

Acculturation and Suicidal Ideation among Turkish Migrants in the Netherlands

Ozlem Eylem ^{a,b,c*}, İlker Dalğar ^d, Burçin Ünlü İnce ^d, Firdevs Tok ^e, Annemieke van Straten ^{a,b},
Leonore de Wit ^{a,b}, Ad .J.F.M. Kerkhof ^{a,b}, Kamaldeep Bhui ^c

^a *Department of Clinical Psychology VU University, Amsterdam, the Netherlands,* ^b *Amsterdam Public Health, Amsterdam, the Netherlands,* ^c *Wolfson Institute of Preventive Medicine Queen Mary University of London, the United Kingdom,* ^d *Middle East Technical University, Ankara, Turkey,* ^e *Arkin Basis GGZ, Amsterdam, the Netherlands*

*Department of Clinical Psychology, VU University Amsterdam, 1 Van Der Boechorststraat 2B-69, Amsterdam, NL 1081 BT, the Netherlands.

Centre for Psychiatry Wolfson Institute of Preventive Medicine Charterhouse Square
London EC1M 6BQ

Tel: +31 0646136765. E-mail: o.eylem@vu.nl; o.eylem@qmul.ac.uk

Orcid number: 0000-0002-5695-9523

More suicidal ideation and higher rates of attempted suicide are found in Turkish people when compared with the general population in Europe. Acculturation processes and related distress may explain an elevated risk of suicide. The current study investigates the association between acculturation and suicidal ideation among Turkish migrants in the Netherlands. The mediating effect of hopelessness and moderating effect of secure attachment are also examined. A total of 185 Turkish migrants living in the Netherlands were recruited through social media and through liaison with community groups. They completed an online survey including validated measures of suicidal ideation, hopelessness, acculturation and attachment style. Mediation and moderation analyses were tested using bootstrapping. Higher participation was associated with less hopelessness and less suicidal ideation. Greater maintenance of one's ethnic culture was associated with higher hopelessness and higher suicidal ideation. Greater participation was associated with less suicidal ideation particularly amongst those with less secure attachment styles. Turkish migrants who participate in the host culture may have a lower risk of developing suicidal thinking. Participation may protect against suicidal thinking, particularly among those with less secure attachment styles.

Keywords:

Migration, participation, maintenance, secure attachment, hopelessness, Turkish

1. Introduction:

There is a variation in rates and characteristics of suicidal behaviours between and within migrants in Europe. Some of this variation is associated with certain ethnic groups being at special risks for suicidal behaviours (Haigh et al., 2016). Turkish populations are one of the largest migrant populations in Europe whose suicidal behaviour deserves further attention (Bursztein Lipsicas et al., 2012).

Gender and age disparities exist between the Turkish migrants and the native populations from across Europe in the manifestation of suicidal behaviours (Aichberger et al., 2015b). In the Netherlands, people of Turkish descent die because of suicide at a younger age compared to Dutch natives (Turkish men: mean age 32; Turkish women: 32; Dutch men: 48; Dutch women: 51) (Garssen et al., 2006). Turkish immigrant girls (age 10-17) in Germany die more often by suicide than Turkish immigrant males, and the female to male ratio (3:2 among German vs 0:6 among Turkish) is reversed compared to the native German population in this age group in particular (Razum and Zeeb, 2004). There is also an increased risk of suicidal ideation in Turkish adolescents (38.1%) compared to Moroccan (28.9%) and Dutch (17.9%) adolescents (van Bergen et al., 2008). Furthermore, the hospital based registration studies showed that young women of Turkish descent in Germany (Lizardi et al., 2006), in the Netherlands (Burger et al., 2006) and in Switzerland (Brückner et al., 2011) respectively, are more than five times more likely to attempt suicide than German native women (0.51% vs 0.09%) two-three times more likely to attempt suicide than Dutch native women (0.54% vs 0.25%) and three-four times more likely than Swiss native women (0.65% vs 0.17%).

Currently, little is known about how the risk for suicidal behaviours is generated among Turkish migrants. Since migration background is also relevant to other migrant groups, it is perhaps not crucial in explaining the increased suicide risk in Turkish migrants in particular.

Difficulties in acculturation processes might be central to the increased suicidal ideation and attempts (Bhugra, 2004; van Bergen et al., 2012). Acculturation occurs when a culture encounters a dominant alternative culture (Berry, 1997; Brown and Zagefka, 2011). Berry's bi-dimensional model of acculturation suggests that at the psychological level, ethnic groups and individuals involved in the acculturation process face two fundamental issues: The first issue, "cultural maintenance" or bonding social capital, is the wish to linkage to those of one's cultural background and the second issue, "participation" or bridging social capital, is the wish to linkage to those of other majority and minority groups (Brown and Zagefka, 2011).

How the acculturation experiences of an ethnic minority group becomes stressful can be explained through the cultural conflict theory (Bhugra, 2004; Lester, 2008; Lester, 2013). When the perceived pressure to adjust to the majority culture contrasts with the expectations for cultural continuity in minority culture, then these stressful experiences can precipitate suicidal behaviours among members of the minority group. Research in Belgium indicates that Turkish migrants with greater cultural maintenance report more distress in their contact with other minority and majority populations especially when they perceive their ethnic identity as incompatible with the majority culture (Güngör, 2008; Güngör and Bornstein, 2009; Phalet & Schonpflug, 2001). It is known that Turkish migrants in Europe have strong ties with their country of origin (Klock et al., 2017). In line with the cultural conflict theory, it could be argued that greater cultural maintenance among Turkish migrants might leave them more prone to experience distress in their daily interactions with other groups which may precipitate other

suicide risk factors such as hopelessness leading to suicidal behaviours (Baysu et al., 2013; Phalet et al., 2015; van Acker and Vanbeselaere, 2012).

Hopelessness is one of the most heavily studied suicide risk factors (e.g. Lester et al., 1979). It is a cognitive component of depression and is defined as a decrease in positive future expectancies (van Beek, 2013).

Recent research suggests ethnic variability in relation between hopelessness and suicidal behaviours (Polanco-Roman and Miranda, 2013; Durant et al., 2006). For instance, a prospective study on an ethnically diverse sample of migrants indicated that hopelessness was a mediator in the associations between culturally related stressors and suicidal ideation (Polanco-Roman and Miranda, 2013).

In extend, the association between acculturation and suicidal ideation might be moderated by other suicide risk factors such as attachment (e.g. Zeyrek et al., 2009, van Leeuwen et al., 2010).

Attachment refers to the interaction strategies with others in new situations and is derived from the early emotional experience with primary caretakers (Bowlby, 1973; Bartholomew et al., 1991; Lizard et al., 2011). There is a well-established evidence suggesting a link between insecure attachment styles and suicidal behaviours (e.g. Adam et al., 1996; de Jong, 1992; Zeyrek et al., 2009; Stepp et al., 2008).

