

Emotional and Behavioral Problems of Turkish Adolescents and Young Adults in the Netherlands

Floor van Oort

Emotional and behavioral problems of Turkish adolescents and young adults in the Netherlands

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Emotional and Behavioral Problems of Turkish Adolescents and Young Adults in the Netherlands

**Emotionele en gedragsproblemen van Turkse adolescenten
en jongvolwassenen in Nederland**

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Summary

Introduction

Turkish adolescents in the Netherlands have more mental health problems, especially emotional problems, than Dutch adolescents. Turkish adolescents have around 1.5-times higher scores for emotional problems than Dutch adolescents. It is unclear what happens with this disparity when adolescents grow up into adults and whether it has consequences for social opportunities in adulthood. Further, little is known about the determinants of mental health problems of Turkish young adults in the Netherlands. In this thesis we will give more insight in the development of Turkish migrant adolescents into young adults with regard to mental health. Herein a comparison is made with the development of Dutch native adolescents. In children two main groups of mental health problems are emotional and behavioral problems. Emotional problems reflect internal distress (e.g., symptoms of anxiety and depression), whereas behavioral problems reflect conflicts with other people (e.g., aggressive and rule-breaking behaviors).

Research questions

Ethnic disparities in mental health

1. What is the prevalence of mental health problems in Turkish and Dutch young adults?
2. Do ethnic disparities in emotional and behavioral problems change during development of adolescents to young adults?

Determinants of problem behavior in young adulthood

3. Is cultural adaptation associated with emotional problems in Turkish young adults?
4. What are important determinants of smoking behavior of Turkish young adults?

Consequences of ethnic disparities in mental health in adolescence for social careers

5. Do ethnic disparities in emotional and behavioral problems in adolescence predict ethnic disparities in educational attainment?
6. Do ethnic disparities in emotional and behavioral problems in adolescence predict ethnic disparities in social class?

Data come from two prospective studies on mental health and development of adolescents in the province of Zuid-Holland in the Netherlands (chapter 2).

Summary of the findings

In chapter 3 we compare mental health problems of Turkish and Dutch young adults. Special attention is given to the possibility that ethnic differences may in fact reflect socioeconomic differences. Turkish young adults report more emotional problems than their Dutch peers. Turkish women also report more behavioral problems. Dutch young adults report more

intrusive behavior. Among women differences in socioeconomic position explain the ethnic disparities in problem behavior, whereas in men socioeconomic position is not associated with problem behavior.

Chapter 4 describes how the scores for emotional and behavioral problems change over the transition from adolescence into adulthood, and what happens to the ethnic differences. Disparities in emotional and behavioral problems decrease by approximately 50% when adolescents become young adults, due to a larger decrease in mental health problems in the Turkish group. The change in mental health in the Dutch adolescents is a well-known pattern: emotional problems remain highly prevalent into young adulthood, whereas behavioral problems become less common. The pattern of the Turkish youth is a more favorable one: both rates of emotional and behavioral problems decrease.

The role of cultural adaptation for emotional problems is described in chapter 5. The hypothesis is that Turkish young adults with ambivalent adaptation are at risk for emotional problems. Ambivalent adaptation refers to a loss in positive bonding with migrant culture while a positive bonding with the host culture has not yet been fully established. Indeed, Turkish young adults with ambivalent adaptation are at higher risk for emotional problems than Turkish young adults with integrated or more separated cultural adaptation. However, ambivalence is a risk factor only in the domains of psychological adaptation and religion, and ambivalence in the domains of ethnic identity, language use, and gender emancipation is not a risk factor for emotional problems.

Chapter 6 presents determinants of smoking behavior of Turkish young adults. Smoking is the most prevalent substance abuse of young adults. The prevalence of smoking is high, and well-known determinants of smoking in Western young adults, such as emotional and behavioral problems, alcohol use, and low self-esteem are also determinants for smoking behavior of Turkish young adults. The strongest risk factor is low education. Smoking is also highly prevalent (64%) among women with children and young adults living with a partner (56%). Cultural determinants, including discrimination, ethnic identity, Dutch friends, and generation, did not predict smoking behavior. The only association was for Muslim identification: smoking prevalence was lower among Turkish young adults who identified themselves as Muslim.

In chapters 7 and 8 we present the consequences of ethnic disparities in mental health problems in adolescence for social careers. The odds for a low educational attainment and occupational class were almost twice as high in Turkish young adults than in Dutch young adults. Among adolescent girls mental health problems predict less successful educational careers. The two-fold increased odds ratio of Turkish women for low education could almost completely be explained by their elevated level in emotional problems in adolescence. In Turkish and Dutch men mental health problems do not predict educational careers. Findings for occupational level point in the same direction, but are less pronounced. The elevated

level of emotional problems of Turkish adolescents explained approximately one third of the occupational disparities. Contrary to the findings for educational attainment, these findings were applicable in both men and women.

Discussion and future directions

In chapter 9 we recapitulate the main findings in the thesis. The findings give insight into ethnic disparities in mental health, determinants of problem behavior in adulthood, and consequences of mental health problems for social careers. Turkish young adults had more emotional problems than Dutch young adults (chapter 3). These differences were about 50% smaller than the differences in adolescence, due to a larger decrease in emotional problems among the Turkish group (chapter 4). This is a positive development for Turkish youth. In young adulthood cultural adaptation predicted emotional problems (chapter 5). Cultural adaptation was little associated with smoking behavior, but many well-known determinants, in particular low education, were predictors of smoking behavior (chapter 6). Emotional and behavioral problems in adolescence were a risk factor for low educational and occupational attainment in women, and a risk factor for low occupational attainment in men (chapters 7 & 8). Together with the higher prevalence of especially emotional problems in Turkish adolescents, disparities in emotional problems form an important mediator in the development of ethnic disparities in social careers.

The findings leave us with several unanswered questions, such as ‘Why are emotional problems so prevalent in Turkish adolescents, and how can we explain the decrease of these problems in the transition into adulthood?’, ‘What can explain the gender difference in the relation between mental health problems and social careers?’, ‘How do mental health problems influence social careers?’, and ‘Is cultural ambivalence a transitional or more permanent characteristic of migrant young adults?’. Potential directions for these questions are given, and may be studied in the future. International studies will be needed to provide more insight in the generalization of the findings across countries and across ethnic groups, and of the magnitude of ethnic disparities in mental health problems in different countries. The main recommendation for policy and mental health care is to improve signaling of emotional problems of Turkish adolescents (especially girls), in order to prevent long-term negative effects on social careers. Several suggestions for improvement are given.

1

Introduction

Turkish adolescents in the Netherlands have more mental health problems than Dutch adolescents¹⁻⁵. It is unclear what happens with this disparity when adolescents grow up to adults or whether it has consequences for social opportunities in adulthood. Further, little is known about the determinants of mental health problems of Turkish young adults in the Netherlands. In this thesis we will give more insight in the development of Turkish migrant adolescents into young adults with regard to mental health. Herein a comparison is made with the development of Dutch native adolescents. In children two main groups of mental health problems are emotional and behavioral problems. Emotional problems reflect internal distress (e.g., symptoms of anxiety and depression), whereas behavioral problems reflect conflicts with other people (e.g., aggressive and rule-breaking behaviors).

Ethnic disparities in mental health among adolescents and young adults

Migrant children and minority children are thought to be at increased risk for mental health problems. The main idea is that growing up with two or more, sometimes conflicting, cultural environments exposes children to considerable stress. In addition, they often grow up in poorer socioeconomic circumstances, which may negatively influence psychological adaptation⁶. Indeed some European studies have reported less favorable mental health of migrant adolescents compared with natives^{1,7-9}. Other studies, however, showed similar mental health for migrant and native adolescents¹⁰⁻¹². From many European countries with large migrant groups (e.g., Germany, France, and Italy) little or no findings on mental health of migrant youth have been published internationally¹³.

In the Netherlands, more and more information has become available. Findings on children of non-Western labor migrants predominantly indicate more emotional problems or less psychological well-being than native Dutch adolescents^{2,3,7,14-18}, and to a lesser extent also more behavioral problems^{3,15-18}. Turkish adolescents in particular report more emotional problems than their Dutch peers^{2,19}. Around 45% of Turkish adolescents had a high score for emotional problems compared with around 30% of Dutch adolescents¹. Average scores for emotional problems were also around 1.5 times higher for Turkish adolescents^{2,17}.

In contrast to the attention for the adolescent offspring of labor migrants, little attention has been given to the young adult offspring of the labor migrants. Second-generation young Sardinian migrants in Paris had a higher risk of depression than first-generation migrants. The first-generation labor migrants already had higher rates of anxiety and depression than Parisians²⁰. In the EMPIRIC study in Great Britain no ethnic disparities in the prevalence of common mental disorders were found for young adults of different ethnic backgrounds compared with British young adults, except for a tendency for higher rates among young Pakistani women²¹. It is clear that more research is needed to describe variation in mental health among young adult migrant offspring.

It is still unknown what happens to the ethnic disparities in mental health when adolescents become young adults. Studies in Western countries in the majority group have shown that the level of emotional problems remains high, or increases from adolescence into young adulthood²²⁻²⁶, whereas the level of behavioral problems decreases in adult life^{22,27}. In migrant populations and their offspring this pattern might differ. During the transition to adulthood the influence of the majority culture may increase and that of the migrant culture may decrease²⁸. A consequence may be that the mental health of migrants becomes more alike that of the natives, and thus that the ethnic disparities decrease during the transition towards adulthood. The only study that described patterns in ethnic disparities in mental health from adolescence into adulthood indeed found smaller ethnic disparities in prevalence of depressive symptoms, suicidal thoughts, and aggressive behavior after the transition to adulthood²⁹. More research is still needed to confirm this hypothesis.

Determinants of problem behavior in young adulthood

Little is known about the role of cultural adaptation and other determinants of mental health and problem behavior in migrant young adults. An interesting topic is the role of cultural adaptation for emotional problems and substance use.

Cultural adaptation and emotional problems

Causes of mental health problems will often be very similar for migrants and natives. However, for migrants one added dimension is that of their dual cultural environment. For example, for labor migrants from southern Europe and the Mediterranean countries to Western Europe the culture at home is often more collective, whereas the host culture is often more individualistic. Dealing with these two cultural environments, characterized by different cultural traditions, involves careful balancing of the migrant culture and the host culture. The process of cultural adaptation encompasses psychological processes as well as behavioral changes. In some migrants this process of cultural adaptation will cause considerable stress with increased levels of anxiety, depression, and psychosomatic problems³⁰⁻³⁵. Most previous studies on cultural adaptation and mental health focused on one or two cultural determinants (e.g., language use, or ethnic identity). However, studies can be improved by inclusion of a wider range of cultural determinants in order to cover the range of differences between cultures³⁶⁻³⁹. Furthermore, most studies focused on adolescents⁴⁰⁻⁴⁵. However, it is very difficult to disentangle cultural adaptation processes from developmental processes in adolescence⁴⁶. Studying young adults can partly solve this problem, because in young adults the developmental processes are less prominent.

Determinants of smoking behavior

Substance use and dependence are more prevalent among young adults than other age groups^{47,48}. Cigarette smoking is the most common substance use and is primarily a manifes-

tation of nicotine addiction. It is a modifiable behavior, but knowledge about the determinants of smoking is necessary for effective interventions and prevention activities. Determinants of smoking have been studied extensively (e.g., ⁴⁹⁻⁵⁸), but mainly in majority populations, and less zoomed in on young adults.

In several migrant populations the prevalence of smoking is high though ⁵⁹⁻⁶¹. Studies among minority groups have taken place in the UK and USA. These studies showed many similarities in determinants across minority groups and the majority group ⁶²⁻⁶⁵. However, findings were mixed for socioeconomic position as determinant of smoking ⁶⁶⁻⁶⁹. Besides the determinants found in majority populations, culture specific determinants, such as discrimination, religion and ethnic identity, may be associated with smoking behavior ^{39,66,68-71}. Acculturation theories predict that migrants will eventually adopt the behaviors of the host population they come into contact with ^{72,73}. There is still a need for studies on determinants of smoking in minorities in other Western European countries, as very little is known about determinants in these groups ^{74,75}.

Consequences of ethnic disparities in mental health in adolescence

The first-generation labor migrants came to Western-European countries in large numbers in the 1960s and 1970s to perform the unschooled jobs in these countries. As a consequence, they had a lower socioeconomic position than the ethnic majority ^{76,77}. Their children who now reach adulthood, still have, on average, lower educational attainment, lower employment rates and lower occupational level than natives, in spite of the fact that they grew up in the host country and seem to have had equal chances as their native counterparts to achieve a high socioeconomic position ⁷⁸⁻⁸⁰. In Netherlands, for example, 55% of the Turkish young adults are low educated compared with 25% of the Dutch young adults, and 70% of second-generation Turkish young adults have a paid employment compared with 86% of Dutch young adults ⁸¹⁻⁸³. It is important for prevention of disparities in social opportunities to know how ethnic disparities in socioeconomic position arise among migrant children.

Children with mental health problems are at risk for less successful social careers. Prospective observational studies have shown negative consequences of mental health problems in childhood for educational achievement and employment ⁸⁴⁻⁸⁷, and for occupational level in adulthood ⁸⁸. If mental health problems are unequally distributed between migrant and native adolescents, which is the case for Turkish migrants, then disparities in these problems may contribute to the disparities in acquirement of socioeconomic position.

This thesis

This thesis aims to give more insight in the development of Turkish youth in the Netherlands. Because Turkish adolescents report more problem behavior, especially emotional problems,

we have chosen to study emotional and behavioral problems during the transition from adolescence to young adulthood. Further, a contribution will be given to the scarce literature on (determinants of) problem behavior of Turkish migrant young adults. More specifically the following questions will be addressed:

Ethnic disparities in mental health

1. What is the prevalence of mental health problems in Turkish and Dutch young adults? (Chapter 3)
2. Do ethnic disparities in emotional and behavioral problems change during development of adolescents to young adults? (Chapter 4)

Determinants of problem behavior in young adulthood

3. Is cultural adaptation associated with emotional problems in Turkish young adults? (Chapter 5)
4. What are important determinants of smoking behavior of Turkish young adults? (Chapter 6)

Consequences of ethnic disparities in mental health in adolescence for social careers

5. Do ethnic disparities in emotional and behavioral problems in adolescence predict ethnic disparities in educational attainment? (Chapter 7)
6. Do ethnic disparities in emotional and behavioral problems in adolescence predict ethnic disparities in social class? (Chapter 8)

For these questions the development of Turkish migrants in the Netherlands was compared with that of Dutch natives. Chapter 2 gives a description of the two samples used in this thesis.

Background of Turkish migrants to the Netherlands

In the 1960s and 1970s Turkish men came, initially on temporal base, to the Netherlands as labor migrants in order to perform unschooled jobs⁸⁹. This was a result of the poor economic conditions in their country of origin, and the severe shortage of labor force in the Netherlands. Only one third of the Turkish men returned to their country of origin. Those who decided to stay permanently brought their wife and children over to the Netherlands from the mid 1970s onwards. In addition, many children were born in the Netherlands. Nowadays, Turkish migrants form the largest non-Western migrant group in the Netherlands and comprise around 341,400 people (21% of all non-Western migrants, 2% of the Dutch population)⁹⁰.

In comparison to the total Dutch population, the Turkish population is more concentrated in large cities in the west of the country. Within the cities, Turkish migrants live in older neighborhoods with a low socioeconomic status, where many relatives live close to one an-

other. Most of the Turkish labor migrants in the Netherlands are Muslim. Probably, the Islam remains an important constituent of young Turkish people's identity although, in comparison with their parents, they have a more liberal interpretation of it⁹¹.

The Dutch policy has officially been one of multiculturalism: mutual support and respect for cultural diversity, combined with egalitarian goals. However, native Dutch adults prefer adaptation to Dutch culture above a combination of adaptation to Dutch culture and maintenance of Turkish culture by Turkish migrants⁹². Recently, attitudes in politics and policy have also changed to higher expectations of adaptation to the Dutch culture⁹³.

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2

Methods

Samples

We have used data from two studies on problem behavior of children in the Netherlands^{1,2}. Both studies were observational prospective studies aimed at describing the development of children into adults. They took place in the province of Zuid-Holland, a very dense populated area with only 10% of the population living in rural area. Rotterdam and The Hague are the two largest cities of the province and cover 31% of the total population. Most Turkish migrants in Zuid-Holland (66%) live in Rotterdam or The Hague. For the prospective analyses we selected adolescents (11-18y) from both studies and used a follow-up period of 10 years. Figure 2.1 presents the flow of respondents in both studies.

Turkish migrant sample

This study included a random sample of 1198 Turkish children aged 4-18 years from The Hague and Rotterdam in 1993. Of these children 19 were not eligible as they had severe intellectual disability, or did not have at least one parent born in Turkey, and 113 children could not be contacted because the address was incorrect. Of the remaining 1066 children 833 (78%) parents were interviewed in the study. In 2003 we attempted to trace all 1066 children through the municipal registries. We were able to trace 994 (93% of 1066) children. The reasons for unsuccessful tracing included unknown in the municipal registries (n=53), residence abroad (n=16), and secret address (n=3). Two children had died. Logistic reasons made it impossible to contact people who had moved outside the regions of Rotterdam and The Hague (n=18).

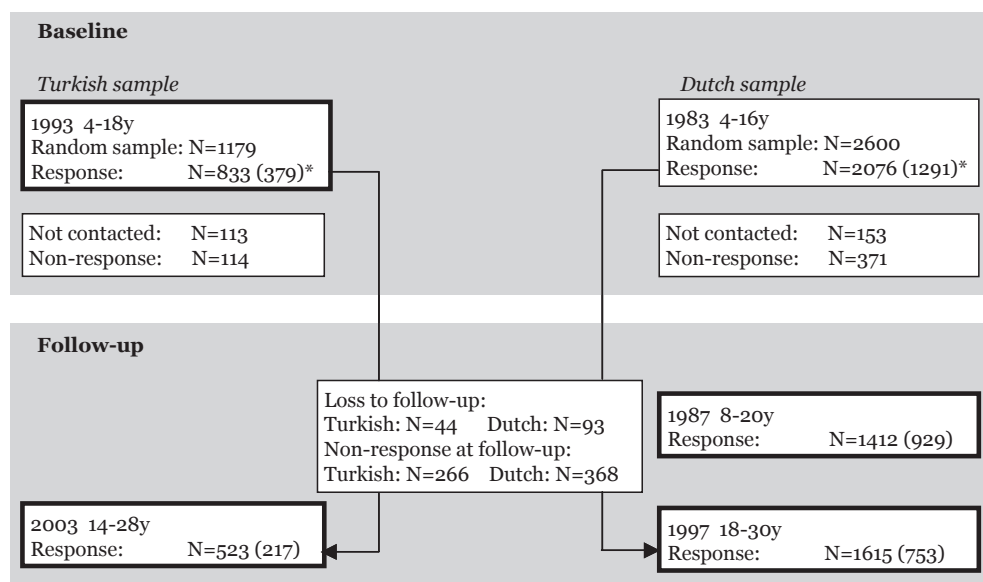


Figure 2.1 – Flow chart of the two studies.

* In brackets are numbers for adolescents (11-18y), in 1993 for Turkish sample and in 1987 for Dutch sample. We used data from the measurements in the marked (—) boxes.

We mailed a request to participate in the current study to 974 (91% of 1066) people. Within two weeks of sending the letter, a trained Turkish interviewer visited the person's home. Six persons were excluded: four had no parents born in Turkey, and two had severe intellectual disability. The response rate was 64% (n=621 of 968). Non-response had three main reasons: refusal (17%), incorrect address provided by the municipality (6.5%), and unable to contact after at least three attempts (10%). For the cross-sectional analyses, in which we focused on young adults, we used data from respondents aged 18-28 years in 2003 (n=439). For the prospective analyses we used data from respondents aged 11-18 years in 1993 and 21-28 years in 2003 (n=217).

Dutch sample

The Dutch sample comes from the longitudinal Zuid-Holland Study^{1,3}. The original random sample consisted of 2600 children (4-16 years). Parents of 2447 of the 2600 target children were reached (94%), and parents of 2076 target children completed the questionnaire (80% of 2600). Verhulst et al^{1,3} have described the details of the initial data collection. After the baseline measurement in 1983 the sample was approached again in 1985, 1987, 1991 and 1997.

For cross-sectional analyses we used respondents aged 18-28 years in 1997 (n=1306). For prospective analyses we used data from 10-year follow-up from 1987 to 1997, because in 1987 most of the respondents were aged 11-18 years. In 1987, the age of 1291 children was between 11 and 18 years. Of these adolescents 929 participated (72% of 1291), and at follow-up in 1997, 753 young adults participated in the interview (81% of 929).

Attrition

Turkish migrant sample

Response in 1993 was not selective with regard to the age of the child, sex of the child, and socioeconomic position of the parents. Response in 2003 was not selective for age and sex of the child, socioeconomic position of parents, and mean parent and self-reported problem behavior scores in 1993 (Table 2.1). The only difference was for respondents who had emotional or internalizing problems in 1993 (score above 80th percentile of the distribution of the scale in the Dutch sample), non-respondents were less likely to have had internalizing problems in 1993 (Table 2.1).

Dutch sample

The response in 1983 was not selective with regard to age of the child, sex of the child, and socioeconomic position of the parents. From 1983 to 1987 attrition was selective for age and sex. Compared with the dropouts in 1987 the respondents of 1987 were younger (mean 10.3y vs. 11.0y in 1983, $p<0.0001$), more frequent women (53% vs. 45%, $p=0.007$). Attrition was not selective for occupational level of the parents or internalizing or externalizing problems in 1983. From 1987 tot 1997 attrition was only selective for age, i.e., respondents were younger

Table 2.1 – Baseline characteristics in the two studies for respondents and non-respondents (21-28y) at follow-up ^a

	Turkish		Dutch	
	Respondents	Non-respondents	Respondents	Non-respondents
N	217	162	753	176
Men	54%	50%	46%	51%
Age	13.6 (13.4-13.9)	13.9 (13.6-14.2)	14.4* (14.2-14.5)	15.6 (15.2-16.0)
Parental SEP ^b				
Low	86%	88%	62%	65%
Parental education ^c				
Low	75%	78%	n.a.	n.a.
YSR				
Internalizing	13.6 (12.6-14.6)	12.5 (11.2-13.8)	7.2 (6.5-8.8)	7.6 (6.5-8.8)
Case ^d	55%*	43%	20%	19%
Externalizing	9.6 (8.9-10.3)	10.3 (9.1-11.4)	7.7 (7.3-8.1)	8.2 (7.2-9.2)
Case	30%	30%	19%	22%
Total Problems	38.7 (36.6-41.1)	37.9 (34.3-41.4)	24.3 (23.1-25.5)	25.5 (22.6-28.4)
Case	50%	41%	19%	22%

Mean (95% confidence interval) or proportion (%); n.a. not available, YSR Youth Self-Report;

* $p < 0.05$;

^a Time frame Dutch sample 1987-1997, Turkish sample 1993-2003;

^b Low SEP (socioeconomic position) defined as manual, or low non-manual occupation;

^c Low education defined as no education, or primary education only;

^d Case defined as score above 80th percentile of the Dutch sample in 1987.

than dropouts (mean 14.4y vs. 15.6y in 1987, $p < 0.0001$). Attrition was not selective with regard to sex, occupational level of the parents, and internalizing and externalizing problems in 1987 (Table 2.1).

Measures of emotional and behavioral problems

In adolescence mental health was measured with the *Youth Self-Report* (YSR ^{4,5}), which is a self-report questionnaire for 11- to 18-year olds. It contains 103 items covering internalizing (emotional) and externalizing (behavioral) problems during the previous six months. Two broadband groups of syndromes are constructed, designated as Internalizing Problems (Withdrawn, Somatic Complaints, and Anxious/Depressed scales) and Externalizing Problems (Delinquent Behavior and Aggressive Behavior scales). The internal consistency of the scales was high among Turkish and Dutch adolescents, and good reliability and validity were confirmed for both the Dutch translation ⁵ and for the Turkish translation in Turkey ^{6,7}. The test-retest reliability of the YSR over an average period of 9 days was $r = 0.78$ for Turkish migrant adolescents in our study. The Dutch translation was used for both Dutch native and Turkish migrant adolescents, since all adolescents were educated in Dutch.

In young adulthood mental health was measured with the *Young Adult Self-Report* (YASR ⁸) in the Dutch sample and with the *Adult Self-Report* (ASR ⁹) in the Turkish sample. The YASR is a self-report questionnaire for adults aged 18-30 years, modeled on the YSR. The

Table 2.2 – Internal consistency of YASR scales by ethnicity, ages 18-28y

	Turkish young adults	Dutch young adults
Internalizing Problems (23)	0.87	0.90
Externalizing Problems (27)	0.83	0.82
Anxious/Depressed (16)	0.86	0.89
Withdrawn (7)	0.63	0.71
Somatic Complaints (12)	0.80	0.75
Aggressive Behavior (12)	0.74	0.73
Delinquent Behavior (9)	0.60	0.66
Intrusive Behavior (6)	0.66	0.73

Cronbach's alpha; YASR Young Adult Self-Report; (...) number of items.

ASR is a newer version of the YASR, suitable for adults aged 18-59 years. The two broadband groups of syndromes (Internalizing and Externalizing Problems) can be constructed, and they only differ from the YSR by the presence of the scale Intrusive Behavior. As the items of Intrusive Behavior are mainly a subset of items of the Aggressive Problems scale in the YSR, Intrusive Behavior is included in the Externalizing Problems in the (Y)ASR. Thus, the scales the YSR and (Y)ASR are very comparable, and are therefore suitable for predictive relations between problems in adolescence and adulthood⁹. Good reliability and validity have been reported for the Dutch translation of the YASR^{10,11}. The internal consistency of most of the scales was similar for Turkish and Dutch young adults (Table 2.2), and confirmatory factor analyses supported the factor structure of the (Y)ASR in the Turkish migrant sample (Tucker-Lewis Index 0.951, Root Mean Square Error of Approximation 0.046).

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3

Internalizing and externalizing behaviors in young adults: Dutch natives and Turkish migrants in the Netherlands

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Abstract

Objective

To compare the prevalence of internalizing and externalizing behavior of Dutch and Turkish migrant young adults in the Netherlands. We will also assess associations with socioeconomic position.

Method

1236 Dutch natives and 438 Turkish migrants, age 18 to 28, completed the Young Adult Self-Report. Scores above the 90th percentile of the distribution of the Dutch sample were defined as deviant.

Results

Turkish migrants more often reported deviant scores than natives for internalizing problems, especially for the Anxious/Depressed syndrome. For externalizing problems, Turkish migrants less often had deviant scores for Intrusive Behavior, whereas Turkish women more often had deviant scores for Aggressive and Delinquent Behavior. Similar results were found for comparison of mean scores. After adjustment for socioeconomic position disparities in men remained, whereas disparities in women largely disappeared.

Conclusion

Compared with Dutch young adults, Turkish migrant young adults reported more problems. Ethnic disparities were strongly associated with socioeconomic disparities among women, but not among men.

Introduction

Migration has a profound impact on people and requires considerable adjustments by immigrants. Not only are they exposed to considerable changes in their social and cultural environment, they also have to conform to new moral values and standards, and often have to learn a new language¹. In their society of settlement migrants often live in socially deprived circumstances and suffer unemployment, or are employed in low-wage jobs as a result of their language problems and low educational levels². Furthermore, as Berry and Sam³ have pointed out, structural adversity and rejection by their host society may cause stress and negatively influence psychological adaptation.

