing, continuous personalised support and referral to community-based activities (12 sessions, free of charge)	To assess the change in energy expenditure levels of service users after participating in a SP programme	• Changes in energy expenditure levels using the International Physical Activity Questionnaire (IPAQ)

Pescheny JV, et al. (2019) (44)	UK	Research (published paper)	Systematic Review	16 studies	Services in primary care linking patients with non-medical needs to sources of support provided by the community and voluntary sector	To assess the evidence base for SP programmes based on primary care and involving navigators	• Health and wellbeing (WEMWBS, SWEMWBS, HADS, PHQ9, GAD7, MYMOP, GHQ-12, COOP/ WONCA) • Health-related behaviours • Self-concepts • Social contacts (Friendship Scale score, Duke-UNC FSSS) • Day-to-day functioning
Carnes D, et al. (2017) (360)	UK	Research (published paper)	Mixed Methods Study	Socially isolated patients referred to a SP programme delivered across 22 primary care general practices in a mixed socio-economic, multi-ethnic area	Referral to a SP coordinator (‘link worker’) for assessment, mutual agreement of a well-being plan over a maximum of 6 sessions and linkage into community organisations and services.	To investigate whether a SP service could be implemented in a general practice setting and evaluate its effect on patients’ well-being and primary care service utilisation	• Quant: mental wellbeing, primary health care resource use • Qual: patients’ satisfaction with the service, appropriateness and timing of referrals, barriers and facilitators to engagement, relationship between link workers and patients.
Thomson LJ, et al. (2015) (361)	UK	Research (web-based report)	Literature review	35 studies	Any referral mechanism linking patients with non-medical sources of support within the community	To provide definitions, models and notable examples of SP schemes and to assess whether and how they have been evaluated	• Self-esteem, confidence, motivation • Mental wellbeing • Lifestyle • Primary care service use • Sociability, communication skills
Moffatt S, et al. (2017) (67)	UK	Research (published paper)	Qualitative Interview Study	Adults with long-term conditions referred to a SP prescribing programme	Link Worker SP programme comprising personalised support to identify meaningful health and wellness goals, ongoing support to achieve	To describe the experiences of patients with long-term conditions referred to a SP programme and	• Self-confidence, self-reliance, resilience, personal responsibility

				delivered in a socio-economically deprived area across 17 GPs	agreed objectives and linkage into appropriate community services (e.g. welfare rights advice, walking groups, physical activity classes, arts) (*Ways to Wellness*)	identify its impact on patients' health and well-being	• Health related behaviours (weight management, exercise, diet) • Mental wellbeing • Long term condition management
Wigfield A, et al. (2015) (198)	UK	Research (web-based report)	Mixed Methods Study	Referrers from primary care and older patients (N 247) referred to a SP programme delivered across 3 localities	A SP scheme linking older patients in primary care with community activities delivered by third sector organisations (*Fit For the Future SP*)	To evaluate the potential impact of a SP initiative in the outcomes of older people	• Quant: mental wellbeing (WEMWBS), lifestyle (physical activity, diet, alcohol, cigarette), clinical data (BMI, waist circumference), social networks, satisfaction with life, self-management. • Qual: health care professionals' expectations of SP, suggestions for improvement, lessons learned.
Hamilton-West K, et al. (2019) (158)	UK	Research (published paper)	Evaluability Assessment Study	Stakeholders involved in two SP programmes. One of them delivered from primary care and the other from secondary care settings.	Two SP services linking patients from health services with community-based resources (*Community Wellbeing Service, Encompass SP Service*)	To inform the design and evaluation of SP schemes through an Evaluability Assessment approach.	• Recommendations to allow for future service evaluation (e.g., related to data monitoring systems, information governance, etc.)
Wildman JM, et al. (2019) (56)	UK	Research (published paper)	Qualitative Follow-up Study	Users (N 24) of a link-worker SP service delivered in a socio-economically	Link Worker SP programme comprising personalised support to identify meaningful health and wellness goals, ongoing support to achieve	To explore experiences of SP among people with long-term conditions one to two years after their initial	• Service users' relationships with link workers • Factors involved in making progress in behaviour change

				deprived area across 17 GPs	agreed objectives and linkage into appropriate community services (e.g. welfare rights advice, walking groups, physical activity classes, arts) (*Ways to Wellness*)	engagement with the service.	and long term condition management • Setbacks and barriers to maintaining change • Fluctuating levels of engagement
Hanlon P, et al. (2021) (172)	UK	Research (published paper)	Qualitative Interview Study	Patients (N 12) referred to SP across GPs in areas of high socioeconomic deprivation	Referral to a community link worker for one-to-one assessment, support and linkage into relevant community resources (*'Deep-End' Links Worker Programme*)	To explore the utility of Self-Determination Theory in understanding the impact of a Links Worker SP Programme in patients' wellbeing	• Overall perceived improvement in daily life • Barriers and facilitators to improvement (related to relatedness, competence, autonomy, beneficence and regulation of behaviour)
Wildman JM, et al. (2019) (164)	UK	Research (published paper)	Qualitative Interview and Focus Groups Study	Link workers (N 41) involved a SP scheme operating in a socioeconomically deprived area across 17 GPs	Link Worker SP programme comprising personalised support to identify meaningful health and wellness goals, ongoing support to achieve agreed objectives and linkage into appropriate community services (e.g. welfare rights advice, walking groups, physical activity classes, arts) (*Ways to Wellness*)	To explore link workers' own definitions of their role in SP and the skills and qualities identified by themselves as necessary for effective patient linkage	• Realities and complexities of the link worker role • Barriers to performing the role (referral challenges, onward referral challenges, boundary setting).
Swift M (2017) (224)	UK	Research (published paper)	Mixed Methods Study	Stakeholders involved in SP delivered across 17 GPs in two neighbouring towns with great health inequalities	A co-created community-centred model of health, including a pathway to link patients with community-based activities and services (Community Wellbeing Practices model SP)	To describe and reflect on the co-design and implementation of a community-centred model of health (including SP)	• Quant: mental wellbeing (SWEMWBS, PHQ9, GAD7), health status (EQ5D) • Qual: health-related goals, satisfaction levels, social connectedness, etc.

Wessex Academic Health Science Network (2017) (363)	UK	Research (web-based report)	Mixed Methods Study	Stakeholders involved in 8 different SP programmes covering a population of 1 million people	8 SP schemes linking patients in primary care with community-based resources and services	To evaluate the impact of a SP programme in patients' wellbeing and service utilisation, and support its development and spread	• Quant: patient reported outcomes (health status, health confidence, wellbeing, experience of service), staff reported outcomes (work wellbeing, job satisfaction), health service use, costs. • Qual: social connectedness, continuity of care, satisfaction levels, etc.
Beech R, et al. (2017) (165)	UK	Research (published paper)	Realist Evaluation (mixed methods design)	SP recipients, carers, link workers and service providers involved in SP	Assessment by a link worker at the GP surgery or hospital. Onward referral to community services and provision with relevant information and support (*The Wellbeing Coordinator service*)	To assess the outcomes of the SP service in terms of benefits experienced by recipients and carers and to understand how care processes are perceived by link workers and other service providers	• Quant: mental wellbeing (SWEMBS, ONS) • Qual: users', carers', service providers' and health workers' perspectives on the service (satisfaction, perceived strengths and limitations, expectations, etc.)
Coan J (2016) (220)	UK	Research (web-based report)	Mixed Methods Research	Users, link workers, primary care workers and community providers involved in a SP programme delivered across 6 GPs	Referral to a SP coordinator (link worker) for patient assessment and provision of onwards supported referral to relevant community-based services (e.g. lifestyle support, social groups, social welfare)	To describe a SP programme and explore stakeholders' perception on its potential impacts	• Quant: satisfaction level (end-of-service questionnaire to patients and healthcare workers'), mental wellbeing (SWEMWBS) • Qual: feedback from patients and community service providers (satisfaction, perceived strengths and limitations, expectations, etc.)

Bertotti M, et al. (2015) (202)	UK	Research (web-based report)	Mixed Methods Study (including an Economic Evaluation)	Stakeholders of a SP programme delivered across 23 GPs and 85 VCS groups in a socio-economically diverse urban area	Referral to a trained SP coordinator (link worker) for assessment and supported, personalised linkage into community-based resources	To evaluate the impact of a SP programme in patients' wellbeing, health service utilisation and associated costs	• Quant: general health and wellbeing, mental wellbeing (anxiety and depression), active engagement in life, A&E visits, costs. • Qual: users' experience with the service (satisfaction, expectations, etc.)
Skivington K, et al. (2018) (21)	UK	Research (published paper)	Qualitative Interview Study	VCS providers (N 30) and link workers (N 6) involved in SP in deprived urban areas	Referral to a trained community link worker to support patients in accessing community organisations (*Links Worker Programme*)	To investigate potential factors associated with successful implementation of a SP programme	• The role and capacity of link workers • Contextual factors that affect SP implementation • Benefits and challenges to collaborative working
Southby K, et al. (2018) (166)	UK	Research (published paper)	Qualitative Case Study	GP workers and VCS organisations engaged in collaborative programmes in socio-economically deprived urban areas	4 SP schemes linking patients in primary care with activities provided by the voluntary and community sector (e.g. weight management, diet, exercise, employability)	To add to the knowledge base around collaborative practice between general practices and voluntary and community sector organisations by examining the factors that aid or inhibit such collaboration	• Modes and outcomes of GP-VCS collaboration • Facilitators to GP-VCS collaboration (equitable relationships, communication stability, etc.) • Barriers to GP-VCS collaboration (policy contingencies, misconceptions, etc)
Heijnders ML, et al. (2018) (31)	The Netherlands	Research (published paper)	Qualitative Interview Study	Patients (N 10) with psychosocial problems referred from 4 GPs to a social well-being organisation	Referral to social well-being organisation, followed by an 'holistic', personalised assessment by a well-being coach based on social activation theory. Onwards	To determine what happens in the chain of the SP and what changes the participant experiences in terms of social participation.	• Participants' life events • Insights on the referral and intake process • Personal strength and responsibility • Self-reliance • Social activation/participation

