MENTAL HEALTH SERVICE USE FOR ADOLESCENTS' INTERNALIZING PROBLEMS:

A COMPARISON BETWEEN FOUR ETHNIC GROUPS IN THE NETHERLANDS

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Mental health service use for adolescents' internalizing problems: A comparison between four ethnic groups in the Netherlands

Zorggebruik voor internaliserende problemen bij jongeren: Een vergelijking tussen vier etnische groepen in Nederland

(met een samenvatting in het Nederlands)

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Introduction

Internalizing problems among immigrant adolescents

Internalizing problems consist of problems such as sadness, anxiety, loneliness, and worrying. During adolescence, there is a general tendency for adolescents – especially girls – to experience more internalizing problems than in childhood (Costello, Copeland, & Angold, 2011). If left untreated, internalizing problems can have negative consequences for later life, as they can result in adult psychopathology as well as negative outcomes related to job performance, relationship functioning, physical well-being, and life satisfaction (e.g., Kerig, Ludlow, & Wenar, 2012; Reef, Van Meurs, Verhulst, & Van der Ende, 2010; Rutter, Kim-Cohen, & Maughan, 2006). Furthermore, research indicates that treating these psychological problems at earlier stages is more cost-effective (e.g., Bayer et al., 2011; Kazdin & Blase, 2011; Rapee, 2013).

It has been proposed that immigrant adolescents are at an increased risk of internalizing problems due to stress accompanied by the migration process in their families, their minority position, and the often weak socioeconomic status of immigrants in the receiving society (Guarnaccia & Lopez, 1998; Stevens & Vollebergh, 2008). However, research on internalizing problems among immigrant adolescents has indicated that the results may vary when different informants are used to assess these problems, with different ethnic groups studied as well as different receiving countries in which the immigrant adolescents were raised (Lau et al., 2004; Stevens & Vollebergh, 2008). In the Netherlands, the results indeed vary across different ethnic groups. For example, Turkish-Dutch parents and adolescents are found to report more internalizing problems for either their child or themselves compared to native Dutch and Moroccan-Dutch parents and adolescents (Stevens, Pels, Bengi-Arslan, Verhulst, & Vollebergh, 2003). However, teachers reported similar levels of internalizing problems for Turkish-Dutch and native Dutch adolescents (Stevens et al., 2003). Despite these differences between informants and ethnic groups, research in the Netherlands has indicated that immigrant adolescents appear to be at least at equal risk of developing internalizing problems compared to non-immigrant adolescents (Health Council of the Netherlands, 2012).

Mental health service use among immigrant adolescents

Several studies, both in the USA and in the Netherlands, have shown ethnic differences in the amount of mental health services children and adolescents receive (e.g., Boon, Haan, & De Boer, 2010; Elster, Jarosik, VanGeest, & Fleming, 2003; Health Council of the Netherlands, 2012). However, the few studies that focused on the differences in mental health service

use in the Netherlands were limited in several ways. First, previous research on ethnic differences in mental health service use in the Netherlands compared the percentage of immigrant adolescents receiving mental health care within one institution to the percentage of immigrant adolescents living in that specific region of the Netherlands. A comparison of these percentages suggested that immigrant children and adolescents are underrepresented in the mental health care system, but this study did not consider the level of problem behavior in the ethnic groups studied (Boon et al., 2010; Health Council of the Netherlands, 2012). In other words, the underrepresentation of immigrants in mental health care may have been due to differences between immigrant groups in their level of problem behaviors. Second, this previous study was performed only within one mental health care institution within one region in the Netherlands (Boon et al., 2010). Third, research in the Netherlands has focused primarily on immigrant adolescents' externalizing problems and the overrepresentation of immigrant youth in the field of forensic psychiatry (Boon et al., 2010; Goderie, Steketee, Mak, & Wentink, 2004; Zwirs, Burger, Schulpen, & Buitelaar, 2006b). Based on these limitations of previous studies in the Netherlands and because research performed in the USA has shown that ethnic differences in mental health service use appear to be larger for internalizing problems than for externalizing problems (Gudiño, Lau, Yeh, McCabe, & Hough, 2009), research on ethnic differences in mental health service use by adolescents with internalizing problems in Netherlands is needed (Health Council of the Netherlands, 2012). Hence, the current thesis aims to address the limitations of previous research by identifying ethnic differences in mental health service use by adolescents with internalizing problems while accounting for internalizing problems across ethnic groups and by performing the research in a broader region of the Netherlands. More importantly, this thesis also attempts to explain possible ethnic differences in mental health service use.

Understanding ethnic differences in mental health service use

To investigate ethnic differences in mental health service use, we used the model proposed by Cauce and colleagues (2002), which aims to incorporate cultural and contextual influences in studying mental health service use. When considering mental health service use among immigrant adolescents in the Netherlands, differences in their pathways toward mental health care could be expected not only due to differences in cultural background between immigrants and non-immigrants, but also due to the ethnic minority status of the former group, possibly resulting in exposure to prejudice, discrimination as well as a low

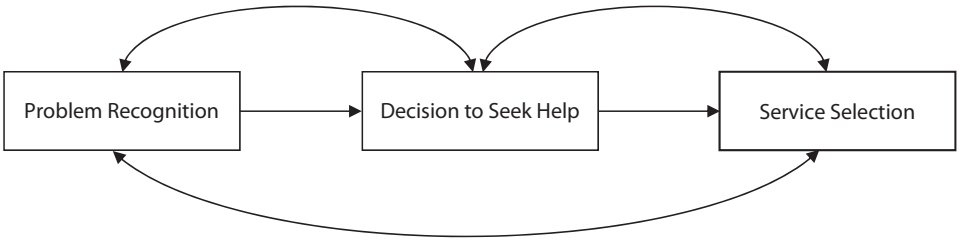

Figure 1.1 Model for mental health help seeking (adapted from Cauce et al., 2002).

socioeconomic status. Figure 1.1 shows the mental health help-seeking model consisting of three steps: problem recognition, the decision to seek help, and service selection (Cauce et al., 2002). Interestingly enough, culture and context were not included in the model as such, but according to the authors, they surround and influence all steps involved in the model. Until now, empirical studies on ethnic differences in mental health service use among adolescents are relatively scarce, and they have focused primarily on the latter steps in the model (Shin & Brown, 2009; Yeh et al., 2005; Yeh, McCabe, Hough, Dupuis, & Hazen, 2003). However, there are indications that ethnic differences exist in all steps in the model, which will be discussed below.

Problem recognition

The first step of the model indicates that problems need to be recognized before mental health care can be received (Cauce et al., 2002). However, the recognition of internalizing problems among adolescents is quite complex. The nature of the problems, which are often internal to the adolescents and not clear to the environment, might be difficult for parents to recognize. This decreases the chances that adolescents will find help because they still depend to some extent on adults in their environment when it comes to seeking help for mental health problems (Logan & King, 2001). Problem recognition has been thought to vary across ethnic groups due to differences between ethnic groups in thresholds defining behavior as problematic (Cauce et al., 2002; Weisz et al., 1988). More specifically, whereas certain behavior might be considered normal in one culture, the same behavior might be considered abnormal in another culture. In other words, the threshold of considering certain behavior as abnormal or problematic might differ across cultures.

Although problem recognition has not been examined yet as explanation of ethnic differences in mental health service use, there are some indications that ethnic differences

might be present in the recognition of problems. Research performed among (young) children in the Netherlands has shown that ethnic differences exist in parental recognition of (externalizing) problems (Bevaart et al., 2012; Zwirs, Burger, Buitelaar, & Schulpen, 2006a). Furthermore, regarding the recognition of problems, a distinction can be made between reporting the symptomatology of problems and the subjective identification of a problem (Cauce et al., 2002). For example, it may be possible to report problem symptoms without being aware that these symptoms are problematic. A previous study has shown a positive relation between subjective identification of a problem and mental health service use after controlling for parental reports on symptoms (Zwaanswijk, Verhaak, Van der Ende, Bensing, & Verhulst, 2006). Thus, the subjective identification of problems might be even more important for mental health service use compared to reported symptoms. Therefore, this study examined whether ethnic differences in either problem symptoms or problem identification can mediate the association between ethnicity and mental health service use.

Decision to seek help

After recognizing the problem, a decision has to be made whether or not professional help will be sought. This decision to seek help may be subjected to cultural as well as contextual influences. People are likely to seek help when they not only recognize the problem, but also believe that the problem does not go away by itself but has to be solved by seeking professional help. The decision to seek for help is presupposed to be influenced by people's lay beliefs about the causes of problems, solutions for problems as well as their attitudes toward mental health care (Cauce et al., 2002). Individuals' cultural background is thought to influence these lay beliefs about problems and attitudes toward mental health care (Kleinman, 1980; Yeh, Hough, McCabe, Lau, & Garland, 2004). The lay beliefs and attitudes toward mental health care of immigrants are influenced by both their ethnic culture and the Dutch culture. As a result, it might be expected that these lay beliefs diverge from the lay beliefs of the native Dutch. Furthermore, immigrants' attitudes toward mental health care are also thought to be influenced by their minority position, which is thought to result in a lack of trust in mental health care institutions (Grinstein-Weiss, Fishman, & Eisikovits, 2005).

Empirical studies on ethnic differences in lay beliefs about problem behavior have mainly been performed among adults rather than adolescents. Only few studies examined ethnic differences in parental beliefs about their children's problems and provided some evidence for possible influences of these beliefs on decisions regarding their children's mental health care (Sood, Mendez, & Kendall, 2012; Yeh et al., 2005). However, to our

knowledge, no studies assessed ethnic differences in both parents' and adolescents' lay beliefs and attitudes toward mental health care. Therefore, the current study adds to the literature by studying ethnic differences in lay beliefs about emotional problems and attitudes toward mental health care among parents and adolescents. Furthermore, we examined the possible mediating effects of lay beliefs and attitudes on the association between ethnicity and mental health service use.

Service selection

In the final step of the model, a service provider has to be selected before actually entering the mental health care system. Different kind of services can be selected after making the decision to seek help. Next to formal forms of mental health service use, it is also possible to seek help among informal sources, such as parents, friends, family members, teachers at school, and the like. Immigrant groups are thought to search for help in their own social network more often (Cauce et al., 2002; Health Council of the Netherlands, 2012). Therefore, it has been suggested that the lower levels of formal mental health service use found among immigrants might be compensated by the amount of informal help they receive (Health Council of the Netherlands, 2012).

The current thesis will also examine informal help among immigrant adolescents, specifically the informal help teachers provide. As teachers are often involved in the referral of adolescents to formal mental health care, informal help provided by the teachers seems to be an important precursor of more formal forms of (school-based) mental health care (Zwaanswijk, Van der Ende, Verhaak, Bensing, & Verhulst, 2007). Furthermore, teacher-adolescent relationship quality will be examined in association with the amount of informal help teachers' provide. As a good teacher-student relationship quality is thought to be associated with more willingness of the teachers to invest in the well-being of their students (Hamre & Pianta, 2001; 2005), we expect the relationship quality to have an important association with informal help provided by the teacher. More specifically, if the relationship between teachers and adolescents is of good quality, we expect that it would be easier for adolescents to ask for help but also that teachers are more willing to provide help to adolescents.

Aims of the present thesis

The objective of the current thesis is to increase our understanding of ethnic differences in mental health service use for adolescents' internalizing problems. Before addressing the question of ethnic differences in mental health service use, part I of the thesis will first

focus on testing whether the instruments that are often used in research but also in clinical practice can be used to validly assess adolescents' internalizing problems across ethnic groups. In part II of the thesis, the main research questions will be addressed:

1. Are there ethnic differences in mental health service use for adolescents' internalizing problems?
2. Is it possible to explain these ethnic differences in mental health service use for adolescents' internalizing problems by ethnic differences in:
   a. Emotional problem identification?
      (Step 1: Problem recognition)
   b. Lay beliefs about emotional problems and attitudes toward mental health care?
      (Step 2: Decision to seek help)
   c. Informal help by the teacher?
      (Step 3: Service selection)

Study design

A two-phase study design was used to include a sufficient number of adolescents from different ethnic groups and to account for the level of internalizing problems among adolescents. In the first phase of the study, a school-based screening was performed among more than 3,000 adolescents in secondary schools in the Netherlands. Adolescents were screened for internalizing problems using the Youth Self-Report (Achenbach & Rescorla, 2001). Adolescents from the four largest ethnic groups in the Netherlands were selected to participate in the second phase of the study (i.e., native Dutch, Surinamese-Dutch, Turkish-Dutch, and Moroccan-Dutch; De Valk, 2010; Health Council of the Netherlands, 2013). In line with the definition of Statistics Netherlands (2012), ethnicity was determined based on the country of birth of the parents. For each ethnic group, two random samples were drawn, one among adolescents scoring in the normal range and one among adolescents scoring in the borderline/clinical range of the YSR internalizing problem scale (see Chapter 5 for more details on the design of the study). The final study sample of the second phase of the study consisted of 95 native Dutch, 85 Surinamese-Dutch, 87 Turkish-Dutch, and 82 Moroccan-Dutch parents and adolescents. Of the immigrant adolescents, 82% were second-generation immigrants. The mean age of the adolescents was 15.2 years old (*SD*=1.0), and 43% of the adolescents were male. About half of the adolescents in the second phase scored in the borderline/clinical range on the internalizing problem

scale during the screening, which was comparable across ethnic groups, indicating that adolescents in the four ethnic groups were at a similar risk of internalizing problems. In the second phase of the study, (diagnostic) interviews were performed with parents and adolescents. Interviews with parents were conducted at home whereas interviews with adolescents were conducted at school. Furthermore, if parents and adolescents provided consent, the teachers (i.e., tutors) of the adolescents were also requested to participate in the study.

Outline of the thesis

As mentioned before, part I of the study addresses the validity and clinical utility of instruments used to assess internalizing problems among adolescents from different ethnic groups in the Netherlands. More specifically, in Chapter 2, we examine whether adolescents responded similarly to the questions in the Youth Self-Report internalizing syndrome scales. By testing measurement invariance, we examine whether the means can be validly compared across ethnic groups. In Chapter 3, we assess parent-adolescent agreement on internalizing disorders measured by diagnostic interviews in each ethnic group. Chapter 4 addresses the question of whether the Youth Self-Report and Child Behavior Checklist, which are questionnaires that are often used in the field to screen for problem behaviors among adolescents, can be used to screen for internalizing problems across ethnic groups by comparing the outcomes of the questionnaires to outcomes of the diagnostic interview.

In the second part of the thesis, we focus on examining and understanding ethnic differences in mental health service use. Each chapter in this part of the thesis addresses a different step of the model depicted in Figure 1.1. In Chapter 5, ethnic differences in mental health service use for adolescents' internalizing problems are examined. Furthermore, the chapter addresses the question of whether ethnic differences in problem symptoms or problem identification could mediate these differences in mental health service use (Step 1: Problem recognition). Ethnic differences in lay beliefs about emotional problems and attitudes toward mental health care among parents and adolescents are discussed in Chapter 6. The study examines the effect of acculturation on these lay beliefs and attitudes toward mental health care among parents as well as the extent to which possible ethnic differences in these lay beliefs and attitudes toward mental health care can explain ethnic differences in mental health service use (Step 2: Decision to seek help). Chapter 7 addresses ethnic differences in an informal form of mental health care, namely informal help provided

by the teacher (Step 3: Service selection). Furthermore, the role of the teacher-adolescent relationship quality is also examined in this chapter.

Finally, in Chapter 8 the main findings of this thesis are summarized and integrated in the discussion. The strengths, limitations, and implications of the results of current thesis are discussed.

PART I

Assessing adolescents' internalizing problems in different ethnic groups

2

Using the Youth Self-Report internalizing syndrome scales among immigrant adolescents: Testing measurement invariance across groups and over time

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ABSTRACT

Although the Youth Self-Report (YSR) has been used in many studies throughout the world, little is known about the equivalence of the factor structure of this instrument for immigrant adolescents. Measurement invariance of the three internalizing syndrome scales of the YSR was tested across four ethnic groups (native Dutch, Surinamese-Dutch, Turkish-Dutch, Moroccan-Dutch) and over time. Results of the present study showed that the scales were invariant across all ethnic groups and over time. Together, the results indicated that the YSR internalizing problem scales can be used for developmental studies in these immigrant populations.

INTRODUCTION

The Youth Self-Report (YSR) is a widely used questionnaire to assess self-reports of emotional and behavioral problems in adolescents (Achenbach & Rescorla, 2001). Notwithstanding the fact that the YSR has originally been developed for US adolescents, the instrument is nowadays used throughout the world and for adolescents with a variety of ethnic backgrounds (Achenbach et al., 2008). Although several studies indicated sufficient psychometric properties of the YSR in different societies (Ivanova et al., 2007a), these studies did not examine the similarity of the factor structure across ethnic groups.

Theoretically, immigrant adolescents are assumed to be at increased risk of internalizing problems, due to the migration history of their families, the often adverse position of their families within the receiving society and because of their socialization within multiple cultures (Stevens & Vollebergh, 2008). However, previous research has shown differences between immigrant groups as well. In the Netherlands, Turkish-Dutch adolescents were found to report more internalizing problems than native Dutch adolescents, while Moroccan-Dutch adolescents reported equal levels of internalizing problems as their native Dutch peers (Stevens et al., 2003). These differences might not only be due to actual differences in reported problem behavior, but also to measurement invariance of the questionnaire since former research has indicated the importance of examining the cross-cultural equivalence of instruments in children of immigrants (Van de Vijver & Poortinga, 1997).

To our knowledge no studies have tested measurement invariance (MI) across immigrant groups for the original syndrome structure of the YSR. MI is necessary to be able to assume that adolescents of different ethnic groups have similar interpretations of the questions posed and to make sure that comparisons between these groups are warranted. Similarly, the YSR has often been used to study developmental trajectories of problem behaviors, whereas little is known about longitudinal psychometric properties of this instrument. The latter implies that it is uncertain whether differences in adolescents' behavior over time are to be perceived as actual changes in behavior or as differences over time in the way adolescents interpret the questions. Although previous studies have examined the factor equivalence of the YSR across age groups (Fonseca-Pedrero, Sierra-Baigrie, Lemos-Giráldez, Paino, & Muñiz, 2012), these studies did not assess the same individuals over time. In this study, MI of the YSR internalizing syndrome scales (anxious/depressed, withdrawn/depressed, and somatic complaints) is assessed across four ethnic groups in the Netherlands and at two different waves.

METHOD

Participants

Two samples of a two-phase study were used (for a description of the design, see also Verhulp, Stevens, Van de Schoot, & Vollebergh, 2013). The sample of the *first wave* was taken from a large school-based screening phase. Adolescents were recruited from Dutch schools with more than 40% non-western immigrant adolescents. Of the eligible participants, 95% agreed to participate (wave 1 *N*=2,515; native Dutch *n*=328, Surinamese-Dutch *n*=356, Turkish-Dutch *n*=939, Moroccan-Dutch *n*=892; hereafter referred to as total sample). The sample of the *second wave* consisted of a subsample of adolescents who participated again in the second phase of the study, on average 14 months after wave 1. To include sufficient adolescents at risk of internalizing problems in the second phase of the study, two equally sized random samples were drawn from the school-based screening phase for the four largest ethnic groups in the Netherlands (one of those scoring in the borderline/clinical range and one scoring in the normal range on the YSR internalizing problems). In line with the design, around 50% of the adolescents in the second phase of the study scored in the borderline/clinical range of the YSR internalizing assessed at the first wave of the study (Table 2.1). During the second wave, parents were interviewed first and after they consented to approach their child, adolescents were requested to participate in the second wave. The response rate was 64% among parents and 96% of the approached adolescents agreed to participate during the second wave (*n*=349; native Dutch *n*=95, Surinamese-Dutch *n*=85, Turkish-Dutch *n*=87, Moroccan-Dutch *n*=82; hereafter referred to as subsample). The vast majority (82%) of the immigrant adolescents were second generation immigrants. See Table 2.1 for background information of the different (sub)samples.

Instruments

Youth Self-Report. The three internalizing syndrome scales of the Dutch version of the YSR were used (Achenbach & Rescorla, 2001).[1] In the subscales anxious/depressed (13 items), withdrawn/depressed (8 items), and somatic complaints (10 items) items addressed symptoms such as "I worry a lot", "I don't have much energy", and "I have nightmares". Response categories were "not at all" (0), "a little" (1), or "a lot" (2). In the current study we used the Dutch version of the YSR which has shown sufficiently good psychometric properties

1 All immigrant adolescents were able to fill out the questionnaire in Dutch, because all of them were educated in Dutch.

Table 2.1 Background characteristics of different (sub)samples

	Total sample (*N*=2,515)	Subsample (*n*=349)	Native Dutch (*n*=95)	Surinamese-Dutch (*n*=85)	Turkish-Dutch (*n*=87)	Moroccan-Dutch (*n*=82)
% Boys	45.9	43.3	41.1	48.2	40.2	43.9
Mean age at wave 1	14.1	14.0	14.0	14.0	14.3	13.8
% Borderline/clinical range YSR	19.4	50.4	50.5	49.4	51.7	50.0
% Born in the Netherlands[ns]	85.0	86.5	98.9	80.0	80.5	85.4
Perceive themselves as Dutch[a]*	1.9	2.3	3.8	2.2	1.7	1.6
Highest education level of parents*						
% No education completed	-	7.4	2.1	2.4	1.1	25.6
% Elementary school	-	16.0	4.2	5.9	41.4	13.4
% Lower secondary education	-	26.9	29.5	35.3	25.3	17.1
% Intermediate secondary education	-	33.2	32.6	42.4	23.0	35.4
% Higher secondary education	-	16.3	31.6	14.1	9.2	8.5

Note. All indicators were assessed at the first wave, except for the highest education level of parents which was asked to parents in the second wave. [a] Mean-level is presented here (answer categories range from 0 to 4). ns No significant differences were found between immigrant groups in the amount of adolescents born in the Netherlands. * Indicates significant differences between native Dutch and immigrant groups.

in both the native Dutch and Moroccan-Dutch immigrant population (Stevens et al., 2003; Verhulst, Van der Ende, & Koot, 1997b). Since the response categories consist of only three categories, we entered the items in the model as being categorical.[2]

Ethnicity. Ethnicity of the child was determined by the country of birth of the parents. If at least one of the parents was born in the Netherlands, Suriname, Turkey, or Morocco, children were defined as having a respectively native Dutch, Surinamese-Dutch, Turkish-Dutch, or Moroccan-Dutch ethnic background. The majority of the parents were born in the same country (e.g., both parents were born in Turkey; this accounted for 95% of the families). Whenever one of the parents was born in, for instance, Morocco while the other was born in Turkey, the country of birth of the mother was used as an indication of ethnicity.[3]

Statistical analyses

CFA for categorical data, using WLSMV and the delta parameterization in Mplus v7 (Muthén & Muthén, 1998-2012), was used to test whether the three-factor structure fits the data, both in the total sample of the first wave and in the four ethnic groups separately. In order to conclude whether the three internalizing syndrome scales fit the data sufficiently χ^2, CFI, TLI, and RMSEA were used. Next, to test for MI, two steps were performed. First, we tested MI across the four ethnic groups using the data from the first wave in both the total sample and among the adolescents who also participated in the second wave (hereafter referred to as subsample). Second, MI was also tested over time. To test for both types of MI we followed the procedure as described in Van de Schoot, Lugtig, and Hox (2012; see also Vandenberg & Lance, 2000).[4] In the baseline model, thresholds and factor loadings were freely estimated. In the first model, thresholds were estimated freely, but factor loadings were fixed to be equal across groups (and over time). In the second model, factor loadings were allowed to be freely estimated in the groups (or over time), whereas thresholds were fixed across groups (and over time). Finally, a model was tested in which both factor

2 A model with the items specified as being continuous showed a worse fit to the data when compared to the categorical specification. We also specified the items as having count distribution, but such a model resulted in a worse fit. The results of both models can be requested from the first author.

3 Suriname is a former Dutch colony which enabled Surinamese people to migrate to the Netherlands mainly for educational purposes starting from the 1950s. Since the 1960s, Turkish and Moroccan immigrants came to the Netherlands as labor migrants. The aforementioned groups belong to the largest immigrant groups in the Netherlands (De Valk, 2010).

4 Note that our analyses differed somewhat from the steps described by Van de Schoot and colleagues (2012), because we analyzed categorical data and therefore had to deal with thresholds instead of intercepts and residuals (see for example Agresti, 2002). Thresholds can be interpreted as the turning point where the probability of answering with the first category is no longer highest, but the probability of answering with the second category is highest. So, with three answering categories, two thresholds are estimated.

loadings and thresholds were constrained to be equal across groups (and over time). MI was concluded to be present if this final model was found to fit the data best.

In the subsample, the third answer category was not always used in all groups (none of the Surinamese-Dutch adolescents indicated they vomit a lot). To control for this issue, robust maximum likelihood estimator had to be used instead of the default weighted least square estimator. As a consequence, model fit indices were not available and the four MI models were compared using only the BIC values (Bayesian Information Criteria). The model with the lowest BIC value was selected, since a lower BIC value indicates a better tradeoff between fit and complexity.

RESULTS

The results of the CFA for categorical variables indicated that the three syndrome scales belonging to the internalizing problem scale fitted the data well in the total sample and in the separate ethnic groups at the first wave (see Table 2.2).

Table 2.2 Model fit indices for the three-factor model of internalizing syndrome scales of the Youth-Self Report in the total sample of the first wave and in different ethnic groups

	χ^2	*p*	CFI	TLI	RMSEA
Total sample	3290.193	<.001	.92	.91	.05
Native Dutch	850.536	<.001	.91	.90	.05
Surinamese-Dutch	751.432	<.001	.94	.94	.05
Turkish-Dutch	1312.078	<.001	.92	.91	.05
Moroccan-Dutch	1195.716	<.001	.93	.92	.05

Measurement invariance across groups

The next step was to examine four models for testing MI in the total sample of the first wave and in the subsample (for both samples we used data of the first wave).[5] In both samples, the model 3 in which the factor loadings and thresholds were fixed to be equal across groups, fitted the data best as indicated by the smallest BIC value (Table 2.3). Thus, MI was found in both samples.

5 In the models in which the thresholds were allowed to be freely estimated across the ethnic groups, some parameters were fixed automatically by Mplus to avoid singularity of the information matrix due to empty cells in the joint distribution of the categorical variables. Furthermore, in the baseline model in the subsample too many parameters were estimated and therefore the model might not have been identified.

Table 2.3 Bayesian Information Criterion for the models used for testing measurement invariance across ethnic groups and over time[5]

	Total sample (*N*=2,515)	Subsample (*n*=349)	AD over time (*n*=349)	WD over time (*n*=349)	SC over time (*n*=349)
Model 0	99677	18570	10444	7643	8311
Model 1	99113	18156	10370	7606	8276
Model 2	98579	17668	10405	7626	8294
Model 3	98111	17276	10356	7591	8262

Note. Model 0: factor loadings and thresholds freely estimated across groups or time; Model 1: factor loadings equal across groups or time; Model 2: thresholds equal across groups or time; Model 3: factor loadings and thresholds equal across groups or time. AD= Anxious/Depressed, WD= Withdrawn/Depressed, SC= Somatic Complaints. In the total sample and in the subsample, the three syndrome scales belonging to internalizing problems were highly correlated (AD with WD total sample *r*=.95 and subsample *r*=.94; AD with SC resp. *r*=.66 and *r*=.61; WD with SC resp. *r*=.67 and *r*=.63).

Comparing latent mean scores across ethnic groups resulted in different outcomes in the two samples. In the total sample, it appeared that Moroccan-Dutch adolescents showed significantly lower factor mean scores on the three internalizing syndrome scales than their native Dutch peers (see Table 2.4 for the latent mean scores). However, in the subsample no mean-level differences were found between ethnic groups at wave 1, which was to be expected given the selection procedure (the subsample consisted of 50% adolescents who scored in the borderline/clinical range on internalizing problems).

Measurement invariance over time

In the subsample, it was also examined whether adolescents interpreted the questions similarly over time. In order to reduce model complexity, the items were dichotomized (i.e., response category not at all versus a little/a lot) and the three syndrome scales were analyzed separately. For all three syndrome scales, model 3 resulted in the smallest BIC (Table 2.3), indicating that all adolescents interpreted the questions similarly at both waves.

Furthermore, for some immigrant groups small mean-level decreases were found over time (e.g., -0.35 on the withdrawn/depressed scale for Moroccan-Dutch adolescents; see also Table 2.4). However, Wald tests indicated that these decreases over time were found not to differ from the decreases found among native Dutch adolescents. Analyzing the mean change over time separately for those scoring in the normal range and those scoring in the borderline/clinical range of internalizing problems at the first wave, showed that in all groups the mean-level decreases were only present among those scoring in the

Table 2.4 Factor means (i.e., logits) of the three internalizing syndrome scales in the two samples and mean-level change over time for the four ethnic groups

		Native Dutch	Surinamese-Dutch	Turkish-Dutch	Moroccan-Dutch
		M (*SE*)	*M* (*SE*)	*M* (*SE*)	*M* (*SE*)
Group differences	*Total sample (N=2,515)*				
	Anxious/depressed	0.00 (0.00)	-0.23 (0.15)	-0.24 (0.13)	-0.81 (0.14)**
	Withdrawn/depressed	0.00 (0.00)	-0.07 (0.07)	-0.12 (0.06)	-0.38 (0.07)**
	Somatic Complaints	0.00 (0.00)	-0.17 (0.10)	-0.16 (0.09)	-0.46 (0.10)**
	Subsample (n=349)				
	Anxious/depressed	0.00 (0.00)	-0.12 (0.25)	-0.08 (0.26)	-0.40 (0.30)
	Withdrawn/depressed	0.00 (0.00)	-0.02 (0.15)	-0.02 (0.15)	-0.20 (0.16)
	Somatic Complaints	0.00 (0.00)	-0.12 (0.16)	-0.14 (0.15)	-0.04 (0.18)
Change over time	*Subsample (n=349)*				
	Anxious/depressed	-0.27 (0.16)	-0.55 (0.18)*	-0.43 (0.17)*	-0.58 (0.17)*
	Withdrawn/depressed	-0.15 (0.10)	-0.03 (0.10)	0.06 (0.10)	-0.35 (0.12)*
	Somatic Complaints	-0.02 (0.04)	-0.11 (0.05)*	-0.01 (0.04)	-0.09 (0.05)

Note. The native Dutch adolescents are the reference group for the comparison in the sample of the first and second wave and therefore the estimates are fixed to be zero. * Indicates a significant change over time within a specific group. ** Indicates that this group differs significantly from the native Dutch group.

borderline/clinical range at the first wave of the study (total sample: AD β=-.80, *SE*=0.10, *p*<.001; WD β=-.58, *SE*=0.10, *p*<.001; SC β=-.66, *SE*=0.18, *p*<.001).

DISCUSSION

This study adds to the literature on the cross-cultural or cross-ethnic validity of the YSR (Achenbach et al., 2008), since it was the first to show measurement invariance across four ethnic groups and over time. As such, these results indicate that the interpretation of the items of the internalizing syndrome scales were similar across these immigrant groups and over time, and provide support that the YSR can be used for longitudinal studies in which these ethnic groups are being compared.

Consistent with previous literature (Stevens et al., 2003), adolescents from Moroccan-Dutch descent reported fewer problems than native Dutch adolescents in the total sample. However, no ethnic differences were found at wave 1 in the subsample, which is in line with the selection procedure. Mean-level changes over time were found to be similar for the four ethnic groups. Since changes over time only occurred in the group of adolescents scoring in the borderline/clinical range, these decreases may have been due to regression to the mean.