The evidence regarding ethnic disparities in mental health, however, is not conclusive⁴⁻⁹. There is also a great diversity in such studies, varying with regard to the type of population studied, the sampling method and the method for assessing mental health. Furthermore, variations in outcomes for migrants in these studies may occur because circumstances of migrants vary. Altogether this makes comparison complicated¹⁰.

Most of the studies on the mental health of migrants have examined first-generation migrants^{4,7,8,11}. In many cases these concern laborers of a low educational level who migrated with the original intention of staying only temporarily in their host country, but later they decided to settle permanently. This decision involved bringing their family to join them and the birth of some of their children in the host country. These are called second-generation migrants. Children of migrants are not only exposed to a dual cultural environment or racial antagonism, they are often raised in poor inner-city areas and are exposed to negative environmental influences.

It is therefore important to assess their possible adjustment problems. Most studies on the children of first-generation migrants have reported on adolescents, and show very different results. Some suggest that migrant youth have a more favorable mental health profile than natives¹². Others show no difference^{13,14}. Yet others suggest that migrants have a less favorable mental health profile than natives^{15,16}.

While many studies have covered the adolescent offspring of labor migrants, few have covered the young adult offspring of the labor migrants in Europe. In several European countries this group is now reaching young adulthood. Prospective studies in natives have demonstrated that mental problems persist into adulthood¹⁷; this may well be true for migrants too. In addition young adults may be at particular risk of mental health problems, as they are at a time period in their life in which they make many important steps that determine their future economic and social position, such as completing education, entering employment and starting a family. Second-generation young Sardinian migrants, in a study in Paris, had a higher risk of depression than first-generation migrants. The first-generation labor migrants already had higher rates of generalized anxiety disorder, depressive episode and dysthymia than Parisians⁷. In the EMPIRIC study in Great Britain no ethnic disparities in the prevalence of common mental disorders were found for young adults of different ethnic backgrounds

compared with white young adults in England, except for a tendency for higher rates among young Pakistani women¹¹. Unfortunately this study does not specify whether the young adults were migrant offspring or migrants themselves.

Most migrants in Continental Europe come from Mediterranean countries such as Morocco, Algeria and Turkey. We found very few comparative studies on mental health of these populations. Therefore, we intend the present study to supplement the scarce information available regarding ethnic differences in mental health status in young adult migrants. Our primary aim is to compare the prevalence of internalizing and externalizing behavior in two groups of young adults in the Netherlands: native Dutch and Turkish migrants.

Previously, researchers have reported on the mental health of Turkish migrant adolescents: they had more internalizing and externalizing problems than native adolescents, most pronounced for emotional or internalizing problems, reported by their parents, themselves and their Turkish teachers^{16,18,19}. Furthermore, they found that the differences with natives appeared to reflect ethnic differences more than stress from migration factors. We therefore expected that the ethnic disparities may persist, but perhaps decrease as a result of increased interaction of Turkish migrants with the Dutch culture while they grow up.

Several researchers have pointed out that ethnic disparities in health should be studied in the context of the socioeconomic position of ethnic minorities. Part of the ethnic disparities found might be attributable to the strong association between ethnicity and socioeconomic position^{9,20-22}. The second aim of our study is therefore to determine the strength of association between ethnic disparities in problem behavior and socioeconomic disparities in internalizing and externalizing behavior.

Material and Methods

We used data from two large studies on internalizing and externalizing behavior of children in the Dutch province of Zuid-Holland, in which Rotterdam and The Hague are the two largest cities. Together they cover 31% of the total population of the province. Most non-Dutch migrants to Zuid-Holland live in Rotterdam or The Hague.

With around 341,000 people, Turkish immigrants form the largest non-Western immigrant group in the Netherlands. They make up 21% of all non-Western immigrants and 2% of the Dutch population²³. Nearly 50% of them are younger than 25 years old. Most of the first-generation Turkish male immigrants were labor migrants.

Turkish migrant sample

The Turkish migrant sample was a random selection of 1,218 children aged 4-18 with at least one parent born in Turkey, drawn by the municipalities of Rotterdam and The Hague in 1993¹⁶. Nineteen percent of the children had been born in Turkey and 81% in the Netherlands. Of this original selection, 132 persons were excluded in 1993 (113 had an incorrect or missing address; 17 had no parents born in Turkey; two had a severe intellectual disability). Parents of

833 (77%) children of the remaining 1,086 eligible children responded in 1993. In 2003, we attempted to trace these 1,086 children via the municipal registers. For reasons of representativeness we included as many as possible people from the original representative sample (i.e., both respondents and non-respondents of 1993).

Twenty records of the 1,086 children were double and 1,066 records were unique. Via the municipalities we were able to trace 994 (93% of 1,066) people. The reasons for unsuccessful tracing included person unknown in the municipal registries ($n=53$), person residing abroad ($n=16$), and person with a secret address ($n=3$). Two persons were deceased. Logistic reasons made it impossible to contact people who had moved outside the region of Rotterdam and The Hague ($n=18$).

We mailed a request to participate in the current study to 974 (91% of 1,066) people. Within two weeks of sending the letter, a trained interviewer visited the person's home. Six persons were excluded: four had no parents born in Turkey, and two had severe intellectual disability. The response rate was 64% ($n=621$ of 968). Non-response had three main reasons: refusal (17%), address provided by the municipality was not correct (6.5%) and person could not be reached after at least three attempts (10%). In total we had data from 621 of the 1,066 people we attempted to trace.

Attrition analyses showed that people who could not be contacted again ($n=1066-974=92$) did not differ in gender or age from those who were approached to participate. Respondents were a little younger than non-respondents (mean age 21 years for respondents and 22 years for non-respondents $p<0.0001$). Respondents in the current study hardly differed from non-respondents with regard to internalizing and externalizing behavior measured in 1993 at younger age.

Turkish interviewers administered the questionnaire, which was in Dutch. Almost all questions were read aloud by the interviewer, except for the Adult Self-Report, which the respondents completed themselves during the interview. Respondents were aged 14 to 28. For the analyses only the results of the age group 18 to 28 years were used, with complete data on the Adult Self-Report ($n=439$).

Dutch sample

The Dutch sample originates from the longitudinal Zuid-Holland Study^{24,25}. The original random sample consisted of 2,600 children (4-16 years, 100 children of each sex and year cohort). Parents of 2,447 of the 2,600 target children were reached (94%), and parents of 2,076 target children completed the questionnaire (80% of 2600). Details of initial data collection have been described by Verhulst et al^{24,25}. After the first measurement in 1983 the sample was approached again in 1985, 1987, 1991 and 1997.

For the analyses in this study we used the data from 1997. In 1997 the age of the young adults in the sample was most similar to the age of the children in the Turkish migrant sample. Out of the original sample of 2,076 respondents in 1997, 93 had died, had severe intellectual disability, emigrated or had requested removal from the sample. Others were approached

for participation. Of those reached, 1582 were interviewed and 36 agreed to fill out a postal questionnaire. The data on 1615 subjects were usable (78% of the original sample of 1983 of 2,076 children).

Attrition analyses showed no differences for age, but a higher proportion of respondents was female. Internalizing and externalizing behaviors assessed in 1983 did not differ between respondents and non-respondents in 1997^{17,26}. Interviewers administered the questionnaire. Almost all questions were read aloud by the interviewer, except for the Young Adult Self-Report, which the respondents completed themselves during the interview. We used the data on the respondents who had been aged 18-28 in 1997 (n=1,306).

Instrument

In the Dutch study, internalizing and externalizing behaviors were measured with the Young Adult Self-Report (YASR)²⁷ and in the Turkish migrant study with the Adult Self-Report (ASR)²⁸. The YASR is a questionnaire with 110 problem items of which 52 items can be summarized in six syndromes: Anxious/Depressed, Withdrawn, Somatic Complaints (together constituting Internalizing Problems); and Intrusive Behavior, Aggressive Behavior, Delinquent Behavior (together constituting Externalizing Problems). Answers were rated '0' if the item was not true, '1' if the item was somewhat or sometimes true, and '2' if the item was very true or often true. The questionnaire referred to the past 6 months.

Good reliability and validity have been reported for the American YASR²⁷; this was supported for the Dutch version^{29,30}. The ASR is the newer version of the YASR. As a result, the two questionnaires had many common items. Only two items of the YASR did not exist in the ASR. We used only common items of the YASR and ASR to construct the YASR syndromes and scales for both Turkish migrants and Dutch natives. In Table 3.1 the number of items used and marker items for each syndrome can be found. On average, Cronbach's alphas for the six syndromes were 0.72 for the Turkish migrants (range: 0.60 for Delinquent Behavior to 0.86 for Anxious/Depressed) and 0.75 for the Dutch respondents (range: 0.66 for Delinquent Behavior to 0.89 for Anxious/Depressed). Cronbach's alphas were higher for Internalizing Problems (Dutch 0.90, Turkish migrants 0.87) and Externalizing Problems (Dutch 0.82, Turkish migrants 0.83).

Characteristics of the samples

The gender and age of the respondents were recorded. We also categorized the highest attained level of education according to five categories: dropout (lowest); currently student, but no secondary education completed; lower vocational education or only secondary education completed; moderate vocational education; higher vocational education or academic education (highest). In addition, we had information on employment status, marital status and whether or not the respondent was living with a partner or spouse. 30 men and 41 women had missing values for level of education or employment status, and were excluded from the analy-

Table 3.1 – Number of items in the constructed syndromes of the Young Adult Self-Report (YASR) and marker items

YASR-syndromes	Number of items	Marker items
Internalizing Problems	23	
Anxious/Depressed	16	I am fearful or anxious; I feel worthless or inferior
Withdrawn	7	I keep from getting involved with others; I am not liked by others
Somatic Complaints	12	Physical problems without known medical cause; I feel overtired
Externalizing Problems	27	
Intrusive Behavior	6	I try to get a lot of attention; I talk too much
Aggressive Behavior	12	I argue a lot; I get in many fights
Delinquent Behavior	9	I do things that may cause me trouble with the law; I destroy things belonging to others

ses. These respondents did not differ from the others with regard to the outcome variables, and all were Dutch except for one.

Statistical analyses

The scores on the syndromes and scales of the YASR were skewed. Therefore we have compared both the mean score and the proportion of individuals with scores in the deviant range of Turkish migrants (from now on referred to as Turkish) with that of Dutch young adults. The comparison of means gives an indication of whether one of the two groups scored higher in general (ANOVA). For the comparison of the proportion of individuals with scores in the deviant range between the two groups, we compared the odds that the Turkish group scored above the 90th percentile of the Dutch group (logistic regression).

All analyses of the YASR syndromes were adjusted for age and stratified by gender. The absolute values of means were not comparable across the syndromes because syndromes consisted of different numbers of items. First we calculated means and odds ratios with adjustment for age only, and later with additional adjustment for level of education and employment status. Level of statistical significance was set at 0.05. For all analyses we used SAS statistical software (SAS Institute Inc., Cary, NC, USA).

Results

Description of study samples

The mean age of the Dutch respondents was higher than that of the Turkish respondents (Table 3.2). With regard to socioeconomic characteristics, there were large differences in the highest level of education attained and in employment status. The Turkish group had achieved a lower

Table 3.2 – Main characteristics of Dutch and Turkish migrant respondents

	Dutch	Turkish migrant	p-value
N	1,236	438	
Age (mean (95%CI))	23.2 (23.0-23.4)	22.6 (22.3-22.8)	0.0001
p25-p75	21-26	20-25	
Gender (N (%))			0.05
Men	569 (46)	225 (51)	
Women	667 (54)	213 (49)	
Education ^a (N (%))			<0.0001
None, not student	32 (3)	59 (13)	
None, student	5 (0.4)	33 (8)	
Lower vocational	358 (29)	133 (30)	
Moderate vocational	594 (48)	191 (44)	
Higher vocational/academic	247 (20)	22 (5)	
Employment (N (%))			<0.0001
Yes, paid work	779 (63)	189 (43)	
No, no paid work	457 (37)	249 (57)	
Marital status (N (%))			<0.0001
Married	163 (13)	134 (31)	
Divorced	6 (0.5)	7 (2)	
Never married	1065 (86)	297 (68)	
Living situation (N (%))			0.0006
With partner	470 (38)	127 (29)	
Without partner	764 (62)	311 (71)	

Chi-square test for frequencies, t-test for age; numbers of marital status and living situation do not sum to the total numbers, due to two respondents with missing values;

^a Highest level of education with certificate, starting from secondary school.

level of education: the Turkish respondents dropped out of school four times as often as the Dutch respondents (13% vs. 3%), and fewer Turkish respondents completed higher vocational or academic education (5% vs. 20%). Fewer Turkish migrants had a paid job than Dutch natives. With regard to marital status, we found, as expected, that more Turkish migrants were married than Dutch natives (Table 3.2). However, when we looked at living together with a partner, the Dutch natives cohabited more often than their Turkish counterparts. In the latter group, cohabiting was almost exclusively something for married subjects. Level of education (Figure 3.1) and employment status had a strong inverse relation with all the YASR syndromes except for Intrusive Behavior, whose scores were higher in higher educated respondents, and were not associated with employment status (data not shown).

Internalizing Behaviors

Turkish men and women scored significantly higher than Dutch men and women on Anxious/Depressed, Somatic Complaints, and Internalizing Problems. In addition, Turkish women

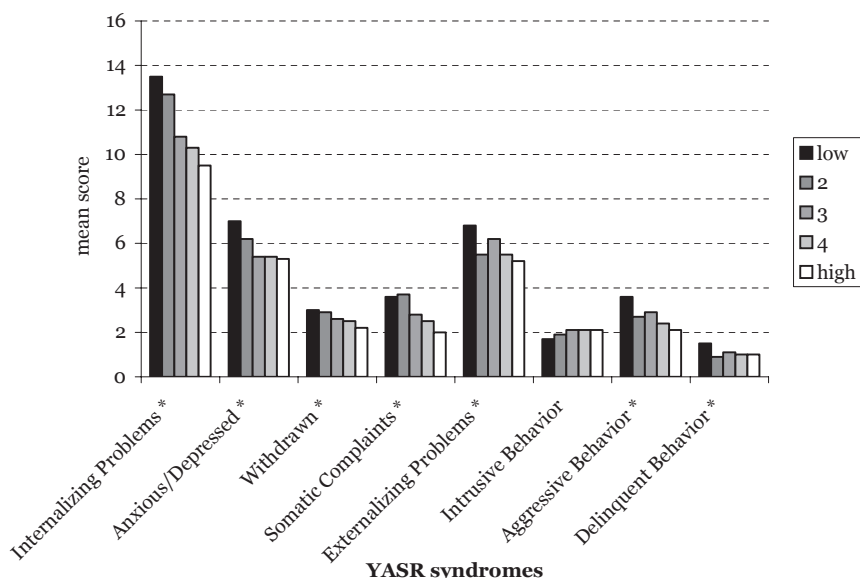


Figure 3.1 - Mean scores for YASR syndromes by level of education. Figure shows combined data of the Turkish and Dutch samples.

* Significant trend test ($p < 0.05$) for mean score by attained level of education.

All means were adjusted for gender, age, and ethnicity. Absolute values cannot be compared between syndromes due to different number of items in each syndrome. Levels of education represent the following categories: 'Low', Dropout; '2', No secondary education completed, but currently student; '3', Lower vocational education; '4', Moderate vocational education; 'High', Higher vocational education/academic education.

scored higher than Dutch women on Withdrawn (Table 3.3). Figure 3.2 shows the odds ratios for deviant scores for men (upper panel) and women (lower panel). Here we observed the same pattern, with significant odds ratios for men and women for Anxious/Depressed (OR men 2.43 95% CI 1.59-3.73; women 1.63 95% CI 1.06-2.51), Somatic Complaints (OR men 2.32 95% CI 1.50-3.60; women 1.77 95% CI 1.17-2.69), and Internalizing Problems (OR men 2.24 95% CI 1.50 to 3.35; women 1.62 95% CI 1.06-2.50). After adjustment for level of education and employment status, differences in mean scores and odds ratios remained significant in men and lost significance in women. In women, both educational level and employment status contributed to the adjustment.

Externalizing Behaviors

Dutch men and women reported more Intrusive Behavior (Table 3.3). Turkish women reported more Aggressive and Delinquent Behavior than Dutch women. Turkish men did not differ in mean scores for Aggressive and Delinquent Behavior. The odds ratios (Figure 3.2) showed, in accordance, lower odds for Intrusive Behavior in Turkish men and women (OR men 0.32 95% CI 0.16-0.63; women 0.46 95% CI 0.23-0.96) and higher odds for women for Aggressive Behavior (OR 1.64 95% CI 1.07-2.51) and Delinquent Behavior (OR 1.52 95% CI 1.02-2.28). After adjustment for level of education and employment status, differences in mean score for

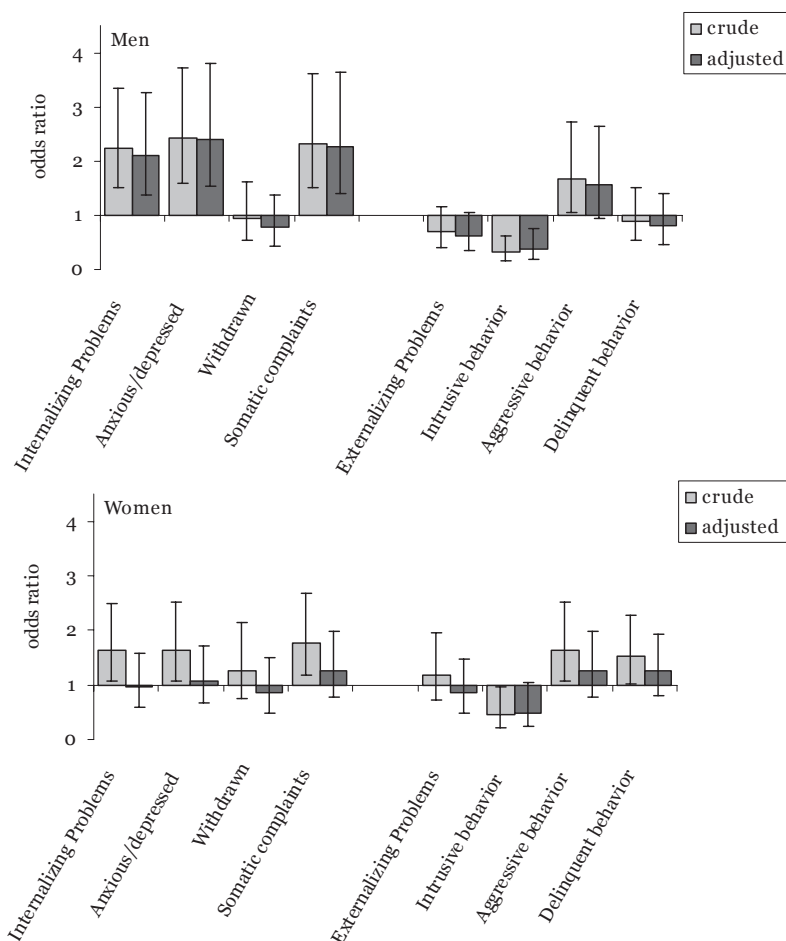


Figure 3.2 - Odds ratios for deviant scores on the YASR syndromes for Turkish men and women.

Error bars indicate 95% Confidence Intervals of the odds ratios. Dutch men and women were reference group. Cut-off points for deviant behavior were the 90th percentiles of the cumulative distributions of the syndrome scales in Dutch men and women. Crude odds ratios were adjusted for age only, adjusted odds ratios were adjusted for age and level of education and employment status.

the Intrusive Behavior remained in men and women. For women, differences in mean scores and odds ratios for the Aggressive and Delinquent Behavior scales were no longer significant. Both educational level and employment status contributed to the adjustment.

Relation between socioeconomic position and YASR syndromes

Because the results showed that ethnic disparities were strongly related to socioeconomic disparities in women but not in men, we re-examined the relation between socioeconomic position and YASR syndromes separately for men and women. Both higher educated and employed Turkish and Dutch women had lower scores for all YASR syndromes than lower educated and unemployed women, except for Intrusive Behavior. The pattern was similar to

Table 3.3 - Mean and 95% confidence intervals of YASR syndromes of Dutch and Turkish migrant men and women

YASR scales	Crude ^a		Adjusted ^b	
	Dutch	Turkish	Dutch	Turkish
Men				
Internalizing Problems (range 0 to 48)	7.9 * (7.3-8.5)	10.3 * (9.3-11.2)	8.2 * (7.3-9.2)	10.3 * (9.3-11.2)
Anxious/Depressed (range 0 to 23)	3.9 * (3.5-4.2)	5.4 * (4.8-5.9)	4.1 * (3.5-4.6)	5.4 * (4.8-6.0)
Withdrawn (range 0 to 12)	2.5 (2.3-2.7)	2.6 (2.3-2.8)	2.6 (2.3-2.8)	2.5 (2.2-2.8)
Somatic Complaints (range 0 to 16)	1.5 * (1.3-1.7)	2.4 * (2.1-2.7)	1.6 * (1.3-1.9)	2.4 * (2.0-2.7)
Externalizing Problems (range 0 to 36)	6.3 * (5.9-6.7)	5.5 * (4.9-6.1)	6.2 * (5.3-6.8)	5.3 * (4.6-6.0)
Intrusive Behavior (range 0 to 11)	2.6 * (2.4-2.7)	1.7 * (1.4-2.0)	2.4 * (2.1-2.7)	1.6 * (1.3-1.9)
Aggressive Behavior (range 0 to 18)	2.3 (2.1-2.5)	2.5 (2.2-2.8)	2.3 (2.0-2.6)	2.4 (2.0-2.7)
Delinquent Behavior (range 0 to 13)	1.4 (1.3-1.6)	1.3 (1.1-1.5)	1.5 (1.2-1.7)	1.2 (1.0-1.5)
Women				
Internalizing Problems (range 0 to 55)	10.9 * (10.3-11.6)	13.8 * (12.6-15.0)	13.4 (12.1-14.7)	14.4 (13.0-15.9)
Anxious/Depressed (range 0 to 29)	5.7 * (5.3-6.1)	7.1 * (6.4-7.9)	6.9 (6.1-7.7)	7.4 (6.5-8.3)
Withdrawn (range 0 to 12)	2.4 * (2.2-2.5)	2.7 * (2.4-3.0)	2.8 (2.5-3.1)	2.8 (2.5-3.2)
Somatic Complaints (range 0 to 19)	2.8 * (2.6-3.1)	3.9 * (3.5-4.4)	3.7 (3.3-4.2)	4.2 (3.7-4.8)
Externalizing Problems (range 0 to 36)	5.4 (5.0-5.7)	5.9 (5.3-6.5)	6.2 (5.5-6.8)	6.1 (5.4-6.9)
Intrusive Behavior (range 0 to 11)	2.2 * (2.0-2.3)	1.8 * (1.5-2.0)	2.3 * (2.0-2.6)	1.8 * (1.5-2.1)
Aggressive Behavior (range 0 to 20)	2.5 * (2.3-2.7)	3.2 * (2.9-3.6)	3.1 (2.7-3.5)	3.4 (3.0-3.8)
Delinquent Behavior (range 0 to 10)	0.7 * (0.6-0.7)	0.9 * (0.8-1.1)	0.8 (0.6-1.0)	0.9 (0.8-1.1)

YASR Young Adult Self-Report;

^a Adjusted for age;^b Adjusted for age and level of education and employment status;* Significant ($p < 0.05$) difference between Dutch young adults and Turkish migrant young adults.

that of Figure 3.1, but differences between high and low socioeconomic positions were bigger. The pattern did not differ between Turkish and Dutch women.

However, the relationship between education and YASR syndromes differed for Turkish and Dutch men (Table 3.4). Higher educated Dutch men, but strikingly not Turkish men, had lower scores for all syndromes except for Somatic Complaints and Intrusive Behavior. Among

Table 3.4 – Mean scores of YASR syndromes by socioeconomic position for men

	Internalizing problems	Anxious/ depressed	Withdrawn	Somatic complaints	Externalizing problems	Intrusive behavior	Aggressive behavior	Delinquent behavior
Education								
<i>Dutch</i>								
Low	15.1	8.1	4.5	2.5 ^a	10.0	2.4	4.7	2.9
2	8.8	3.8	4.4	0.6	4.6	1.5	1.7	1.4
3	7.7	3.6	2.5	1.6	7.0	2.6	2.7	1.6
4	7.6	3.8	2.4	1.4	5.9	2.5	2.1	1.3
High	7.9	4.1	2.3	1.4	5.4	2.5	1.7	1.2
Trend	0.007	0.01	0.0006	0.44	0.05	0.50	0.003	0.02
p-value								
<i>Turkish</i>								
Low	8.9	4.7	2.2	2.0	4.2	0.9	2.0	1.3
2	9.7	4.9	2.0	2.8	4.9	1.7	2.3	0.9
3	11.3	6.0	2.8	2.5	5.8	1.7	2.8	1.3
4	10.1	5.2	2.6	2.3	5.9	1.8	2.5	1.5
High	10.2	5.3	2.5	2.4	7.1	3.9	2.0	1.2
Trend	0.61	0.70	0.42	0.82	0.08	<0.0001	0.94	0.76
p-value								
Employment								
<i>Dutch</i>								
No	8.8 ^a	4.4 ^a	2.6 ^a	1.7 ^a	6.4 ^a	2.6 ^a	2.2 ^a	1.5 ^a
Yes	7.3	3.5	2.4	1.4	6.1	2.5	2.3	1.3
Difference	0.03	0.01	0.29	0.16	0.59	0.49	0.70	0.26
p-value								
<i>Turkish</i>								
No	10.8	5.7	2.7	2.4	5.8	1.7	2.6	1.4
Yes	9.9	5.1	2.4	2.4	5.5	1.8	2.5	1.2
Difference	0.42	0.35	0.30	0.97	0.66	0.91	0.75	0.33
p-value								

YASR Young Adult Self-Report; means adjusted for age;

^a No significant differences in association with YASR between Dutch native and Turkish migrant men.

Turkish men the only association of education with YASR syndromes was for Intrusive Behavior, for which higher educated Turkish men had higher scores than lower educated Turkish men (Table 3.4). Both employed Turkish and Dutch men had lower scores than unemployed men for only Internalizing Problems, and Anxious/Depressed (Table 3.4). These gender differences in the relation between socioeconomic position and YASR syndromes statistically explained our results.

Discussion

Summary of results

In summary, we found disparities in problem behavior between Turkish and Dutch young adults: Turkish men and women alike had more internalizing problems. Turkish women also had more externalizing problems, especially Aggressive Behavior, than Dutch women. However, Turkish men and women reported less Intrusive Behavior. In women, ethnic disparities were strongly related to socioeconomic disparities. In men there was little evidence suggesting for an association between ethnic disparities and socioeconomic disparities.

Strengths and limitations

The main strengths of this study were that its data was drawn from two large, and representative studies of young adults in the Netherlands. Both were intended to examine internalizing and externalizing behavior. They were properly comparable, because the sampling procedure, measurement instruments and data collection were very similar. Response rates were acceptable and not selective.

