Psychotic experiences and emotional problems in relation to discrimination and acculturation

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Abstract

Background: Previous research shows that the prevalence of psychiatric problems is higher for ethnic minority youth compared to native youth. The aim of this study was to examine the differences in prevalence of psychotic experiences (PE's) and emotional problems in ethnic minority youth compared with their Dutch peers. Moreover, we investigated to what extend these differences are explained by acculturation and perceived personal and group discrimination.

Method: This study analyses the data of two cohorts of similar studies. PE's and emotional problems were assessed in a sample of 2374 ethnic minority and majority schoolchildren (*M* age = 13.72, *SD* = 1.43) in the Netherlands. The three biggest ethnic groups in the Netherlands were studied i.e. the Dutch (*n* = 1516), Moroccan-Dutch (*n* = 559) and the Dutch-Turkish (*n* = 299) group. The self-report Strengths and Difficulties Questionnaire and questionnaires on PE, impact, perceived personal and group discrimination and acculturation were used.

Results: Our research showed that the prevalence of PE's, hallucinatory experiences (HLE's) and emotional problems among the Dutch-Moroccan and the Dutch-Turkish group is significantly lower in comparison with the native Dutch group. Assimilation with regard to ethnic identity had the most effect on the development of PE's, HLE's and delusion experiences (DLE's) among Dutch-Moroccan and Dutch-Turkish youth. And perceived personal and group discrimination had a significant effect on the development of PE's, HLE's, DLE's and emotional problems among Dutch, Dutch-Turkish and Dutch-Moroccan youth.

Conclusions:

Assimilation had the most effect and this may be related to identity conflicts, rejecting the heritage culture and adopting the receiving culture in order to be more accepted which can lead to mental health problems due to the identity crisis. Personal discrimination had a stronger effect in comparison with group discrimination on the development of PE's, HLE's, DLE's and emotional problems among Dutch-Turkish and Dutch-Moroccan youth which is in accordance with the minority stress theory. Group discrimination, among Dutch-Moroccans and Dutch-Turkish-youth, is related to better mental health in accordance with the rejection-identification model. Noteworthy is that personal and group discrimination had a strong similar effect among the Dutch youth.

Key words: Child psychiatry, ethnicity, psychosis, emotional problems, risk, schizophrenia.

Introduction

Prevalence studies have shown that one in ten children experience a serious emotional disturbance that has a direct impact on the social, academical and emotional state of the child (Brauner & Stephens, 2006; Costello, Egger & Angold, 2005). Merikangas et al. (2010) found that the overall prevalence of disorders with severe distress was 22.2% (11.2% with mood disorders, 8.3% with anxiety disorders, and 9.6% behaviour disorders). Latest studies have shown that psychotic experiences (PE's) are also common among youth and have an early onset between the childhood and early adolescence (Van Os, 2009). PE's contain positive symptoms like delusion experiences (DLE's) and hallucinatory experiences (HLE's) and negative symptoms like lack of motivation and affective flattening (Heiden & Hafner, 2010). PE's are often described as early symptoms of psychosis, subclinical psychotic symptoms or prodromal symptoms (Van Os et al., 2009). The prevalence of PE's was 17% among 9 to 12-year old children and 7.5% among 13 to 18 year old adolescents (Kelleher et al. 2012).

The prevalences of PE's and other psychiatric symptoms differ for ethnic minorities (Adriaanse, Domburgh, Hoek, Susser, Doreleijers & Veling, 2014, Bourque et al. 2011; Selten, Laan, Kupka, Smeets, & Van Os, 2012; Stevens et al. 2008; Veling et al. 2006). Ethnic minority youth report more PE with high impact and more externalizing problems in comparison with native youth (Adriaanse, Veling, Dorelijers, Domburgh, 2014; Bourque et al., 2011; Bubier & Drabick, 2009; Coid et al., 2008; Costello et al., 2003; Stevens, Pels, Bengi-Arslan, Verhulst, Vollebergh & Crijnen, 2003; Van Oort, Joung, Van der Ende, Mackenbach, Verhulst, Crijnen, 2007; Veling et al., 2006) Extending on this, similar studies show that non-Western minorities, especially Dutch-Moroccan minorities, have a higher risk of developing psychotic disorders and mental health problems in general in comparison with native Dutch youth (Selten et al. 2012; Veling et al. 2006, Bourque et al. 2011; Stevens et al. 2008). Contrary is that ethnic minority youth had less internalizing problems in comparison with the native youth. The explanation for this paradox is that because of the disadvantaged position in society of ethnic minorities they develop an external attribution style to protect themselves against internalizing problems which leads to more externalizing than internalizing problems (Adriaanse et. al., 2014).

There is a wealthy amount of research trying to explain the differences in the prevalence of mental health problems between native youth and non-western ethnic minorities (Adriaanse et. al., 2014; Andriessen et al., 2014; Oha, Yangb, Anglinc & DeVyldera, 2014). One of the most discussed explanations is discrimination. Non-western ethnic minorities experience higher social exclusion and more perceived discrimination in comparison with

native youth. Perceived discrimination is the discrimination the subjects of a study feel and perceive for themselves (Andriessen et al., 2014; Hoogsteder, Schalk-Soekar, & van de Vijver, 2001; Veling & Susser, 2011; Schalk-Soekar, Hoogsteder, & van de Vijver, 2004) and there is a distinction between perceived personal and perceived group discrimination. Perceived personal discrimination is the degree to which someone feels discriminated against personally while group discrimination is the extent to which the group where the person feels they belong to, like ethnicity and religion, is discriminated against (Bourguignon, Seron, Yzerbyt, &, Herman, 2005). Discrimination is known to be a risk factor for developing mental health problems (Warner, 2003; Leff, & Warner, 2006; Veling et al. 2007; Cantor-Graae & Selten, 2005; Sharpley, Hutchinson, Murray, & McKenzie, 2001). Studies show a relationship between discrimination and the incidence of psychotic disorders and conclude that perceived personal and group discrimination increases the incidence of psychotic disorders and is related to an increase of PE's because of the disadvantaged social position (Oha, Yangb, Anglinc & De Vyldera, 2014; Veling et al. 2007). These studies are based on the minority stress theory which means that perceived personal and group discrimination leads to stress, social exclusion and psychological distress (McGarrity, Huebner, & McKinnon 2013). Contrary to this belief is the rejection-identification model from Branscombe, Schmitt and Harvey (1999) which declares that perceived discrimination in general is related to a stronger group identification and can lead to reducing psychological distress and can preserve self-esteem by attributing failures to discrimination rather than to personal defects. However, recent research shows a correlation between perceived personal discrimination and lower self-esteem which can lead to psychological distress whereas perceived group discrimination was related to increased group identification which leads to higher self-esteem and less psychological distress (Armenta & Hunt, 2009).