					linkage into community-based activities (e.g. cooking classes)		
Centre for Reviews and Dissemination. University of York (2015) (364)	UK	Research (web-based report)	Rapid Review	22 studies	SP schemes linking patients in primary care with sources of support within the community	To review the effectiveness and cost effectiveness of SP programme	• Mental and physical wellbeing (WWQ, PHQ9, GAD7, IPAQ, HAD, COOP chart, WEMWBS, WSAS, Dynamic Observation scale) • SROI analysis • Cost-effectiveness
Pescheny JV, et al. (2018) (181)	UK	Research (published paper)	Literature Review	8 studies	Referral schemes that link patients in primary care with local services and activities provided by the third sector (community, voluntary, and social enterprise sector)	To identify factors that facilitate and hinder the implementation and delivery of SP services based in general practice and involving navigators	• Facilitating factors: implementation approach, organisation and management, attitudes, support and supervision, communication, etc • Barriers: leadership, economic climate and funding, shared understanding, staff engagement and turnover, etc
South et al. (2008) (60)	UK	Research (published paper)	Qualitative Case Study	Primary care workers (N 8) and patients (N 10) referred to SP in 2 GPs in deprived urban areas	Up to 3 appointments with a link worker to discuss needs and identify appropriate sources of local support (e.g. volunteering, debt advice, luncheon clubs, etc.)	To explore the concept of SP and discuss its value as a public health initiative embedded within general practice	• The potential of SP on (1) Extending primary care, (2) Addressing public health issues, (3) Building health alliances
Bertotti M, et al. (2018) (57)	UK	Research (published paper)	Realist Evaluation (Mixed	SP users, commissioners, and primary care	Referral to a trained SP coordinator (link worker) for assessment and supported,	To evaluate a SP pilot, by unpacking the contextual factors and	• Relevant contextual factors and mechanisms related to (1) GP referral process,

			Methods Study)	workers involved in SP in 23 GPs in a socio-economically diverse urban area	personalised linkage into community-based resources	mechanisms that might influence its implementation and development	(2) Consultation with the link worker, (3) Interaction with VCS organisations
Bragg R, et al. (2017) (366)	UK	Research (web-based report)	Evidence Synthesis	12 England-based SP services	SP services that are well established, have a good track record in terms of numbers of patients involved, have been evaluated, are operating at scale (e.g. with at least one CCG) and show the diversity of SP models.	To develop an understanding of the use of nature-based-interventions within social prescribing services and provide suggestions for good practice	• Characteristics of SP services (including referral and funding mechanisms) • Characteristics of service users • Evidence of effectiveness and cost effectiveness (general wellbeing, health service use, SROI)
Bungay H, et al (2010) (162)	UK	Research (published paper)	Evidence Synthesis	Grey literature on UK-based Arts on Prescription (AoP)	SP schemes linking patients in health services with community-based art initiatives facilitated by artists (*AoP*)	To review current AoP initiatives in the UK and reflect on the challenges of providing evidence for their effectiveness	• Policy context for AoP • Evidence on effectiveness: mental well-being (WEMWBS, HADS), quality of life, social inclusion • Existing challenges for AoP
Grant C, et al. (2000) (367)	UK	Research (published paper)	Randomised Controlled Trial	161 patients identified by their GP as having psychosocial problems in 26 GPs with varied socioeconomic characteristics	Referral to a liaison organisation for assessment of patients' needs and linkage into voluntary organisations	To compare wellbeing and resource utilisation among patients referred to a SP scheme, with patients receiving routine general practitioner care.	• Primary outcomes: psychological wellbeing (HAD scale), social support (Duke-UNC FSS questionnaire) • Secondary outcomes: quality of life (COOP/WONCA, delighted-terrible faces scale), costs (service use, prescribing, referrals)
Jensen A, et al.	Denmark	Research (published paper)	Qualitative Study	Patients (N 7) with mild-moderate mental health	Referral from a health service to a 10-week project offering a variety of arts and cultural	To evaluate and explore the impact of an AoP programme in	• Mental wellbeing (sense of coherence, sense of meaning)

(2019) (223)				problems referred to an AoP programme delivered across a local authority area	activities averaging 2 hour sessions 2.5 times a week (Culture Vitamins – AoP)	participants' mental health wellbeing	• Capacity to overcoming challenges (motivation, self-esteem, resilience, ability to socialize) • Moving from self-critical to self-caring
Jensen A, et al. (2017) (368)	Sweden, Norway, Denmark, UK	Research	Rapid Review	34 studies	Referral from a health service to community-based arts activities (Arts on Prescription – AoP)	To provide an overview of how AoP is delivered in Scandinavian countries and the UK	• Institutional context: political support and recognition, existence of specific research centres • Evidence for AoP effectiveness: quality of life, work ability, self-confidence, motivation, social and communication skills
Maughan DL, et al (2016) (369)	UK	Research (published paper)	Observational Study	Patients from an urban GP, diagnosed with common mental health conditions and referred to SP	Referral to a 'link worker service' aimed at connecting people with community organisations. Patients were discharged when they were engaged in the community (maximum of 20 appointments) (Connect Project)	To assess the effects of a SP service on healthcare use and the subsequent economic and environmental cost	• Number of GP appointments • Prescriptions of psychotropic medications • Number of secondary-care referrals
Redmond M, et al. (2018) (370)	UK	Research	Qualitative Follow-up Study	Individuals (N 1297) referred to AoP SP	Referral to an 8- or (formerly) 10-week course of creative activities, led by a local artist.	To explore the impact of an arts referral programme in service users' well-being	• Social connectedness • Physical and mental well-being • Self-management
Age Concern Support	UK	Research (web-	Mixed methods (Qualitative	Elderly patients diagnosed with mild-moderate	In-depth assessment of the older person's social, emotional and practical	To assess the effectiveness of social prescribing for older	• Quant: mental well-being (WEMWBS)

Services (2011) (371)		based report)	case studies, before-and after survey)	depression or socially isolated referred SP in 12 GPs	support needs, and onwards referral to Age UK services (including befriending, social groups, benefit checks and Fit as a Fiddle classes)	people with mild to moderate depression or who are lonely and socially isolated	• Qual: users' experience with the service (satisfaction, expectations, etc.)
Stickley T, et al. (2013) (179)	UK	Research	Qualitative follow-up study	10 SP users	Referral to a 8- or (formerly) 10-week course of creative activities, which are led by a local artist in community locations. There are usually no more than 10 participants per group. (AoP)	To explore the long-term effects of an 'Arts on Prescription' SP service	• Self-confidence, feelings of self-worth, self-perception • Social and communication skills • Motivational and aspirational changes
Stickley T, et al. (2012a) (177)	UK	Research	Qualitative Interview Study	10 referrers from primary care, secondary mental health care and VCS	Referral to a 10-week blocks of art sessions led by professional artists in community locations. Usually with no more than 10 participants per group (AoP)	To investigate the views of referrers to AoP regarding the quality and effectiveness of the service	• Perceived impact of AoP on service users (personal benefits, social benefits) • Contextual views (policy environment, practical concerns)
Stickley T, et al. (2012b) (372)	UK	Research	Qualitative Interview Study	Patients with mental health conditions referred to a SP activities led by artists	Referral to a the 10-week blocks of art sessions led by professional artists in community locations. There are usually no more than 10 participants per group (AoP)	To explore the experiences of people who have engaged with AoP programmes	• Social: sense of social belonging, peer support, etc. • Psychological: self-awareness, self-discovery, etc. • Occupational: meaningful occupation and vocation
Sumner RC, et al. (2019) (373)	UK	Research	Observational Study	Patients (N 1297) referred to AoP SP by primary care professionals	Referral to an 8- or (formerly) 10-week course of creative activities (ranging from painting, to ceramics,	To identify potential factors associated with attendance, engagement and wellbeing change of	• Wellbeing (WEMWBS) • Programme attendance and engagement

					playwriting, and mosaics), led by a local artist.	patients referred to AoP.	
Thomson L, et al. (2018) (374)	UK	Research (published paper)	Mixed-Methods Study	Participants (N 115) aged 65–94 at risk of loneliness and social isolation referred to museum-based SP	A museum-based intervention consisting of 10-week programmes of engaging, creative and socially interactive sessions, of around 2 hours each, comprising curator talks, behind-the-scenes tours, object handling and discussion, and arts activities inspired by the exhibits.	To assess psychological wellbeing in a novel SP intervention for older adults called Museums on Prescription and to explore the extent of change over time	• Quant: Psychological wellbeing (Museum wellbeing Measure for Older Adults - MwM-OA) • Qual: perceptions and experiences of the participants and their carers where present, museum facilitators and volunteers.
Creative Alternatives (2009) (375)	UK	Research (web-based report)	Before-and-after Study	Patients (N 187) with mild to moderate depression, stress or anxiety referred to AoP delivered in an urban area	A free programme of creative activities over six months, comprising weekly core workshops on expressive work in the visual arts, creative writing, storytelling, photography, pottery, etc. (*Creative Alternatives - AoP*)	To assess the effectiveness of an AoP scheme in participants' health and wellbeing	• Mental wellbeing (HAD Scale, The Dartmouth COOP Chart) • Lifestyle modification (The Creative Alternatives Lifestyle Questionnaire)
Dayson C et al. (2013) (201)	UK	Research (web-based report)	Mixed Methods Study	Patients with long term conditions and their carers (N 808) referred to SP delivered in an urban area across 28 GPs	Referral to a link worker (advisor) for assessment of support needs before referring to funded VCS services (e.g advice and information, leisure-social activities, exercise, etc.) (*Rotherham SP Pilot*)	To evaluate the effectiveness and cost-effectiveness of a SP pilot project aimed at patients with long term conditions and their carers	• Quant: number of referrals into SP and the VCS, hospital episodes data, social outcomes • Qual: perceptions and experiences of public sector stakeholders, the VCS and project staff