We nevertheless encountered some limitations. Both the YASR and the ASR were modeled on the Child Behavior Checklist (CBCL), a parent questionnaire for the assessment of mental health in children and adolescents. Good reliability and validity were confirmed for the Turkish translation of the CBCL in Turkey^{34,32}. Unfortunately, to date no validation study is available for either the YASR or ASR for use in Turkish populations. The internal consistency of most of the syndromes was high among Turkish adolescents and young adults and the factor structure could be confirmed by confirmative factor analyses (data not shown). Together with the validity studies of the CBCL these findings suggest that the consistency and the interpretation of the items of the questionnaires were satisfactory in Turkish populations. Furthermore, most Turkish respondents were born in the Netherlands (74%), or had lived there for on average 19 years. Most of them understand the Dutch language well and they are quite aware of the Dutch perception of problem behavior.

Secondly, the data were self-reported by the respondents and may have been vulnerable to social desirability bias. Although we tried to reduce this by letting the respondents complete the (Y)ASR themselves, the Turkish respondents may have answered more social desirably than the Dutch respondents, for example out of a fear that this information might be used by the authorities. If this were the case, we will have underestimated the differences for most syndromes, and have overestimated the difference between Dutch and Turkish respondents regarding Intrusive Behavior.

Another limitation may be that the Dutch data were collected in 1997 and the Turkish data in 2003. But, although rates in the Dutch population may have changed in the six years between 1997 and 2003, a large Dutch study on the incidence of mental health problems showed no increase in 12-month incidence between 1996 and 1999³³. On the other side, since about 2001 Dutch society became less tolerant to migrants. This could have been stressful

for Turkish migrants and have caused more problem behavior. Finally, the analyses were on cross-sectional data. This means that we cannot be sure whether socioeconomic inequalities cause mental health problems or vice versa.

Comparison with other studies

Few previous studies have presented results on ethnic differences in mental health in young adult migrants in the general population. The Fourth National Survey of Ethnic Minorities in Britain found higher rates of depression for people of Caribbean extraction. Asians who were educated in Britain or fluent in English showed similar rates for depression as whites^{6,34}. In the EMPIRIC study, also in Great Britain, rates of anxiety and depression were similar for young adult migrants (Irish, Black Caribbean, Bangladeshi, Indian and Pakistani) and whites; only the rates for Pakistani young women were slightly higher¹¹. In a comparison of Sardinian migrants in Paris, second-generation young adult Sardinian migrants had a higher risk of depression, drug abuse and bulimia than Parisians⁷. In our study, Turkish young men and women reported more internalizing behavior, especially for the Anxious/Depressed syndrome. In addition, Turkish women reported more Aggressive and Delinquent Behavior than Dutch women. These results support those of the study in Paris.

Possible explanation of the main findings

Turkish men and women reported more internalizing problems, mainly on the Anxious/Depressed syndrome. This finding was also found in the same sample of Turkish migrant children in 1993^{16,35}. In addition, in 1993, parents reported fewer problems for older children than for younger children. As a possible explanation, the authors suggested that the older the children get, the more they are exposed to influences outside of the family, which may reduce their levels of anxiety and depression¹⁶. This is in line with our findings: Turkish young adults still report higher levels of anxiety and depression, but to a lesser extent than Turkish adolescents. An explanation may be found in cultural differences in styles of child rearing. In Turkish culture, dependence, obedience, conformity and respect for adults are all expected of children. For Turkish parents in the Netherlands, especially those with low socioeconomic position, the most important aims of child rearing were school success, social success and conformity; autonomy and social behavior were less important³⁶⁻³⁸. For Dutch parents, however, polarities were reversed³⁶. This is supported by Erol and Sahin³⁹, who reported similar levels of fear for Turkish migrant children living in the Netherlands and Turkish children living in Turkey. Child-rearing strategies characterized by high expectations for education, and social success, together with common use of verbal criticism, little praise, and punishment or threats to be punished^{36,40} may result in behavior as captured by the items of the Anxious/Depressed syndrome, even at young adult age.

Another remarkable finding in our study was that Turkish women reported more Aggressive and Delinquent Behavior than Dutch women. The Aggressive behavior syndrome includes both oppositional and physical aggressive behavior. We tested ethnic differences separately

for each of the items of this syndrome (data not shown), because this syndrome, and the items that showed ethnic differences were more related to oppositional behavior (e.g., “I scream or yell a lot”, “I get along badly with my family”, “I argue a lot”) than to physical aggressive behavior. For delinquent behavior the ethnic differences were largest for the item on breaking rules at school, work or elsewhere. The high scores for Turkish young women may thus in part reflect reactions to conflicts with their family members, or Turkish peers, possibly associated with exposure to their dual cultural environment. This has also been reported as one of the reasons for higher rates of self-harm in young Asian women in London⁴¹. The Turkish traditions and child rearing restrict Turkish men less. Therefore, men may have fewer conflicts with family members about cultural issues.

Role of socioeconomic position

Our results showed a strong association between ethnic disparities and socioeconomic disparities in women, but not in men. The few other studies that reported separate results for men and women mostly did not show gender differences with regard to socioeconomic disparities in mental health. An exception is from Matthews et al, whose findings for psychological distress in early adulthood were similar to our findings that socioeconomic disparities were stronger in women than in men⁴².

The relationship between socioeconomic position and mental health is not yet clear^{43,44}. For anxiety and depression there seems to be a strong inverse association with education, employment and material circumstances^{43,45}. For other mental disorders, however, the association is less clear.

For men the main ethnic disparities on the YASR syndromes were found for internalizing behavior. For this behavior we found socioeconomic disparities in Dutch men, but hardly in Turkish men. This is in line with research of Farmer and Ferraro⁴⁶, in which black adults did not enjoy similar health benefits as white adults at similar levels of education and income. As a possible explanation for these ‘diminishing returns’ for black adults, the authors suggested that higher educated blacks become more aware of social injustices and discrimination. The latter causes distress, which might be internalized and manifest itself in self-rated health^{21,46}. Indeed, in our sample higher educated men, but not women, perceived more discrimination than lower educated men (data not shown). Discrimination was not related to employment in men and in women.

In contrast to our findings in men, we found socioeconomic disparities in all syndromes except for Intrusive Behavior in women. Women who have completed higher education or who are employed have opportunities to establish a social network outside their family, which may help them cope with stress and, for the Turkish women, compensate the ‘diminishing returns’⁴⁷. For men, the establishment of social networks may be not as dependent on having a paid job or educational achievement.

Another explanation may be that Turkish men, compared with Turkish women, set their expectations for standard of living higher with increasing level of education. If these expect-

tations cannot be realized, the inconsistency then raises levels of distress^{48,49}. This would attenuate the association between socioeconomic position and mental health.

From the point of view of selection, the results would be explained if internalizing and externalizing behaviors at young age limited girls, but not boys, in their educational achievement and with their future chances of attaining a paid job as young adults. However we did not find evidence in the literature for this hypothesis^{50,51}.

Finally, as about 20% of the respondents were students, whose level of education was likely to increase, part of the gender differences may have been artificial. In addition, some of the dropouts may start studying and complete secondary education at a later age. However, as most of the respondents did not study any more and as we do not expect large gender differences among students, we do not believe that the gender difference is completely artificial.

Conclusion and recommendations

This study presented moderate disparities in mental health between Dutch young adults and Turkish migrant young adults. We also showed that these disparities were strongly associated with socioeconomic position in women, but less in men. Future studies should take account of the possibility of gender differences in socioeconomic disparities in mental health. It would be interesting to further investigate the background to these gender differences. Prospective studies may also shed a light on the role of causation and selection mechanisms in the socioeconomic disparities, also in relation to ethnicity. Supporting women in achieving a successful socioeconomic career will largely prevent ethnic disparities in women's mental health, if a high socioeconomic position proves to prevent mental health problems.

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4

Development of ethnic disparities in internalizing and externalizing problems from adolescence into young adulthood

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Abstract

Background

Little is known about changes in ethnic disparities in mental health during the development of adolescents into young adults. The aim of this study was to study the development of disparities in internalizing and externalizing problems between Dutch natives and Turkish migrant children from adolescence into adulthood.

Methods

Turkish migrants (n=217) and Dutch natives (n=723) completed two comparable questionnaires about internalizing and externalizing problems: the Youth Self-Report at age 11-18 and the (Young) Adult Self-Report ten years later, at age 21-28. We used mixed linear regression models to model development of mental health problems and to test changes in disparities in mental health between Turkish migrants and Dutch natives.

Results

Both in adolescence and in adulthood migrants reported more internalizing and externalizing problems than natives, most pronounced for internalizing problems. Disparities decreased from adolescence into adulthood for both internalizing problems (-52%, $p < 0.0001$) and externalizing problems (-67%, $p = 0.01$), independently of gender, age, country of birth of Turkish adolescents, and parental socioeconomic position. The favorable changes in the disparities over time were due to more favorable development among Turkish migrants than among natives.

Conclusions

In this prospective study, ethnic disparities in internalizing and externalizing problems decreased as adolescents entered adulthood. Different explanations are discussed.

Introduction

In the second half of the 20th century, especially in the 1960s and 1970s, many labor migrants from southern Europe and Mediterranean countries came to (northern) Europe on a temporary basis. Many of the labor migrants settled permanently and brought their families. Also, children were born in the host country. Most of the migrant children did not experience migration themselves, or experienced it at young age. However, they grow up in two, sometimes conflicting, cultural environments. The culture at home with their families is often more collective. In contrast, the host culture is often more individualistic and emphasizes autonomy¹.

Migrant children may show more emotional and behavioral problems than native children. Reasons are that specific risk factors are more common in the migrant culture, such as authoritarian parenting styles^{1,2}, or the stress of having to deal with two different cultural environments³. Furthermore, migrant children often grow up under poorer socioeconomic circumstances, which may influence their psychological wellbeing. Indeed, some European studies have found less favorable mental health of migrant youth compared with natives⁴⁻⁶, however, in other studies similar mental health has been found for migrant and native children^{7,8}. Yet in a study in London no differences were found for Pakistani, Indian, and Black adolescents, but lower psychological distress for Bangladeshi adolescents and higher rates of depressive symptoms for Non-UK White girls compared with White UK adolescents⁹.

For both migrants and natives the developmental process from adolescents to young adults is complex, with, importantly, a shift in influence of the family to that of the environment outside the family. The family environment loses its dominant and unchallenged role function and the social environment outside the family becomes more important¹⁰. For migrant adolescents the contrast between the worldviews at home and those outside is larger than for native adolescents. In addition, over adolescence and young adulthood migrants may get an increasing number of opportunities to interact with members of the host population. As a result, their behavior may change. Thus, the influence of the majority culture may increase whereas the influence of the migrant culture may decrease. As a consequence internalizing and externalizing behavior of migrants and natives may become more alike³, resulting in a decrease in ethnic disparities during the transition to adulthood. Only one study, in the USA, has described patterns in ethnic disparities in mental health from adolescence to adulthood. During the transition ethnic disparities in prevalence of depression, suicidal thoughts, and aggressive behavior decreased¹¹.

Our aim was to study the changes in internalizing and externalizing problems from adolescence into young adulthood in Turkish migrants, and to compare them with changes in Dutch natives. Previous findings of these young Turkish adolescents have indicated more problem behavior than for native adolescents, most pronounced for internalizing problems, reported by their parents, themselves, and their Turkish teachers^{4,12,13}. These differences could only for a small part be explained by differences in social context⁴. We hypothesized that mental health of Turkish migrants entering adulthood would increasingly resemble that of natives.

Method

Setting

The largest immigrant group in the European Community is the Turkish group, with over 3 million immigrants. In the Netherlands live around 341,000 Turkish migrants¹⁴. We used data from two studies on problem behavior of children in the province of Zuid-Holland, a very dense populated area with only 10% rural area, in the Netherlands. Rotterdam and The Hague are the two largest cities of the province and most Turkish migrants in Zuid-Holland (66%) live in these two cities. Additional analyses showed that problem behavior was not related to urbanization in Zuid-Holland. From both studies we selected adolescents (11-18y) and used a follow-up period of 10 years. All respondents have given written informed consent. The ethics committee of Erasmus University Medical Center approved the studies.

Samples

Turkish migrant sample For the Turkish migrant sample we used data from 1993 and 2003. The study in 1993 included 1198 Turkish children aged four through eighteen years and their parents, randomly selected from municipal registers of The Hague and Rotterdam. Of these children 19 were not eligible as they had a severe intellectual disability, or did not have at least one parent born in Turkey. From the 1179 eligible children, 833 (71%) parents participated in the study. Fifty-one percent of the children (n=425) were 11-18y old and thus eligible for filling out the Youth Self-Report (YSR). The response for the YSR was 379 (89% of 425).

In 2003 we traced addresses via municipal registries. We could not follow-up 17 children because they moved out of the region (n=8), died (n=2), moved abroad (n=3), or were untraceable (n=4). We approached 362 of the 379 children for participation, and 217 completed the Adult Self-Report in 2003 (60% of 362).

Response in 1993 was not selective with regard to the age of the child, gender of the child, and socioeconomic position of the parents^{15,16}. Response in 2003 was not selective for age (mean for responders 13.6y and 13.9y for non-responders; $t=1.37; 377df; p=0.17$), gender (50% men vs. 54% men; $\chi^2=0.62; 1df; p=0.43$), and occupational level of parents (86% low vs. 88% low; $\chi^2=0.18; 1df; p=0.67$). Response was also not selective for internalizing and externalizing problems in 1993, measured by mean scores and proportion above 80th percentile on the scales of the Child Behavior Checklist and of the YSR (CBCL internalizing mean 10.7 for responders vs. 10.1 for non-responders; $t=-1.00; 377df; p=0.32$; externalizing 7.3 vs. 8.0; $t=0.95; 377df; p=0.34$; YSR internalizing 13.6 vs. 12.5; $t=-1.31; 377df; p=0.19$; externalizing 9.6 vs. 10.3; $t=0.94; 377df; p=0.34$; internalizing 25% above 80th percentile vs. 20%; $\chi^2=1.39; 1df; p=0.24$; externalizing 18% above 80th percentile vs. 22%; $\chi^2=0.78; 1df; p=0.38$). Thus, attrition was not selective with regard to demographics, socioeconomic position and problem behavior in adolescence.

Dutch sample The Dutch sample was from the longitudinal Zuid-Holland Study on mental health in children and adolescents. The original random sample in 1983 consisted of

2600 children (4-16y) from the province of Zuid-Holland. Parents of 2076 of the 2600 target children completed the questionnaire (80%). Details of the initial data collection have been published previously¹⁷. After the first measurement in 1983 the sample was approached again in 1985, 1987, 1991 and 1997. For the analyses in this study we have used the data from 1987 and 1997. In 1983, 1291 children were 7-14y old, and therefore eligible for filling out the Youth Self-report in 1987. In 1987, 929 children completed the YSR (72% of 1291), and in 1997, 753 young adults completed the Young Adult Self-Report (81% of 929).

The response in 1983 was not selective with regard to age of the child, gender of the child, and socioeconomic position of the parents¹⁷. From 1983 to 1987 attrition was selective for age (responders mean 10.3y vs. 11.0y for non-responders; $t=5.01; 1289df; p<0.0001$), and for gender (47% men vs. 55% men $\chi^2=7.21; 1df; p=0.007$). Attrition was not selective for occupational level of parents (54% low vs. 52% low; $\chi^2=0.27; 1df; p=0.60$) and for scores on the scales of the Child Behavior Checklist/4-18 in 1983 (internalizing mean 5.5 for responders vs. 5.7 for non-responders; $t=0.54; 577df; p=0.59$; externalizing 7.1 vs. 8.0; $t=1.87; 577df; p=0.06$).

From 1987 tot 1997 attrition was only selective for age, i.e., respondents were younger than dropouts (mean 14.4y vs. 15.6y in 1987; $t=6.18; 927df; p<0.0001$). Attrition was not selective for gender (respondents: 46% men vs. non-respondents: 51% men $\chi^2=1.54; 1df; p=0.21$), occupational level of parents (62% low vs. 65% low; $\chi^2=0.67; 1df; p=0.41$), and not selective for internalizing and externalizing problems in 1987, measured by mean scores and proportion above 80th percentile on the scales of the Child Behavior Checklist and of the YSR (CBCL internalizing mean 5.2 for responders vs. 5.2 for non-responders; $t=-0.04; 892df; p=0.97$; externalizing 5.2 vs. 5.4; $t=0.47; 892df; p=0.64$; YSR internalizing 7.2 vs. 7.6; $t=0.75; 927df; p=0.45$; externalizing 7.7 vs. 8.2; $t=1.06; 927df; p=0.29$; internalizing 20% above 80th percentile vs. 19%; $\chi^2=0.13; 1df; p=0.72$; externalizing 19% above 80th percentile vs. 22%; $\chi^2=1.17; 1df; p=0.28$). In summary, attrition was not selective for problem behavior in adolescence, nor for socioeconomic position, and only slightly for demographics.

Instruments

In both studies, problem behavior in adolescence was measured with the Dutch version of the Youth Self-Report (YSR). This is a self-report questionnaire for adolescents (11-18y) and it was modeled on the Child Behavior Checklist (CBCL), a parent questionnaire for the assessment of mental health in children and adolescents¹⁸. Problem items were scored 0 if the item was 'not true', 1 if it was 'somewhat or sometimes true', and 2 if it was 'very true or often true', during the past six months. Two broadband groups of scales are constructed, designated as Internalizing Problems (including Withdrawn, Somatic Complaints, and Anxious/Depressed scales) and Externalizing Problems (including Delinquent Behavior and Aggressive Behavior scales). The good reliability and validity of the YSR were supported for the Dutch version¹⁹. The test-retest reliability of the Total Problem Score of the Dutch version for Turkish migrant children over an interval of 9 days was 0.78.

In the Dutch study mental health in young adulthood was measured with the Young Adult Self-Report (YASR) and in the Turkish migrant study with the Adult Self-Report (ASR). The YASR is a questionnaire for adults aged 18-30y, modeled on the YSR and CBCL. The ASR is the newer version of the YASR, suitable for adults aged 18-59y. Most items of both questionnaires were common. The YASR and ASR have the same scoring format and can be largely scored on the same empirical scales as the YSR. The only difference is the scale Intrusive Behavior that is scored from the YASR and ASR, but not from the YSR. The items of Intrusive Behavior are a subset of the items of Aggressive Problems in the YSR. In the YASR and ASR Intrusive Behavior is included in the Externalizing Problems scale, together with Aggressive Behavior and Delinquent Behavior. We scored the YASR scales from common ASR items. Two items were not in the ASR but were present in the YASR. These items were excluded for both Dutch natives and Turkish migrants. Good reliability and validity for the American YASR have been reported²⁰, and were supported for the Dutch version^{21,22}. In the Turkish sample confirmatory factor analyses also confirmed the factor structure of the YASR (Tucker-Lewis Index 0.951, Root Mean Square Error of Approximation 0.046), and Cronbach's alphas were high (Internalizing Problems 0.87, Externalizing Problems 0.83).

For our analyses, we included Intrusive Behavior in the Externalizing Problems scale of the YASR to ensure comparability with the Externalizing Problems scale of the YSR^{20,23}.

Confounders

Potential confounders were age in adolescence (dichotomized as '11-14y' and '15-18y'), gender, and parental socioeconomic position at baseline (dichotomized as 'manual or low non-manual occupation' versus 'self-employed, or intermediate non-manual, or high non-manual occupations').

Statistical analyses

The number of items in each scale was not the same for the YSR and the YASR. We calculated the mean item score for each scale for the YSR, and for the YASR in order to standardize scores of both questionnaires. For example, a mean item score of 0.20 for the Anxious/Depressed scale indicates that one out of ten items was answered with 'often true', or two items out of ten items with 'sometimes true'.

Mean item scores for each scale were compared between Dutch natives and Turkish migrants in adolescence (11-18y) and in young adulthood (21-28y), with mixed linear models. We allowed the intercept and the regression coefficients to differ randomly between subjects. The model estimated mean group parameters and standard errors. We constructed a dummy variable 'migrant status' that coded 0 for Dutch and 1 for Turkish. A significant interaction between time and migrant status indicated a change in the difference in mean item score between Dutch natives and Turkish migrants over time. The initial models included time, migrant status, and confounders. After these analyses we checked whether the findings applied to different subgroups: for men and women, for the two age groups, for first and second-

generation migrants, and for adolescents with low and high parental socioeconomic position. For the subgroup analyses we additionally entered two-way interactions (subgroup x time) and three-way interactions (subgroup x time x migrant status) in the models. Subsequently, we analyzed the data separately for each subgroup. We used Proc Mixed from SAS statistical software version 8.02 (SAS Institute Inc., Cary, USA) for all analyses.

Results

The proportion of men was 50% in the Turkish migrant group and 46% in the Dutch native group ($p=0.27$). Mean age was higher in the Dutch natives than the Turkish migrants (14.5y vs. 13.6y in adolescence, $p<0.0001$). Parental socioeconomic position was low for 86% of Turkish migrant adolescents, and for 62% of Dutch native adolescents ($p<0.0001$). Twenty-six percent of the Turkish migrants were born in Turkey and 74% in the Netherlands.

Turkish adolescents (11-18y) reported more problems for all subscales and for Internalizing Problems and Externalizing Problems, most pronounced for the internalizing subscales: Anxious/Depressed, Withdrawn, and Somatic Complaints (Table 4.1). At age 21-28y, Turkish migrants still reported more Internalizing Problems, Anxious/Depressed, Withdrawn, Somatic Complaints, Aggressive Behavior, and Delinquent Behavior. Turkish migrants no longer reported more Externalizing Problems. Dutch natives reported more Intrusive Behavior than Turkish migrants (Table 4.1).

The disparity in internalizing problems between Turkish migrants and Dutch natives decreased when adolescents aged into young adulthood (Table 4.1, Figure 4.1): scores decreased more in Turkish migrants than in Dutch natives for both Internalizing Problems and for its subscales. The disparity in externalizing problems decreased for Externalizing Problems, and also but less strong for Delinquent Behavior, but not for Aggressive Behavior (Table 4.1, Figure 4.2).

Table 4.1 – Mean item scores for problem behavior scales for Dutch natives and Turkish migrants at age 11-18y and at age 21-28y

	Dutch (n=753)		Turkish (n=217)		Difference	P-value ^a
	Mean	(SE)	Mean	(SE)		
Internalizing Problems (31/35) ^b						
11-18y	0.23	(0.0074)	0.45	(0.016)	0.21	<0.0001
21-28y	0.25	(0.0078)	0.36	(0.017)	0.11	<0.0001
Change ^c	0.02 *	(0.0084)	-0.09 *	(0.022)	-0.11 (-52%) ^d	<0.0001
Anxious/Depressed (16/16)						
11-18y	0.21	(0.0086)	0.45	(0.018)	0.23	<0.0001
21-28y	0.28	(0.0099)	0.40	(0.021)	0.12	<0.0001
Change	0.07 *	(0.010)	-0.05	(0.025)	-0.11 (-48%)	<0.0001
Withdrawn (7/7)						
11-18y	0.33	(0.010)	0.53	(0.022)	0.20	<0.0001
21-28y	0.33	(0.011)	0.40	(0.021)	0.07	0.002
Change	0.00	(0.012)	-0.13 *	(0.028)	-0.13 (-65%)	<0.0001
Somatic Complaints (9/12)						
11-18y	0.17	(0.0079)	0.36	(0.021)	0.19	<0.0001
21-28y	0.17	(0.0074)	0.27	(0.018)	0.11	<0.0001
Change	0.00	(0.0089)	-0.09 *	(0.025)	-0.09 (-47%)	0.0008
Externalizing Problems (30/27)						
11-18y	0.26	(0.0070)	0.32	(0.013)	0.06	<0.0001
21-28y	0.19	(0.0058)	0.22	(0.013)	0.03	0.07
Change	-0.07 *	(0.0071)	-0.10 *	(0.014)	-0.04 (-67%)	0.01
Aggressive Behavior (19/12)						
11-18y	0.29	(0.0085)	0.35	(0.015)	0.06	0.0003
21-28y	0.18	(0.0069)	0.25	(0.017)	0.07	0.0001
Change	-0.11 *	(0.0089)	-0.11 *	(0.018)	0.01 (+17%)	0.67
Delinquent Behavior (11/9)						
11-18y	0.19	(0.0065)	0.26	(0.012)	0.07	<0.0001
21-28y	0.10	(0.0054)	0.13	(0.011)	0.03	0.006
Change	-0.10 *	(0.0074)	-0.13 *	(0.015)	-0.03 (-43%)	0.06
Intrusive Behavior (-/6)						
21-28y	0.36	(0.012)	0.28	(0.022)	-0.08	0.002

SE standard error. Mean scores were adjusted for age, gender, and parental socioeconomic position;

* Significant change over time within group: $p < 0.0075$ for Internalizing Problems and subscales and $p < 0.0001$ for Externalizing Problems and subscales;

^a P-value for absolute difference between Dutch natives and Turkish migrants;

^b Number of items in the scale of YSR/YASR;

^c Change in mean item score over age 11-18y and 21-28y, negative values indicate a lower mean item score at age 21-28y compared to the mean item score at age 11-18y;

^d Proportional change in difference, for example for Internalizing Problems $(-0.11/0.21) \times 100\% = -52\%$.

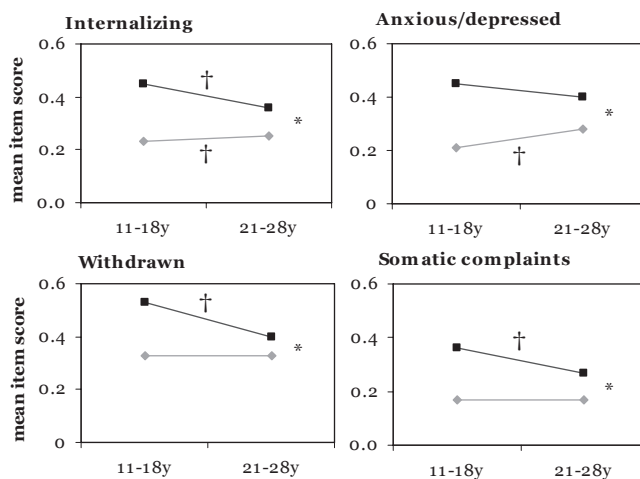


Figure 4.1 – Change in mean item scores for Internalizing Problems Scale and subscales Anxious/Depressed, Withdrawn and Somatic Complaints from adolescence (11-18y) to young adulthood (21-28y) for Dutch natives and Turkish migrants.

Scores were adjusted for age, gender and parental socioeconomic position;

Black squares (—■—) for Turkish migrants; grey diamonds (—◆—) for Dutch natives;

* Difference in mean item score between Dutch natives and Turkish migrants decreased significantly ($p < 0.0001$) from adolescence into young adulthood;

† Significant change over time within group ($p < 0.0075$).