Attachment has been identified as one of the predictors of particular acculturation dimensions (Bhugra, 2004; van Leeuwen et al., 2010). Theoretically, it could be argued that, attachment styles in early years of life form the basis of our attitudes and adaptation strategies in our in-group and out-group interactions (Hofstra et al., 2005; van Oudenhoven and Hofstra, 2006). Further support for the predictive role of attachment in acculturation comes from both

correlational and prospective studies. For instance, migrants with secure attachment styles were found to be positively oriented to participating in the host country whereas; migrants with dismissive-avoidant attachment styles, appeared to be more positively oriented to maintaining their heritage culture (Handojo, 2000; De Pater et al., 2003; Bakker et al., 2004).

In the present study, we assess the extent of the relationship between acculturation and suicidal ideation among the Turkish migrants in the Netherlands. On the basis of the attachment theory, we assume that attachment style is settled early in life and is an effect modifier increasing or decreasing the risk for suicidal behaviours. Hopelessness on the contrary, is perhaps dependent on the other culture related stressors such as, acculturation (e.g. Polanco-Roman and Miranda, 2013) and functions as a mediator in the associations between the acculturation and suicidal ideation. It is expected that, a more secure attachment style, and greater participation in the host culture is associated with less hopelessness and less suicidal ideation. On the contrary, a less secure attachment style, and greater maintenance of one's ethnic culture is associated with more hopelessness and more suicidal ideation. We investigate the following research questions:

Is there an association between acculturation and suicidal ideation?

Does hopelessness mediate the relationship between acculturation and suicidal ideation?

Does attachment style is an effect modifier of the association between acculturation and suicidal ideation?

2. Method

2.1. Participants

Participants were 185 (114 women, 71 men) Turkish migrants with a mean age of 36 years ($M=36$, $SD = 11.9$, range 18-75). The aim was recruiting 1st and 2nd generation individuals with Turkish descent. The inclusion criteria were: living in the Netherlands, having Turkish ethnic background (i.e. with at least one parent or grandparent born in Turkey), 18 and older, having sufficient command of Dutch or Turkish language and giving informed consent.

2.2. Procedure

The study was approved by the Scientific and Ethical Review Board of the Faculty of Psychology and Education of the VU University Amsterdam (VCWE). The recruitment took place in 2013 and 2014 based on convenience sampling. Participants were recruited through social media and through liaison with community groups. Interested participants contacted the research team through e-mail. Then the information letter, informed consent form and a link to the online questionnaire were shared. Both Turkish and Dutch languages were used during the inclusion process.

2.3. Materials

Participants could choose between the Turkish and the Dutch versions of the questionnaires. Only 8 participants chose the Dutch language. Thus, we couldn't compare those who filled in the Dutch questionnaire with those who filled in the Turkish questionnaire to see if there was any

effect of the language choice (Oyserman, & Lee, 2008). Suicidal ideation was measured through the suicide ideation subscale of the Suicide Probability Scale (SPS; Cull & Gill, 1990) which is a self-report measure for the assessment of an attempted suicide potential in adolescents and adults. The suicide ideation subscale consists of 8 items. Items are scored using a four points scale where 1 refers to 'none or a little of the time' and 4 refers to 'most or all of the time'. Some of the items are: "I think of suicide in order to punish others" and "I feel like dying is better than living like this". The total scores ranged from 8 to 31 in our sample and they can possibly range from 8 to 32 with higher scores indicating higher suicidal thinking. The SPS scale reported good test re-test reliability and internal consistency (Eskin, 1993; Gençöz and Or, 2006; Atli et al., 2009). In our sample the internal consistency of the subscale was good ($\alpha=0.74$).

The level of acculturation was measured through the Lowlands Acculturation Scale (LAS; Mooren et al., 2001). LAS is a structured questionnaire consisting of 25 statements which represent the difficulties that migrants might face. Some of the items are: "I have frequent contact with (Dutch) people" and "It is important to celebrate the (Turkish) traditional fest in the (Netherlands)". On the basis of a six-point Likert scale, item scores range from 1 (not applicable) to 6 (very applicable). The instrument is validated among Turkish migrants living in the Netherlands (Mooren et al. 2001). Because of the purpose of the research questions addressed in this paper, we used the adapted version of the scale which was used by Ünlü İnce and colleagues (Ünlü İnce et al., 2014) measuring participation and maintenance as two independent dimensions. These dimensions were created following the two-dimensionality theory of Berry (Beery, 1997) on the basis of the exploratory factor analysis (Ünlü İnce et al., 2014). The 2 subscales are: participation (measured by 4 items) and maintenance (measured by 11 items). The total score for participation ranges from 4 to 23, and for the maintenance from 11 to 60 with

higher scores indicating a greater degree of participation and maintenance. The new sub scales showed good reliability as chronbach's alpha was 0.86 for both scales in the previous study (Ünlü İnce et al., 2014). In our sample they also had good internal consistency: participation ($\alpha = 0.79$) and maintenance ($\alpha = 0.80$).

Hopelessness was measured thorough the Beck Hopelessness Scale (BHS; Beck et al., 1974). BHS is a 20-item true-false inventory which measures a pessimistic outlook for the future. Some of the items are: 'I don't expect to get what I really want' and 'It is very unlikely that I will get any satisfaction in the future'. Item scores range from 0 to 1 and the total scores can range from 0 to 20 with higher scores indicating a greater degree of hopelessness. The Turkish and Dutch versions of the scale reported good internal consistency and test-retest reliability (Seber et. al., 1993; Brown, 2011). The internal consistency of the scale was also good in our data ($\alpha=0.74$).

Attachment styles were measured through the Attachment style Relationship Questionnaire (RQ; Bartholomew and Horowitz, 1991). RQ consists of 4 items each rated on a scale 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating higher characteristics of the particular attachment style for each item on the questionnaire. The 4 items are: secure (comfortable with intimacy and autonomy), dismissive (counter-dependent), preoccupied and fearful (socially avoidant). For example, the secure attachment item is: "It is easy for me to become emotionally close to others, I am comfortable depending on them and having them depend on me, I don't worry about being alone or having others not accept me" and the dismissive attachment item is: "I am comfortable without close emotional relationships, it is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depended on me". The Turkish and Dutch versions reported good test-retest

reliability and good concurrent validity with the Relationship Scales Questionnaire (Sümer and Güngör, 1999; Griffin and Bartholomew, 1994).

2.4.Data analysis

Descriptive statistics were used to report a gender difference in demographical variables. General Linear Model analysis was conducted to test if two acculturation dimensions, attachment styles and hopelessness were uniquely related with suicidal ideation. The Statistical Package for the Social Sciences (SPSS) version 21 was used for these analyses. Mediation tests between hopelessness, acculturation and suicidal ideation were performed. Interaction between secure attachment, acculturation and suicidal ideation was tested via PROCESS model (Hayes, 2013) using 5000 bootstrapped samples.

3. Results

Means and standard deviations of study variables are provided in table 1. There were no differences between males and females on any of the study variables. The total mean score for suicidal ideation was low ($M=12.64$, $SD= 3.49$) suggesting low suicidal ideation scores among participants in this study. The total mean score on maintenance ($M=42.80$, $SD=8.74$) was higher compared to the total mean score on participation ($M=9.41$, $SD=5.02$), indicating that the cultural maintenance (i.e. the wish to linkage to those of one's cultural background) was possibly more common in the current sample. The total mean score for hopelessness ($M=9.66$, $SD=1.66$) indicates moderate degree of hopelessness (i.e. a decrease in positive future expectancies).

