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Chapter 4

Risk and Protective Factors for Psychiatric Symptoms and Psychiatric Disorders in Ethnic Minority Youth

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ABSTRACT

While ethnic diversity is increasing in many countries, ethnic minority youth is less likely to be reached, effectively treated and retained by youth mental health care compared to majority youth. Improving understanding of risk and protective factors for mental health problems within socially disadvantaged ethnic minority youth is important to tailor current preventive and treatment interventions to the needs of these youth. The aim of this study was to explore factors at child, family, school, peer, neighbourhood and ethnic minority group level associated with mental health problems in Moroccan-Dutch youth (n=152, mean age: 13.6 years \pm 1.9). Self-reported and teacher-reported questionnaire data on psychiatric symptoms and self-report interview data on psychiatric disorders were used to divide children into three levels of mental health problems: no symptoms, only psychiatric symptoms and psychiatric disorders. Statistically significant risk factors for both psychiatric symptoms and disorders were psychopathic traits, trauma, a large family, conflicts with parents, affiliation with delinquent peers, perceived discrimination and cultural mistrust. Protective factors were self-esteem, parental monitoring, positive affiliation with religion, orientation to Dutch or Moroccan culture and a strong ethnic identity. For youth growing up in a disadvantaged ethnic minority position, risk and protective factors were mainly found at family and ethnic minority group level. Preventive and treatment interventions for socially disadvantaged ethnic minority youth should be aimed at dealing with social disadvantage and discrimination, improving the parent-child relationship and parenting practices, and developing a positive (cultural) identity.

Keywords: Ethnicity, Children, Adolescents, Risk, Mental health problems, Psychiatric disorders.

INTRODUCTION

Ethnic diversity is increasing in many countries. At the same time, ethnic minority youth is less likely to be reached by regular youth mental health care services than majority youth (Angold et al., 2002; de Haan et al., 2012). In addition, retaining ethnic minority youth in care is difficult (Ingoldsby, 2010; de Haan, 2014). It is unlikely that these lower treatment rates are explained by a lower prevalence of psychiatric disorders, as mental health problems are equally or more prevalent in minority youth as compared to majority youth (Stevens & Vollebergh, 2008; Belhadj et al., 2014b). Tailoring current preventive and treatment interventions to the needs of this youth may increase efficacy of treatment and enhance inter-cultural competence of mental health care professionals. Therefore, improving our understanding of factors associated with the development of mental health problems and psychiatric disorders in ethnic minority youth is important.

Several studies have examined factors underlying differences in prevalence of mental health problems *between* ethnic groups (Stevens & Vollebergh, 2008; Belhadj et al., 2014b). Social factors associated with ethnicity seem to be most important in explaining differences between ethnic minority and majority youth. A disadvantaged ethnic minority position, characterized by a low socioeconomic status (SES), a low social status and experiencing discrimination, has repeatedly been associated with mental health problems in ethnic minorities (see chapter three and Stevens & Vollebergh, 2008; Veling & Susser, 2011). Although social disadvantage may partly explain why mental health problems are more prevalent in socially disadvantaged ethnic minority groups, it does not explain which members of these groups will develop such problems. Studies carried out *within* a socially disadvantaged ethnic minority group are needed to explore factors that make some children resilient and others vulnerable to developing mental health problems. As social and cultural characteristics of ethnic groups differ, and the degree of social disadvantage in ethnic groups varies, such factors should be explored in specific ethnic groups separately.

Factors explaining the development of mental health problems lie at multiple levels of causation (Susser et al., 2006), including the child, family, school, peer and neighbourhood level. Specific to ethnic minorities, factors associated with migration, the minority position or cultural background at ethnic minority group level should be taken into account as well (Garcia et al., 1996; Stevens & Vollebergh, 2008). Social disadvantage is included in these levels, because differences social disadvantage within the group can still be substantial and may also explain differences in mental health within the group. According to the vulnerability-stress model, mental health problems will develop when the total balance between protective and risk factors at child, family, school, peer, neighbourhood and ethnic minority group level is disturbed (Ingram & Luxton, 2005). In this respect, mental health problems refer to the presence of psychiatric symptoms. In case of psychiatric disorders, psychiatric symptoms are so severe that functioning is impaired and professional treatment is needed (Doreleijers et al., 2006).

In the Netherlands, Moroccan-Dutch youth is the largest ethnic minority population in its age group, is underrepresented in youth mental health care and difficult to involve in treatment (de Haan et al., 2012; de Haan, 2014). Moroccan-Dutch children have an increased risk to develop mental health problems and psychotic disorders in (young) adulthood (see chapter three and Stevens et al., 2003; Veling et al., 2006). Moroccans living in the Netherlands have a low SES, a low social status and are exposed to a high degree of discrimination (Stevens et al., 2003; Veling et al., 2007b; Dagevos et al., 2014). Therefore, studying Moroccan-Dutch youth offers an outstanding opportunity to examine risk and protective factors for the development of mental health problems and psychiatric disorders in a large socially disadvantaged ethnic minority group.

Previous population studies in Moroccan-Dutch adolescents showed that self-esteem, support from parents, monitoring and affection by parents, perceived social support, positive affiliation with religion and acculturation towards the Moroccan and/or Dutch culture were protective factors for mental health problems. A single parent family, conflict with parents, discipline by parents, repeating a school year, affiliation with delinquent peers, recently been moved, living in an urbanized neighbourhood and discrimination were risk factors for mental health problems (see chapter three and Stevens et al., 2005a; Stevens et al., 2005b; Stevens et al., 2007a; Stevens et al., 2007b; Wissink et al., 2008). The associations of these or other risk and protective factors have not been investigated across different degrees of mental health problems in Moroccan-Dutch youth.