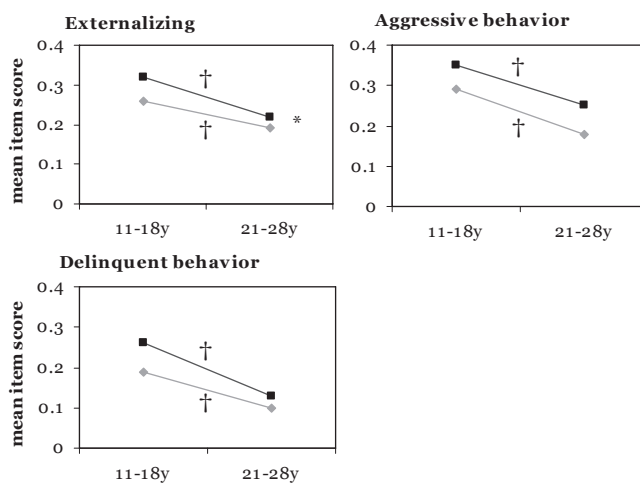


Figure 4.2 – Change in mean item scores for Externalizing Problems Scale and subscales Aggressive Behavior and Delinquent Behavior from adolescence (11-18y) to young adulthood (21-28y) for Dutch natives and Turkish migrants. Scores were adjusted for age, gender and parental socioeconomic position;

Items of the Intrinsic Behavior subscale were also included in the mean item score for Externalizing Problems;

Black squares (—■—) for Turkish migrants; grey diamonds (—◆—) for Dutch natives;

* Difference in mean item score between Dutch natives and Turkish migrants decreased significantly ($p = 0.01$) from adolescence into young adulthood;

† Significant change over time within group ($p < 0.0001$).

Subgroup analyses showed differences by age groups, by gender and by parental socioeconomic position, however these differences were similar for Dutch natives and Turkish migrants. For Externalizing Problems, Internalizing Problems, Withdrawn Behavior, Somatic Complaints, and Delinquent Behavior the decrease was stronger for older adolescents than for younger adolescents. With regard to gender differences we found a stronger decrease among women for Anxious/Depressed, Withdrawn, Somatic Complaints, and Delinquent Behavior, and a stronger decrease among men for Aggressive Behavior. High parental socioeconomic position was associated with a stronger decrease over time for Aggressive Behavior only. Withdrawn Behavior decreased more in first-generation migrants, but changes on other scales were the same for first and second-generation Turkish migrants. In summary, subgroup analyses did not show specific groups in which the disparity between Dutch natives and Turkish migrants changed differently compared with the total group.

Discussion

Disparities decreased substantially for internalizing (52%) and externalizing (67%) problems when Turkish migrant and Dutch native adolescents became young adults. In young adulthood Turkish migrants still reported more internalizing problems, and slightly more Aggressive and Delinquent Behavior than natives. The changes in disparities were independent of the lower parental socioeconomic position of many of the Turkish adolescents, and of the country of birth of the Turkish migrant adolescents.

Ethnic disparities in mental health

In our sample, Turkish migrant adolescents reported more mental health problems than Dutch natives. Findings on mental health of migrant children compared with native children have yet been inconclusive^{5,7,9,24-26}. True differences in mental health between migrant and native children may reflect stress from migration factors, but also ethnic or population differences in mental health independent of migration. The latter is supported by findings in our Turkish sample, where Turkish children reported more mental health problems, especially internalizing problems, than Dutch natives, but almost similar levels as Turkish children in Turkey^{12,24}, and by the finding of a higher level of internalizing problems in Turkish youth in Turkey than in Dutch youth in an international comparison study²⁷. In addition, studies with Turkish migrant children in Europe reported less favorable mental health compared with natives^{5,9,24}.

Fewer studies have presented findings on ethnic differences among young adult migrants in the general population. The Fourth National Survey of Ethnic Minorities in Britain found higher rates of depression for people of Caribbean extraction. Rates for depression were similar for Asians who were educated in Britain or fluent in English as for whites²⁸. In the EMPIRIC study, also in Great Britain, rates of anxiety and depression were similar for young adult migrants (Irish, Black Caribbean, Bangladeshi, Indian and Pakistani) and whites; only

the rates for Pakistani young women were slightly higher²⁹. In a comparison of Sardinian migrants in Paris, second-generation young adult Sardinian migrants had a higher risk of depression, drug abuse and bulimia than Parisians³⁰. There is a lack of population studies on mental health of migrants in other European countries³¹. Further international studies will be of value to describe the magnitude of ethnic disparities in mental health problems in different countries, and to guide design and delivery of health care and prevention.

We found smaller ethnic disparities in young adulthood than in adolescence, but disparities were still present especially for internalizing problems. These findings are in line with an American study on longitudinal trends in ethnic health disparities from adolescence to young adulthood¹¹.

Explanations for the decrease in ethnic disparities

Two explanations could be raised for the changes in disparities: different period effects, and differences in developmental pathway for migrants and for natives. Different period effects could be present, but cannot be calculated with only one follow-up measurement. Follow-up periods of both studies were overlapping for five years. During the follow-up period of the Dutch sample no important changes, such as an economic crisis, in the Dutch society happened that would be expected to have a large impact on mental health. During the end of the follow-up of the Turkish migrant sample Dutch society became less tolerant to migrants. This could have been stressful for Turkish migrants and have caused more mental health problems. If this period effect had been absent, the decrease in mental health problems of the Turkish migrants might have been even larger, and the decrease in difference compared with Dutch natives might have been even stronger.

Secondly, differences between migrants and natives in the transition or developmental process from adolescents to young adults provide a framework for explanations of our results. In short, this transition is characterized by making decisions about careers and potential partners, by becoming less dependent on ones immediate family's home, and by forming world-views and unique identities^{10,32}. In the following sections we will relate aspects of transition to adulthood with migrant status in order to explain our findings.

Firstly, migrant children are often more upward social mobile than native children³³. This results from the low socioeconomic position of their labor migrant parents. Upward social mobility sometimes yields mental health benefits^{34,35}. Part of the more favorable changes in internalizing and externalizing problems in migrants may therefore be ascribed to differences in upward social mobility. We checked this possibility in our study, and as expected more Turkish than Dutch young adults moved into a higher social-economic position than their parents (56% vs. 43%, $p=0.0007$), however this was not related to changes in internalizing or externalizing problems. Therefore, a higher upward social mobility among migrants did not explain the decrease in ethnic disparities.

Secondly, parenting styles of migrants and natives differ. Turkish parents highly value conformity, school success and social success, and value autonomy and social behavior less.

Dutch parents also value conformity, but they value autonomy and social behavior more^{1,2}. Child-rearing strategies characterized by high expectations for education, and social success, together with more common use of verbal criticism, little praise, and punishment or threats to be punished³⁶ may result in fear and behavior as captured by the items of the internalizing problems scales³⁷. When migrant adolescents grow up, and become less dependent of their parents the fear may lessen, and consequently internalizing problems³⁸.

Thirdly, adolescents have more possibilities to interact with others outside their family and family's social network during the transition. For migrant adolescents this period may give relatively more freedom, as (Turkish) migrant families are very much oriented in interactions within their own migrant population with only few persons of Turkish origin in higher positions in the Dutch society³⁹. The behavior of migrants may change when migrants have cultural contact with the members of the host population. And, subsequently, adaptation of behaviors of the host society may result in a mental health profile that resembles that of the host population³.

Finally, during the transition to young adults, adolescents seek for identity. Many will find themselves questioning the worldviews they learned from their parents and role models¹⁰. For migrant youths that grow up with two distinct cultures, the differences in worldviews they experience at home and outside (e.g., in school and at workplace) are often larger than for natives, and may give considerable confusion¹⁰. It is possible that identity development of migrants gives more internalizing problems in adolescence, because the process of dealing with two (or more) distinct cultures is stressful and confusing. But, when the identity development has finished in young adulthood, migrants show only little difference in mental health compared with natives²⁸.

Strengths and limitations

Three main advantages of this study were that it was a prospective study with a within subject design; that the development of problem behaviors in migrants was compared with that in natives; and that the samples were fairly representative, response rates were satisfactory, and attrition not selective. Furthermore, we accounted for age cohort effects by including adolescents of different ages covering the period of adolescence. We did find age specific results, but these were similar for Turkish migrants and Dutch natives. Verhulst et al⁴⁰ did not find evidence for a clear increase in malfunctioning of Dutch children and adolescents from 1983 to 1993 in the Netherlands. This supports the view that cohort effects were not very likely.

The validity of the measurement instruments for the Turkish migrants is supported. Good reliability and validity were confirmed for the Turkish translation of the CBCL in Turkey^{41,42}. The YSR is based on the CBCL. For the adult questionnaire, consistency and the interpretation of the items by Turkish migrants was supported by the high internal consistency of the scales and satisfactory fit of the factor structure of the YASR. Further, the pattern of decreasing disparities was found across almost all scales. If different interpretation of symptoms by Turkish migrants would underlie these patterns, then the differences in reporting between Turkish

migrants and Dutch natives would have taken place across a large variation of problem behaviors, and both in adolescence and in young adulthood. Therefore, our results may have been influenced by differences in cultural determined perceptions of behavior and the willingness to disclose the existence of a symptom⁴³, but we do not believe that this can completely explain our findings.

Conclusion

In conclusion, our study addressed the development of ethnic differences in mental health problems among Turkish and native adolescents growing up to adulthood in the Netherlands. Turkish adolescents are known to have both more internalizing and externalizing problems than native Dutch adolescents. Our study showed that the large disparities in mental health problems between migrant and native adolescents decreased towards young adulthood. The development of the Dutch native adolescents showed a pattern that is well-known: internalizing problems remained highly prevalent into young adulthood, whereas externalizing problems became less common. The pattern of the migrants, in contrast, was a more favorable one: both scores of internalizing and of externalizing problems decreased. Thus, the good news is that high rates of internalizing problems among ethnic minority adolescents do not necessarily have to persist into adulthood. However, the bad news is that, although ethnic disparities decreased, Turkish migrants still showed more mental health problems in young adulthood. More empirical information about the explanations of disparities is required to guide prevention strategies to reduce mental health disparities in young adulthood. Since the mental health problems in adolescence form a risk factor for other developmental problems too (e.g., education and employment), policies for reducing mental health problems in adolescence should give special attention to engagement of Turkish migrants.

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5

Cultural ambivalence as a risk factor for mental health problems in ethnic minority young adults

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Abstract

Objective

The most stressful phase in cultural adaptation is probably cultural ambivalence: loss of positive bonding with migrant culture while a positive bonding with the host culture has not yet been established. Individuals with cultural ambivalence may thus be at increased risk for mental health problems. Previous studies have addressed the association between cultural adaptation and mental health in migrant offspring, but most were restricted to an adolescent population and included only one or two domains of cultural adaptation. The objective was to test the hypothesis that ambivalent cultural adaptation in a range of different domains is a risk factor for mental health in young adult migrant offspring.

Design

426 Turkish young adults in the Netherlands (18-28y) completed the General Health Questionnaire-28. We assessed the association of mental health with ambivalent cultural adaptation as indicated by measures of ethnic identity, language use, religion, and gender emancipation, as well as by psychological adaptation, which is more proximal to mental health. Psychological adaptation was measured with 12 items and groups were identified through latent class analyses.

Results

144 (34%) of the Turkish young adults had mental health problems. Those who did not comply with the Ramadan (Relative risk 1.28, 95%-Confidence Interval 0.97 to 1.70) and those with ambivalent psychological adaptation with both cultures (Relative risk 1.49, 95%-Confidence Interval 1.09 to 1.70) had more mental health problems. Ethnic identity, language use and gender emancipation were not related with mental health. Associations with mental health problems were similar for men and women and were not influenced by socioeconomic factors.

Conclusion

Findings supported our hypothesis of a higher risk of mental health problems in culturally ambivalent young adults. This risk was limited to psychological and religious ambivalence. Other domains of cultural adaptation are probably of more relevance in adolescence or in the first period after migration.

Introduction

Labor migration has a profound impact on people and requires considerable adjustments by immigrants. Not only are they exposed to considerable changes in their social and cultural environment, they also have to deal with new moral values and standards, and often have to learn a new language¹. In their country of settlement migrants often live in socially deprived circumstances and many are unemployed, or are employed in low-wage jobs as a result of their language problems and low educational levels². It is not surprising that for several health outcomes disparities have been found between natives and migrants^{3,4}, including mental health⁵⁻⁸.

Causes for mental health problems will often be very similar for migrants and natives. However, for migrants one added dimension is that of their dual cultural environment. For example, large differences are found between cultures of non-Western labor migrants to Western Europe and host cultures^{9,10}. Dealing with two different cultural environments may expose individuals to considerable stress^{9,11}. When migrants arrive they still have the traditions, norms and values of their country of origin. They are familiar with these and in the beginning this may be the least stressful way of life. However, with prolonged residence some migrants will start accepting the traditions, norms and values of the host country¹². Sometimes it is inevitable that elements of the migrant culture have to be abandoned, but often in different settings either of the cultures will prevail¹⁰. Although children, adolescents and young adults with migrant background may not have experienced the migrant culture directly, many of them acquire important aspects of their culture through socialization and enculturation from their parents and members of their migrant community in the host country¹³. Adaptation and finding a balance of two cultures is thus relevant for them too.

Cultural adaptation is a complex and multifaceted process: it encompasses psychological processes as well as behavioral changes. Furthermore, it requires acceptance by host members. Successful adaptation involves the balancing of the migrant culture and the host culture¹⁴. Some migrants will experience this process as stressful, and it may result in increased levels of anxiety, depression, and psychosomatic problems¹⁵⁻¹⁸. During adaptation a person is thought to move along two dimensions: (1) acquiring or not acquiring a positive bonding with the host culture, and (2) maintenance or devaluing of bonding with the migrant culture¹⁹. With the term 'bonding' we summarize involvement with a culture and comfortability in a culture. Four groups are often defined: an integrated group (positive bonding with both cultures), a separated group (positive bonding with migrant culture only), an assimilated group (positive bonding with host culture only), and a marginalized group (positive bonding with neither culture)¹⁹. The integrated group probably has the lowest risk of mental health problems, whereas in the other groups the risk is thought to be higher¹⁹⁻²¹. However, the most stressful phase and highest risk for mental health problems for migrants may be when they are in the process of losing positive bonding with migrant culture while a positive bonding with the host culture has not yet been fully established, that is ambivalent cultural adaptation²².

Most previous studies on cultural adaptation and mental health focused on one or two domains (e.g., language use, or ethnic identity). However, there is increasing acknowledgment that studies can be improved by inclusion of indicators from a wider range of domains in order to cover the range of differences between cultures^{10,23-25}. Furthermore, most studies of migrant offspring focused on adolescents^{1,20,26-29}. Some have suggested that it is very difficult to disentangle cultural adaptation processes from developmental processes in this life stage³⁰. Studying young adult migrant offspring can partly solve this problem, because in young adults the developmental processes are less prominent.

Aim of the study

In the present study we tested the hypothesis that migrant young adults with ambivalent cultural adaptation are at highest risk for mental health problems. We studied four more distal (to mental wellbeing) domains of cultural adaptation: ethnic identity, language use, religion, and gender emancipation; and one more proximal domain: psychological attachment and understanding. These domains were selected based on experienced differences and difficulties of Turkish migrants in the Netherlands¹⁰. We studied Turkish young adults in the Netherlands, who were offspring of first-generation labor migrants.

Methods

Context of Turkish migrants in the Netherlands

With around 341,000 people, Turkish migrants form the largest non-Western migrant group in the Netherlands. They form 21% of all non-Western immigrants and 2% of the Dutch population³¹. Similarly, in other European countries Turkish migrants also form a large group of labor migrants (e.g.,³²⁻³⁴). Most first-generation Turkish men arrived in the 1960s and 1970s and were laborers. Their wife and children followed through family reunion programs, and children were born in the Netherlands³⁵. The Turkish young adults in this study have spent at least their adolescence in the Netherlands, enrolled in the Dutch education system. Therefore, they have been in contact with the Dutch culture more than their parents for whom contact with Dutch natives was less systematic. In comparison with Dutch young adults, these Turkish young adults have higher levels of anxiety and depression³⁶.

Participants

In 1993, a random selection was drawn of 1198 children aged 4 to 18y with at least one parent born in Turkey from the municipalities of Rotterdam and The Hague^{37,38}. In 2003, they were interviewed again at young adult age, and information about cultural adaptation was collected. Because of the prospective nature of the study, all young adults lived in the Netherlands for at least ten years including adolescence. A more extensive description of the study population has been published previously³⁶.

Of the original selection in 1993, 132 persons were excluded in 1993 because they did not fulfill inclusion criteria (19), or because the address provided was incorrect (113). In 2003, we traced 994 (93%) of the remaining 1066 children via the municipal registers. Two children were deceased. Logistic reasons made it impossible to contact individuals who had moved outside the region of Rotterdam and The Hague ($n=18$). We approached 974 people for participation. Six persons were excluded: four had no parents born in Turkey, and two had severe intellectual disability. The response rate was 64% ($n=621$ of 968). Non-response had three main reasons: refusal (17%), address provided by the municipality was not correct (6.5%), and person could not be reached after at least three attempts (10%). Respondents were aged 14 to 28. For the analyses only the results of the age group 18 to 28 years were used ($n=439$), with complete data on all variables in the study ($n=426$).

Attrition analyses showed that individuals who could not be approached ($n=1066-974=92$) did not differ in sex or age from those who were approached to participate. Respondents were a little younger than non-respondents (mean age 21 years for respondents and 22 years for non-respondents $p<0.0001$). Attrition was not selective with regard to sex, mental health in adolescence in 1993, country of birth, and parental socioeconomic position.

Mental health

We used the 28-item version of the General Health Questionnaire (GHQ) to measure mental health³⁹. The GHQ-28 consists of items of psychosomatic symptoms, anxiety, social dysfunction, and severe depression. The items were rated on a 4-point scale. For defining cases the answers were recoded into yes/no responses and a total score of five or higher was used as threshold^{39,40}. The GHQ-28 has previously been validated and used in Turkish people in Turkey and immigrant countries^{7,41,42}.

Cultural adaptation

Ethnic identity was assessed with the items 'I consider myself to be Turkish' and 'I consider myself to be Dutch'. Items were rated on a 5-point Likert-type scale ranging from totally disagree to totally agree, and were summarized in three groups for analyses. The first group is the group that agreed on both items (identification with both cultures), the second group agreed on only one of the items (identification with Dutch ($n=10$) or Turkish culture ($n=301$) only), and the third group identified themselves little with both Turkish and Dutch culture (ambivalent identification).

Language use was measured by asking respondents how often they speak Dutch and Turkish language when they talk with important others: parents, siblings, other relatives, and Turkish friends. Items were rated on 5-point Likert-type scale ranging from never to very often/always. We summed answers into a score for Dutch language use (Cronbach's alpha 0.72) and one for Turkish language use (Cronbach's alpha 0.71). Scores were coded into three groups: often use of both languages (score equal to or above median for both languages), often use of one language only (score equal to or above median for Turkish language ($n=136$) or

for Dutch language (n=124) only), little use of both languages (score below median for both languages). This last group is ambivalent with regard to language use.

Ramadan compliance We asked the respondent to rate his/her compliance with the last Ramadan (all days, some days, not), dichotomized as 'all days' and 'not/some days'. Compliance with Ramadan is more a reflection of personal importance of Islam, than of following religious rules for Turkish young adults in the Netherlands ⁴³. Many Turkish migrants regard compliance with Ramadan also as an expression of respect for Turkish traditions. Thus non-compliance with Ramadan was an indicator of losing bonding with migrant culture (ambivalence).

Gender emancipation. A scale was used for gender emancipation with six items, e.g., 'Women can best be responsible for the housekeeping', and 'It is more important for boys than for girls that they can earn their own income later'. The items were rated on a 5-item Likert-type scale ranging from fully agree (1) to fully disagree (5), and the mean score formed a score for gender emancipation. High scores indicated more gender emancipation (Cronbach's alpha 0.73). It was coded into low (lower tertile, score < 3.33), high (upper tertile, score > 4.00) and moderate. Low gender emancipation was expected to best reflect older Turkish migrants' attitudes, whereas high gender emancipation was expected to best reflect Dutch attitudes. The moderate emancipated group was thus the ambivalent group.

Psychological adaptation We used a measure for psychological adaptation based on latent class analyses developed by Stevens et al ²². Stevens et al adapted and validated the Psychological Acculturation Scale (PAS) ⁴⁴ for migrants in the Netherlands and found three distinct styles ²². Two of the styles were in line with Berry's model of acculturation indicating integration and separation ¹⁹. The third style was labeled ambivalent and described a moderate attachment and understanding with both migrant and host groups. The adapted PAS had six items measuring sense of emotional attachment and belonging (Figure 5.1). Items were applied to both cultures and were rated on a 5-point Likert-type scale, later dichotomized for latent class analyses (agree vs. disagree). We have successfully replicated Stevens et al's styles in this sample of Turkish young adults (Figure 5.1).

Confounders

We used sex, age, educational level, employment status and partnership as possible confounders. Education was categorized as low (drop-out, lower vocational training), moderate (intermediate vocational training), and high (higher vocational training, academic). Students were classified according to their current training. Employment was dichotomized as being or not being in paid employment. Partnership was defined as being married, or cohabiting unmarried for at least six months. In practice unmarried cohabitation was very rare in this sample.

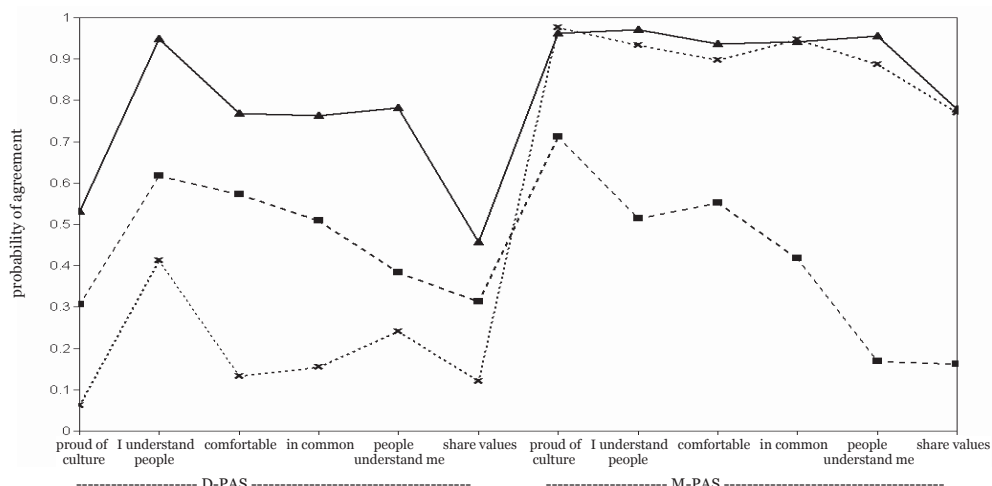


Figure 5.1 – Probabilities of agreement with D-PAS and M-Pas items.

D-PAS Dutch Psychological Adaptation Scale; M-PAS Migrant Psychological Adaptation Scale. Example of items ‘I feel proud to be part of Dutch (Turkish) culture’, ‘Dutch (Turkish) people understand me’.

--▲-- integrated style (42% of sample); --×-- separated style (32% of sample); --■-- ambivalent style (25% of sample); Vuong-Lo-Mendell-Rubin likelihood ratio test indicated a three-class solution for the data (three vs. two classes $p < 0.0001$; four vs. three classes $p = 0.26$). Respondents were classified on the base of their highest class-probability. Class sensitivity, i.e., average class probability after classifying, was high: 0.89 to 0.91.

Analyses

First frequencies of GHQ-case and cultural determinants and differences between men and women were tested. To assess the association between the determinants and GHQ we calculated relative risks. These were calculated as prevalence rate ratios (PR), by log-Poisson models^{45,46}, and were calculated with adjustment for confounders only (model 1), and with adjustment for both confounders and the other determinants (model 2). Interactions with gender were tested. Both main effect and interactions with generation were also tested, but they were not significant.

Results

The sample included 218 men (51%) and 208 women (49%). Of the respondents 23% were low educated, 53% moderate educated, and 24% were high educated, 44% were employed, and 32% had a partner. Mean age was 22.6y (SD 2.8y). Thirty four percent of the Turkish young adults were classified as GHQ-case. The prevalence was very different between men and women: 23% of men ($n=50$) and 45% of women ($n=94$) ($p < 0.0001$).

Figure 5.1 shows the three different classes of psychological adaptation: integrated, separated and ambivalent. The ambivalent group (25% of the sample) is characterized by moderate understanding and attachment with Dutch and Turkish culture. Individuals in this group were quite proud of the Turkish culture, but did not feel understood by Turkish people, and did not

Table 5.1 – Distribution of cultural determinants

	Total (426)		Men (218)		Women (208)		P ^a
	N	%	N	%	N	%	
Ethnic identity							0.20
Two cultures	66	(15)	38	(17)	28	(13)	
One culture	311	(73)	160	(73)	151	(73)	
Little with both cultures ^b	49	(12)	20	(9)	29	(14)	
Language							0.24
Both often	65	(15)	27	(12)	38	(18)	
One often	260	(61)	137	(63)	123	(59)	
Both sometimes ^b	101	(24)	54	(25)	47	(23)	
Fasting Ramadan							0.02
All days	304	(71)	145	(67)	159	(76)	
No/some days ^b	122	(29)	73	(33)	49	(24)	
Gender emancipation							<0.0001
Low	147	(35)	110	(50)	37	(18)	
Middle ^b	114	(27)	53	(24)	61	(29)	
High	165	(39)	55	(25)	110	(53)	
Psychological adaptation ^c							0.04
Integration	180	(42)	96	(44)	84	(40)	
Separation	138	(32)	78	(36)	60	(29)	
Ambivalent ^b	108	(25)	44	(20)	64	(31)	

^a P-value for difference between men and women;

^b Ambivalent group;

^c Groups were derived from latent class analyses (Figure 5.1).

(wholly) subscribe to Turkish values. The integrated group was the biggest (n=180, 42% of the sample), followed by the separated group (32%). More women than men had an ambivalent psychological cultural adaptation (31% vs. 20%, $p=0.04$) (Table 5.1).

Table 5.1 shows the distribution of the cultural determinants. Most respondents identified with one culture only (73%), 12% identified themselves only little with both cultures (ambivalence). A majority complied with Ramadan, women more often than men. Women scored higher for gender emancipation.

Next we assessed the relative risks of mental health problems. Table 5.2 presents the relative risks for cultural ambivalence in different domains. Adjustment for socioeconomic confounders (education, employment, and partnership) and age had little effect on the relative risks. Also, relative risks changed very little when the different cultural determinants were mutually adjusted. The prevalence of mental health problems was higher among those who did not comply with the Ramadan (PR 1.30, 95%-Confidence Interval 0.98 to 1.72, $p=0.06$), however only borderline significant. Ambivalence in the other distal domains, identity, language use and gender emancipation, was not related with mental health problems. The prevalence of mental health problems was almost 1.6-times as high in individuals with ambivalent psychological adaptation compared with those with integrated psychological adaptation. None

Table 5.2 – Prevalence rate ratios (PR) for mental health problems

	GHQ case		Model 1		Model 2	
	Men	Women	PR	95%CI	PR	95%CI
Ethnic identity						
Both cultures	21%	36%	1.00		1.00	
One culture	24%	45%	1.20	0.79-1.83	1.17	0.77-1.77
Little with both cultures ^a	20%	55%	1.36	0.83-2.24	1.22	0.72-2.04
Language use						
Both often	19%	53%	1.00		1.00	
One often	22%	45%	0.87	0.62-1.22	0.86	0.61-1.21
Both sometimes ^a	28%	40%	0.91	0.61-1.37	0.90	0.60-1.34
Fasting Ramadan						
All days	20%	42%	1.00		1.00	
No/some days ^a	29%	55%	1.30	0.99-1.70	1.30	0.98-1.72
Gender emancipation						
Low	26%	46%	1.00		1.00	
High	20%	45%	0.85	0.60-1.19	0.76	0.54-1.08
Moderate ^a	19%	44%	0.85	0.59-1.23	0.77	0.54-1.11
Psychological adaptation ^b						
Integration	20%	36%*	1.00		1.00	
Separation	23%	45%	1.20	0.86-1.68	1.18	0.83-1.68
Ambivalent ^a	30%	58%	1.58**	1.16-2.16	1.57**	1.14-2.16

Model 1: each cultural factor separately; Model 2: all cultural factors simultaneously. Both models include confounders: sex, age, education, employment status and partner status;

95%CI 95% confidence interval

* $P < 0.05$; ** $p < 0.01$;

^a Ambivalent group;

^b Groups were derived from latent class analyses (Figure 5.1).

of the associations were different for men and women. The high prevalence of mental health problems among women may raise the question of whether the cut-off value used is suitable for this ethnic group. Therefore, we repeated the regression analyses with higher cut-off values for the GHQ. With cases defined as having a score of 6 or higher 29% of the sample were case (19% of men, 39% of women), and with cases defined as having a score of 7 or higher 23% of the sample were case (15% of men, 32% of women). Findings were similar for models with higher cut-off value for GHQ.