Some limitations need to be considered as well. First, this study has only been able to test the cross-ethnic equivalence of the YSR internalizing scale within three immigrant populations. Future studies should try to replicate these findings in different countries with different ethnic groups. Note that in the current paper we assumed configural invariance, that is, we assumed the three-factor solution to fit best in the different ethnic groups. It could also be interesting to investigate in a large scale cross-cultural study whether the three-factor structure can be found in a wide range of different ethnic groups. Second, the results regarding the equivalence over time should be interpreted with some caution since only a small, partially at risk subset of the original sample was reassessed after 14 months. Furthermore, the limited sample size urged us to simplify our model for analysis over time.

3

Ethnic differences in parent-adolescent agreement on internalizing disorders

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ABSTRACT

Disagreement between parent and child reports on internalizing problems in adolescents poses a threat to diagnoses that are based on both parent- and adolescent-reported problems. In this paper, we analyze the possible influence of ethnicity on agreement in parent and adolescent reports of internalizing disorders. A two-phase study design was used. In the first phase, a large sample of adolescents was screened for internalizing disorders using the Youth Self-Report. In the second phase, adolescents scoring in the borderline/clinical range (50%) and in the normal range (50%) were selected for each ethnic group. Diagnostic interviews were conducted with 348 parents and adolescents (95 native Dutch, 85 Surinamese, 86 Turkish-Dutch, 82 Moroccan-Dutch dyads). Of the immigrant parents, Moroccan-Dutch parents reported fewer internalizing disorders compared to the native Dutch. Combining parent and adolescent reports therefore resulted in a lower amount of internalizing disorders among Moroccan-Dutch adolescents. In all ethnic groups, (parent- and adolescent-reported) internalizing diagnoses were related to mental health service use. Professionals in the field should be sensitive to possible discrepancies between parents and adolescents when diagnosing adolescents' internalizing disorders, in particular since underreports of internalizing disorders by parents might contribute to lower levels of mental health service use among some immigrant adolescents.

INTRODUCTION

Most studies gather diagnostic information from both parents and children to decide whether children or adolescents suffer from internalizing psychiatric disorders (e.g., Mash & Hunsley, 2005; Schniering, Hudson, & Rapee, 2000; Silverman & Ollendick, 2005). During early childhood, parents are generally perceived as the most reliable informants of their child's internalizing psychiatric disorders. As children grow older, clinicians tend to attach an increasing value to children's own perceptions of their internalizing problems due to, for instance, increases in cognitive abilities to report on their own behavior or feelings (Grills & Ollendick, 2002; 2003; Jensen et al., 1999). As a result, in adolescence, both parent and child reports are used to establish diagnoses. However, several studies have shown large discrepancies between parents and adolescents in diagnostic information they provide (e.g., Grills & Ollendick, 2002; 2003; Verhulst, Van der Ende, Ferdinand, & Kasius, 1997). So far, discrepant diagnostic information has usually been considered as complementary as opposed to unreliable (Jensen et al., 1999). It is assumed that parents and children's views should be considered equally important, since both are able to provide valid information concerning child's anxiety and depression.

In line with the foregoing, most studies that focused on prevalence rates of psychiatric disorders among adolescents combined parent and adolescent reports to obtain a diagnosis. Several methods have been applied to combine these different reports into one diagnosis. In some studies, children were considered to have a disorder if the DSM criteria for a specific disorder were met as reported by either the parent or the child (e.g., Canino et al., 2004; Verhulst, Van der Ende, Ferdinand, & Kasius, 1997), other studies regarded a symptom to be present if either parent or child reported it (Angold et al., 2002; Costello, Farmer, Angold, Burns, & Erkanli, 1997), and finally, some studies used best-estimate diagnoses, which were attributed when at least two informants indicated a diagnosis to be present (i.e., parent-child, parent-teacher, or child-teacher; Zwirs et al., 2007). Regardless of the specific method used, the central notion of all methods used in former studies is that both parents and children are given equal weight in determining whether a child suffers from a disorder.

If parent and child reports contribute evenly to the final diagnosis, it is of importance to gain more insight into the factors that influence levels of possible (dis)agreement between parent and adolescent reports of internalizing disorders, as these may considerably affect the pertinent diagnostic conclusions. Previous research has identified some factors that may affect the extent to which parents and their children agree about the presence of internalizing disorders, in particular characteristics of the child (type of disorder and

age) or family (parental psychopathology, lack of communication, family conflict; Grills & Ollendick, 2002).

Until now, immigrant status has rarely been considered in research examining agreement in the outcome of parent and adolescent diagnostic interviews. This may be an important omission, since current international migrations are of an unprecedented volume (Bhugra, 2004) and children of immigrants may be at increased risk of internalizing problems because of various disadvantages related to the migration of their parents, such as their limited socioeconomic resources within the family, their low social status, and their position as newcomer in a new and sometimes unwelcoming society (Guarnaccia & Lopez, 1998; Stevens & Vollebergh, 2008). Moreover, since one's cultural background has been supposed to influence one's interpretation of problem symptoms (Weisz et al., 1988) and immigrant children may more strongly adhere to the receiving culture than their parents (Le & Stockdale, 2008), immigrant parents and their children may relatively often disagree about the child's level of internalizing problems or disorders. Indeed, research on different ethnic groups, both ethnic minority and immigrant groups, suggests that ethnicity might influence parent-adolescent agreement (De Los Reyes & Kazdin, 2005; Roberts, Alegria, Roberts, & Chen, 2005). Additionally, in research using questionnaires to assess internalizing problems, parents and adolescents from ethnic minority groups have been found to disagree more about the problems of their child than did ethnic majority dyads (Lau et al., 2004; Van de Looij-Jansen, Jansen, De Wilde, Donker, & Verhulst, 2011). In a US-based study, all ethnic minority parents reported fewer internalizing problems than did their children (Lau et al., 2004), whereas in a study conducted in the Netherlands, Turkish immigrant parents were found to report more internalizing problems and Surinamese/Antillean parents were found to report fewer internalizing problems compared to their children (Van de Looij-Jansen et al., 2011). However, the impact of migrant status on parent-adolescent agreement regarding internalizing problems has not been examined using diagnostic interviews. Such research is needed because this might not only influence the extent to which immigrant children are diagnosed with an internalizing disorder but may also influence the decision to seek mental health care.

The implications of this parent-adolescent disagreement for mental health service use of the children may be considerable. In general, parents have been found to play a pivotal role in the pathways toward mental health care for their adolescent children (Logan & King, 2001; Zwaanswijk, Verhaak, Bensing, Van der Ende, & Verhulst, 2003). For instance, if parents do not identify any problems in their child, their child's chances to receive mental health care reduce considerably (Teagle, 2002; Verhulst & Van der Ende, 1997). Thus, low levels of parent-reported internalizing disorders may prevent their children from receiving help for

their problems. In fact, in a previous study, immigrant parents originating from Morocco, Turkey or Suriname and Moroccan-Dutch immigrant adolescents were found to report significantly lower levels of mental health service use for internalizing problems (Verhulp, Stevens, Van de Schoot, & Vollebergh, 2013). The current study enables us to investigate the importance of parent-reported internalizing disorders for the mental health service use of their adolescent children.

In sum, the present study adds to the current literature by examining the impact of migration status on parent-adolescent agreement on internalizing disorders as measured by a diagnostic interview by comparing three immigrant groups in the Netherlands with a non-immigrant reference group. Next to testing ethnic differences in the percentages of parent- and adolescent-reported internalizing disorders, the present study assessed ethnic differences in the agreement about the presence of internalizing disorders. In line with the foregoing, we expected less parent-adolescent agreement with regard to internalizing disorders in the immigrant groups. These discrepancies may be primarily due to immigrant parents reporting fewer internalizing disorders as compared to native Dutch parents, although differences between immigrant groups could also be present (Van de Looij-Jansen et al., 2011). Additionally, parent and adolescent reports of internalizing disorders were examined in relation to mental health service use (as reported by parent and adolescent). Reports of internalizing disorders were expected to be positively related to mental health service use, with strongest associations among parent reports.

METHOD

Sample

The present study used data from the second phase of a two-phase study. In the first phase of the study, a screening was performed at 16 schools which were selected because their population consisted of more than 40% non-western immigrant adolescents (N=3331; M_{age}=14.1). The response rate of the adolescents in the first phase of the study was 95%. In the second phase, we selected random samples of adolescents and their parents with either a native Dutch, Surinamese-Dutch, Turkish-Dutch, or Moroccan-Dutch background (the latter three groups belong to the largest immigrant groups in the Netherlands; De Valk, 2010). For all four groups of adolescents, 50% of the adolescents scored in the borderline/clinical range and 50% scored in the normal range on internalizing problems on the Youth Self-Report as assessed in the first phase of the study (YSR; Achenbach & Rescorla, 2001).

In the second phase of the study, diagnostic interviews were performed with both parents and adolescents. Parents, mostly biological mothers (91%), were interviewed first (*n*=381; response rate 64%; ranging from 57% among Surinamese-Dutch to 70% among Moroccan-Dutch parents). They provided permission to interview their adolescent child (96% of the parents provided informed consent; which varied from 92% among Moroccan-Dutch parents to 100% among native Dutch parents). Of the adolescents with parental consent, 96% agreed to participate (ranging from 92% among Surinamese-Dutch to 98% among Turkish-Dutch and native Dutch adolescents), which resulted in a sample of 349 parents and adolescents. Since one adolescent did not complete the diagnostic interview, the total study sample was 348 (native Dutch *n*=95, Surinamese-Dutch *n*=85, Turkish-Dutch *n*=86, and Moroccan-Dutch *n*=82). The mean age of the adolescents in the study sample was 15.2 years, ranging from 13.1 to 18.0 years of age. An overview of the sample characteristics is provided in Table 3.1. As shown in Table 3.1, the selection procedure succeeded, as the percentage of adolescents scoring in the borderline/clinical range in the first phase of the study was around 50% in all ethnic groups. Significant differences were only found in education level of parents. Native Dutch and Surinamese-Dutch parents did not differ with regard to mean education level, whereas Turkish-Dutch and Moroccan-Dutch parents had a significantly lower mean education level compared to parents of native Dutch origin. No differences in the mean education level were found between Turkish-Dutch and Moroccan-Dutch parents. The local Medical Ethical Committee approved the study, and all participants provided written informed consent for data use.

Instruments

Internalizing disorders. The Dutch version of the Anxiety Disorders Interview Schedule for DSM-IV Child Version (Siebelink & Treffers, 2001; Silverman & Albano, 1996) was used to assess internalizing disorders. The instrument consists of semi-structured interviews, with different versions for parents and children. Both versions are quite similar and in the present study, parents and adolescents were assessed for separation anxiety, social phobia, specific phobia, panic disorder, agoraphobia, generalized anxiety disorder, obsessive-compulsive disorder, posttraumatic-stress disorder, dysthymic disorder, and depressive disorder. Due to the limited amount of some disorders in the present study, a distinction was made only between anxiety and depressive disorders. To determine the diagnostic status of the adolescents, we followed the guidelines provided in the manual (Siebelink & Treffers, 2001; Silverman & Albano, 1996). To receive a diagnosis, the adolescent needed to meet the criteria prescribed by the DSM-IV and the severity should be rated by the interviewer as four

Table 3.1 Background characteristics of the study sample

	Total sample (*N*=348)	Native Dutch (*n*=95)	Surinamese-Dutch (*n*=85)	Turkish-Dutch (*n*=86)	Moroccan-Dutch (*n*=82)	Test statistics
% Boys	43.1	41.1	48.2	39.5	43.9	*n.s.*
Mean age (*SD*)	15.2 (1.0)	15.2 (1.0)	15.2 (0.9)	15.5 (1.1)	15.1 (1.0)	*n.s.*
Education level parents						ND=S>T=M
% No education completed	7.5	2.1	2.4	1.2	25.6	
% Elementary school	15.8	4.2	5.9	40.7	13.4	
% Lower level secondary education	27.0	29.5	35.3	25.6	17.1	
% Intermediate secondary education	33.3	32.6	42.4	23.3	35.4	
% Higher secondary education	16.4	31.6	14.1	9.3	8.5	
% Borderline/clinical range YSR*	50.3	50.5	49.4	51.2	50.0	*n.s.*

Note. * YSR scores as assessed in the first phase of the study. n.s. denotes non-significance regarding the comparison between native Dutch reference group and immigrant groups. ND=Native Dutch, S=Surinamese-Dutch, T=Turkish-Dutch, M=Moroccan-Dutch.

or higher on a scale from 0 (not severe) to 8 (really severe). Previous studies have shown acceptable to good test-retest reliabilities for this parent and child interview (Silverman, Saavedra, & Pina, 2001).

Mental health service use. Parents and adolescents were asked whether the adolescents received formal mental health care for their internalizing problems from any of several different professionals in the past year. To make sure that all parents and adolescents with different ethnic backgrounds agreed on the meaning of internalizing problems, a definition of internalizing problems was provided based on the items of the emotional problem scale of the Strengths and Difficulties Questionnaire (Goodman, 1997). Both parents and adolescents were given a list of possible professional caregivers, such as psychiatrists, (school) psychologists, or social workers. For both parents and adolescents separately, a dichotomous variable was created with 0 indicating that the adolescent did not receive care in the past year and 1 indicating that the adolescent received care in the past year (see also Verhulp et al., 2013).

Ethnicity. Ethnicity of the child was determined by the country of birth of the parents. If at least one parent was born in the Netherlands, Suriname, Turkey, or Morocco, children were defined as having a native Dutch, Surinamese-Dutch, Turkish-Dutch, or Moroccan-Dutch background. The majority of the parent dyads were born in the same country (i.e., 95% of the families). Whenever one of the parents was born in, for instance, Morocco while the other parent was born in Turkey, the country of birth of the mother was used as an indication of ethnicity. Although at least one of the parents of the immigrant adolescents was born in Morocco, Turkey, or Suriname, the vast majority of the immigrant adolescents were born in the Netherlands (82%).[1]

Education level. Education level was measured as the highest education level achieved by either of the parents (either within the Netherlands or in their country of origin). Response categories were 0 (no education completed), 1 (elementary school), 2 (lower level of secondary/vocational training), 3 (intermediate level of secondary/vocational training), or 4 (university education or higher level of vocational training).

1 In the current study, we used a definition of ethnicity that is often used in the Netherlands. This definition for ethnicity is appropriate for the Dutch situation, because 98% of the adolescents with a non-Western ethnic background in the Netherlands belong to the first or second generation (Statistics Netherlands, 2008) and a strong association has been found between the country of birth and self-classified ethnicity (Stronks, Kulu-Glasgow, & Agyemang, 2009).

Procedure

Intensively trained lay interviewers with a Turkish-Dutch or Moroccan-Dutch background performed the diagnostic interviews with Turkish-Dutch and Moroccan-Dutch parents to be able to perform interviews in their first language if necessary. These lay interviewers were experienced interviewers who also worked with children professionally. Developmental psychologists (who were also trained to perform the interview) conducted the interviews with the Surinamese-Dutch and native Dutch parents and with all adolescents. The training for both lay interviewers and developmental psychologists consisted of two days, with sessions on internalizing problems, the ADIS-C, and more general interview techniques. Furthermore, interviewers practiced using the ADIS-C by rating two sample ADIS-C interviews which were subsequently discussed during one of the sessions. Next, all interviewers video-taped one of their own first interviews with parents and adolescents (i.e., both a parent and an adolescent interview) and received feedback from a developmental psychologist with multiple years of experience in using the ADIS-C. Next to this clinician, two other developmental psychologists rated these video-taped interviews (i.e., for each interviewer a parent- and a child-interview was rated or in case interviewers only interviewed parents or children then only a parent- or a child-interview was rated), and the inter-rater agreement about the presence and severity of a certain diagnosis between the interviewer and this rater was found to be good. The average kappa for the presence of internalizing disorders was .93 for parent-reported diagnoses and .91 for adolescent-reported diagnoses. The inter-rater agreement about the severity ratings of the disorders was examined using Pearson's correlations, showing average correlations of .91 for parents and .96 for adolescents. Note that only the final diagnostic status was used in our analyses (the severity rating was, next to the presence of sufficient symptoms, necessary to receive a diagnosis).

Statistical analyses

Cross tabulations were used to indicate ethnic differences in the total percentage of adolescents with internalizing disorders (i.e., reported by parents and adolescents separately) split between anxiety and affective disorders. Additionally, for each ethnic group, gender differences in adolescent- and parent-reported internalizing problems were examined. Logistic regression analyses were used to test ethnic differences using dummy variables of ethnicity.

Furthermore, cross tabulations were used to calculate ethnic differences in total percentages of adolescents with internalizing diagnoses (reported by either parent, child,

or both), in percentages of parents and adolescents who agreed on the presence of an internalizing diagnosis (i.e., agreement on the dyadic level), in percentages of cases for which only parents indicated a diagnosis, and in percentages of cases for which only adolescents indicated a diagnosis. Logistic regression analyses in SPSS were used to test these ethnic differences. All analyses including parent reports were also performed using educational level of parents as a covariate.

Finally, Mplus (Version 7; Muthén & Muthén, 1998-2012) was used to examine the associations between parent- and adolescent-reported internalizing disorders and mental health service use while controlling for gender and age of the child and educational level of the parents. Multiple group analyses were used to test whether the associations differed between different ethnic groups.

RESULTS

Parent and adolescent reports of internalizing disorders

Table 3.2 shows parent- and adolescent-reported diagnoses separately as well as by anxiety and affective disorders. Immigrant adolescents did not report significantly fewer internalizing disorders compared to native Dutch adolescents (Surinamese-Dutch: *OR*=0.80, 95% CI[0.44,1.45]; Turkish-Dutch: *OR*=0.90, 95% CI[0.50,1.63]; Moroccan-Dutch: *OR*=0.68, 95% CI[0.37,1.26]). Moroccan-Dutch parents, however, reported fewer internalizing disorders compared to native Dutch parents (*OR*=0.37, 95% CI[0.18,0.77]), whereas Surinamese-Dutch and Turkish-Dutch parents reported similar amounts of internalizing disorders for their children compared to native Dutch parents (*OR*=0.73, 95% CI[0.39,1.39] and *OR*=1.17, 95% CI[0.63-2.15] respectively). Table 3.2 further presents the gender distribution of adolescents with an internalizing disorder. At least two thirds of the adolescents with an internalizing disorder were girls across all ethnic groups. When differentiating between anxiety and affective disorders, Moroccan-Dutch parents reported significantly fewer anxiety disorders (Surinamese-Dutch: *OR*=0.77, 95% CI[0.40,1.46]; Turkish-Dutch: *OR*=1.22, 95% CI[0.66,2.26]; Moroccan-Dutch: *OR*=0.32, 95% CI[0.15,0.69]), but did not report fewer affective disorders (Surinamese-Dutch: *OR*=0.74, 95% CI[0.12,4.53]; Turkish-Dutch: *OR*=1.11, 95% CI[0.22,5.64]; Moroccan-Dutch: *OR*=1.17, 95% CI[0.23,5.93]) compared to native Dutch parents. Again, no ethnic differences were found among adolescents regarding both anxiety and affective disorders (Anxiety: Surinamese-Dutch *OR*=0.76, 95% CI[0.42,1.38]; Turkish-Dutch *OR*=0.90, 95% CI[0.50,1.63]; Moroccan-Dutch *OR*=0.61, 95% CI[0.33,1.13]; Affective: Surinamese-Dutch

OR=0.40, 95% CI[0.10,1.55]; Turkish-Dutch *OR*=0.39, 95% CI[0.10,1.53]; Moroccan-Dutch *OR*=0.41, 95% CI[0.11,1.61]). Finally, Table 3.2 shows the ethnic differences in mental health service use for internalizing problems. All immigrant parents reported that their children used mental health service for internalizing problems significantly less compared to native Dutch parents. Among adolescents, only Moroccan-Dutch adolescents reported significantly lower levels of mental health service use compared to their native Dutch peers (for test statistics, see Verhulp et al., 2013).

Agreement on parent and adolescent reports of internalizing disorders

Combining the parent- and adolescent-reported internalizing disorders into a single diagnosis resulted in fewer internalizing disorders among Moroccan-Dutch adolescents compared to native Dutch adolescents (see Table 3.3; Surinamese-Dutch: *OR*=0.61, 95% CI[0.34,1.11]; Turkish-Dutch: *OR*=1.22, 95% CI[0.67,2.21]; Moroccan-Dutch: *OR*=0.51, 95% CI[0.28,0.93]). To further illustrate the (dis)agreement between parents and adolescents on internalizing diagnosis, the amount of internalizing disorders reported by both parents and adolescents (i.e., cases in which parents and adolescents agreed on the presence of a disorder) and the disorders reported only by the parent or the adolescent (i.e., cases in which parents and adolescents disagreed on the presence of a disorder) are presented in Table 3.3.

Table 3.2 Percentage of adolescents (girls and boys) with internalizing diagnoses (based on parent and adolescent reports presented separately by anxiety and affective disorders) and mental health service use for internalizing problems (reported by parents and adolescents)

	Native Dutch	Surinamese-Dutch	Turkish-Dutch	Moroccan-Dutch
Adolescent diagnoses - Total	43.2 (78.0/22.0)	37.6 (78.1/21.9)	40.7 (71.4/28.6)	34.1 (75.0/25.0)
Anxiety disorder	43.2	36.5	40.7	31.7
Affective disorder	8.4	3.5	3.5	3.7
Parent diagnoses - Total	33.7 (71.9/28.1)	27.1 (78.3/21.7)	37.2 (68.8/31.2)	15.9* (69.2/30.8)
Anxiety disorder	32.6	27.1	37.2	13.4*
Affective disorder	3.2	2.4	3.5	3.7
Mental health service use				
Parent	30.5	17.6*	10.5*	7.3*
Adolescent	22.1	17.6	15.1	8.5*

Note. Percentages in brackets represent the gender distribution of adolescents with an internalizing disorder for girls and boys, respectively. * Indicates a significant difference as compared to the native Dutch reference group.

Table 3.3 Total percentage of adolescents with internalizing diagnoses (reported by either parent, adolescent, or both) and percentages of cases in which both parents and adolescents reported a diagnosis (i.e., agreement) and cases in which only the adolescent or only the parent reported a diagnosis (i.e., disagreement)

	Native Dutch	Surinamese-Dutch	Turkish-Dutch	Moroccan-Dutch
Total diagnoses	56.8	44.7	61.6	40.2*
Reported by both	20.0	20.0	16.3	9.8†
Reported only by adolescent	23.2	17.6	24.4	24.4
Reported only by parent	13.7	7.1	20.9	6.1

Note. * Denotes a significant difference compared to the native Dutch reference group (p<.05). † Denotes a trend toward significance compared to the native Dutch reference group (p<.10).

Table 3.3 indicates that the percentage of parent-adolescent agreement about the presence of an internalizing disorder (i.e., diagnoses reported by both parent and adolescent) was lower only for the Moroccan-Dutch adolescents relative to the native Dutch reference group, although this difference only showed a trend toward significance (*OR*=0.43, 95% CI[0.18,1.05]). Considering parent-only reported internalizing disorders, differences in percentages between ethnic groups seem to indicate fewer internalizing disorders reported by Surinamese-Dutch and Moroccan-Dutch parents compared to native Dutch parents, although these differences were non-significant.

Parental education level

Table 3.1 shows clear ethnic differences in education level of the parents, with Turkish-Dutch and Moroccan-Dutch parents having lower education levels than native Dutch and Surinamese-Dutch parents. Therefore, analysis concerning parent-reports were rerun using parental education level as a covariate. First, ethnic differences in *parent*-reported internalizing disorders were tested again. After controlling for education level, for Moroccan-Dutch parents only a trend toward significance was found (*OR*=0.50, 95% CI[0.23,1.06]). Second, the *total amount* of internalizing disorders (reported by either parents and/or adolescents) among Moroccan-Dutch adolescents did not significantly differ from the native Dutch adolescents, after controlling for parental education level (*OR*=0.60, 95% CI[0.32,1.13]). Furthermore, regarding *agreement* between parents and adolescents on the presence of an internalizing disorder, the previously found difference between Moroccan-Dutch and native Dutch adolescents was non-significant after controlling for education level of parents (*OR*=0.49, 95% CI[0.19,1.22]). Finally, ethnic differences in *parent-only*

reported disorders were also re-examined. Again, the effect remained non-significant for Moroccan-Dutch parents (*OR*=0.61, 95% CI[0.20,1.86]). However, a non-significant effect became significant for Turkish-Dutch parents, indicating that after controlling for education level Turkish-Dutch parents reported significantly more internalizing disorders for their adolescent children than native Dutch parents (*OR*=2.67, 95% CI[1.13,6.28]).

Associations with mental health service use

To examine the possible consequences of the lower number of parental reports on internalizing disorders among Moroccan-Dutch compared to Dutch native adolescents, associations of parent- and adolescent-reports of internalizing disorders with parent- and adolescent-reported mental health service use were investigated. The effects of age, gender, and education level of parents were controlled for but deleted from the model since they did not contribute significantly to the model.

The results of the analysis are shown in Figure 3.1, indicating that in the total sample, parent-reported internalizing disorders related to parent-reported mental health service use while adolescent-reported internalizing disorders related to adolescent-reported mental health service use. Cross paths of parent-reported internalizing disorders with adolescent-reported mental health service use and of adolescent-reported internalizing disorders with parent-reported mental health service use were not significant. Multi-group analyses were used to examine whether the associations between reports on internalizing disorders and mental health service use differed between ethnic groups. Wald tests revealed that all associations were similar across ethnic groups (the path from parent-reported internalizing disorder to parent-reported mental health service use: Wald=1.77, *p*=.621 and from adolescent-reported disorder to adolescent-reported service use: Wald=1.89, *p*=.596).

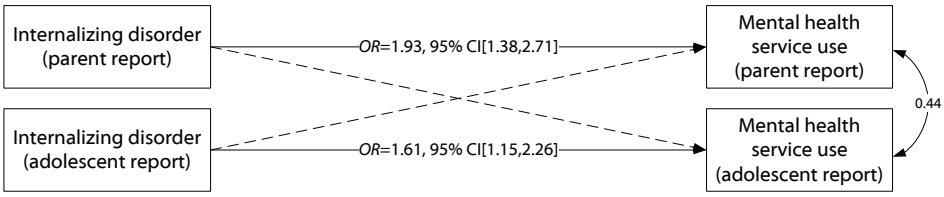

Figure 3.1 Logistic regression model testing the associations between internalizing disorders (reported by parents and adolescents) and mental health service use (reported by parents and adolescents).

DISCUSSION

The aim of the present study was to examine the impact of immigrant status on the agreement between parents and adolescents regarding adolescents' internalizing disorders and possible consequences for mental healthcare. The results showed significant differences in parent-adolescent agreement between native Dutch and only one of the three immigrant populations. Moroccan-Dutch parents reported lower levels of internalizing disorders for their children compared to native Dutch parents, whereas Moroccan-Dutch immigrant adolescents themselves reported as many internalizing disorders as their native Dutch peers, providing preliminary evidence for a lower level of parent-adolescent agreement in this specific immigrant population. More specifically, by testing ethnic differences in percentages of cases for which both parents and their child reported an internalizing disorder, the results indeed showed that the degree of parent-child agreement on the presence of an internalizing disorder in the child was much lower in the Moroccan-Dutch immigrant compared to the native Dutch ethnic group. The consequences of Moroccan-Dutch immigrant parents' reports for pertinent diagnostic conclusions were clear. When combining reports of both informants – a method frequently used to assess adolescent diagnoses – Moroccan-Dutch immigrant adolescents were considerably less often diagnosed with an internalizing disorder compared to native Dutch adolescents. The results furthermore suggested that this lower level of parental reports on internalizing disorders among the Moroccan-Dutch immigrant group negatively affects Moroccan-Dutch children's access to mental health care, since there is a clear relationship between parental reports on adolescent internalizing disorders and parent-reported mental health service use by the child.

The results further showed that the relatively low levels of parent-reported internalizing disorders by Moroccan-Dutch parents and the resulting low levels of parent-adolescent agreement in Moroccan-Dutch immigrant families could be partly explained by the lower education level of Moroccan-Dutch immigrant compared to native Dutch parents. Possibly, both their low level of education and their cultural background may have influenced these parents' perceptions of their child's internalizing problems. More specifically, compared to their children and other parents, lowly educated Moroccan-Dutch immigrant parents may be less likely to define their children's problems psychologically (De Swaan, 1990; Knipscheer & Kleber, 2005) and may have higher thresholds for considering child behaviors as abnormal (Weisz et al., 1988). Furthermore, it has become clear that, in general, it might be difficult for parents to detect internalizing problems, as adolescents have to share their internal states with their parents (Grills & Ollendick, 2002; Jensen et

al., 1999). In this sense, it is not strange that a previous study has indicated that a lack of communication between parents and adolescents results in larger discrepancies between parent and adolescent reports (Grills & Ollendick, 2002). Combining our findings with research showing greater cultural differences between Moroccan-Dutch adolescents and their parents compared to Turkish-Dutch adolescents and their parents (Verkuyten, 2003), may indicate that Moroccan-Dutch adolescents in the Netherlands might not share the same feelings and emotions with their parents as other adolescents do (Pels & De Haan, 2003). This might explain why Moroccan-Dutch parents seem to be relatively unaware of their children's problems and subsequently report relatively few internalizing disorders.

In contrast, when compared to native Dutch parents, Turkish-Dutch parents were found to report relatively high levels of internalizing disorders in their children after controlling for education level of the parents. These findings are in line with several studies conducted in several Turkish-Dutch immigrant samples and in Turkish children in Turkey. Parents of Turkish-Dutch immigrant children have been found to report more internalizing problems than non-immigrant parents, but comparing Turkish-Dutch immigrant children to Turkish children in Turkey revealed no differences between these groups with regard to internalizing problems (Bengi-Arslan, Verhulst, Van der Ende, & Erol, 1997; Van de Looij-Jansen et al., 2011). Together, these studies might be suggestive of an effect of Turkish culture on parental perceptions of children's internalizing disorders or symptoms. In studies performed ten years ago, Turkish-Dutch immigrant adolescents were also found to report more internalizing problems than native Dutch adolescents (Janssen et al., 2004). However, these differences were already less pronounced than the differences found among parents (Bengi-Arslan et al., 1997). Findings in different generations and at different time points suggest that Turkish-Dutch immigrant adolescents become more similar to non-immigrant adolescents in reporting about problem behavior, which has been suggested to be influenced by the fact that adolescents are more strongly integrated in the new society than their parents (Janssen et al., 2004).

Although reports on internalizing disorders may be more comparable between Surinamese-Dutch, Turkish-Dutch, and native Dutch parents and adolescents, Surinamese-Dutch and Turkish-Dutch parents reported lower levels of mental health service use in our study. Surinamese-Dutch and Turkish-Dutch adolescents did not report lower levels of mental health service use themselves compared to native Dutch adolescents, which may indicate that these adolescents also seek help for their internalizing problems without informing their parents (for example in the school context). Furthermore, in a previous study, we showed that the subjective identification of emotional problems is more important in association with mental health service use than the reports on problem

symptoms (Verhulp et al., 2013). Surinamese-Dutch and Turkish-Dutch parents did not identify emotional problems to a similar extent compared to native Dutch parents and the subjective identification of emotional problems mediated the association between ethnicity and mental health service use. These findings suggest that Turkish-Dutch and Surinamese-Dutch parents are less likely to seek help for their children's internalizing problems because they tend to subjectively identify fewer emotional problems.