The aim of this study was to explore risk and protective factors at child, family, school, peer, neighbourhood and ethnic minority group level for mental health problems in Moroccan-Dutch youth. Self-reported and teacher-reported questionnaire data on psychiatric symptoms and interview data on psychiatric disorders were used to divide children into three levels of mental health problems (i) no psychiatric symptoms, (ii) only psychiatric symptoms, but no psychiatric disorder, and (iii) psychiatric disorders.

METHOD

Participants

The study consisted of two phases; a full description of the study's first, screening phase and second, diagnostic phase has been reported previously (see chapter six). Here, we describe in brief how the current study sample was collected.

In the *screening phase*, a total sample of 1,563 participants was screened on psychiatric symptoms in years six to eight of eight primary schools (9 to 12 year olds) and years one to three of ten secondary schools (12 to 15 year olds) with various educational levels throughout the Netherlands with an overall participation rate of 85.7%. Among other ethnicities, a sample of 407 children and adolescents was classified as Moroccan-Dutch according to the ethnic categories defined by Statistics Netherlands (Statistics Netherlands, 2015). Besides self-report measures, 88.7% of the participating Moroccan-Dutch youth was also screened on psychiatric symptoms by teacher-report measures (n=361).

In the diagnostic phase, out of the Moroccan-Dutch screening sample with complete data (self report and teacher report, $n=361$) a high-risk and low-risk subgroup were selected for in-depth psychiatric diagnostic assessment. Cut-offs for high-risk and low-risk selection were based on the subscales measuring externalizing, internalizing or psychotic symptoms of the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997), Social and Health Assessment (SAHA) (Ruchkin et al., 2004) and items derived from the Kiddie-Schedule for Affective Disorders and Schizophrenia (K-SADS) (Kaufman et al., 1997) assessing psychotic experiences. Moroccan-Dutch youth scoring two standard deviations above the mean of their age category (9-12 years olds or 13-16 year olds) on at least one of the (sub)scales measuring psychiatric symptoms were defined as screen positive ($n=105$). Moroccan-Dutch youth scoring below one standard deviation above the mean of their age category on all (sub)scales were defined as screen negative ($n=128$). Of the 233 eligible Moroccan-Dutch youths, 69 of the screen positives (65.7%) and 83 of the screen negatives (64.8%) participated and formed the current study sample of 152 Moroccan-Dutch youths (65.2%). Medical doctors diagnostically assessed children regarding psychiatric disorders using the K-SADS (Kaufman et al., 1997). Twenty children ($n=19$, 28% of screen positives and $n=1$, 1% of screen negatives) met the DSM-IV criteria for any psychiatric disorder. The majority of diagnoses was externalizing ($n=13$, 8.6%) and the minority of diagnoses was internalizing ($n=7$, 4.6%). There was no comorbidity: none of the participants met the diagnostic criteria for more than one DSM-IV diagnosis. For the current study, the Moroccan-Dutch children and adolescents were divided into three groups. The first group included youths who were screen negative (*no psychiatric symptoms*, $n=82$; 53.9%). The second group included youths who were screen positive but had no psychiatric disorder (*psychiatric symptoms*, $n=50$; 32.9%). The third group consisted of youths who had a psychiatric disorder (*psychiatric disorders*, $n=20$; 13.2%). Indicators of social disadvantage of the Moroccan-Dutch screening sample compared to other ethnic groups, described in detail elsewhere (see chapter three), showed that this sample indeed is a high socially disadvantaged ethnic minority group.

Procedure

The ethics committee of the VU Medical Centre approved the study protocol. In the *screening phase* (2009-2010), a letter of introduction and a description of the study were sent to children and parents at their home address in separate envelopes. Parents or primary caregivers additionally received a passive informed consent form, which they could sign and return when they did not want their child to participate. Children had the option to decline at the time the survey was administered. They completed the web-based survey during a regular school day. A trained research assistant introduced the study and at least two research assistants were available in the classroom to answer the children's questions during administration. Teachers were not involved in the actual administration. In the *diagnostic phase* (2010-2011), the selected Moroccan-Dutch youths and their parents received a letter in Dutch and Moroccan Arabic introducing the

study. Parents or primary caregivers were asked to inform the researchers if they refused participation. The remaining families were visited at home in a face-to-face approach. We exclusively worked with female interviewers, because for some Moroccan-Dutch families it is more accepted to welcome unknown females than males into their homes. Additionally, each team consisted of at least one Moroccan-Dutch research assistant to have the option to inform families about the study in Dutch, Moroccan Arabic or a Berber (Tamazight) language. Written informed consent was obtained from mothers and children. Mothers of participating children were interviewed on several topics at home (see section Measurements). At the same time, children filled out a set of paper questionnaires and completed an intelligence and reading test (see section Measurements). In an additional appointment, medical doctors diagnostically assessed children regarding psychiatric disorders. The average time between the screening and diagnostic phase was 13 months.