Discussion

In summary this study of young adult migrant offspring indicates high risk for mental health problems for those with ambivalent cultural adaptation in the domains of psychological adaptation, and of religion. Mental health was not related with cultural adaptation in the domains of ethnic identity, language use, and gender emancipation.

Ambivalence in psychological adaptation was the strongest risk factor in this study. This is not very surprising perhaps, because it was the most proximal domain to mental wellbeing. Psychological adaptation involves sense of emotional attachment to, belonging within and understanding of the two cultures. How does ambivalent psychological adaptation increase the risk of mental health problems? Conflicts with parents may play a mediating role⁴⁷. We checked this latter possibility in our sample for those who lived with their parents (55% of the respondents). We found some support: individuals with ambivalent psychological adaptation reported more conflicts with their parents, and among women having more conflicts was a risk factor for mental health problems. Adjustment for conflicts with parents reduced the relative risk with about 20% among women. Another source of stress in psychological ambivalence may be feelings of being an outsider and unaccepted by host members⁹. We checked this possibility by comparing self-perceived discrimination between psychological cultural adaptation groups: the ambivalent group reported less perceived discrimination than the integrated and separated group. Therefore it is not very likely that lack of acceptance by members of the host culture is an important explanation for the higher risk of mental health problems in the ambivalent group. We could not check for a lack of acceptance or of social support from migrant culture members, which may be an important mediator^{17,48,49}. Thirdly, psychological ambivalence may reflect a choice for individualization: a liberalist attitude against ethnocentrism and prejudices based on ethnic identity and stereotypes^{50,51}, which may involve higher stress levels.

The second risk factor, although less strong, was in the domain of religion. Compliance with the Ramadan reflects both personal importance of Islam and respect for Turkish culture and traditions⁴³. Non-compliance indicates a loss of bonding with the migrant culture. Unlike with psychological adaptation, it is difficult to think of an appropriate complement for this loss to acquire from or in the host culture. Therefore, we labeled non-compliance with Ramadan as ambivalence. Again both conflicts with parents and not feeling accepted by host members may play a mediating role. In this study compliance with Ramadan was related with more perceived discrimination than non-compliance, and not related with conflicts with parents. For this domain lack of acceptance by migrant culture members may be of more relevance to create feelings of outsider than lack of acceptance by host culture members.

Other indicators of cultural adaptation were not related with mental health problems: ethnic identity, language use and gender emancipation attitudes. The different indicators were not strongly interrelated, indicating that ambivalence in one domain can be independent of ambivalence in other domains. Further, the findings suggest that well-known indicators for the process of cultural adaptation as language use and ethnic identity^{24,25}, may not be very relevant for mental health among ethnic minority young adults. Language use may be more relevant for recent migrants, who still have to acquire language skills for the new language³⁰, and ethnic identity (formation) may be especially important during adolescence²⁰. Adolescence is characterized by a search for identity, in many areas, which may be stressful and confusing^{30,52}. It is possible that (ethnic) identity development of migrants gives more mental

health problems in adolescence, but less so in adulthood when identities have largely been formed³⁰. Another well-known indicator of cultural adaptation is interaction with members of the other culture. In our study 98% of the respondents had Turkish friends, and a majority of 82% also had Dutch friends. We could not identify ambivalence for this indicator, and it was not related with mental health problems. In summary, this study showed that for young adult migrant offspring mainly the psychological domain of cultural adaptation is of relevance for mental health, and several classical other domains are less so.

The findings of this study are subject to limitations. Firstly, our findings were cross-sectional associations. Theory helps us interpret the associations as determinants of mental health, however we cannot exclude the influence of mental health on the determinants. Findings will have to be confirmed with longitudinal data. Secondly, we examined cultural adaptation of young adults without taking into account the cultural adaptation of important others, such as parents. There may be an interaction between cultural adaptation of oneself and that of important others, leading to health risk only when there are discrepancies. Further research taking account of these possible interactions would be worthwhile. Thirdly, the analyses were restricted to one ethnic group. Thus, whether our findings can be generalized to other ethnic groups in the Netherlands, or in other countries remains to be studied. However, the findings will probably apply for ethnic minority young adults from ethnic groups with similar differences with the host culture as the Turkish culture.

In conclusion, we found support for a high risk of mental health problems of those in an ambivalent cultural adaptation position. This risk was most pronounced for the domains of psychological adaptation. Other domains are probably of more relevance in adolescence or in the first period after migration.

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6

Determinants of daily smoking in Turkish young adults in the Netherlands

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Abstract

Background

For large ethnic minorities in the Netherlands and other Western European countries knowledge about determinants of smoking is limited. Our aim was to study determinants of smoking in Turkish young adults, offspring of migrants in the Netherlands.

Methods

Cross-sectional survey of 439 Turkish adults (18-28y) in 2003. Smokers were compared with never smokers on five groups of determinants: demographic and socioeconomic factors, behavioral and emotional problems, psychosocial factors, and cultural factors. Associations were measured by prevalence rate ratios.

Results

Prevalences for men were 51% for daily smoking, 12% for former smoking, and 38% for never smoking, and for women 44%, 11%, and 47%, respectively. Without adjustment for other determinants higher smoking prevalence was associated with: male sex, emotional problems, boredom, life events, and specifically among women, low self-esteem and having children. In multivariate models demographic and socioeconomic factors and alcohol use were strongest determinants of daily smoking. Of the cultural factors only strong Muslim identification was associated with lower smoking prevalence.

Conclusions

Prevalence of smoking was high and warrants action. Many of the well-known determinants of smoking in Western countries were also important among ethnic minority young adults. Low educated people and women with children deserve special interest.

Background

Smoking is one of the greatest public health concerns^{1,2}, and many policies and health promotion campaigns have been implemented, especially over the past two decades. Smoking is a modifiable risk factor, but knowledge about the determinants of smoking behavior is necessary for effective interventions and for identification of priority groups for intervention. Determinants of smoking have been explored in many different domains. For example, smoking prevalence has been found to be higher among men (e.g.,³), among the lower educated in Western countries (e.g.,^{4,5}), and the unemployed (e.g.,⁶), among individuals who experience adverse life events or chronic stress (e.g.,^{5,7}), who have low self-esteem (e.g.,⁷), and little control of their lives (e.g.,^{7,8}), who are involved in other risk behavior (e.g.,^{5,9}), or have emotional problems (e.g.,^{7,10,11}). Sometimes determinants were sex specific (e.g.,^{6,12}).

Few studies have been done among ethnic minorities and migrants, although, in several migrant populations the prevalence of smoking is high¹³⁻¹⁵. These studies were predominantly in the UK and in the USA, and show mainly similarities in determinants of smoking among migrants and their offspring¹⁶⁻¹⁹. However, associations of smoking with socioeconomic position were mixed^{18,20,21}. Further, also culture specific determinants of smoking may exist among migrants, such as discrimination and ethnic identity (e.g.,^{20,22-25}). Acculturation theories predict that migrants will eventually adopt the behaviors of the host population they come into contact with^{26,27}. In addition, the association between acculturation and smoking may vary by educational level of migrants^{28,29}.

For large ethnic minorities in other Western European countries than the UK and the USA knowledge is limited^{28,29}. The largest immigrant group in the European community is the Turkish group, with over 3 million immigrants. Turkish immigrants arrived as labor migrants between 1960 and 1980 in countries such as the Netherlands, Belgium, Germany, France and Sweden. Smoking prevalence is high among Turkish male labor migrants (42-73%), and lower among female migrants (13-34%) compared to Dutch natives and migrants from other countries²⁸. We tested whether well-known determinants of smoking apply to ethnic minority Turkish young adults in the Netherlands. We studied five groups of determinants: demographic factors, socioeconomic factors, emotional and behavioral problems, psychosocial factors, and cultural factors.

Methods

Participants

In 1993, a random selection was drawn of 1198 children aged 4-18y with one or both parents born in Turkey from the municipal registers of Rotterdam and The Hague³⁰. Parents and children were interviewed at home. In 2003, the children, by now young adults, were interviewed again and information about smoking behavior and determinants was collected.

Table 6.1 – Flow of participants

1993	1198	Random sample (4-18y)		
			19	Did not fulfill inclusion criteria
			113	Incorrect address provided
	1066	Eligible		
2003	1066	Target sample (14-28y)		
				Loss to follow-up (9% of 1066)
			72	Unsuccessful tracing
			2	Deceased
			18	Moved out of region
	974	Approached (91% of 1066)		
			6	Did not fulfill inclusion criteria
	968	Eligible		
				Non-response
			168	Refusal
			97	Unreachable ^a
			64	Incorrect address
			18	Other reasons
	621	Respondents (14-28y) (64% of 968)	184	14-17 years old
	437	Respondents (18-28y)		

^a Unreachable after at least 3 attempts on different times spread over different days.

Of the original sample in 1993, 132 persons were excluded in 1993 because they did not fulfill inclusion criteria (n=19), or because the address provided was incorrect (n=113) (Table 6.1). Both respondents and non-respondents of the original representative sample of 1993 were traced through the municipal registers. Table 6.1 describes the flow of participants. Successful tracing was achieved for 994 (93%) of the 1066 children via the municipal registers. Two children had died. It was impossible to contact individuals who had moved outside the regions of Rotterdam and The Hague (n=18). We approached 974 (91% of 1066) people aged 14-28y for participation. Four had no parents born in Turkey, and two had severe intellectual disability; they were excluded. Thus 968 people were eligible. The response rate was 64% (621 of 968). Non-response had three main reasons: refusal (17%), incorrect address (6.5%), and unreachable after at least three attempts (10%). Only young adults (18-28y) were included in the analyses (N=437). More details of the study have been published previously³¹. All respondents were interviewed at home by a bilingual interviewer. The interview was in Dutch. Most respondents were born in The Netherlands (78%), and those born in Turkey arrived at young age (median age 3.5y). Most of them understand the Dutch language very well. The ethics committee of Erasmus University Medical Center approved the study. All participants have given written informed consent.

Attrition analyses showed that individuals who could not be approached (n=1066-974=92) did not differ in sex or age from those who were approached to participate. Respondents were

a little younger than non-respondents (21y vs. 22y, $p < 0.0001$). Attrition was not selective for sex, mental health in adolescence in 1993, country of birth, and parental socioeconomic position.

Variables

Smoking behavior Respondents reported on whether they smoked or had smoked in the past and how many cigarettes per day they smoked. They were classified as daily smoker, former smoker, or never smoker. Two respondents were excluded from the analyses because information on smoking behavior was missing, or the respondent smoked occasionally (i.e., not daily).

Categories of the determinants described below are displayed in table 6.2.

Demographic factors included age, sex, living with partner, and living with own children. Living with partner was defined as cohabitating for at least six months, or being married.

Socioeconomic factors were educational level and number of spells of unemployment after leaving school. Current education was categorized as low (drop-out, lower vocational training), moderate (intermediate vocational training), and high (higher vocational training, academic).

Emotional and behavioral problems were alcohol use, externalizing, and internalizing problems. Externalizing problems include aggressive, delinquent and intrusive behaviors; internalizing problems include anxious/depressed, withdrawn and psychosomatic complaints. These problems were measured with the Adult Self-Report ³². The Externalizing Problems Scale consists of 36 items (Cronbach's alpha 0.88), and the Internalizing Problems Scale of 39 items (Cronbach's alpha 0.91). Categories were formed with the 80th percentile of the distribution as cut-off value.

Psychosocial factors included boredom, number of life events experienced in the previous year, locus of control ³³, and self-esteem ³⁴. The life events were house-breaking/fire, and events involving a family member: death, an accident, problems with the law, financial problems, divorce, and health problems. For locus of control we summed the seven items (Cronbach's alpha 0.73), and total scores in the upper quartile of the distribution were categorized as internal locus of control and those in the lowest quartile as external locus of control. Self-esteem (10 items, Cronbach's alpha 0.84) was categorized similarly with scores in the upper quartile labeled as high and those in the lowest quartile as low.

Cultural factors were discrimination, having Dutch friends, ethnic identity, Muslim identity and generation. Discrimination was measured with one item: 'Generally spoken, how often do you feel you are discriminated because you are Turkish?'. Items for ethnic and Muslim identity were rated on a scale ranging from 'totally disagree (1)' to 'totally agree (5)'. Ethnic identity was assessed with the items 'I consider myself to be Turkish' and 'I consider myself to be Dutch', and answers were dichotomized (above/below 4). We used a 5-item instrument to measure Muslim identification ³⁵, which included cognitive Muslim identity, emotional

Table 6.2 - Distribution of determinants

	N	(%)		N	(%)
Demographic factors			Psychosocial factors		
Sex			Feel bored		
Women	189	49	Sometimes/never	316	82
Men	198	51	Often	71	18
Age			Life events		
18-23y	257	66	0	139	36
24-28y	130	34	1-2	201	52
Living with partner			≥ 3	47	12
No	265	68	Locus of control		
Yes	122	32	Internal	93	24
Living with children			Neutral	203	52
No	321	83	External	91	24
Yes	66	17	Self-esteem		
Socioeconomic factors			High	102	26
Education			Medium	196	51
High	93	24	Low	89	23
Middle	169	44	Cultural factors		
Low	125	32	Discrimination		
Unemployment			Sometimes/never	318	84
No spells	281	73	Often	61	16
1 spell	81	21	Missing	8	
≥ 2 spells	25	6	Dutch friends		
Emotional and behavioral problems			No	69	18
Alcohol use			Yes	318	82
No	295	76	Dutch identity		
Yes	92	24	No	313	81
Externalizing problems			Yes	74	19
No	312	81	Turkish identity		
Yes	75	19	No	49	13
Internalizing problems			Yes	338	87
No	317	82	Muslim identity		
Yes	70	18	No	128	33
			Yes	259	67
			Generation		
			Second	300	78
			First	87	22

N=387, 50 former smokers were excluded.

attachment, and identification as a Muslim (Cronbach's alpha 0.81). The average score was dichotomized (above/below 4).

Statistical analyses

We determined the proportion of smokers within each category of the determinants and tested for differences with a Chi-square test. Prevalence rate ratios were calculated as measure of relative risk (RR)³⁶. The relative risks express how much higher the prevalence of smoking in one group is than in another, e.g., a twice as high prevalence of smoking for men than for women yields a RR of 2.0. All variables from one set of predictors (e.g., demographic factors) were entered in the first series of models (models 1). For the second model (model 2) we entered all variables in one multivariate model. Interactions of each of the determinants with sex and education were assessed in the regression models. Significance was set at $p < 0.05$, borderline significant at $0.05 < p < 0.10$.

Results

The prevalence of daily smoking was 47% ($n=204$), of former smoking 11% ($n=50$), and of never smoking 42% ($n=183$). Prevalences for men were 51% daily smoking, 12% former smoking, and 38% never smoking, and for women 44%, 11%, and 47%, respectively. We present findings comparing the daily smokers with the never smokers, because the group of former smokers was too small for separate analyses. Findings were similar when former smokers were merged with the never smokers.

Table 6.2 presents the distribution of determinants in the study. A quarter of the Turkish young adults were highly educated. Only 3% of the respondents had experienced a divorce. Most of the respondents were born in the Netherlands (78%). The median age of arrival in the Netherlands of respondents who were born in Turkey was 3.5y, with only 10% older than 10 years at arrival.

Table 6.3 shows the proportion of smokers smoking by determinant categories (former smokers were excluded). Most determinants were related with smoking in the expected way. Smoking was more prevalent for men, adults living with partner and/or children, adults who experienced unemployment, used alcohol, had externalizing and/or internalizing problems, often felt bored, experienced multiple adverse life events, had external locus of control, and adults with low self-esteem. Interestingly, smoking was more common among lower educated people, a pattern that is common in especially Western populations. Of the cultural factors, only Muslim identification was associated with smoking. Similar associations were found when determinants were adjusted for the other determinants in their group (model 1 in Table 6.3), except for externalizing problems and for locus of control. Two determinants predicted smoking among women but not among men: living with children (RR women 1.54 (95%-Confidence Interval 1.07, 2.22)), men 0.84 (95%CI:0.58, 1.23)), and low self-esteem (RR women 2.45 (95%CI:1.28, 4.69), men 1.00 (95%CI: 0.65, 1.54)).

In the full adjusted model only living with partner, low education, and alcohol use were determinants of daily smoking; boredom and Muslim identification were also associated, but weaker. Low self-esteem was a determinant for women only (RR 2.15 (95%CI: 1.19, 3.88), men

Table 6.3 – Relative risks for smokers compared with never smokers by determinants

	Smoker (%)	Model 1 RR (95% CI)	Model 2 RR (95% CI)
Demographic factors (N=387)			
Age			
18-23y	50	-	-
24-28y	57	0.94 (0.75, 1.18)	1.01 (0.81, 1.26)
Sex			
Women	47*	-	-
Men	58	1.28 (1.06, 1.55)*	1.15 (0.94, 1.40)
Living with partner			
No	47**	-	-
Yes	65	1.35 (1.07, 1.71)*	1.23 (1.01, 1.52)*
Living with children			
No	49*	- ^a	-
Yes	68	1.19 (0.91, 1.55)	1.11 (0.87, 1.42)
Socioeconomic factors (N=387)			
Education			
High	35**	-	-
Middle	49	1.35 (0.98, 1.84) [†]	1.30 (0.95, 1.78) [†]
Low	70	1.81 (1.33, 2.47)**	1.59 (1.15, 2.19)*
Unemployment			
No spells	47*	-	-
1 spell	62	1.15 (0.93, 1.42)	1.03 (0.83, 1.27)
≥ 2 spells	80	1.39 (1.09, 1.78)*	1.23 (0.90, 1.67)
Emotional and behavioral problems (N=387)			
Alcohol use			
No	45**	-	-
Yes	77	1.68 (1.42, 2.00)**	1.46 (1.20, 1.79)**
Externalizing problems			
No	49*	-	-
Yes	65	1.04 (0.83, 1.31)	1.15 (0.91, 1.45)
Internalizing problems			
No	50*	-	-
Yes	66	1.24 (1.00, 1.55)*	0.89 (0.70, 1.14)

0.90 (95%CI: 0.56, 1.43)). Experience of multiple adverse life events was a determinant among the higher educated only (RR ≥3 events: high 3.50 (95%CI: 1.09, 11.21), low 1.09 (95%CI: 0.69, 1.72)). The relative risks of the most distal determinants (demographic and socioeconomic factors) were attenuated compared with the first model. Possibly, the more proximal determinants including emotional and behavioral problems and psychosocial factors mediate part of the association between demographic and socioeconomic factors and smoking.

Table 6.3 (continued)

	Smoker (%)	Model 1 RR (95% CI)	Model 2 RR (95% CI)
Psychosocial factors (N=387)			
Feel bored			
Sometimes/never	48**	-	-
Often	70	1.31 (1.09, 1.59)*	1.19 (0.98, 1.44)†
Life events			
0	45**	-	- ^b
1-2	54	1.16 (0.93, 1.45)	1.10 (0.87, 1.39)
≥ 3	68	1.38 (1.05, 1.81)**	1.25 (0.93, 1.70)
Locus of control			
Internal	44**	-	-
Neutral	48	0.88 (0.64, 1.21)	0.89 (0.66, 1.20)
External	71	1.16 (0.82, 1.64)	1.11 (0.78, 1.57)
Self-esteem			
High	40**	- ^a	- ^a
Medium	52	1.28 (0.93, 1.76)	1.11 (0.82, 1.50)
Low	67	1.43 (0.99, 2.05)†	1.23 (0.86, 1.76)
Cultural factors (N=379)			
Discrimination			
Sometimes/never	52	-	-
Often	56	1.05 (0.81, 1.36)	0.93 (0.71, 1.22)
Dutch friends			
No	57	-	-
Yes	52	0.88 (0.69, 1.12)	1.00 (0.78, 1.27)
Dutch identity			
No	51	-	-
Yes	57	1.12 (0.88, 1.41)	1.21 (0.96, 1.52)
Turkish identity			
No	55	-	-
Yes	52	1.04 (0.79, 1.36)	1.14 (0.88, 1.48)
Muslim identity			
No	62*	-	-
Yes	48	0.76 (0.63, 0.92)*	0.83 (0.68, 1.01)†
Generation			
Second	54	-	-
First	46	0.87 (0.68, 1.12)	0.84 (0.65, 1.08)

Model 1 determinants by group of determinants; Model 2 all determinants (n=379);

Prevalences were tested by Chi-square test; RR relative risk (i.e., prevalence rate ratios); 95% CI 95%-confidence interval; - reference group; 50 former smokers were excluded;

† P<0.10; * p<0.05; **p<0.001;

^a Interaction by sex p<0.05;

^b Interaction by educational level p<0.05.

Discussion

Smoking was related with many of the well-known determinants of smoking behavior in Turkish young adults. Cultural factors were not related with smoking except for Muslim identity.

The prevalence of smoking of Turkish young men in the Netherlands was higher than that of Dutch young men living in large cities³⁷, and was lower than that of first-generation Turkish male migrants²⁸. For Turkish young women the smoking rate was similar to that of Dutch peers in large cities³⁷, and higher than that of first-generation Turkish female migrants²⁸. Compared with Turkish adults in Turkey in general (men 51%, women 11%)³⁸, and in large cities in Turkey, the prevalence of smoking of Turkish young men in the Netherlands is lower (men in Ankara 65%, and Istanbul 64%), and findings were mixed for women (women in Ankara 8%, and Istanbul 56%)^{39,40}. In Istanbul the prevalence of smoking was especially high among young adults⁴⁰.

Studies of determinants of smoking among young adults in Western countries showed similar positive associations as this study for low education^{5,16,41}, living with children (especially for lower socioeconomic groups)^{5,16,42}, emotional problems and behavioral problems^{5,11,16,43}, and low self-esteem¹⁶. However, for some of the determinants findings differed. For example, previous findings were mixed for differences in smoking behavior between young adults with and without a partner^{16,41}. In another study smoking behavior depended on smoking behavior of the partner⁵. Sex differences have been found for unemployment: a stronger association with smoking among young women than men^{6,12}. Possibly, the number of frequent unemployed in our study was too small to reveal sex differences.

In line with our findings, studies of determinants of smoking behavior have reported mainly similarities in determinants between ethnic groups^{12,17,19,21,25,42,44,45}. Many of these studies were among adolescents, with emphasis on the start of smoking and on the transition from experimental smoking to regular smoking. Furthermore, most of these studies were in the US, and little is known about smoking determinants across ethnic minorities in Europe.

The strongest determinant was level of education. In Western countries smoking is more prevalent among lower educated people⁴, whereas in developing countries this association is mostly not present or opposite. The diffusion of innovations theory predicts that socioeconomic patterns of smoking shift from concentration among the higher socioeconomic groups (positive gradient) to the lower socioeconomic groups (negative gradient) as cigarette use spreads through a population and begins to decline^{46,47}. It is unclear how long it will take before the negative gradient in smoking found in Western populations, also appears among ethnic minorities¹⁸. In the US and Canada the negative gradient was more pronounced for second- than for first-generation migrants, and even more pronounced for third-generation migrants^{18,48}. Our results showed a clear negative gradient for Turkish young adults (migrant offspring) in the Netherlands.

Except for Muslim identification, the cultural determinants in this study were not related with smoking prevalence. It is possible that those who strongly identify themselves as Muslim

more strictly follow the Islamic rules in which use of addictive substances, intoxicants and substances that harm health are forbidden²⁵. Contrary to our findings, three previous studies found more smokers among black Americans who experienced discrimination²⁴.

This study has its strengths in that it is the first to report on smoking behavior and determinants of young adult migrant offspring in Europe, apart from the UK. A wide range of well-known determinants was included. However, certain determinants were not included, such as smoking behavior of peers and family, attitudes towards smoking behavior and cessation, self-efficacy, and material deprivation. Many similarities were found for factors of social cognition theories in a study among first-generation migrants in the Netherlands⁴⁹. Further, all associations were cross-sectional and thus useful for distinguishing daily smokers from never smokers, but not suitable to assess the direction of causality. The group of former smokers was too small for separate analyses to give more insight in the predictors of smoking cessation.

Our results provide insight into several aspects relevant for prevention. Firstly, most of the determinants were similar to those found for young adults in Western countries suggesting that, (preventive) interventions that target populations at risk, characterized by the studied determinants, can be useful for Turkish migrant young adults too. However, this suggestion will have to be examined further. Secondly, a strong negative socioeconomic gradient appeared for both men and women, suggesting that interventions to help smoking cessation should be targeted especially at the lower educated, and prevention of smoking especially among adolescents in lower vocational schools. Thirdly, smoking prevalence was particularly high (64%) among Turkish women with children. This is of concern, because of the harmful effects of passive smoking for children⁵⁰. Therefore, pregnant Turkish women and young Turkish mothers should be a priority group for smoking interventions. Last, as smoking is more prevalent among Turkish young adults with a partner, it seems useful to involve partners in smoking cessation programs.

Conclusions

Many of the well-known determinants of smoking in Western countries were determinants in young adult migrant offspring too. Prevalence of smoking was high and warrants intervention and prevention. Groups that should be of special interest are adults with low educational level and women with children.

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7

Ethnic disparities in mental health in adolescence and educational attainment in adulthood

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Abstract

Study background and aims

Ethnic disparities in mental health in adolescence may play a role in the development of ethnic disparities in educational attainment. The aim was to assess the contribution of ethnic disparities in mental health problems in adolescence to ethnic disparities educational attainment in adulthood.

Methods

We followed two community samples of respectively 486 Dutch native and 168 Turkish migrant adolescents (11-15y) into adulthood (21-25y). Mental health was measured in adolescence, and educational attainment was assessed in adulthood. The contribution of mental health disparities to educational disparities was estimated by the degree of attenuation of the odds ratio (OR) for low education after adjustment for mental health problems.

Results

Adult Turkish men more often had attained only lower education than Dutch men (OR 1.81 (1.01 – 3.25). Additional adjustment for mental health problems during adolescence did not change the OR. In Turkish women, however, the OR was 1.94 (1.04 – 3.62), and adjustment for mental health problems lowered it by 96% to 1.04 (0.51 – 2.14). The contribution was mostly due to ethnic disparities in internalizing problems.

Conclusion

In women, but not in men, mental health problems were a strong predictor for low educational attainment. Together with the higher prevalence of especially internalizing problems in adolescence, the association with education made ethnic disparities in internalizing problems an important mediator in the development of ethnic disparities in educational careers. Prevention or treatment of internalizing problems among Turkish girls will probably contribute to the prevention of educational disparities.