The present study has provided more insight into the overlap between diagnoses based on parent and child reports, showing that the agreement between parent and child reports is rather limited in general and that the independent contribution of both the parent and child reports of internalizing disorders is substantial. More specifically, for all four ethnic groups, for more than 50% of the participants their diagnosis was based on only one informant. Obviously, there is no 'gold standard' to decide whether the parent or the child report on internalizing disorders is right or wrong. However, when only one of the two informants reports lower levels of internalizing disorders, combining information provided by parents and adolescents by giving them similar weight might result in a lower number of diagnoses. In this study, this was the case for Moroccan-Dutch adolescents. For the Moroccan-Dutch adolescents in our sample, the lower number of internalizing diagnoses might not be an accurate estimate because Moroccan-Dutch adolescents themselves reported similar amounts of internalizing disorders compared to the native Dutch, Surinamese, and Turkish-Dutch adolescents. Studies reporting on prevalence rates among different ethnic groups might also suffer from this problem and therefore these prevalence rates should be interpreted with caution.

To solve the issue of low parent-adolescent agreement, previous studies have suggested using a more continuous approach by analyzing problems at the symptom level (Brown-Jacobsen, Wallace, & Whiteside, 2011; Comer & Kendall, 2004). Although this might enhance parent-adolescent agreement, it is unlikely to solve the ethnic differences in parent-adolescent agreement on internalizing disorders. Analyzing reports on psychiatric disorders at the symptom level will possibly result in higher parent-adolescent agreement among all ethnic groups and will not result in smaller ethnic differences. Therefore, when investigating the prevalence rates of psychiatric problems among immigrant groups, parent and adolescent reports should be studied to examine whether underreports of parents in some immigrant groups influence these prevalence rates.

Several limitations of the present study should be considered. First, some apparent differences between ethnic groups were found to be non-significant, most likely due to insufficient group sizes and thus limited power. Second, the variation in the outcome variable was limited, which might have influenced the results. Future studies should replicate the

findings of the current study using a larger sample and more variation in the outcome variable to assess whether non-significant differences found in the current study become significant. A larger sample size might also have provided the possibility to differentiate more consistently between anxiety and affective disorders. To disentangle the parent-adolescent discrepancies more thoroughly such a differentiation may be worthwhile. Third, Moroccan-Dutch and Turkish-Dutch lay interviewers were used to interview the Moroccan-Dutch and Turkish-Dutch parents, respectively, in order to facilitate communication in participants' first language. Although all lay interviewers were trained elaborately and did have some experience in working with children and/or adolescents, they were not psychologists. Finally, another limitation of the present study was that it focused only on internalizing disorders. Studying parent-adolescent agreement regarding externalizing disorders would also be very interesting, since these types of behaviors are more visible for parents and therefore agreement is probably larger in general. Moreover, ethnic differences in parent-adolescent agreement might also differ with regard to different types of behavior. For example, compared to other ethnic groups, previous research showed that Turkish-Dutch parents have more difficulties detecting ADHD (Zwirs, Burger, Buitelaar, & Schulpen, 2006), while they seem to have no difficulties detecting internalizing problems in their children (Van de Looij-Jansen et al., 2011).

To our knowledge, the present study is the first to examine ethnic differences in parent- and adolescent-reports of internalizing disorders as well as the contributions of both informants to the final diagnosis. In order to enhance the generalizability of the present findings, other studies in other countries with different ethnic groups should examine the same research questions including the potential influence of parental education level. Even more importantly, research is necessary to explain why a lack of parent-adolescent agreement on internalizing disorders may be especially prevalent in certain immigrant groups. More specifically, more research is needed to understand why these immigrant populations, besides their low education level, experience difficulties reporting on their children's problem behaviors. Do they actually proto-professionalize problems to a lesser extent and/or do they have different thresholds in when to consider behavior as abnormal or problematic? For example, these parents may need mental health education on internalizing problems and possible benefits of mental health service use. Finally, it would also be interesting for future research to attempt to tap into variation within immigrant populations. For example, in the current study, we did not account for the amount of years immigrant parents resided in the Netherlands since their migration, being first- or second-generation immigrants, or for instance, the extent to which these parents are oriented toward the Dutch and their ethnic culture (i.e., parental acculturation orientations). These

factors may also influence on parents' perceptions of their children's behavior and as a consequence have an impact on parent-adolescent agreement on internalizing disorders (e.g., Sood, Mendez, & Kendall, 2012).

Conclusion

Although discrepant diagnostic information is considered complementary as opposed to unreliable (Jensen et al., 1999), clinicians tend to base their final diagnostic conclusion on parent rather than child reports (Grills & Ollendick, 2003). As a result, clinicians should be aware of the fact that some immigrant parents might underreport internalizing disorders in their (adolescent) children. In other words, reports of internalizing disorders by adolescents should perhaps be taken more seriously particularly in some immigrant groups (Cantwell, Lewinsohn, Rohde, & Seeley, 1997). Another important issue to be aware of in some immigrant groups is that the pathway toward mental health care through parents may be used less often. In order to reach out to these immigrant adolescents and provide them with adequate mental health care, mental health education could be provided to these immigrant populations. In addition, other pathways may be considered toward mental health care. Schools, general practitioners, social workers, and other professionals should be aware of the possibility that immigrant parents might experience more difficulties reporting on their children's internalizing problems and therefore with entering mental health care for their children.

4

The diagnostic utility of the YSR/CBCL internalizing problem scale among adolescents: Comparing immigrant and non-immigrant groups

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ABSTRACT

The aim of the study was to examine the diagnostic utility of the Youth Self-Report (YSR) and Child Behavior Checklist (CBCL) internalizing problem scale across immigrant and non-immigrant groups, by testing associations with diagnostic instruments, with emotional problem identification and between the YSR and CBCL. For this study, we selected a sample of 348 adolescents of which 50% scored in the borderline/clinical range on YSR internalizing problems in a previous phase of the study (native Dutch *n*=95, Surinamese-Dutch *n*=85, Turkish-Dutch *n*=86, Moroccan-Dutch *n*=82). Parents and adolescents completed the YSR/CBCL, a diagnostic interview (ADIS C/P), and a question on emotional problem identification. Associations between the YSR/CBCL internalizing problem scale and diagnostic status were significant for all four adolescent groups, but only for Surinamese-Dutch immigrant and native Dutch parents. The YSR/CBCL borderline/clinical cut-off scores yielded low sensitivity scores for diagnoses in all groups, with lowest scores among Turkish-Dutch and Moroccan-Dutch immigrant groups. Finally, associations between YSR/CBCL and emotional problem identification were significant among all adolescent groups and all parent groups except the Moroccan-Dutch. Our study indicates that the diagnostic utility of the CBCL may not be acceptable for some immigrant populations in the Netherlands, namely Turkish-Dutch and Moroccan-Dutch. This implies that for these immigrants, CBCL scores insufficiently reflect their children's internalizing problems, which may also have negative consequences for adolescents' pathways toward mental health care.

INTRODUCTION

Early identification of internalizing problems is essential among children and adolescents, since these problems often become more severe over time (Costello, Copeland, & Angold, 2011). Therefore, being able to intervene at an early stage is essential and probably cost-effective (Farrell & Barrett, 2007; Simon, Dirksen, Bögels, & Bodden, 2012). The Child Behavior Checklist and the Youth Self-Report are widely used screening questionnaires to identify children and adolescents at risk of behavioral and emotional problems (CBCL and YSR; Achenbach & Rescorla, 2001; Achenbach et al., 2008). Both the CBCL and YSR have been frequently used in many countries across the world and have been found to be reliable within several countries and in different immigrant groups (Achenbach et al., 2008; Achenbach, 2010; Ivanova et al., 2007a; 2007b; Rescorla et al., 2012). Although the diagnostic utility of these questionnaires has been examined in several Western populations (Ferdinand, 2007; Ferdinand, 2008; Kendall et al., 2007; Seligman, Ollendick, Langley, & Baldacci, 2004), it has not been examined across immigrant groups. The present study addressed this gap in the literature by examining the diagnostic utility of the YSR and CBCL internalizing problem scale in three immigrant groups in the Netherlands.

The CBCL and YSR were originally designed to "describe a broad spectrum of problems" (Achenbach et al., 2008, p. 256) and not specifically to measure whether a disorder is present. However, to examine the diagnostic utility of these questionnaires, results based on CBCL and YSR are often compared with results of diagnostic interviews. Previous studies on the diagnostic utility of the YSR and CBCL appear to be promising. In a meta-analysis it was shown that the internalizing problem scale of the CBCL is able to differentiate between youth with and without an anxiety disorder (Seligman et al., 2004). Other studies tested the YSR and CBCL internalizing-type DSM-IV scales (i.e., Anxiety Problems and Affective Problems) against both anxiety and affective diagnoses (Ferdinand, 2007; 2008). As the DSM scale Anxiety Problems contains only 5 items, which may be too few to cover the entire range of anxiety disorders, associations between YSR and CBCL anxiety problems and anxiety disorders were found to be poor or fair (Ferdinand, 2007; 2008). The Affective Problems scale performed better and was strongly associated with affective disorders (Ferdinand, 2008).

Far less is known about the diagnostic utility of the YSR and CBCL in different immigrant groups (Achenbach et al., 2008), which constitutes a gap in the literature because in most western countries immigrant populations have grown considerably in the past decennia (Bhugra, 2004). It is important to gain knowledge on the diagnostic utility of the YSR and CBCL in different ethnic groups, because it is known that immigrant adolescents receive less mental health services (e.g., Elster, Jarosik, VanGeest, & Fleming, 2003; Verhulp, Stevens,

Van de Schoot, & Vollebergh, 2013) and this might in part be due to difficulties identifying immigrant adolescents at risk of problem behaviors (Green et al., 2012). Therefore, the purpose of the present study was to examine differences between immigrant and non-immigrant adolescents with respect to the diagnostic utility of the YSR and CBCL internalizing problem scale using multiple methods. First, the association between the YSR and CBCL was examined to determine cross-informant agreement in different ethnic (i.e., immigrant and non-immigrant) groups. Rescorla et al. (2013) recently reported a mean CBCL/YSR correlation of .45 for the internalizing scale across 24 countries, with a range from .21 for Japan to .61 for Algeria. However, they did not calculate cross-informant agreement on internalizing problems for different ethnic groups within countries. Second, YSR and CBCL internalizing scores were tested against results of a diagnostic interview performed among adolescents and their parents. Tests of association were conducted using both continuous scores on the YSR and CBCL as well as borderline/clinical cut-off scores provided in the manual (Achenbach & Rescorla, 2001). Finally, YSR and CBCL internalizing scores were correlated with a global, more subjective measure of emotional problem identification, since we previously found that emotional problem identification was more strongly associated with mental health service use than were YSR/CBCL internalizing problem scores (Verhulp et al., 2013).

METHOD

Sample

Data from the second phase of a two-phase study were used in the present study. In the first phase of the study, a school-based screening was performed among more than 3000 adolescents in urban regions in the Netherlands on YSR internalizing problems to include sufficient adolescents with internalizing problems in the second phase of the study (the response rate in the first phase of the study was 95%). For the second phase of the study, which on average took place after 14 months, random samples of parents and adolescents with a native Dutch, Surinamese-Dutch, Turkish-Dutch, and Moroccan-Dutch background were selected for participation (the latter three belong to the largest immigrant groups in the Netherlands; De Valk, 2010). By design, 50% of the adolescents selected in each ethnic group for the second phase of the study scored in the borderline/clinical range.

Interviews were then conducted with these parents and adolescents. Parents, mostly biological mothers (91%), were interviewed first at home (*N*=381; average response rate 64%; ranging from 57% among the Surinamese-Dutch to 70% among the Moroccan-Dutch parents). Parents then provided permission to interview their adolescent child (96% of

the parents provided informed consent; which varied from 92% among Moroccan-Dutch parents to 100% among native Dutch parents). Of the adolescents with parental consent, 96% agreed to participate, which resulted in a total sample of 349 parents and adolescents. Interviews with adolescents were held at their schools. One adolescent did not complete the diagnostic interview and therefore the total study sample was 348 (native Dutch *n*=95, Surinamese-Dutch immigrants *n*=85, Turkish-Dutch immigrants *n*=86, and Moroccan-Dutch immigrants *n*=82). The background characteristics of the sample are presented in Table 4.1, which also shows that our selection procedure succeeded as 50% of the adolescents in all ethnic groups scored above the borderline/clinical cut-off on the YSR internalizing problem scale assessed in the first wave of the study. However, it should be noted that for Moroccan-Dutch adolescents this percentage dropped in the second wave, resulting in relatively few Moroccan-Dutch adolescents scoring above the borderline/clinical cut-off at wave 2. The study was approved by the local Medical Ethical Committee and all participants provided written informed consent for data use.

Procedure

In phase 2, each parent and adolescent participated in a diagnostic interview. Additionally, parents completed the CBCL, adolescents completed the YSR, and both informants

Table 4.1 Background characteristics of the study sample (*n*=348)

	Native Dutch	Surinamese-Dutch	Turkish-Dutch	Moroccan-Dutch	Test statistics
% Boys	41.1	48.2	39.5	43.9	*n.s.*
Mean age (*SD*)	15.2 (1.0)	15.2 (0.9)	15.5 (1.1)	15.1 (1.0)	*n.s.*
Education level parents					nd > t, m
No education completed %	2.1	2.4	1.2	25.6	
Elementary school %	4.2	5.9	40.7	13.4	
Lower level secondary education %	29.5	35.3	25.6	17.1	
Intermediate secondary education %	32.6	42.4	23.3	35.4	
Higher secondary education %	31.6	14.1	9.3	8.5	
% Bc-range YSR (phase 1)*	50.5	49.4	51.2	50.0	*n.s.*
% Bc-range YSR (phase 2)*	31.6	23.5	33.7	14.6	nd > m
% Bc-range CBCL (phase 2)*	30.5	28.2	26.7	9.8	nd > m

Note. * Bc-range represents borderline/clinical range of YSR/CBCL internalizing problems at phase 1 and phase 2. *n.s.* denotes non-significance regarding the comparison between native Dutch versus immigrant groups. nd=Native Dutch, s=Surinamese-Dutch, t=Turkish-Dutch, m=Moroccan-Dutch.

responded to several other questions. The interviews with Turkish-Dutch and Moroccan-Dutch immigrant parents were performed by intensively trained lay interviewers with a Turkish-Dutch or Moroccan-Dutch background, to ensure that parents were able to communicate in their preferred language. Because of sufficient Dutch language ability, the interviews with the Surinamese-Dutch and native Dutch parents and with all adolescents were performed by Dutch developmental psychologists trained to perform the interview. To be able to control the quality of the diagnostic interviews performed by all interviewers, the interviewers video-taped one of their interviews (i.e., both a parent and a child interview) and received feedback from a clinical psychologist. Two other developmental psychologists also rated the taped interviews for purposes of measuring interrater agreement.

Instruments

Internalizing problems. The Dutch version of the Youth Self-Report (YSR) and Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) were used. Furthermore, Turkish and Moroccan-Arabic versions of the CBCL were used for Turkish-Dutch and Moroccan-Dutch parents. Syndromes included on the internalizing scale for both forms were Anxious/Depressed, Withdrawn/Depressed, and Somatic Complaints. Items addressed various symptoms like "I am unhappy, sad, or depressed" and "I worry a lot". Response categories were not at all (0), a little (1), or a lot (2). Previous studies have found acceptable to good test-retest reliability and internal consistency for the Dutch translation of the original American version of the YSR (e.g., Verhulst, Van der Ende, & Koot, 1997b). Adequate fit and measurement invariance of the YSR internalizing syndrome scales were shown across the ethnic groups examined in the current study (Verhulp, Stevens, Van de Schoot, & Vollebergh, 2014). Turkish and Moroccan-Arabic versions of the CBCL have been used in previous studies and have shown acceptable psychometric properties (Bengi-Arslan, Verhulst, Van der Ende, & Erol, 1997; Stevens, Vollebergh, Pels, & Crijnen, 2007a; Verhulst, Van der Ende, & Koot, 1996). In the present study, Cronbach's alpha for the CBCL internalizing problem scale was .81 for the total sample (ranging from .66 among Turkish-Dutch parents to .84 among native Dutch parents).

Internalizing disorders. The Dutch version of the Anxiety Disorders Interview Schedule for DSM-IV-Child Version (Siebelink & Treffers, 2001; Silverman & Albano, 1996) was used to examine internalizing disorders. The instrument consists of semi-structured interviews for parents and children. Both versions are quite similar and in the present study, parents and adolescents were questioned regarding separation anxiety, social phobia, specific phobia, panic disorder, agoraphobia, generalized anxiety disorder, obsessive-compulsive disorder,

posttraumatic-stress disorder, dysthymic disorder, and depressive disorder. Interviewers also rated the severity of each disorder on a scale from 0 to 8. In order to receive a diagnosis, all criteria of the disorder should be met and the severity rating had to be ≥4. Previous studies have shown acceptable to good test-retest reliabilities for the parent and child interviews (Silverman, Saavedra, & Pina, 2001).

In this study, the interrater agreement was found to be good. The kappa for the presence of internalizing disorders varied between .78 for posttraumatic stress disorder to 1.00 for social phobia, separation anxiety, generalized anxiety disorder, and dysthymic disorder. The interrater agreement of the severity ratings of the disorders were examined using Pearson's correlations, which indicated that the correlations ranged from .73 for social phobia to 1.00 for separation anxiety.

Emotional problem identification. Parents and adolescents were asked to indicate whether the adolescent had shown emotional problems within the past year by answering the following question: "Do you think your child has, or has had in the past year, emotional problems?" and "Do you think you have, or have had in the past year, emotional problems?". Response categories ranged from 0 (no problem) to 9 (a large problem). To ensure similar interpretations across groups, an explanation of emotional problems was provided based on the symptoms used in the Strengths and Difficulties Questionnaire (Goodman, 1997). Similar questions have been used in previous studies to assess problem identification and clear associations with mental health service use have been found (Teagle, 2002; Verhulp et al., 2013; Zwaanswijk et al., 2006).

Ethnicity. Ethnicity of the child was determined by the country of birth of the parents. If at least one parent was born in the Netherlands, Suriname, Turkey or Morocco, children were defined as having a native Dutch, Surinamese-Dutch, Turkish-Dutch or Moroccan-Dutch background. The majority of the parents were born in the same country (i.e., 95% of the families). Whenever one of the parents was born in, for instance, Morocco while the other parent was born in Turkey, the country of birth of the mother was used as an indication of ethnicity. Although at least one of the parents of the immigrant adolescents was born in Morocco, Turkey, or Suriname, the vast majority of the immigrant adolescents were born in the Netherlands (i.e., 82% of the immigrant adolescents belong to the second generation immigrants).[1]

1 The Dutch definition used for ethnicity differs from definitions used in for example the USA. Based on the current definition of ethnicity, third or higher generation immigrant are excluded and the definition does not account for self-classified ethnicity. However, this definition is appropriate for the Dutch situation, because 98% of the adolescents with a non-Western ethnic background in the Netherlands belong to the first or second generation (Statistics Netherlands, 2008) and this definition correlates highly with self-classified ethnicity (Stronks, Kulu-Glasgow, & Agyemang, 2009).

Statistical analyses

Bivariate correlations were used to examine the association between adolescent- and parent-reported internalizing problems on the YSR and CBCL in the different ethnic groups. Furthermore, multivariate analysis of variance was used to examine mean-level differences in internalizing problems on the YSR/CBCL between adolescents with and without an internalizing disorder derived from adolescent/parent diagnostic interviews. Scores on the YSR were related to adolescent-reported internalizing disorders and scores on the CBCL were related to parent-reported internalizing disorders. In addition, ROC analyses were performed to analyze whether diagnostic status could be predicted by the continuous scores on the screening instruments (YSR/CBCL). Again, analyses were performed separately for parents and adolescents. ROC analyses result in area under the curve (AUC). Significant AUCs represent a significant association between the screening instrument and diagnostic status. Additionally, the strength of the AUCs can also be interpreted. AUCs smaller than .50 indicate no association, between .50-.70 a poor association, between .70-.80 fair, between .80-.90 good, and between .90-1.00 excellent (Ferdinand, 2007). To examine the association between the cut-off scores of the YSR and CBCL with diagnostic status, sensitivity and specificity were calculated and ethnic differences were tested using risk ratios. Finally, bivariate correlations were used to examine the association between the continuous internalizing problem scale and emotional problem identification in each ethnic group, separately for adolescent- and parent-reports. Also, multivariate analysis of variance was used to examine mean-level differences in emotional problem identification between adolescents scoring in the normal versus borderline/clinical range on the YSR/CBCL internalizing problems, again analyzed separately for adolescents and parents.

RESULTS

Associations between multiple informants

First, the diagnostic utility was tested by examining cross-informant agreement on adolescents' internalizing problems, separately for each ethnic group. CBCL/YSR bivariate correlations were significant but modest in the native Dutch group (r=.26, p=.011) and lower and non-significant in the three immigrant groups (Surinamese-Dutch: r=.17, p=.113; Turkish-Dutch: r=.15, p=.178; Moroccan-Dutch: r=.17; p=.123).

Associations with diagnostic status: continuous approach

Next, the diagnostic utility was examined within each ethnic group by testing mean-level differences on the YSR/CBCL internalizing problem scale between adolescents with and without an internalizing disorder, as reported by the same informant in a diagnostic interview (see Table 4.2). Results indicated that in all ethnic groups, adolescents with a self-reported internalizing disorder (on a diagnostic interview) scored significantly higher on internalizing problems (as measured by the YSR) than adolescents without a self-reported internalizing disorder. However, only native Dutch and Surinamese-Dutch parents reported higher CBCL internalizing problem scores for adolescents with a parent-reported internalizing disorder than adolescents without a parent-reported internalizing disorder. For Turkish-Dutch and Moroccan-Dutch parents, no differences in CBCL internalizing problem scores were found between adolescents with and without a parent-reported internalizing disorder.

ROC analyses yielded similar results (Table 4.3). Among adolescents, all areas under the curve (AUC) were significant, indicating that for all four groups associations between

Table 4.2 Mean-level scores on YSR and CBCL internalizing problems split out for adolescents with and without an internalizing disorder (as reported by adolescent or parent) per ethnic group

	Native Dutch		Surinamese-Dutch		Turkish-Dutch		Moroccan-Dutch	
	n	*M* (*SD*)	*n*	*M* (*SD*)	*n*	*M* (*SD*)	*n*	*M* (*SD*)
Adolescents								
Disorder	41	18.68 (7.51)	32	16.31 (8.13)	35	16.89 (10.30)	28	13.54 (8.36)
No disorder	54	9.70 (6.60)*	53	9.55 (6.64)*	51	11.25 (7.47)*	54	8.96 (6.99)*
Parents								
Disorder	32	13.53 (7.31)	23	11.09 (6.06)	32	10.03 (6.32)	13	4.69 (4.73)
No disorder	63	6.67 (5.19)*	62	6.06 (4.84)*	54	8.54 (4.53)	69	3.81 (4.11)

Note. * $p<.05$, refers to a significant difference between adolescents with and without an internalizing disorder regarding the YSR/CBCL internalizing problems within ethnic groups.

Table 4.3 Area under the curve (AUC) for the association between continuous score on the internalizing problem scale of the YSR and CBCL tested against the presence of an internalizing disorder on the ADIS-C

	Native Dutch	Surinamese-Dutch	Turkish-Dutch	Moroccan-Dutch
Adolescents	.82 **	.74 **	.66 *	.66 *
Parents	.79 **	.74 *	.56	.56

Note. ** $p<.001$, * $p<.05$.

the continuous scores on the YSR internalizing problem scale were significantly related to diagnostic status. Among parents, the AUCs of native Dutch and Surinamese-Dutch parents were significant, while the AUCs of Turkish-Dutch and Moroccan-Dutch parents were not. In addition, the strength of the AUCs also provided information on the magnitude of the associations. For native Dutch and Surinamese-Dutch parents and adolescents, the strength of the association was fair to good (.74-.82). For Turkish-Dutch and Moroccan-Dutch adolescents and parents, the association was much weaker and could be considered poor (.56-.66), although it must be noted that the associations were stronger among adolescents than among their parents.

Associations with diagnostic status: dichotomous approach

Cut-off scores of the YSR/CBCL were also examined separately by ethnic group in relation to diagnostic status. Table 4.4, which presents both sensitivity and specificity for each ethnic group, generally indicates low sensitivity in all groups. The sensitivity was around 50% for native Dutch adolescents, indicating that 50% of the adolescents with an internalizing disorder was correctly indicated as such on the YSR.

Differences in sensitivity and specificity between immigrant and non-immigrant groups were tested by examining the risk ratios. Only the sensitivity of Moroccan-Dutch immigrant adolescents was found to be significantly lower than the sensitivity of native Dutch adolescents. Among parents, some trends toward significance were detected. For example, the sensitivity of Turkish-Dutch parents was borderline significantly lower than the sensitivity among native Dutch parents. Also, the specificity of Moroccan-Dutch immigrant parents tended to be higher than among native Dutch parents.

Table 4.4 Sensitivity and specificity for parents and adolescent per ethnic group

	Native Dutch		Surinamese-Dutch		Turkish-Dutch		Moroccan-Dutch	
	SE	SP	SE	SP	SE	SP	SE	SP
Adolescents	.51	.83	.34	.83	.46	.75	.22*	.89
Parents	.53	.81	.43	.77	.28†	.74	.23	.93†

Note. SE= Sensitivity, SP= Specificity. * Denotes a significant difference from the native Dutch reference group ($p<.05$) and † denotes a trend toward a significant difference from the native Dutch reference group ($p<.10$).

Associations with emotional problem identification: continuous approach

The final way in which we examined the diagnostic utility of the YSR/CBCL internalizing problem scales was by testing the associations with emotional problem identification – a global and more subjective measure of emotional problems. Table 4.5 shows the correlations for parents and adolescents separately for each ethnic group. Among adolescents, there was a significant, strong association between the YSR internalizing problem scale and emotional problem identification in each ethnic group. Among parents, however, a strong association was found among native Dutch and Surinamese-Dutch parents, a significant but somewhat weaker association was found among Turkish-Dutch parents, and among Moroccan-Dutch immigrant parents the association was found to be only a trend toward significance (Cohen, 1988).

Associations with emotional problem identification: dichotomous approach

Finally, mean-level differences on emotional problem identification were tested in each ethnic group between adolescents scoring in the normal range versus the borderline/clinical range on the YSR/CBCL (see Table 4.6). Among adolescents, emotional problem identification was found to be higher among those adolescents scoring in the borderline/clinical range (on the YSR) in all ethnic groups. Among parents, differences between ethnic groups were found. Native Dutch, Surinamese-Dutch immigrant, and Turkish-Dutch parents identified more emotional problems among those adolescents scoring in the borderline/clinical range (on the CBCL) than among those scoring in the normal range. Moroccan-Dutch immigrant parents, however, did not identify significantly more emotional problems among adolescents scoring in the borderline/clinical range than among those scoring in the normal range.

Table 4.5 Bivariate correlations between internalizing problems and emotional problem identification in each ethnic group reported by adolescents and parents separately

	Native Dutch	Surinamese-Dutch	Turkish-Dutch	Moroccan-Dutch
Adolescents	.61*	.67*	.52*	.61*
Parents	.69*	.50*	.35*	.20†

Note. * $p<.05$; † $p<.10$.

Table 4.6 Mean-level scores on emotional problem identification (reported by adolescents and parents) split out for adolescents scoring in the borderline/clinical range or normal range on the YSR/CBCL internalizing problem scale per ethnic group

	Native Dutch	Surinamese-Dutch	Turkish-Dutch	Moroccan-Dutch
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Adolescents				
Bc-range	5.17 (2.47)	4.55 (2.24)	3.76 (2.29)	4.25 (2.53)
Normal range	2.86 (2.17)*	1.83 (1.93)*	1.70 (1.54)*	1.76 (2.10)*
Parents				
Bc-range	5.66 (2.47)	3.25 (2.89)	2.43 (2.43)	1.13 (1.36)
Normal range	2.20 (2.33)*	1.69 (2.27)*	1.05 (1.90)*	0.56 (1.35)

Note. Bc-range represents the borderline/clinical range on YSR/CBCL internalizing problems. * $p<.05$, refers to a significant difference between adolescents scoring in the bc-range and normal range on YSR/CBCL internalizing problems within ethnic groups.

DISCUSSION

Results of the current study indicated that for immigrant parents belonging to certain ethnic groups in the Netherlands (i.e., Moroccan-Dutch and Turkish-Dutch), the CBCL shows insufficient diagnostic utility and therefore seems unsuitable to be used as a screener for their child's internalizing problems. In contrast, among adolescents, the diagnostic utility of the YSR was roughly comparable across immigrant and non-immigrant groups. Thus, for Moroccan-Dutch and Turkish-Dutch immigrant populations, considerable differences in diagnostic utility of the CBCL compared to the YSR were found. These results are consistent with previous studies showing that ethnic minority parents may experience difficulties reporting on their children's emotional and behavioral problems, while this may not be the case for their children (e.g., Lau et al., 2004).

The diagnostic utility of the YSR and CBCL internalizing problem scale was examined in several ways. First, adolescents with and without internalizing disorders – assessed with a diagnostic instrument among parents and adolescents separately – were compared on the YSR and CBCL using both continuous and dichotomous internalizing problem scores. Results showed that Turkish-Dutch and Moroccan-Dutch immigrant parents reported similar levels of internalizing problems for adolescents with and without an internalizing disorder, which is in accordance with the revealed non-significant AUCs. The dichotomous borderline/clinical cut-off scores also showed relatively low sensitivity scores for Turkish-Dutch and Moroccan-Dutch immigrant parents, although only for Turks a trend toward a significant difference

on sensitivity scores was found when compared to the native Dutch parents. These low sensitivity scores indicate that compared to native Dutch adolescents with internalizing disorders, Turkish-Dutch and Moroccan-Dutch adolescents with internalizing disorders less often received a score in the borderline/clinical range on the CBCL internalizing problem scale. A borderline significant difference in specificity scores between Moroccan-Dutch immigrant and native Dutch parents was found as well, and the high specificity scores of Moroccan-Dutch indicate that – compared to native Dutch adolescents – few Moroccan-Dutch adolescents without internalizing disorders received a score above the borderline/clinical cut-off on the CBCL (i.e., false positives).

In contrast, for adolescents, comparable results were found between immigrant and non-immigrant groups. In all ethnic groups, adolescents with an internalizing disorder scored significantly higher on the YSR internalizing problem scale than adolescents without an internalizing disorder. However, when the dichotomous cut-off score of the YSR was associated to diagnostic status, a difference between native Dutch and Moroccan-Dutch adolescents was found. That is, a significantly lower sensitivity score among Moroccan-Dutch immigrants compared to native Dutch adolescents was revealed. This finding may be explained by the drop in the percentage of Moroccan-Dutch adolescents scoring above the borderline/clinical cut-off on the YSR at wave 2, while at wave 2 immigrant adolescents did report similar amounts of internalizing disorders on a diagnostic interview (Verhulp et al., re-submitted). This implies that caution is warranted when using the borderline/clinical cut-off score of the YSR among Moroccan-Dutch adolescents.