Another much debated explanation is acculturalization. Acculturalization in its general form is described by Redfield et al.in 1936 as "comprehending those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups." (as described in Broesch, Hadley 2012). There is distinction made between psychological and behavioral acculturalization. Psychological acculturalization is the extent to which a person is emotionally and psychologically attached to the mainstream culture or the heritage culture (Stevens et al., 2004). Berry concludes (1989) that there are four different psychological acculturation strategies. The first strategy is integration. Integration occurs when a person can highly identify with both the heritage and the mainstream culture. Assimilation occurs when

there is high identification with the mainstream culture, but there is also low identification with the heritage culture. Separation is the contrary and means low identification with the mainstream culture and high identification with the heritage culture. Lastly marginalization occurs when there is low identification with both cultures. Behavioral acculturalization, on the other hand, is the extent to which a person behaves accordance to the mainstream culture or the heritage culture. Behaving according to the mainstream culture is equivalent to the use of the mainstream language and according to the heritage culture is using the heritage language in conversations (Paalman et. al., 2013). With behavioral acculturalization, assimilation occurs when especially the mainstream language is used and separation occurs when the heritage language is mainly used.

As mentioned, acculturalization is used as an explanation for the differences in the prevalence of mental health problems between native and non-western ethnic minorities (Berry & Sabatier, 2011; Koneru et al., 2007; Nakash et al., 2012; Sam, 2000; Veen, 2010). Research shows that poor acculturation in general is associated with poor self-reported health and that integration is associated with better adaptation in school and the community and with the most positive psychological well-being in comparison to other acculturation strategies (Berry & Sabatier, 2011). Being integrated means being engaged in two cultures what may lead to developing more dual competencies and broader networks. A broader network can support individuals more when they face problems during the acculturation process (Berry & Sabatier, 2011). Marginalization is related to poorer adaption in school and the community and is also related the least positive psychological well-being (Berry & Sabatier, 2011). Separation and assimilation are related with intermediate outcomes, which means that the outcomes aren't as good as with integration but not as bad as with marginalization (Berry & Sabatier, 2011; Koneru et al., 2007). Research about acculturalization is contradictory and although the main view is that integration is related to a positive psychological well-being (Berry & Sabatier, 2011; Koneru et al., 2007), many studies have different conclusions. For example, integration, in comparison with separation and marginalization, is also associated with increased mental health and internalizing problems, because the subjects felt a social disadvantage despite their integration (Sam, 2000; Veen, 2010). Other studies shows that assimilation is related to mental health problems (Nakash et al., 2012), while Sawrikar and Hunt (2005) found that separation was related to the most severe depressive symptoms among youth. Contrary to all these findings is that acculturation strategies have no influence on behavioral problems (Stevens et al., 2007).

So far most studies examining the relation between mental health and ethnic minorities have focused on the risk factors of the development of psychiatric disorders such as anxiety disorders, depression and schizophrenia (Verhulst et al. as described in Muris, Meesters & Van der Berg, 2003; Juuhl-Langseth, 2014). Most studies focused on the effects of these risk factors on the development of full blown psychotic disorders or mental health problems in general (Berry & Sabatier, 2011; Leff & Warner, 2006; Stevens et al. 2008; Warner, 2003) and just a few studies focus on PE's and emotional problems in relation to acculturation and discrimination. A few studies, researched the PE's between native and ethnic minority youth (Adriaanse et al., 2014 ; Eilbracht et al., 2013 ; Laurens, West, Murray & Hodgins 2008 ; Wigman et al. 2011) but there is little known about which factors cause these differences between native and ethnic minority youth. This study will research the underlying causes of the differences between these prevalences.

The current study will investigate the influence of behavioral and psychological acculturalization and discrimination on the report of PE's, HLE's, DLE's and emotional problems. This study has three goals; (1) to examine the relationship between the psychological acculturation strategies and the report of PE's, HLE's, DLE's and emotional problems among Dutch-Turkish and Dutch-Moroccan children, (2) to examine the relationship between behavioural acculturation and the report of PE's, HLE's, DLE's and emotional problems among Dutch-Turkish and Dutch-Moroccan children and (3) to examine the relationship between perceived personal and group discrimination and the report of PE's, HLE's, DLE's and emotional problems among the Dutch-Turkish and Dutch-Moroccan group.

Based on the literature we expect that integration, compared to separation, marginalization and assimilation, will be related to lesser report of PE's, HLE's, DLE's and emotional problems. We expect with behavioral acculturation, that the more the participants behave like the mainstream culture the lesser they report PE's, HLE's, DLE's and emotional problems. In addition we expect that personal discrimination, based on the minority stress theory (McGarrity, Huebner, & McKinnon 2013) leads to reporting more PE's, HLE's, DLE's and emotional problems, while group discrimination, according to the rejection-identification model (Armenta & Hunt, 2009), is linked to reporting less PE's, HLE's, DLE's and emotional problems.

Methods

Sample

This study analyses the data of two cohorts of similar studies. The studies were approved by the medical ethics committee of the VU University Medical Center. The first cohort was from June 2009 to April 2010. The second cohort was from 2012 to 2015. Both studies approached primary and secondary schools in the Netherlands.

For the first cohort we approached eight primary and ten secondary schools in the Dutch provinces of North Holland, South Holland, Utrecht, Gelderland, North Brabant and Limburg. The schools had different educational levels and we included the last three classes of primary schools and the first three years of secondary schools.

With the second cohort we approached only secondary schools. Thirteen schools, that consisted of 96 first grade classes, participated in this study. The participating schools were located in different parts of the Netherlands, but the most of them were based in urban agglomerations (Amsterdam, Rotterdam, Den Haag, Purmerend, Zaandam, Delft, Eindhoven and Alphen aan de Rijn).

Procedure

The procedure for data collection was similar for both studies. After receiving approval from school administrators, pupils and their parents or primary caregivers received an envelope including a letter of introduction, a description of the study and a passive informed consent form. The parents or primary caregivers of the subjects were asked to sign and return the informed consent form if they refused participation of their children. On a regular school day subjects completed the web-based survey. A trained research assistant introduced the study before the survey and at least two research assistants were accessible in the classroom to answer the questions of the subjects during the survey.

Participants

Participants were pupils of primary and secondary schools and we included in total 3052 participants. The current research only selected the data of the Dutch-Turkish, Dutch-Moroccan and Dutch children which in total consisted of 2374 participants. These three ethnic groups were selected because they belong to the three biggest ethnic groups of the Netherlands[1] and they also had the biggest sample size which results in the most accurate results.