Introduction

In many countries substantial disparities in health outcomes exist between ethnic groups^{1,2}. One of the most important explanations for these ethnic disparities is probably the difference in socioeconomic position between different ethnic groups^{3,4}. Especially first-generation labor migrants have a lower socioeconomic position than natives in Western countries. Their children, who grow up in the host country, often still have a lower socioeconomic position than native children once they grow up to be young adults⁵. A life course perspective is useful to understand how these ethnic disparities arise. This perspective takes account of how socially patterned exposures during childhood, adolescence and early adult life influence adult socioeconomic position and disease risk⁶. For example, disadvantage in early life may translate in childhood health problems, which in turn may lead to a lower adult socioeconomic position, which may then affect the next generation's childhood health: a vicious circle. Insight in socially patterned exposures in early life will help policy and health care practice to set priorities for prevention of adverse life trajectories, and prevention of disparities in health and other domains in adulthood. In this paper we intend to contribute to this understanding by examining the role of ethnic disparity in mental health in adolescence as a predictor of ethnic disparity in educational attainment.

Children of labor migrants are often thought of being at risk of mental health problems. The main idea is that growing up with two or more, sometimes conflicting, cultural environments exposes children to considerable stress. In addition, they often grow up in poorer socioeconomic circumstances, a consequence of their parents' background as labor migrants. Indeed, some studies have found less favorable mental health of migrant youth compared with natives^{7,8}. Further, children with mental health problems were at risk for less successful educational careers in several prospective studies⁹⁻¹³.

The elevated risk of mental health problems of children of labor migrants may thus subsequently affect their educational attainment through selection into less successful school careers. Several studies have found that migrant offspring are at risk for less successful school careers^{5,14-16}. The disadvantaged socioeconomic background of many migrant families will probably contribute to both the ethnic disparities in mental health problems and those in educational attainment^{10,11,13,17,18}.

We focused on the role of mental health problems and hypothesized that ethnic disparities in mental health problems in adolescence may predict ethnic disparities in educational attainment in young adulthood. We have tested this hypothesis in a longitudinal study in which Turkish migrant and Dutch native adolescents in the Netherlands were followed up into young adulthood. We have chosen to study Turkish immigrants because they form the largest immigrant group in the European Community. Most of the first-generation Turkish male immigrants arrived as labor migrants between 1960 and 1980 in countries such as the Netherlands, Belgium, Germany, France and Sweden. In the Netherlands, where Turkish immigrants form the largest non-Western immigrant group, Turkish adolescents report more

problem behavior, especially emotional problems, than Dutch adolescents^{7,8}. In addition, Turkish young adults more often have a lower educational level than Dutch young adults (55% vs. 25%)¹⁹.

We have divided the study question into three subquestions: (1) Do Turkish young adults have lower educational attainments in young adulthood than Dutch natives?; (2) Do mental health problems of Turkish migrant and Dutch native adolescents predict lower educational attainment?; and (3) Can disparities in mental health problems in adolescence explain disparities in educational attainment in young adulthood, and to what extent? In answering these questions we have taken account of the lower socioeconomic background of migrant families, differences in family situation in adolescence, and differences in school performance until adolescence.

Methods

Setting

We have used data from two studies in the densely populated province of Zuid-Holland of the Netherlands. The study of Dutch native children was developed to study the mental health and development of these children as they grow-up. A second study modeled on the study of Dutch native children started, after indications became apparent of higher prevalence of mental health problems among Turkish youth. This second study took place in Rotterdam and The Hague, where most migrants in Zuid-Holland live. The study confirmed the higher rate of mental health problems among Turkish adolescents^{7,20,21}.

Turkish migrant sample

For the Turkish migrant sample we used data from 1993 and 2003. The study in 1993 included 1198 Turkish children aged four through eighteen years, randomly selected from municipal registers of The Hague and Rotterdam. Of these children 19 were not eligible as they had a severe intellectual disability, or did not have at least one parent born in Turkey. From the 1179 eligible children, 833 (71%) parents were interviewed in the study. Of the 425 adolescents (11-18y), 379 (89% of 425) filled out the Youth Self-Report (YSR). In 2003 we traced addresses via municipal registers. We could not follow-up 17 children because they moved out of the region (n=8), died (n=2), moved abroad (n=3), or were untraceable (n=4). We approached 362 (96%) of the 379 children for participation, and 217 were interviewed in 2003 (60% of 362). Reasons for non-response at follow-up were mainly refusal (18%), impossible to reach respondent after at least three attempts (11%), and incorrect address provided by the municipality (8%).

Response in 1993 was not selective with regard to the age of the child, sex of the child, and socioeconomic position of the parents. The proportion of second-generation children among respondents was higher than on average in the Netherlands. Response in 2003 was not selective for age, sex, and level of education and occupation of parents, mental health reported by parents and by adolescents themselves in 1993, and not for school performance in 1993.

Dutch sample

The Dutch sample was from the longitudinal Zuid-Holland Study. The original random sample in 1983 consisted of 2600 children (4-16 years) from the province of Zuid-Holland, and 2076 parents completed the questionnaire (80%). For details of the initial data collection see Verhulst et al.^{22,23} After the baseline measurement in 1983 the sample was approached again in 1985, 1987, 1991 and 1997. We have used the data from 1987 and 1997. In 1983, 1291 children were between 7 and 14 years, and therefore eligible for filling out the Youth Self-Report in 1987. In 1987, 929 children completed the YSR (72% of 1291), and in 1997, 753 young adults participated in the interview (81% of 929).

The response in 1983 was not selective with regard to age of the child, sex of the child, and socioeconomic position of the parents. From 1983 to 1987 attrition was selective for age, sex and socioeconomic position of parents. Compared with the dropouts in 1987 the respondents of 1987 were younger (mean 10.3y vs. 11.0y in 1983, $p < 0.0001$), more frequent women (53% vs. 45%, $p = 0.007$), and their parents had a higher socioeconomic position ($\chi^2 = 20.6669$, 5df, $p = 0.0009$). Attrition was not selective for mental health (reported by parents) in 1983.

From 1987 to 1997 attrition was only selective for age, i.e., respondents were younger than dropouts (mean 14.4y vs. 15.6y in 1987, $p < 0.0001$). Attrition was not selective with regard to sex, socioeconomic position of the parents, and mental health reported by parents and by adolescents themselves in 1987.

Selection of respondents

For our analyses we have selected only adolescents with age 11-15y (Turkish $n = 186$, Dutch $n = 492$). In the Netherlands education is compulsory until the age of 16 years. By selecting 11-15-year-olds we have tried to measure mental health problems before educational attainment, which we assessed at age 21-25y.

Mental health problems

In both studies mental health problems in adolescence were measured with the Youth Self-Report (YSR)^{24,25}. This is a self-report questionnaire with 102 problem items for adolescents aged 11-18 years intended to assess psychopathology in adolescents. The problem items can be grouped on two broadband scales: Internalizing Problems (including items on anxiety, depression, withdrawn behavior, and somatic complaints) and Externalizing Problems (including items on aggressive and delinquent behavior). All 102 items together form the Total Problems Score (including besides items on internalizing and externalizing problems, items on thought, social, and attention problems and other problems). Problem items were scored 0 if the item was 'not true', 1 if it was 'somewhat or sometimes true', and 2 if it was 'very true or often true', during the past six months. The internal consistency of the scales was high among Turkish and Dutch adolescents, and good reliability and validity were confirmed for both the Dutch translation²⁴ and for the Turkish translation in Turkey^{26,27}. The Dutch translation was used for both Dutch native and Turkish migrant adolescents, since all adolescents were educated

in Dutch. The test-retest reliability of the YSR over an average period of 9 days was $r=0.78$ for the Total Problems Score for Turkish migrant adolescents.

Educational attainment

Educational attainment was assessed by self-report at follow-up, age 21-25y. Level of education was grouped in two levels: (1) drop-out of secondary education, or lower vocational education, and (2) intermediate or higher vocational education and academic education (i.e., $\geq 7y$ secondary education with certificate). Students were classified by their current training. The first level will be referred to as 'low' and the other level as 'high' throughout the paper.

Confounders

We have adjusted all our analyses for possible confounders: sociodemographic background (age, socioeconomic position of parents), family situation at baseline, and school performance until baseline measurement^{9,28}. Socioeconomic position of the parents was indicated by the highest occupation of either parent at baseline and coded as 'low' (manual, or low non-manual), and 'high' (self-employed, or intermediate non-manual, or high non-manual)²⁹. Family situation at baseline was indicated by whether the child lived with one, or with two parents (missing for 6 Dutch adolescents). School performance was measured in three ways: whether the adolescent had ever repeated a grade or not, by item 61 of the YSR 'My school performance is poor', and whether the adolescent was in special education at baseline. Each of these three measures for school performance correlated strongly with the outcome measure for low educational attainment.

Statistical analyses

First, we assessed disparities in mental health problems in adolescence, and in educational attainment in adulthood. Then we checked the association between mental health problems and educational attainment, adjusted for confounders. We used logistic regression models to calculate odds ratios (OR) for low educational attainment, with Dutch natives as reference group. In the first model we adjusted for confounders only, and in subsequent models we additionally adjusted for the three YSR problem scores (i.e., mental health problems). We used the change in OR as an indication of the predictive value of disparities in mental health in adolescence for the development of educational disparities³⁰. All analyses were for men and women separately as findings indicated significant sex differences.

Results

Adult Turkish men and women had attained a lower education level than Dutch men and women (Table 7.1). In addition, in adolescence they had less favorable mental health as indicated in Table 7.1 by higher scores for Internalizing Problems (e.g., men: 12.2 vs. 6.1) and Total Problems (e.g., men: 36.5 vs. 24.0). Furthermore, Turkish girls had a less favorable (higher)

Table 7.1 – Baseline and follow-up characteristics of Turkish migrants and Dutch natives

	Men			Women		
	Turkish	Dutch	P-value ^a	Turkish	Dutch	P-value ^a
N	86	232		82	254	
Baseline characteristics						
Age at baseline ^b	12.7 (12.4-13.0)	13.2 (13.0-13.3)	0.01	12.9 (12.6-13.2)	13.2 (13.0-13.4)	0.07
Parental occupation ^c			<0.0001			0.0007
Low	74 (86)	138 (59)		67 (82)	156 (61)	
High	12 (14)	94 (41)		15 (18)	98 (39)	
Single parent	6 (7)	19 (8)	0.73	7 (9)	14 (6)	0.33
Special education	4 (5)	19 (8)	0.28	2 (2)	14 (6)	0.26
Repeated a grade	34 (40)	59 (25)	0.01	29 (35)	47 (19)	0.002
Poor schoolwork			0.30			0.05
Often or always	3 (3)	4 (2)		5 (6)	6 (2)	
Sometimes	23 (27)	48 (21)		23 (28)	50 (20)	
Never	60 (70)	180 (78)		54 (66)	198 (78)	
Mental health ^{b,d}						
Internalizing Problems	12.2 (11.0–13.4)	6.1 (5.3–6.8)	<0.0001	14.3 (12.9-15.6)	6.7 (6.0-7.4)	<0.0001
Externalizing Problems	9.4 (8.1–10.7)	8.3 (7.6–9.1)	0.16	9.8 (8.6-11.0)	7.0 (6.4-7.7)	<0.0001
Total Problems	36.5 (33.2–39.8)	24.0 (22.1–26.0)	<0.0001	39.6 (36.1-43.0)	22.5 (20.6-24.4)	<0.0001
Follow-up characteristic						
Level of education ^e			0.003			0.003
Low	35 (41)	55 (24)		29 (35)	49 (19)	
Medium / High	51 (59)	177 (76)		53 (65)	205 (81)	

N (column percentages);

^a Dutch natives vs. Turkish migrants;

^b mean (95% confidence interval);

^c Low: manual, or low non-manual; High: self-employed or intermediate/high non-manual;

^d Adjusted for baseline characteristics: age, repeated a grade, school performance, special education, single parent, and parental occupation;

^e Low: drop-out of secondary school or only lower vocational education; Medium/High: intermediate/higher vocational education or academic education.

score for Externalizing Problems than Dutch girls (9.8 vs. 7.0). Mental health problems in adolescence were associated with educational attainment in women but not in men (Table 7.2). Women with a low educational level had higher scores of Internalizing (10.6 vs. 7.9) and Externalizing Problems (9.3 vs. 7.3) in adolescence than women with high education.

Turkish migrants had an elevated risk of low educational attainment, also after adjustment for confounders (OR men 1.81; women 1.94, Table 7.3). For women, ethnic disparities in Internalizing Problems during adolescence predicted disparities in educational attainment: additional adjustment for Internalizing Problems reduced the elevated risk by 86% to a non-significant 1.13 (95% CI 0.54 to 2.36). Disparities in Externalizing Problems also predicted

Table 7.2 – Educational level in adulthood (21-25y) by mean problem scores in adolescence (11-15y)

Education:	Men		Women	
	Low	Medium/high	Low	Medium/high
Problem scores in adolescence:				
Internalizing Problems	7.2 (6.0 - 8.4)	7.9 (7.2 - 8.6)	10.6 * (9.2 - 12.0)	7.9 (7.2 - 8.6)
Externalizing Problems	9.0 (7.8 - 10.2)	8.5 (7.7 - 9.3)	9.3 * (8.1 - 10.5)	7.3 (6.7 - 7.9)
Total Problems	26.8 (23.6 - 30.0)	27.6 (25.6 - 29.6)	33.4 * (29.9 - 36.9)	24.6 (22.8 - 26.4)

Mean scores (and 95%-confidence intervals) were adjusted for baseline characteristics: age, repeated a grade, school performance, special education, single parent, parental occupation, and migrant status;

* P-value of difference score for low vs. medium/high education <0.005

Table 7.3 - Odds ratios for low level of education for Turkish migrant men and women, crude and adjusted for mental health problems

Migrant status:	Men			Women		
	Turkish		Dutch	Turkish		Dutch
Model:	OR	(95% CI)	OR	OR	(95% CI)	OR
Confounders	1.81	(1.01 - 3.25)	1.00	1.94	(1.04 - 3.62)	1.00
Conf + Internalizing Problems	2.12	(1.09 - 4.14)	1.00	1.13	(0.54 - 2.36)	1.00
Conf + Externalizing Problems	1.78	(0.99 - 3.20)	1.00	1.61	(0.84 - 3.06)	1.00
Conf + Total Problems	1.90	(1.01 - 3.56)	1.00	1.04	(0.51 - 2.14)	1.00

Confounders were characteristics at baseline: age, repeated a grade, schoolwork, special education, single parent, parental occupation; OR odds ratio, CI confidence interval.

educational disparities, but to a lesser extent: additional adjustment for Externalizing Problems reduced the elevated risk by 35% to 1.61. Finally, after adjustment for Total Problems the risk was no longer elevated: 1.04. In men adjustment for mental health problems hardly changed the elevated risk. This was expected because in Turkish and in Dutch men mental health problems were not related to educational attainment.

Discussion

This study of the life courses of migrant and native youth showed that adolescent mental health problems were predictive of the adverse life trajectory of a less successful educational career among women. As these problems were more prevalent among migrant youth, they contributed to disparities in educational attainment in adulthood. Among men disparities in mental health were not predictive of educational outcome.

Interpretation and explanations

Our hypothesis was that ethnic disparities in problem behavior in adolescence could predict ethnic inequalities in educational level in adulthood. We did find that in women disparities

in problem behavior contributed strongly to educational disparities. Unfortunately we could not study the specific mechanisms for the association between mental health problems and educational attainment. Some of the risk factors for mental health problems in adolescence probably also influence educational outcome through affecting mental health problems (e.g., socioeconomic background). Mental health problems may influence education among others through causing intermediate educational outcomes (e.g., repeating a grade), through limiting resources necessary for successful education (e.g., ability to concentrate), and through inducing unfavorable classroom behavior (e.g., avoidance of contact with teachers)^{12,13}. We are not aware of any other study that has presented findings on the same hypothesis as ours. In the next paragraphs we compare our findings with those of others with regard to the association between ethnicity and problem behavior in adolescence, and the association between problem behavior and educational attainment.

In our sample, Turkish migrant adolescents reported more mental health problems than Dutch natives. Findings on mental health problems of migrant children compared with native children have yet been inconclusive. Some reported less favorable mental health for migrant children^{7,8}, others reported similar mental health³¹⁻³³, or more favorable mental health³⁴. In other studies findings differed according to informant or ethnic group^{35,36}. Studies with Turkish migrant adolescents in Europe showed similar findings of less favorable health compared with natives^{7,8,36}. Therefore, we expect that our findings can be generalized to Turkish children in other (Western) countries where native youth have similar mental health as in the Netherlands. In how far the findings can be generalized to other migrant groups remains to be studied.

Consistent with prior longitudinal research, we found that externalizing problems were associated with educational attainment in women⁹⁻¹¹. In contrast with the findings of these studies, we also found that internalizing problems were associated with educational attainment in women, which is consistent with findings of others^{13,37,38}. The discrepancy for internalizing problems might be explained by difference in adjustment for co-morbidity. McLeod and Kaiser demonstrated that by adjustment of the effect of internalizing problems for co-morbid externalizing problems the association between internalizing problems and education was strongly attenuated¹³. We have also observed this attenuation by adjustment for co-morbidity in our data. Because the internalizing/externalizing overlap exists in nature, manipulation to obtain pure groups would be contrived. Therefore we have chosen to look at internalizing and externalizing problems regardless of co-morbidity.

The gender differences that we have found are not consistent with previous prospective studies. These have reported no gender differences^{9,11,13}. The most striking difference is that externalizing problems were not related to educational attainment in men. One of the differences between our study and others is that we followed adolescents into adulthood, whereas others have followed younger children into adulthood^{9,13}. McLeod and Kaiser found that the main mechanism for childhood problems to influence high school degree receipt is through a chain of educational failures in elementary, middle school and high school, especially through

the likelihood of repeating a grade¹³. Possibly, we did not find an association because by adjusting for possible confounding by school performance we may have concurrently adjusted for the mechanism by which externalizing problems affect school career: pre-adolescence school performance. Indeed, when we did not adjust for school performance, we did find that a higher score for externalizing behavior in adolescence was associated with low educational attainment in men (mean score in low education group 9.7; in high education group 8.2, $p=0.06$). In women adjustment for pre-adolescence school performance did not influence the association between externalizing problems and educational attainment. Possibly, problem behavior is associated with school careers by different mechanisms in men and women. Regarding internalizing problems, this possible explanation did not hold. However, we found a stronger correlation between adolescent-report of internalizing problems and teacher-report of attention problems in boys than in girls. Perhaps, within a school setting boys with emotional problems are also more often than girls referred to health care by teachers (albeit for attention problems), and therefore internalizing problems may be less harmful for educational attainment in boys.

Methodological considerations

The main strength of our study was that it is the first to relate ethnic disparities in mental health problems in adolescence with ethnic disparities in educational level in adulthood. Furthermore, it was a prospective study with a within subject design, the samples were fairly representative, and response rates were satisfactory. We measured mental health problems in a dimensional way, with as advantage that we could observe effects over the whole range of severity and not only restricted to children with psychiatric diagnoses. Attrition was higher in the Turkish sample than in the Dutch sample. Although we did not find strong selective attrition, we cannot exclude selective attrition on other than the measured possible selective factors. Usually, those with the least successful life trajectories drop out of prospective studies. Therefore we may have underestimated the proportion respondents with low-level education more in the Turkish than in the Dutch population.

We have chosen the confounders included in our analyses on the basis of the groups of most important confounders for the association between problem behavior and educational attainment from other studies: family sociodemographic background, family functioning, and cognitive ability^{9,13}. It is possible that other characteristics, for which we did not control, account for some of the observed effect, for example parental psychopathology, and parental education¹⁰. We have calculated the association between mental health problems and educational attainment in the Turkish migrants with additional adjustment for parental score on the General Health Questionnaire and for parental education, but the associations did not change. This information was not available from the parents of the Dutch children. Another confounder could have been perceived discrimination, however this is not very likely as an equal proportion of high and low educated Turkish adults reported experience of discrimination in schools (20%), and experience of discrimination in general (21%).

Some of the respondents were students and we classified them according to their current training. Some of them will not complete this training, however 84% of them had already completed a level of education that is above our cut-off point for low educational attainment. This number was the same for Turkish and Dutch students. Therefore the overestimation of high educational attainment was probably limited and did not differ by ethnicity.

Conclusion

In conclusion, in Turkish migrant women, but not in men, disparities in mental health problems in adolescence, especially internalizing problems, contributed substantially to the development of disparities in educational attainment. From a life course perspective this information is useful for the understanding of the development of adverse life trajectories and disparities in education. Further for policy makers and other professionals in school and health care, the findings emphasize the importance of primary and secondary prevention of mental health problems in Turkish migrant adolescent girls.

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8

Ethnic disparities in problem behavior in adolescence contribute to ethnic disparities in social class in adulthood

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Abstract

Background

It is important for prevention of social class disparities to know how ethnic disparities in social class arise among migrant children. We contribute to this understanding by examining the role of problem behavior in adolescence.

Methods

Prospective observational study with 753 Dutch native and 217 Turkish migrant adolescents (11-18y) followed for 10 years. Internalizing and externalizing problems were assessed in adolescence and employment status and occupational level were assessed in adulthood. The difference in odds ratios (OR) before and after adjustment for internalizing and externalizing problems was an indication of the predictive value of disparities in internalizing and externalizing problems for the development of social class disparities.

Results

A total of 135 (62%) of the Turkish and 602 (80%) of the Dutch adults were employed. Internalizing and externalizing problems were not associated with employment status. Of the employed, 65 (48%) Turkish and 179 (30%) Dutch adults worked in low-level occupations ($p < 0.0001$). Internalizing and externalizing problems were associated with both ethnicity and occupation. The OR for low-level occupation for Turkish adults was 1.78 (1.19 – 2.65), indicating ethnic disparities. Adjustment for internalizing problems lowered the OR with 36% to 1.50 (0.97 – 2.31), and adjustment for externalizing problems lowered it with 8% to 1.72 (1.15 – 2.57). Findings were similar for men and women and did not vary by age.

Conclusions

Ethnic disparities in occupational level in adulthood could partly be attributed to disparities in mental health between Turkish migrants and Dutch natives in adolescence. Prevention of ethnic disparities in mental health at young age may therefore also contribute to the prevention of occupational differences in adulthood.

Introduction

Within many countries substantial disparities in health outcomes exist between ethnic groups^{1,2}. Socioeconomic position is often mentioned as one of the important explanations of ethnic disparities^{3,4}. A low socioeconomic position is associated with many health outcomes⁵, and ethnic minority populations often have a lower socioeconomic position than the ethnic majority^{6,7}. The latter is especially true for first-generation labor migrants. Their children, who grow up in the host country, still have a lower socioeconomic position as adults than natives, although they are enrolled in the same educational system as natives⁸. It is important for prevention of social class disparities to know how ethnic disparities in social class arise among migrant children.

In this paper we want to contribute to this understanding, by examining the role of problem behavior in adolescence. Prospective observational studies have mainly focused on education or employment status as indicators of socioeconomic position, and have shown that externalizing problems and internalizing problems in childhood probably have negative consequences for educational achievement and employment⁹⁻¹². Fewer studies are available for occupational level. Power et al reported selection into lower occupational levels for those with mental health problems at age 16 in the 1958 British birth cohort¹³. In this study and those on educational achievement no findings specific to ethnic groups were reported.

Different mechanisms have been suggested and tested by which mental health problems in childhood may lead to lower social class in adulthood. These mechanisms mainly included contextual circumstances, such as parental involvement, material deprivation, and school composition^{9,10,14}. Therefore, one might expect similar associations among migrant children and native children. If externalizing and internalizing problems are unequally distributed between migrant children and native children, then the disparities in these problems may contribute to the disparities in acquirement of socioeconomic position.

We have tested this hypothesis in a sample of Turkish migrant and Dutch native adolescents in the Netherlands who were followed up into young adulthood. Previously we have found ethnic disparities in problem behavior among the adolescents in this sample, most pronounced for internalizing problems, but also present for externalizing problems, with more problems in Turkish adolescents than Dutch natives^{15,16}. The study question was split up into three questions: (1) Are Turkish migrants more often unemployed, or employed in low-level occupations in young adulthood than Dutch natives?; (2) Is problem behavior in adolescence in Turkish migrants and in Dutch natives related to employment status and to employment in low-level occupations in adulthood?; and (3) Can disparities in problem behavior in adolescence explain disparities in employment status and occupational level in young adulthood, and to what extent?

Methods

Setting

Turkish men, predominantly young and healthy, came to the Netherlands in the 1960s and 1970s to take part in the Dutch labor force. This migration resulted from the poor economic conditions in their country of origin, and the shortage of labor force in the Netherlands. Although their initial intention was to stay only temporarily, a large proportion decided to stay permanently, and brought their families to the Netherlands. Nowadays Turkish migrants form the largest non-Western migrant group in the Netherlands, with around 341,000 people¹⁷. Similarly, in other European countries Turkish migrants also form large groups of labor migrants (e.g.,^{18,19}).

Samples

We have used data from two studies on problem behavior of children in the Netherlands^{15,20}. Both studies were observational prospective studies aimed at describing the development of children into adulthood. They took place in the province of Zuid-Holland, a very dense populated area with only 10% rural area. Rotterdam and The Hague are the two largest cities of the province and cover 31% of the total population. Most migrants in Zuid-Holland live in Rotterdam or The Hague. From both studies we selected adolescents (11-18y) and used a follow-up period of 10 years. We used two separate samples, of which data were collected in partly overlapping periods. However, there were no secular trends in problem behavior among Dutch children and adolescents²¹, and there were no major economic changes in the Netherlands²².

Turkish migrant sample The Turkish migrant sample was followed up for 10 years from 1993 to 2003. The study in 1993 included a random sample of 1198 Turkish children aged 4-18 years from The Hague and Rotterdam. Of these children 19 were not eligible as they were mentally retarded, or did not have at least one parent born in Turkey. Parents of 833 (71%) children were interviewed in the study. Of these children 425 were adolescents (11-18y), and 379 of them filled out a questionnaire on problem behavior (89% of 425). In 2003 we traced addresses via municipal registries. We could not follow-up 17 adolescents because they moved out of the region (n=8), died (n=2), moved abroad (n=3), or were untraceable (n=4). At follow-up in 2003 we approached 362 of the 379 young adults for participation, and 217 were interviewed in 2003 (57% of 379). Main reasons for non-response at follow-up were refusal (18%), impossible to reach respondent after at least three attempts (11%), and incorrect address provided by the municipality (8%). Of the respondents 26% were born in Turkey and 74% in the Netherlands. Those born in Turkey arrived in the Netherlands at young age.

Response in 1993 was not selective with regard to the age of the child, sex of the child, and socioeconomic position of the parents. Response in 2003 was not selective for age and sex of the child, socioeconomic position of parents, and parent and self-reported problem behavior

scores in 1993. Thus, attrition was not selective with regard to demographics, socioeconomic position and problem behavior in adolescence.