Measurements

Demographic information

Children filled out questions on demographic characteristics, such as their gender, age, and child's and parents' country of birth. They also responded to categorical questions on family structure (categorized as living with both biological parents; 'yes' or 'no'), if they had ever repeated a school year ('no' or 'yes'), if they had ever moved (categorized as moved past year; 'no' or 'yes') and if they identified themselves as religious ('yes' or 'no'), and to a continuous question on the number of children in the family.

Factors at child, family, school/peer and ethnic minority group level

Factors at child, family, school/peer and ethnic minority group level were assessed in the screening or diagnostic phase with self-report or parents-report measures (for an overview, see online resource 1, table 1).

Child level

IQ was measured by the Raven's Standard Progressive Matrices (Raven SPM) (Raven & Court, 2000). It consists of 60 progressively more difficult items grouped into five sets. In each item a figure is presented, participants are asked to point out the missing element out of six or eight options. Raven-scores were transformed into percentiles per age according to the 1979 UK standardization among young people, subsequently these percentiles were converted into IQ-scores (Raven, 2000). The Raven is an appropriate test to measure intelligence in ethnic minorities because of its non-verbal nature and culture-fairness (Spreen & Strauss, 1998), although ethnic minorities sometimes achieved inexplicably low scores (Raven & Court, 2000).

Reading problems were assessed using the One-Minute Reading Task (EMT) (Brus & Voeten, 1979). It consists of a list of words. Participants are asked to read as many words correctly as possible within one minute. A child was considered to have reading problems when it was more than one year behind compared to the

level considered appropriate for his or her age, taking repeated school years into account.

Psychopathic traits were measured by the Youth Psychopathic traits Inventory – Short Child Version (YPI-SCV) (van Baardewijk et al., 2010). It consists of 18 items on a 4-point scale (1=*does not apply at all*, 4=*applies very well*). Adding the items generates a total psychopathic traits score (range 18-72). The YPI-SCV had good internal consistency and validity in a community sample of children (van Baardewijk et al., 2010) and the cross-ethnic generalizability of the original 50-item adolescent YPI was supported in a sample of Moroccan-Dutch and Dutch incarcerated adolescents (Veen et al., 2011a). Internal consistency was confirmed in our sample with a Cronbach's alpha of 0.89.

Narcissistic traits were measured by the Childhood Narcissism Scale (CNS) (Thomaes et al., 2008), consisting of 10 items on a 4-point scale (1=*not at all true*, 4=*completely true*). A total narcissistic traits score is generated by summing the scores (range 10-40). In a series of six studies, the CNS had good reliability and validity (Thomaes et al., 2008). The Cronbach's alpha in our sample was 0.82.

Self-esteem was measured by the Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1979). It consists of 10 items, with five negative and five positive statements on a 4-point scale (1=*strongly disagree*, 4=*strongly agree*). By totalling the scores after reverse-scoring the negatively worded items, a total self-esteem score is computed (range 10-40). The RSE is a widely used instrument to measure self-esteem. It had comparable internal reliability in migrant and native youth (Berry et al., 2006) and an acceptable Cronbach's alpha of 0.68 in our sample.

Number of trauma was measured by six items derived from the Post Traumatic Stress Disorder section of the Diagnostic Interview Schedule for Children (DISC-C) (Shaffer et al., 1996). When children responded positively to one of the trauma items, an additional question was administered: 'Did you often think of this event during the past month?' Children who had experienced a traumatic event and reported having thought often about it during the past month, were classified as trauma positive. Subsequently, the number of positive trauma items with positive responses to the additional question was summed (range 0-6).

Family level

Family socioeconomic status (SES) was assessed with the Family Affluence Scale (FAS) (Currie et al., 2008). It consists of four questions about material comforts in their families (car, bedrooms, vacations, computers). A total FAS score is calculated by summing the responses to these four items (range 0-9). The scale was developed to reliably estimate family SES in (young) children using questions they are likely to know about.

Parental support and parental conflict, two aspects of the *parent-child relationship*, were assessed by a shortened version of the Network of Relationship Inventory (NRI) (Furman & Buhrmester, 1985). Subscale support consists of eight items and subscale conflict of two items on a 5-point Likert scale (1=*little to none*, 5=*could not be more*). A sample item of subscale support is: "How much does your mother/father really care about you?". A sample item of subscale conflict is: "How

much do you and your mother/father disagree and quarrel?“. Each subscale was assessed regarding mothers and fathers separately, their scores were added to create one score for parental support (range 16-80) and parental conflict (range 4-20). When just one score of the parents was available, the score was doubled to generate comparable scores. Subscales support and conflict were previously used in a longitudinal study in the Netherlands with high internal consistencies for Moroccan-Dutch adolescents, which were comparable to those reached in Dutch adolescents (Buist et al., 2014). Cronbach’s alphas were 0.96 for parental support and 0.72 for parental conflict in our sample.

Monitoring was measured by the Adolescent and Parent Disclosure Scale (ADS and PDS) (Dekovic et al., 2004). It consists of 5 items on a 4-point scale (1=‘nothing’ to 4=‘everything’). Participants were asked to indicate how much parents know about their child’s activities (e.g. who their friends are, where they spend time after school). It was administered to children regarding their mothers and fathers (*parental monitoring*) and to mothers about the participating child (*maternal monitoring*). Scores of children about mothers and fathers were added to create the parental monitoring score (range 10-40). When just one score was available, scores were doubled. Adding the items of the mothers generates the maternal monitoring score (range 5-20). It was previously used in Moroccan-Dutch children with high internal consistencies (Stevens et al., 2007a). In our sample Cronbach’s alphas were 0.86 for parental monitoring and 0.74 for maternal monitoring.