The total sample of cohort one consisted of 1563 participants from eight primary (grades six to eight; children from nine to twelve years old) and ten secondary schools (grades

[1] http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLNL&PA=37325&D1=0&D2=a&D3=0&D4=0&D5=2-4,11,38,46,95-96,137,152,178,182,199,220,237&D6=0,4,8,12,16,l&HD=140523-1106&HDR=T,G2,G3,G5&STB=G1,G4

one to three; children from twelve to fifteen years old) throughout the Netherlands. Using the definitions of Statistics Netherlands, children were categorized as Dutch-Moroccan when they or one or both parents were born in Morocco. In case of parents with two different foreign countries of birth, the mothers' country of birth was used to define the child's ethnic group. From the 1563 participants 400 were categorized as Dutch-Moroccan (202 boys (51%) and 198 girls (49%); *M* age = 12.6, *SD* = 1.5), 171 as Dutch-Turkish (92 boys (54%) and 79 girls (46%); *M* age = 12.7, *SD* = 1.8) and 693 as Dutch (382 boys (55%) and 311 girls (45%); *M* age = 13.2, *SD* = 1.7). Participants with missing data on outcome variables were excluded.

The total sample of cohort two consisted of 1489 participants from thirteen secondary schools. The pupils were aged between 12 and 15 years and the second cohort also used the definitions of Statistics Netherlands to define the ethnicity of the participants. From the 1489 pupils who participated, 159 were categorized as Dutch-Moroccan (68 boys (43%) and 91 girls (57); *M* age = 13.6, *SD* = 0.6), 128 as Dutch-Turkish (60 boys (47%) and 68 girls (53%); *M* age = 13.9, *SD* = 0.6) and 823 as Dutch (391 boys (48%) and 432 girls (52%); *M* age = 13.5, *SD* = 0.6).

Instruments

Psychotic experiences

The presence of PE's in cohort one is measured by the Kiddie-Schedule for Affective Disorders and Schizophrenia (K-SADS) (Kaufman, 1997). The presence of PE's was assessed by eight items, adapted to use in a self-report setting, from the K-SADS (Goodman 1997). These items show high resemblance with items derived from the Diagnostic Interview Schedule for Children (DISC-C), which have been shown to be predictive of adult schizophreniform disorder (Poulton et al., 2000). This questionnaire also measures DLE's and HLE's. For example, an item that measures DLE's is "Have you ever noticed that people can read your mind?" and an item that measures HLE's is "Did you ever hear voices that other people could not hear?". Six items were used to assess DLE's and two items assessed HLE's. Responses were made on a three-point scale (0=not true, 1=yes, likely and 2=yes, definitely). To dichotomize these responses and to generate a sumscore of PE, HLE and DLE, the three-point scale was converted into a two-point scale. The two possible answers were 'zero' and a 'one'. Zero means that all the eight items were scores with a 'not true' on the three-point scale and one means that the eight items were scored with 'yes, likely' or with 'yes, definitely'. Additional questions on the impact of PE's, HLE's and DLE's were administered to measure the impact of the symptoms. Impact was scored on a four-point 'impact'-scale that ranges from not at all to very (possible responses: 0 = not at all, 1=

slightly, 2 = quite, 3 = very). Participants who scored ‘quite’ or ‘very’ on the impact-scale were considered to experience high distress of their symptoms. A sum score of this score was called the total impact-score.

The second cohort used the 16-item Prodrome Screening Self-Report Questionnaire (16-PQ) (Ising, 2012). The 16-PQ is a shorter version of the original questionnaire, the PQ-92, that contains 92 items (Loewy, 2005). This is a self-report screening questionnaire that measures the presence of mild psychotic symptoms. The 16-PQ measures 14 positive symptoms and 2 negative symptoms. This research only used the presence of the positive symptoms of the 16-PQ to calculate a sumscore, the presence of PE, which means that only 14 questions were summed up. Items that measure positive symptoms are for example ‘I have felt that I am not in control of my own ideas or thoughts’ and ‘I feel that parts of my body have changed in some way, or that parts of my body are working differently’. Items that represent negative symptoms are for example ‘I get extremely anxious when meeting people for the first time’ and ‘I feel uninterested in the things I used to enjoy’. The items that measured the positive symptoms contained items that measure the DLE’s (e.g. ‘I often feel that others have it in for me’) and HLE’s (e.g. ‘I have seen things that other people can't see or don't seem to’). Five items assess DLE’s and nine items HLE’s. The participants were asked if the statements that measure the symptoms were true or false and possible answers were ‘one’ meaning true or ‘zero’ meaning false. Each item is followed by an item that measures impact. Impact is scored on a 4-point scale and ranges from not at all to very (0=not at all, 1= slightly, 2=quite, 3= very). Participants who scored ‘quite’ or ‘very’ on the ‘impact’ scale were defined as the participants that experience distress i.e. impact. The 14 items were added up to generate a total PE-score without impact. The scores for impact were summed up for a total impact-score. The current research defined the presence of PE’s as the presence of the symptom with high impact, because the impact distinguishes the normal symptoms from the high risk for developing psychosis among adolescents with symptoms (McGorry, et al., 2010). As described above, impact is present if participants score ‘quite’ or ‘very’ on the impact-scale. To determine a cut-off score of the impact-scale, the method of the SDQ cut-off points was used (Goodman, 1997). This means that 80% of the children on the frequency distribution are categorized as normal while the remaining 20% is described as abnormal and in this case, the remaining 20% experiences impact. To calculate the presence of impact, the sumscore was transformed into a dichotomous variable. Score ‘0’ contained all the sum scores from zero to 80 percent of the frequency distribution. Score ‘1’ was from 80 to 100 percent. Score ‘0’ means that there was no or little impact and no risk for developing the psychotic

symptoms and contained all the scores from zero to five. Score '1' means that there is distress and a risk for developing psychotic symptoms and contains the scores from five to 14.

Emotional problems

The Strengths and Difficulties Questionnaire (SDQ) is used to measure psychosocial symptoms and the current study used the self-report version for adolescents aged between 11 and 16. The SDQ contains 25 items, which explores five domains: hyperactivity/inattention, emotional problems, problems with peers, behavioural problems and pro-social behaviour. This study used the Dutch translation of the SDQ (Widenfelt, B.M., Goedhart, A.W., Treffers, P.D.A., & Goodman, R., 2003) to measure emotional problems. Examples of items that were measured are 'I am nervous in new situations' and 'I easily lose my confidence'. The answers can be scored on a three-point scale (0 = Not true, 1 = Somewhat true and 2 = Certainly true). The general cut-off score of the SDQ is 80%, which means that 80% of the children on the frequency distribution are categorized normal, 10% is categorized as borderline and 10% is categorized as abnormal. Eighty percent of the sample has an average score and the remaining 20% has a raised score and is viewed as abnormal (Goodman, 1997). In our study we maintained the same cut-off scores. To compute a total score, the sumscore was calculated and divided in two scores. Score 0 means that there were no or little emotional problems and score 1 means that there are emotional problems. Score 0 contained all the sum scores from 0 to 80 percent of the frequency distribution. Score 1 contained the scores from 80 to 100 percent. To calculate the presence of emotional problems, the sum score was transformed into a dichotomous variable. Possible answers were '0' which means the absence of emotional problems and '1' is the presence of emotional problems.