Dutch sample The Dutch sample was followed-up from 1983 to 1997. We used data from 10-year follow-up from 1987 to 1997, because in 1987 the respondents were aged 11-18 years. The original random sample in 1983 consisted of 2600 children from the province of Zuid-Holland, and 2076 parents completed the questionnaire (80%)²⁰. After the baseline measurement in 1983 the sample was approached again in 1985, 1987, 1991 and 1997. In 1987, 1291 children were between 11 and 18 years. Of these adolescents 929 participated (72% of 1291), and at follow-up in 1997, 753 young adults participated in the interview (81% of 929).

The response in 1983 was not selective with regard to age of the child, sex of the child, and socioeconomic position of the parents. From 1983 to 1987 attrition was selective for age, sex and socioeconomic position of parents. Compared with the dropouts in 1987 the respondents of 1987 were younger (mean 10.3y vs. 11.0y in 1983, $p < 0.0001$), more frequent women (53% vs. 45%, $p = 0.007$), and their parents had a higher socioeconomic position ($\chi^2 = 20.6669$, 5df, $p = 0.0009$). Attrition was not selective for problem behavior in 1983. From 1987 to 1997 attrition was only selective for age, i.e., respondents were younger than dropouts (mean 14.4y vs. 15.6y in 1987, $p < 0.0001$). Attrition was not selective with regard to sex, socioeconomic position of the parents, and problem behavior in 1987.

Problem behavior

In both studies problem behavior in adolescence was measured with the Dutch version of the Youth Self-Report (YSR)²³. This is a self-report questionnaire for adolescents aged 11-18 years for the assessment of psychopathology²⁴. Problem items were scored 0 if the item was 'not true', 1 if it was 'somewhat or sometimes true', and 2 if it was 'very true or often true', during the past six months. Scores can be grouped on two broadband scales: Internalizing Problems with 31 items (including items on anxiety, depression, withdrawn behavior, and somatic complaints) and Externalizing Problems with 30 items (including items on aggressive and delinquent behavior). All 102 items together form the Total Problems Score (including besides items on internalizing and externalizing problems, items on thought, social, and attention problems and other problems). The good reliability and validity of the YSR were supported for the Dutch version²³, and for the Turkish translation in Turkey^{25,26}. The test-retest reliability of the YSR in the Turkish migrant children over an interval of nine days was 0.78. Internal consistency was high: Cronbach's alpha was 0.87 for Internalizing Problems and 0.86 for Externalizing Problems in the Turkish sample.

Social class

Respondents were grouped into 'not employed' and 'employed'. Current students were classified as 'not employed'. The employed group included everybody who was currently employed, or had been employed in the preceding two years. For the employed group we coded job descriptions according to the classification of Statistics Netherlands.²⁷ This classification is

based on the principles of the International Standard Classification of Occupations ISCO-1988²⁸. The Dutch classification identifies five occupational levels: elementary, low, intermediate, high, and academic. We merged these levels into two categories: 'low' (elementary and low; e.g., unschooled and schooled farm worker, cleaner, caretaker, cycle repairer) and 'high' (intermediate, high and academic; e.g., foreman, self-employed, teacher, doctor).

Confounders

Possible confounders represented three large groups of confounders: socio-demographic background (age, sex, socioeconomic position of parents), family situation at baseline, and school performance until baseline measurement^{10,29}. Socioeconomic position of the parents was measured by the highest occupation of either parent at baseline and coded as 'low' (manual, or low non-manual), and 'high' (self-employed, or intermediate non-manual, or high non-manual)³⁰. Family situation at baseline was indicated by whether the parents of the child were divorced. The indicator for school performance was item 61 of the YSR 'My school performance is poor'.

Statistical analyses

First, we assessed disparities in problem behavior in adolescence and in employment status and occupational level in adulthood. Then we checked the association of problem behavior with employment status and occupational level, adjusted for confounders (ANOVA). Last, we used logistic regression models to calculate odds ratios (OR) for low occupation, with Dutch natives as reference group. In the first model we adjusted for confounders and in the next models we added problem behavior. We used the change in OR as an indication of the predictive value of disparities in problem behavior for the development of occupational disparities³¹. Country of birth of the Turkish adults was not related to employment status or occupation, and was therefore not included in the analyses.

Results

Baseline and follow-up characteristics are presented in Table 8.1. Turkish adolescents reported more problem behavior, especially Internalizing Problems (mean score Turkish 13.7 vs. Dutch 7.1, $p < 0.0001$). As adults, Turkish were less often employed (62%) than Dutch (80%). Most of the not employed adults were students in both groups (Turkish ($n=59$) 72%, Dutch ($n=131$) 87%). Other reasons for not being employed were mainly housework and unemployment. In the Turkish group housework (Turkish ($n=12$) 15%, Dutch ($n=11$) 7% of the not employed) and involuntary unemployment (Turkish ($n=8$) 10%, Dutch ($n=3$) 2% of the not employed) were more common than in the Dutch group. Turkish adults more often worked in low-level occupations (Turkish 48% vs. Dutch 30%, $p < 0.0001$).

Not employed and employed young adults had similar scores for problem behavior in adolescence (Table 8.2). The largest group within the group of not employed, i.e., the students,

Table 8.1 – Characteristics of Turkish migrants and Dutch natives

	Turkish	Dutch	P-value
N	217	753	
Baseline characteristics			
Age ^a	13.6 (13.3 – 13.8)	14.5 (14.3 – 14.6)	<0.0001
Men	109 (50)	347 (46)	0.28
'My schoolwork is poor'			0.01
Often or always	11 (5)	26 (3)	
Sometimes	62 (29)	152 (20)	
Never	144 (66)	575 (76)	
Parents divorced	11 (5)	66 (9)	0.08
Parental occupation ^b			<0.0001
Low	187 (86)	465 (62)	
High	30 (14)	288 (38)	
Problem behavior ^{a,c}			
Internalizing Problems	13.7 (12.8 – 14.5)	7.1 (6.6 – 7.5)	<0.0001
Externalizing Problems	9.5 (8.8 – 10.2)	7.7 (7.3 – 8.1)	<0.0001
Total Problems	38.3 (36.1 – 40.4)	24.3 (23.2 – 25.4)	<0.0001
Follow-up characteristic			
Employed in ≤2y			<0.0001
Yes	135 (62)	602 (80)	
No	82 (38)	151 (20)	
Occupational level ^d			<0.0001
Low	65 (48)	179 (30)	
High	70 (52)	423 (70)	

Frequencies in numbers and column percentages;

^a Mean; 95% confidence interval;

^b Low: manual, or low non-manual; High: self-employed or intermediate non-manual or high non-manual;

^c Adjusted for baseline characteristics: age, school performance, parents divorced, and parental occupation;

^d Only for those employed in previous 2 years.

had similar scores of problem behavior in adolescents as employed young adults. Adults who were not employed for other reasons (e.g., unemployment, house work) had higher scores of problem behavior in adolescence: 10.7 (8.8 – 12.7) for Internalizing Problems, 10.6 (8.9 – 12.2) for Externalizing Problems, and 35.2 (30.4 – 39.9) for Total Problems. However, they form only a small group of the not employed, too small for separate analyses.

We did find differences in adolescence problem behavior between young adults with low-level and with high-level occupation (Table 8.2). Young adults with low-level occupations had a higher mean score for Internalizing Problems, Externalizing Problems and Total Problems in adolescence. We did not find any interactions with ethnicity, sex or age.

The association of social class with problem behavior is necessary for a contribution of disparities in problem behavior to disparities in social class; therefore we have focused on occupational level in the following analyses.

Thirdly, we have looked at odds ratios unadjusted and adjusted for problem behavior (Table 8.3). The odds for low-level occupation were significantly higher for Turkish adults

Table 8.2 – Mean problem scores in adolescence (11-18y) by employment status and occupational level in adulthood (21-28y)

	Internalizing Problems		Externalizing Problems		Total Problems	
	Mean	95% CI	Mean	95% CI	Mean	95% CI
Employment:						
No	8.6	7.7 – 9.4	7.7	6.9 – 8.4	26.8	24.7 – 28.9
Yes	8.6	8.2 – 9.1	8.2	7.9 – 8.6	27.7	26.5 – 28.8
p-value	0.94		0.17		0.48	
Occupation:						
Low	9.3	8.5 – 10.1	8.7	8.0 – 9.4	29.5	27.5 – 31.4
High	8.3	7.7 – 8.8	8.0	7.5 – 8.5	26.6	25.2 – 28.0
p-value	0.04		0.10		0.02	

Adjusted for age, sex, migrant status, family situation, school performance, and parental occupation; CI confidence interval.

Table 8.3 - Odds ratios for low-level occupation for Turkish migrants, crude and adjusted for Internalizing Problem Score, or Externalizing Problem Score, or Total Problem Score

	Turkish		Dutch
	OR	95% CI	OR
Confounders	1.78	1.19 - 2.65	1.00
Confounders + Internalizing	1.50	0.97 - 2.31	1.00
Confounders + Externalizing	1.72	1.15 - 2.57	1.00
Confounders + Total Problems	1.52	1.00 - 2.32	1.00

All models included the confounders age, sex, family situation, school performance, and parental occupation; OR odds ratio, CI confidence interval.

than for Dutch natives (OR 1.78, 95%-confidence interval 1.19 – 2.65), independent of parental socioeconomic position, age, sex, family situation, and school performance in adolescence. As the disparities in problem behavior in adolescence were most pronounced for Internalizing Problems, and the association with occupation was stronger for Internalizing Problems than for Externalizing Problems, we expected more attenuation of the odds ratio by adjustment for Internalizing Problems than for Externalizing Problems. This expectation was supported by our findings in Table 3: an attenuation of 36% by adjustment for Internalizing Problems (1.78 to 1.50) and an attenuation of 8% by adjustment for Externalizing Problems (1.78 to 1.72). We did not find any interactions with sex or age.

Discussion

In this prospective study problem behavior in adolescence was strongly related to ethnicity, and modestly related to occupational level in adulthood. The contribution of ethnic disparities in problem behavior to occupational disparities was 36% for internalizing problems and 8% for externalizing problems.

Strengths and limitations

The main strength of our study is that it is the first to relate ethnic disparities in mental health in childhood with ethnic disparities in occupational level in adulthood. Furthermore, it was a prospective community study with a within subject design, the samples were fairly representative, and response rates were satisfactory. Attrition was higher in the Turkish sample than in the Dutch sample. Although we did not find strong selective attrition, we cannot exclude selective attrition on other than the measured possible selective factors. Usually, those with the least successful life trajectories drop out of prospective studies. Therefore we may have underestimated the proportion respondents with low-level occupations more in the Turkish than in the Dutch population. Further, the Dutch data on problem behavior were collected in 1987 and the Turkish data in 1993, which may affect our results. However, the effect is probably very limited as no secular trends in problem behavior among Dutch children and adolescents were found over this period, and no major economic changes occurred in the Dutch society^{21,22}.

Another limitation may be that the measurement of problem behavior was influenced by different interpretation of symptoms or willingness to disclose the existence of a symptom by migrants. However, the internal consistency of the scales was high among Turkish adolescents, and good reliability and validity were confirmed for both the Dutch translation²³, and for the Turkish translation in Turkey^{25,26}. Furthermore, most Turkish respondents were born in the Netherlands (74%), or arrived at young age. Most of them understand the Dutch language well and they are quite aware of the Dutch perception of problem behavior. Therefore, we believe that ethnic differences in the answer tendency to the YSR cannot solely explain our findings.

It is possible that other characteristics, for which we did not control, account for some of the observed effect. We have chosen our controls from the groups of most important confounders for the association between problem behavior and social class from other studies: family socio-demographic background, family functioning, and cognitive ability^{9,10}. Another possible confounder could have been parental psychopathology¹¹. However, in our study additional adjustment for parental score on the General Health Questionnaire did not change the association between problem behavior and occupational level for the Turkish adults. These data were not available for the Dutch natives. Furthermore, discrimination could be suggested as possible confounder. We measured discrimination among Turkish adults at the same time as we assessed social class. Discrimination in adulthood was not related to problem behavior in adolescence and it was also not related to employment status or occupational level of Turkish adults. Therefore, discrimination may play a role in the origin of disparities in problem behavior in adolescence, but probably it did not strongly confound the association between problem behavior in adolescence and social class in adulthood.

At follow-up respondents were aged between 21 and 28y old. In most cases their occupational careers have only just begun and will continue to develop. The educational attainment of migrant children is often lower than that of native children⁸, and may limit their advancement

towards higher-level occupations. Therefore it is likely that the observed ethnic disparities in occupational level will increase when migrant young adults become older.

Disparities in problem behavior as predictors of disparities in social class

Our aim was to find out whether ethnic disparities in problem behavior in adolescence contributed to ethnic occupational disparities in adulthood. We are not aware of any other study that has presented findings on this research question. The only findings that come close to ours are from the 1958 British birth cohort where men and women with problem behavior at age 16 were significantly more likely to be intergenerational downwardly mobile in occupational level and less likely to be upward mobile by age 23 in comparison with others¹³. In the same study population also disparities in problem behavior in adolescence by family social class have been reported¹⁴. Although these findings have not been combined in one analysis, we might expect similar findings as our findings if they were combined, albeit for the contribution to social class disparities instead of ethnic disparities in occupational level.

Unfortunately we could not study the specific processes underlying the association between mental health and occupational level. Probably the mental health impact on adult occupational level is largely mediated through education³². Two types of processes have been suggested to underlie the association between mental health in childhood and educational achievements. First, early academic failures resulting from the child's early emotional and behavioral problems become self-sustaining, independent of subsequent mental health status. Academic failures may create interactional cycles that lead to further failures^{9,33}. Second, children who have emotional and behavioral problems are more likely than others to have those same problems in adolescence and young adulthood. In turn, the problems they experience at those later points in time are associated with poor academic achievement^{9,34}. The pathway of mediation through education probably also underlies the development of ethnic disparities in social class of second-generation migrants, as we know that educational attainment of second-generation migrants from various ethnicities is lower than that of the host population in many European countries⁸. Besides an impact on adult occupational level through education, problem behavior may also affect occupational level through its effect on social functioning, skills and relationships.

In our sample Turkish adolescents reported more problem behavior than Dutch natives. Findings on mental health of migrant children have been inconclusive^{16,35-41}. However, all findings on Turkish migrant children indicated less favorable mental health than native children^{16,36,41}. It is possible that these differences reflect population differences more than migration related differences¹⁵. Migrant children may have different mental health compared with native children because risk factors are differentially distributed between migrant and native children (e.g., parental social class), or because they are exposed to risk factors specific to migrant children (e.g., acculturation, discrimination), or both. Cross-sectional findings indicate similar risk factors for Turkish and Moroccan adolescents as for natives in the Netherlands⁴²⁻⁴⁴. In the study of Turkish adolescents the distribution of only a limited range of risk

factors, including repeating a grade, parental socioeconomic position, family size, and stress differed between migrant and native adolescents¹⁶. Findings on the role of migrant specific factors, such as acculturation and discrimination, in mental health of migrant children have yet been inconclusive (e.g.,^{45,46}). It is clear that more research is warranted in this field.

Conclusion

In conclusion, ethnic disparities in social class in adulthood could partly be attributed to disparities in mental health between Turkish adults and Dutch natives in adolescence in this study. The findings are new and warrant future studies. These studies may give more insight in the role of mental health in the development of disparities in social class and may also give more insight in the generalization of our findings to other countries and other ethnic groups. Since minority groups within the Netherlands resemble groups in other countries in many ways, we expect that these results to some extent apply to other countries with similar minority groups. Finally the findings suggest that prevention of ethnic disparities in mental health at young age may also partly prevent social class disparities in adulthood.

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9

Discussion

The topic of this thesis was mental health and development of Turkish minority youth. The topic was refined into different questions, dealing with ethnic disparities in mental health problems in adolescence and young adulthood (chapters 3 and 4), with determinants of problem behavior in young adulthood (chapters 5 and 6) and with social consequences of mental health problems in adolescence (chapters 7 and 8).

Main findings and interpretation

Ethnic disparities in mental health

Findings First ethnic disparities in mental health in young adulthood were determined. In young adulthood Turkish men and women had more emotional problems than Dutch young adults. Turkish women also had more behavioral problems, especially higher scores on the Aggressive Behavior scale, than Dutch women. Both Turkish men and women reported less intrusive behavior than Dutch young adults. Among women these disparities could largely be explained by differences in socioeconomic position, but among men socioeconomic position was not related to mental health problems.

Next the changes in ethnic disparities in mental health between adolescence and young adulthood were studied. The disparities in emotional and behavioral problems decreased by approximately 50% when Turkish and Dutch adolescents became young adults, due to a (larger) decrease in mental health problems in the Turkish group. The change in mental health in the Dutch adolescents is a pattern that is well-known: emotional problems remain highly prevalent into young adulthood, whereas behavioral problems become less common (e.g., ¹⁻³). The pattern of Turkish youth is a more favorable one: both scores of emotional and of behavioral problems decreased.

Interpretation Several explanations for these differences in development between Turkish and Dutch young people could be thought of. A first explanation could be that more Turkish youth move upward in social class than Dutch youth ⁴, which may result in mental health benefits ^{5,6}. Indeed, more Turkish than Dutch young adults moved into a higher socioeconomic position than that of their parents, however, this was not related to changes in mental health. Secondly, disparities in adolescence may be caused partly by differences in parenting styles of Turkish and Dutch parents ⁷⁻⁹. Turkish parents highly value conformity, school success and social success, and value autonomy and social behavior less. Dutch parents also value conformity, but they value autonomy and social behavior more ^{10,11}. Child-rearing strategies characterized by high expectations for education, and social success, together with more common use of verbal criticism, little praise, and punishment or threats to be punished ¹² may result in fear and emotional problems ¹³. When migrant adolescents grow up, and become less dependent of their parents the fear may lessen, and consequently emotional problems ¹⁴. Thirdly, during the transition to young adults adolescents have increasing opportunity to interact with native Dutch people, and their behavior and mental health profile may subsequently converge to that of Dutch young adults ^{15,16}. Finally, it is possible that the disparities found for especially

emotional problems in adolescence are related to adolescent development, and thus typical for adolescence. Identity formation, a very important developmental process in adolescence, may be more difficult and confusing for migrants as they have to bridge larger differences in worldviews at home and outside home than native adolescents. The higher rate of emotional problems in Turkish adolescents may be related to problems with identity formation, and when the identity development has largely finished in young adulthood, little disparity in emotional problems remains¹⁷. Unfortunately, these explanations could not be studied, because the study design with a large follow-up time between two measurements provided only limited information on processes happening during the transition from adolescents into young adults.

Determinants of problem behavior in young adulthood

Cultural adaptation and emotional problems Turkish young adults with ambivalent cultural adaptation were at a higher risk for emotional problems than Turkish young adults with integrated or more separated cultural adaptation. Ambivalence was a risk factor only in the domains of psychological adaptation and religion. Psychological adaptation involves sense of emotional attachment to, belonging within and understanding of the two cultures, and is thus very proximal to symptoms of emotional distress. It was measured in a thorough way through empirically derived classes based on twelve items¹⁸. This provides trust that the high risk associated with ambivalent psychological adaptation is unlikely an artifact of poor measurement. On the other side this complexity of the measurement limits its suitability for large-scale identification of individuals with ambivalent psychological adaptation. Cultural adaptation in the domain of religion was measured by degree of compliance with the Ramadan. Non-compliance was a risk factor for emotional problems. In both domains the ambivalence may affect emotional problems through the degree of acceptance by the native Dutch population^{19,20} and the migrant group, and through conflicts with parents²¹. However, our study gave no support for non-acceptance by Dutch natives (i.e., discrimination) as a mediator, and some support for conflicts with parents as a mediator.

Cultural adaptation as a risk factor for emotional distress was limited to some domains of cultural adaptation. In others, such as ethnic identity and language use, cultural adaptation was not associated with emotional distress. These findings suggest that it is useful to include multiple measures of cultural adaptation. Different domains of cultural adaptation may play a role in various life stages (childhood, adolescence, adulthood)²²⁻²⁴, in different generations of migrants^{23,25}, and in different ethnic groups and contextual circumstances^{24,26}. Often it is not known which domain of cultural adaptation will be of relevance for mental health in a particular study population, and therefore a choice for the most relevant measure of cultural adaptation can often not be made beforehand. Studies with only limited measurement of cultural adaptation may miss relevant associations between cultural adaptation and mental health.

Determinants of smoking behavior We studied determinants of smoking behavior of Turkish young adults. We have chosen to study smoking behavior because it is the most preva-

lent substance use in young adults. The prevalence of smoking was higher among Turkish young adults than among Dutch men living in large cities, and similar for Turkish and Dutch women living in large cities²⁷. Well-known determinants of smoking in Western young adults, such as emotional and behavioral problems²⁸⁻³⁰, alcohol use³¹, and low self-esteem³¹ were also determinants for smoking among Turkish young adults. The strongest determinant was low educational level. In many Western countries low education is associated with higher smoking prevalence^{32,33}. However, in many non-Western countries, such as Turkey, the association is less clear or opposite³⁴⁻³⁶. It is not yet clear how fast patterns of smoking behavior of migrants will converge to those of the Western host populations³⁷. Our study showed that already among the first-generation's offspring patterns of smoking by educational level were converged. Of particular concern were women with children: in this group the prevalence of smoking was high (64%). Cultural determinants, including discrimination, ethnic identity, Dutch friends, and generation, did not predict smoking behavior. The only significant association was for Muslim identification. Smoking prevalence was lower among Turkish young adults who identified themselves as Muslim.

Consequences of ethnic disparities in mental health in adolescence for social careers

Findings Among girls, emotional and behavioral problems in adolescence predicted less successful educational careers. Together with the higher prevalence of emotional problems among Turkish girls, the association with educational careers made ethnic disparities in emotional problems an important mediator in the development of ethnic disparities in educational careers: the two-fold increased odds ratio of Turkish women for a low educational attainment could be explained almost completely by their elevated level of emotional problems during adolescence. In Turkish and Dutch men we did not find an association of emotional and behavioral problems in adolescence with educational attainment, and therefore disparities in these problems in adolescence could not explain the development of ethnic disparities in educational attainment in adulthood. For other outcomes of social careers, i.e., occupational class and employment, findings were less pronounced. Disparities in emotional problems during adolescence explained around one third of the occupational disparities, and disparities in behavioral problems explained eight percent of the occupational disparities. Contrary to the findings with regard to educational attainment, these findings were applicable for both men and women. Emotional and behavioral problems were not associated with employment status. However, we may have lacked power to address this in full detail. Most of the not employed were students (Turkish 72%, Dutch 87%), and they reported similar rates of problem behavior as the employed.

Interpretation Problem behavior can affect educational attainment through different pathways. Findings from other studies suggest that associations with family socioeconomic characteristics and IQ cannot solely explain the effect of emotional and behavioral problems on education^{38,39}. There is limited research of the processes through which children with emotional and behavioral problems are selected out, or select themselves out, of educational

success. A plausible mechanism is through involvement with deviant peers, who have little interest in educational success, but value risky behaviors such as alcohol and drugs use^{40,41}. Other mechanisms may involve reactions from others. For example, expectations of parents and teachers may change in response to children's problems, leaving troubled children with fewer academic supports at home and at school⁴². Also, children with problem behavior may withdraw from social relationships, including those with teachers, in order to minimize exposures to anticipated negative interactions (labeling theory)⁴³.

Part of the association between problem behavior and occupational class will be mediated by educational attainment⁴⁴. In our study this will be the most important pathway for women, as problem behavior was associated with educational attainment and the association of educational attainment with occupational class was strong. For men the pathway through educational attainment was less important, as problem behavior was not associated with educational attainment, but was associated with occupational class. Further, in men educational attainment was less strongly associated with occupational class than in women. Thus, other pathways will play a role in men. Emotional and behavioral problems may for example limit skills (e.g., locus of control, collaboration skills, assertiveness), and social functioning (e.g., membership of associations, initiating and maintaining relationships), which in turn are related to lower occupational class^{45,46}. Prejudice may deprive men with a history of emotional and behavioral problems of the same job opportunities as men without a history of problem behavior, independent of their educational attainment⁴⁷. Though little is known about these pathways.

Gender differences

Findings Differences between men and women were found mainly in the associations between problem behavior and socioeconomic position, both cross-sectionally in young adulthood and prospectively over adolescence and young adulthood. Cross-sectionally, in young adulthood, educational level and employment were negatively associated with emotional and behavioral problems among Turkish and Dutch women, and educational level was negatively associated with emotional problems among Dutch men. In men, education was not associated with behavioral problems, and employment was not associated with emotional and behavioral problems. Prospectively, emotional and behavioral problems during adolescence predicted educational attainment and occupational class in adulthood for Turkish and Dutch women, but these problems predicted only occupational class for Turkish and Dutch men.

Interpretation The gender difference in association of education with problem behavior in adulthood is probably largely due to the fact that emotional and behavioral problems in adolescence predicted lower educational attainment in adulthood only among girls. This leaves us with the question why emotional and behavioral problems during adolescence were associated with lower educational outcomes in women but not in men. In boys behavioral problems only predicted low educational attainment when no adjustment was made for school performance in or before adolescence. Possibly, in boys the initiation of academic problems

by behavioral problems starts at a younger age than in girls. Further, in boys self-reported emotional problems correlated stronger with teacher-reported attention problems than in girls. Possibly, in a school setting boys with emotional problems are more often than girls referred to health care by teachers (albeit for attention problems). As a result boys with emotional problems may experience less negative effects on educational attainment than girls with emotional problems.

In young adulthood not employed women reported more problem behavior than employed women. No differences were found for men. Possibly, young women (Turkish and Dutch) are more dependent than men on employment for opportunities to establish a social network outside their family, which may help them cope with stress⁴⁸. This is also in line with the resource substitution hypothesis of Ross and Mirowsky, which predicts that people with the fewest socioeconomic resources are most dependent on any one resource for their wellbeing⁴⁹. Women have fewer socioeconomic resources than men, and therefore they may be more dependent on employment for their wellbeing than men.

Methodological considerations

The main strength of the study is that it is a comparison of the development of Turkish migrant and Dutch native children. The comparison provides a broader context for both the development of Turkish and of Dutch youth. The samples were randomly drawn, response rates were satisfactory and attrition was not selective.

The study of Turkish children is the first longitudinal study in the Netherlands and to our knowledge in other industrialized countries that describes the development of labor migrant offspring adolescents to young adults. It is a large-scale study with a study population that in size is comparable to well known studies as the Dunedin Study, the New York State Study, and the Simmons Study⁵⁰⁻⁵². Although there was a long period between the measurements in the Turkish migrant study, the tracing of the addresses was very successful and only few adolescents could not be followed up (chapter 2). Further, the Turkish interviewers explained the background of the study in the Turkish language and could help if respondents did not understand questions due to language problems.

In the next paragraphs the study's methodological limitations will be discussed.

Internal validity

Different sources of bias can be a threat to the internal validity of the studies in this thesis. Two potential sources of bias will be discussed in the following paragraphs: selection and information bias and confounding. Possible sources of bias specific to each of the study questions have been discussed in the previous chapters.

Selection and information bias For the comparison of the development of Turkish migrant children and Dutch children we used data from two different studies. Both were intended to study the development of children with regard to problem behavior. In both studies

the study population was randomly sampled from municipal registries, mode of data collection was similar, and measurement scales for mental health as well as measurement of social careers were comparable.