Second, associations between YSR/CBCL internalizing problems and emotional problem identification were examined using both continuous and dichotomous YSR/CBCL scores. Again, for Turkish-Dutch and in particular Moroccan-Dutch immigrant parents a weaker relationship was found between this more subjective measure of problem identification and CBCL scores when compared to native Dutch parents. For Moroccan-Dutch immigrant parents, no mean-level differences in emotional problem identification were found between adolescents with CBCL scores above the borderline/clinical cut-off and adolescents with scores in the normal range. In contrast, comparing their children's scores with those of native Dutch adolescents, associations between YSR scores and emotional problem identification were comparable. Among all adolescents, those who reported more problems on the YSR also reported more problems on emotional problem identification. Likewise, adolescents in all ethnic groups scoring above the borderline/clinical cut-off on YSR internalizing problems identified significantly more emotional problems than those scoring below the cut-off.

Thus, the most important finding of the current study is that the diagnostic utility of the CBCL is lacking for Turkish-Dutch and Moroccan-Dutch immigrant parents, because these parents tend to respond inconsistently to different instruments measuring internalizing problems. In all immigrant groups, most parents were first generation immigrants. However, only for Turkish-Dutch and Moroccan-Dutch immigrant parents insufficient diagnostic utility of the CBCL internalizing problem scale was found. Although the three immigrant groups are clearly distinguishable regarding their culture of origin, migration history and current position in Dutch society, Turkish-Dutch and Moroccan-Dutch immigrants differ from Surinamese-Dutch immigrants in several ways. Turkish-Dutch and Moroccan-Dutch immigrant parents came to the Netherlands as labor migrants, are mostly Muslim by religion, and both groups originate from relatively low educated areas in their country of birth (De Valk, 2010). Surinamese-Dutch parents diverge from Turkish-Dutch and Moroccan-Dutch immigrant parents in that Suriname is a former Dutch colony. Related to this, Surinamese-Dutch immigrants mainly came to the Netherlands for educational purposes, are much more familiar with the Dutch language and culture, and as a group have a better socio-economic position in the Netherlands than Turkish-Dutch and Moroccan-Dutch immigrants (Van Ours & Veenman, 1999). The particularly low socio-economic status and unfamiliarity with Western (Dutch) culture of both Moroccan-Dutch and Turkish-Dutch may explain the insufficient diagnostic utility found in these groups, which will be discussed in further detail below.

First, as a consequence of their low education level and their divergent cultural background, Turkish-Dutch and Moroccan-Dutch immigrant parents may be less likely to interpret symptoms in psychological terms (De Swaan, 1990). More specifically, Turkish-Dutch and Moroccan-Dutch parents may be less familiar with Western psychological concepts such as internalizing problems (Lau et al, 2004; Knipscheer & Kleber, 2005). Although it is not necessary for parents to know exactly which symptoms constitute internalizing problems, parents need to be familiar with the underlying concept of internalizing problems and some core behaviors belonging to these problems. Possibly, these parents were more unfamiliar to the underlying concept or interpret these symptoms as problematic in a less systematic and consistent way (Rubin, 1998; Weisz et al., 1988), resulting in inconsistent answers and limited diagnostic utility of the CBCL among Turkish-Dutch and Moroccan-Dutch immigrant parents. As a result, Turkish-Dutch and in particular Moroccan-Dutch immigrant parents do not consistently identify their child to have internalizing problems, whereas their children do this more consistently.

Second, language difficulties of Turkish-Dutch and Moroccan-Dutch immigrant parents may underlie the findings. Culture-sensitive approaches are necessary when

adapting instruments for other cultures to make sure that items are correctly translated, but also that the construct measured remains conceptually similar in different cultures. Certain items might be more difficult to translate to another language, which could account for the inconsistent responses by immigrant parents (Van Widenfelt, Treffers, De Beurs, Siebelink, & Koudijs, 2005). However, in the current study we attempted to prevent possible language difficulties by using interviewers who could speak the same language as parents and were professionally trained to perform the interviews. Also, Turkish and Moroccan-Arabic versions of CBCL have previously been used in the same ethnic groups in the Netherlands, were professionally (back-) translated and sufficient fit has been shown for the internalizing problem scale (Bengi-Arslan et al., 1997; Stevens et al., 2007a). So, it seems unlikely that language problems can fully explain our results.

Contrary to the immigrant parents in our sample, all immigrant adolescents were found to be able to report rather consistently on their internalizing problems. These differences between the two generations are consistent with previous studies (Lau et al, 2004) and might be explained by the fact that immigrant adolescents in our study mostly belonged to the second generation, have received Dutch education, and were socialized within the Dutch culture. As a result, language difficulties were not present and adolescents were probably more familiar with the concept of internalizing problems.

In all immigrant groups, associations between CBCL and YSR internalizing problem scores were found to be non-significant. Although there was a significant association between YSR and CBCL internalizing problem scores among native Dutch dyads, the strength of the correlation was somewhat weaker compared to the correlation found in other studies around the world and in previous research conducted the Netherlands (Achenbach, Dumenci, & Rescorla, 2003; Rescorla et al., 2012; Van der Ende, & Verhulst, 2005). This could be due to the fact that, in the current study, we aimed at selecting a native Dutch reference group that was more or less comparable to the immigrant groups with regard to socio-economic status. Whereas the parents in the native Dutch reference group were still more highly educated than immigrant parents, their level of education is lower than that of average Dutch parents (Statistics Netherlands, 2007). However, all families in our study lived in similar, disadvantaged neighborhoods and the adolescents did attend the same schools (with more than 40% non-western immigrant adolescents). Selecting a representative native Dutch reference group would probably have resulted in higher parent-adolescent agreement, and would probably have resulted in even larger differences between immigrant and non-immigrant groups regarding diagnostic utility of the questionnaires. Another explanation may be that we selected an at risk sample in the current study, in which 50% of the adolescents scored above the borderline/clinical

cut-off on internalizing problems. As it seems to be more likely to agree on the absence of problems than on the presence of problems, the chances on higher parent-child agreement might be more likely in studies conducted in the general population than in at risk samples (Rescorla et al., 2013).

Some limitations should be taken into account when considering the results of the current study. First, although it is quite common to use diagnostic information as golden standard, we would like to emphasize that in fact there is no golden standard with regard to examining psychiatric disorders. In our previous study, we have shown that especially Moroccan-Dutch immigrant parents reported fewer internalizing disorders for their children when compared to Dutch native parents, whereas for adolescents no differences in internalizing disorders between Moroccan-Dutch immigrants and Dutch natives were found (Verhulp et al., re-submitted). However, these parents could have reported consistently low on both instruments, but the current study shows that is not the case, since associations between the diagnostic interview and CBCL were rather low. Unfortunately, we were not able to examine measurement equivalence of the CBCL internalizing problem scale because the sample size was too limited for the complexity of such analyses. Also, we were not able to use the DSM-scales of the YSR and CBCL and therefore did not differentiate between anxiety and depression in the current study, because the DSM-scale for anxiety is rather small (Ferdinand, 2007; 2008) and the prevalence of depressive disorders was rather low in the current sample (Verhulp et al., re-submitted). Another limitation of the current study is that we could not differentiate between ethnic differences and parental education level. In the current study, but also in the Netherlands in general, the education level of immigrant parents is rather low (Statistics Netherlands, 2007). Therefore, it was impossible in the current study to make a distinction between immigrants with high and with low education levels, which would have enabled us to test whether revealed differences are due to the low education level among immigrant groups. Furthermore, we did not examine gender differences because of limited power. Future studies should try to disentangle whether diagnostic utility varies between boys and girls within different ethnic groups. Finally, the differences found between immigrant populations in the Netherlands indicate that it is important to differentiate between different immigrant groups and therefore results could not just be generalized to other countries. However, the findings do indicate that differences might be present between different ethnic groups and therefore should be examined and accounted for in future research.

In sum, this study showed that the diagnostic utility of the CBCL internalizing problem scale was insufficient for some immigrant parents (i.e., Turkish-Dutch and Moroccan-Dutch parents), while this was not the case for their children. As such, the results indicate that the

internalizing problem scale of the CBCL might not be appropriate to use as a screening tool among Turkish-Dutch and Moroccan-Dutch parents. The discrepancy between parents and their children can have major implications for the chances of Turkish-Dutch and Moroccan-Dutch immigrant children to enter (mental) health care. Indeed, it is a well-known fact that immigrant children are far less well represented in (mental) health care (e.g., Elster et al., 2003; Verhulp et al., 2013). Since parents are still important actors in adolescents' pathways toward mental health care (Logan & King, 2001), the lack of diagnostic utility of instruments measuring internalizing problems of immigrant parents' children may also have negative consequences for immigrant adolescents' chances to receive mental health care.

PART II

Ethnic differences in mental health service use for adolescents' internalizing problems

5

Understanding ethnic differences in mental health service use for adolescents' internalizing problems: The role of emotional problem identification

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ABSTRACT

Although immigrant adolescents are at least at equal risk of developing internalizing problems as their non-immigrant peers, immigrant adolescents are less likely to use mental health care. The present study is the first to examine ethnic differences in problem identification in order to find explanations for this disparity in mental health service use. Specifically, the extent to which emotional problem identification mediates the relationship between immigrant status and mental health service use for internalizing problems in three immigrant populations in the Netherlands (i.e., Surinamese-Dutch, Turkish-Dutch, and Moroccan-Dutch) was investigated. A two-phase design was used to include adolescents at risk for internalizing problems. Data were used from the second phase, in which 349 parents and adolescents participated (95 native Dutch, 85 Surinamese-Dutch, 87 Turkish-Dutch, and 82 Moroccan-Dutch). Results indicated that mental health service use for internalizing problems is far lower among immigrant adolescents than among native Dutch adolescents, although differences between immigrant groups were also substantive. A lack of emotional problem identification was identified as an essential mediator in the relationship between immigrant status and mental health service use. Since the results suggest that the low levels of problem identification in our immigrant samples may serve an explanatory role in the relationship between immigrant status and mental health service use, future research should aim at understanding these ethnic differences in problem identification.

INTRODUCTION

Adolescents are at considerable risk of developing internalizing problems (e.g., Costello, Copeland, & Angold, 2011). However, only a small percentage of these adolescents receive mental health care (e.g., Angold et al, 1998). Immigrant adolescents are even less likely to use mental health care (Angold et al., 2002; Elster, Jarosik, VanGeest, & Fleming, 2003; Garland et al., 2005; Gudino, Lau, Yeh, McCabe, & Hough, 2009), even though they generally appear to be at least at equal risk of developing internalizing problems as non-immigrant adolescents (e.g., Stevens & Vollebergh, 2008).

Previous attempts to explain the low levels of mental health service use by immigrant adolescents have focused exclusively on factors related to steps toward care once parents or adolescents identified a problem. For example, previous studies have examined parental beliefs about causes of or solutions for their children's mental health problems (Yeh et al., 2005), parental burden as a result of their children's mental health problems (Shin & Brown, 2009), or practical barriers encountered by parents once services providing help for these problems were selected (Yeh, McCabe, Hough, Dupuis, & Hazen, 2003). Although these studies might give the impression that immigrants themselves may primarily be held responsible for their limited level of mental health service use, the barriers could also be interpreted as a failure of the mental health care system (Snowden, 2001). For instance, some studies suggest that the mental health care system does not fit the needs of immigrants and mental health care providers may be biased against immigrants and therefore unable to provide adequate care to immigrant groups (e.g., Alegria, Atkins, Farmer, Slaton, & Stelk, 2010; Snowden, 2003). Notwithstanding the importance of former research, previous studies all seem to assume that parents or children have actually detected and/or recognized a mental health problem. Since the recognition of a mental health problem has theoretically been identified as the first essential step in the process of seeking help (Cauce et al., 2002; Srebnik, Cauce, & Baydar, 1996) and has indeed been found to be positively related to mental health service use (Teagle, 2002; Zwaanswijk, Verhaak, Van der Ende, Bensing, & Verhulst, 2006), problem identification may be an important additional explanation for differences in mental health service use between immigrant and non-immigrant populations.

To the best of our knowledge, this first step in the help-seeking process, the identification of a mental health problem, has not been examined in relation to ethnic differences in mental health service use among adolescents. This might constitute an important gap in the literature, as there are several empirical indications that immigrant parents might be less able to recognize mental health problems in their children than non-immigrant

parents. Research on parental recognition of (externalizing) problem behaviors among (young) children has revealed that despite the fact that the prevalence of these problem behaviors appears to be equal across immigrant and non-immigrant children, immigrant parents were found to experience more difficulty to detect these problems in their children (Bevaart et al., 2012; Zwirs, Burger, Buitelaar, & Schulpen, 2006a; Zwirs et al., 2007). Whether the same disparity exists with respect to specifically internalizing problems is not yet clear.

The present study investigates whether a lack of emotional problem identification mediates the relationship between immigrant status and mental health service use for internalizing problems in an ethnic diverse population of adolescents in the Netherlands. In line with the research discussed above, a lack of emotional problem identification among immigrant parents and adolescents is expected to mediate the relationship between immigrant status and mental health service use. Previous studies on parental problem recognition have used different operationalizations of problem recognition (Sayal, 2006). Some studies used parental reports of symptoms of problem behavior as an indication of problem recognition (i.e., problem symptoms; Verhulst & Van der Ende, 1997; Zwirs et al., 2006a), whereas other studies actually asked parents whether they think their child has a problem (i.e., problem identification; Bevaart et al., 2012; Teagle, 2002; Zwaanswijk et al., 2006). In the present study, we will therefore examine the possible mediating effects of both reports of problem symptoms and the more subjective identification of a problem.

METHOD

Design

To include a sufficient number of adolescents experiencing internalizing problems, a two-phase design was used in this study. In the first phase, a school-based survey was conducted within secondary schools in urban regions where more than 40% of the pupils were of non-western immigrant origin. Pupils in the first 3 years of secondary education were screened on the internalizing problem scale of the Youth Self-Report (YSR; Achenbach & Rescorla, 2001). In the second phase of the study, adolescents of the four largest ethnic groups in the Netherlands were included. For each ethnic group, two equally sized random samples of adolescents were drawn, one of those scoring in the borderline/clinical range and one of those scoring in the normal range on the internalizing problem scale. In this

second phase of the study, interviews were conducted with both parents and adolescents drawn from each of the samples. In the present study, data from the second phase of the study were analyzed.

Sample and procedure

In the first phase of the study, adolescents were recruited from 16 schools in the Netherlands. In some schools not all classes were able to participate; for these schools a random selection was drawn from the amount of classes that could participate to determine which classes were to participate in the study. In total 3,850 children were selected for participation in this phase of the study. Most children (91%) were present on the day of the screening. Of those present, 5% of the parents did not consent to participation of their child or the adolescent refused to participate. In total, 9.8% of the adolescents who participated were native Dutch, 10.7% were Surinamese-Dutch, 28.2% were Turkish-Dutch, 26.8% were Moroccan-Dutch, and 24.5% had another ethnic background. In the second phase of the study, only native Dutch, Surinamese-Dutch, Turkish-Dutch, and Moroccan-Dutch adolescents and their parents were approached for participation, since Surinamese-Dutch, Turkish-Dutch, and Moroccan-Dutch are among the largest immigrant groups in the Netherlands (De Valk, 2010). Because of the relatively small amount of native Dutch and Surinamese-Dutch adolescents in the first phase of the study, all native Dutch and Surinamese-Dutch adolescents who scored in the borderline/clinical range and their parents were invited to participate in the second phase, whereas for the Turkish-Dutch and Moroccan-Dutch adolescents who scored in the borderline/clinical range a random sample was drawn. Likewise, random samples of adolescents scoring in the normal range on the internalizing problem scale of the YSR were drawn for the four ethnic groups.

In the second phase of the study, parents were approached for an interview, and active informed consent for interviewing their child was sought. In total, 64% of the parents agreed to participate. Response rates varied between 57% among the Surinamese-Dutch to 70% among the Moroccan-Dutch parents. Of the participating parents, 91% were biological mothers, 7% were biological fathers, and 2% were stepparents or foster parents. Active informed consent was provided by 96% of the participating parents for an interview with their adolescent child (ranging from 92% among Moroccan-Dutch parents to 100% among native Dutch parents). Of the adolescents with parental consent, 96% agreed to participate (ranging from 92% among Surinamese-Dutch to 98% among Turkish-Dutch and native Dutch adolescents). This resulted in a final study sample of 349 parents and their adolescent children (borderline/clinical range n=176; normal range

n=173). In the final sample, 27% of the adolescents were native Dutch (*n*=95), 24% were of Surinamese-Dutch origin (*n*=85), 25% were of Turkish-Dutch origin (*n*=87), and 24% were of Moroccan-Dutch origin (*n*=82). The age of the adolescents ranged from 13.1 to 18.0 years (*M*=15.2; 43% were male). The majority of the immigrant adolescents (86%) were second generation immigrants. In accordance with the design of the study, the sample of the second phase consisted of a sample of adolescents of which 50% scored in the normal and 50% scored in the borderline/clinical range on the YSR internalizing problem scale as assessed in the first phase of the study. In all ethnic groups, almost 50% of the adolescents who participated in the second phase scored in the borderline/clinical range as measured during the first phase (native Dutch 49.5%; Surinamese-Dutch 50.6%; Turkish-Dutch 51.7%; Moroccan-Dutch 50.0%).

To avoid language difficulties, interviews with Turkish-Dutch and Moroccan-Dutch immigrant parents were administered by an interviewer from their own ethnic group. Interviews with the adolescents and with native Dutch and Surinamese-Dutch parents were conducted in Dutch, since this was either their first language or the only language taught and used in school. All instruments were professionally translated. Interviews were held on average within 14 months after the screening phase of the study. The local medical ethical committee approved the study and all participants provided written informed consent for data use.

Instruments

Internalizing problem symptoms. Adolescents reported on internalizing problem symptoms using the Dutch version of the Youth Self-Report in the first and second phase (YSR; Achenbach & Rescorla, 2001). The internalizing problem scale is the sum score of the syndrome scales: anxious/depressed, withdrawn/depressed, and somatic complaints. The scale consists of items such as "I am unhappy, sad, or depressed" and "I worry a lot". Response categories are not at all (0), a little (1), or a lot (2). On basis of the standard cut-offs, the sum scores of the internalizing problem scale were recoded to 0 (normal range) and 1 (borderline/clinical range). Test-retest reliability and internal consistency were found to be acceptable to good for the Dutch translation of the original American version of the YSR (Verhulst, Van der Ende, & Koot, 1997b). In addition, the measurement equivalence of the YSR internalizing problem scales has been shown across the ethnic groups included in this study (Verhulp, Stevens, Van de Schoot, & Vollebergh, 2014).

Parents reported on the internalizing problem symptoms of the adolescents using the Dutch, Turkish, and Moroccan-Arabic version of the Child Behavior Checklist (CBCL;

Achenbach & Rescorla, 2001). The internalizing problem scale consists of the syndrome scales anxious/depressed, withdrawn/depressed, and somatic complaints. Items and response categories were similar to the YSR. Psychometric properties of the Dutch, Turkish, and Moroccan-Arabic version of the CBCL were found to be acceptable to good (Bengi-Arslan, Verhulst, Van der Ende, & Erol, 1997; Stevens, Pels, Bengi-Arslan, Verhulst, Vollebergh, & Crijnen, 2003; Stevens, Vollebergh, Pels, & Crijnen, 2007b; Verhulst, Van der Ende, & Koot, 1996).

Emotional problem identification. Both parents and adolescents were asked to indicate the extent to which the adolescent had shown emotional problems within the past year. Parents were asked: "Do you think your child has, or has had in the last year, emotional problems?" and the adolescents were asked: "Do you think you have, or have had in the last year, emotional problems?". Previous studies used highly similar questions to assess problem identification, and found a clear relationship with mental health service use (Teagle, 2002; Zwaanswijk et al., 2006). To assure that parents and adolescents of different ethnic groups had similar interpretations of emotional problems, an explanation of what was meant by emotional problems was provided. Response categories ranged from 0 (no problem) to 9 (a large problem).

Mental health service use. Parents and adolescents were asked whether the adolescents had received formal care from a mental health professional for internalizing problems in the past year by explicitly mentioning different mental health care providers. Parents were asked: "Could you indicate whether (your child) received (mental health) care by one or more of the following professionals in the past year for emotional problems?" and the adolescents were asked: "Did you receive (mental health) care in the past year for emotional problems by one of the following persons?". This could be mental health professionals in the school (e.g., school psychologist) or outside the school (e.g., psychologist, psychiatrist, social worker). An explanation of emotional problems was provided to parents and adolescents by mentioning different symptoms of emotional problems as formulated in the emotional problem scale of the Strengths and Difficulties Questionnaire (e.g., Often unhappy, downhearted or tearful; Goodman, 1997). For both parents and adolescents, a dichotomous variable was created with 0 indicating that the adolescent did not receive mental health care in the past year and 1 indicating that the adolescent received mental health care in the past year.

Ethnicity. The ethnicity of the child was determined by the country of birth of the parents. If at least one parent was born in Suriname, Turkey, or Morocco, children were defined as having either a Surinamese-Dutch, Turkish-Dutch, or Moroccan-Dutch background. For the vast majority of the families, both parents were born in the same country (this accounted

for 94% of the Surinamese-Dutch, 99% of the Turkish-Dutch, and 96% of the Moroccan-Dutch). In most cases where parents were not born in the same country, one parent was born in the Netherlands or another country (excluding Morocco, Turkey, or Suriname) and the other in Morocco, Turkey, or Suriname (this accounted for 3% of the Surinamese-Dutch, 1% of the Turkish-Dutch, and 2% of the Moroccan-Dutch). Finally, in < 1% of the immigrant families, parents were born in Morocco, Turkey, or Suriname but not in the same country (e.g., father was born in Morocco and mother in Turkey). In these cases, the country of birth of the mother was used as an indicator of ethnicity.

Education level. The highest education level achieved by either of the parents was used as an indicator of socioeconomic status (either within the Netherlands or in their country of origin). Response categories were 0 (no education completed), 1 (elementary school), 2 (lower level of secondary/vocational training), 3 (intermediate level of secondary/vocational training), or 4 (university education or higher level of vocational training).

Statistical analyses

Mplus (Version 6.11; Muthén & Muthén, 2010) was used to perform the analyses. The percentages of mental health service use, mean levels of emotional problem identification and internalizing problem symptoms were calculated across ethnic groups (reported by parents and adolescents). Ethnic differences in mental health service use were examined using logistic regression analyses with mental health service use as dependent variable and the dummy variables of ethnicity as predictors (native Dutch were used as reference group). The ethnic differences in mean levels of emotional problem identification and internalizing problem symptoms were investigated using multiple group analyses, where the means were estimated for each group separately and tested for mean differences across ethnic groups. Finally, a path model with a dichotomous dependent variable was used to test whether emotional problem identification or internalizing problem symptoms could mediate the ethnic differences in mental health service use, after controlling for age, gender, and education level of the parents (see Figure 5.1). This model was tested separately for parent- and adolescent-reports of problem symptoms, problem identification, and mental health service use. Indirect effects were calculated to test whether the possible mediators did indeed mediate the relationship between the independent variable (the dummy variables of ethnicity) and the dependent variable (mental health service use; see Zhao, Lynch, & Chen, 2010). Before examining the indirect effects, a moderation model was examined to test whether the effect of the mediator on mental health service use was similar across ethnic groups (path B1 and B2 in Figure 5.1).

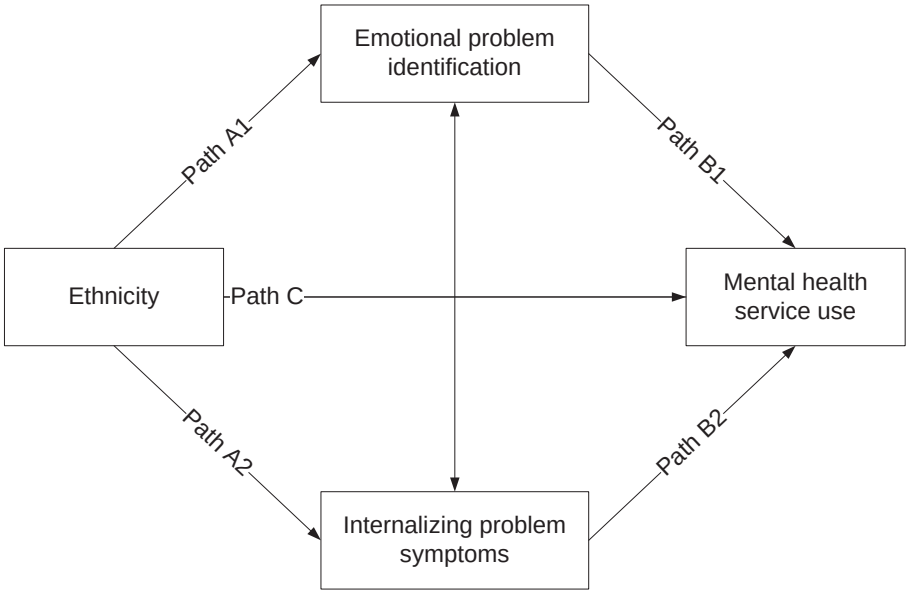

Figure 5.1 Theoretical mediation model in which the effect of ethnicity on mental health service use can be mediated by either emotional problem identification or internalizing problem symptoms. Note that ethnicity represents the dummy variables of the three immigrant groups. Parent- and adolescent-reports were examined in separate models.

Since the regression coefficients of the indirect effects were not distributed normally, we used Bayes as an estimator in all analyses with the default settings in Mplus. The use of Bayesian statistics results in slightly different interpretations of the effects compared to frequentist statistics. In Bayesian statistics, confidence intervals (or in Bayesian terms credibility intervals) are used to indicate the 95% probability that the estimate will lie between the lower and upper value of the interval. When the confidence interval does not include zero, the null hypothesis is rejected and the effect is assumed to be present (for more information on Bayesian statistics, see for example Lynch, 2007; Van de Schoot et al., 2011; Walker, Gustafson, & Frimer, 2007).

RESULTS

Ethnic differences in mental health service use, problem identification, and problem symptoms

Table 5.1 shows that native Dutch parents reported higher levels of mental health service use for their children's internalizing problems than Surinamese-Dutch, Turkish-Dutch, and Moroccan-Dutch parents. Compared to the native Dutch sample, parental reports indicated a lower level of mental health service use among all immigrant groups (Surinamese-Dutch: β=-.17, 95% CI[-.33,-.00]; Turkish-Dutch: β=-.30, 95% CI[-.47,-.13]; Moroccan-Dutch: β=-.37, 95% CI[-.53,-.19]), whereas adolescent reports only revealed differences between native Dutch and Moroccan-Dutch adolescents (Surinamese-Dutch: β=-.07, 95% CI[-.24,.10]; Turkish-Dutch: β=-.11, 95% CI[-.28,.06]; Moroccan-Dutch: β=-.25, 95% CI[-.43,-.06]). Ethnic differences in emotional problem identification showed a comparable pattern (see Table 5.1). Overall, the mean scores on emotional problem identification were higher for native Dutch parents and adolescents than for the immigrant groups. With regard to internalizing problem symptoms only Moroccan-Dutch parents reported fewer symptoms than native Dutch parents. In line with the design of the study, no differences in internalizing problem symptoms were found among adolescents (see Table 5.1).

Mediating the relationship between ethnicity and mental health service use

The next step was to examine whether emotional problem identification or internalizing problem symptoms mediate the ethnic differences in mental health service use (after controlling for age, gender, and education level of parents). Figure 5.2 shows the results of the parent and adolescent model. Although Table 5.1 showed ethnic differences in parent-reported mental health service use, no direct effects of the dummy variables of ethnicity on parent-reported mental health service use were found after adding parent-reported emotional problem identification and internalizing problem symptoms to the model (path C, Figure 5.2). Moreover, no direct effect of parent-reported internalizing problem symptoms on mental health service use was found as well (path B2). Only Moroccan-Dutch parents were found to report fewer internalizing problem symptoms than native Dutch parents (path A2; which is consistent with Table 5.1), but ethnic differences were found in parent-reported emotional problem identification (path A1; see also Table 5.1) and parent-reported emotional problem identification was related to mental health service use (path B1).

Table 5.1 Percentages of mental health service use, means (confidence intervals) of emotional problem identification and internalizing problem symptoms for the different ethnic groups as reported by parents and adolescents

	Native Dutch	Surinamese-Dutch	Turkish-Dutch	Moroccan-Dutch
Parents				
Mental health care	31%	18%*	10%*	7%*
Problem identification	3.25 (2.77-3.73)	2.13 (1.64-2.62)*	1.47 (0.99-1.97)*	0.62 (0.10-1.13)*
Internalizing problems	9.00 (7.91-10.22)	7.38 (6.31-8.46)	9.13 (8.06-10.45)	3.99 (2.72-5.25)*
Adolescents				
Mental health care	22%	18%	15%	9%*
Problem identification	3.59 (3.12-4.06)	2.47 (1.98-2.96)*	2.41 (1.94-2.91)*	2.13 (1.61-2.63)*
Internalizing problems	13.58 (11.97-15.36)	12.03 (10.45-13.62)	13.54 (11.97-15.49)	10.58 (8.71-12.44)

Note. Problem identification = emotional problem identification. Overlapping confidence intervals of emotional problem identification/internalizing problems in the four groups indicate an absence of differences between the groups. * Indicates that the specific immigrant group differs from the native Dutch reference group.

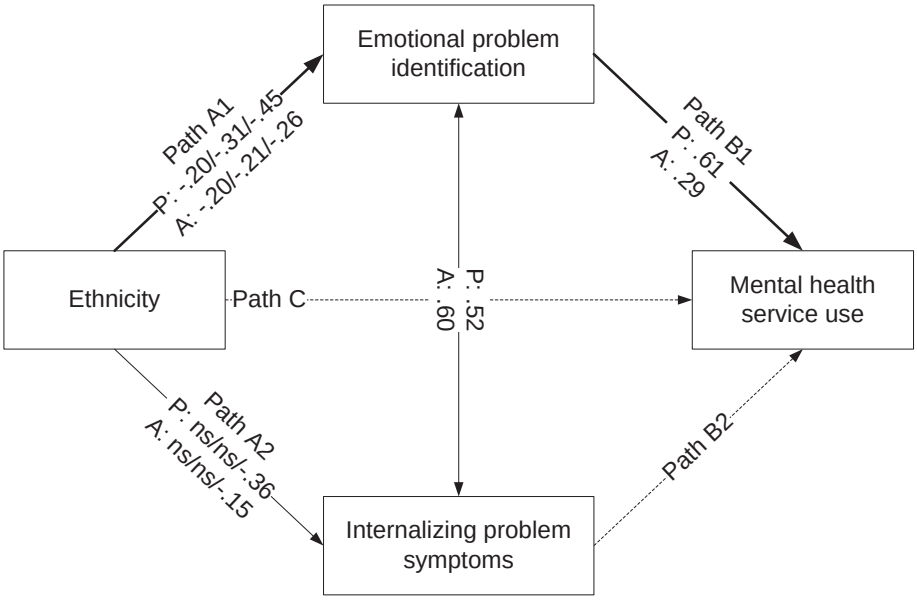

Figure 5.2 Results of the mediation analyses showing the effects separately for parents (P) and adolescents (A), after controlling for age, gender, and education level of parents. Path A1 and A2 show the betas of the effects for the three immigrant groups, respectively Surinamese-Dutch, Turkish-Dutch, and Moroccan-Dutch. The bold path indicates a significant indirect effect.