Psychological and behavioral acculturalization

To measure psychological and behavioural acculturalization in cohort one and two we used the adapted version of the psychological acculturalization scale (PAS) that was developed by Stevens et al. (2004) to measure the psychological and behavioural acculturalization, culture acquisition and ethnic culture retention. It was developed to assess an individual's sense of emotional attachment to, belonging within and understanding of a particular culture. The PAS measures the connection towards Dutch (e.g. 'I feel at ease with Dutch people'), Moroccan and Turkish people and culture (e.g. 'Moroccan/Turkish people have the same ideas and values as I have') and only the Dutch-Turkish and Dutch-Moroccan participants filled out the PAS. All the items were rated on a five-point scale that ranges from strongly disagree (=1) to strongly agree (=5).

Berry (1997) designed an acculturation framework that contains four different psychological acculturation approaches based on the quadrants of two dimensions. Subjects were classified as high or low on receiving culture acquisition and ethnic culture retention (Schwartz, Unger, Zamboanga, & Szapocznik,, 2010). Assimilation implies a high score on receiving culture acquisition and a low score on ethnic culture retention. Integration means that the subject has a high score on both dimensions. Separation is defined as a low score on receiving culture acquisition and a high score on ethnic culture retention. Lastly, marginalization indicates that both dimensions are rejected by the participants. The two dimensions 'receiving culture acquisition' and 'ethnic culture retention' are in this study referred to as the Dutch PAS (receiving culture acquisition) and the Moroccan or the Turkish PAS (ethnic culture retention). The median scores of the Dutch PAS and the Moroccan or Turkish PAS were calculated to use as cut-off points and to allocate participants into these four categories. For example, participants who scored below the median of the Dutch PAS and above the median of the Moroccan PAS were categorized as connected to the Moroccan people and culture only. This group is referred to as segregated. Participants with a score above the median of both scales were categorized as connected to both Moroccan and Dutch people and culture. This group is called integrated. Those who had a score below the median of both scales were categorized as connected to neither Moroccan nor Dutch people and culture. This group is marginalized. At last, subjects who had a score above the median of Dutch PAS and below the median of Moroccan PAS were classified as connected to only Dutch people and culture. This group is assimilated.

Behavioural acculturalization on the other hand was gauged by studying six items about the use of Dutch, Moroccan or Turkish language (e.g. 'I speak Dutch with my brothers/sisters'). It examines the language that the participants speak and indirect also the ethnic background of the people they interact with. Having a Moroccan behavioral acculturalization means that the participants interact with Moroccan people who they can speak Moroccan to. We asked participants how often they use a certain language when they talk to their parents, siblings or friends. These items were rated on a five-point Likert scale ranging from never to always. Moroccan or Turkish behavioral acculturalization can be classified as the acculturation strategy of separation and Dutch behavioral acculturation on the other hand can be classified as assimilation.

Ethnic identity

Assimilation, integration, marginalization or separation with regard to ethnic identity was assessed with the items 'I consider myself to be Moroccan' and 'I consider myself to be

Dutch'. These items were rated on a five-point Likert scale ranging from totally disagree to totally agree. Subjects were categorized in four groups, 1) separation: I consider myself to be Moroccan, 2) integration: I consider myself to be Moroccan and Dutch, 3) marginalization: I consider myself to be neither Moroccan nor Dutch and 4) assimilation: I consider myself to be Dutch. The same was done for the Turkish youth with the items 'I consider myself to be Turkish' and 'I consider myself to be Dutch'.

Perceived personal and group discrimination

To measure perceived personal and group discrimination in cohort 1 and 2 the discrimination questionnaire from Stevens et al. (2005) was used. For the measurement of perceived personal discrimination the subjects were asked if they ever were felt discriminated against personally. Pupils were asked if they felt discriminated the past year, because of their skin color, origin or religion. The items were dichotomous and pupils could enter if they felt discriminated (1 = yes) or not (0 = no). All answers were summed up to create a total perceived personal discrimination score. A high score on the perceived personal discrimination scale means higher perceived personal discrimination.

For the measurement of group discrimination pupils were asked if their ethnic group is discriminated against at street, at school, in stores or by the police in the Netherlands. Answers were ranging from never to always on a 4-point scale (1=never, 2= sometimes, 3=mostly, 4=always). To create a total perceived group discrimination score all answers were summed up. Higher total scores indicate higher perceived group discrimination.

Data-analyses

Descriptive data were analyzed using the Statistical Package for the Social Sciences version 20 (SPSS Inc., Chicago, IL, USA). Statistical significance was set at $p \leq .05$. One-way ANOVA and the Bonferroni post-hoc analyses were used to examine differences in the presence of PE, HLE, DLE, perceived personal and group discrimination and emotional problems between the Dutch-Moroccan, the Dutch-Turkish and the Dutch group before analyzing the research questions. The dependent variables were the presence of PE, HLE, DLE, perceived discrimination and emotional problems. The independent variable was the ethnicity of the participants, i.e. Dutch-Moroccan, Dutch-Turkish or Dutch. To examine the differences in the acculturation strategies between the Dutch-Moroccan and the Dutch-Turkish group, the independent t-test was used. The dependent variable was the acculturation strategy and the independent variable was ethnicity.

The binary logistic regression analysis was used to examine all the three research questions. For the first research question the logistic regression was used to study the relation

between PE's, HLE's, DLE's, emotional problems and the psychological acculturation strategies integration, separation, marginalization and assimilation. The PE's, PE's, HLE's, DLE's and emotional problems were the dependent variables and the psychological acculturation strategies, such as integration, marginalization, assimilation and separation were the independent variable. The strategy separation was used as a reference group because it has the lowest value of the categorical variable. To test the second research question the logistic regression was used to study the relation between PE's, HLE's, DLE's, emotional problems and the behavioral acculturalization. The PE's, PE's, HLE's, DLE's and emotional problems were the dependent variables and the behavioral acculturalization was the independent variable. The last research question is also tested by the logistic regression and studied the relation between PE's, HLE's, DLE's, emotional problems and perceived personal and group discrimination. The PE's, HLE's, DLE's and emotional problems were the dependent variables and the perceived personal and group discrimination were the independent variable.

Results

Sociodemographic data

Table 1 shows that 2374 students participated in the research. The Dutch-Moroccan group consisted of 559 (23,5%) participants, the Dutch-Turkish group had 299 (12,6%) participants and the Dutch group had 1516 (63,9%). Table 1 also shows that the prevalence of PE, HLE and DLE symptoms was much higher than the prevalence of PE, HLE and DLE with impact. For example, 410 Dutch-Moroccans report one or more PE's, but merely 35 participants report that the PE's causes distress i.e. impact.