The unique associations between acculturation strategies, attachment styles and hopelessness with suicidal ideation after controlling age and gender were tested with the General Linear Model approach. The results of the test are demonstrated in table 2.

The model accounted for 28% of the variance in participants' suicidal ideation scores. Both acculturation strategies: higher participation ($B=-0.18$, $SE=0.045$, $p<.000$, 95% CI [-0.271, -0.095]) and higher maintenance ($B=-0.07$, $SE=0.03$, $p=0.031$, 95% CI [-0.134, -0.007]) were uniquely associated with lower suicidal ideation. Higher hopelessness was associated with higher suicidal ideation ($B=0.03$, $SE=0.009$, $p<.000$, 95% CI [0.016, 0.050]). Higher secure attachment was associated with lower suicidal ideation ($B=-0.03$, $SE=0.015$, $p=0.024$, 95% CI [-0.062, -0.004]) (see table 2).

3.1. Indirect Associations between Acculturation, Hopelessness and Suicidal Ideation

We have done two separate mediation analyses. For the first, participation was entered as an independent variable; hopelessness was a mediator and suicidal ideation as an outcome. For the second, maintenance was entered as an independent variable, hopelessness as a mediator and suicidal ideation as an outcome. First analysis revealed that, higher participation was significantly associated with lower hopelessness ($B = -1.92$, $SE = 0.34$, $p < 0.001$, 95% CI [-2.58, -1.26]) and higher suicidal ideation ($B = 0.03$, $SE = 0.01$, $p < 0.001$, 95% CI [0.02, 0.05]) (See Figure 1a). The results indicated a significant indirect association between participation and suicidal ideation, ($B = -0.07$, $Boot SE = 0.03$, 95% CI [-0.14, -0.02]). In the second analysis, higher maintenance was significantly associated with higher hopelessness, ($B = 0.59$, $SE = 0.25$, $p = .0203$, 95% CI [0.09, 1.09]) (See Figure 1b). Hopelessness was significantly associated with suicidal ideation after controlling maintenance, ($B = 0.05$, $SE = 0.01$, $p < .001$, 95% CI [0.03,

0.06]). The indirect association between maintenance and suicidal ideation was also significant, ($B = 0.03$, $\text{Boot } SE = 0.02$, $p < 0.001$, 95% $CI [0.01, 0.07]$) indicating that higher maintenance was associated with higher hopelessness and higher suicidal ideation.

3.2. Moderated Associations between Secure Attachment Acculturation and Suicidal Ideation

We performed two separate moderation analyses. For the first analysis, we have entered participation as an independent variable, secure attachment as a moderator and suicidal ideation as an outcome. For the second analysis, maintenance was entered as an independent variable; secure attachment as a moderator and suicidal ideation as an outcome. In the first analysis, the interaction of participation in the host culture with secure attachment was found to be significant, ($B = 0.08$, $SE = 0.02$, $p = 0.0002$, 95% $CI [0.04, 0.12]$). As depicted on Figure 2, the association between higher participation and lower suicidal ideation was stronger particularly among those with less secure attachment ($B = -0.32$, $SE = 0.05$, $p < 0.001$, 95% $CI [-0.42, -0.22]$). The association between higher participation and lower suicidal ideation was weaker for people with more secure attachment ($B = -0.05$, $SE = 0.05$, $p = 0.3039$, 95% $CI [-0.16, 0.05]$). In the second analysis, the interaction between maintenance and secure attachment was non-significant ($B = -0.01$, $SE = 0.02$, $p = 0.3449$, 95% $CI [-0.05, 0.02]$). Thus, secure attachment was an effect modifier only for the association between participation and suicidal ideation indicating that among those with less secure attachment, the more they participate in the host culture, the less they think of suicide.

4. Discussion

The present study indicates that Turkish migrants who actively participate in the host culture may have a lower risk of developing suicidal thinking. Participation may protect against suicidal thinking, particularly among those with less secure attachment styles. Overall, the protective role of participation is in line with the literature suggesting a pathway linking participation in the host country with more social support and resilience against suicidal behaviours among migrants (e.g. Bhui et al., 2012; Schweiter et al., 2006).

The protective role of participation in the host country contradicts with the studies reporting that the strong identification with the heritage culture increases resilience against mental health problems (Pascoe and Richman, 2009). Yet, it is in line with the research suggesting that cultural maintenance increases perceived discrimination and subsequent psychological distress among women of Turkish descent in Germany (Aichberger et al., 2015a). These contradictory findings in the literature highlights two things which might be helpful to understand what makes acculturation protective or a risk enhancement for mental health. First, it is important to know whether the mainstream culture adoption or the cultural continuity is dominant in migrants' lifestyle. Second, the extent of the cultural conflict is relevant. The literature suggests that the greater the disparity between the demands of the host culture and the minority culture, the greater the risk for psychological distress and subsequent mental health problems (Bhugra, 2004).

In the light of the cultural conflict thesis, it could be argued that the present socio-political conditions such as raising political conservatism, nationalism, racism and subsequent discriminatory politics discourages cultural continuity among migrants. Because Turkish migrants have strong ties with their culture of origin (Klock et al., 2017), the perceived pressure

to fit in might lead to opposing cultural maintenance to mainstream culture adoption. Since maintaining traditional cultural values are not welcome on a national level, opposing cultural maintenance might precipitate distress in interactions with other groups, hopelessness and ultimately the risk for suicidal ideation and attempts (Brown and Zagefka, 2011; Phalet et al., 2015; Walker et al., 2008).

The interaction of attachment style, acculturation and suicidal ideation suggests that, those who are less securely attached might be more vulnerable for suicidal ideation especially if they also have higher orientation to maintain their ethnic culture. It is known that the insecure attachment styles are characterized by the sense of unworthiness (unlovability) and the anticipation of rejection by the others (e.g. Bowlby, 1973). At the psychological level, this would mean that the current socio-political context is more likely to precipitate this anticipation of rejection by the other groups. Arguably, engaging in daily social interactions with the members of other minority and majority communities might provide them positive intergroup contacts which would contradict the anticipation of rejection and reduce the risk for suicidal thinking and attempts in return (Phalet et al., 2015; Sheftall, 2010; van Acker and Vanbeselaere, 2011).

One unexpected finding was that, the suicidal ideation scores were low in our sample ($M=12.64$, $SD= 3.49$). This could be due to our sample of middle-aged participants. In cross cultural studies, there is an indication that the percentages for suicidal ideation are comparable between Turkish adolescents and adolescents from Europe (e.g. Slovak = 36.4%; Turkish = 33.8%) (Eskin et al., 2014). However, the percentages for suicidal ideation are higher among the Turkish migrant adolescents (38.1%) compared to Dutch adolescents (17.9%) in the Netherlands (van Bergen et al., 2008). It maybe that with a younger sample, the suicidal ideation scores could have been higher.