Faulkner M (2004) (168)	UK	Research (published paper)	Qualitative Pilot Study	Patients with psychosocial issues (N 11) and VCS advisors (N 8) involved SP delivered in an urban GP	Appointments with 2 volunteer link workers responsible for leading discussions and arranging appointments with community-based services (over 150 organisations)	To describe and analyse the key features of a SP scheme, its perceived effectiveness, and any barriers to effective service provision.	• Key features of the SP scheme • Perceived effectiveness (social connectedness, distress levels, primary care service use) • Barriers to effective service provision
Roessler K (2011) (380)	Denmark	Research (published paper)	Qualitative Follow-up Study	Patients referred to a community-based exercise programme delivered in an urban area	4 months of twice weekly supervised community-based physical training in groups (*Exercise on Prescription - EoP*)	To examine psychological aspects of intra- and interpersonal learning for patients with diabetes, hypertension, dyslipidaemia referred to EoP	• Motives and barriers in exercise participation • Characteristics of the 'non-completers' • Characteristics of the 'completers'
Baines A (2015) (381)	UK	Research (web-based report)	Mixed-Methods Evaluation Study	Primary care referrers, link workers and patients referred to a SP programme delivered across 4 mixed urban and rural practices	Referral to volunteer link workers ('Navigators', 'Health Buddies') for assessment adn supported referral to community-based services (e.g. dancing, volunteering, housing/homelessness, yoga, etc.) (*ConnectWELL SP Programme*)	To evaluate the impact and cost-effectiveness of a SP programme and identify potential gaps and barriers	• Quant: mental well-being (WEMWBS), costs • Qual: SP users', link workers', primary care workers', VCS representatives' experience with the service (satisfaction, expectations, etc.)
Edmunds et al. (2007) (383)	UK	Research (published paper)	Before-and-after Study	Participants aged 16-73 and diagnosed as overweight/obese, referred by their GP to an EoP	Referral to an advisor (i.e., a health and fitness instructor with specialized training to deliver exercise prescriptions) for a 3-month exercise routine	To examine perceived autonomy support, psychological need satisfaction, self-determined motivation, exercise behaviour,	• Perceived autonomy support • Psychological need satisfaction • Motivational regulations for exercise (BREQ-2) • Exercise behaviour (GLTEQ)

				programme delivered in an urban area	suited to each patient's condition (EoP)	exercise-related cognitions and general well-being amongst overweight/obese individuals referred to EoP	• Self-efficacy • Commitment • Behavioural intention to exercise • Subjective vitality • Satisfaction with life
Jones et al. (2005) (384)	UK	Research (published paper)	Before-and-after Study	Participants (N 119) diagnosed with high blood pressure, weight or stress related problems referred to EoP delivered in 7 sports centres across different localities	24 exercise sessions spread over 12 weeks. The exercise sessions consisted of gym-based, structured physical activity. Programme specification regarding equipment, intensity, duration was designed for each individual on the basis of an initial fitness assessment (*EoP*)	To investigate the role of participant expectations, self-efficacy, stage of change and psychological well-being in adherence to EoP, and assess the impact of failure to adhere on self-efficacy and psychological well-being	• Physical assessment (weight, BP) • Psychological measures (present level of activity, assessment of stage of change, exercise self-efficacy, expectations and achievement of change, psychological well-being)
Murphy et al. (2012) (155)	UK	Research (published paper)	Pragmatic randomised controlled trial with nested economic evaluation	Patients (N 1080) with coronary heart disease risk, mild to moderate depression, anxiety/stress referred to EoP in 12 local health board areas	16-week tailored exercise programme supervised by a qualified exercise professional and delivered at leisure centres. The scheme included motivational interviewing, goal setting and relapse prevention (*National Exercise Referral Scheme - NERS*)	To assess the effectiveness and cost effectiveness of an EoP programme in increasing physical activity and reducing anxiety and depression	• Physical activity (7D-PAR, Baecke) • Health-related quality of life (EQ-5D) • Mental well-being (hospital anxiety and depression scale – HADS). • Costs

Rahman R, et al. (2011) (385)	UK	Research (published paper)	Before-and-after Study	Patients (N 293) identified by their GP as inactive and referred to an EoP programme operating in six council owned leisure centres	An induction followed by twice weekly exercise classes supervised by an exercise leader. Exercise schemes were individually tailored to suit referral conditions and delivered free of charge (*EoP*)	To examine psychological need satisfaction and motivational regulations as predictors of psychological and behavioural outcomes in EoP programmes	• Motivation (BREQ-2) • Mental wellbeing (HADS, Satisfaction with Life Scale) • Health-related quality of life (SF-36v2) • Physical activity level (Baecke's Questionnaire of Habitual Physical Activity) • Adherence
Morton K, et al (2008) (222)	UK	Research (published paper)	Before-and-after Study	Patients (N 30) referred from primary care to an EoP scheme delivered in a local leisure centre	Twice weekly exercise sessions over 6 weeks (*EoP*)	To examine whether self-determined motivation is fostered through EoP, and the extent to which patient motives are related to exercise adherence	• Motivation (BREQ-2, self-determination score)
Kimberlee RH (2013) (388)	UK	Research (web-based report)	Mixed Methods Study, including a Literature Review	Service users, practitioners and commissioners involved in SP programmes delivered across 7 GPs in an urban area	Different referral pathways to community resources (SP as signposting, SP light, SP medium, SP holistic)	To provide an outline of different SP models and assess their impact, effectiveness and cost-effectiveness	• Characterisation of existing SP models • Quant: SP effectiveness (Inventory for Brokerage Service Outcomes Star (IBSO)) • Qual: SP users', link workers', primary care workers', VCS representatives' experience with the service (satisfaction, expectations, etc.)

Public Health England (2019) (41)	UK	Research (web-based report)	Evidence Synthesis (rapid review)	8 studies	Referral from healthcare professionals in primary care settings to a link worker or SP facilitator	To investigate the effectiveness of SP in the UK	• Contact with primary health care services • Changes in physical and/or mental health (WEMWBS, HADS, HRQL EQ-5D5L, ICECAP-A)
Duda J, et al. (2014) (391)	UK	Research (published paper)	Cluster randomised controlled trial	Individuals (N 347) referred from 13 primary care centres to an EoP scheme delivered across 13 leisure centres in a large city	Exercise referral intervention grounded in Self Determination Theory over 3 months, including motivational interviewing, goal setting and a self- management exercise promotion booklet (*EoP*)	To test the feasibility and impact of a Self Determination Theory-based (SDT) exercise referral consultation	• Self-reported physical activity (7-day PAR) • Physical health outcomes (BMI, BP) • Health status (Dartmouth CO-OP Chart Scales) • Mental wellbeing (HADS, SVS) • Motivation-related processes of change measures (HCCQ, PNSES, BREQ-2)
Kok M, et al. (2016) (392)	UK	Research (web-based report)	Before-and-after Study	Patients (N 811) at risk of or recently diagnosed with T2D referred from GP to community-based diabetes prevention in 2 urban and rural localities	A 12-month programme that starts with a GP surgery invitation letter and eligibility check; followed by a 4-week group course with trained facilitators, follow-on one-to-one contacts, and referral to selected healthy lifestyle activities (*Living Well, Taking Control*)	To evaluate the effectiveness and cost-effectiveness of a community-based type 2 diabetes prevention programme	• Biometric measures (weight, HbA1c, BMI, waist circumference, BP) • Questionnaire on quality of life (EQ-5D), overall life satisfaction (LSS), mental wellbeing (SWEMBS, CESD-7), physical activity (IPAQ), diet (FFQ), motivation to behavioural change
Mercer S, et al. (2017) (184)	UK	Research (web-based report)	Mixed-methods study	All practice staff (such as GPs, practice nurses, receptionists and health care	The provision of a Community Links Practitioner and a practice development fund to support patients' referrals to	To assess the implementation and impact of a Links Worker SP Programme	• Quant: quality of life (EQ-5D-5L), mental wellbeing (ICECAP-A, HADS), work-social functioning, life-style behaviours (alcohol, smoking,

				assistants) of 7 GPs involved in SP and patients (N 288) referred	community services (*‘Deep-End’ Links Worker Programme*)	at patient, practice and community levels	exercise), healthcare utilisation. Practice level: team climate, job satisfaction, morale, burnout • Qual: barriers and facilitators to program implementation
Mills H, et al. (2012) (395)	UK	Research (published paper)	Mixed Methods Study	Patients (N 1,315), exercise providers and referring GP professionals involved in an EoP programme delivered in 5 urban local leisure centres	Referral to a patient-centred physical activity program over 26 weeks, including individual and group exercise sessions in gyms, exercise studios and swimming pools (*EoP*)	To explore and reveal the constituents of ‘‘success’’ in exercise referral schemes through comparison, contradiction, and integration of qualitative and quantitative research findings	• Qual: the perception of success according to participants, referrers, and exercise providers • Quant: programme completion, weight loss, mean arterial pressure reduction
Dayson C, et al. (2016) (397)	UK	Research (web-based report)	Mixed Methods Study and Economic Evaluation	Staff members (N 7), volunteers (N 2) and patients (N 939) referred to SP delivered across a metropolitan borough	Referral to a link worker (advisor) for assessment of support needs before referring to appropriate VCS services (e.g advice and information, leisure-social activities, exercise, etc.) (*Rotherham SP*)	To provide an updated assessment of the social and economic impact of a SP programme	• Quant: Demand for urgent hospital care, well-being and positive functioning, economic and social cost-benefit • Qual: staff members’, volunteers’ and users’ experiences
Kimberlee RH (2016) (200)	UK	Research (web-based report)	Mixed Methods Study and Economic Evaluation	Referring GPs, link workers, members of VCS and patients (N 2047) referred to SP	Referral to a link worker for assessment of support needs before referring to VCS services (e.g. welfare services, exercise activities, arts classes) (*Gloucestershire SP*)	To evaluate the impact of an expanded SP scheme in patients’ well-being and service use	• Quant: mental wellbeing (WEMWBS), hospital and primary care attendance • Qual: stakeholders’ views and experiences