Group differences

The group differences (table 1) were tested with the independent t-test and the one-way ANOVA. The independent t-test examined the group differences between the psychological acculturalization strategies and shows that there is a significant difference between the Dutch-Moroccan and the Dutch-Turkish group on integration ($p < 0.001$), marginalization ($p < 0.001$) and assimilation ($p < 0.01$). The Dutch-Moroccan group is more integrated ($M = 0.316$) in comparison with the Dutch-Turkish group ($M = 0.210$). As regards to marginalization and assimilation, the Dutch-Turkish group is more marginalized ($M = 0.402$ cf. $M = 0.312$ among the Dutch-Moroccan group) and is also more assimilated ($M = 0.233$ cf. $M = 0.188$ among the Dutch-Moroccan group) in comparison with the Dutch-Moroccan group. Lastly the independent t-test shows that there is no significant difference between the Dutch-Moroccan and the Dutch-Turkish group on separation.

One-way ANOVA shows that there is no significant difference between the Dutch-Moroccan, Dutch-Turkish and the Dutch group on the report of PE's and DLE's with impact. However a significant difference between the Dutch-Moroccan and the Dutch group was found on reporting PE's ($p < 0.01$) and HLE's ($p = 0.046$). The Dutch group reported more PE's and HLE's in comparison with the Dutch-Moroccan group. There was also a significant difference found on the report of HLE's without impact between the Dutch-Moroccan and the Dutch group ($p < 0.001$) and between the Dutch-Turkish and the Dutch group ($p = 0.02$). The Dutch group reported more HLE's without impact in comparison with the Dutch-Moroccan and the Dutch-Turkish group. A significant difference between the Dutch-Moroccan and the Dutch group was found ($p = 0.12$) on the report of DLE's without impact. This means that the Dutch-Moroccan group reported significantly more DLE's without impact compared to the Dutch group.

The one-way ANOVA also shows that there is a significant difference on perceived personal and group discrimination between all ethnic groups ($p < 0.001$). The Dutch-Moroccan group reports the most perceived personal and group discrimination followed by the Dutch-Turkish group. The Dutch group reported the least personal and group discrimination.

Lastly, the one-way ANOVA shows that there is a significant difference on emotional problems between the Dutch-Turkish and the Dutch group ($p < 0.001$) and between the Dutch-Moroccan and the Dutch group ($p < 0.001$). The Dutch group reported more emotional problems in comparison with the Dutch-Moroccan and the Dutch-Turkish group.

Psychological acculturalization and PE's, HLE's, DLE's and emotional problems.

The effects of the psychological acculturalization strategies on the development of PE's, HLE's, DLE's and emotional problems were tested with a binary logistic regression. Tables 2, 3, 4 and 5 show that the four psychological acculturalization strategies have no significant effect on the report of PE's, DLE's and emotional problems among the Dutch-Moroccan or the Dutch-Turkish group. However the psychological acculturalization strategy integration has a significant effect on the report of HLE's with impact among the Dutch-Moroccan group ($p = 0.035$). This means that the more a Dutch-Moroccan participant is integrated, the more HLE's this participant will report.

Ethnic identity and PE's, HLE's, DLE's and emotional problems.

The relation between ethnic identity and PE's, HLE's, DLE's and emotional problems was tested with the binary logistic regression. Table 2 shows that ethnic identity doesn't have a significant effect on the report of emotional problems but it had a significant effect on the

report of PE's, HLE's and DLE's among the Dutch-Moroccan and the Dutch-Turkish group. Assimilation with regard to ethnic identity had a significant effect on the report of PE's (p = 0.011), HLE's ($p < 0.01$) and DLE's ($p < 0.01$) among the Dutch-Moroccan group. Among the Dutch-Turkish group the regression shows that assimilation with regard to ethnic identity has only a significant effect on the report of PE's (p = 0.029) and that marginalization with regard to ethnic identity has a significance effect on the report of HLE's (p = 0.032). In conclusion, assimilation with regard to ethnic identity has the most effect on the report of the symptoms among the Dutch-Moroccan and the Dutch-Turkish group.

Behavioural acculturalization and PE's, HLE's, DLE's and emotional problems.

Dutch-Moroccan and Dutch-Turkish behavioural acculturalization was tested in relation to PE's, HLE's, DLE's and emotional problems. Results show a significant influence of Moroccan behavioral acculturalization, i.e. separation, on the development of DLE's (p = 0.021) among the Dutch-Moroccan group. The regression also shows that Turkish behavioural acculturalization, i.e. separation, has a significant influence on the development of emotional problems ($p < 0.01$) among the Dutch-Turkish group.

Discrimination and PE's, HLE's, DLE's and emotional problems.

The effects of perceived personal and group discrimination was tested with the binary logistic regression. Tables 2, 3, 4 and 5 show that personal and group discrimination had a significant effect on the report of PE's, HLE's, DLE's and emotional problems among Dutch, Dutch-Turkish and Dutch-Moroccan participants. Results show a significant influence of perceived personal discrimination on the development of HLE's (p = 0.001), DLE's (p = 0.013) and emotional problems (p = 0.016) among the Dutch-Moroccan group. Perceived group discrimination had a significant influence on emotional problems only ($p < 0.001$) among the Dutch-Moroccans. The analyzes show a significant influence of perceived personal discrimination on the development of PE's (p = 0.023), HLE's (p = 0.013) and emotional problems (p = 0.013) among Dutch-Turkish youth. The influence of perceived group discrimination was not significant among the Dutch-Turkish group. The regression also shows that perceived personal discrimination had a significant influence on developing PE's (p = 0.003), HLE's (p = 0.003) and DLE's (p = 0.019) among the Dutch group. Perceived group discrimination had also a significant influence on PE's (p = 0.007), HLE's (p = 0.001) and DLE's ($p < 0.001$). Personal and group discrimination didn't significantly influence emotional problems among the Dutch youth.

Discussion

Summary of findings

The aim of this study was to investigate the influence of behavioral and psychological acculturalization and perceived personal and group discrimination on the report of PE's, including HLE's and DLE's, and emotional problems among Dutch-Turkish, Dutch-Moroccan and Dutch youth. Based on the results the following three conclusions can be drawn. First, we can conclude that the prevalence of PE's, HLE's and emotional problems among the Dutch-Moroccan and the Dutch-Turkish group is significantly lower in comparison with the native Dutch group. Secondly, assimilation with regard to ethnic identity has a strong influence on the development of PE's among the Dutch-Moroccan and the Dutch-Turkish group. The influence of assimilation with regard to ethnic identity had a stronger effect among the Dutch-Moroccans and influenced the development of HLE's and DLE's. Thirdly, there was found that perceived discrimination had a significant effect on the development of PE's, HLE's, DLE's and emotional problems among Dutch, Dutch-Turkish and Dutch-Moroccan youth. There was also a difference found between personal and group discrimination. While perceived personal discrimination had a stronger effect in comparison with group discrimination on the development of PE's, HLE's, DLE's and emotional problems among Dutch-Turkish and Dutch-Moroccan youth, we didn't find this difference among Dutch youth. Both personal and group discrimination had a similar effect on the development on the development of PE's, HLE's and DLE's among the Dutch youth.