Before examining the indirect effects of ethnicity on mental health service use through emotional problem identification, it was first tested whether the association between emotional problem identification and mental health service use differed for the four ethnic groups by testing a moderation model. Overlapping confidence intervals revealed that this relationship was not different across groups which indicated that the association between emotional problem identification and mental health service use was similar in the four ethnic groups (native Dutch: *b*=0.25, *SD*=0.06, 95% CI[0.15,0.36]; Surinamese-Dutch: *b*=0.34, *SD*=0.08, 95% CI[0.20,0.51]; Turkish-Dutch: *b*=0.45, *SD*=0.11, 95% CI[0.27,0.69]; Moroccan-Dutch: *b*=0.49, *SD*=0.14, 95% CI[0.23,0.77]). Next, the indirect effect of ethnicity on mental health service use through emotional problem identification was examined for the three immigrant groups separately (as compared with the native Dutch). It appeared that the indirect effect was present in all the three immigrant groups as compared to the native Dutch reference group (Surinamese-Dutch: *b*=-0.37, *SD*=0.13, 95% CI[-0.64,-0.15]; Turkish-Dutch: *b*=-0.59, *SD*=0.14, 95% CI[-0.90,-0.34]; Moroccan-Dutch: *b*=-0.87, *SD*=0.17,

95% CI[-1.23,-0.58]), indicating that differences in mental health service use between the three immigrant populations and native Dutch were mediated by ethnic differences in emotional problem identification. Internalizing problem symptoms were found not to be related to mental health service use and therefore could not serve as a mediator in the present model. The explained variance of the parent model was 46%.

In the adolescent model, no direct effects of the dummy variables of ethnicity on mental health service use were found either (path C; where they were present in Table 5.1). For Moroccan-Dutch adolescents a negative effect was found from ethnicity to internalizing problem symptoms (β=-.15; path A2). Internalizing problem symptoms were not related to mental health service use in this model (path B2) and therefore could not mediate the association between ethnicity and mental health service use. However, similar to the parent model, in the adolescent model ethnic differences were found in emotional problem identification (path A1), indicating that immigrant adolescents identified fewer emotional problems (see also Table 5.1). In turn, emotional problem identification was related to mental health service use (path B1). Again, it was first tested whether the relationship between emotional problem identification and mental health service use was similar in the four ethnic groups. The overlapping confidence intervals revealed that the association did not differ across groups (native Dutch: *b*=0.18, *SD*=0.06, 95% CI[0.06,0.31]; Surinamese-Dutch: *b*=0.17, *SD*=0.07, 95% CI[0.03,0.32]; Turkish-Dutch: *b*=0.12, *SD*=0.08, 95% CI[-0.04,0.29]; Moroccan-Dutch: *b*=0.14, *SD*=0.08, 95% CI[-0.02,0.31]).

Finally, the indirect effect of ethnicity on mental health service use through emotional problem identification was only examined for Moroccan-Dutch adolescents since they were the only adolescent group who reported less mental health service use (see Table 5.1). Indeed, emotional problem identification was found to mediate the relationship between ethnicity and mental health service use for Moroccan-Dutch as compared to native Dutch adolescents, indicating that a lack of emotional problem identification mediated the relationship between ethnicity and mental health service use for Moroccan-Dutch adolescents (indirect effect: *b*=-0.19, *SD*=0.08, 95% CI[-0.36,-0.07]). The explained variance of the adolescent model was 20%.

DISCUSSION

The aim of the present study was to examine whether emotional problem identification or internalizing problem symptoms could serve as a mediator in the relationship between immigrant status and mental health service use for internalizing problems. In line with theoretical models on pathways toward mental health care (e.g., Cauce et al., 2002; Logan

& King, 2001; Sayal, 2006; Zwaanswijk, Verhaak, Bensing, Van der Ende, & Verhulst, 2003), our results indicated that independent of reports of internalizing symptoms, emotional problem identification was found to be an important factor contributing to the mental health help-seeking process of adolescents. Differences in reported mental health service use between native Dutch parents and Moroccan-Dutch, Turkish-Dutch, and Surinamese-Dutch immigrant parents, as well as between native Dutch and Moroccan-Dutch immigrant adolescents were mediated by emotional problem identification. Thus, the finding that immigrant parents are less likely to identify their children's internalizing problems seems to provide an important explanation as to why their children do not receive mental health care, and this may be an important explanatory factor for the limited adolescent-reported mental health service use of Moroccan-Dutch adolescents as well.

In interpreting these results, a first finding to consider is the overall lower level of emotional problem identification among immigrants. Immigrant adolescents and their parents identified fewer emotional problems than native Dutch parents and adolescents, although these differences were most pronounced for the parents. Several reasons behind the disparities in emotional problem identification between native Dutch and immigrant populations can be put forward. First of all, ethnic differences in what is perceived as normal and abnormal behavior may be of importance in the formulation of an explanation (Cauce et al., 2002; Zwirs et al., 2006a). The same behavior may be perceived as problematic by native Dutch parents, but as normal by parents with a Moroccan-Dutch, Turkish-Dutch, or Surinamese-Dutch ethnic background, which may have led to lower scores of emotional problem identification in the immigrant groups. In line with this, there are indications that the extent to which parents are concerned about symptoms of emotional distress may vary across cultures (Weisz et al., 1988). Indeed, a US study points to a tendency among ethnic minority parents to apply higher thresholds when identifying problems (Roberts, Alegria, Roberts, & Chen, 2005). Secondly, the revealed ethnic differences in emotional problem identification may predominantly reflect the extent to which people of different ethnic groups 'proto-professionalize' their problems, that is the extent to which a redefinition of distress into psychological problems takes place (De Swaan, 1990; Logan & King, 2001). Previous studies indeed suggested that native Dutch and Surinamese-Dutch people are more used to defining problems in a psychological way than Turkish-Dutch and Moroccan-Dutch people (Knipscheer & Kleber, 2005), which might indicate that although immigrant (and especially Moroccan-Dutch and Turkish-Dutch) parents may identify their children's distress, they may not label these problems as psychological which in fact may be necessary to receive mental health care. Furthermore, differences in communication patterns between parents and children in native Dutch families and families of immigrant background may

also explain the low levels of parental problem identification in the latter group. More specifically, the substantial difference in problem identification between Moroccan-Dutch immigrant adolescents and their parents, may indicate that Moroccan-Dutch parents and their children may not talk about their feelings and emotions on a regular basis (Pels & De Haan, 2003). In addition, a previous study on family values has provided indirect support for this assumption, by showing that Moroccan-Dutch and Turkish-Dutch, compared to native Dutch and Surinamese-Dutch, responded less positively to items assessing family values (such as "If you have worries, your family should support you"; Arends - Tóth & Van de Vijver, 2009, p. 165).

In line with previous studies on mental health service use among immigrant youth (Angold et al., 2002; Elster et al., 2003; Garland et al., 2005; Gudino et al., 2009), this study showed clear differences between immigrant and non-immigrant populations in the use of mental health care. However, substantial differences were also found between the three immigrant populations, with Turkish-Dutch, and in particular, Moroccan-Dutch adolescents and their parents showing remarkably low levels of emotional problem identification and mental health service use. This underlines the importance of differentiating between immigrant populations when examining ethnic differences in mental health service use. In our study, the Surinamese-Dutch parents and adolescents were more similar to the native Dutch with regard to both mental health service use and problem identification than the Turkish-Dutch and Moroccan-Dutch parents and adolescents. These results might be explained by the fact that Suriname is a former colony of the Netherlands and therefore Surinamese-Dutch immigrants may be more familiar with the Dutch language and culture. As a result, Surinamese-Dutch individuals may experience less difficulty identifying mental health problems and may be less reluctant to search for professional help than the other two immigrant populations analyzed (Knipscheer & Kleber, 2005).

Some limitations of the present study should be taken into account. First, a cross-sectional design was used and therefore no conclusions about causality can be drawn. Future research should address the order of the effects regarding problem identification and mental health service use by using a prospective or at least a longitudinal design. Another limitation was the one item that was used to measure emotional problem identification. Although problem identification has also been assessed as a one item construct in previous research (Zwaanswijk et al., 2006), future research could explore whether it is possible to assess emotional problem identification using more items in order to be able to compare the validity of these items across different ethnic groups. In addition, more insights are necessary regarding why immigrant parents and their children do report internalizing problem symptoms but do not identify these symptoms as an emotional problem.

Research testing differences in what is perceived of as an internalizing problem may be helpful in this respect. Furthermore, the present study focused specifically on internalizing problems, but it would also be interesting to examine the role of problem identification in the help-seeking process for externalizing problems and/or comorbid internalizing and externalizing problems.

In conclusion, the current study has identified considerable ethnic differences in mental health service use for internalizing problems. Immigrant parents and adolescents reported less mental health service use than native Dutch parents and adolescents, whereas substantive differences between immigrant groups were found as well. Although it is important to stress that there may be several different factors contributing to the likelihood of mental health service use in immigrant adolescents, parental and adolescent problem identification may serve as an important explanatory factor for the relatively low level of mental health service use among immigrant adolescents. The findings of the present study also have some clinical and scientific implications. Whereas parents usually have an important role to play in the pathway to care for their children (Logan & King, 2001), the present study indicates that other pathways may also need to be developed for immigrant children, as the current mental health care system seems unable to provide adequate care to immigrant adolescents. As suggested by previous studies, schools and teachers could play an important role in facilitating access to mental health care (Logan & King, 2001), which might be even more important for immigrant adolescents. Even though a previous study has only found a modest contribution of the school to children's pathways toward mental health care (Zwaanswijk, Van der Ende, Verhaak, Bensing, & Verhulst, 2007), it may be worthwhile to consider teachers at school as an additional source of adolescent's problem identification especially among immigrant adolescents. Future studies on ethnic differences in mental health service use should take account of problem identification as an important mediating factor and may attempt to gain more knowledge on how to understand the clear ethnic differences in the identification of problems.

6

Ethnic differences in lay beliefs about emotional problems and attitudes toward mental health care among parents and adolescents: Exploring the impact of acculturation

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ABSTRACT

Individuals' lay beliefs about mental health problems and attitudes toward mental health care are thought to be influenced by the cultural background of these individuals. Since the lay beliefs and attitudes toward mental health care of immigrant groups may be influenced by both their ethnic and the receiving culture, it seems likely that their beliefs diverge from those of the receiving and the original culture. In the current study, we investigated ethnic differences in both parents' and adolescents' lay beliefs about emotional problems and attitudes toward mental health care. Additionally, among immigrant parents, we examined whether their acculturation orientation is associated with their lay beliefs and attitudes toward mental health care. In total, 349 pairs of parents and their adolescent children participated in our study (95 native Dutch, 85 Surinamese-Dutch, 87 Turkish-Dutch, and 82 Moroccan-Dutch). Results indicated that whereas ethnic differences were found among parents, adolescents hardly differed from each other. For example, Turkish-Dutch and Moroccan-Dutch parents scored higher on passive and lower on active solutions for emotional problems than native Dutch parents. Also, Moroccan-Dutch and Surinamese-Dutch parents reported higher levels of fear of mental health care(givers). Furthermore, among immigrant parents, acculturation orientations were associated with lay beliefs and attitudes toward mental health care. For example, if immigrant parents were more strongly oriented toward the Dutch culture, they reported less fear of mental health care(givers). In sum, our results show clear differences in lay beliefs and attitudes toward mental health care between immigrants and non-immigrants. However, substantial differences were found between immigrant populations and immigrant generations as well as within immigrant groups.

INTRODUCTION

Lay beliefs about mental health problems reflect people's own ideas and beliefs about their mental health problems and possible treatment for these problems (Kleinman, 1980; Haslam, Ban, & Kaufman, 2007). More specifically, lay beliefs concern beliefs about the causes and solutions for problems. These lay beliefs are thought to be of influence on people's decision to seek help when they experience mental health problems (Haslam et al., 2007). It has also been suggested that these lay beliefs and attitudes toward mental health care are influenced by people's cultural background (Kleinman, 1980; Yeh, Hough, McCabe, Lau, & Garland, 2004). For example, in some cultures it is thought to be better to ignore rather than actively deal with mental health problems, while the opposite may be true for other cultures (Cauce et al., 2002). Immigrant groups are not only confronted with the mental health ideology and systems of the receiving culture, but also have experienced those of their country of origin. As a result, their lay beliefs and attitudes toward mental health care may be influenced by both and will probably diverge from the beliefs and attitudes of both the receiving and the ethnic culture. In the current study, differences in lay beliefs about adolescents' emotional problems and attitudes toward mental health care between three groups of immigrants (Moroccan-Dutch, Turkish-Dutch, and Surinamese-Dutch) and non-immigrant Dutch are examined. Also, the potential impact of a person's orientation toward the receiving and original culture on these lay beliefs and attitudes toward care is tested, not only by comparing parents and adolescents but also by investigating the relationship between parents' acculturation orientations and their lay beliefs and attitudes toward care.

Lay beliefs about emotional problems

Up until now, research on cultural differences in lay beliefs about mental health problems has mainly focused on adults' lay beliefs and distinguished causes, consequences, and (confidence in) types of interventions for mental health problems (e.g., Lloyd et al., 1998; Bhui, Rüdell, & Priebe, 2006). Only a few studies have examined parents' lay beliefs about their children's problems (Sood, Mendez, & Kendall, 2012; Yeh et al., 2004; 2005). Overall, these studies found ethnic differences in parental beliefs about causes of the problem behaviors among children (Sood et al., 2007; Yeh et al., 2004). More specifically, results indicated that ethnic minority parents reported more medical causes of psychological problems (e.g., problems due to medical condition or illness; Sood et al., 2007), and fewer personality and relationship issues as causes of problems. Also, they more often ascribed problems to the

receiving culture and to racial discrimination (Yeh et al., 2004). To our knowledge, no studies have examined lay beliefs among adolescents. That may be regarded as a major omission, because several studies on child functioning point to discrepancies between the reports of parents and their children (e.g., Ohannessian, Lerner, Lerner, & Von Eye, 2000; Pelegrina, García-Linares, & Casanova, 2003; Shapiro, 2004). Moreover, children of immigrants do not necessarily have the same lay beliefs as their parents since they are socialized in both the ethnic culture and the receiving culture (Oppedal, 2006). Therefore, in the current study, we will examine differences in both parents' and adolescents' beliefs about causes of and solutions for emotional problems between several immigrant groups and non-immigrants in the Netherlands.

Attitudes toward mental health care

In addition to beliefs about causes and solutions for problem behavior, cultural differences in attitudes toward mental health care have also been found in former research (e.g., Gonzalez, Alegria, & Prihoda, 2005), which in turn may influence decisions to seek help (Logan & King, 2001; McKay, Pennington, Lynn, & McCadam, 2001; Rickwood, Deane, & Wilson, 2007; Starr, Campbell, & Herrick, 2002; Turner & Liew, 2010). For example, in some cultures, people may feel more ashamed when professional help is needed for mental problems than in other cultures, which will probably decrease the likelihood to seek professional help (e.g., Snowden & Cheung, 1990). Furthermore, it has been hypothesized that immigrant groups may not only have more negative attitudes toward mental health care than non-immigrants because of cultural differences between the receiving and ethnic culture, but also because of the fact that immigrants engage a minority position within the receiving culture (Grinstein-Weiss, Fishman, & Eisikovits, 2005). Grinstein-Weiss and colleagues (2005) suggested that ethnic minorities may be more reluctant to seek help due to a lack of trust in mental health care institutions of the receiving culture. Thus, it may be expected that immigrant populations may have less favorable attitudes toward mental health care than non-immigrants. However, gaining insight in the influence of ethnicity on attitudes toward mental health care is hampered by methodological differences such as differences in the operationalization of these attitudes toward mental health care between studies. Possibly as a result of the latter, previous research has shown inconsistent findings. Whereas some studies reported no differences in attitudes toward mental health care between adolescents or young adults from different ethnic groups (Gonzalez et al., 2005), other studies did report more positive attitudes toward mental health care among ethnic majority than minority adolescents (Kuhl, Jarkon-Horlick, & Morrissey, 1997; Munson, Floersch, & Townsend, 2009).

Acculturation perspective

In the current study, an acculturation perspective is used to study ethnic differences in lay beliefs about emotional problems and attitudes toward mental health care. In order to do so, ethnic differences in these lay beliefs and attitudes among both parents and adolescents are investigated as well as the relationship between parental acculturation orientations and their lay beliefs. According to the acculturation gap-distress model (Telzer, 2010), adolescents adapt to their new culture in a faster pace than their parents because they participate more intensively in and interact with members of the receiving society more frequently than their parents (Szapocznik, Kurtines, & Fernandez, 1980). Put differently, while the development of children of immigrants is embedded in both the ethnic cultural background of their parents and the surrounding majority society, their first-generation immigrant parents were primarily socialized in the culture of origin (e.g., Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Therefore, the ideas, values, and lifestyles of children of immigrants may be more similar to those of their non-immigrant peers. In contrast, differences in lay beliefs about emotional problems and attitudes toward mental health care between non-immigrant and (first-generation) immigrant parents may be much more substantial (Telzer, 2010). Hence, ethnic differences in parents' beliefs and attitudes were expected more than among adolescents.

More specifically, ethnic differences among parents can be expected in the extent to which they attribute problems to internal versus external causes, and related to this, in the extent to which they perceive problems as controllable (Haslam et al., 2007; Knipscheer, 2000; Leventhal, Leventhal, & Contrada, 1998). Individuals originating from so-called "individualistic" cultures may show more internal attributions, because in these cultures the self is viewed as an autonomous entity, goals are phrased in terms of self-fulfillment and competence, and relationships are viewed as evolving between separate individuals (Hofstede, 1994; Kagitcibasi, 2005; Markus & Kitayama, 1991). For example, problems might be attributed more often to personality or relational issues by the ethnic majority than by minority groups (e.g., Yeh et al., 2004). In contrast, individuals coming from "collectivistic cultures" – in which the self is viewed as embedded within relationships, goals are phrased in terms of communal responsibilities, and relationships stress the inseparateness of group members (Hofstede, 1994; Markus & Kitayama, 1991) – might have the tendency to attribute these causes externally. For example, ethnic minority groups may attribute causes of problems more often to prejudice, the receiving culture, or medical causes that might appear uncontrollable (Yeh et al., 2004; Sood et al., 2007).

Since the cultural background of the largest immigrant groups in the Netherlands (Moroccan-Dutch, Turkish-Dutch, and Surinamese-Dutch) can be roughly considered as

collectivistic while the Dutch culture can be considered as individualistic (e.g., Komter, & Schans, 2008), immigrants in the Netherlands may be more likely to make external and less likely to make internal attributions to causes of emotional problems than their non-immigrant counterparts. In line with this, they may suggest external, uncontrollable and less internal solutions for these problems. However, consistent with previous studies, differences between different immigrant or ethnic minority populations are to be expected as well (Sood et al., 2007; Yeh et al., 2004). Differences compared to the non-immigrant population may be more pronounced for those immigrant groups that are more culturally distant from the native Dutch reference group. The cultural distance between the Dutch and immigrant culture was found to be smaller for Surinamese-Dutch than for Turkish-Dutch and Moroccan-Dutch immigrants. As Suriname was a former colony of the Netherlands, Surinamese-Dutch immigrants were already more familiar with Dutch language and culture before migration (Arends-Tóth & Van de Vijver, 2009; De Valk, 2010; Schalk-Soekar, Van de Vijver, & Hoogsteder, 2004). As a result, compared to the Dutch natives, we expect larger differences in lay beliefs and attitudes toward care for Turkish-Dutch and Moroccan-Dutch than for Surinamese-Dutch parents.

However, within the population of immigrant parents, considerable within-group variation in lay beliefs about emotional problems and attitudes toward mental health care may be found as well. In order to gain insight into this variation, this study investigates the relationship between parental acculturation orientations toward the ethnic and receiving culture and lay beliefs about emotional problems and attitudes toward mental health care. The acculturation perspective holds that contact between cultural groups results in numerous cultural changes in both parties, although consequences are largest for the non-dominant group members (e.g., Berry, 1997). On an individual level, people can be characterized by their acculturation orientation or strategy, i.e., the way in which they relate to their ethnic and the receiving culture (e.g., Berry, 2006). As the lay beliefs and attitudes toward mental health problems of immigrants are thought to be influenced by the mental health ideology of the ethnic as well as the receiving culture (Kleinman, 1980), we expect that immigrants with a relatively strong orientation toward the receiving culture and a relatively weak orientation toward their ethnic culture will hold lay beliefs and attitudes that resemble the beliefs and attitudes of the receiving culture more strongly. Thus, these immigrant parents are expected to be more likely to make internal attributions and less likely to make external attributions to emotional problems as well as to suggest internal as opposed to external solutions for these problems. Moreover, they may have relatively favorable attitudes toward mental health care.

Research addressing the relationship between acculturation orientations and lay beliefs or attitudes toward mental health care is scarce, but former research has shown an

association between these phenomena. For instance, a study on children with separation anxiety has shown that a stronger orientation toward the receiving culture was associated with the attribution of more psychological causes (i.e., internal causes) to problems and with more help-seeking from mental health and medical professionals (Sood et al., 2012).

Current study

In the current study, we examined ethnic differences in beliefs about causes of and solutions for emotional problems, and also in attitudes toward mental health care. We examined these ethnic differences among parents and adolescents. Based on the acculturation gap-distress model, it was hypothesized that differences between immigrant and non-immigrant groups would be larger among parents than among adolescents. It was also hypothesized that immigrant parents are more likely to attribute causes and solutions to external sources and to have more negative attitudes toward mental health care than non-immigrant parents. Due to the larger cultural distance with Dutch natives, differences are hypothesized to be larger for Turkish- and Moroccan-Dutch than for Surinamese-Dutch parents. Furthermore, among immigrant parents, it was hypothesized that a stronger orientation toward the Dutch culture would be associated with more internal attributions of causes and solutions, and more positive attitudes toward mental health care. Finally, we examined whether beliefs about emotional problems and attitudes toward mental health care(givers) were associated with mental health service use among parents and adolescents. It was hypothesized that ethnic differences in mental health service use are mediated by ethnic differences in lay beliefs and attitudes toward mental health care.

METHOD

Sample

Data from the first and second phase of a two-phase study were used. In the first phase of the study, a school-based screening was performed among more than 3000 adolescents on YSR internalizing problems in order to include sufficient adolescents with internalizing problems for the second phase of the study (the response rate in the first phase of the study was 95%). For the second phase of the study, which took place on average 14 months after the first phase, parents and adolescents with a native Dutch, Surinamese-Dutch, Turkish-Dutch, and Moroccan-Dutch background were selected for participation (the latter three belong to the largest immigrant groups in the Netherlands; De Valk, 2010). In line with the definition of

the Statistics Netherlands (2012), ethnicity was determined based on the country of birth of parents. Within each ethnic group, random selections of adolescents in the normal and borderline/clinical range on YSR internalizing problems were drawn. In the second phase of the study, within each ethnic group 50% of the adolescents were chosen who scored in the borderline/clinical range (as measured in the first phase) and 50% in the normal range.

Interviews were then conducted with these parents and adolescents. Parents, mostly biological mothers (91%), were interviewed at home (*n*=381; average response rate 64%; varying from 57% among the Surinamese-Dutch to 70% among the Moroccan-Dutch parents). Parents then provided permission to interview their adolescent child (96% of the parents provided informed consent; which ranged from 92% among Moroccan-Dutch parents to 100% among native Dutch parents). Of the adolescents with parental consent, 96% agreed to participate, which resulted in a total sample of 349 parent and adolescent dyads (native Dutch *n*=95, Surinamese-Dutch *n*=85, Turkish-Dutch *n*=87, and Moroccan-Dutch *n*=82). Of the immigrant adolescents, 82% were second-generation immigrants. Interviews with adolescents were held at their schools. The mean age of the adolescents was 15.2 years and 43% of the adolescents were male. The study was approved by the local Medical Ethical Committee and all participants provided written informed consent for data use.

Procedure

Adolescents' lay beliefs about causes of/solutions for emotional problems, attitudes toward mental health care(givers), and internalizing problems were assessed at the first wave of the study, whereas parents' lay beliefs were assessed in the second wave of the study. Parents and adolescents were provided a vignette about an adolescent with emotional problems and were then questioned on their lay beliefs about causes of and solutions for emotional problems as presented in the vignette. The vignette was based on symptoms described in the emotional problems scale of the Strengths and Difficulties Questionnaire (Goodman, 1997). Mental health service use, internalizing problems (reported by parents), and psychological acculturation were assessed at wave 2. For more information on the procedure, see Verhulp, Stevens, Van de Schoot, & Vollebergh (2013).

Instruments

Lay beliefs about causes. The same instruments were used to assess lay beliefs among parents and adolescents. We used the trigger questions of Yeh and Hough's questionnaire

"Beliefs about causes" as a starting point to assess lay beliefs about causes of emotional problems (Yeh & Hough, 1997). However, we slightly adjusted the questions to the Dutch context resulting in 11 questions (see Supplementary Table S6.1). Parents and adolescents were asked whether they thought that the problems described in the vignette could result from the causes listed in Supplementary Table S6.1. Answer categories ranged from definitely not (0) to definitely (4). Exploratory factor analysis in Mplus (Muthén & Muthén, 1998-2012) resulted in 4 factors among parents (i.e., the most parsimonious model with a sufficient model fit): *individual causes*, *family causes*, *peer/school causes,* and *environmental causes* (see Supplementary Table S6.1 for items within the scales and factor loadings). The fit of the four factor model was χ^2=47.34, p<.001; CFI=.986; TLI=.955; RMSEA=.072. The same model was used to perform confirmatory factor analysis among adolescents. However, the initial model did not reach sufficient fit (χ^2=274.24, p<.001; CFI=.871; TLI=.798; RMSEA=.140). Model identification indices suggested that model fit would improve significantly if we added economic problems to environmental factors for adolescents. Therefore, we added this item to the environmental factor for adolescents which resulted in a much better fit (χ^2=139.450, p<.001; CFI=.944; TLI=.912; RMSEA=.092).

Lay beliefs about solutions. Based on existing literature on solutions for problems, we formulated items on solutions for emotional problems (Cauce et al., 2002; Furnham, 1984; Stevens & Hosper, 2001). Parents and adolescents were asked whether they thought that the solutions listed in Supplementary Table S6.2 would be applicable to the problems described in the vignette. Answer categories ranged from definitely not (0) to definitely (4). Again, exploratory factor analyses were performed in Mplus on the parent data, which resulted in a three-factor model being the most parsimonious factor solution with sufficient fit (χ^2=21.70 p=.041; CFI=.990; TLI=.971; RMSEA=.048). Confirmatory factor analyses were performed on the adolescent data, resulting in sufficient fit for the same factor structure (χ^2=77.97, p<.001; CFI=.923; TLI=.884; RMSEA=.080). The first factor consisted of *passive solutions*, the second factor of *active solutions*, and the final factor of *environmental solutions* (see Supplementary Table S6.2 for items within the factors and factor loadings).

Attitudes toward mental health care(givers). Again, existing questionnaires were used to formulate questions on attitudes toward mental health care(givers) (Kuhl et al., 1997; Stevens & Hosper, 2001; Yeh & Hough, 1997). Parents and adolescents had to answer the following question: "How do you think about mental health care and mental health caregivers? Try to imagine that you have the same feelings as presented in the vignette". Answer categories ranged from fully disagree (0) to fully agree (4). Exploratory factor analyses were performed in Mplus on the parent data. Results indicated that a three-factor model was the most parsimonious model with an adequate fit (χ^2=26.74, p=.008; CFI=.989; TLI=.967;

RMSEA=.059). A reasonable fit was also found for the confirmatory factor analyses on the adolescent data (χ^2=74.84, p<.001; CFI=.921; TLI=.881; RMSEA=.078). The three factors consisted of *informal help*, *rejection of care*, and *fear of care* (see Supplementary Table S6.3 for items and factor loadings).

Psychological acculturation. The Dutch version of the Psychological Acculturation Scale was used to assess immigrant parents' sense of belonging and emotional attachment to the Dutch culture and people and their own ethnic culture and people (Stevens, Pels, Vollebergh, & Crijnen, 2004; Tropp, Erkut, Coll, Alarcon, & Garcia, 1999). The scale consists of six items to measure psychological acculturation orientation to the Dutch culture/people and six items to assess psychological acculturation orientation to the ethnic culture/people (Stevens et al., 2004; Stevens, Vollebergh, Pels, & Crijnen, 2007). Former research on the Dutch version of the Psychological Acculturation Scale has revealed sufficient psychometric properties of this instrument (Stevens et al., 2004). Sample items are 'I feel comfortable with Dutch people', 'Moroccan people understand me' and 'I feel proud to be a part of Dutch culture'. Answer categories ranged from fully disagree (0) to fully agree (4). In this study, Cronbach's alpha for psychological acculturation orientation to the Dutch culture was .83 and to the ethnic culture was .81.

Mental health service use. Parents and adolescents were asked whether the adolescents ever had received formal mental health care for their internalizing problems from several different professionals. Both parents and adolescents were given a list of possible professional caregivers, such as psychiatrists, (school) psychologists, or social workers. For both parents and adolescents, a dichotomous variable was created with 0 indicating that the adolescent had not received mental health care and 1 indicating that the adolescent ever had received such care.

Statistical analyses

First, multivariate analyses of variance were used to examine ethnic differences in parents' and adolescents' lay beliefs and attitudes toward mental health care. Second, within the group of immigrant parents, separate regression analyses were conducted investigating the relationship between acculturation orientation toward the ethnic culture and the Dutch culture respectively and lay beliefs and attitudes toward care, controlling for ethnicity. Third, among parents and adolescents the relationship between their lay beliefs and attitudes toward mental health care and mental health service use was investigated in line with the study of Yeh and colleagues (2005). We analyzed the association between lay beliefs and attitudes with mental health service use (without taking ethnicity into account). In the next step, we also included ethnicity in the model and examined whether the effects

of lay beliefs and attitudes toward mental health care on mental health service use were still present and mediated the effects of ethnicity on mental health service use. In these analyses we controlled for age, gender, and adolescents' internalizing problems (reported by parents or adolescents on the Child Behavior Checklist or Youth Self-Report; Achenbach & Rescorla, 2001).

RESULTS

Parents' lay beliefs and attitudes toward care

Ethnic differences in parents' lay beliefs and attitudes toward mental health care(givers) were examined. Multivariate results indicated ethnic differences in lay beliefs about causes of emotional problems, $F(12,1032)=6.96$, $p<.001$. Furthermore, univariate results showed that for individual ($F(3,345)=17.55$, $p<.001$), family ($F(3,345)=10.13$, $p<.001$), peer/school ($F(3,345)=4.73$, $p=.003$), and environmental causes ($F(3,345)=4.35$, $p=.005$) ethnic differences were present. As can be seen from Table 6.1, Moroccan-Dutch parents scored significantly lower on all causes of emotional problems compared to native Dutch parents. Surinamese-

Table 6.1 Analyses of variance on ethnic differences in parents' lay beliefs about emotional problems and attitudes toward mental health care

	Native Dutch *M* (*SE*)	Surinamese-Dutch *M* (*SE*)	Turkish-Dutch *M* (*SE*)	Moroccan-Dutch *M* (*SE*)
Beliefs about causes				
Individual	6.57 (0.21)	6.17 (0.22)	7.72 (0.21)*	5.57 (0.22)*
Family	6.14 (0.23)	5.57 (0.25)	7.13 (0.24)*	5.42 (0.25)*
Peer/school	4.73 (0.14)	4.09 (0.15)*	4.64 (0.15)	4.20 (0.15)*
Environmental	3.91 (0.22)	4.06 (0.23)	4.05 (0.23)	3.05 (0.23)*
Beliefs about solutions				
Passive	2.35 (0.36)	3.39 (0.38)*	4.23 (0.37)*	4.06 (0.38)*
Active	6.81 (0.21)	6.61 (0.22)	2.24 (0.22)*	5.45 (0.23)*
Environmental	7.38 (0.31)	7.42 (0.32)	8.52 (0.32)*	6.73 (0.33)
Attitudes toward care				
Informal help	4.60 (0.26)	5.04 (0.27)	2.54 (0.27)*	3.56 (0.28)*
Rejection of care	1.76 (0.31)	2.85 (0.32)	2.45 (0.32)	2.67 (0.33)
Fear of care	1.80 (0.40)	3.48 (0.42)*	2.82 (0.42)	4.10 (0.43)*

Note. * Denotes a significant difference ($p<.05$) compared to the native Dutch reference group as indicated by post-hoc tests.