Rouse O, et al. (2011) (399)	UK	Research (published paper)	Cross-Sectional Study	Patients (N 347) referred to EoP in a large city	Referral to an EoP scheme (*EoP*)	To explore the role of autonomy support on the motivation, mental health and intentions of EoP participants	• Emotional well-being: subjective vitality (SVS) and depressive symptoms (HADS-D) • Physical activity intentions
Brandling J, et al. (2007) (226)	UK	Research (web-based report)	Mixed Methods Pilot Study	Community stakeholders, GP workers and patients defined as 'high resource users' in 3 GPs	A SP service, to be designed based upon the finding of the study	To explore the feasibility of developing a SP service to reach a significant proportion of primary care high resource users	• Quant: health resource use • Qual: opinions on potential SP users, benefits and drawbacks of SP, barriers to accessing the service
Wormald H, et al (2006) (227)	UK	Research (published paper)	Qualitative Focus Group Study	16 participants referred to EoP delivered in deprived urban areas	Referral to an advisor for ongoing support in the form of up to 6 monthly progress consultations and optional ongoing referred to VCS activities (*Active Lifestyles – EoP*)	To explore participants' perceptions of the operation and effectiveness of a community-based physical activity service	• Participants' views on the referral process, operational aspects of the service, and perceived benefits
Kier Business Services Limited (2016) (401)	UK	Research (web-based report)	Mixed Methods Evaluation	Referring GP workers, patients, link workers and VCS involved in a SP programme operating across 37 GPs	Referral to a link worker for assessment of patients' needs and linkage into third sector, statutory services or community-based activities (*Patient Empowerment Project*)	To evaluate effectiveness and cost-effectiveness of a SP programme focused on individuals with long-term conditions	• Quant: patients' health and wellbeing (clinical data, SWEMWBS, EQ-5D-5L), self-efficacy and management, (ONS items), healthcare utilisation • Qual: stakeholders' perceptions about the service
Mistry B, et al. (2017) (403)	UK	Research (web-based report)	Mixed Methods Study	Patients (N 28) referred from primary care to a SP programme	Assessment by a Community Support Coordinator (link worker) and referral to community-based services (e.g. physical activities,	To assess the impact of a SP scheme in patients' wellbeing and service utilisation	• Quant: patients' wellbeing, health services use • Qual: stakeholders' experiences and perceptions about the service

				delivered across 4 urban GPs	counselling, advice around debt, housing, etc.) (*Prescription Plus*)		
Jones T, et al. (2009) (407)	UK	Research (web-based report)	Mixed Method Study	Project staff (N 28) and service users (N 40) involved in SP	SP programmes offering physical exercise, healthy eating, mental well-being and general well-being activities (*South West Well-being*)	To evaluate a SP programme in the first year of delivery and identify emerging themes across the programme.	• Quant: general health, physical activity, diet related behaviour, mental and social well-being • Qual: service staff and users' experiences on the service
Tava'e N, et al. (2011) (27)	New Zealand	Research (published paper)	Qualitative Study	Pacific women (N 20) aged 40+ referred to EoP and discharged as independently active	Referral to a supported, tailored exercise programme comprising education workshops covering topics such as nutrition, healthy lifestyle, etc. (EoP)	To investigate the experience of Pacific women referred to a Green Prescription programme	• Past history of physical activity • Views and experiences about the programme • Influences on programme adherence or dropout rates • Health perception
Kimberlee R, et al (2015) (22)	UK	Research (published paper)	Qualitative Study	SP practitioners, council/Public Health, GPs and patients referred	Different referral pathways to community resources (SP as signposting, SP light, SP medium, SP holistic)	To explore the meaning and definition of SP, and describe different programme types	• Different SP models based on their community embeddedness
ERS Research and Consultancy (2013) (186)	UK	Research (web-based report)	Mixed Methods Study	SP users, GP workers, steering group involved in a SP scheme operating in a socio-economically diverse city	Referral to one of the 5 collaborating Linkwork Organisations. Initial assessment and onward referral to community-based activities	To provide an assessment of the impact and achievements of a SP scheme, and document lessons learned to inform future practice.	• Quant: number for referrals, reason for referral, primary goals set, mental wellbeing (SWEMWB, mean confidence scores) • Qual: stakeholders' views and experiences around SP

Grayer J, et al. (2008) (414)	UK	Research (published paper)	Before-and-after Study	Patients with psychosocial problems referred by primary care practitioners to a SP scheme delivered across 13 urban GPs	Initial assessment by a graduate primary care mental health worker and onwards referral to community resources with different, personalised levels of support	To evaluate the acceptability and effectiveness of a SP programme facilitating access of patients with psychosocial problems in primary care to VCS services	• Mental wellbeing (GHQ-12, COREOM) • Social outcomes (WSAS) • Patient satisfaction (CSQ, community link evaluation) • Use of primary care resources
Aggar C, et al (2020) (26)	Australia	Research (published paper)	Before-and-after Study	13 patients with mental health conditions referred from primary care to a SP scheme delivered in an urban setting	Referral to a link worker for assessment and discussion on available community-based resources, and provision of weekly arts and crafts group sessions (2-3h for 10 weeks)	To evaluate whether a SP pilot program can improve participants' quality of life, and social and economic participation.	• Quality of life (WHOQoL) • Welfare needs and support (CANSAS) • Health Status and self-efficacy (EQ5D) • Psychosocial distress (Scale K10) • Loneliness and social participation (UCLA) • Economic participation • Hospital admission
Beardmore A (2020) (161)	UK	Research (published paper)	Qualitative Study	8 primary care and VCS workers involved in SP	'Medium' and 'Holistic' SP schemes, as specified by Kimberlee (22)	To explore who works in SP and how they experience their role	• Narrative accounts of those working in SP
Tierney S, et al (2020) (54)	UK	Research (published paper)	Realist review	118 studies	Primary care-based SP schemes focusing in adults (+18)	To understand how SP might work, for whom, in what circumstances and how to optimise delivery within primary care	• A refined programme theory on how connector roles, especially link workers, work in practice

Kellezi B, et al (2019) (167)	UK	Research (published paper)	Mixed methods	GPs, SP providers and patients experiencing loneliness referred to a SP scheme delivered in the English East Midlands.	Initial meeting and needs assessment by a health coach. Onwards prescription of self-care management or referral to a link worker for linkage into VCS groups	To determine social factors central to the understanding of SP and how SP is experienced among stakeholders. To evaluate the effects of SP on patients' health-service use.	• QuaL: stakeholders' perceptions of social (dis)connection, and the potential of SP to address it. • QuanT: service use, number of group memberships, community belonging, loneliness (ULS-8).
Wallace C, et al (2020) (418)	UK	Research (published paper)	Mixed Methods Study	A group of (n=18) geographically spread link workers across Wales and 85 professionals with SP-related roles	SP schemes involving assessment and support by a link worker	To develop an education and training needs conceptual framework for SP in Wales	• QuanT: Sociodemographic characteristics, statements in response to agreed focus prompts • QuaL: prioritisation of learning needs, identification of appropriate timelines of training delivery
Frostick C, et al (2019) (160)	UK	Research (published paper)	Qualitative Study	Link Workers (n=13) actively working in one of three London-based SP schemes	Three SP schemes involving assessment and support by link workers	To identify the training, skills and experience that link workers working with patients with long-term conditions require to carry out their role	• Link workers' prior expectations, training and experience, as well as perceived challenges
Mercer SW et al (2019) (45)	UK	Research (published paper)	Quasi-experimental cluster-randomized controlled trial	Patients (n=288) referred to SP in 7 intervention practices, and patients (n= 612) in 8 comparison GPs	Referral to a link worker for assessment of patient's most pressing problems, and ongoing supported referral to local community resources	To assess the effect of a primary care–based community links practitioner intervention on patients' quality of life and well-being	• Primary outcome: health-related quality of life (EQ-5D-5L) • Secondary outcomes: well-being (ICECAP-A), depression (HADS-D), anxiety (HADS-A), and self-reported exercise.

Payne K, et al (2020) (171)	UK	Research (published paper)	Qualitative Study	Adults (n=17) involved in SP activities delivered in an urban locality	Initial assessment by a link worker and onwards referral to relevant community groups or in-house support services	To explore the ways by which SP may be beneficial to individuals undertaking socially prescribed activities	• Participants' recalled and narrated accounts of their experience participating in socially prescribed activities

Appendix 6. Overview of quantitative research design

Study design	Study population			Main variables	
	Entry date	Exit date	Excluded	Outcome	Main exposure
Cohort study (1)	People eligible for SP (18+ and active GP registration in Tower Hamlets CCG). Latest date of • Registration with practice • Beginning of study (1/12/2016)	Earliest date of • SP referral (outcome) • Death or deregistration • End of study (14/2/2022)	Patients with known T1D or T2D	SP referral	T2D high risk, defined by: • GDM, • QDScore >= 20, • FBG 5.5-6.9 mmol/L, • HBA1c 42-47 mmol/mol, • Diagnosis of NDHG, • Referral into NDPP
Cohort study (2)	People at high risk of T2D: • Earliest date of the diagnosis of T2D high risk status • Latest date of practice registration or beginning of study (1/12/2016) if diagnosed with high risk T2D before the study started	Earliest date of • SP referral (outcome) • Death or deregistration • End of study (14/2/2022)	Patients with known T1D or T2D	SP referral	• Socio-demographics (age, gender, ethnicity, SES) • Clinical (CVD, HYT, obesity, smoking, CKD, respiratory condition, mental health problem, learning disability, multimorbidity)
Cross sectional study	People at high risk of T2D eligible for NDPP: • Age between 18 and 79, and: • GDM, • FPG 5.5-6.9 mmol/L, • HBA1c 42-47 mmol/mol, or • Diagnosis of non-diabetic hyperglycaemia		Patients with known T1D or T2D	• SP only • NDPP only • None • Both	• Socio-demographic and clinical, as described above

SP: Social Prescribing. NDPP: NHS Diabetes Prevention Programme. CCG: Clinical Commissioning Group. GDM: Gestational Diabetes Mellitus. FBG: Fasting Blood Glucose. CVD: Cardiovascular disease. HYT: hypertension. CKD: Chronic Kidney Disease. T1D: type 1 diabetes. T2D: type 2 diabetes.