Discipline was measured by a subscale of the Nijmegen Rearing Questionnaire (NRQ) (Gerris et al., 1993) assessing different ways of punishment and discipline that parents may use. It consists of 5 items on a 6-point scale (1=‘highly disagree’ to 6=‘highly agree’). It was administered to children regarding their mothers and fathers (*parental discipline*) and to mothers about the participating child (*maternal discipline*). Scores of children about mothers and fathers were added in a parental discipline score (range 10-60). When just one score was available, scores were doubled. Adding the items of the mothers generates the maternal discipline score (range 5-30). Reliability was good in previous studies among Moroccan-Dutch youths (Stevens et al., 2007a) and comparable in our study (parental discipline: $\alpha=0.83$, maternal discipline: $\alpha=0.72$).

Maternal affection was assessed by another subscale of the NRQ (Gerris et al., 1993) by 9 items on a 6-point scale (1=‘highly disagree’ to 6=‘highly agree’). Adding the items generates a maternal affection score (range 9-54). It was administered to participating mothers and measured the extent to which mothers show feelings of positive affection towards their children. The internal reliability was found to be good in the previous studies (Stevens et al., 2007a) as well as in our sample ($\alpha=0.77$).

School and / peer level

Affiliation with delinquent peers was measured by a subscale of the Social and Health Assessment (SAHA) (Ruchkin et al., 2004). It consists of 9 items asking how many of their friends are involved in different types of risk taking behaviour on a 4-point scale (0=‘no friends’, 1=‘1 or 2 friends’, 2=‘more friends’, and 3=‘all

of my friends'). A total affiliation with delinquent peers score was computed by summing the scores (range 0-27). The SAHA has been used in ethnically diverse samples in multiple countries and previously in Moroccan-Dutch youth (Paalman et al., 2011; Schwab-Stone et al., 2013). Cronbach's alpha of the affiliation with delinquent peers subscale was good in Belgium, Russia and the United States (Ruchkin et al., 2004), as well as in our sample ($\alpha=0.92$).

Perceived social support was assessed by the Multidimensional Scale of Perceived Social Support (MSPSS) (Canty-Mitchell & Zimet, 2000). It consists of 12 items divided into three subscales of four identical items related to the source of the social support (family, friends and significant others.) on a 7-point scale (1='very strongly disagree' to 7='very strongly agree'). The 12 items were summed to create a total perceived social support score (range 12-84). The Cronbach's alpha was 0.89.

Ethnic minority group level

Perceived discrimination was measured by the Discrimination Questionnaire (DQ) (Stevens et al., 2005b). Three items assessed whether children *perceived personal discrimination* based on skin colour, origin or religion during the past year. Children answering 'yes' to one of these items were classified as having experienced personal discrimination. To assess *perceived group discrimination*, children were asked whether they felt their ethnic group was discriminated against in four situations (street, school, shops or by the police). Answers on a 4-point scale (0='never' to 3='always') were summed to create a total perceived group discrimination scale (range 0-12).

Psychological acculturation, ethnic identity and behavioural acculturation were measured by an adapted version of the Psychological Acculturation Scale (PAS) and the Behavioural Acculturation Scale (BAS) (Stevens et al., 2004). Six items were administered to measure *orientation towards Dutch culture* (D-PAS) and six items to measure *orientation towards Moroccan culture* (M-PAS). Additionally, *ethnic identity* was assessed with the items 'I consider myself to be Dutch' and 'I consider myself to be Moroccan'. Items were rated on a 5-point scale (1='strongly disagree' to 5='strongly agree'). The items of the D-PAS and M-PAS were added to compute sum scores for orientation towards Dutch and Moroccan culture (range 6-30). To measure *behavioural acculturation*, children were asked how often they use Dutch (D-BAS) and Moroccan (M-BAS) language when talking to important others such as parents, siblings and friends. The scales consist of three items for each language and was rated on a 5-point Likert-scale (1='never' to 5='always') and added to create a total *use of Dutch and Moroccan language* score (range 3-15). Furthermore, participants were asked whether they had *Dutch and Moroccan friends*. This instrument had good psychometric properties in previous studies on acculturation of Moroccan-Dutch youth (Stevens et al., 2004). For the current population, Cronbach's alphas were 0.85 for the D-PAS and 0.89 for the M-PAS.

Cultural mistrust, the degree to which ethnic minorities trust intentions of the majority group, was measured by an adapted version of the Cultural Mistrust Inventory (CMI) (Terrell & Terrell, 1981). It consists of 11-items on a 4-point answering scale (1='not at all true' to 4='completely true'). Summing the scores

generates a cultural mistrust score (range 11-44). The original questionnaire, developed in the USA for Afro-Americans, was translated and back translated to create a Dutch version and adapted towards Moroccans living in the Netherlands. Internal reliability was confirmed by a Cronbach's alpha of 0.74.

Neighbourhood level

Neighbourhood socioeconomic status (SES), was obtained from the Netherlands Institute for Social Research (SCP) by postal code of the home addresses of the children, provided by the schools (The Netherlands Institute for Social Research, 2010). The score is based on mean income, unemployment rate and level of education of the residents of a neighbourhood and was transformed by the SCP to a z-distribution.