Interestingly, the mean scores for hopelessness ($M=9.66$, $SD=1.66$) were high compared to Turkish University student population ($M=4.22$, $SD=4.33$) (Zeyrek et al., 2009), Turkish general population ($M=4.14$, $SD=3.72$) (Eskin, 2017) and Hispanic migrant sample in the US ($M=4.30$, $SD=3.76$) (Dueweke et al., 2015). The low mean scores for suicidal ideation in spite of the high hopelessness scores could be attributed to the possible greater cultural maintenance in our study. Having stronger traditional religious values have been linked with negative attitudes towards disclosing suicidal thoughts amongst the Turkish populations (Eskin, 2003; Eskin, 2004). It maybe that in our sample, disclosing suicidal thoughts was less acceptable than disclosing hopelessness about future because of the shame and stigma attached to publicising suicidal thoughts (Eylem et al., 2016).

In contrast to the one of the persistent trends in research on suicide amongst the migrant communities showing great variation between men and women, our results did not reveal such differences. Gender and age disparities in suicidal behaviours exist in Turkish populations (van Bergen et al., 2018). A study from Germany on suicide prevention campaign for women of Turkish descent (Scholer-Ocak, 2015) reported that the most common reason for thinking of suicide was the conflict with the informal network (e.g. family, partner) concerning the family honour (33.8%) (Scholer-Ocak, 2015). This would mean that the demands for cultural continuity (i.e. maintaining family honour) would be greater among Turkish females which would put them in a vulnerable position for stressful acculturation experiences and suicidal behaviours (e.g. van Bergen et al., 2012). Because of the methodological limitations, this risk group in particular might not be represented in the current study. Future studies must investigate whether different pathways to suicidal behaviours exist among Turkish females and whether there are differences between the first and second generation within this group.

It must be underlined that our results should be understood in accordance with the Berry's bi-dimensional framework which suggests that the acculturation processes are essentially the same for all. One argument against this universalist approach suggests that migrants constantly go through the process of social transformation in line with the changing dynamics of labor forces in highly developed countries (Castles, 2010). This would mean that the process of acculturation is multidimensional and cannot be possibly understood as either migrants participate in the host culture or maintain their heritage culture. It can be both-that is, they can participate in both communities and maintain their heritage culture at the same time. (Borges et al., 2009; Hassan, 1995; Cetin 2015; 2017). The methodological implication of the multidimensional nature of the acculturation construct is, measurement difficulties. The difficulty with measuring acculturation restricts our current understanding of how acculturation is linked with the mental health outcomes (Salant and Lauderdale, 2003). Furthermore, the bi-dimensional model has been criticized for ignoring the dynamics of the intergroup processes central to the acculturation experiences of minority groups as well as majorities in the host country (Brown and Zagefka, 2011; Pettigrew and Trop, 2006). The intergroup relationships perspective suggests that the conflicting acculturation orientations between the minority and the majority groups determines the acculturation experiences of the members of the minority group. The policy towards diversity in the host country is another important contextual determinant of the intergroup relationships and subsequent cultural conflict (Castles, 2010). Future research should take the contextual factors into account and should also investigate if the migrants' interaction with the majority culture can be identified as a protective as well as a risk factor for suicidal behaviours from the viewpoint of the intergroup relations theory.

4.1.Strengths and Limitations:

The current study has various innovations. We have connected attachment styles with Berry`s bi-dimensional acculturation model. Thus, the results indicate that variations in acculturation experiences could be related with attachment styles. This has been previously suggested by previous research (e.g. Hofstra et al., 2005; van Oudenhoven and Hofstra, 2006). Further, the results also provide new insights on how acculturation experiences might hinder social adaptation leaving Turkish migrants more prone to hopelessness for their future, and suicidal thinking.

A further advantage of this study is to study an “at risk” population with constricted reachability (Jansen-Kallenberg et al., 2017). In line with the previous research, it appears that, using multiple channels such as social media and newspapers advertisements in multiple languages are more effective in reaching hard-to-reach populations (Aichberger et al., 2013; Jansen-Kallenberg et al., 2017; Ünlü İnce et al., 2014).

There are several methodological limitations to this study. First of all, the current study is cross-sectional which implies that the findings in this study are only a snapshot of reality. Future studies should utilize prospective designs in order to test a broader hypothesis suggesting a path in which higher participation in the Dutch society might be associated with lower suicidal ideation amongst those who are less securely attached.

Second, the small number of participants with high suicidal ideation scores resulted in low power to detect possible associations and differences. In spite of this limitation, we found strong associations between hopelessness, participation and suicidal ideation in line with the earlier research.

Third, participants were recruited based on a convenience sample. Thus, the sample characteristics might not represent the Turkish migrant population in the Netherlands. It maybe that with a bigger and a representative sample of the Turkish migrant population, higher rates of suicidal ideation and gender differences can be found.

Fourth, the self-selection bias also limits the representativeness of the current sample. Future studies could benefit from adjusting for selection bias in their data analysis (Keeble et al., 2015). Another method is to predict the amount of selection bias by using information from non-respondents (Keeble et al., 2015).

Fifth, only a limited number of risk factors have been measured. Other factors such as socio economic background (i.e. poverty, unemployment) and education level have to be identified to study the association between demographic risk factors such as gender and suicide outcomes (e.g. Bhugra et al., 1999a,1999b,1999c). Future studies should measure demographic characteristics in a bigger sample.

Sixth, the cross-cultural validity of the two new sub-scales: participation and maintenance of the LAS has not been tested. The new sub-scales were created previously by Ünlü İnce and colleagues and showed good reliability (e.g. Chronbach's alpha was 0.86 for both scales) (Ünlü İnce et al., 2014). In our sample, they also showed good reliability (e.g. Chronbach's alpha was 0.79 for participation and 0.80 for the maintenance). Further research investigating cross-cultural validity of the new sub-scales in different populations is needed.

Another notable limitation was the use of a brief self-report to measure attachment styles in the study. In depth structured clinical interviews might give more reliable results compared to self-report measures.

Lastly, we did not study whether the associations between acculturation and suicidal ideation were different between 1st, 2nd and 3rd generation. Different acculturation experiences across generations might be differentially related with the risk factors leading to suicidal ideation (Cetin, 2015; 2017; Klock et al., 2017). Future studies should investigate the differences in the associations between acculturation and suicidal behaviours among first and later generations.

4.2.Implications and Conclusions:

The findings of the current study support the view of healthy culture as the one which adapts to assist people and groups to cope and do better in the world and as such should not be overly rigid or fixed. Participation in the host culture can create opportunities for interactions between groups which would assist group members to adapt to each other. Thus, participation in the host country should be an essential element of national mental health policies. On the part of the psychological service providers, an important clinical implication might be including acculturation as a component in screening and treatment for mental health problems (e.g. depression) and suicidal behaviours. The assessment of acculturation and attachment styles may be useful in identifying high risk profiles of migrants. Awareness of mental health professionals of the acculturation experiences as risk or protective factors for suicidal behaviours should be promoted. This approach might help service providers` engagement in service users` help-seeking process. This is central to improving the provision of psychological services for the Turkish populations as well as other migrant groups. Thus, more attention and prominence should be given to acculturation in migrants in general, and further understanding on how it leads to suicidal behaviours specifically.