Dutch parents showed lower scores than native Dutch parents on peer/school-related causes of emotional problems. Turkish-Dutch parents reported higher scores on individual and family causes of emotional problems compared to native Dutch parents.

Regarding parents' solutions of emotional problems, a multivariate effect of ethnicity was found as well ($F(9,1035)=27.56$, $p<.001$). Univariate results showed ethnic differences in passive solutions ($F(3,345)=5.54$, $p=.001$), active solutions ($F(3,345)=94.60$, $p<.001$), and environmental solutions ($F(3,345)=5.27$, $p=.001$). Post-hoc tests showed that compared to the native Dutch parents, all immigrant parents scored significantly higher on passive solutions (see Table 6.1). Turkish-Dutch and Moroccan-Dutch parents also scored significantly lower on active solutions of emotional problems than native Dutch parents. Furthermore, Turkish-Dutch parents reported more environmental solutions compared to the native Dutch parents.

Finally, multivariate analyses showed ethnic differences in parents' attitudes toward mental health care ($F(9,1035)=10.29$, $p<.001$). Univariate results revealed ethnic differences on the factors informal help ($F(3,345)=17.50$, $p<.001$) and fear of care ($F(3,345)=5.66$, $p=.001$). However, the effect of ethnicity on rejection of care was not significant ($F(3,345)=2.35$, $p=.072$), indicating that similar levels of rejection of mental health care were found for parents of different ethnic groups. Table 6.1 shows that Turkish-Dutch and Moroccan-Dutch parents scored significantly lower on the factor informal help than native Dutch parents, which indicates that native Dutch parents more often reported that they wanted to solve their problems themselves or to seek informal instead of professional help. Surinamese-Dutch and Moroccan-Dutch parents reported higher levels of fear of care compared to native Dutch parents, indicating that these parents were more afraid of talking about their problems to caregivers.

Adolescents' lay beliefs and attitudes toward care

Among adolescents, no ethnic differences were found in lay beliefs about causes of emotional problems and attitudes toward mental health care ($F(12,1032)=1.54$, $p=.104$ and $F(9,1029)=0.88$, $p=.546$). However, ethnic differences were found in solutions for emotional problems, $F(9,1035)=2.70$, $p=.004$. Univariate results indicated ethnic differences with regard to passive solutions ($F(3,345)=4.58$, $p=.004$) and environmental solutions ($F(3,345)=2.98$, $p=.032$), but not regarding active solutions ($F(3,345)=0.22$, $p=.884$). Post hoc tests revealed that Turkish-Dutch adolescents reported more passive and more environmental solutions compared to native Dutch adolescents (see Table 6.2).

Table 6.2 Analyses of variance on ethnic differences in adolescents' lay beliefs about emotional problems and attitudes toward mental health care

	Native Dutch *M* (*SE*)	Surinamese-Dutch *M* (*SE*)	Turkish-Dutch *M* (*SE*)	Moroccan-Dutch *M* (*SE*)
Beliefs about causes				
Individual	5.73 (0.22)	6.11 (0.23)	5.85 (0.23)	5.98 (0.24)
Family	4.54 (0.18)	4.46 (0.19)	4.13 (0.19)	4.35 (0.19)
Peer/school	4.67 (0.17)	4.20 (0.18)	4.20 (0.18)	4.28 (0.18)
Environmental	5.64 (0.31)	6.04 (0.33)	6.29 (0.32)	6.12 (0.33)
Beliefs about solutions				
Passive	4.56 (0.31)	5.41 (0.33)	6.23 (0.33)*	5.39 (0.34)
Active	5.30 (0.22)	5.22 (0.24)	5.07 (0.23)	5.31 (0.24)
Environmental	6.74 (0.30)	6.57 (0.31)	7.60 (0.31)*	7.55 (0.32)
Attitudes toward care				
Informal help	4.82 (0.20)	4.61 (0.21)	4.51 (0.21)	4.90 (0.22)
Rejection of care	4.93 (0.31)	5.73 (0.33)	5.48 (0.33)	5.36 (0.34)
Fear of care	5.80 (0.41)	6.26 (0.43)	6.01 (0.43)	6.05 (0.44)

Note. * Denotes a significant difference ($p<.05$) compared to the native Dutch reference group as indicated by post-hoc tests.

Acculturation orientation and parental lay beliefs and attitudes toward care

Within the immigrant groups, multiple regression analyses were used to test whether orientations toward the Dutch and/or ethnic culture were associated with beliefs about emotional problems and attitudes toward mental health care (after controlling for ethnicity). Results are shown in Table 6.3. Immigrant parents who were more strongly oriented toward the Dutch culture, reported fewer environmental causes, fewer passive solutions of problems, reported lower scores on informal help, as well as considerably less rejection and less fear of care. Immigrant parents who were more strongly oriented toward the ethnic culture reported higher scores on passive solutions, active solutions, and informal help.

Associations between lay beliefs and attitudes toward care and mental health service use

In three separate logistic regression analyses, beliefs about causes, beliefs about solutions, and attitudes toward care(givers) were added as predictors of mental health service use (i.e., among both immigrants and non-immigrants). Among parents, results showed that neither

Table 6.3 Multiple regression analyses on the associations between Dutch and ethnic orientations among immigrant parents and lay beliefs and attitudes toward mental health care

	Orientation Dutch culture β	Orientation ethnic culture β
Beliefs about causes		
Individual	ns	ns
Family	ns	ns
Peer/school	ns	ns
Environmental	-.15	ns
Beliefs about solutions		
Passive	-.29	.16
Active	ns	.16
Environmental	ns	ns
Attitudes toward care		
Informal help	-.17	.14
Rejection of care	-.36	ns
Fear of care	-.39	ns

Note. Beliefs and attitudes were entered as dependent variable in separate regression analyses and were predicted by acculturation orientations toward the Dutch and ethnic culture (controlling for ethnicity).

the beliefs about causes nor the attitudes toward care(givers) were significantly associated with mental health service use after accounting for age, gender, and CBCL internalizing problems. However, passive and active solutions of emotional problems were significantly associated with service use. Whereas passive solutions were negatively associated with service use (*OR*=0.89, 95% CI[0.81, 0.98]), active solutions were positively associated with mental health service use (*OR*=1.13, 95% CI[1.02,1.27]). Among adolescents, none of the lay beliefs nor attitudes toward mental health care were significantly associated with mental health service use.

The next step was to examine whether the parental beliefs about solutions could serve as a mediator of the association between ethnicity and mental health service use. In order to investigate this, we first analyzed the model with only the dummy variables of ethnicity (accounting for age, gender, and CBCL internalizing problems) and then tested a model in which we also added the variables on beliefs about solutions of problems. When accounting for ethnicity in the analyses, active and passive solutions did not significantly predict mental health service use anymore (passive: *OR*=0.93, 95% CI[0.84,1.03] and active: *OR*=0.96, 95% CI[0.81,1.14]) and the effects of ethnicity on mental health service use hardly

decreased (Surinamese-Dutch: *OR*=0.69, 95% CI[0.34,1.40] to *OR*=0.75, 95% CI[0.37,1.54]; Turkish-Dutch: *OR*=0.22, 95% CI[0.10,0.52] to *OR*=0.20, 95% CI[0.06,0.72]; Moroccan-Dutch: *OR*=0.38, 95% CI[0.16,0.94] to *OR*=0.42, 95% CI[0.16,1.09]). Thus, the effects of ethnicity on mental health service use were not mediated by parental beliefs about active and passive solutions for emotional problems.[1]

DISCUSSION

This study is the first to show that differences in lay theories on emotional problems and attitudes toward mental health care between immigrants and non-immigrants are mainly present among parents and hardly among their adolescent children. These findings are consistent with the acculturation gap-distress model suggesting that, compared to their parents, adolescents may be much more similar to their non-immigrant counterparts in their beliefs and attitudes (e.g., Telzer, 2010). More specifically, Turkish-Dutch and Moroccan-Dutch parents showed higher scores on passive and lower scores on active solutions for emotional problems than native Dutch parents. With regard to the lay beliefs about causes of emotional problems, considerable ethnic differences were found as well. Moroccan-Dutch parents showed lower scores on all causes than native Dutch parents, whereas Turkish-Dutch parents reported higher scores on both individual and family causes. In addition, Moroccan-Dutch and Surinamese-Dutch parents reported more fear of care compared to native Dutch parents.

Hardly any support was found for the hypothesis that the immigrant parents would be more likely to make external causal attributions and less likely to make internal causal attributions to emotional problems than native Dutch parents. Turkish-Dutch reported higher scores than native Dutch parents on individual ("internal") causes and only scored higher on one out of three types of external causes than Dutch native parents (i.e., family causes). For Surinamese-Dutch parents, elevated scores were only found for one external cause (i.e., peers/school) as well. Finally, Moroccan-Dutch parents scored relatively low on all causes. In line with the scarce literature available on this topic (Haslam et al., 2007; Sood et al., 2007; Yeh et al., 2004; 2005), our results suggest that a distinction between internal and external causes is too crude and variation between immigrant populations is considerable. It has previously been pointed out that both tendencies (i.c., autonomy and relatedness) may well coexist (Kagitcibasi, 2005). Only for Moroccan-Dutch parents lower scores on individual causes were found, but they showed a general tendency to score low on all causes. This last finding seems to be in line with previous studies in the same sample,

1 For reasons of space, non-significant results were not reported but can be requested from the first author.

showing low levels of parent-adolescent agreement on internalizing disorders in this group and revealing that Moroccan-Dutch parents have difficulties identifying emotional problems among their children (Verhulp et al., 2013; Verhulp, Stevens, & Vollebergh, re-submitted). In former studies it has been theoretically proposed that thinking about causes of problems is only possible when the behaviors concerned are perceived as abnormal (Haslam et al., 2007). The lower likelihood of Moroccan-Dutch parents to pathologize the emotional problems of their children (Verhulp et al., 2013; Verhulp et al., re-submitted), may result in a lower likelihood of parents to develop their own lay beliefs about these problems.

With regard to solutions for children's emotional problems, our results were somewhat more in line with the formulated expectation that immigrant parents would be likely to seek solutions in external instead of internal processes. In line with this notion, Turkish-Dutch and Moroccan-Dutch parents indicated to a much lower extent than native Dutch parents that trying to deal with the problems yourself (captured in the factor "active solutions") would be an effective way to solve emotional problems. In addition, Turkish-Dutch parents to a higher extent than native Dutch parents expected that changes in the behaviors of either parents, teachers or friends of the child would help solve the problems ("environmental solutions"). Also, Turkish-Dutch, Moroccan-Dutch, and Surinamese-Dutch parents more often advocated "passive solutions" (or solutions not directly associated with the problem itself) compared to native Dutch parents. On the one hand, and in line with the expectation formulated in the introduction, this result may reflect these parents' heightened notion of uncontrollability of emotional problems. However, as one of the items assessed the extent to which parents saw investing more in religion as a solution for this problem, this finding may also result from the important role religion plays in the lives of immigrant populations in the Netherlands (e.g., De Valk & Liefbroer, 2007; Merz, Ózeke-Kocabas, Oort, & Schuengel, 2009).

Finally, we also expected more negative attitudes toward mental health care among immigrant groups than among the native Dutch group due to cultural differences between the immigrant and non-immigrant populations as well as the minority position of immigrants in the Dutch society. Results partly confirmed this hypothesis. Although no differences between ethnic groups were found with regard to rejection of mental health care(givers) (e.g., "caregivers have nothing to do with these problems"), Surinamese-Dutch and Moroccan-Dutch parents did report considerably higher levels of fear of mental health care than native Dutch parents. This fear predominantly focused on the expected shame it would bring to the family if others were to find out about these problems. More specifically, this fear of shame to the family has been suggested to be one of the reasons why immigrants or ethnic minority groups may be reluctant to use mental health care (Flink, Beirens, Butte, & Raat, 2013; Snowden & Cheung, 1990). Remarkably, both Turkish-Dutch and Moroccan-

Dutch parents also showed lower scores on the items assessing the tendency to use informal networks to solve the problems or to prefer solving them yourself. This finding is striking considering former theoretical notions as well as empirical research indicating that immigrants may refrain from mental health care because they prefer help from their own informal network (Cauce et al., 2002; Health Council of the Netherlands, 2012). However, results from a focus group study in the same immigrant groups in the Netherlands revealed that sometimes it is considered to be a facilitating factor that formal mental health care providers are unknown within the ethnic community (Flink et al., 2013). Due to (the fear of) shame and gossip, anonymous mental health care providers may sometimes be preferred over informal sources of help among ethnic minority groups.

The above makes clear that the majority of the differences between the immigrant and native Dutch parents, were not found for all three immigrant populations. In fact, differences between the immigrant parent populations were considerable. Overall, the Surinamese-Dutch differed the least from the Dutch, followed by the Turkish-Dutch and the Moroccan-Dutch parents. Variation between these groups in the cultural distance between the country of origin and the receiving country as well at their specific migration history may have contributed to these different results. Hence, immigrant groups that diverge more strongly from the native Dutch group in terms of cultural distance, were found to differ most strongly from the native Dutch with regard to lay beliefs and attitudes toward mental health care (Arends-Tóth & Van de Vijver, 2009; Schalk-Soekar et al., 2004).

Furthermore, within the immigrant populations, parents' orientations toward the Dutch and ethnic culture were clearly associated with their lay beliefs and attitudes. As lay beliefs about problems are thought to be influenced by one's cultural background (e.g., Kleinman, 1980), it is not surprising that, after accounting for ethnicity, orientations toward the receiving and ethnic culture are related to these lay beliefs and attitudes. In fact, these orientations are relevant in understanding variation within immigrant groups. In line with our expectations, weaker orientations toward the ethnic culture and stronger orientations toward the Dutch culture were associated with lower levels of fear of care, and stronger orientations toward the Dutch culture were associated with lower levels of rejection of care. Also, if immigrant parents were more oriented toward the Dutch and less toward their ethnic culture, they scored lower on passive solutions for emotional problems. In contrary to our expectations, if immigrant parents were more strongly oriented toward their ethnic culture, they scored higher on active solutions for emotional problems. Finally, higher levels of orientation toward the Dutch culture were associated with lower levels of environmental causes for adolescent emotional problems, which was consistent with our expectations.

Although former research has found clear associations between lay beliefs as well as attitudes toward mental health care and mental health service use (Yeh et al., 2005), this study only found a relationship between active and passive solutions for emotional problems and mental health service use. Higher scores on active and lower scores on passive solutions were associated with a higher likelihood of mental health service use in the total sample of parents. Active and passive solutions for adolescent emotional problems seem to relate rather directly to the intention to search for (professional) help (e.g., "nobody can do anything" and "learn how to deal with difficult things"). Therefore, it seems logical that the strongest associations were found for these variables and not for the lay beliefs addressing parental ideas about causes of adolescents' problems. Still, there might be at least two reasons why no associations between both causes for emotional problems as well as attitudes toward mental health care and mental health care use were found in the present study, and no evidence for mediation was found. First, in the current study, the variation in the dependent variable was rather small for some ethnic groups (i.e., the mental health service use was rather low in some immigrant groups), which made it rather difficult to find support for such associations. Second, we examined lay beliefs about emotional problems using a fictitious vignette, while the previous study by Yeh and colleagues (2005) – revealing clear associations between lay beliefs and mental health service use – examined parental lay beliefs concerning their children's own problems.

The findings of the present study need to be interpreted in the light of the following limitations. First, adolescents' lay beliefs and attitudes toward mental health care were assessed at the first phase of the study, whereas parents' lay beliefs were assessed at phase 2. However, since we examined beliefs using a fictitious vignette, the answers can be considered to represent general health beliefs which are thought to be relatively stable over time (Kleinman, 1980). This suggests that the differential findings for the adolescents and their parents (i.e., no ethnic differences for the adolescents and clear ethnic differences for their parents) cannot be explained by the fact that parental reports were retrieved more than one year later. Among parents, associations between lay beliefs, attitudes, and mental health service use were assessed at one point in time, whereas this was not the case for their children. As a result, stronger associations could be expected among parents. However, for both adolescents and their parents, the associations between beliefs and attitudes and mental health service use were modest. Second, as mentioned above, we used a vignette to examine lay beliefs. This might – in combination with the low levels of variation in mental health service use – have influenced the associations with mental health service use as the lay beliefs did not focus on the children's own emotional problems.

In sum, the findings of the current study are in line with Kleinman's notion (1980) that lay beliefs and attitudes toward mental health care are influenced by cultural background. Furthermore, the findings of the current study show that this notion could be refined even further as results also indicated differences in lay beliefs and attitudes toward mental health care between generations, between immigrant groups, and even within immigrant groups. Hence, this variation between generations, between groups, and within groups should be accounted for in future research to be able to more consistently study the multifaceted impact of culture on lay beliefs, attitudes toward and use of mental health care.

SUPPLEMENTARY TABLES

Supplementary Table S6.1 Four-factor structure and factor loadings of beliefs about causes of emotional problems

	Parents	Adolescents
Individual causes		
Physical health problems	.37	.46
Personality	.73	.43
Developmental stage (adolescence)	.63	.32
Family causes		
Something that happened to you or your family	.94	.84
Parents (e.g., divorce or bad parenting)	.77	.86
Economic problems (e.g., not enough money)*	.51	-
Peer/school causes		
Peers (e.g., not enough friends)	.87	.74
School (e.g., atmosphere at school)	.65	.59
Environmental causes		
Dutch culture	.78	.45
Prejudices or discrimination	.72	.68
Supernatural powers (e.g., god(s), spirits, magic)	.41	.62
Economic problems (e.g., not enough money)*	-	.73

Note. Factor loadings among parents were derived from an exploratory factor analysis and for adolescents from a confirmatory factor analysis. * Economic problems as cause of emotional problems belongs to the factor family factors among parents, whereas it belongs to environmental causes among adolescents.

Supplementary Table S6.2 Three-factor structure and factor loadings of beliefs about solutions for emotional problems

	Parents	Adolescents
Passive solutions		
Will pass automatically	.79	.65
Nobody can do anything	.76	.73
Think about it as little as possible	.68	.39
Invest more in religion	.47	.30
Active solutions		
Cope with difficulties	.95	.70
Learn how to deal with difficult things	.83	.92
Environmental solutions		
Parents need to learn parenting skills	.52	.64
Teachers need to give more attention	.85	.81
Friends need to be more kind	.70	.69

Note. Factor loadings among parents were derived from an exploratory factor analysis and for adolescents from a confirmatory factor analysis.

Supplementary Table S6.3 Three-factor structure and factor loadings of attitudes toward mental health care

	Parents	Adolescents
Informal care		
Rather solve it myself than with caregiver	.70	.65
Rather ask help to someone else than caregiver	.88	.33
Rejection of care		
Weak to go to caregiver	.61	.53
Caregivers have nothing to do with my problems	.97	.70
Caregivers will determine too much what I can/can't do	.71	.78
Fear of care		
Scared to talk with caregiver about myself	.71	.59
Afraid that caregiver will pass the problems on	.75	.66
Worry what others will think about it	.80	.80
Talking with an outsider about problems will bring shame on one's family	.71	.45

Note. Factor loadings among parents were derived from an exploratory factor analysis and for adolescents from a confirmatory factor analysis.

7

Ethnic differences in the teacher-adolescent relationship quality and associations with teachers' informal help for adolescents' internalizing problems

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ABSTRACT

Previous studies have shown that schools often play a crucial role in adolescents' pathways toward mental health care and that ethnic minority adolescents are found to be underrepresented in mental health care. However, little is known about ethnic differences in the extent to which teachers provide informal help for adolescents' internalizing problems, as well as possible explanations for these differences. Therefore, the aim of the current study was to test whether ethnic differences exist in informal help provided by the teacher, and whether these could be explained by differences in teacher-reported internalizing problems and the teacher-adolescent relationship quality. Adolescents from four ethnic groups in the Netherlands (native Dutch, Surinamese-Dutch, Turkish-Dutch, and Moroccan-Dutch) and their teachers participated in the study (*n*=229). Although teachers reported similar levels of internalizing problems for the four ethnic groups, results showed that Moroccan-Dutch adolescents reported considerably less informal help for their internalizing problems from their teachers than native Dutch adolescents. Also, results showed that teachers reported significantly more conflicts in their relationships with Moroccan-Dutch compared to native Dutch adolescents. Furthermore, only for Moroccan-Dutch adolescents higher levels of conflicts were associated with decreased chances of informal help by the teacher. In sum, results of the current study indicate ethnic differences to be present in informal forms of help, this however applied to only one ethnic minority group in the Netherlands. Potentially, the relatively high amount of conflicts in the teacher-adolescent relationship in this specific ethnic group might prevent these adolescents from receiving informal help from their teachers.

INTRODUCTION

Adolescents spend a lot of time at school and therefore it is not surprising that schools are often a source of help in cases of psychopathology among adolescents (Rickwood, Deane, & Wilson, 2007). Indeed, several studies have shown that for children and adolescents schools play an important role in their pathways toward the mental health care system (Burns et al., 1995; Farmer, Burns, Phillips, Angold, & Costello, 2003; Zwaanswijk, Van der Ende, Verhaak, Bensing, & Verhulst, 2005). Evidence accumulates that adolescents of particular ethnic minority groups receive less formal mental health services than majority adolescents (e.g., Elster, Jarosik, VanGeest, & Fleming, 2003; Verhulp, Stevens, Van de Schoot, & Vollebergh, 2013), and there are also indications that some ethnic minority adolescents are less often referred by schools and are less likely to receive school-based health services (Gudiño, Lau, Yeh, McCabe, & Hough, 2009; Wood et al., 2005; Yeh et al., 2002). However, many questions about *why* ethnic minority adolescents are less likely to use mental health services within and outside schools remain unanswered. Therefore, the current study focuses specifically on examining differences in informal help provided by teachers for adolescents' internalizing problems between four ethnic groups in the Netherlands (i.e., native Dutch, Surinamese-Dutch, Turkish-Dutch, and Moroccan-Dutch). This type of informal help can be considered as a precursor of more formal forms of (school-based) mental health services (Zwaanswijk, Van der Ende, Verhaak, Bensing, & Verhulst, 2007). Furthermore, we investigate the extent to which ethnic differences in informal help provided by the teacher can be explained by differences in teacher-reported internalizing problems and teacher-adolescent relationship quality.

Teachers' perceptions of adolescents' internalizing problems

Overall, adolescents' internalizing problems – such as sadness, loneliness, anxiety – are often difficult to signal for adults in their environment, since these problems are often kept internal to the adolescent and are not always visible (Gudiño et al., 2009). Former research has shown that whereas teachers feel the pressure to signal internalizing problems, they do not feel capable to do so (Papandrea & Winefield, 2011). Still, teacher reports of (internalizing) problems are perceived to be important in the pathways toward mental health care, as teachers are often considered to be 'gatekeepers' providing a less threatening pathway into the mental health care system than formal mental health care providers (Cauce et al., 2002, p. 50). Although teacher reports of problem behaviors were not always directly associated with formal mental health service use (Zwaanswijk et al., 2007), it is likely that teacher

reports of adolescents' internalizing problems are positively associated with teachers' referral to formal mental health services or the amount of informal help teachers provide themselves (Rickwood et al., 2007; Williams, Horvarth, Wei, Van Dorn, & Jonson-Reid, 2007; Zahner, Pawelkiewicz, DeFrancesco, & Adnopoz, 1992).

Previous studies have suggested that ethnic majority teachers may underreport internalizing problems among ethnic minority students because they are less able to understand the behavior of ethnic minority adolescents (Crijnen, Bengi-Arslan, & Verhulst, 2000; Jackson, 2002). For many ethnic minority students there will be a mismatch between their own ethnicity and the ethnicity of their teacher (see Saft & Pianta, 2001; Thijs, Westhof, & Koomen, 2012), potentially causing more difficulties for teachers to understand the problem behaviors of ethnic minority versus majority students due to cultural misunderstandings and more bias against people of ethnic minority groups. Additionally, teachers may have different expectations of the behavior of (some) ethnic minority groups (Alegria et al., 2012; Crijnen et al., 2000). More specifically, research has shown that teachers may have low expectations of the educational capacities of ethnic minority parents. This negative stereotyping may result in negative expectations of the behavior of their children, which may also affect teachers' reports of minority children's internalizing problem behavior (Davies, Ryan, & Tarr, 2011; Lopez, Scribner, & Mahitivanichcha, 2001). Moreover, the tendency to underreport internalizing problems among ethnic minority students, might be especially large when the cultural distance between the students' ethnic group and the ethnic majority group, to which most teachers belong, is considerable. In the Netherlands, the cultural distance has been found to be larger for Turkish-Dutch and Moroccan-Dutch groups than for the Surinamese-Dutch group compared to the majority group (Arends-Tóth & Van de Vijver, 2009; Schalk-Soekar, Van de Vijver, & Hoogsteder, 2004). As a result, it can not only be expected that teachers report fewer internalizing problems among ethnic minority compared to majority adolescents, but more extensive differences may be found for Turkish-Dutch and Moroccan-Dutch adolescents than for Surinamese-Dutch adolescents as well.

In line with this, several empirical studies have suggested that teachers might indeed experience some difficulties with detecting internalizing problems among ethnic minority adolescents resulting in underreports of internalizing problems, although it is important to note that the available research only provides indirect evidence for this phenomenon. Some studies found that teachers reported fewer internalizing problems for ethnic minority compared to majority adolescents whereas no ethnic differences were found in adolescent reports of the amount of internalizing problem behavior (Lau et al., 2004; Vollebergh et al., 2005). Other studies found that Turkish-Dutch adolescents reported more internalizing problems than their native Dutch counterparts whereas teachers reported similar levels

of internalizing problems across these ethnic groups (Stevens et al., 2003). Furthermore, another study pointed to differences between majority and minority teachers rating the behavior of the Turkish-Dutch adolescents, indicating that minority teachers detected more internalizing problems for these adolescents than majority teachers (Crijnen et al., 2000).

Based on these theoretical assumptions and empirical findings, we expect that teachers might underreport internalizing problems among ethnic minority compared to majority adolescents. If these differences are present, we expect them to be largest for Turkish-Dutch and Moroccan-Dutch adolescents since the cultural distance between the culture of origin and the receiving culture is largest for these ethnic minority groups. Furthermore, we hypothesize that if these ethnic differences are found in teacher-reported internalizing problems, they could mediate the association between ethnicity and informal help provided by the teacher.

Teachers' perception of the teacher-adolescent relationship quality

Another factor that might be associated with the amount of informal help teachers provide, is the quality of the relationship between teachers and adolescents. A good quality relationship between teachers and adolescents serves as a protective factor for adolescent mental health (Wang, Brinkworth, & Eccles, 2013). Furthermore, it has been suggested that teachers who experience a good quality relationship with their pupil, might also be more willing to invest in the pupil's well-being (Hamre & Pianta, 2001; 2005), and possibly provide more informal help when adolescents experience internalizing problems.

Theoretically, it has been assumed that the teacher-adolescent relationship quality is probably less favorable for ethnic minority compared to majority adolescents. As lined out above, ethnic minority adolescents often have teachers with a different ethnic background potentially resulting in cultural misunderstandings and miscommunication. Therefore, it could be expected that relationships among ethnic incongruent dyads are less favorable than ethnic congruent dyads (Hamre & Pianta, 2001; Thijs et al., 2012). In line with this, it might also be expected that difficulties in relationship quality increase with a growing cultural distance between ethnic minority and majority groups. Hence, it can be hypothesized that the teacher-student relationship quality is less favorable for Turkish-Dutch and Moroccan-Dutch adolescents than for Surinamese-Dutch adolescents (Arends-Tóth & Van de Vijver, 2009; Schalk-Soekar et al., 2004).

Indeed, previous studies have shown that ethnic differences exist in teacher-adolescent relationship quality among children, indicating that in some ethnic minority groups the quality of the relationship is less positive than in others (Hughes, Gleason, & Zhang, 2005;

Thijs et al., 2012). In an American sample, less supportive relationships with teachers were found among African American students compared to ethnic majority students, but not among Hispanic children (Hughes et al., 2005). In the Netherlands, more negative relationships in terms of conflict and dependency were found among Moroccan-Dutch students in comparison to ethnic majority students, but not among Turkish-Dutch students (Thijs et al., 2012). Whereas these studies provide partial support for the ethnic incongruence hypothesis, they also indicate that it is necessary to differentiate between ethnic minority groups since ethnic incongruence does not result in more negative relationships for all ethnic minority adolescents. Differences were even found between two ethnic minority groups in the Netherlands, Turkish-Dutch and Moroccan-Dutch, who differ most strongly from the majority group in terms of cultural distance (Arends-Tóth & Van de Vijver, 2009; Schalk-Soekar et al., 2004). However, former Dutch research has indicated that especially Moroccan-Dutch adolescents are faced with negative attitudes against their ethnic group which might result in more bias of teachers toward this particular ethnic group (Thijs & Eilbracht, 2012; Verkuyten & Thijs, 2010). Thus, although the teacher-adolescent relationship quality may be less favorable for ethnic minority compared to majority adolescents, this may especially be especially true for Moroccan-Dutch adolescents.

Goal of the current study

To sum up, in the current study ethnic differences in the amount of informal help for adolescents' internalizing problems provided by teachers are examined. To include sufficient adolescents at risk of internalizing problems, we screened adolescents on internalizing problems in the first phase of the study. Next, in the second phase of the study, half of the adolescents who were selected for participation scored in the borderline/clinical range on internalizing problems during the first phase of the study. Hence, adolescents of the four ethnic groups were comparable with regard to the amount of internalizing problems and therefore could be validly compared regarding teacher-reported internalizing problems and informal help provided by the teacher.

Based on studies examining formal mental health service use within the school context (Gudiño et al., 2009; Wood et al., 2005; Yeh et al., 2002), we expect that some ethnic minority groups will receive less informal help from the teacher compared to the majority group. Also, we hypothesize that both teacher-reported internalizing problems and the teacher-adolescent relationship mediate the association between ethnicity and informal help provided by teachers as reported by adolescents (see Figure 7.1), because of the following more specific expectations. First, ethnic differences in teacher-reported

internalizing problems and teacher-adolescent relationship quality are expected. We not only hypothesize that teachers report fewer problems for ethnic minority compared to majority adolescents, but this may especially be found or Turkish-Dutch and Moroccan-Dutch adolescents. With regard to the teacher-adolescent relationship quality, we hypothesize less favorable teacher-adolescent relationship quality for ethnic minority compared to majority adolescents, with largest differences for Moroccan-Dutch adolescents.

METHOD

Participants and procedure

In the current study, data were used of 229 teachers and adolescents. To obtain these data, a two-phase study design was used. In the first phase of the study, a large school-based screening was performed among over 3,000 adolescents from Dutch schools with at least 40% non-western immigrant pupils. A subsample of adolescents from the first wave participated again in the second wave of the study. To include sufficient adolescents at risk of internalizing problems in the second phase of the study, for the four largest ethnic groups in the Netherlands two equally sized random samples of adolescents were drawn from the school-based screening phase, one sample consisting of adolescents scoring in the borderline/clinical range, the other with adolescents scoring in the normal range on the YSR internalizing problems (see below for a description of the instruments used). In line with the design of the study, for all four ethnic groups around 50% of the adolescents who participated in the second phase of the study scored in the borderline/clinical range of the YSR internalizing problems as assessed at the first wave of the study. In the second wave, 349 adolescents and their parents participated in the study (native Dutch *n*=95; Surinamese-Dutch *n*=85, Turkish-Dutch *n*=87, Moroccan-Dutch *n*=82). The response rate among parents was 64% and among adolescents the response rate was 96% (for more detailed information about the data collection procedure and response rates, see Verhulp et al., 2013).