The follow-up periods of both studies were different. Dutch respondents were interviewed in 1987 and 1997, whereas Turkish respondents were interviewed in 1993 and 2003. The follow-up of ten years thus included an overlap of four years. This difference could cause bias through period and cohort effects. Period effects concern specific environmental conditions at a particular time of measurement. During the follow-up period of the Dutch adolescents no important changes happened that would be expected to have had a large impact on mental health. During the end of the follow-up of the Turkish adolescents, the Dutch society became less tolerant to migrants⁵³. This may have been stressful for Turkish adolescents and have caused more problem behavior. If this period effect had been absent, then the decrease in problem behavior from adolescence to adulthood might have been larger, and the differences in adulthood with Dutch young adults smaller.

Cohort effects refer to changes that are specific to an age or birth cohort. We limited these effects by including adolescents of different ages covering the period of adolescence. Furthermore, there were no secular trends indicating increases or decreases in emotional and behavioral problems of children in the Netherlands over the period from 1983 to 1993⁵⁴, and only small increases were found for only girls over the period from 1993 to 2003⁵⁵. Also for adults there was no secular trend in 12-months incidence of mental health problems from 1996 to 1999⁵⁶. Thus we do not expect that cohort effects biased our findings.

Another difference between the two studies is that the Dutch sample represented the Dutch children in the province Zuid-Holland, whereas the Turkish sample represented the Turkish children in the two largest cities of Zuid-Holland, Rotterdam and The Hague. The province of Zuid-Holland is a very densely populated area: only 10% of the population lives in rural areas⁵⁷. Nevertheless, ethnic differences in emotional and behavioral problems may partly reflect differences in urbanization, or reflect geographical differences. We checked for differences between the Dutch young adults living in Rotterdam or The Hague and the rest of the province, and scores were slightly higher for behavioral but not for emotional problems in the group living in Rotterdam or The Hague. When we compared the proportion in the highest decile of the scores we found no differences, which is in line with findings from a large Dutch study among adults on the incidence of mental health problems⁵⁸. For the Dutch adolescents in Zuid-Holland in 1987 we did not have information on the urbanization degree. But in a more recent cohort from 2003 of adolescents in the province of Zuid-Holland, no differences in emotional and behavioral problems were found according to degree of urbanization. In a national study in the Netherlands parent-reported emotional problems were not associated with degree of urbanization, but in highly urbanized areas parents reported more behavioral problems for their children than in less urbanized and rural areas⁵⁹. In summary, both in adolescence and in young adulthood emotional problems were not related to urbanization, and behavioral problems were slightly more prevalent in highly urbanized areas in the

Netherlands. Therefore, our findings may overestimate the ethnic disparities in behavioral problems, but this is unlikely for emotional problems.

Although most data of both studies were comparable, for some variables we did not have information from both studies. These include for example parental psychopathology, and parental educational level. Possible implications will be discussed in the next paragraph on confounders. Besides unavailable variables, sometimes information was more detailed in one of the studies, but for comparisons information had to be aggregated. This was for example the case for school careers. We had information about all transitions in school careers of Turkish migrants but not in Dutch natives.

Confounding In the analyses we have controlled for the most important confounders. These confounders were selected on the basis of literature. However, sometimes not all potential confounders were available for both studies. For example, for the associations between mental health in adolescence and socioeconomic position in young adulthood additional confounders could have been generation, discrimination, parental education and parental psychopathology. Information on these potential confounders was available for the Turkish group. Adjustment for these confounders within the Turkish group, however, did not change the associations between mental health problems in adolescence and socioeconomic position in young adulthood. Neither did adjustment for a less aggregated variable of occupational class within the Dutch group. Nevertheless, we cannot exclude residual confounding in these studies.

The comparison of mental health problems between Turkish and Dutch adolescents could only be adjusted for parental occupational class as measure for socioeconomic background. In a previous study, the same Turkish adolescents were compared with a national sample of Dutch adolescents, and information was available on both parental and maternal educational level and employment status. These socioeconomic characteristics could not explain ethnic differences in emotional problems⁶⁰. Thus, although inclusion of more information on socioeconomic background of the two groups would have been preferable, available evidence suggests that the effect of more extensive adjustment for socioeconomic background would have been limited.

External validity

External validity refers to the generalization of the results. We will discuss the extent to which we expect the findings can be generalized to other Turkish migrant youth in the Netherlands, to other migrant groups in the Netherlands, and to Turkish migrants in other European countries.

Generalization in the Netherlands Most of the Turkish migrants in the Netherlands live in large cities, especially in Rotterdam, Amsterdam and The Hague. In several large cities in the Netherlands emotional and behavioral problems of Turkish and other migrant youth have been studied⁶¹⁻⁶⁵, as well as in national samples^{66,67}. In line with our study, findings of most of these studies indicated more emotional problems for Turkish than Dutch children and little

differences in behavioral problems. Therefore, the findings of our study will probably also apply to other Turkish young people in the Netherlands.

The size of ethnic disparities in problem behavior for other migrant children, including Moroccan, Surinamese, and Antillean children, was different though^{61-64,68}, and therefore our findings on changes in disparities in problem behaviors and consequences of disparities in problem behavior for disparities in social careers cannot be generalized to other migrant groups. The negative association between problem behavior in adolescence and social careers in adulthood did not differ between Turkish and Dutch youth and may therefore also apply for other migrant groups. Further, the association between ambivalent psychological cultural adaptation and emotional problems has been found previously for Moroccan adolescents²¹, and therefore our findings on cultural ambivalence may be generalized to other groups of migrants in the Netherlands, at least to Moroccan young adults. Finally, we studied determinants of smoking behavior among Turkish young adults. It is unclear whether these findings can be generalized to other migrant groups.

Generalization in Europe Whether our findings can be generalized to Turkish migrants in other European countries remains to be ascertained. In several other European countries more emotional problems were found for Turkish adolescents than for native adolescents⁶⁹⁻⁷¹. In addition, similar associations between problem behavior and social careers were found for other Western populations^{38,45,72-75}. Therefore, in countries where problem behavior is more prevalent among Turkish adolescents than among native adolescents, these disparities may likewise contribute to ethnic disparities in social careers. How much will depend largely on the size of the ethnic differences in problem behavior. Similarly, we also expect that disparities in problem behavior between Turkish and native adolescents will decrease over the transition to adulthood.

With regard to cultural ambivalence, we believe that the theory supporting cultural ambivalence as a risk factor for emotional problems is not specific for Turkish migrants in the Netherlands, but the relative importance of the different domains of cultural ambivalence will depend on the domains in which migrants perceive difficulties in handling two cultures^{76,77}. Finally, for determinants of smoking behavior our findings were in line with findings in the US supporting mainly similarities in determinants between ethnic groups (e.g.,⁷⁸⁻⁸⁰). Further, cultural factors were of little influence. Therefore, a tentative speculation may be that also in Western Europe differences in determinants for smoking behavior will not be very different for various ethnic groups, and that thus our findings may be generalized to at least Turkish migrant populations in Western Europe.

Implications

Recommendations for future research

Insight in ethnic disparities in mental health in the Netherlands In the Netherlands, more and more information on the mental health of migrant children has become available. The main

source for this information is the youth monitoring questionnaire of the Municipal Health Services of the large cities in the Netherlands^{61,64,81}. Although this information is of great value, it is limited to children in adolescence, and to the largest ethnic groups in the Netherlands (Turkish, Moroccan, Surinamese, and Antillean). Furthermore, different measurement instruments are used which limits comparison between cities. National studies lack power to study the variety in ethnic backgrounds, forcing them to collapse ethnic groups^{66,67,82}. Information about ethnic variation in mental health is still scarce for younger children^{62,68,83,84}, for young adult migrant offspring⁸⁵, and for migrant children from other ethnic groups including children from refugees. This information would help to define the groups at highest risk for mental health problems and thereby set priorities for primary and secondary prevention. Future studies are recommended, with use of standardized instruments, and in particular focusing on younger children and young adults, and with sufficient power to study variations in the smaller ethnic groups.

Insight in ethnic disparities in mental health in Europe In general little information is available on the ethnic distribution of mental health in adult European populations^{86,87}. In addition, the available information is concentrated in a few countries, especially in the UK. Information on the ethnic distribution of mental health in adolescents is increasingly available. Further, the definitions and categorizations of ethnic groups are diverse, as well as measures used to assess mental health problems and mental health care use. Additional information on the ethnic distribution of mental health problems and care needs will guide design and delivery of mental health care as well as prevention of mental health problems. Preferably, studies will include international comparable outcome measures, and include not only first-generation migrants, but also second-generation migrant young children, adolescents and young adults. International studies will also provide more information about the generalization of findings across countries and across ethnic groups, and of the magnitude of ethnic disparities in mental health problems in different countries.

Better understanding of ethnic disparities in mental health In adolescence, especially emotional problems were more prevalent among Turkish girls and boys. For effective prevention and treatment it will be of great value to understand the reasons for the excess of these problems. Previous studies have shown that the excess of emotional problems was little related with migration specific factors^{84,88}. A range of possible other risk factors for emotional problems in adolescence have already been explored, but these risk factors did not occur more often in Turkish adolescents than in Dutch adolescents⁶⁰. These risk factors were referral of child or family member to mental health care, repeating a grade, not living with both parents, and health problems among relatives or friends. Socioeconomic position of the parents could explain a small part of the differences⁶⁰. Hopefully, future studies, including the two large birth cohort studies in Rotterdam^{89,90} and Amsterdam⁹¹, will contribute to this understanding. Especially, we recommend to further explore of the role of differences in family factors (e.g., parenting style, conflicts in the family, and communication between parents and children), and culture specific factors (e.g., acculturation, ethnic identity, and discrimination)^{7-9,92,93}.

Smaller ethnic disparities in mental health were still present in young adulthood, especially for emotional problems among women and men, and also for behavioral problems in women. Among women, these disparities were largely due to socioeconomic characteristics. Several explanations have already been explored for socioeconomic disparities in emotional problems, including work characteristics, life events and material resources^{94,95}. It is still unclear why socioeconomic position is such an important explanatory factor in women but not in men, and neither do we know the reasons for why Turkish men have more emotional problems than Dutch men. Future studies may explore reasons for these gender and ethnic differences.

We gave a number of possible explanations for the decrease in ethnic disparities in problem behavior over adolescence and young adulthood: namely decreasing influence of different parenting styles, increased interaction with Dutch people, and less problems with identity formation in adulthood than in adolescence. More empirical information about the explanations for the reduction in disparities may be used to increase the reduction so that disparities in young adulthood can be prevented.

Better understanding of problem behavior of migrant young adults The study on cultural ambivalence and mental health was based on cross-sectional information. Therefore, it is uncertain whether ambivalence is a transitional phase in young migrants, or whether it is a more permanent characteristic. Further, it is not certain whether ambivalence leads to more mental health problems or vice versa. Prospective studies will be able to give more insight in these issues.

Better understanding of consequences of mental health problems of Turkish and Dutch youth Several studies have been conducted to assess effectiveness of interventions to prevent or treat problem behavior of children and adolescents⁹⁶⁻⁹⁹. Such studies of interventions may contribute to the understanding of the relation between problem behavior and educational attainment by including outcomes of school careers in their effect measurements. Besides providing additional support for causality, including intermediate school outcomes will also add to the understanding of the pathways through which problem behavior influences educational attainment. These studies should take account of possible differences between boys and girls.

The studies in this thesis revealed differences between men and women for the association between mental health in adolescence and socioeconomic position in adulthood. We have speculated about explanations, however, these possibilities will have to be confirmed in future studies. Further, qualitative studies may be useful to explore new ideas about reasons for the gender differences.

Implications for policy and mental health care

Emotional problems in adolescence The high prevalence of emotional problems among Turkish girls, together with the negative long-term effects of emotional problems for social careers, calls for special attention in this group: prevention, signaling, and intervention. Primary pre-

vention requires background information about the risk factors of emotional problems. However, as has been said before it is still unclear which risk factors cause the higher prevalence of emotional problems in Turkish adolescents. These risk factors will have to be identified before primary prevention can play an important role in reducing the high rates of emotional problems in Turkish adolescents.

We expect more powerful effects from secondary prevention targeted at adolescents with a subclinical level of emotional problems. The first step in this form of prevention is the identification of these adolescents. In the Netherlands monitoring and signaling of emotional problems in secondary school are tasks of the youth healthcare¹⁰⁰. The way and intensity in which these tasks are fulfilled for adolescents vary widely by region. Preferably, the signaling of emotional problems will be standardized and achieve full coverage¹⁰¹. Within the current situation, though, improvement is also possible. For example, information from questionnaires that is currently only used for monitoring could also be used to identify girls with emotional problems and invite them for a consult with a youth health care physician or nurse. When no questionnaires are available, alertness for emotional problems of Turkish girls by health care physicians and nurses, teachers and parents should be improved. After the signaling by the youth health care in the first years of secondary school, health care for emotional problems is only provided at the request of the adolescent, parents or the school. Adolescent girls, however, are reluctant to seek help for their emotional problems, and their self-perceived unmet need for care is higher than for boys¹⁰². Efforts should be focused on reducing adolescent girls' thresholds to seek help for their problems. Teachers did not signal higher levels of emotional problems in Turkish girls than in Dutch girls¹⁰³, and should be informed both of the higher rates, and of possible consequences expressed in school behavior and school results. In this way the signaling within the school setting may be improved.

After signaling, the next step is to provide early intervention for emotional problems. Cognitive-behavioral interventions are recommended for secondary prevention⁹⁶. Although effective interventions are available^{101,104}, effectiveness depends largely on the engagement and compliance of individuals in these interventions. This is often a serious problem in secondary prevention of emotional problems. Not only the willingness of the adolescent is needed, but also the acceptance and co-operation of parents. Especially parents from ethnic minority groups who are not familiar with secondary prevention of emotional problems in the Netherlands may be more reluctant to approve participation of their children in these interventions. For both parents and adolescents other reasons for reluctance may be fear for stigmatization and shame⁹⁶.

Signaling and its current limitations also play an important role for the identification of adolescents with severe clinical levels of emotional problems. There is still a significant proportion of unmet need for treatment of mental health problems among adolescents¹⁰². Again, problems of engagement exist for the available effective treatment possibilities.

Smoking behavior The second recommendation concerns smoking behavior of Turkish young adults. Smoking prevalence was high among Turkish young adults. The prevalence was

especially high among the lower educated and among women with children. These groups already form a priority in prevention of smoking and interventions to motivate and to assist people to quit smoking. One difference should be noted. In Dutch women, the prevalence of smoking is lower for women with children than without children¹⁰⁵, and smoking is less accepted for pregnant women and women with children. Smoking interventions focus primarily on the harmful effects of smoking for children^{106,107}. In contrast, we found that the majority of Turkish young women with children smoke, and smoking may therefore be more accepted and seen as normal¹⁰⁸. This should be taken in account when these women are encouraged to quit smoking. The high prevalence of smoking of Turkish young women with children may partly explain the elevated risk of Turkish children in the Netherlands for sudden infant death syndrome¹⁰⁹. Therefore, prevention of smoking and campaigns aimed at the cessation of smoking should be intensified for Turkish young adults, in particular for low educated women.

Conclusion

In conclusion the findings give insight into ethnic disparities in mental health, determinants of problem behavior in adulthood, and development of Turkish adolescents to young adults. Turkish young adults had more emotional problems than Dutch young adults (chapter 3). These differences were about 50% smaller than the differences in adolescence, due to a larger decrease in emotional problems among the Turkish group (chapter 4). This is a positive development for Turkish youth. In young adulthood cultural adaptation was related to emotional problems (chapter 5). Cultural adaptation was only slightly associated with smoking behavior, but many well-known determinants, in particular low education, were predictors of smoking behavior (chapter 6). Emotional and behavioral problems in adolescence were a risk factor for low educational and occupational attainment for women, and a risk factor for low occupational attainment in men (chapters 7 and 8). Together with the higher prevalence of especially emotional problems in Turkish adolescents, disparities in emotional problems form an important mediator in the development of ethnic disparities in social careers.

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Samenvatting

Inleiding

Turkse adolescenten in Nederland vertonen meer probleemgedrag dan hun autochtone leeftijdsgenoten, met name doordat zij meer emotionele problemen hebben. Bij onderzoek met gedragsvragenlijsten is de score van emotionele problemen bij Turkse adolescenten 1,5 keer zo hoog als die van hun autochtone leeftijdsgenoten. Het is nog onduidelijk of de verschillen in probleemgedrag blijven bestaan als adolescenten ouder worden en of zij consequenties hebben voor de maatschappelijke loopbaanontwikkeling. Er is ook nog weinig bekend over emotionele en gedragsproblemen van Turkse jonge volwassenen in Nederland.

In dit proefschrift geven we meer inzicht in de ontwikkeling van Turkse adolescenten tot jongvolwassenen met betrekking tot probleemgedrag. Hierbij worden Turkse jongeren vergeleken met Nederlandse jongeren. Bij kinderen zijn emotionele en gedragsproblemen twee belangrijke groepen van probleemgedrag. Emotionele problemen zijn problemen als gevolg van spanning die een kind zelf voelt (bijvoorbeeld angstklachten en somberheid), terwijl gedragsproblemen problemen zijn die vaak samengaan met conflicten met anderen (bijvoorbeeld agressief gedrag en regels overtreden).

Onderzoeksvragen

Etnische verschillen in emotionele en gedragsproblemen

1. Wat is de prevalentie van emotionele en gedragsproblemen bij Turkse en Nederlandse jongvolwassenen?
2. Veranderen verschillen in emotionele en gedragsproblemen in grootte als adolescenten opgroeien tot jongvolwassenen?

Determinanten van emotionele en gedragsproblemen van jongvolwassenen

3. Hangt acculturatie samen met emotionele problemen van Turkse jongvolwassenen?
4. Wat zijn belangrijke determinanten van rookgedrag van Turkse jongvolwassenen?

Consequenties van etnische verschillen in emotionele en gedragsproblemen in adolescentie voor maatschappelijke loopbaanontwikkeling

5. Voorspellen etnische verschillen in emotionele en gedragsproblemen van adolescenten etnische verschillen in schoolloopbaan?
6. Voorspellen etnische verschillen in emotionele en gedragsproblemen van adolescenten etnische verschillen in beroepsniveau?

Voor het onderzoek gebruiken we gegevens van twee prospectieve studies naar emotionele en gedragsproblemen van adolescenten in de provincie Zuid-Holland in Nederland (hoofdstuk 2).

Bevindingen

In hoofdstuk 3 vergelijken we emotionele en gedragsproblemen van Turkse en Nederlandse jongvolwassenen. Daarbij besteden we aandacht aan de mogelijkheid dat de etnische verschillen eigenlijk sociaal-economische verschillen kunnen zijn. Turkse jongvolwassenen rapporteren meer emotionele problemen dan Nederlandse leeftijdgenoten. Turkse vrouwen rapporteren ook meer gedragsproblemen. Nederlandse jongvolwassenen rapporteren meer ‘opdringerig’ gedrag. Bij vrouwen verklaren verschillen in sociaal-economische positie de etnische verschillen. Bij mannen echter, is er nauwelijks samenhang tussen sociaal-economische positie en probleemgedrag.

Hoofdstuk 4 beschrijft de verandering van etnische verschillen in emotionele en gedragsproblemen als adolescenten opgroeien tot jongvolwassenen. De etnische verschillen worden veel kleiner, zij verminderen met ongeveer 50%. Dit komt door een sterkere daling in de scores voor emotionele en gedragsproblemen in de Turkse groep. Nederlandse adolescenten ontwikkelen zich volgens een bekend patroon: de scores voor emotionele problemen blijven hoog, terwijl de scores voor gedragsproblemen lager worden als adolescenten opgroeien tot jongvolwassenen. De ontwikkeling van Turkse adolescenten steekt hier voordelig bij af: zowel scores voor emotionele als voor gedragsproblemen worden lager.

De rol van acculturatie voor emotionele problemen is beschreven in hoofdstuk 5. De hypothese is dat Turkse jongvolwassenen met een ambivalente acculturatie, in vergelijking tot geïntegreerde en gesepareerde jongvolwassenen, het hoogste risico lopen op emotionele problemen. Iemand heeft een ambivalente acculturatie wanneer hij de Turkse cultuur al los heeft gelaten, maar nog geen sterke positieve band met de Nederlandse cultuur heeft opgebouwd. Aangezien cultuurverschillen veel verschillende domeinen bestrijken, zoals religie, taalgebruik en emancipatie, hebben we gekeken naar culturele ambivalentie in verschillende domeinen. Ambivalente acculturatie blijkt inderdaad een risicofactor voor emotionele problemen te zijn. Echter, het is alleen een risicofactor in de domeinen psychologische acculturatie en religie. Culturele ambivalentie met betrekking tot etnische identiteit, taalgebruik, en emancipatie van de vrouw is geen risicofactor voor emotionele problemen.

In hoofdstuk 6 hebben we gekeken naar determinanten van rookgedrag van Turkse jongvolwassenen. Roken is verslavend en is de meest voorkomende verslaving bij jongvolwassenen. De prevalentie van roken is hoog bij Turkse jongvolwassenen en veel bekende determinanten van roken bij autochtone jongvolwassenen zijn ook van toepassing bij Turken. Roken gaat bijvoorbeeld vaak samen met emotionele en gedragsproblemen, alcohol gebruik en lage zelfwaardering. De sterkste determinant is lage opleiding. Verder roken veel vrouwen met kinderen (64%) en veel Turken met vaste partner (56%). Culturele determinanten, zoals discriminatie, etnische identiteit, het hebben van Nederlandse vrienden en eerste/tweede generatie, zijn geen voorspeller van rookgedrag. De enige culturele determinant die samen-

hangt met rookgedrag is moslim identificatie: de prevalentie van roken is lager onder Turkse jongvolwassenen met sterke moslim identificatie.

De hoofdstukken 7 en 8 gaan over de gevolgen van emotionele en gedragsproblemen tijdens de adolescentie voor de maatschappelijke loopbaan van jongeren. In vergelijking met Nederlandse jongvolwassenen zijn er bijna twee keer zoveel Turkse jongvolwassenen met een laag opleidingsniveau en/of een laag beroepsniveau. Emotionele en gedragsproblemen in de adolescentie voorspellen een lagere opleiding bij vrouwen en een lager beroepsniveau bij mannen en vrouwen. Aangezien emotionele en gedragsproblemen ook meer voorkomen bij Turkse adolescenten voorspellen ze een aanzienlijk deel van de achterstand in sociaal-economische positie: bij vrouwen vrijwel het hele verschil in opleiding, bij mannen en vrouwen eenderde van het verschil in beroepsniveau tussen Turkse en Nederlandse jongvolwassenen. Emotionele problemen dragen meer bij dan gedragsproblemen, aangezien vooral emotionele problemen veel voorkomen onder Turkse adolescenten.

Discussie en aanbevelingen

In hoofdstuk 9 vatten we de belangrijkste bevindingen in het proefschrift samen. We hebben inzicht gekregen in etnische verschillen in probleemgedrag, determinanten van probleemgedrag van jongvolwassenen en de gevolgen van probleemgedrag in adolescentie voor maatschappelijke loopbaanontwikkeling. Turkse jongvolwassenen hebben meer emotionele problemen dan Nederlandse jongvolwassenen (hoofdstuk 3). Door een sterkere afname in emotionele problemen bij de Turkse adolescenten als ze opgroeien tot jongvolwassenen zijn deze verschillen bij jongvolwassenen nog maar ongeveer half zo groot als de verschillen bij adolescenten (hoofdstuk 4). Dit is een positieve ontwikkeling voor Turkse jongeren. Bij jongvolwassenen is ambivalente acculturatie een risicofactor voor emotionele problemen (hoofdstuk 5). Acculturatie is weinig gerelateerd aan rookgedrag, maar veel bekende andere determinanten zijn wel gerelateerd aan rookgedrag. De sterkste determinant van roken is opleidingsniveau (hoofdstuk 6). Emotionele en gedragsproblemen in adolescentie zijn risicofactoren voor een laag opleidingsniveau en een laag beroepsniveau voor vrouwen en voor een laag beroepsniveau voor mannen (hoofdstuk 7 en 8). Samen met de hogere prevalentie van vooral emotionele problemen bij Turkse adolescenten, vormen etnische verschillen in emotionele problemen een belangrijke intermediair in het ontstaan van etnische verschillen in sociaal economische positie van jongvolwassenen.

Er blijven nog een aantal vragen onbeantwoord, zoals 'Waarom hebben Turkse adolescenten zoveel emotionele problemen en hoe verklaren we de sterke afname van die problemen als ze opgroeien tot volwassenen?', 'Wat is de reden voor de verschillen tussen mannen en vrouwen in het verband tussen probleemgedrag en sociaal economische positie?', 'Hoe beïnvloedt pro-

bleemgedrag de maatschappelijke loopbaan?’ en ‘Is ambivalente acculturatie een tijdelijke of een permanente eigenschap van allochtone jongeren?’.

We geven een aantal suggesties bij deze vragen, die kunnen worden uitgewerkt in toekomstig onderzoek. Internationale studies zijn nodig om vast te stellen hoe generaliseerbaar de bevindingen zijn en om de grootte van etnische verschillen in verschillende landen te vergelijken. De belangrijkste aanbeveling voor beleid en zorg is verbetering van de signalering van emotionele problemen bij Turkse adolescenten, zodat negatieve lange termijn effecten op maatschappelijke loopbaan kunnen worden voorkómen.

Over de auteur

Publicaties

Dank je wel

Over de auteur

Floor van Oort werd op 3 juli 1978 geboren in Eindhoven. In 1996 haalde ze haar atheneum diploma aan het Jacob Roelandslyceum in Boxtel en begon zij met de studie Voeding en Gezondheid aan de Wageningen Universiteit. Tijdens haar studie heeft zij gekozen voor de afstudeerrichting epidemiologie. Een van haar afstudeerscripties heeft zij in Parijs geschreven bij het Institut National de la Santé et de la Recherche Médicale (INSERM). In het najaar van 2000 studeerde zij cum laude af. Aansluitend werkte zij als junior onderzoeker bij het Wageningen Centre for Food Sciences (WCFS) aan een interventiestudie. Van mei 2002 tot juli 2006 werkte zij als junior onderzoeker bij de afdeling Maatschappelijke Gezondheidszorg van het Erasmus Medisch Centrum in Rotterdam. Het eerste jaar deed zij onderzoek naar verklaringen voor sociaal-economische verschillen in sterfte. Vanaf april 2003 heeft zij gewerkt aan haar promotieonderzoek, waarvan de bevindingen beschreven zijn in dit proefschrift. Dit promotieonderzoek deed ze in nauwe samenwerking met de afdeling Kinder- en Jeugdpsychiatrie van het Erasmus Medisch Centrum. In 2005 heeft zij twee maanden in Londen gewerkt bij het Wolfson Institute of Preventive Medicine bij het Department of Psychiatry, waar ook een grote studie loopt naar etnische verschillen in gezondheid van adolescenten. Vanaf juli 2006 is ze werkzaam als postdoc onderzoeker bij de afdeling Kinder- en Jeugdpsychiatrie van het Erasmus Medisch Centrum. Hier doet ze onderzoek naar angststoornissen van jonge adolescenten in het TRAILS cohort. Floor woont in Rotterdam en is getrouwd met Eduard IJsselmuiden.

Publicaties

- van Oort FVA**, van der Ende J, Crijnen AAM, Verhulst FC, Mackenbach JP, Jounng IMA. Ethnic disparities in problem behaviour in adolescence contribute to ethnic disparities in social class in adulthood. *Soc Psychiatry Psychiatr Epidemiol*. in press.
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~

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~

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Floor

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