Acknowledgements

The corresponding author wishes to acknowledge the contribution of Tineke Fokkema in the revision of the drafts. The author also wishes to thank Marcello Gallucci, Koen Neijenhuijs and Aart Franken for their advice on the analyses and interpretation of the data.

References:

- Adam, K.S., Sheldon-Keller, A.E., West, M. (1996). Attachment organization and history of suicidal behavior in clinical adolescents. *Journal of Consulting and Clinical Psychology*, 64, 264-272.
- Aichberger, M.C., Bromand, Z., Rapp, M.A., Rapp, M.A., Yesil, R., Heredia Montesinos, A. et al., (2015a). Perceived ethnic discrimination, acculturation, and psychological distress in women of Turkish origin in Germany. *Soc Psychiatry Psychiatr Epidemiol*,50:1691–1700.
- Aichberger, M.C., Heredia Montesinos, A., Bromand, Z., Yesil, R., Temur-Erman, S., Rapp, M.A. (2015b). Suicide attempt rates and intervention effects in women of Turkish origin in Berlin. *European Psychiatry*, 30,480-485.
- Aichberger, M.C., Yesil, R., Rapp, M.A., Schlattmann, P., Temur-Erman, S., Bromand, Z. et al., (2013) Surveying migrant populations – methodological considerations: An example from Germany, *International Journal of Culture and Mental Health*, 6:2, 81-95.
- Atli Z., Eskin M., Dereboy C. (2009). The validity and the reliability of suicide probability scale (SPS) in clinical sample. *Klinik Psikiyatri*,12,111-24.
- Bakker, W., Van Oudenhoven, J. P., Van der Zee, K. I. (2004). Attachment styles, personality, and Dutch emigrants' intercultural adjustment. *European Journal of Personality*, 18, 387–404.
- Bartholomew, K., Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, 61, 226–244.

- Baysu, G., Phalet, K., Brown, R. (2013). Relative group size and minority school success: The role of intergroup friendship and discrimination experiences. *British Journal of Social Psychology*, 53, 328-349.
- Beck, A. T., Weissman, A., Lester, D., Trexler, L. (1974). The measurement of pessimism: The Hopelessness Scale. *Journal of Consulting & Clinical Psychology*, 42, 861–965.
- Behrens, K., del Pozo, M.A., Grobhenning, A., Sieber, M., Graef-Calliess, I.T. (2015). How much orientation towards the host culture is healthy? Acculturation style as risk enhancement for depressive symptoms in immigrants. *International Journal of Social Psychiatry*, 61, 498 – 505.
- Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology: An International Review*, 46(1), 5–68.
- Bhugra, D. (2004). Migration and mental health. *Acta Psychiatrica Scandinavica*, 109, 243 – 258 .
- Bhugra, D., Baldwin, D.S., Desai, M., Jacob, K.S. (1999a). Attempted suicide in west London, II. Inter-group comparisons. *Psychological Medicine*, 29, 1131-1139.
- Bhugra, D., Bhui, K., Desai, M., Singh, J., Baldwin, D. (1999b). The Asian cultural identity schedule: an investigation of culture and deliberate self-harm. *International Journal of Methods in Psychiatry Research*, 8, 212-218.
- Bhugra, D., Desai, M., Baldwin, D.S. (1999c). Attempted suicide in west London, I. Rates across ethnic communities. *Psychological Medicine*, 29, 1125-1130.

- Bhui, K.S., Lenguerrand, E. , Maynard , M.J., Stansfeld, S.A., Harding, S. (2012). Does cultural integration explain a mental health advantage for adolescents? *International Journal of Epidemiology*, 41, 791 – 802 .
- Borges, G., Breslau, J., Su, M., Miller, M., Medina-Mora, M.E., Aguilar-Gaxiola, S. (2009) ‘Immigration and Suicidal Behavior Among Mexicans and Mexican Americans’, *American Journal of Public Health* 99(4): 728–33.
- Bowlby, J. (1973). *Attachment and loss. Vol. 2. Separation*. New York, Basic Books.
- Brown, R., Zagefka, H. (2011). The dynamics of acculturation: an intergroup perspective. *Advances in Experimental Psychology*, 44, 129-176.
- Brückner B, Muheim F, Berger, P, Riecher-Rössler A. (2011). Characteristics of suicide attempts among Turkish immigrants living in Basel City – results from the WHO/ EURO-Multicentre study. *Nervenheilkunde*, 30, 517–522.
- Burger, I., van Hemert, A.M., Bindraban, C.A., Schudel, W.J. (2009). Parasuicide in The Hague. Incidences in the years 2000–2004 [in Dutch]. *Epidemiologisch Bulletin*, 40, 2–8.
- Bursztein Lipsicas, C. Makinen, I.H., Wasserman, D., Apter, A., Kerkhof, A., Michel, K. et al. (2012). Gender distribution of suicide attempts among migrant groups in European countries-an international perspective. *European Journal of Public Health*. Advance online publication. doi:10.1093/eurpub/cks029.
- Castles, S. (2010). Understanding global migration: A social transformation perspective. *Journal of Ethnic and Migration Studies*, 36, 1565-1586.

Cetin, U. (2015). Durkheim, ethnography and suicide: Researching young male suicide in the transnational London Alevi-Kurdish community. *Ethnography*, 0, 1–28.

Cetin, U. (2017). Cosmopolitanism and the relevance of ‘zombie concepts’: The case of anomic suicide amongst Alevi Kurd youth. *The British Journal of Sociology*, 68, 145-166.

Cull, J. G., & Gill, W. S. (1990). *Suicide probability scale: Manual*. Los Angeles, Western Psychological Services.

de Jong, M. L. (1992). Attachment, individuation, and risk of suicide in late adolescence. *Journal of Youth and Adolescence*, 21 (3), 357-373.

de Pater, I. E., Van Vianen, A. E. M., Derksen, M. (2003). Het aangaan van hechte relaties en de Cross culturele aanpassing van expatriates: de rol van persoonlijkheid en hechtingsstijl. *Gedrag in Organisaties*, 16, 89–107.

Dueweke, A. R., Hurtado, G., Hoevey, J. D. (2015). Protective psychosocial resources in the lives of Latina migrant farmworkers. *Journal of Rural Mental Health*, 39, 162-177.

Durant, T., Mercy, J., Kresnow, M., Simon, T., Potter, L., Hammond, W. (2006). Racial differences in hopelessness as a risk factor for a nearly lethal suicide attempt. *Journal of Black Psychology*, 32, 285–302.

Eskin, M. (1993). Reliability of the Turkish version of the perceived social support from friends and family scales, scale for interpersonal behavior, and suicide probability scale. *Journal of clinical psychology*, 49 (4), 515-522.

Eskin, M. (1999). Gender and cultural differences in the 12 month prevalence of suicidal thoughts and attempts in Swedish and Turkish adolescents. *Journal of Gender, Culture and Health*, 3, 87-200.