Parents and adolescents were requested to provide consent for participation of the teacher of the adolescent. On average, 85% of the parents (ranging from 68% among Turkish-Dutch parents to 97% among Surinamese-Dutch parents) and 94% of the adolescents (ranging from 92% among native Dutch to 95% among Surinamese-Dutch adolescents) provided consent for participation of the teacher. Of the teachers with consent, 77% participated in the study (ranging from 65% of the teachers of Moroccan-Dutch adolescents

to 87% of the teachers of native Dutch adolescents), which resulted in a final study sample of 229 teachers (75 teachers of native Dutch adolescents, 64 of Surinamese-Dutch adolescents, 45 of Turkish-Dutch adolescents, and 45 of Moroccan-Dutch adolescents). Of these teachers, 72% belonged to the ethnic majority. To make sure that the sample for which both teacher- and adolescent-data were available (n=229) was a representative subset of the complete sample of 349 adolescents, it was tested whether the distribution of adolescents in the normal and borderline/clinical range (assessed at wave 1) was comparable for the different ethnic groups. The results indicated that the ethnic minority groups did not differ from the native Dutch group regarding the amount of adolescents who scored in the borderline/clinical range (Surinamese-Dutch adolescents: Wald=0.00, p=.959; Turkish-Dutch adolescents: Wald=0.64, p=.423; Moroccan-Dutch adolescents: Wald=0.32, p=.572), indicating that this subsample can be considered a representative subsample.

Instruments

Internalizing problems. Teacher-reports on adolescents' internalizing problems were assessed using the Dutch version of the Teacher Report Form (TRF; Achenbach & Rescorla, 2001). The broadband internalizing problem scale consists of three subscales (i.e., withdrawn/depressed, anxious/depressed, and somatic complaints) and 33 items (e.g., "Worries" or "There is very little he/she enjoys"). Response categories are "not at all" (0), "a little" (1), or "a lot" (2). Previous research on the Dutch version of the TRF has shown sufficient psychometric properties (Verhulst, Van der Ende, & Koot, 1997a). In the present sample, Cronbach's alpha was .88 for the internalizing problem scale.

Informal help from teacher. Adolescents were questioned on the informal help they received for their internalizing problems from their teacher. Adolescents were explained what was meant with internalizing problems using the symptoms described in the emotional problem scale of the Strengths and Difficulties Questionnaire (Goodman, 1997). Answer categories consisted of no help (0) or help (1).

Teacher-student relationship quality. The quality of the relationship between the teacher and adolescents was assessed with an adapted version of the Dutch Teacher-Student Relationship Scale (Koomen, Verschueren, & Pianta, 2007; Pianta, 2001). As the original instrument was developed for the teacher-pupil relationship during primary school, some items were slightly reworded to make the items more applicable for pupils in secondary education. One item was deleted from the questionnaire ("This child is uncomfortable with physical affection or touch from me"). One of the teachers of the adolescents (i.e., their tutor who is usually responsible for guiding students at school, not just related to the

curriculum but more in general) filled out the questionnaire. In the current study, these teachers reported that they saw the students on average 5 hours in class each week (*M*=5.00, *SD*=2.70). We assessed two dimensions of the teacher-adolescent relationship quality. The first dimension "closeness" refers to whether the teacher-adolescent relationship is characterized by warmth and open communication (the scale consists of 10 items, such as "I share an affectionate, warm relationship with this child"), whereas the second dimension "conflict" refers to the amount of mutual anger and negativity in the relationship between the teacher and adolescent (the scale consists of 11 items, such as "Dealing with this child drains my energy"). Answer categories ranged from "definitely does not apply" (0) to "definitely applies" (4). A principal component analysis confirmed the two-factor solution of closeness and conflict. Previous studies have found sufficient psychometric properties of the questionnaire among children (Koomen et al., 2007; Pianta, 2001). In the current study, Cronbach's alpha's for the two scales were .88 and .90 respectively.

Statistical analyses

Figure 7.1 shows our conceptual model, which was examined in different steps. First, to test the ethnic differences in informal help from the teacher, logistic regression analyses were used in which the dummy variables of ethnicity were included as predictors of informal help (i.e., native Dutch adolescents were defined as the reference group and separate dummy variables were created for the three ethnic minority groups). Second, it was tested whether

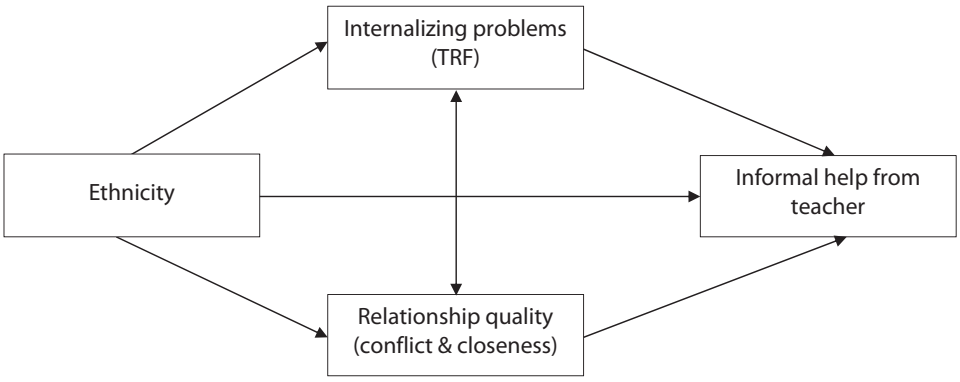

Figure 7.1 Conceptual model displaying the associations between ethnicity and adolescent-reported informal help from the teacher, and possible mediating effects of teacher-reported internalizing problems and teacher-reported relationship quality.

ethnic differences exist in teacher-reported internalizing problems and teacher-reported relationship quality using (univariate and multivariate) analysis of variance. Third, if ethnic differences existed in either internalizing problems or the relationship quality, we examined the association with informal help from the teacher as reported by the adolescent using a logistic regression analyses. We then analyzed whether internalizing problems and/or relationship quality mediated the association between ethnicity and informal help (i.e., by testing indirect effects in Mplus; Muthen & Muthen, 1998-2012). In these analyses, we controlled for age and gender.

RESULTS

Adolescent-reported informal help by teachers

In Table 7.1, the percentage of adolescent-reported informal help by their teacher can be found for each ethnic group. Testing ethnic differences showed that, compared to native Dutch adolescents, only Moroccan-Dutch adolescents reported significantly less informal help from their teachers (Surinamese-Dutch: *OR*=0.53, 95 CI[0.27,1.05]; Turkish-Dutch: *OR*=0.50, 95% CI[0.24,1.07]; Moroccan-Dutch: *OR*=0.38, 95% CI[0.17,0.82]).

Teacher-reported internalizing problems

Table 7.1 shows the mean levels of internalizing problems reported by teachers for adolescents from all ethnic groups. Univariate analysis of variance was used to test whether teachers reported similar amounts of internalizing problems among adolescents from a native Dutch, Surinamese-Dutch, Turkish-Dutch, and Moroccan-Dutch background. Results

Table 7.1 Adolescent-reports of informal help by the teacher and teacher-reports of informal help, closeness, and conflict in the teacher-adolescent relationship (*n*=229)

	Native Dutch	Surinamese-Dutch	Turkish-Dutch	Moroccan-Dutch
Teacher-reported internalizing problems	8.35 (7.95)	6.77 (5.82)	7.21 (6.73)	6.77 (6.29)
Teacher-reported closeness	2.70 (0.71)	2.57 (0.68)	2.74 (0.61)	2.53 (0.67)
Teacher-reported conflict	0.61 (0.68)	0.70 (0.74)	0.78 (0.78)	1.10 (0.82)*
Adolescent-reported informal help	54.7%	39.1%	37.8%	31.1%*

Note.* Refers to a significant difference compared to the native Dutch reference group ($p<.05$).

showed no differences between the groups, $F(3,219)=0.78$, $p=.508$, est $\omega^2=.01$. This indicates that teachers reported similar amounts of internalizing problems for adolescents from all four ethnic groups.

Teacher-adolescent relationship quality

Next, ethnic differences in teacher-reported closeness and conflict in the teacher-adolescent relationship were tested (see also Table 7.1). Multivariate tests, with closeness and conflict as dependent variables, revealed significant differences between ethnic groups, $F(6,440)=2.43$, $p=.025$. Univariate tests showed that no differences were found regarding closeness ($F(3,220)=1.17$, $p=.322$), indicating that teachers reported similar levels of closeness in the relationship with adolescents from all ethnic groups.

However, ethnic differences were found with regard to conflict ($F(3,220)=4.06$, $p=.008$). Post hoc tests revealed that teachers reported significantly more conflicts in the relationships with Moroccan-Dutch adolescents than in the relationships with native Dutch adolescents ($M_{i-j}=-0.48$, $SE=0.14$, $p=.001$), whereas teachers did not report more conflicts in the relationship with Surinamese-Dutch and Turkish-Dutch than native Dutch adolescents (resp. $M_{i-j}=-0.09$, $SE=0.13$, $p=.478$ and $M_{i-j}=-0.17$, $SE=0.14$, $p=.240$).

Associations with informal help: mediation

Consistent with the findings presented above, there was a significant effect of ethnicity on adolescent-reported informal help provided by the teacher for Moroccan-Dutch compared to native Dutch adolescents ($OR=0.58$, 95% CI[0.36,0.94]), but not for Surinamese-Dutch and Turkish-Dutch adolescents (resp. $OR=0.73$, 95% CI[0.47,1.12] and $OR= 0.65$, 95% CI[0.41,1.03]). Furthermore, there were no effects of ethnicity on teacher-reported internalizing problems (Surinamese-Dutch: $\beta=-.20$, $p=.222$; Turkish-Dutch: $\beta=-.18$, $p=.327$; and Moroccan-Dutch: $\beta=-.21$, $p=.248$) and closeness (Surinamese-Dutch: $\beta=-.21$, $p=.237$; Turkish-Dutch: $\beta=.05$, $p=.817$; and Moroccan-Dutch: $\beta=-.26$, $p=.176$). Again consistent with the findings presented above, there was an effect of ethnicity on teacher-reported conflicts for Moroccan-Dutch adolescents ($\beta=.68$, $p<.001$), but not for Surinamese-Dutch and Turkish-Dutch adolescents (resp. $\beta=.11$, $p=.554$ and $\beta=.30$, $p=.126$). Finally, we found significant associations between both teacher-reported internalizing problems and teacher-reported closeness and informal help provided by the teacher as reported by the adolescent (resp. $OR=1.03$, 95% CI[1.01,1.05] and $OR=1.47$, 95% CI[1.13,1.91]), indicating that more teacher-reported internalizing problems and more closeness in the teacher-adolescent relationship

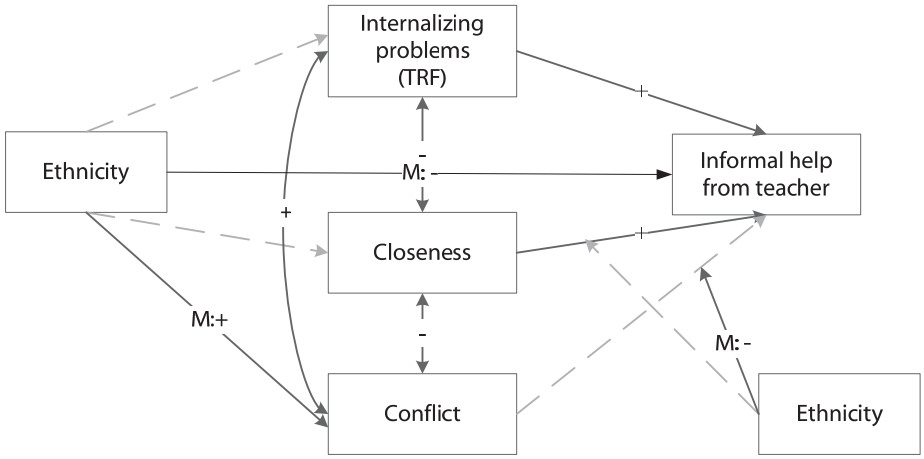

Figure 7.2 Graphical representation of results. Note that the results of mediation and moderation analyses were combined in one model. Dashed lines indicate non-significant effects. M indicates an effect for Moroccan-Dutch compared to native Dutch adolescents. + represents a positive effect, whereas – denotes a negative effect.

were associated with a higher likelihood of informal help by the teacher. However, conflict was not related to informal help (*OR*=1.09, 95% CI[0.86,1.40]). Hence, teacher-reported internalizing problems, closeness, and conflict could not mediate the association between ethnicity and informal help by the teacher.

Post-hoc analyses: moderation

Although conflict could not mediate the association between ethnicity and informal help by the teacher, we were post-hoc interested in whether this association between teacher-adolescent conflicts and informal help from the teacher was different for Moroccan-Dutch compared to native Dutch adolescents, because of the previously found mean-level differences between both ethnic groups. Thus, additional analyses were performed. Multigroup analyses in Mplus showed that for conflict in teacher-adolescent relationship there was a significant effect of ethnicity on the association between conflict and informal help from the teacher (Wald(3)=16.64, p<.001). More specifically, the association between conflict and informal help appeared to be significantly different only for Moroccan-Dutch in comparison to native Dutch adolescents (Wald(1)=6.46, p=.011), whereas the association was not different for Surinamese-Dutch and Turkish-Dutch compared to native Dutch adolescents

(resp. Wald(1)=0.01, *p*=.938 and Wald(1)=1.85, *p*=.174). Among native Dutch adolescents, a non-significant association between conflict and informal help was found (*OR*=1.14, 95% CI[0.79,1.65]), but for Moroccan-Dutch adolescents a significant, negative association was found (*OR*=0.57, 95% CI[0.39,0.84]). For Moroccan-Dutch adolescents, this indicates that more teacher-reported conflicts in the teacher-adolescent relationship were associated with less informal help from their teachers as reported by the adolescents (see also Figure 7.2).

DISCUSSION

This study is one of the first to indicate that ethnic differences in adolescent-reported informal help for adolescents' internalizing problems provided by the teacher exist. More specifically, results showed that Moroccan-Dutch adolescents were less likely to receive informal help for their internalizing problems from their teacher than native Dutch adolescents, whereas this was not the case for the other two ethnic minority populations (Turkish-Dutch and Surinamese-Dutch adolescents). Furthermore, substantially more conflicts in the teacher-adolescent relationship were found for Moroccan-Dutch compared to native Dutch adolescents which again was not found for the Turkish-Dutch and Surinamese-Dutch peers. This may be especially problematic, since only for Moroccan-Dutch adolescents conflicts in the teacher-adolescent relationship were associated with less informal help provided by these teachers.

As such, the current study adds to previous studies on ethnic differences in formal mental health care (Gudiño et al., 2009; Wood et al., 2005; Yeh et al., 2002), by indicating that specific ethnic minority groups also receive less *in*formal help in the school context. This finding is especially worrisome because a previous study on formal mental health care in the same sample indicated that only Moroccan-Dutch – and not so much Turkish-Dutch or Surinamese-Dutch – adolescents reported considerably less formal mental health service use compared to native Dutch adolescents (Verhulp et al., 2013). However, results do show that even among ethnic minority groups at least 30% of the adolescents reported to receive informal help from the teacher. So, even though this is a significantly lower percentage than reported by ethnic majority adolescents, it does indicate that many teachers are aware of these problems enabling them to either provide help themselves or to refer adolescents to formal mental health care.

Although Moroccan-Dutch adolescents reported less informal help from their teacher, teachers did signal similar levels of internalizing problems among adolescents from different ethnic groups and teachers' reports of internalizing problems were positively associated with

informal help. Based on previous studies, we hypothesized that teachers would possibly identify fewer internalizing problems among ethnic minority adolescents (Crijnen et al., 2000; Lau et al., 2004; Stevens et al., 2003; Vollebergh et al., 2005). However, in the current study teachers were found to report similar levels of internalizing problems across ethnic groups. The fact that we did not find differences between ethnic groups in teacher-reported internalizing problems, might be due to the fact that the adolescents in the current study were mostly born in the Netherlands, followed Dutch education, and therefore it is likely that these adolescents have become quite similar to the native Dutch adolescents in terms of their behavior. Hence, it seems that teachers at least are similarly aware of the problems of adolescents originating from different ethnic backgrounds and therefore opportunities within schools to offer help to these adolescents seem to be present.

Furthermore, consistent with previous research, the results did show clear ethnic differences with regard to the teacher-adolescent relationship quality. Again, these differences were only revealed for Moroccan-Dutch adolescents. According to teachers, the quality of the relationship with Surinamese-Dutch and Turkish-Dutch adolescents did not differ from that with ethnic majority adolescents. However, teachers reported notably more conflicts in the relationship with Moroccan-Dutch adolescents compared to ethnic majority adolescents, which is in line with previous research on the teacher-pupil relationship quality in which children of the same ethnic minority groups were compared (Thijs et al., 2012). No ethnic differences were found with regard to closeness in the teacher-adolescent relationship, which is also consistent with the study of Thijs and colleagues (2012).

The finding that teachers report much more conflicts in their relationships with Moroccan-Dutch than with native Dutch adolescents may reflect actual differences in conflicts between teachers and adolescents as well as perceptions of teachers– which might be influenced by negative prejudices on the behavior of Moroccan-Dutch adolescents in the Netherlands. Previous research on teachers' reports on externalizing behavior among Moroccan-Dutch adolescents have suggested that both options are still open (Vollebergh et al., 2005). Current and previous research have indeed shown more conflicts in this relationship (Thijs et al., 2012). However, there are also indications that the social position of the Moroccan-Dutch is worse than the position of the Turkish-Dutch resulting in a more negative bias of the Dutch majority group against the Moroccan-Dutch group compared to the other ethnic minority groups (Verkuyten & Thijs, 2010). More research is needed to determine which of the explanations is more valid.

To our knowledge, the current study is the first to associate teacher-adolescent relationship quality with informal help provided by teachers for adolescents' internalizing problems. Results showed that, in the entire sample, more closeness in the teacher-

adolescent relationship was associated with a higher likelihood of informal help by the teacher. In line with previous studies, more closeness seems to result in more willingness of the teacher to invest in a students' well-being (Hamre & Pianta, 2001; 2005). Conflicts in the teacher-adolescent relationship were not associated with informal help in the entire sample. However, for Moroccan-Dutch students, conflicts in the teacher-adolescent relationship were negatively associated with informal help. We can only speculate how to explain these findings. On the one hand, the prejudices against and low social position of the Moroccan-Dutch group in the Netherlands (Verkuyten & Thijs, 2010) may activate a mechanism by which – in case of a problematic relationship – adolescents may be hesitant to ask their teacher for help and the teacher may feel unable to help the adolescent. On the other hand, it might be that there is a quadratic association between conflicts and informal help. Possibly, conflicts in the teacher-adolescent relationship are not necessarily associated with negative outcomes, unless there are too many conflicts in the relationship. However, due to a limited sample size, we could not further examine these quadratic associations.

Limitations

Several limitations of the current study need to be taken into account. First, we used cross-sectional data. Although we used teacher-reported relationship quality and internalizing problems as predictors of adolescent-reported informal help from the teacher, the relationships are correlational in the current study. Future research should use a longitudinal design to disentangle the direction of effects. Second, the study was conducted in the Netherlands and should be replicated in other countries with other ethnic groups. Still, our findings are quite consistent with previous literature both from the Netherlands and other countries in showing that some ethnic minority groups have been found to receive less (informal) help in the school context than majority youth and teacher-adolescent relationship quality was more negative for some ethnic minority groups. Third, we did not include ethnicity of the teachers in the current study, due to too little variation in the ethnic background of the teachers. As a result, no information is available on whether it is the ethnic mismatch that influences the amount of informal help teachers offer to their students or whether teachers in general are less likely to provide informal help to Moroccan-Dutch adolescents. Furthermore, we only examined explanations related to teachers for the lower levels of informal help found for Moroccan-Dutch adolescents. However, it might also be that Moroccan-Dutch adolescents do not ask for help from their teacher, because they feel that their teachers can't help them or have nothing to do with their problems. Finally, the sample of teachers participating in our study was relatively small for Turkish-Dutch

and Moroccan-Dutch adolescents. This limited sample size did not enable us to test for example moderated mediation models or the quadratic association between conflicts and informal help, since these models are too complex for the sample size of the current study.

Conclusion

In sum, the current study adds to the literature by showing that ethnic differences are not only present in formal mental health care, but also in informal help from teachers for adolescents' internalizing problems which was specifically the case for Moroccan-Dutch adolescents in the Netherlands. Furthermore, the teacher-adolescent relationship quality may be an important factor in association with the amount of informal help teachers provide. More closeness was associated with a higher likelihood of informal help. Although conflicts were not associated with informal help in the entire sample, for Moroccan-Dutch adolescents conflicts in the teacher-adolescent relationship were negatively associated with informal help provided by the teacher. Hence, this study suggests that although schools might potentially play an important role in the pathways toward mental health care – because no ethnic differences in teacher-reported internalizing problems were revealed – several barriers need to be overcome to be able to provide sufficient (in)formal help to adolescents from all ethnic groups.

8

Summary and discussion

The objective of the current thesis was to increase our understanding of the ethnic differences in mental health service use for adolescents' internalizing problems. In the first part of the thesis, we examined whether questionnaires assessing adolescents' internalizing problems could be validly used across ethnic groups and more specifically whether the diagnostic utility of the instruments was comparable across four ethnic groups (i.e., native Dutch, Surinamese-Dutch, Turkish-Dutch, and Moroccan-Dutch). In the second part of the thesis, we focused specifically on the ethnic differences in mental health service use for adolescents' internalizing problems and attempted to unravel the mechanisms underlying these differences following the steps toward mental health care proposed by Cauce and colleagues (2002; i.e., problem recognition, decision to seek help, service selection). The most important findings of the studies in the current thesis are summarized and integrated below. Furthermore, implications for clinical practice and future research are discussed.

Part I – Assessing adolescents' internalizing problems in different ethnic groups

When comparing different ethnic groups in terms of problem behavior, it is important to establish whether differences found between ethnic groups are meaningful or due to measurement difficulties (Van de Vijver & Poortinga, 1997). In the current thesis, we therefore first examined the validity of the most important instruments in our study.

In Chapter 2, we assessed whether the internalizing syndrome scales of the Youth Self-Report (YSR; Achenbach & Rescorla, 2001) could be used to validly compare internalizing problems of adolescents in different ethnic groups in the Netherlands. The results showed that the scales were measurement invariant across all ethnic groups, indicating that adolescents from the four ethnic groups showed similar responses to the questions. Therefore, the YSR internalizing syndrome scales could be used to validly compare mean-level differences across the four ethnic groups in the current study.

In addition to the YSR, parents and adolescents reported on adolescents' internalizing disorders through diagnostic interviews. Whereas both reports are usually combined into one final diagnosis (e.g., Angold et al., 2002; Verhulst, Van der Ende, Ferdinand, & Kasius, 1997; Zwirs et al., 2007), the results of Chapter 3 indicated that this method may result in an underestimation of the amount of internalizing diagnoses in certain ethnic groups. In particular, Moroccan-Dutch parents reported fewer internalizing disorders for their adolescent children compared to native Dutch parents while the adolescent reports on

internalizing disorders did not reveal any differences between ethnic groups. As a result, the total amount of internalizing disorders appeared to be lower for Moroccan-Dutch than for native Dutch adolescents. Hence, combining parent- and adolescent-reports on internalizing disorders to arrive at a clinical diagnosis resulted in fewer internalizing disorders among Moroccan-Dutch adolescents, despite the fact that adolescents themselves reported similar levels of internalizing disorders compared to their native Dutch counterparts.

Next, the diagnostic utility of the YSR and CBCL (i.e., Child Behavior Checklist) was examined by comparing reports of adolescents and parents on the screening questionnaires with their diagnostic status (as determined using diagnostic interviews). The results indicated that the consistency between the screening questionnaires and diagnostic status was lower among Turkish-Dutch and Moroccan-Dutch than among native Dutch parents. This indicates that low scores of Turkish-Dutch and Moroccan-Dutch parents for their children's internalizing problems on the CBCL were not consistently associated with negative outcomes in the diagnostic interview. Among adolescents, differences between ethnic groups in the diagnostic utility of the YSR were hardly found (Chapter 4).

Hence, whereas the current thesis provides support for the validity and diagnostic utility of the instruments used to compare internalizing problems across ethnic groups among adolescents, the diagnostic utility of these instruments was insufficient among immigrant parents, specifically among Moroccan-Dutch parents. Compared to native Dutch parents, Moroccan-Dutch parents not only reported lower levels of internalizing problems for their children than their child's score would suggest, but they also – like Turkish-Dutch parents – tended to report more inconsistently on different instruments measuring the same constructs. Together, these results suggest that whereas previous studies often attached equal value to both parent- and adolescent-reports on internalizing disorders to come to a diagnosis, in some immigrant groups – in this case particularly in the Moroccan-Dutch group – adolescent reports on internalizing disorders may need to be given more weight to prevent underdiagnoses (Cantwell, Lewinsohn, Rohde, & Seeley, 1997).

Part II – Ethnic differences in mental health service use for adolescents' internalizing problems

In line with previous studies on ethnic differences in mental health service use (Elster, Jarosik, VanGeest, & Fleming, 2003; Health Council of the Netherlands, 2012), clear ethnic differences emerged in formal mental health service use for adolescents' internalizing

problems. According to all immigrant parents, immigrant adolescents were less likely to receive mental health care compared to native Dutch adolescents. Only Moroccan-Dutch adolescents reported lower levels of mental health services compared to their native Dutch counterparts (Chapter 5). These differences in reports on mental health service use between parents and adolescents might have emerged from parents not always being aware that their adolescent child receives care, for example, in the school context. Hence, the current study showed ethnic differences in mental health service use in the Netherlands after accounting for the level of problem behaviors and focusing specifically on adolescents' internalizing problems. The specific focus on internalizing problems added to the literature on ethnic differences in mental health service use in the Netherlands because former research performed in the USA has indicated that ethnic disparities in mental health service use may even be larger for internalizing than for externalizing problems (Gudiño, Lau, Yeh, McCabe, & Hough, 2009). Furthermore, previous research in the Netherlands has been performed mainly on mental health service use for individuals with externalizing problems (Zwirs, Burger, Schulpen, & Buitelaar, 2006b).

In an attempt to explain this disparity, we analyzed the processes behind these ethnic differences in mental health service use by assessing several factors that have been suggested to be associated with these ethnic differences in mental health service use. In line with the model proposed by Cauce and colleagues (2002), we assessed factors associated with the three steps in their help seeking model. This model suggests that problems need to be first recognized (Step 1; Problem recognition), then the decision to seek help has to be made (Step 2; Decision to seek help), and finally a mental health service provider has to be selected (Step 3; Service selection).

Problem recognition

In Chapter 5, we examined whether emotional problem identification or reports of problem symptoms could mediate the ethnic differences in mental health service use. In addition to the reports of different symptoms of internalizing problems, we asked parents and adolescents whether they thought the adolescent had an emotional problem (which is a subjective interpretation of emotional problems). The results showed that immigrant parents displayed a much lower indication of any emotional problems in their children and that this low level of subjective identification of emotional problems mediated the associations between ethnicity and mental health service use, whereas reports on problem symptoms did not. Among adolescents, differences between the Moroccan-Dutch and native Dutch in mental health service use were also explained by differences in emotional

problem identification between both groups of adolescents. Thus, these results suggest that because immigrant parents were less likely to identify emotional problems among their children than were native Dutch parents, their children did not access mental health care. Furthermore, the findings indicated that the subjective identification of problems is more important for mental health service use than are reports of symptomatology. When it comes to pathways toward mental health care, the awareness that certain distress constitutes a problem seems more important than reporting on symptoms (Cauce et al., 2002; Zwaanswijk et al., 2006).

Decision to seek help

According to the mental health help seeking model (Cauce et al., 2002), individuals' lay beliefs about emotional problems and attitudes toward mental health care are related to the decision to seek help. Lay beliefs concern beliefs about the causes of certain problems and the ways to solve them. In Chapter 6, we examined ethnic differences in lay beliefs and attitudes toward mental health care among parents and adolescents. Considerable ethnic differences were found in parents' lay beliefs about emotional problems and attitudes toward mental health care, whereas hardly any ethnic differences were revealed in the lay beliefs of their children. When asked to indicate possible causes that could explain the emotional problems described in a vignette, Moroccan-Dutch parents showed lower scores on all possible causes than did native Dutch parents, indicating that they thought it was unlikely that the listed factors could have caused emotional problems. Furthermore, regarding possible solutions for emotional problems, Turkish-Dutch and Moroccan-Dutch parents reported higher scores on passive and lower scores on active solutions for emotional problems compared to native Dutch parents. Finally, ethnic differences were found in parental attitudes toward mental health care. Surinamese-Dutch and Moroccan-Dutch parents indicated considerably higher levels of fear of mental health care compared to native Dutch parents, whereas no differences were found regarding rejection of mental health care. Hence, it seems that immigrant parents do not reject mental health care, whereas both Surinamese-Dutch and Moroccan-Dutch parents were more likely to be afraid of the opinion of people in their direct environment when they would seek professional help.

To consider the variation within immigrant groups as well, we also examined associations of parents' lay beliefs and attitudes toward mental health care with acculturation orientations toward the Dutch and ethnic culture. In line with our expectations, the results in Chapter 6 showed that stronger orientations toward the Dutch culture and weaker

orientations toward the ethnic culture were associated with lower levels of passive solutions and less fear of mental health care. Thus, in line with the acculturation literature and ideas on the ways in which culture influences lay beliefs, the beliefs and attitudes of immigrant parents who were oriented more strongly toward the Dutch culture and less strongly toward the ethnic culture seem more in line with beliefs and attitudes of native Dutch parents (Berry, 1997; 2006; Kleinman, 1980).

In contrast to previous studies on lay beliefs (Yeh et al., 2005), in the current study, lay beliefs and attitudes toward mental health care did not mediate the associations between ethnicity and mental health service use (Chapter 6). This may be due to the way in which lay beliefs about emotional problems were assessed in the current study. Whereas previous studies assessed parental lay beliefs concerning their child's own problem behavior (Yeh et al., 2005), we used a vignette to investigate parents' and adolescents' lay beliefs to compare ethnic differences in beliefs regarding the same problems. Parents' beliefs about children's actual problem behavior, rather than beliefs following fictitious behavior in a vignette, are probably much more likely to relate to mental health service use for these same behaviors. An additional factor explaining these results could be that the variation in mental health service use was rather small, resulting in power that is too limited to assess possible differences (i.e., very few immigrant parents reported mental health service use for their children's internalizing problems).

Service selection

Different kinds of services can be selected after the decision to seek help has been made, such as formal or informal sources of help. Immigrant groups are often thought to have a tight informal network for providing help in case of – for instance – mental health problems (e.g., Cauce et al., 2002), which is in turn assumed to compensate for their lower levels of formal mental health service use (Health Council of the Netherlands, 2012). Although at least 30% of the adolescents in all ethnic groups reported obtaining informal help for internalizing problems from their teacher, we did not find support for such compensatory levels of informal help by teachers in the current study. Moroccan-Dutch adolescents received less informal help from their teachers compared to native Dutch adolescents (Chapter 7). Moreover, Moroccan-Dutch adolescents were also found to receive less informal help from parents and friends (Verhulp, Stevens, & Vollebergh, 2013).