Neighbourhood urbanization and ethnic density were provided by Statistics Netherlands (CBS) by district (Statistics Netherlands, 2010b). The measure for *urbanization* is based on the average number of addresses per square kilometre. The measure for *ethnic density* is based on the percentage of ethnic minorities originating from non-Western countries (all countries in Africa, Latin-America and Asia (excluding Indonesia and Japan), and Turkey).

Translation parent interviews

Mothers of participating children were interviewed in a Berber (Tamazight) language (n=85; 56%), Dutch (n=43; 28%) or Moroccan Arabic (n=24; 16%). Translations into the two most spoken Berber (Tamazight) dialects in the Netherlands were developed by translation and independent back translation procedures. The final translation resulted out of consensus meetings of research assistants who carried out the translation and back translation, assisted by a medical doctor and a research fellow of Moroccan-Dutch descent to monitor the concepts and final phrasing of the items. For the Moroccan Arabic version, translations developed by Stevens and colleagues were used (Stevens et al., 2007a).

Statistical analysis

Analyses were performed using the Statistical Package for Social Sciences (SPSS), version 20.0. Demographic characteristics were compared across the three groups of Moroccan-Dutch youth (*no symptoms, psychiatric symptoms and psychiatric disorders*). Differences were tested using Chi-square tests for categorical variables (gender and migrant status) and one-way analyses of variance (ANOVA) with post-hoc Bonferroni tests for continuous variables (age).

To explore which risk and protective factors were associated with the different levels of mental health problems, logistic regression analyses were used with group status as outcome measure. First, all scale variables (YPI, CNS, RSE, FAS, NRI, ADS, PDS, NRQ, SAHA, MSPSS, DQ, PAS, BAS, CMI) were standardized to enable comparisons of effect sizes. Subsequently, each factor at child, family, school, peer, neighbourhood and ethnic minority group level was entered individually, with gender and age included as covariates (univariate analyses adjusted by demographic variables). Second, all factors at child, family, school,

peer, neighbourhood and ethnic minority group level were entered in forward multiple regressions analyses, with gender and age included as covariates, to examine which factors uniquely distinguished youths with no symptoms, psychiatric symptoms and psychiatric disorders (multivariate analyses adjusted by demographic variables).

RESULTS

Demographic characteristics

Demographic characteristics are presented in table 4.1. In the total Moroccan-Dutch sample, boys and girls were represented equally (49.3% boys, 50.7% girls), most were second-generation migrants (93.4%) and the mean age was 13.6 years (SD \pm 1.9) at assessment in the diagnostic phase. Moroccan-Dutch youth with psychiatric symptoms and psychiatric disorders were more likely to be boys compared to youths with no symptoms ($\chi^2 = 3.83$, $p = 0.050$). Youths with psychiatric disorders were older than youths with psychiatric symptoms and no symptoms ($F = 6.26$, $p = 0.002$).

Table 4.1: Demographic characteristics of the sample

| | No symptoms (n=82) | Psychiatric symptoms (n=50) | Psychiatric disorders (n=20) |
|-----------------------|-----------------------|--------------------------------|---------------------------------|
| | n (%) | n (%) | n (%) |
| Gender | | | |
| Boys | 34 (41.5) | 29 (58.0) | 12 (60.0) |
| Girls | 48 (58.5) | 21 (42.0) | 8 (40.0) |
| Migrant status | | | |
| First generation | 5 (6.1) | 5 (10.0) | 0 (0.0) |
| Second generation | 77 (93.9) | 45 (90.0) | 20 (100.0) |
| | Mean \pm SD | Mean \pm SD | Mean \pm SD |
| Age | 13.5 \pm 1.5 | 13.2 \pm 2.4 | 14.9 \pm 1.7 |

Univariate analyses

Table 4.2 shows the results of the univariate logistic regression analyses exploring associations between risk and protective factors, and no symptoms, psychiatric symptoms and psychiatric disorders.

At child level, reporting psychopathic traits was a risk factor and self-esteem was a protective factor for psychiatric symptoms and psychiatric disorders. Experienced trauma was a risk factor for psychiatric symptoms, but not for psychiatric disorders.

At family level, conflict was a risk factor and monitoring a protective factor for both psychiatric symptoms and psychiatric disorders. In addition, more conflict and less monitoring differentiated youths with psychiatric disorders from youths with psychiatric symptoms. Finally, a larger number of children in the family was a risk factor for psychiatric symptoms, but not for psychiatric disorders.

At school/peer/neighbourhood level, affiliation with delinquent peers was a risk factor for both psychiatric symptoms and psychiatric disorders.

Table 4.2: Factors at child, family, school/peer/neighbourhood and ethnic minority group level by group: univariate logistic regression analyses