Eskin, M. (2003). A cross cultural investigation of the communication of suicidal intent in Swedish and Turkish adolescents. *Scandinavian Journal of Psychology*, 44, 1-6.

Eskin, M. (2004). The effects of religious versus secular education on suicide ideation and suicidal attitudes in adolescents in Turkey. *Social Psychiatry and Psychiatr Epidemiol*, 39, 536-542.

Eskin, M. (2017). Gençler arasında intihar düşüncesi, girişimi ve tutumları [Attitudes towards suicide, ideation and attempts among young people]. *Türk Psikoloji Dergisi*, 32(80), 93–111.

Eskin, M., Palova, E., Krokavcova, M. (2014). Suicidal behaviour and attitudes in Slovak and Turkish high school students: A cross-cultural investigation. *Archives of Suicide Research*, 18, 58-73.

Eylem, O., van Bergen, D.D., Rathod, S., van Straten, A., Bhui, K. & Kerkhof, A.J.F.M. (2016). Canın Kırılmak ‘crushing life energy’: A qualitative study on lay and professional understandings of suicide and help-seeking among Turkish migrants in the UK and in the Netherlands. *International Journal of Culture and Mental Health*, 9, 1-16.

Garssen, M., Hoogenboezem, H., Kerkhof, A.J.F.M. (2006). Zelfdoding onder migrantengroepen en autochtonen in Nederland [Suicide among migrant groups and natives in the Netherlands]. *Nederlands Tijdschrift voor Geneeskunde*, 150, 2143 – 2149.

- Gençöz, T., Or, P. (2006). Associated Factors of Suicide Among University Students: Importance of Family Environment. *Contemporary Family Therapy*, 28, 261-268.
- Güngör, D. (2008). The meaning of parental control in migrant, sending and host communities: Adaptation or persistence? *Applied Psychology. An International Review*, 57, 397–416.
- Güngör, D., & Bornstein, M.H. (2009). Gender, development, values, adaptation and discrimination in acculturating adolescents: The case of Turk heritage youth born and living in Belgium. *Sex Roles*, 60, 537–548.
- Haigh, M., Kapur, N., Cooper, J. (2016). Suicidal Behaviour Among Ethnic Minorities in England. In van Bergen, D., Montesinos, A.H. & Schouler-Ocak M. (Eds), *Suicidal behaviour of immigrants and ethnic minorities in Europe*. Gottingen, Germany: Hogrefe.
- Handojo, V. (2000). Attachment styles, acculturation attitudes/behaviors, and stress among Chinese Indonesian immigrants in the United States. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 61(4B), 2271.
- Hassan, R. (1995). *Suicide Explained: The Australian Experience*, Victoria: Melbourne University Press.
- Hayes, A.F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. Guilford Publications.
- Hofstra, J., van Oudenhoven, J.P., Buunk, B.P. (2005). Attachment styles and majority members' attitudes towards adaptation strategies of immigrants. *International Journal of Intercultural Relations*, 29, 601-619.

- Jansen-Kallenberg, H., Schulz, H., Kluge, U., Strehle, J., Wittchen, H-U., Wolfradt, U. et al. (2017). Acculturation and other risk factors of depressive disorders in individuals with Turkish migration backgrounds. *BMC Psychiatry*, 17, 1-12.
- Keeble, C., Richard Law, G., Barber, S., Baxter, P.D. (2015). Choosing a method to reduce selection bias: A tool for researchers. *Open Journal of Epidemiology*, 5, 155-162.
- Klock, J., van Tilburg, T. G., Suanet, B., Fokkema, T., Huisman, M. (2017). National and transnational belonging among Turkish and Moroccan migrants in the Netherlands: protective against loneliness. *Eur J Ageing*. doi: 10.1007/s10433-017-0420-9
- Lester, D. (2008). Suicide and culture. *World Cultural Psychiatry Research Review*, 3, 51-68.
- Lester, D., (2013). Culture and Suicide. In Colucci, E., Lester, D., Hjelmeland, H. & Park, B. (2013). *Suicide and Culture: Understanding the Context*. Hogrefee, USA.
- Lester, D., Beck, A. T., Mitchell, B. (1979). Extrapolation from attempted suicides to completed suicides: A test. *Journal of Abnormal Psychology*, 88, 78-80.
- Lizardi, D., Grunebaum, M. F., Burke, A., Stanley, B., Mann, J. J., Harkavy – Friedman, J. et al. (2006). Epidemiologie suizidalen verhaltens von migranten in Deutschland [Epidemiology of suicidal behavior of migrants in Germany]. *Suizidprophylaxe*, 33, 171- 176.
- Lizardi, D., Grunebaum, M.F., Burke, A., Stanley, B., Mann, J.J., Harkavy-Friedman, J. and Oquendo, M. The effect of social adjustment and attachment style on suicidal behaviour. *Acta Psychiatr Scand* 124, 2011, 295–300.
- Mooren, T. T. M., Knipscheer, J. W., Kamperman, A. N., Kleber, R. J., Komproe, I. H. (2001). The Lowlands Acculturation Scale: Validity of an Adaptation Measure Among Migrants in The

Netherlands. *The Impact of War. Studies on the psychological consequences of war and migration*, 49-68. Delft: Eburon.

Noh S, Kaspar V (2003) Perceived discrimination and depression: moderating effects of coping, acculturation, and ethnic support. *Am J Public Health* 93(2):232–238.

Oyserman, D. & Lee, S. W. (2008). Does culture influence what and how we think? Effects of priming individualism and collectivism. *Psychological Bulletin*, 134, 311–342.

Pascoe EA, Smart Richman L. (2009) Perceived discrimination and health: a meta-analytic review. *Psychol Bull*, 135(4):531–554.

Pettigrew, T. F., Tropp, L. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90, 751–783.

Phalet, K., Baysu, G., van Acker, K. (2015). Ethnicity and migration in Europe. *International Encyclopedia of Social and Behavioural Sciences (Second Edition)*, 142-147.

Phalet, K., Schönplflug, U. (2001). Intergenerational transmission of collectivism and achievement values in two acculturation contexts: The case of Turkish families in Germany and Turkish and Moroccan families in the Netherlands. *Journal of Cross Cultural Psychology*, 32, 186–201.

Phalet, K., Schönplflug, U. (2001). Intergenerational transmission of collectivism and achievement values in two acculturation contexts: The case of Turkish families in Germany and Turkish and Moroccan families in the Netherlands. *Journal of Cross Cultural Psychology*, 32, 186–201.

Polanco-Roman, L., Miranda, R. (2013). Culturally-related stress, hopelessness, and vulnerability to depressive symptoms and suicidal ideation in emerging adulthood. *Behavior Therapy*, 44, 75-87.

Razum, O., Zeeb, H. (2004) Suizidsterblichkeit unter Türkinnen und Türken in Deutschland [Suicide mortality among Turks in Germany]. *Nervenarzt*, 75: 1092-1098.

Salant, T., Lauderdale, D.S. (2003). Measuring culture: a critical review of acculturation and health in Asian immigrant populations. *Social Science & Medicine*, 57, 71-90.