Regarding informal help by teachers, we aimed to understand these lower levels of informal help for Moroccan-Dutch adolescents by testing whether teacher-reported internalizing problems and the teacher-adolescent relationship quality could mediate the

associations between ethnicity and informal help by the teacher. No differences in teacher-reported internalizing problems were found for Moroccan-Dutch compared to native Dutch adolescents; however, teachers did report more conflicts in their relationships with Moroccan-Dutch than with native Dutch adolescents. Although we did not find support for mediation, we found that the association between conflicts in the teacher-adolescent relationship and informal help by the teacher was different for Moroccan-Dutch than for native Dutch adolescents. Whereas this association was not present among native Dutch adolescents (i.e., the level of conflict in the teacher-adolescent relationship was not related to the level of informal support offered for internalizing problems), higher levels of conflict in the teacher-adolescent relationship for Moroccan-Dutch adolescents were associated with a lower likelihood of informal help by the teacher. Hence, only for Moroccan-Dutch adolescents, conflicts in the teacher-adolescent relationship seemed to have negative consequences for the informal help teachers provide.

Former studies conducted in the USA have already indicated that ethnic minority students are underrepresented in school-based mental health services (Gudiño et al., 2009; Wood et al., 2005; Yeh et al., 2002). The current study adds to these findings by showing that Moroccan-Dutch adolescents in the Netherlands also receive lower levels of informal help by teachers compared to native Dutch adolescents. More conflicts in the teacher-adolescent relationship appeared to be associated with these lower levels of informal help provided by the teacher for Moroccan-Dutch adolescents, but it remains unanswered why teachers reported more conflicts in the teacher-adolescent relationship with Moroccan-Dutch adolescents. Previous studies have suggested that an ethnic mismatch between teachers and adolescents could result in a more negative relationship quality due to cultural misunderstandings and miscommunication (Hamre & Pianta, 2001; Thijs, Westhof, & Koomen, 2012). Although the ethnic mismatch may play a role, it does not explain why this would only hold for one immigrant group in the Netherlands. Another explanation that has previously been suggested involves the negative stereotypes toward the Moroccan-Dutch group. Possibly, these stereotypes influence teachers' views of their relationships with Moroccan-Dutch adolescents (Thijs & Eilbracht, 2012; Verkuyten & Thijs, 2010). More research is needed to further understand whether teacher-adolescent relationships are actually more negative for Moroccan-Dutch adolescents or whether teachers' views of the behavior of Moroccan-Dutch adolescents may be biased.

Divergent findings between immigrant populations in the Netherlands

Considering the results of the six studies together, three findings were found consistently throughout the thesis, revealing divergent findings for different immigrant populations and generations. The differences between parents and adolescents and between immigrant groups are discussed below. Additionally, we discuss the Moroccan-Dutch group in our study, as they consistently diverged most strongly from the native Dutch group.

Intergenerational differences

This thesis clearly shows that ethnic differences in various phenomena are far more substantial for the parents than for their children. For instance, our results indicated that differences between immigrant and native Dutch adolescents in the validity and diagnostic utility of the internalizing problem scale of the Youth Self-Report were hardly found, whereas clear differences between native Dutch and especially Moroccan-Dutch and Turkish-Dutch parents were found regarding the diagnostic utility of the Child Behavior Checklist. Additionally, in line with the design of the study, immigrant adolescents reported similar levels of internalizing problems and disorders compared to their native Dutch counterparts, whereas Moroccan-Dutch parents reported far lower levels of internalizing problems and disorders compared to the native Dutch parents. Finally, immigrant adolescents were found to have comparable lay beliefs and attitudes toward mental health care as did their native Dutch peers, whereas again substantial ethnic differences were found for their parents.

These intergenerational differences could reflect differences in the extent to which immigrant parents and their children are socialized within the Dutch culture. When individuals migrate to a new country, they need to adapt their lives to the new circumstances in which they live. Many factors influence the ease and pace at which this process of adaptation occurs. For example, cultural distance between the receiving and ethnic culture, migration motivation of immigrants, and the ideology of the society of settlement regarding immigrants have been presupposed to influence the process of adaptation (Berry, 1997). Within families, differences between parents and adolescents in adaptation can also be expected because adolescents are often born in the new country and they are frequently in contact with the new culture, especially since they attend school (Telzer, 2010). As a result, an acculturation gap may exist between parents and adolescents, resulting in more similarities between immigrant adolescents and their native Dutch counterparts than between immigrant and native Dutch parents (Telzer, 2010). Furthermore, these

intergenerational differences are larger for some immigrant groups (i.e., Moroccan-Dutch) compared to other immigrant groups (i.e., Surinamese-Dutch), depending on the extent to which immigrant parents differ from the native Dutch parents.

Differences between immigrant groups

Besides differences between generations, differences between immigrant groups (particularly parents) were found as well. Although all immigrant parents reported lower levels of mental health service use by their adolescent children, the largest differences were found for Moroccan-Dutch parents followed by Turkish-Dutch and Surinamese-Dutch parents. This pattern was found for other differences as well, such as the level of emotional problem identification, the diagnostic utility of the CBCL, and differences in lay beliefs and attitudes toward mental health care. The differences between Surinamese-Dutch on the one hand and Turkish-Dutch and Moroccan-Dutch on the other hand might be explained by cultural differences and the specific migration history of these three immigrant populations. Suriname is a former colony of the Netherlands; hence, the Surinamese-Dutch immigrants are more familiar with the Dutch language and the Dutch culture. Turkish-Dutch and Moroccan-Dutch immigrants came to the Netherlands as unskilled labor migrants who were unfamiliar with the Dutch language prior to migration, their religion was mostly Muslim, and they generally had a lower socioeconomic position compared to Surinamese-Dutch immigrants (De Valk, 2010). In addition, previous research has shown that the cultural distance between the Surinamese-Dutch and native Dutch group is smaller than for the Turkish-Dutch and Moroccan-Dutch groups (Arends-Tóth & Van de Vijver, 2009; Schalk-Soekar, Van de Vijver, & Hoogsteder, 2004).

Moroccan-Dutch immigrants in the Netherlands

The results of the current thesis consistently indicated that Moroccan-Dutch adolescents received the lowest levels of formal and informal help for their internalizing problems. An explanation for the underrepresentation of Moroccan-Dutch adolescents in the mental health care system may be found in the consistent finding that Moroccan-Dutch parents seem – more than parents of the other ethnic groups in our sample – to know relatively little about the internalizing problems of their adolescent children. They differ most strongly from their adolescent children in terms of the emotional problems they identify. In this group, parent-adolescent agreement on internalizing disorders was lower than in other ethnic groups, and the results indicated that Moroccan-Dutch parents have relatively few

ideas about which processes may cause emotional problems during adolescence. Together, these findings seem to have considerable consequences for mental health service use by Moroccan-Dutch adolescents, as parents are considered important in adolescents' pathways toward mental health care (Logan & King, 2001; Verhulst & Van der Ende, 1997). Indeed, the low levels of emotional problem identification were found to mediate the association between ethnicity and mental health service use (Chapter 5). In fact, these findings become even more worrisome, as Moroccan-Dutch adolescents themselves also indicated that they receive the lowest levels of informal help from teachers, their parents, and their friends.

Previous studies suggested that the tendency of Moroccan-Dutch immigrants to deny their children's problem behaviors explained the low levels of children's problem behavior reported by Moroccan-Dutch parents (Stevens, 2011). However, if parents denied their children's problem behaviors, it would be expected that the consistency between reports on different instruments would be higher (i.e., they would be expected to score consistently low on the CBCL and in the diagnostic interview). However, the inconsistency between the reports on different instruments measuring the same construct might instead suggest that these parents are unfamiliar with the underlying concept of internalizing problems. More specifically, Moroccan-Dutch parents may be less likely to 'proto-professionalize' distress into psychological problems compared to native Dutch parents; in other words, their mental health literacy may be lower (De Swaan, 1990; Jorm, 2012). Mental health literacy has been defined as "knowledge and beliefs about mental health disorders which aid their recognition, management and prevention" (Jorm et al., 1997, p. 182). As mental health literacy in the Netherlands is largely based on westernized conceptualizations, it may be relatively low in non-western immigrant groups, and differences between immigrants and native Dutch may be largest for those groups who are thought to be culturally most distinct from the native Dutch reference group. Moroccan-Dutch parents belong to the immigrant groups that are found to be culturally most distinct from the native Dutch, which would explain why they diverge most strongly from the native Dutch parents (Jorm, 2012; Schalk-Soekar et al., 2004). Other explanations for these relatively low levels of reported internalizing problems by Moroccan-Dutch parents may be formulated. These explanations focus on cultural differences in perceiving behavior as (ab)normal (Roberts, Alegria, Roberts, & Chen, 2005) and on higher thresholds among immigrant parents when identifying the behavior as problematic (Weisz et al., 1988). Following these explanations, Moroccan-Dutch parents are expected to report fewer internalizing problems for their children because they have different definitions of abnormal behavior or their threshold for considering such problems as problematic is higher. Still another explanation that could contribute to the underreporting of adolescents' internalizing problems among Moroccan-Dutch parents

relates to the extent to which Moroccan-Dutch parents communicate with their children about these types of problems. For Moroccan-Dutch adolescents, the amount of problems identified diverged most strongly from the amount of emotional problems identified by their parents. This may indicate that Moroccan-Dutch parents and their children do not talk about feelings and emotions as much as for example native Dutch parents and their children do (Pels & De Haan, 2003). This may also be due to the larger amount of cultural distance between Moroccan-Dutch adolescents and their parents than for example among Turkish-Dutch parents and adolescents (Verkuyten, 2003). Hence, the underreporting of Moroccan-Dutch parents may also result from differential communication patterns between Moroccan-Dutch parents and their children.

Next to the explanation that Moroccan-Dutch parents appear to know relatively little about the internalizing problems of their adolescent children, the results of the current thesis suggested other possible explanations for the low amount of Moroccan-Dutch adolescents receiving mental health care. Due to the limited amount of mental health service use among Moroccan-Dutch adolescents, the power in our study was too small to examine these explanations sufficiently. However, indications for at least two other explanations were found. The first additional explanation why Moroccan-Dutch adolescents may have received the lowest levels of mental health care could be related to the high level of fear of mental health care found among Moroccan-Dutch parents. More specifically, this fear focused on the opinion of the environment toward their mental health help-seeking, which has been mentioned as a barrier to seeking help in other Dutch research as well (Flink, Beirens, Butte, & Raat, 2013). The lower levels of informal help by their teacher can also explain the low levels of mental health service use among Moroccan-Dutch adolescents. School is thought to be an important source of help in cases of psychopathology among adolescents (Flink et al., 2013; Rickwood, Deane, & Wilson, 2007), but it seems that for Moroccan-Dutch adolescents, additional barriers in the teacher-adolescent relationship need to be overcome.

Strengths and limitations

The six studies presented in the current thesis have considerable strengths, but also some limitations. Both strengths and limitations should be considered when interpreting the findings of the studies. The design of the study offered advantages in the interpretation of the results. Due to the selection procedure, we were able to compare ethnic groups regarding mental health service use while accounting for the number of internalizing

problems among adolescents. More specifically, due to our selection procedure, adolescents in the four ethnic groups indicated similar levels of internalizing problems, providing the opportunity to compare the amount of mental health service use across ethnic groups. Additionally, we were able to include three different immigrant populations in our study. This differentiation between immigrant groups appeared to be highly relevant, with the results varying between the three immigrant populations compared to the native Dutch reference group. It should be noted here as well that whereas immigrant groups are often thought to be reluctant to participate in research (Stevens, 2011), we found – in line with other studies – that the response rates among parents were higher for Turkish-Dutch and Moroccan-Dutch parents than for native Dutch parents. Furthermore, in an attempt to gain insight into the number of internalizing disorders of adolescents with a native Dutch, Moroccan-Dutch, Turkish-Dutch, and Surinamese-Dutch ethnic background, diagnostic interviews with parents and adolescents with different ethnic backgrounds were performed in their homes and at school, respectively. Another strength of the current study is that multiple informants were used to examine adolescents' internalizing problems and mental health service use. Besides parents and adolescents, teachers also provided information, for example, on adolescents' internalizing problems and on the relationship quality with the adolescent.

Some limitations of the study need to be addressed as well. The first limitation is the cross-sectional nature of the study, making it impossible to gain insight about the direction of the revealed associations. For instance, regarding the relationship between internalizing problems and mental health service use, we cannot be certain that problem identification precedes mental health service use or that mental health service use increases the awareness of these problems among parents and adolescents. Previous longitudinal research suggested that problem identification at one point in time is associated with mental health service use a year later; however, this study did not examine these associations in different ethnic groups (Zwaanswijk et al., 2006). Thus, more longitudinal research is needed to examine the association between problem identification and mental health service use in different ethnic groups. Furthermore, externalizing problems and the comorbidity between both internalizing and externalizing problems were not examined in the current study. In general, it is expected that externalizing problems can be recognized more easily (e.g., Gudiño et al., 2009). If we would therefore focus exclusively on internalizing problems (i.e., without possible comorbid externalizing problems), the ethnic differences might have been even larger because parents or teachers might now have recognized some children with internalizing problems based on their comorbid externalizing problems. Another important limitation concerns the measurement difficulties encountered by

immigrant parents. Specifically, for Turkish-Dutch and Moroccan-Dutch immigrant parents, the diagnostic utility of the CBCL was rather low, since their response patterns seemed inconsistent. Although the sample was relatively large for the type of data gathered, we were not able to differentiate between boys and girls. It is widely known that adolescent girls experience more internalizing problems compared to boys (e.g., Costello, Copeland, & Angold, 2011). Even though we controlled for gender in some of the analyses, it would be interesting to examine whether – for example – agreement on internalizing disorders between parents and adolescents would be larger for girls than for boys and whether such phenomenon would be found in all ethnic groups. Moreover, the levels of mental health service use were lower than expected for the immigrant populations in our study, which might have resulted in difficulties finding support for some of the possible explaining mechanisms in our study.

Implications

Internalizing problems during adolescence can have negative consequences for later life, such as adult psychopathology, job performance, and relationship functioning, among others (Kerig, Ludlow, & Wenar, 2012; Reef, Van Meurs, Verhulst, & Van der Ende, 2010; Rutter, Kim-Cohen, & Maughan, 2006). As early interventions are more cost-effective, it is important to identify internalizing problems and intervene during early stages (e.g., Bayer et al., 2011; Kazdin & Blase, 2011; Rapee, 2013). The results of the current thesis indicate that immigrant adolescents in general and Moroccan-Dutch adolescents in particular receive lower levels of mental health service use for their internalizing problems compared to their native Dutch peers; therefore, these adolescents require special attention.

The current thesis revealed several barriers that need to be addressed to improve the help seeking pathways for immigrant, specifically Moroccan-Dutch, adolescents. The current study focused on several barriers that immigrants might encounter when entering the mental health care system. Although the focus on problem identification, lay theories, attitudes toward mental health care, and informal help might give the impression that immigrants are held responsible for their underrepresentation in the mental health care system, these barriers can also be interpreted as a failure of the Dutch mental health care system to meet the needs of immigrants (Alegria, Atkins, Farmer, Slaton, & Stelk, 2010). To improve mental health care for immigrant adolescents with internalizing problems, the implications of the results of the current thesis were documented and discussed in several expert meetings (Pels, De Gruijter, & Los, 2013). These expert meetings were

organized for professionals working with immigrant groups, such as people from migrant self-organizations, youth care professionals, and caregivers in and around schools. Three important recommendations that resulted from these meetings will be highlighted here. First, our results indicate that it is important to improve the immigrant parents and specifically Moroccan-Dutch parents' recognition of internalizing problems among their children. As it may be difficult to engage these parents, it was suggested during one of the meetings that psycho-education on internalizing problems may be organized for immigrant parents in collaboration with migrant self-organizations. Previously, such organizations have been found to provide parenting support to immigrant groups. Immigrant parents might be more willing to join initiatives that are organized by familiar institutions. Second, this study indicated that within schools, more attention needs to be paid to identifying internalizing problems and to organizing the referral of adolescents with internalizing problems to more formal mental health services. An important bottleneck seems to be that schools pay more attention to the externalizing problems of children than to their internalizing problems (Van der Steenhoven & Van Veen, 2010). Third, another possibility is offering help to (immigrant) adolescents themselves directly. For example, several online interventions focus on adolescents' internalizing problems (e.g., Master your Mood; Van der Zanden, Conijn, Visscher, & Gerrits, 2005). Although more research is needed on this topic, a review of ten studies showed preliminary evidence that computerized cognitive behavioral therapy is an effective intervention for reducing depression and anxiety among children and adolescents (Richardson, Stallard, & Velleman, 2010).

In addition to implications for clinical practice, the results of the current thesis also have implications for future research. The current study was one of the first to focus on increasing the understanding of ethnic differences in mental health service use. Therefore, more research is needed on this topic. First, longitudinal and prospective research is needed to disentangle the order of the effects found in the current study. Second, research is needed to further understand why immigrant parents experience difficulties identifying their children's emotional problems. Related to this, future research should consider parents' lay beliefs, their attitudes toward mental health care, and possible associations of these beliefs and attitudes with mental health service use. These associations with mental health service use were rather small in our study, which appeared to be due to methodological problems. Therefore, it would be interesting to investigate whether deploying another methodological approach would result in stronger associations with mental health service use. Furthermore, the role of the teacher in the pathways toward mental health care of immigrant adolescents could also be examined further, specifically the more negative relationship between Moroccan-Dutch adolescents and their teachers.

Conclusion

The main aim of the current thesis was to increase our understanding of the ethnic differences in mental health service use for adolescents' internalizing problems. The results of the current thesis showed that immigrant and specifically Moroccan-Dutch adolescents, are indeed underrepresented in mental health care for internalizing problems. Several possible barriers toward mental health care were also revealed, such as immigrant parents' difficulties identifying adolescents' internalizing problems, immigrant parents' attitudes toward mental health care, and difficulties encountered by Moroccan-Dutch adolescents in their pathway toward mental health care in the school context. These barriers offer possibilities for improvement in order to decrease the underrepresentation of immigrant and specifically of Moroccan-Dutch adolescents in mental health care. More attention – in research and clinical practice – is needed for this group of adolescents to be able to provide sufficient mental health care for all adolescents with internalizing problems, regardless of their ethnic background.

Summary in Dutch

Internaliserende problemen omvatten symptomen zoals angst, verdriet, eenzaamheid en piekeren. Gedurende de adolescentie neemt het risico op internaliserende problemen toe en als deze problemen onbehandeld blijven, kunnen ze negatieve gevolgen hebben voor het functioneren in de toekomst. Er zijn verschillende aanwijzingen uit eerder empirisch onderzoek waaruit blijkt dat migrantenjongeren ondervertegenwoordigd zijn in de professionele hulpverlening. In Nederland is echter nog weinig onderzoek verricht naar etnische verschillen in zorggebruik waarin rekening wordt gehouden met de mate waarin jongeren internaliserende problemen rapporteren. Verder is er weinig bekend over mechanismen die ten grondslag liggen aan de ondervertegenwoordiging van migrantenjongeren in de hulpverlening.

Het doel van dit proefschrift is om deze etnische verschillen in zorggebruik voor internaliserende problemen bij jongeren beter te begrijpen. In het eerste deel van dit proefschrift vergelijken we de validiteit en klinische bruikbaarheid van de belangrijkste instrumenten in ons onderzoek tussen etnische groepen. In het tweede deel van dit proefschrift onderzoeken we etnische verschillen in zorggebruik voor internaliserende problemen van jongeren en mogelijke mechanismen die ten grondslag liggen aan deze etnische verschillen in zorggebruik.

Het huidige onderzoek bestaat uit twee fasen. In de eerste fase van het onderzoek zijn jongeren gescreend op internaliserende problemen, om in de tweede fase van het onderzoek voldoende jongeren met een verhoogd risico op internaliserende problemen te kunnen includeren. Voor deze tweede fase van het onderzoek hebben we jongeren uit de vier grootste etnische groepen in Nederland geselecteerd voor deelname. De uiteindelijke onderzoeksgroep in de tweede fase bestaat uit 95 Nederlandse, 85 Surinaams-Nederlandse, 87 Turks-Nederlandse en 82 Marokkaans-Nederlandse jongeren en hun ouders. In alle vier de etnische groepen scoort ongeveer de helft van deze jongeren in de borderline/klinische range op internaliserende problemen, wat aangeeft dat de jongeren in de vier etnische groepen een vergelijkbaar risico lopen op internaliserende problemen.

Deel I – Het meten van internaliserende problemen bij jongeren uit verschillende etnische groepen

Zoals gezegd, zijn in het eerste deel van dit proefschrift de validiteit en klinische bruikbaarheid van de belangrijkste instrumenten in ons onderzoek bestudeerd. In Hoofdstuk 2 is onderzocht of de internaliserende syndroomschalen van de Youth Self-Report (YSR) gebruikt kunnen worden om internaliserende problemen van jongeren uit verschillende

etnische groepen in Nederland op een valide manier te vergelijken. De resultaten laten zien dat Marokkaans-Nederlandse, Turks-Nederlandse, Surinaams-Nederlandse en Nederlandse jongeren de vragen op vergelijkbare wijze invullen, zodat aangenomen kan worden dat deze schalen bruikbaar zijn om verschillen in internaliserende problemen tussen jongeren afkomstig uit deze vier etnische groepen te vergelijken.

De bevindingen beschreven in Hoofdstuk 3 laten zien dat jongeren uit de vier verschillende etnische groepen evenveel internaliserende stoornissen rapporteren in een diagnostisch interview, terwijl onder ouders duidelijke etnische verschillen naar voren komen. Met name Marokkaans-Nederlandse ouders rapporteren minder internaliserende stoornissen voor hun kinderen dan Nederlandse ouders. Om internaliserende stoornissen bij jongeren in kaart te brengen, is het gebruikelijk om de informatie van zowel ouders als jongeren uit deze interviews te combineren. Het combineren van ouder- en jongerenrapportages resulteert in dit onderzoek echter in een onderschatting van het aantal internaliserende diagnoses bij Marokkaans-Nederlandse jongeren, ten opzichte van de rapportages van jongeren zelf.

Vervolgens is de klinische bruikbaarheid van de YSR en Child Behavior Checklist (CBCL) onderzocht, door de uitkomsten uit deze screeningsvragenlijsten te relateren aan de uitkomsten uit de diagnostische interviews (Hoofdstuk 4). Uit de resultaten komt naar voren dat de samenhang tussen de screeningsvragenlijsten en het diagnostisch interview lager is voor Turks-Nederlandse en Marokkaans-Nederlandse dan voor Nederlandse ouders. Dit betekent bijvoorbeeld dat een internaliserende stoornis bij de jongere, zoals vastgesteld aan de hand van het diagnostisch interview, bij Turks-Nederlandse en Marokkaans-Nederlandse ouders aanzienlijk minder vaak samengaat met een hoge score op de CBCL dan bij Nederlandse ouders. Onder jongeren worden wederom nauwelijks etnische verschillen gevonden in de samenhang tussen de YSR en het diagnostisch interview, hetgeen impliceert dat de klinische bruikbaarheid van de YSR vergelijkbaar is voor de vier etnische groepen.

Kortom, de resultaten van het eerste deel van dit proefschrift laten zien dat de validiteit en klinische bruikbaarheid van de instrumenten bij jongeren redelijk vergelijkbaar zijn tussen de vier etnische groepen. Bij ouders moeten echter vraagtekens geplaatst worden bij de klinische bruikbaarheid van de instrumenten. Dit geldt met name voor Marokkaans-Nederlandse en in mindere mate voor de Turks-Nederlandse ouders.

Deel II – Etnische verschillen in zorggebruik voor internaliserende problemen bij jongeren

Het doel van het tweede deel van dit proefschrift is om etnische verschillen in zorggebruik beter te begrijpen. Eerst zijn etnische verschillen in zorggebruik voor internaliserende problemen bij jongeren onderzocht, waarbij een onderscheid is gemaakt tussen Marokkaans-Nederlandse, Turks-Nederlandse, Surinaams-Nederlandse en Nederlandse jongeren. De resultaten tonen aan dat er aanzienlijke etnische verschillen in zorggebruik voor internaliserende problemen bij jongeren zijn. Alle migrantenouders rapporteren minder professionele zorg voor hun kinderen bij dit type problemen. Uitgaande van de rapportages van jongeren, ontvangen alleen Marokkaans-Nederlandse jongeren minder zorg dan Nederlandse jongeren voor internaliserende problemen (Hoofdstuk 5). Op basis van de beschikbare wetenschappelijke literatuur zijn vervolgens drie verschillende factoren onderzocht die mogelijk gerelateerd zijn aan deze etnische verschillen in zorggebruik.

Allereerst is onderzocht in hoeverre deze etnische verschillen in zorggebruik verklaard kunnen worden door etnische verschillen in emotionele probleemidentificatie of rapportages over symptomen van internaliserende problematiek (Hoofdstuk 5). Naast het rapporteren over een groot aantal internaliserende symptomen, is aan ouders en jongeren gevraagd of zij vinden dat er sprake is van een emotioneel probleem. Resultaten laten zien dat Surinaams-Nederlandse, Turks-Nederlandse en Marokkaanse-Nederlandse ouders en jongeren minder emotionele problemen identificeren dan Nederlandse ouders en jongeren. Vervolgens blijkt dat de beperkte mate waarin migrantenouders emotionele problemen identificeren de etnische verschillen in zorggebruik mediëren, terwijl rapportages over symptomen dit niet doen. Ook bij jongeren is gevonden dat de verschillen tussen Marokkaans-Nederlandse en Nederlandse jongeren in zorggebruik verklaard kunnen worden door de verschillen in emotionele probleemidentificatie tussen deze groepen. De resultaten wijzen dus uit dat met name het subjectief identificeren van een internaliserend probleem door ouders en jongeren bepalend lijkt voor het al dan niet zetten van de stap naar professionele hulpverlening.

Vervolgens is onderzocht of etnische verschillen in lekenopvattingen over emotionele problemen en houdingen ten opzichte van de hulpverlening een rol spelen in het verklaren van de etnische verschillen in zorggebruik (Hoofdstuk 6). Er zijn aanzienlijke etnische verschillen gevonden in de opvattingen en houdingen ten opzichte van de hulpverlening onder ouders, terwijl deze verschillen nauwelijks naar voren komen onder jongeren. In vergelijking met Nederlandse ouders, reageren Turks-Nederlandse en Marokkaans-Nederlandse

ouders onder andere positiever op passieve oplossingen voor emotionele problemen (bv. er zo min mogelijk aan denken). Daarnaast rapporteren Marokkaans-Nederlandse en Surinaams-Nederlandse ouders ook meer angst voor de hulpverlening (bv. het is eng om met een hulpverlener over mijzelf te praten), maar staan ze niet afwijzender tegenover professionele hulpverlening dan Nederlandse ouders (bv. het is zwak om naar een hulpverlener te gaan). Verder blijkt dat de mate waarin migrantenouders gericht zijn op hun oorspronkelijke etnische cultuur en de Nederlandse cultuur van invloed zijn op deze lekenopvattingen en houdingen ten opzichte van de hulpverlening. Wanneer migrantenouders sterker gericht zijn op de Nederlandse cultuur en minder op hun etnische cultuur, dan reageren ze minder positief op passieve oplossingen voor emotionele problemen en rapporteren ze bijvoorbeeld ook minder angst voor de hulpverlening. Opvallend genoeg kunnen deze etnische verschillen in lekenopvattingen en houdingen ten opzichte van de hulpverlening de etnische verschillen in zorggebruik niet verklaren. Toch kan op basis van dit onderzoek niet uitgesloten worden dat deze opvattingen en houdingen relevant zijn bij het begrijpen van de etnische verschillen in zorggebruik, vanwege de specifieke manier waarop deze opvattingen zijn onderzocht en het kleine aantal migrantenjongeren dat zorg heeft ontvangen in deze onderzoeksgroep. Verder onderzoek naar de mogelijke rol van lekenopvattingen en houdingen ten opzichte van de hulpverlening is daarom noodzakelijk.

Tot slot is in dit proefschrift de rol van de mentor onderzocht door etnische verschillen in informele hulp van de mentor te bestuderen. De resultaten laten zien dat Marokkaans-Nederlandse jongeren minder hulp voor internaliserende problemen van hun mentor ontvangen dan Nederlandse jongeren (Hoofdstuk 7). Om deze verschillen in informele hulp van de mentor beter te begrijpen, is onderzocht in hoeverre deze etnische verschillen in informele hulp gerelateerd zijn aan de mate waarin leerkrachten internaliserende problemen rapporteren bij jongeren en aan de kwaliteit van de relatie tussen de mentor en de jongere. Er komen geen verschillen naar voren in de mate waarin de mentoren internaliserende problemen rapporteren voor de jongeren uit de vier etnische groepen. De relatiekwaliteit tussen de mentor en de jongere blijkt echter minder goed te zijn voor Marokkaans-Nederlandse dan voor Nederlandse jongeren. Alleen voor Marokkaans-Nederlandse jongeren is vervolgens gevonden dat conflicten in de relatie met de mentor samenhangen met minder informele hulp van de mentor.

Samenvattend zijn in dit proefschrift etnische verschillen in zorggebruik voor internaliserende problemen bij jongeren in kaart gebracht. De resultaten laten aanzienlijk minder zorggebruik voor internaliserende problemen door migrantenjongeren zien, waarbij met name Marokkaans-Nederlandse jongeren ondervertegenwoordigd zijn in de hulpverlening.

Daarnaast zijn factoren blootgelegd die kunnen bijdragen aan een beter begrip van deze ondervertegenwoordiging, zoals de beperkte mate waarin migrantenouders emotionele problemen bij hun kinderen identificeren, de houding van migrantenouders ten opzichte van de hulpverlening en de mate waarin Marokkaans-Nederlandse jongeren binnen de schoolcontext geholpen worden met deze problemen. Deze factoren bieden mogelijkheden om de ondervertegenwoordiging van migrantenjongeren en met name Marokkaans-Nederlandse jongeren in de hulpverlening te verkleinen. Meer aandacht, in onderzoek en in de praktijk, is nodig voor deze groep jongeren om voldoende hulp te bieden aan alle jongeren met internaliserende problemen, ongeacht hun etnische achtergrond.

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Curriculum Vitae

Esmée Verhulp (1986) obtained her Bachelor of Science in Developmental Psychology at Utrecht University in 2007. In 2009, she graduated cum laude from the research master Development and Socialization in Childhood and Adolescence at Utrecht University. As she was also interested in clinical practice, she then started the (clinical) master Developmental Psychology. Esmée completed her clinical internship at the Department of Child and Adolescent Psychiatry of the University Medical Center Utrecht. In 2010, she graduated cum laude and obtained her certificate "Psychodiagnostic Assessment" of the Dutch Association of Psychologists. Afterwards, she started a three-year PhD project at the research group Youth in Changing Cultural Contexts at Utrecht University focusing on ethnic differences in mental health service use for adolescents' internalizing problems. At the same time, she gained experience as a teacher in Developmental Psychology and worked as a developmental psychologist at the Faculty of Social and Behavioral Sciences' outpatient clinic. After the completion of her PhD, Esmée will continue her work as a teacher and developmental psychologist at Utrecht University.

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