| | Psychiatric symptoms versus No symptoms OR (95% CI) | | Psychiatric disorders versus No symptoms OR (95% CI) | | Psychiatric disorders versus Psychiatric symptoms OR (95% CI) | |
|--|--|-------------|---|-------------|--|-------------|
| | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR (95% CI) |
| Child level | | | | | | |
| <i>IQ</i> | | | | | | |
| <i>Reading problems</i> | | | | | | |
| Psychopathic traits | 2.19 (1.37 – 3.50)*** | | 2.37 (1.25 – 4.46)** | | | |
| Narcissistic traits | 0.60 (0.40 – 0.90)* | | 0.35 (0.19 – 0.67)*** | | | |
| Self-esteem | 1.98 (1.35 – 2.89)*** | | | | | |
| <i>Number of trauma</i> | | | | | | |
| Family level | | | | | | |
| <i>Living with both biological parents (0=yes, 1=no)</i> | | | | | | |
| <i>Number of children in the family</i> | 1.28 (1.01-1.62)* | | | | | |
| Family SES | | | | | | |
| Parental support | | | | | | |
| Parental conflict | 1.90 (1.18 – 3.05)** | | 3.92 (1.96 – 7.87)*** | | 2.12 (1.21 – 3.71)** | |
| Parental monitoring | 0.57 (0.38 – 0.86)** | | 0.41 (0.22 – 0.75)** | | 0.54 (0.30 – 0.97)* | |
| Parental discipline | | | | | | |
| Maternal monitoring (parent report) | | | | | | |
| Maternal discipline (parent report) | | | | | | |
| Maternal affection (parent report) | | | | | | |
| School / peer / neighbourhood level | | | | | | |
| <i>Ever repeated a school year (0=no, 1=yes)</i> | | | | | | |
| Affiliation with delinquent peers | 2.34 (1.32 – 4.14)** | | 4.28 (1.85 – 9.89)*** | | | |
| <i>Moved past year (0=no, 1=yes)</i> | | | | | | |
| Neighbourhood SES | | | | | | |
| Neighbourhood urbanisation | | | | | | |
| Neighbourhood ethnic density | | | | | | |
| Perceived social support | | | | | | |

| Ethnic minority group level | |
|--|-----------------------|
| <i>Religious</i> (0=yes, 1=no) | 0.04 (0.00-0.94)* |
| <i>Perceived personal discrimination</i> (0=no, 1=yes) | 4.65 (1.37-15.79)* |
| Perceived group discrimination | 2.39 (1.27-4.47)** |
| Orientation Dutch culture | 0.42 (0.22 – 0.80)** |
| Orientation Moroccan culture | 0.36 (0.19 – 0.68)*** |
| Considers Dutch | |
| Considers Moroccan | 0.42 (0.21-0.83)* |
| Use of Dutch language | 0.49 (0.27-0.89)* |
| Use of Moroccan language | |
| <i>Dutch friends</i> | 0.39 (0.18-0.83)* |
| <i>Moroccan friends</i> | |
| Cultural mistrust | 3.15 (1.54 – 6.45)** |
| | 1.28 (1.28 – 5.39)** |

All factors were individually entered in the model, adjusted by gender and age

Non-standardized factors are shown in *italic*

* p < 0.05; ** p < 0.01; *** p < 0.001

Table 4.3: Factors at child, family, school/peer/neighborhood and ethnic minority group level by group: multivariate logistic regression analyses

| | Psychiatric symptoms | | Psychiatric disorders | | Psychiatric disorders versus | |
|------------------------------------|----------------------|----------------------|-----------------------|--|------------------------------|--|
| | No symptoms | | No symptoms | | Psychiatric symptoms | |
| | OR (95% CI) | | OR (95% CI) | | OR (95% CI) | |
| Family level | | | | | | |
| Parental conflict | 2.07 (1.19-3.60)** | 9.29 (2.72-31.72)*** | 11.51 (1.76-75.26)* | | | |
| Parental discipline | | 2.91 (1.18-7.20)* | 9.20 (1.35-62.49)* | | | |
| Ethnic minority group level | | | | | | |
| Perceived group discrimination | 2.82 (1.57-5.06)*** | 0.22 (0.08-0.63)** | 0.11 (0.02-0.69)* | | | |
| <i>Orientation Dutch culture</i> | | | | | | |
| <i>Considers Dutch</i> | | | | | | |
| <i>Considers Moroccan</i> | 0.48 (0.29-0.80)** | | | | | |
| <i>Use of Dutch language</i> | 0.46 (0.28-0.76)** | | | | | |
| Cultural mistrust | | | 26.09 (1.37-498.53)* | | | |

All factors were entered using a forward stepwise procedure, adjusted by gender and age

Only statistically significant factors are shown. Protective factors are shown in *italic*

* p < 0.05; ** p < 0.01; *** p < 0.001

At ethnic minority group level, perceived personal and group discrimination were risk factors for both psychiatric symptoms and psychiatric disorders, while orientation to Dutch and Moroccan culture, a strong ethnic identity and more use of Dutch language were protective factors. Having Dutch friends was a protective factor against psychiatric symptoms, while being religious was protective against psychiatric disorders. Finally, more cultural mistrust differentiated youths with psychiatric disorders from youths with no symptoms and psychiatric symptoms.

Multivariate analyses

Table 4.3 shows the results of the multivariate logistic regression analyses examining which factors uniquely distinguished youths with no symptoms, psychiatric symptoms and psychiatric disorders.

More conflict at family level and more group discrimination, a weaker ethnic identity and less use of the Dutch language at ethnic minority group level uniquely distinguished youths with psychiatric symptoms from youth with no symptoms ($\chi^2 = 47.13$, $p < 0.001$, Nagelkerke $R^2 = 0.43$).

More conflict and discipline at family level and less orientation to Dutch culture at ethnic minority level uniquely distinguished between youths with psychiatric disorders and youth with no symptoms ($\chi^2 = 49.06$, $p < 0.001$, Nagelkerke $R^2 = 0.66$).