Prevalence

Inconsistent with earlier studies is that the prevalence of PE's, HLE's and emotional problems among ethnic minorities is not higher compared to the native Dutch group (Adriaanse, et al., 2014; Bourque et al., 2011; Bubier & Drabick, 2009; Coid et al., 2008; Costello et al., 2003; Stevens, et al., 2003; Van Oort, et al., 2007; Veling et al., 2006). In fact, the Dutch-group report significantly more PE's with impact, HLE's and emotional problems compared to the Dutch-Moroccan and the Dutch-Turkish groups. This finding may show that the ethnicity of the participants doesn't influence the report of PE's, HLE's and emotional problems. Other factors we studied, like discrimination and acculturalization, do have a significant effect on the report of PE's, HLE's and emotional problems. This finding can also be a refutation of the theory that some non-Western cultures and religions can predict the presence of PE's, because the presence of supernatural powers is considered normal in for instance the Turkish or the Moroccan culture (Blom et al. 2010). We found that the cultural background of participants

didn't predict the presence of PE's, HLE's and emotional problems but other factors like discrimination and acculturalization did influence the presence of these symptoms.

Acculturalization

The finding that assimilation has a strong influence on the development of PE's among the Dutch-Moroccan and the Dutch-Turkish group is consistent with research from Nakash et al. (2012) who found that assimilated migrant youth in Israel have the most mental health problems in comparison with the migrant youth with other acculturation strategies. There was found that these youth also reported identity conflicts and that 2nd generation assimilated migrants develop negative stereotypes towards their heritage culture and ethnicity. This leads to rejecting the heritage culture and adopting the Israeli culture in order to be more accepted and increase the social mobility and likelihood. Despite the increasing acceptance, this study shows that rejecting the heritage culture can lead to serious mental health problems due to the identity crisis. This study also emphasizes the importance of testing variables associated with migration like perceived discrimination, because this study shows that assimilation and discrimination lead to severe mental health problems. Noteworthy is that assimilation has the strongest effect among the Dutch-Moroccan group where it had also a significant effect on the development of HLE's and DLE's. Our analyses and studies (Veling et al, 2007; Schalk-Soekar, Hoogsteder, & van de Vijver, 2004) show that the Dutch-Moroccan group experiences the most perceived personal and group discrimination compared to Dutch group and even the Dutch-Turkish group. Our research corresponds to the research of Nakash (2012) because of the high level of perceived discrimination amongst the Dutch-Moroccan and Dutch-Turkish groups and the negative stereotypes towards their heritage culture.

Inconsistent with our expectations and previous research is that integration has an influence on reporting the impact of HLE among Moroccan youth. This was not what we were expecting, but can be explained by discrimination. Participants that are more discriminated develop more HLE and more social disadvantage despite the fact that they are integrated. Among Moroccan youth integration has a significant influence on reporting the impact of HLE's. Our research shows that integration increases the impact of HLE's and this finding is contradictory to earlier research from Berry and Sabatier (2011) and from Koneru et al. (2007) who found that integration is related with better adaptation at school and in the community what leads to a better mental health and better self-esteem. On the other hand, our research is consistent with the studies of Sam (2000) and Veen (2010) who both concluded that integration was related with increased mental health problems because integrated youth experience social disadvantages despite of their level of integration.

Discrimination

The outcomes concerning discrimination were in accordance with our expectations and many studies concluded that discrimination in general is a risk factor for developing mental health problems (Warner, 2003; Leff & Warner, 2006; Veling et al. 2007; Cantor-Graae & Selten, 2005; Sharpley, 2001). Our research however has distinguished between personal and group discrimination. We found that perceived personal discrimination had a stronger effect in comparison with group discrimination on the development of PE's, HLE's, DLE's and emotional problems among Dutch-Turkish and Dutch-Moroccan youth. According to the minority stress theory, we found that personal discrimination leads to severe mental health problems (McGarrity, Huebner, & McKinnon 2013).We also found that group discrimination, among Dutch-Moroccans and Dutch-Turkish-youth, is related to better mental health in comparison with the perceived personal discrimination. Group discrimination only effected the development of emotional problems among Dutch-Moroccan youth and it didn't effect PE's, HLE's and DLE's among both groups. This is in accordance with the rejection-identification model (Armenta & Hunt, 2009) stating that group discrimination strengthens the in-group identification, which may act as a protection for the development of mental health problems. The mechanism behind this theory is that defaults are attributed to group discrimination rather than to personal defects.

Noteworthy was that we didn't find this difference between personal and group discrimination among Dutch youth. Both personal and group discrimination had a strong similar effect on the development on the development of PE's, HLE's and DLE's. Our research showed that the Dutch youth is more affected by discrimination and that discrimination has a strong influence on developing PE's, HLE's, DLE's and emotional problems. This is exceptional because Dutch youth belong to the majority group of the Netherlands and Dutch-Moroccan and Dutch-Turkish youth report more perceived personal and group discrimination than the Dutch youth. An explanation for this phenomenon is that because the Dutch group is the majority, they are not used to getting discriminated. Another explanation is that belonging to the majority group of the Netherlands doesn't mean that the majority group in the classroom is also Dutch. The schools that participated in our research were mainly schools in big cities where there is a variety of ethnicity and it may occur that being Dutch means that you belong to the ethnic minority of the classroom. The conclusion we can draw is that discrimination is about social exclusion and everyone can experience social exclusion. It can have adverse effects on everyone and is not bound to ethnicity.

Strengths and limitations

This research has several strengths as well as limitations. A strength of this study is the large number of participants (n = 2374) and more specifically, a large number of ethnic minority youth (n = 858) which results in higher validity. Another strength is that participants filled the surveys simultaneously with the whole class, which can increase the feeling of being more anonymous and can lead to more valid and reliable answers (Adriaanse, et al., 2014). Lastly, this study used reliable, valid and widely used surveys and focused on the underlying causes of the differences between native and ethnic minority groups.

The first limitation of this study is that even though the number of participants is high, the groups are not equally in size. The Dutch group consisted of 1516 participants, the Dutch-Moroccan group had 559 participants and the Dutch-Turkish group had 299 participants which was in comparison small which is why the results should be interpreted cautiously. Secondly, the surveys we used, like the16-PQ, K-SADS and the PAS, are developed in Europe and there is no research about whether the questionnaires can be used for ethnic minority groups like the Dutch-Moroccan and Dutch-Turkish youth in the Netherlands. The SDQ, however, has been validated among ethnic minorities in the Netherlands (Mielo, et al., 2014). Thirdly, we only tested PE once while PE can change over time especially in fluctuating times like puberty, childhood and adolescence (Adriaanse et al, 2014). Wigman et al., (2011) showed that consistent or increasing PE leads to more reliable and valid predictions of psychotic disorders. Fourthly, this study didn't investigated the relation between the different variables like acculturation and discrimination and whether there is a moderating or mediating effect between this variables. It may be that acculturalization only effects PE's if there is discrimination. Further research can focus on the type of the acculturalization strategy and the report of perceived discrimination among a certain group. In that way, there can be a broader view of the acculturalization and the mediating or moderating effects of discrimination.