Scholer-Ocak, M. (2015) End your silence, not your life: A suicide prevention campaign for women of Turkish origin in Berlin. In: van Bergen D., Heredia Montesinos, A. & Scholer-Ocak, M. editors. Hogrefe Publishing. Germany. p. 173-185.

Schweitzer, R., Melville, F., Steel, Z., Lacherez, P. (2006). Trauma, post-migration living difficulties, and social support as predictors of psychological adjustment in resettled Sudanese refugees. *Australian and New Zealand Journal of Psychiatry*, 40, 179-187.

Seber, G., Dilbaz, N., Kaptanoğlu, C., Tekin, D. (1993). Umutsuzluk ölçeği: Geçerlilik ve güvenilirliği [Hopelessness scale: reliability and validity]. *Kriz Dergisi*, 1, 139-142.

Sheftall, A.H. (2010). Attachment and Suicidality in Adolescents: An Exploration of Mediators and Moderators. Dissertation. The Ohio State University. The United States.

Stepp, S.D., Morse, J.Q. , Kristen, Y.E., Reynolds, S.K., Reed, I.L., Pilkonus, P.A. The role of attachment styles and interpersonal problems in suicide-related behaviors. *Suicide Life Threat Behav* 38,2008,592. doi:10.1521/suli.2008.38.5.592.

Sümer, N., Güngör, D. (1999). Yetişkin bağlanma stilleri ölçeklerinin Türk örneklemi üzerinde psikometrik değerlendirilmesi ve kültürler arası bir karşılaştırma [Psychometric assessment of the adult attachment scale on Turkish sample and a cross cultural comparison]. *Türk Psikoloji Dergisi*, 14, 71–106.

Ünlü İnce, B., Fassaert, T., de Wit, M.A.S., Cuijpers, P., Smit, J., Ruwaard, J. et al. (2014). The relationship between acculturation strategies and depressive and anxiety disorders in Turkish migrants in the Netherlands. *BMC Psychiatry*,14,252. Retrieved from <http://www.biomedcentral.com/1471-244X/14/252>

van Acker, K., Vanbeselaere, N. (2011). Heritage culture maintenance precludes host culture adoption and vice versa. Flemings' perceptions of Turks' acculturation behavior. *Group Processes & Intergroup Relations*,15,133-145.

Van Acker, K., Vanbeselaere, N. Heritage culture maintenance precludes host culture adoption and vice versa: Flemings' perceptions of Turks' acculturation behavior. *Group Processes & Intergroup Relations* 15,2012, 133–145.

van Beek, W. (2013). Future Thinking in Suicidal Patients: Development and Evaluation of a Future Oriented Group Training in a Randomized Controlled Trial. Print Service Ede BV, Ede, The Netherlands.

van Bergen, D., Eylem, O., Tasdelen, A.S., Heredia Montesinos, A. (Forthcoming). Suicidal behavior of young women with a Turkish background. A comparative literature review of studies using hospital samples from Turkey and Europe. Manuscript Submitted for Publication.

- van Bergen, D.D., Smit, J.H., Van Balkam, A.J.L.M., Van Ameijden, E., Saharso, S.(2008). Suicidal ideation in ethnic minority and majority adolescents in Utrecht, the Netherlands. *Crisis*, 29,202 – 208.
- van Bergen, D.D., van Balkom, A.J., Smit, J.H., Saharso, S. (2012). ‘I felt so hurt and lonely’’: Suicidal behaviour in South Asian-Surinamese, Turkish and Moroccan women in the Netherlands. *Transcultural Psychiatry*, 49,69-86. doi:10.1177//1363461511427353.
- Van Leeuwen, N., Rodgers, R., Régner, I. and Chabrol, H. The role of acculturation in suicidal ideation among second-generation immigrants adolescents in France. *Transcultural Psychiatry* 47,2010, 812-833.
- van Oudenhoven, J.P., Hofstra, J. (2006). Personal reactions to ‘strange situations’: Attachment styles and acculturation attitudes of immigrants and majority members. *International Journal of Intercultural Relations*,30,783-798.
- Walker, R.L., Obasi, E.M., Wingate, L.R., Joiner, T.E. (2008). An empirical investigation of acculturative stress and ethnic identity as moderators for depression and suicidal ideation in college students. *Cultural Diversity and Ethnic Minority Psychology*,14,75-82.
- Zeyrek, E.Y., Gençöz, F., Bergman, J., Lester, D. (2009) Suicidality, problem solving skills, attachment style and hopelessness in Turkish students. *Death studies*, 33, 815-827.

Appendices

Table 1. page 29

Table 2. page 30

Figure 1a page 31

Figure 1b page 32

Figure 2 page 33

Table 1.

Table of mean and standard deviation of study variables (N=185)

Variables	Total		Gender			
	(N=185)		Female (N=114)		Male (N=71)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Age	34.00	11.90	33.41	12.34	34.00	11.30
Suicidal Ideation	12.64	3.49	12.53	3.35	12.81	3.72
Level of acculturation						
Participation	9.41	5.02	9.84	5.13	8.72	4.81
Maintenance	42.80	8.74	42.78	9.22	42.83	8.74
Hopelessness	9.66	1.66	9.57	1.69	9.80	1.60
Attachment style						
Secure	5.27	1.72	5.21	1.71	5.37	1.73
Dismissive-Avoidant	3.07	1.93	3.16	1.91	2.91	1.96
Pre-occupied	3.86	1.65	3.89	1.63	3.80	1.70
Fearful	3.13	1.83	3.05	1.83	3.25	1.82

Table 2.

Summary of the general linear model for the study variables associated with suicidal ideation

(N=185)

Variables	ΔR^2	B (95%CI)	SE	<i>p</i>
<i>Adj. R²</i>	0.28			
Age		-0.00 (-0.006, 0.002)	0.00	0.333
Gender		-0.04 (-0.042, 0.137)	0.04	0.293
(Male=1, Female=2)				
Participation		-0.18 (-0.271, -0.095)	0.04	0.000
Maintenance		-0.07 (-0.134, -0.007)	0.03	0.031
Hopelessness		0.03 (0.016, 0.050)	0.00	0.000
Secure		-0.03 (-0.062, -0.004)	0.01	0.024
Dismissive		-0.00 (-0.029, 0.023)	0.01	0.824
Preoccupied		0.00 (-0.024, 0.032)	0.01	0.775
Fearful		0.02 (-0.004, 0.050)	0.01	0.100

Notes: The values are unstandardized regression coefficients (B), their standard errors (SE), and 95% confidence intervals (CI).