More conflict and discipline at family level and a weaker Dutch identity and more cultural mistrust at ethnic minority group level uniquely distinguished youth with psychiatric disorders from youth with psychiatric symptoms ($\chi^2 = 42.00$, $p < 0.001$, Nagelkerke $R^2 = 0.71$).

DISCUSSION

Summary of findings

The aim of this study was to explore risk and protective factors at child, family, school, peer, neighbourhood and ethnic minority group level associated with mental health problems in Moroccan-Dutch youth. Multi-informant questionnaire data on psychiatric symptoms and interview data on psychiatric disorders were used to divide children into three levels of mental health problems. Factors at child, school, peer and neighbourhood level were associated to psychiatric symptoms and psychiatric disorders, but did not distinguish these youths from youths with no symptoms in the multivariate analyses. The risk factors that differentiated between groups in the multivariate analyses were found at family level (parental conflict and parental discipline) and ethnic minority group level (discrimination and cultural mistrust). The protective factors that independently distinguished between groups were found at ethnic minority group level (orientation to Dutch culture and a strong ethnic identity).

Family level

Factors at family level were important in explaining psychiatric symptoms and psychiatric disorders in Moroccan-Dutch youth. In line with findings in Western populations, more conflict with parents, less monitoring and more discipline by

parents were associated with mental health problems (Dishion & McMahon, 1998; Burt et al., 2003; Mash & Barkley, 2014). Parent practices in Moroccan-Dutch families are generally characterized by more discipline and less monitoring (Pels & Nijsten, 2003; Wissink et al., 2006). However, Moroccan-Dutch parents with a higher SES and more orientation to Dutch culture, raise their children with more monitoring, but also relatively high levels of discipline (Stevens et al., 2007a). Interestingly, parental discipline as perceived by children was only associated with psychiatric disorders in the multivariate analyses while it was not associated in the univariate analysis. Previous research stated that in traditional Moroccan families, parenting is a communal task of a wider network around children than solely parents (Pels & Nijsten, 2003). Also, whereas in Dutch child rearing discipline is generally negatively associated with affection (Wissink et al., 2006), discipline was positively associated with parental affection in a previous Moroccan-Dutch sample (Stevens et al., 2007a), as well as in our sample (results available from first author). Therefore, our finding may indicate that in case of psychiatric symptoms with severe impairment of functioning, i.e. a psychiatric disorder, parents react with discipline to externalizing problems or discipline as a form of support to internalizing problems (Stevens et al., 2007a). Because of the cross-sectional nature of the study, however, it is not possible to determine whether parents of children with psychiatric disorders respond with more discipline to the behaviour of their children, resulting in conflicts, or whether children experiencing conflicts with their parents and restrictive parenting develop psychiatric disorders. Either way, the findings indicate that difficulties in the parent-child relationship and parenting practices are encountered by Moroccan-Dutch youths with psychiatric symptoms and psychiatric disorders, hence prevention or treatment interventions at family level can be useful.

Ethnic minority group level

Factors at ethnic minority group level were important in explaining psychiatric symptoms and psychiatric disorders in Moroccan-Dutch youth. Psychological orientation towards Dutch culture and a strong ethnic identity were protective factors. Behavioural orientation towards Dutch culture, as reflected by making more use of the Dutch language with parents, siblings and Moroccan friends, was also a protective factor. A previous study on acculturation in Moroccan-Dutch youth showed that ambivalent acculturated girls had more internalizing and externalizing problems than integrated or separated girls, whereas in boys no effect of acculturation was found (Stevens et al., 2007a). According to the acculturation strategies defined by Berry, low identification with the mainstream and heritage culture corresponds with marginalization, generally seen as the most unfavourable strategy considering mental health outcomes (Berry et al., 2006). Orientation to any culture, whether heritage or mainstream, may promote mental health because sense of belonging helps to develop a positive and stable self-image (Garcia et al., 1996). In our study we indeed found a positive correlation between orientation towards a culture and self-esteem (results available from first author). A strong ethnic identity is also generally associated with psychological wellbeing (Sam, 2000; Phinney et al., 2001). However, whereas orientation

towards only the heritage culture can promote psychological wellbeing, it is also related to poorer sociocultural adaptation to mainstream society (Berry et al., 2006). Possibly the protective effect of behavioural acculturation towards Dutch culture in our study is a reflection of better sociocultural adaption, which in turn would be related to a better mental health.

Perceived discrimination and cultural mistrust were risk factors. Discrimination has frequently been associated with mental health problems in Moroccan-Dutch individuals, as well as in other ethnic groups (Stevens et al., 2005a; Stevens et al., 2005b; Veling et al., 2007b; Pascoe & Smart Richman, 2009). Cultural mistrust has previously been associated with deviant behaviour and low self-esteem among ethnically diverse minority adolescents and students in the United States of America (Biafora et al., 1993; Phelps et al., 2001). Acculturation problems and perceived discrimination may eventually lead to cultural mistrust in severe cases, as a general anxious state or a form of paranoia associated with social exclusion or defeat, as was illustrated by the specific association between cultural mistrust and psychiatric disorders in our study (Garcia et al., 1996; Whaley, 1998; Selten & Cantor-Graae, 2005). The pronounced influence of factors associated with migration, the minority position or cultural background, indicates that prevention or treatment interventions at ethnic group level are needed.