Conclusion

This study investigated the effects of acculturalization and discrimination on the report of PE's, HLE's, DLE's and emotional problems. Our research showed that the prevalence of PE's, HLE's and emotional problems among the Dutch-Moroccan and the Dutch-Turkish group is significantly lower in comparison with the native Dutch group. Assimilation had the most effect on the development of PE's, HLE's and DLE's among Dutch-Moroccan and Dutch-Turkish youth. This may be related to identity conflicts, rejecting the heritage culture and adopting the receiving culture in order to be more accepted which can lead to mental health problems due to the identity crisis. Perceived personal and group discrimination had a

significant effect on the development of PE's, HLE's, DLE's and emotional problems among Dutch, Dutch-Turkish and Dutch-Moroccan youth. Personal discrimination had a stronger effect in comparison with group discrimination on the development of PE's, HLE's, DLE's and emotional problems among Dutch-Turkish and Dutch-Moroccan youth. According to the minority stress theory, we found that personal discrimination leads to severe mental health problems. We also found that group discrimination, among Dutch-Moroccans and Dutch-Turkish-youth, is related to better mental health in comparison with the perceived personal discrimination. This is in accordance with the rejection-identification model stating that group discrimination strengthens the in-group identification, which may act as a protection for the development of mental health problems and that defaults are attributed to group discrimination rather than to personal defects. Noteworthy is that personal and group discrimination had a strong similar effect among the Dutch youth and our research showed that they are more affected by discrimination in comparison with Dutch-Moroccan and Dutch-Turkish-youth. This shows that discrimination is about social exclusion, can have adverse effects on everyone and is not bound to ethnicity.

Table 1
Demographic characteristics of the sample

	Dutch-Moroccan group *N*=559	**Dutch-Turkish group** *N*=299	**Dutch group** *N*=1516	**Group differences**		
	n(%)	*n*(%)	*n*(%)	*F*-value	*p* - value	Significant Post Hoc Findings
Gender						
Boys	270 (48.3)	152 (50.8)	773 (51.0)			
Girls	289 (51.7)	147 (49.1)	743 (49.0)			
Age (mean)	12.89	13.22	13.37			
PE						
Yes one or more PE's: *n* (% of total)	410 (73.3)	239 (79.9)	1208 (79.6)	1,053 (*df* = 2)	,349	n.s.
Impact with regard to PE's: *n* (% of those who report a PLE)	35 (8.5)	19 (7.9)	162 (13.4)	5.,902	**,003***	D > DM (*p* < 0.01)
HLE:						
Yes one or more HLE's: *n* (% of total)	210 (37.6)	148 (49.5)	813 (53.6)	16,856	**,000***	D > DM (*p* < 0.001) D > DT (*p* = 0.02)
Impact with regard to HLE's: *n* (% of those who report a HLE)	26 (12.4)	15 (10.1)	117 (14.4)	3,660	**,026***	D > DM (*p* = 0.046)
DLE						
Yes one or more DLE's: *n* (% of total)	387 (69.2)	207 (69.2)	1104 (72.8)	4,341	**,013***	DM > D (*p* = 0.12)
Impact with regard DLE's: *n* (% of those who report a DLE)	40 (10.3)	18 (8.7)	103 (9.3)	,207	,813	n.s.
				F-value	*p*- value	T- value
Psychological acculturation						
Separation	99 (17.7)	46 (15.4)	/	3,026 (*df* = 848)	,082	,860
Integration	175 (31.3)	62 (20.7)	/	50,937 (*df* = 848)	**,000***	3,314

Marginalization	176 (31.4)	119 (39.8)	/	19,557 (*df* = 848)	**,000***	-2,467
Assimilation	104 (18.6)	69 (23.1)	/	9,413 (*df* = 848)	**,002***	-1,566
Ethnic identity						
Separation with regard to ethnic identity	256 (45.8)	170 (56.8)	/			
Integration with regard to ethnic identity	168 (30.0)	81 (27.1)	/			
Marginalization with regard to ethnic identity	62 (11.1)	33 (11.0)	/			
Assimilation with regard to ethnic identity	68 (12.2)	12 (4.0)	/			
Discrimination						
Perceived personal discrimination: mean (*sd*)	0.5 (0.9)	0.3 (0.6)	0.1 (0.3)	102,047	**,000***	DM > DT and D($p < 0.001$) DT > D ($p < 0.001$)
Perceived group discrimination: mean (*sd*)	6.8 (2.8)	5.9 (2.4)	4.8 (1.5)	213,822	**,000***	DM > DT and D ($p < 0.001$) DT > D ($p < 0.001$)
Emotional problems n (% of total)	29 (5.2)	15 (5.0)	175 (11.5)	13,612	**,000***	D > DM and DT ($p < 0.001$)

Notes: n.s. = non-significant, D = Dutch group, DM = Dutch-Moroccan group and DT = Dutch-Turkish group

Table 2
Binary logistic regression model of acculturation, discrimination and PE impact.

	Dutch-Moroccan		**Dutch-Turkish**		**Dutch**	
	OR (95% CI)	Wald (*P* –value)	OR (95% CI)	Wald (*P* –value)	OR (95% CI)	Wald (*P* –value)
Psychological acculturation x PE impact						
Separation - reference group						
Integration	1.4 (0.5-4.0)	0.3 (0.559)	0.7 (0.2-3.0)	0.2 (0.648)	/	/
Marginalization	1.3 (0.4-3.8)	0.2 (0.641)	0.4 (0.1-1.5)	1.9 (0.166)	/	/
Assimilation	1.1 (0.3-3.9)	0.1 (0.809)	1.2 (0.3-4.2)	0.1 (0.815)	/	/
Ethnic identity x PE impact						
Separation with regard to ethnic identity - reference group						
Integration with regard to ethnic identity	1.6 (0.7-3.4)	1.3 (0.258)	0.6 (0.2-2.2)	0.6 (0.442)	/	/
Marginalization with regard to ethnic identity	1.0 (0.3-3.4)	0.1 (0.946)	1.5 (0.4-5.8)	0.4 (0.549)	/	/
Assimilation with regard to ethnic identity	4.8 (1.4-16.1)	**6.4 (0.011)***	5.0 (1.2-21.6)	**4.7 (0.029)***	/	/
Behavioral acculturation x PE impact						
Moroccan/Turkish behavioral acculturation – separation	0.9 (0.8-1.0)	1.5 (0.220)	0.9 (0.8-1.1)	1.1 (0.285)	/	/
Dutch behavioral acculturation – assimilation	0.9 (0.8-1.1)	0.7 (0.387)	0.9 (0.8-1.1)	1.0 (0.307)	/	/

Discrimination x PE impact						
Perceived personal discrimination	1.5 (1.1-2.1)	**6.6 (0.010)***	1.9 (1.1-3.4)	**5.1 (0.023)***	1.7 (1.2-2.4)	**8.7 (0.003)***
Perceived group discrimination	1.1 (0.9-1.2)	0.2 (0.662)	1.1 (0.9-1.3)	1.3 (0.258)	1.1 (1.0-1.2)	**7.4 (0.007)***

Table 3
Binary logistic regression model of acculturation, discrimination and HLE impact.