Appendix 7. Quantitative study variables and their associations

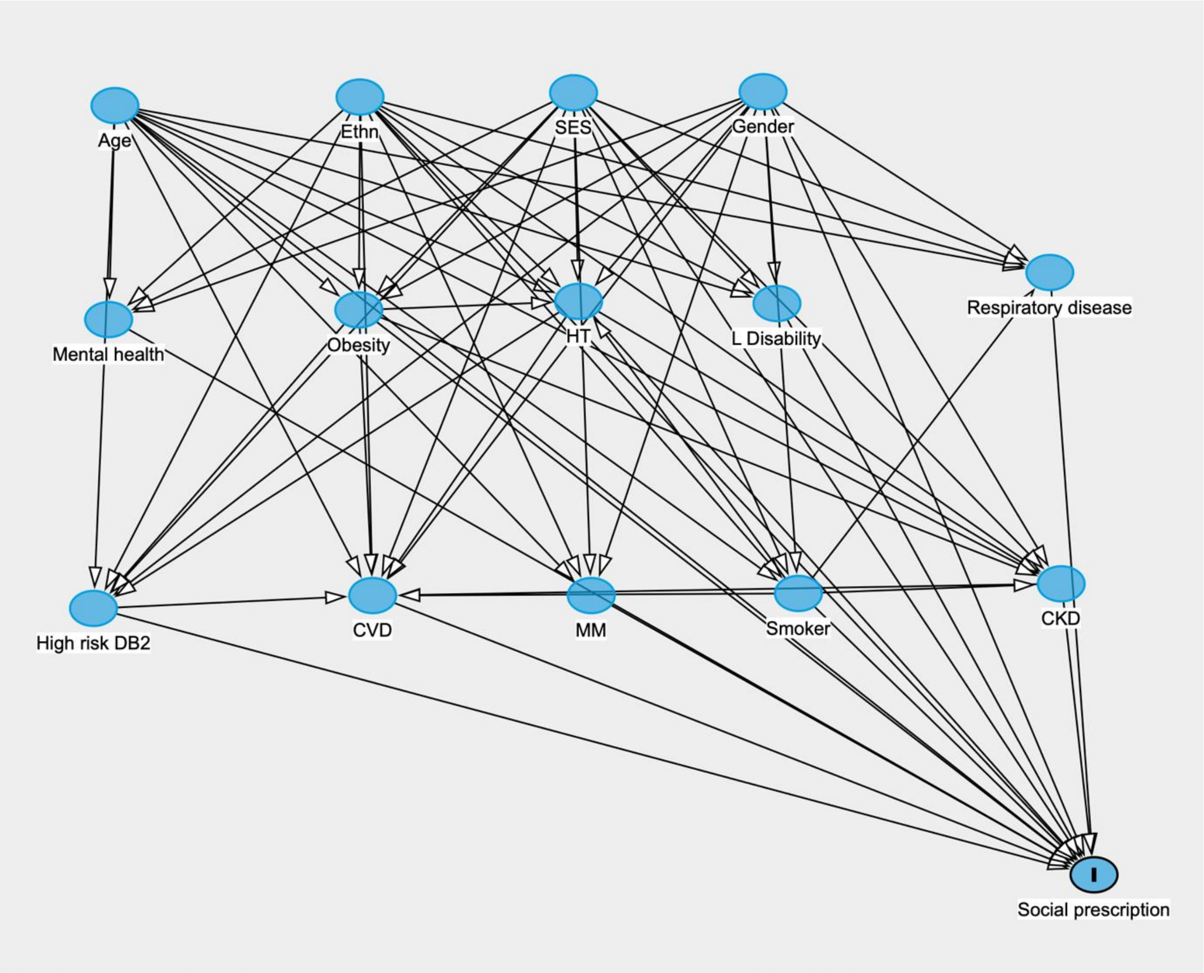
Table 7.1. Quantitative study variables and their characteristics

Variable	Type of variable	Values
• SP referral	binary	Yes/no. Earliest event between 1/12/2016 and 14/2/2022.
• SP/NDPP referral	categorical	Only SP, only NDPP, both or none. Earliest event between 1/12/2016 and 14/2/2022.
• GDM	binary	Yes/no. Earliest event.
• QDScore	binary	>= 20: yes/no. Earliest value.
• FBG	binary	5.5-6.9 mmol/L: yes/no. Earliest value.
• HBA1c	binary	42-47 mmol/mol: yes/no. Earliest value
• NDHG	binary	Yes/no. Earliest event.
• NDPP referral	binary	Yes/no. Earliest event between 1/12/2016 and 14/2/2022.
• Gender	binary	Female/male
• Age at enrolment	numeric	Calculated based on age at data extraction (14/2/2022) and date of enrolment
• Ethnicity	categorical	White, South Asian, Chinese, black, Arab, mixed/others. Based on GGS-18.
• IMD	ordered categorical	1st most deprived to 5th least deprived. Based on LSOA
• IHD (QOF)	binary	Yes/no. Earliest event.
• PAD (QOF)	binary	Yes/no. Earliest event.
• STIA (QOF)	binary	Yes/no. Earliest event.
• HYT (QOF)	binary	Yes/no. Earliest event.
• Obesity	binary	Yes/no. Latest ethnicity specific BMI value: 30.0 kg/m2 for white/mixed/other; 28.1 kg/m2 for black; 23.9 kg/m2 for South Asians; 26.9 kg/m2 for Chinese; or 26.6 kg/m2 for Arab
• Current Smoker	binary	Yes/no. Latest event.
• CKD (QOF)	binary	Yes/no. Earliest event.
• Asthma (QOF)	binary	Yes/no. Earliest event.
• COPD (QOF code)	binary	Yes/no. Earliest event.

• Depression/anxiety (QOF)	binary	Yes/no. Earliest event.
• Severe MH (QOF)	binary	Yes/no. Earliest event.
• LD (QOF)	binary	Yes/no. Earliest event.
• Multimorbidity	binary	>= 2 long-term conditions (IHD, PAD, STIA, AF, HYT, depression/anxiety, severe mental health diagnosis, learning disability, obesity): yes/no. Earliest event.

SP: Social Prescribing. NDPP: NHS Diabetes Prevention Programme. CCG: Clinical Commissioning Group. GDM: Gestational Diabetes Mellitus. FBG: Fasting Blood Glucose. CVD: Cardiovascular disease. HYT: hypertension. CKD: Chronic Kidney Disease. T2D: type 2 diabetes. Severe MH: severe mental health diagnosis, including schizophrenia, bipolar affective disorder and other psychoses. LD: Learning Disability.

Figure 7.1. Direct Acyclic Graph



Eth Ethnicity; SES Socio-economic status; HT Hypertension; L Disability Learning Disability; CVD Cardiovascular disease; MM Multimorbidity; CKD Chronic kidney disease

Appendix 8. Qualitative data sources and sample characteristics (Chapter V)

Table S1. Characteristics of SP users interviewed

Code	**T2D status**	**Reason for referral**	**Participation**	**Link Worker**	**Age & Gender**	**Main language**	**Ethnicity**	**Mode**
04.1	QDS> 20	Weight management	Several LW visits and referrals	In-house	53 F	English	White Irish	Phone
04.2	Pre-diabetes	Anxiety, agoraphobia, pain	Several LW visits and referrals	In-house	43 F	English	Bangladeshi	Phone
04.3	T2D	Lifestyle, bereavement, employment.	Several LW visits and referrals	In-house	35 F	English	Bangladeshi	Online
04.4	Pre-diabetes	Depressed mood, stress.	Several LW visits and referrals	In-house	61 F	English	White British	Phone
04.5	Pre-diabetes	Housing, immigration status.	1 LW visit	Centrally managed	38 M	Bengali	Bangladeshi	Phone, advocate
04.6	GDM, QDS > 20	Housing, depressed mood, stress	2 LW visits and 1 referral	Centrally managed	36 F	English	Bangladeshi	Phone
04.7	QDS > 20	Depressed mood, stress.	Several LW visits and referrals	In-house	49 M	English	Black British	Online
04.8	GDM, QDS> 20	Housing.	1 LW visit and 1 referral	Centrally managed	27 F	English	Bangladeshi	Phone

LW link worker; F female; M male; QDS Q-Diabetes Score, GDM: Gestational Diabetes Mellitus

Table S2. Characteristics of link workers interviewed

Code	**Type**	**Gender**	**Age**	**Time worked in TH**	**Ethnicity**	**Interview mode**
02.1	In-house	Female	20-30	<1 year	White	online
02.2	In-house	Female	30-40	>5 years	White	phone
02.3	DES funded	Male	40-50	<1 year	South Asian	online
02.4	CCG funded	Male	40-50	>5 years	South Asian	online
02.5	CCG funded	Female	40-50	>5 years	White	online
02.6	CCG funded	Female	50-60	>5 years	White	online
02.7	DES funded	Female	40-50	<1 year	South Asian	online
02.8	DES funded	Female	40-50	>5 years	South Asian	online
02.9	DES funded	Female	30-40	1 to 5 years	White	online
02.10	In-house	Female	30-40	<1 year	White	online
02.11	CCG funded	Female	40-50	>5 years	South Asian	online

DES Direct Enhanced Scheme; CCG Clinical commissioning Group; TH Tower Hamlets

Table S3. Characteristics of primary care clinicians interviewed

Code	Role	Contract	Gender	Age	Time worked in TH	Ethnicity	Interview mode
01.1	GP	Partner	Male	40-50	>5 years	White	online
01.2	GP	Locum	Male	30-40	1-5years	Asian	phone
01.3	GP	Salaried	Female	30-40	>5 years	Asian British	online
01.4	Physiotherapist	Salaried	Female	30-40	<1 year	White	online
01.5	GP	Partner	Male	40-50	>5 years	White	online
01.6	GP	Partner	Female	30-40	>5 years	Asian British	online
01.7	GP	Partner	Female	40-50	>5 years	Asian British	online
01.8	Nurse	Salaried	Female	40-50	>5 years	White	online
01.9	HCA	Salaried	Female	40-50	>5 years	Asian British	online
01.10	Nurse	Salaried	Female	40-50	>5 years	White	online
01.11	Nurse	Salaried	Female	40-50	>5 years	Black	online

HCA Health care Assistant; TH Tower Hamlets

Table S4. Characteristics of VCS members interviewed

Code	Gender	Age	Role	Activity type	Funding	Interview mode
03.1	Female	30-40	Welfare advisor	Welfare advice, physical activity, cultural activities	Methodist Church, National Lottery	online
03.2	Female	40-50	Coordinator	Welfare advice, community kitchen, day centre, walking group	CCG and TH Council	online
	Female	40-50	Coordinator			
03.3	Female	30-40	Employment advisor	Employability and Skills	Donations, legacies, public contracts, grants	online
03.4	Male	40-50	Social Welfare advisor	Welfare advice	Donations, legacies, public contracts, grants	online
03.5	Female	>70	Founder	Day centre, community kitchen, physical activity	Donations, public contracts	online
03.6	Female	50-60	CEO	Mental Health Support	Donations, public contracts	Online
	Female	40-50	Operational director			
03.7	Female	40-50	Legal/welfare advisor	General and specialised (DV) legal and welfare advice	Corporate funding, donations, lottery, public contracts	online
03.8	Male	50-60	Project Manager	Physical activity programme	Donations, legacies, public contracts, grants	online
03.9	Female	40-50	CEO	Weight management, healthy lifestyle and physical activity programme	Donations, legacies, public contracts, grants	online
	Female	40-50	Project Manager			
03.10	Male	40-50	Community navigator	Support and signposting	Public Health England	online
03.11	Male	40-50	Coordinator	Day centre, physical activity – special focus on patients with mental health conditions	Local council	online
03.12	Female	40-50	Provider	Food Bank	Donations, legacies, public contracts, grants	online
	Female	40-50	CEO			
	Female	20-30	Volunteer			
03.13	Male	60-70	Provider	Physical Activity programme	Donations, legacies, public contracts, grants	in person

CCG Clinical commissioning Group; TH Tower Hamlets; DV Domestic Violence

Box S5. Characteristics of VCS and NDPP activities observed

VCS1 – community-based health promotion programme

- Consisted of a holistic weight management programme covering nutritional and lifestyle topics over 12 weeks, as well as a social, peer-led 8-week course about different aspects of good health and wellbeing for people with long term conditions (including T2D, high blood pressure, cardiovascular disease, chronic kidney disease).
- Held in the organisation's main office. Free for attendees and commissioned by the local authority and CCG.
- Observed for a total of 8 hours over a period of 2 months between September and November 2021.