Child and school/peer/neighbourhood level

Risk and protective factors at multiple levels play a role in explaining psychiatric symptoms and psychiatric disorders in Moroccan-Dutch youth, but the influence of factors at child, school, peer and neighbourhood level was limited in this study. At child level, psychopathic traits and experienced trauma were risk factors and higher self-esteem was a protective factor. As psychopathic traits share symptoms with externalizing problems, like impulsivity and not complying with rules, it is not surprising that these traits were associated with mental health problems (Frick et al., 2000). Trauma and self-esteem are well known correlates of mental health problems (Doreleijers et al., 2006). At peer level, affiliation with delinquent peers was a risk factor. It showed many correlations with factors at other levels such as a larger family, more conflict with parents, less monitoring, more perceived discrimination, less orientation to Dutch culture and more cultural mistrust (results available from first author). Although adolescents usually shift from family to peers as primary source of social support, negative interaction with important others at home or school may force children to affiliate more with peers. Also, especially rejected children are more likely to find group membership with others who are rejected and these children may engage more in delinquent behaviour (Brown, 2004). In turn, affiliation with delinquent peers is a known risk factor for mainly externalizing problems and delinquency (Stevens et al., 2005a; Newman et al., 2007; Stouthamer-Loeber et al., 2008).

Social disadvantage

In the context of social disadvantage, factors at family and ethnic minority group level explained psychiatric symptoms and psychiatric disorders within Moroccan-Dutch youth. Social disadvantage itself, in terms of a low SES and limited

resources of social support, did not explain mental health problems within this socially disadvantaged ethnic minority group. In our total multi-ethnic sample, these aspects of social disadvantage together with discrimination, did explain ethnic differences in the prevalence of mental health problems between Moroccan-Dutch and Dutch youth (see chapter three). As all members of the high-risk group are exposed to these risk factors, these factors have to be investigated between groups instead of within groups. In case of growing up in a disadvantaged ethnic minority position, the development of mental health problems mainly depends on how it is dealt with (acculturation, discrimination, cultural mistrust) and how the family environment is (parent child relationship and parenting practices).

Strengths and limitations

This study had several limitations. First, the sample size was small and only one specific socially disadvantaged ethnic minority group was included. Although exploring factors explaining mental health problems in specific ethnic groups separately is preferable as social and cultural characteristics of ethnic groups vary, it precludes generalization of results to other ethnic groups. Because of the small sample size, some of the associations with psychiatric disorders may have lost statistical significance when controlling for gender and age. Second, questionnaires developed in Europe or the United States of America were used. For the parent interviews, non-validated translations into Moroccan Arabic and Berber languages were used. It is not known to what extent these questionnaires and translations can be used in the same way in Moroccan-Dutch youth, because psychometric properties and norms have not been evaluated in ethnic groups separately. However, we selected questionnaires that have been used worldwide and were validated cross-culturally (SDQ, SAHA, FAS, RSE), were developed specifically for the use in ethnic minority youth (PAS, DQ, CMI), were used before in Moroccan-Dutch youth with good internal validity (YPI, NRI, ADS, PDS, NRQ), because of their non-verbal nature (Raven's SPM) or the freedom to use alternative descriptions of psychiatric symptoms in case of the semi-structured diagnostic interview (K-SADS) or we added questions to enhance validity of the answers (trauma). In our sample, internal reliabilities were acceptable to good, with Cronbach's alpha's ranging from 0.68 to 0.96, and the presence of psychiatric symptoms in the screening phase predicted psychiatric disorders in the diagnostic phase (see chapter six). Another limitation is that mental health problems and risk and protective factors were only assessed once and that there was a relatively long time lag between the screening and diagnostic phase. Since childhood and adolescence are turbulent periods, levels of mental health problems vary over time. Group assignment into absence and presence of psychiatric symptoms can be blurred because in the meantime part of the screen negatives may have developed psychiatric symptoms (without meeting full criteria of a psychiatric disorder) and some of the psychiatric symptoms of screen positive children may have been remitted. Risk and protective factors are part of dynamic underlying processes explaining ethnic differences in constant interaction and complex interplay with mental health problems. Because the measurement took place at

only one time-point, we were unable to determine causal relationships. Strengths of this study were that we gathered information from multiple informants (children, teachers, parents and medical doctors) and included neighbourhood characteristics in the analyses as well. In this way we were able to study three levels of mental health problems and a wide array of risk and protective factors at multiple levels in a community sample of highly disadvantaged ethnic minority youth in the Netherlands. Furthermore, we used cultural sensitive procedures in the possibility of informing and interviewing families in Moroccan Arabic or Berber, using a face-to-face approach and diagnostic assessment of children by medical doctors trained in transcultural psychiatry.

Conclusions and implications

For youth growing up in a disadvantaged ethnic minority position, risk and protective factors associated with psychiatric symptoms and psychiatric disorders are mainly found at family (parent-child relationship and parenting practices) and ethnic minority group level (marginalization, discrimination and cultural mistrust). Preventive and treatment interventions for socially disadvantaged ethnic minority youth should be aimed at dealing with social disadvantage and discrimination, improving the parent-child relationship and parenting practices and developing a positive (cultural) identity and self-image. Such interventions may increase efficacy of treatment, enhance inter-cultural competence of mental health care professionals and decrease dropout among ethnic minority youth. These conclusions were drawn by studying Moroccan-Dutch youth in the Netherlands. Other ethnic groups with similar difficulties in reaching, treating and retaining socially disadvantaged ethnic minority youth in mental health care could possibly benefit in the same way.