	Dutch-Moroccan		**Dutch-Turkish**		**Dutch**	
	OR (95% CI)	Wald (*P* –value)	OR (95% CI)	Wald (*P* –value)	OR (95% CI)	Wald (*P* –value)
Psychological acculturation x HLE impact						
Separation - reference group						
Integration	0.2 (0.1-0.9)	**4.5 (0.035)***	1.1 (0.2-7.1)	0.0 (0.890)	/	/
Marginalization	0.9 (0.3-2.4)	0.1 (0.803)	1.6 (0.3-7.8)	0.3 (0.562)	/	/
Assimilation	0.7 (0.2-2.1)	0.5 (0.486)	0.7 (0.1-4.8)	0.2 (0.680)	/	/
Ethnic identity x HLE impact						
Separation with regard to ethnic identity - reference group						
Integration with regard to ethnic identity	1.7 (0.7-4.4)	1.4 (0.236)	2.1 (0.6-7.6)	1.4 (0.239)	/	/
Marginalization with regard to ethnic identity	1.4 (0.4-5.1)	0.2 (0.637)	4.5 (1.1-17.7)	**4.6 (0.032)***	/	/
Assimilation with regard to ethnic identity	7.3 (2.1-25.9)	**9.5 (0.002)***	3.0 (0.3-27.6)	0.9 (0.340)	/	/
Behavioral acculturation x HLE impact						
Moroccan/Turkish behavioral acculturation – separation	0.9 (0.8-1.0)	3.1 (0.078)	1.0 (0.8-1.2)	0.2 (0.641)	/	/
Dutch behavioral acculturation – assimilation	1.1 (0.9-1.2)	0.4 (0.515)	1.1 (0.9-1.5)	0.9 (0.332)	/	/

Discrimination x HLE impact						
Perceived personal discrimination	1.8 (1.3-2.5)	**10.7 (0.001)***	2.1 (1.2-3.8)	**6.1 (0.013)***	1.8 (1.2-2.6)	**8.8 (0.003)***
Perceived group discrimination	1.1 (0.9-1.2)	0.8 (0.362)	1.1 (1.0-1.3)	2.1 (0.151)	1.2 (1.1-1.3)	**12.1 (0.001)***

Table 4
Binary logistic regression model of acculturation, discrimination and DLE impact.

	Dutch-Moroccan		**Dutch-Turkish**		**Dutch**	
	OR (95% CI)	Wald (*P* – value)	OR (95% CI)	Wald (*P* – value)	OR (95% CI)	Wald (*P* –value)
Psychological acculturation x DLE impact						
Separation - reference group						
Integration	1.1 (0.4-3.1)	0.1 (0.815)	0.9 (0.2-3.7)	0.0 (0.927)	/	/
Marginalization	1.4 (0.5-3.6)	0.4 (0.552)	0.4 (0.1-1.5)	1.9 (0.171)	/	/
Assimilation	1.1 (0.4-3.4)	0.0 (0.860)	0.8 (0.2-3.2)	0.1 (0.777)	/	/
Ethnic identity x DLE impact						
Separation with regard to ethnic identity - reference group						
Integration with regard to ethnic identity	1.4 (0.6-2.9)	0.6 (0.426)	1.4 (0.5-4.1)	0.4 (0.526)	/	/
Marginalization with regard to ethnic identity	1.4 (0.5-3.8)	0.3 (0.563)	0.6 (0.1-4.5)	0.3 (0.579)	/	/
Assimilation with regard to ethnic identity	5.6 (1.8-17.3)	**9.0 (0.003)***	3.5 (0.7-18.6)	2.2 (0.136)	/	/
Behavioral acculturation x DLE impact						
Moroccan/Turkish behavioral acculturation – separation	0.9 (0.8-1.0)	**5.4 (0.021)***	1.0 (0.8-1.2)	0.1 (0.815)	/	/
Dutch behavioral acculturation – assimilation	0.9 (0.8-1.1)	1.0 (0.323)	0.9 (0.7-1.0)	2.6 (0.106)	/	/

Discrimination x DLE impact						
Perceived personal discrimination	1.5 (1.1-2.0)	**6.2 (0.013)***	1.4 (0.7-2.6)	0.8 (0.367)	1.6 (1.1-2.5)	**5.5 (0.019)***
Perceived group discrimination	1.0 (0.9-1.1)	0.1 (0.722)	1.1 (0.9-1.3)	0.3 (0.578)	1.2 (1.1-1.3)	**12.5 (0.000)***

Table 5
Binary logistic regression model of acculturation, discrimination and emotional problems.

	Dutch-Moroccan		**Dutch-Turkish**		**Dutch**	
	OR (95% CI)	Wald (*P* –value)	OR (95% CI)	Wald (*P* –value)	OR (95% CI)	Wald (*P* –value)
Psychological acculturation x Emotional problems						
Separation - reference group						
Integration	1.1 (0.3-3.9)	0.0 (0.837)	1.5 (0.3-8.7)	0.2 (0.639)	/	/
Marginalization	1.4 (0.4-4.7)	0.4 (0.554)	0.6 (0.1-3.5)	0.4 (0.544)	/	/
Assimilation	1.2 (0.3-4.6)	0.1 (0.791)	1.4 (0.2-7.7)	0.1 (0.733)	/	/
Ethnic identity x Emotional problems						
Separation with regard to ethnic identity - reference group						
Integration with regard to ethnic identity	2.4 (1.0-6.0)	3.7 (0.053)	0.7 (0.1-3.5)	0.2 (0.657)	/	/
Marginalization with regard to ethnic identity	2.6 (0.8-8.1)	2.8 (0.094)	2.7 (0.6-11.5)	1.9 (0.171)	/	/
Assimilation with regard to ethnic identity	3.7 (0.7-18.2)	2.5 (0.112)	5.5 (1.0-30.6)	3.7 (0.053)	/	/
Behavioral acculturation x Emotional problems						
Moroccan/Turkish behavioral acculturation – separation	1.0 (0.8-1.1)	0.5 (0.492)	0.7 (0.6-0.9)	**8.6 (0.003)***	/	/
Dutch behavioral acculturation – assimilation	0.9 (0.8-1.1)	1.5 (0.213)	1.1 (0.8-1.4)	0.4 (0.536)	/	/

Discrimination x Emotional problems						
Perceived personal discrimination	1.5 (1.1-2.2)	**5.9 (0.016)***	2.2 (1.2-3.8)	**6.2 (0.013)***	0.9 (0.6-1.5)	0.1 (0.739)
Perceived group discrimination	1.2 (1.1-1.4)	**14.3 (0.000)***	1.1 (0.9-1.3)	0.9 (0.354)	1.1 (1.0-1.2)	2.8 (0.094)

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