VCS2- community-based physical activity and wellbeing programme

- Consisted of a physical activity and wellbeing programme aimed at young people aged 16 to 26. The programme was run by a wellbeing coach and combined classroom-based interactive sessions on 'healthy' lifestyle with practical physical activity sessions in open-access exercise facilities.
- Held in a local community centre. Free for attendees and funded by a 3-year grant support line from the central government.
- Observed over a period of 2 weeks between August and September 2021 (total 3 visits, 12 hours).

NDPP sessions

- Consisted of group sessions focusing on weight management, physical activity and healthy diet, delivered by health and wellbeing coaches fortnightly and then monthly over a period of 9 months. Available to those patients registered with a GP practice in the local area and diagnosed as being at high risk of developing T2D.
- Held online. Free for attendees, delivered by a private provider and publicly commissioned by Northeast London Health and Care Partnership.
- Observed over a period of 2 months from September to November 2021 (total 4 visits, 6 hours).

VCS meetings

- Consisted of monthly meetings with local VCS organisations, link workers and community navigators aimed at showcasing available activities and resources, providing relevant updates, and creating opportunities for collaborative partnership across organisations
- Held online during Covid 19 and in person after September 2021. Open to the public and self-organised/funded
- Observed almost monthly between March 2021 and April 2022 (total 10 visits, 10 hours).

Appendix 9. Qualitative interview guides, participant information sheets and consent forms (Chapter V)

9.1. Qualitative interview guides

9.1.1. Qualitative interview guide with referrers/clinicians

1. Introductory questions:

- What has been your experience with the service so far?
- How does SP work in practice? What does your role involve?
- Could you give me a couple of examples to illustrate this?

2. Interactions with stakeholders:

a) Patients:

- When would you consider SP? Can you give me some examples to illustrate this? (for what type of patients? Social issues/lifestyle issues/LTC) [LTC, lifestyle, social]
- How do you introduce SP to patients? What do patients normally say, how do they react?
- Once you have completed the referral, what does normally happen? (any feedback, any follow up, do they know where patients go) would you know whether a patient has ended up accessing the service?
- What is it about the service that you've found most helpful/you like most?
- What is about the service that you like less/that you would maybe criticize?
- **Follow up questions -** they might list a number of situations that might prompt a referral.
    - [T2D prevention] if SP been helpful/considered for patients at high risk of T2D - In what ways?
    - [lifestyle/physical activity] if SP been helpful/considered for lifestyle issues - In what ways?
    - [social/welfare] if SP been helpful/considered for social/welfare issues - In what ways?
    - [mental health] f if SP been helpful/considered for MH issues - In what ways?

b) Link workers:

- Do you know who your link worker is?
- How is your relationship with them?
- What do you expect from your link worker when you refer a patient?
- How do you normally keep in touch with them? Do you keep in touch regarding patients that you have referred?
- [Enablers and barriers] What has contributed to this good relationship? Are there any barriers to keeping in touch? What would contribute to improving this relationship?

c) VCS:

- What's been your experience with the local third sector organisations that patients may end up accessing?
- Are you in touch with them? If no – how do you feel about this? If yes – how do you keep in touch?

- What do you expect from them?

3. SP and T2D prevention: We are also exploring the potential role of SP in the prevention of type two diabetes, which is very prevalent in the borough

- What do you think about this?
- Why do you think there is such high risk of diabetes in Tower Hamlets? How do you explain this?
- Were any of the patients that you have referred at high risk of diabetes, or diagnosed with diabetes? What services do they normally access?
- What are the barriers or challenges that patients at high risk of diabetes face when trying to access SP/engage in prevention?
- What is it about the programme that you think is helpful or relevant to patients at high risk of T2D? And from your experience with patients, what is it about the programme that those at high risk of T2D may criticize or find less helpful?
- What are the main pros and cons of SP as a diabetes prevention strategy if we compare it with other preventative approaches, such as the NDPP?
- How would you increase the role or potential of SP in diabetes prevention? How would you improve the current service and make it more relevant to people at high risk of diabetes?

4. Service roll-out:

- What do you think about the way in which SP has been rolled-out in Tower Hamlets?
- Is there anything you would have done maybe in a different way?
- How would you improve the SP scheme in Tower Hamlets?

5. Closing questions:

- Is there anything that I haven’t ask or that you’d like to add?

9.1.2. Qualitative interview guide with link workers

1. Introductory questions:

- What has been your experience with the service so far?
- How does the link workers' service work in practice?
- What does your role involve?

2. Interactions with different stakeholders:

a) Patients:

- What does your role involve with patients? [responses may include patients' assessment/support/referral/signposting, community development activities, meeting with different stakeholders]
- [Assessment] What happens during the assessment, how is it performed? How is progress normally assessed?
- [Support] How long do keep in touch with patients? Does the service have a pre-stablished time limit? How do feel about this?
- [Referral] Once you've met the patient what happens next? How do you find out what has happened? Do you get any feedback?
- [Patients characteristics] What kind of patients do normally access the service? What kind of patients tend to drop out? How do you explain this?
- [Needs and T2D] What are the main needs that patients have? What services do they normally access and find helpful? From your experience, what are the barriers or challenges that patients at high risk of diabetes or diagnosed with T2D face when trying to address this issue(risk/condition)? What is it about the service that patients with diabetes or at high risk of diabetes might find helpful?
- [Unmet needs] What happens when a patient has a need but, unfortunately, it cannot be resolved? Can you give me an example where this has happened? How do you deal with this? How do you feel about this?

b) VCS:

- How is your relationship with the community organisations? What do you expect from them?
- How do you normally keep in touch with them? Do you keep in touch regarding patients that you have referred?
- [Enablers and barriers] What has contributed to this good relationship? Are there any barriers to keeping in touch? Is there anything you would do/you would find helpful to keep or even improve this relationship?
- Have you identified any gaps in the community?

c) Clinicians:

- How is your relationship with the referring clinicians and surgeries? What do you expect from them?
- How do you normally keep in touch with them?
- [Enablers and barriers] What has contributed to this good relationship? Are there any barriers to keeping in touch? What would contribute to improving this relationship? Have you ever had any issues?

- I’ve read that there are different referral rates between clinicians, and also between surgeries. How do you explain this?

3. SP and T2D prevention: We are also exploring the potential role of SP in the prevention of type two diabetes, which is very prevalent in the borough

- What do you think about this?
- Why do you think there is such high risk of diabetes in Tower Hamlets? How do you explain this?
- Were any of the patients that you have seen at high risk of diabetes, or diagnosed with diabetes? What services do they normally access?
- What are the barriers or challenges that patients at high risk of diabetes face when trying to access SP/engage in prevention?
- How would you increase the role or potential of SP in diabetes prevention?

4. Service roll-out:

- What do you think about the way in which SP has been rolled-out in Tower Hamlets?
- Is there anything you would have done maybe in a different way?
- And what would you say about your workload?
- How is your relations with the rest of link workers?

5. Biographic questions:

- What made you become a link worker? What made you apply for this job?
- What did you used to do before working as a link worker in Tower Hamlets?

6. Closing questions:

- Is there anything that I haven’t ask or that you’d like to add?

9.1.3. Qualitative interview guide with VCS organisations

1. Introductory questions:

So just before we get into social prescribing and diabetes prevention, I just wondered if you could explain your role and what services [name of organisation] provides?

2. About the service/activities:

- How are the activities/services run? How long/how often?
- How do patients access the services?
- How long do they keep in touch with the service? Are there any time limits?
- What is it about the service that people like and find helpful? What is it about the service that people might like less or find less helpful?

3. Interactions with service users:

- From your experience, what are the main issues, needs, challenges that service users face?
- And are some of these problems difficult to solve? In what sense? Can you provide an example? How do you feel about that?
- Are there people who fail to engage or are harder to reach? How do you explain this?

4. About T2D prevention. We are also exploring the potential role of SP and community organisations in the prevention of type two diabetes, which is very prevalent in the borough

- What do you think about this?
- Why do you think there is such high risk of diabetes in Tower Hamlets? How do you explain this?
- Were any of the patients that you have seen at high risk of diabetes, or diagnosed with diabetes? How would you find out? Is it useful for you to know about their health conditions? What services do they normally access?
- What are the barriers or challenges that patients at high risk of diabetes face when trying to access your service/engage in prevention/the activity on offer?
- What type of service do they tend to find more helpful? Why/in what ways? What type of activities might they find less helpful?

5. Organisation contingencies:

- What are the sources of funding? What does the funding application process involve?
- How do you feel about the funding you receive/funding application process? (is it enough to cover the range of activities that you provide, is it stable/unstable)
- Is the funding linked to any targets or evaluation? How do you feel about these targets? Who decides them?