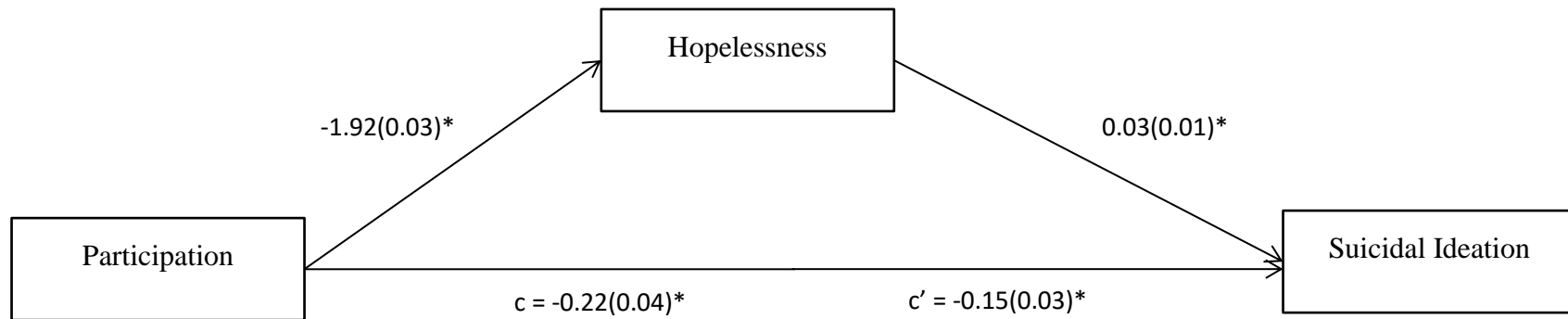


Figure 1a¹. The path analysis indicated a significant indirect association between participation and suicidal ideation ($B = -0.07$, Boot $SE = 0.03$, 95% $CI [-0.14, -0.02]$) through hopelessness. The presented values on the Figure are unstandardized regression coefficients and their standard errors * $p < 0.001$

¹c stands for the total association between independent variable and outcome, whereas c' stands for the direct association between them (i.e., the association between independent variable and outcome after controlling the effect accounted for by mediator).

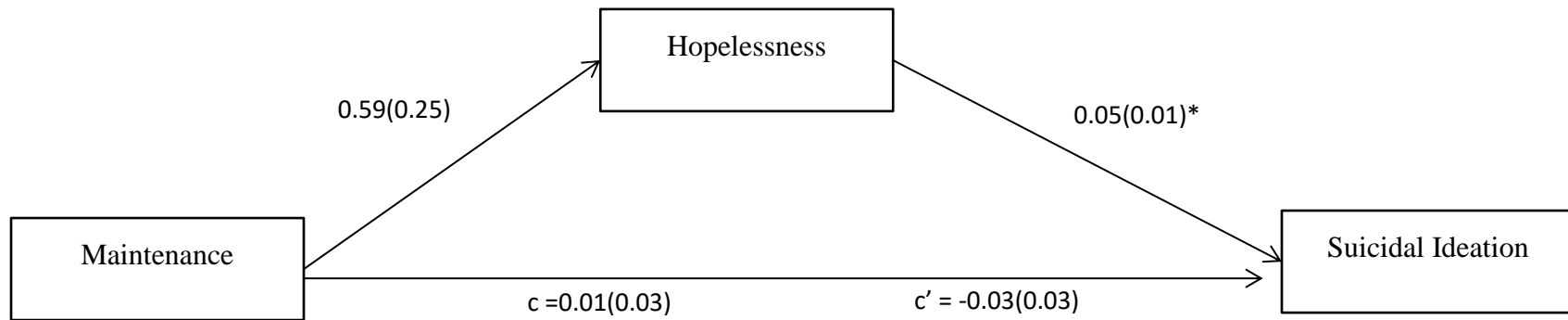


Figure 1b. The path analysis showing an indirect association between maintenance and suicidal ideation ($B = 0.03$, Boot $SE = 0.02$, $p < 0.001$, 95% $CI [0.01, 0.07]$) through hopelessness. The presented values on the Figure are unstandardized regression coefficients and their standard errors $*p < 0.001$

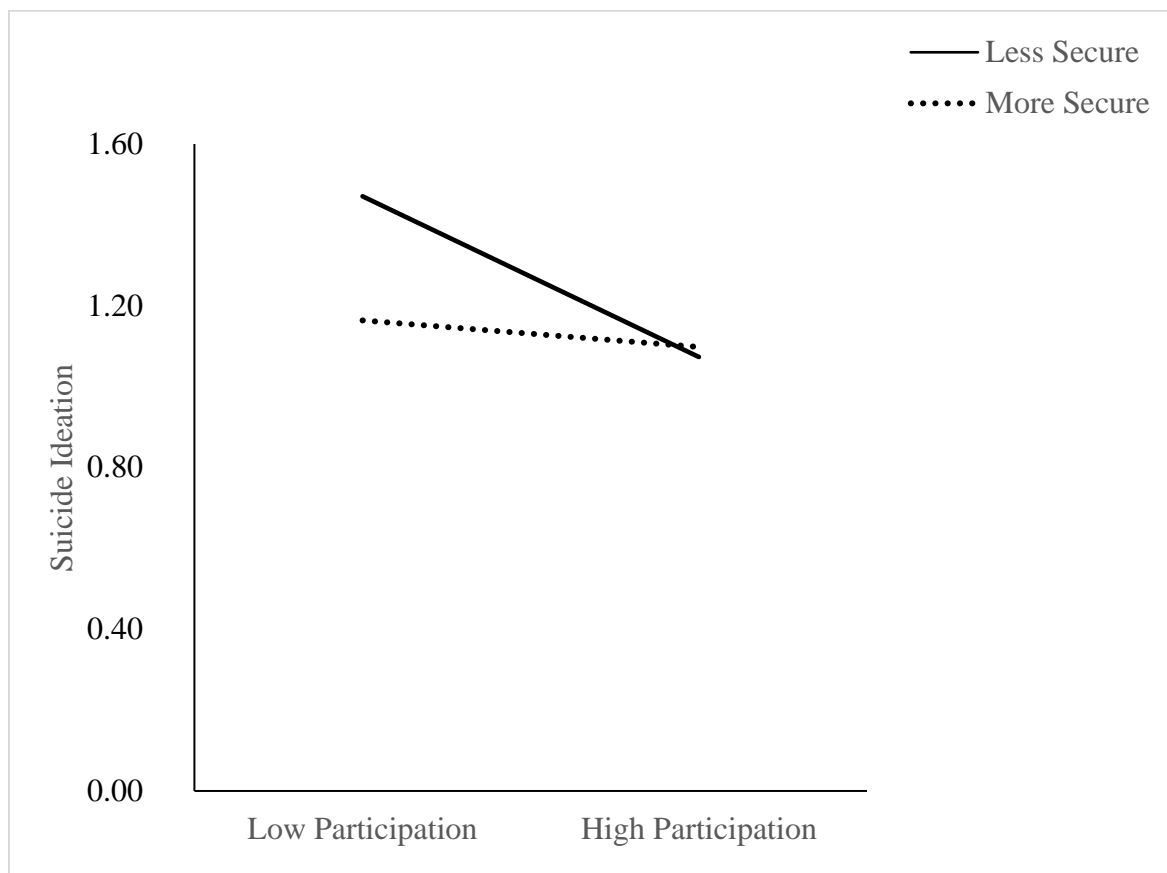


Figure 2. The interaction between participation and suicidal ideation, indicating that the association between higher participation and lower suicidal ideation was stronger particularly amongst people with less secure attachment. Scores of both participation and secure attachment were centred.