6. About social prescribing:
- What has been your experience with the local TH SP service so far?
- How does the referral from the SP service to your organisation happen in practice? Would you know whether a patient has been referred through SP?

a) Relationship with link workers:

- How is your relationship with link workers?
- How do you keep in touch? Would you, for instance, keep in touch regarding a patient who has been referred?
- [Enablers and barriers] What has contributed to this good relationship? Are there any barriers to keeping in touch? What would contribute to improving this relationship?
- Have you identified any gaps in the community?

b) Relationship with VCS:

- How is your relationship with the rest of community organisations?
- Are there other [physical activity programmes] in the community you're aware of?
- Have you identified any gaps in the community, in terms of [physical activity services]?

c) Relationship with clinicians:

- Do you have any relationship with GP surgeries?
- 'No'. How do you feel about this?
- 'Yes'. How is your relationship with them?

7. Biographic questions:

- What made you become [advisor, part of this organisations, etc.]?
- What made you apply for this job?
- What did you used to do before working as […]?

7. Closing questions:

- Is there anything that I haven't ask or that you'd like to add?

9.1.4. Qualitative interview guide with SP users

1. Introductory questions

- I wondered if you could tell me when you were referred into social prescribing and by whom?
- Why were you offered social prescribing?
- What activities have you accessed through social prescribing?
- What is it about the service/the SP experience that you have found helpful? What is it about the service that you have liked less, or have found less helpful?

2. Interactions with different stakeholders

a) General practice

- How is your relationship with the clinician who referred you into SP?
- How did they offer social prescribing, do you remember? How did you feel or react when they offered you social prescribing?
- What made you accept it (and go ahead with the referral)?
- What were your initial expectations, when your GP/nurse first spoke to you about this? Did the experience/programme meet these initial expectations?
- Now that you've gone through it, and looking back to that initial conversation, is there anything you would like to have known at that point? Anything you would have found helpful?

b) Link worker

- How has your experience with the link worker been? What did it involve? How is your relationship with them?
- [first contact] How did you first get in touch with them? Once you got in touch what happened next?
- [assessment] I've heard that link workers normally do an initial assessment with patients to explore their needs and provide relevant support, is that the case? How did you feel during that assessment?
- [ongoing plan/progress] And once the assessment was completed what happened next? Did you agree any particular plan/where there any specific recommendations/referrals? How long did you stay in touch with the link worker?
- [feedback] Were you able/Have you been able to feed them back on your progress/how the referral/recommendations worked out? [If "yes"] And how was that? [If "No"] Why? How do you feel about that?
- What is it about the link workers' service that you found helpful? What is it about the link worker's service that you maybe liked less/found less helpful?

c) VCS activities/resources

- What activities did you access? What's been your experience with the service?
- [first contact] How did you first get in touch? Once you got in touch what happened next?
- [activities] What did the activities involve? How long/how often?
- What is it about the activity/service that you found helpful? What is it about the activity/service that you maybe liked less/found less helpful?

3. Questions related to diabetes risk and SP. Our research also aims to explore the potential role of social prescribing on type 2 diabetes prevention:

- You mentioned that you've been told that you are at high risk of developing T2D? Am I right?
- How do you feel about it? How are you coping with the fact of being at high risk?
- [Exploring barriers/constrains for 'healthy' lifestyle] How have you blood sugar levels been lately? [If "good"] How have you managed? Have your blood sugar levels ever been a bit more difficult to control? In what ways/why? [If "bad"] Why? How do you explain this?
- Have you ever shared/discussed about it with your GP/nurse/link worker/activity provider?
- [with link worker] Did you ever speak/have you ever spoken about your high sugar levels with your link worker? Is this something you would like to have addressed/spoken about? Do you think that could have been helpful? In wat ways?
- [with VCS] Were the [activity providers] aware? Is this something you would like to have addressed/spoken about?
- [If the problem was about welfare/debt/housing] And do you think that your housing/debt/benefits issue/situation was affecting or having an impact on your sugar levels? In what sense?
- [If the problem was related to mental health] And do you think that your low mood/anxiety/etc was affecting or having an impact on your sugar levels? In what ways?
- [If the problem was related to lack of exercise/diet/weight loss] And do you think that the lack of exercise/diet was affecting or having an impact on your sugar levels? In what ways? What were the main challenges?
- [If the problem was related to social isolation] And do you think that the loneliness/social isolation [use patients' own words] was affecting or having an impact on your sugar levels? In what ways?
- What is it about the [service/specific activity] that helped you with your diabetes risk? What is it about the link worker's service that you maybe liked less/found less helpful?

4. Closing questions

Is there anything that I haven't ask or that you'd like to add

Appendix 10. Quantitative results (Chapter V)

Table S1. Distribution of clinical characteristics within the total study population and their association with referral into SP

Variables	Total N 447,360 (%)	Events (SP) N 15,454 (%)	Rates per 1000 P/Y	Crude RR (95% CI)	P value	Adjusted RR (95% CI)	P value
Cardiovascular*[a] (IHD, PAD or STIA)	4,926 (1.1)	817 (5.3)	43.1 (40.2-46.1)	4.67 (4.35-5.01)	<0.001	1.42 (1.30-1.54)	<0.001
Hypertension*[b]	19,684 (4.4)	2,540 (16.4)	32.1 (30.9-33.4)	3.79 (3.64-3.96)	<0.001	1.20 (1.14-1.27)	<0.001
Obesity*	68,862 (15.4)	6,008 (38.9)	22.3 (21.8-22.9)	3.15 (3.05-3.26)	<0.001	1.83 (1.76-1.91)	<0.001
Current smoker*	106,379 (23.8)	5,548 (35.9)	13.7 (13.3-14.0)	1.65 (1.60-1.71)	<0.001	1.69 (1.63-1.75)	<0.001
Chronic Kidney Disease*[c]	5,553 (1.2)	775 (5.0)	34.5 (32.2-37.0)	3.72 (3.46-3.99)	<0.001	0.98 (0.90-1.07)	0.723
Respiratory*[d] (asthma or COPD)	40,996 (9.2)	2,954 (19.1)	18.6 (18.0-19.3)	2.16 (2.07-2.25)	<0.001	1.68 (1.60-1.75)	<0.001
Mental health* (mild to severe)	45,241 (10.1)	5,389 (34.9)	32.8 (31.9-33.7)	4.70 (4.54-4.85)	<0.001	3.44 (3.31-3.57)	<0.001
Learning Disability*	1,184 (0.3)	268 (1.7)	56.4 (50.0-63.6)	5.94 (5.27-6.70)	<0.001	5.33 (4.69-6.06)	<0.001
Multimorbidity* (+2)	38,024 (8.5)	5,559 (36.0)	37.5 (36.6-38.5)	5.53 (5.35-5.71)	<0.001	2.90 (2.79-3.02)	<0.001
High risk of T2D*[c]	41,378 (9.3)	5,226 (33.8)	30.8 (29.9-31.6)	4.31 (4.17-4.46)	<0.001	1.33 (1.27-1.39)	<0.001

*Adjusted by variables in level 1: age-band, gender, ethnicity, IMD/SES and year; *[a]Adjusted by variables in level 1 plus obesity, hypertension, high risk of T2D, current smoker and CKD; *[b]Adjusted by variables in level 1 plus obesity and current smoker; *[c]Adjusted by variables in level 1 plus obesity, hypertension, current smoker; *[d]Adjusted by variables in level 1 plus current smoker. SP: Social Prescribing. IHD: Ischemic Heart Disease. PAD: Peripheral Arterial Disease. STIA: Stroke and Transient Ischemic Attack. COPD: Chronic Obstructive Pulmonary Disease.

Table S2. Distribution of clinical characteristics amongst people at high risk of T2D and their association with referral into SP

Variables	Total N 41,378 (%)	Events (SP) N 5,226 (%)	Rates per 1000 P/Y	RR (95% CI)	P value	Adjusted RR* (95% CI)	P value
Cardiovascular*[a] (IHD, PAD or STIA)	3,353 (8.1)	586 (11.2)	43.8 (40.4-47.4)	1.43 (1.31-1.55)	<0.001	1.32 (1.19-1.45)	<0.001
Hypertension*[b]	12,483 (30.2)	1,887 (36.1)	36.3 (34.7-37.9)	1.22 (1.16-1.29)	<0.001	1.07 (0.99-1.14)	0.054
Obesity*	23,433 (56.6)	3,276 (62.7)	35.2 (34.1-36.5)	1.30 (1.23-1.37)	<0.001	1.29 (1.20-1.38)	<0.001
Current smoker*	13,029 (31.5)	1,878 (35.9)	36.1 (34.5-37.8)	1.22 (1.15-1.29)	<0.001	1.40 (1.31-1.49)	<0.001
Chronic Kidney Disease*[c]	3,559 (8.6)	517 (9.9)	34.9 (32.0-38.0)	1.11 (1.01-1.22)	0.024	0.90 (0.81-1.01)	0.053
Respiratory*[d] (asthma or COPD)	6,428 (15.5)	1,177 (22.5)	46.6 (44.0-49.3)	1.60 (1.50-1.71)	<0.001	1.46 (1.36-1.57)	<0.001
Mental health* (mild to severe)	7,846 (18.9)	1,794 (34.3)	59.1 (56.4-61.9)	2.31 (2.18-2.45)	<0.001	2.21 (2.07-2.35)	<0.001
Learning Disability*	256 (0.6)	69 (1.3)	75.8 (59.9-95.9)	2.41 (1.90-3.05)	<0.001	2.79 (2.18-3.58)	<0.001
Multimorbidity* (+2)	16,856 (40.7)	3,034 (58.1)	44.8 (43.3-46.5)	1.98 (1.88-2.10)	<0.001	1.87 (1.75-1.99)	<0.001

*Adjusted by variables in level 1: age-band, gender, ethnicity, IMD/SES and year; *[a]Adjusted by variables in level 1 plus obesity, hypertension, current smoker and CKD; *[b]Adjusted by variables in level 1 plus obesity and current smoker; *[c]Adjusted by variables in level 1 plus obesity, hypertension, current smoker; *[d]Adjusted by variables in level 1 plus current smoker. SP: Social Prescribing. IHD: Ischemic Heart Disease. PAD: Peripheral Arterial Disease. STIA: Stroke and Transient Ischemic Attack. COPD: Chronic Obstructive Pulmonary Disease.

Table S3. Study year, age, and their association with referral to SP within the study population

		Events SP	P/Y	Rates/1000 P/Y (95% CI)	Crude RR (95% CI)	P value
Age-band	18-29	3517	614.8	5.7 (5.5-5.9)	1	
	30-39	3919	555.1	7.1 (6.8-7.3)	1.23 (1.18-1.29)	<0.001
	40-49	3077	221.3	13.9 (13.4-14.4)	2.43 (2.32-2.55)	<0.001
	50-59	2242	105.6	21.2 (20.4-22.1)	3.71 (3.52-3.91)	<0.001
	60-69	1401	53.1	26.4 (25.0-27.8)	4.61 (4.33-4.91)	<0.001
	=>70	1298	54.3	23.9 (22.6-25.2)	4.18 (3.92-4.45)	<0.001
Year	1st (2017)	5057	412.5	12.3 (11.9-12.6)	1.48 (1.33-1.65)	<0.001
	2nd (2018)	2651	349.7	7.6 (7.3-7.9)	0.91 (0.82-1.03)	0.120
	3rd (2019)	2484	310.5	8.0 (7.7-8.3)	0.97 (0.86-1.08)	0.537
	4th (2020)	2627	266.6	9.9 (9.5-10.2)	1.19 (1.06-1.33)	0.003
	5th (2021)	2295	224.0	10.2 (9.8-10.7)	1.24 (1.10-1.39)	<0.001
	6th (2022 Q1)	340	41.0	8.3 (7.5-9.2)	1	

SP: Social Prescribing.

Table S4. Study year, age, and their association with referral to SP amongst patients at high risk of T2D

		Events SP	P/Y	Rates/1000 P/Y (95% CI)	Crude RR (95% CI)	P value
Age-band	18-29	199	7.8	25.5 (22.2-29.3)	1	
	30-39	699	26.0	26.9 (25.0-29.0)	1.06 (0.90-1.24)	0.506
	40-49	1376	47.1	29.2 (27.7-30.8)	1.15 (0.99-1.33)	0.071
	50-59	1201	36.4	33.0 (31.2-34.9)	1.30 (1.12-1.51)	0.001
	60-69	869	24.1	36.1 (33.7-38.5)	1.42 (1.21-1.65)	<0.001
	=>70	882	23.2	38.0 (35.6-40.6)	1.49 (1.28-1.74)	<0.001
Year	1st (2017)	1426	39.1	36.6 (34.7-38.5)	1.24 (1.04-1.48)	0.016
	2nd (2018)	909	35.5	25.6 (24.0-27.3)	0.87 (0.73-1.04)	0.129
	3rd (2019)	981	32.3	30.4 (28.6-32.4)	1.03 (0.86-1.24)	0.724
	4th (2020)	991	28.6	34.7 (32.6-36.9)	1.18 (0.98-1.41)	0.075
	5th (2021)	782	24.6	31.8 (29.7-34.2)	1.08 (0.90-1.30)	0.399
	6th (2022 Q1)	134	4.6	29.4 (24.8-34.9)	1	

SP: Social Prescribing.

Table S5. Association of clinical characteristics with referral into only SP compared to referral into only NDPP amongst patients eligible for NDPP

Referral into SP	**OR (95% CI)**	**P value**	**OR (95% CI)***	**P value**
Cardiovascular*[a] (IHD, PAD, or STIA)	0.95 (0.79-1.13)	0.533	0.93 (0.76-1.14)	0.479
Hypertension*[b]	0.96 (0.86-1.07)	0.473	0.92 (0.80-1.05)	0.201
Obesity*	0.99 (0.89-1.09)	0.785	0.94 (0.82-1.08)	0.377
Current smoker*	1.30 (1.16-1.45)	<0.001	1.57 (1.38-1.78)	<0.001
Chronic Kidney Disease*[c]	0.98 (0.80-1.21)	0.866	0.81 (0.65-1.04)	0.099
Respiratory*[d] (asthma or COPD)	1.78 (1.55-2.04)	<0.001	1.57 (1.35-1.82)	<0.001
Mental health* (mild to severe)	3.25 (2.86-3.69)	<0.001	2.78 (2.42-3.20)	<0.001
Learning Disability*	5.95 (2.67-13.3)	<0.001	6.03 (2.55-14.29)	<0.001
Multimorbidity* (+2)	1.80 (1.63-2.00)	<0.001	1.75 (1.55-1.97)	<0.001

OR comparing referral into only SP with referral into only NDPP (baseline category). **Adjusted by each other *Adjusted by variables in level 1: age-band, gender, ethnicity, IMD/SES and year; *[a]Adjusted by variables in level 1 plus obesity, hypertension, current smoker and CKD; *[b]Adjusted by variables in level 1 plus obesity and current smoker; *[c]Adjusted by variables in level 1 plus obesity, hypertension, current smoker; *[d]Adjusted by variables in level 1 plus current smoker. SP: Social Prescribing. NDPP: NHS Diabetes Prevention Programme. IHD: Ischemic Heart Disease. PAD: Peripheral Arterial Disease. STIA: Stroke and Transient Ischemic Attack. COPD: Chronic Obstructive Pulmonary Disease.

Appendix 11. COMCs developed in the realist mixed-methods evaluation.

Drawing on quantitative data and interviews with patients and service providers (including comparisons with NDPP where possible and relevant), we developed four CMOCs that explain why (and how) accessible, holistic, sustained and integrated SP approaches were key for contributing to T2D prevention in communities at high risk. These four CMOCs are synthesised in Figure 3 and explained in more detail below and in Figure S1:

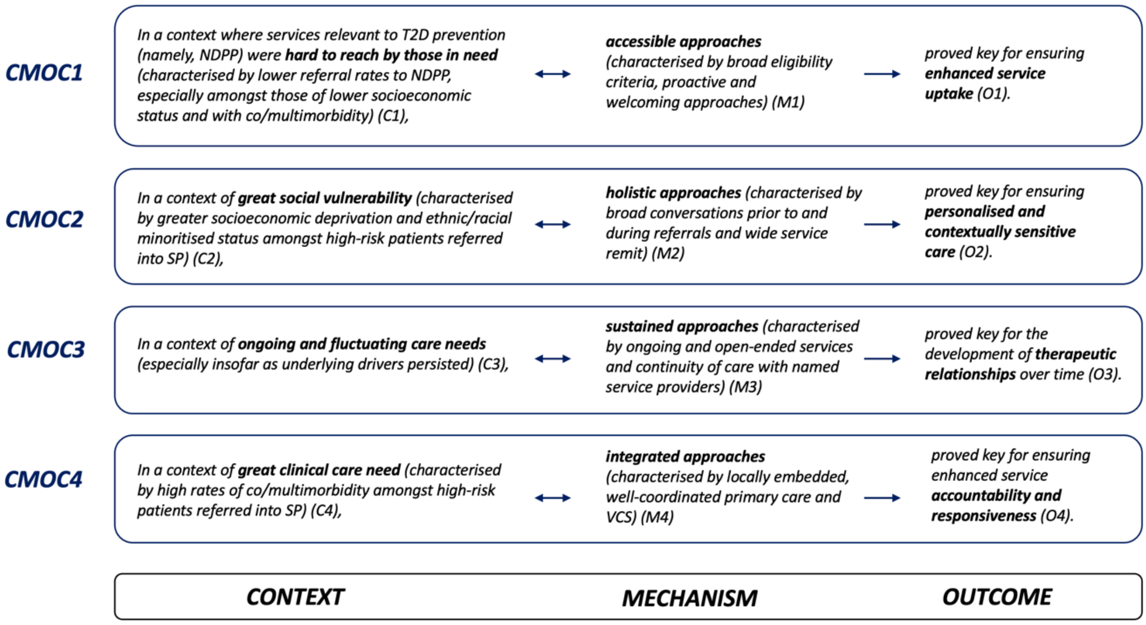
CMOC1: In a context where services relevant to T2D prevention (namely, NDPP) are hard to reach by those in need (characterised by lower referral rates to NDPP, especially amongst those of lower socioeconomic status and with co/multimorbidity) (C), accessible approaches (characterised by broad eligibility criteria, proactive and welcoming approaches) (M) proved key for ensuring enhanced service uptake(O).

CMOC2: In a context of great social vulnerability (characterised by greater socioeconomic deprivation and ethnic/racial minoritised status amongst high-risk patients referred into SP) (C), holistic approaches (characterised by broad conversations prior to and during referrals and wide service remit) (M) proved key for ensuring personalised and contextually sensitive care (O).

CMOC3: In a context of ongoing and fluctuating care needs (especially insofar as underlying drivers persisted) (C), sustained approaches (characterised by ongoing and open-ended services and continuity of care with named service providers) (M) proved key for the development of therapeutic relationships over time (O).

CMOC4: In a context of great clinical care need (characterised by high rates of co/multimorbidity amongst high-risk patients referred into SP) (C), integrated approaches (characterised by locally embedded, well-coordinated primary care and VCS) (M) proved key for ensuring enhanced service accountability and responsiveness (O).

Figure S1. Realist evaluation COMCs



CMOC1

*In a context where services relevant to T2D prevention (namely, NDPP) were **hard to reach by those in need** (characterised by lower referral rates to NDPP, especially amongst those of lower socioeconomic status and with co/multimorbidity) (C1),* ⟷ ***accessible approaches** (characterised by broad eligibility criteria, proactive and welcoming approaches) (M1)* → *proved key for ensuring **enhanced service uptake** (O1).*

CMOC2

*In a context of **great social vulnerability** (characterised by greater socioeconomic deprivation and ethnic/racial minoritised status amongst high-risk patients referred into SP) (C2),* ⟷ ***holistic approaches** (characterised by broad conversations prior to and during referrals and wide service remit) (M2)* → *proved key for ensuring **personalised and contextually sensitive care** (O2).*

CMOC3

*In a context of **ongoing and fluctuating care needs** (especially insofar as underlying drivers persisted) (C3),* ⟷ ***sustained approaches** (characterised by ongoing and open-ended services and continuity of care with named service providers) (M3)* → *proved key for the development of **therapeutic relationships** over time (O3).*

CMOC4

*In a context of **great clinical care need** (characterised by high rates of co/multimorbidity amongst high-risk patients referred into SP) (C4),* ⟷ ***integrated approaches** (characterised by locally embedded, well-coordinated primary care and VCS) (M4)* → *proved key for ensuring enhanced service **accountability and responsiveness** (O4).*