Utrecht University

How to Explain the Link between Immigration and Adolescent Mental Health?

SES, perceived discrimination, parental and peer support as mediators in the association between immigration and adolescent internalizing and externalizing problems

Marije Voorwinden-Bremmer (5519314)
Supervisor: Dr. G.W.M.J. Stevens
Universiteit Utrecht, Master's program Youth Studies
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Abstract

Contrasting other European studies, Dutch research has consistently shown that Dutch immigrant adolescents report more externalizing problems than their non-immigrants peers, while they show equally high amounts of internalizing problems. This cross-sectional study advances our understanding of mechanisms explaining the link between immigration and Dutch adolescent mental health, by investigating to what extend SES, perceived discrimination, and social support mediate this association. Data of the Dutch HBSC study (2017) were used, with a sample of 8,190 adolescents (M_{age} = 13.38, *SD* = 1.63). Linear Regression analyses revealed that, when compared to their non-immigrant peers, immigrant adolescents reported more externalizing problems, equally high amounts of internalizing problems, remarkably higher levels of perceived discrimination, lower SES and less social support. Perceived discrimination had a stronger positive contribution to externalizing than to internalizing problems. Family affluence and peer support were negatively related to internalizing problems, while education level was negatively associated with externalizing problems. Comparably strong negative associations of parental support with both types of mental health problems were found. These findings stress the need for interventions targeting immigrant adolescents' perceived discrimination, to reduce their relatively high amounts of externalizing problems. Upcoming research should investigate which predictors explain perceived discrimination.

Keywords: immigration, mental health problems, socioeconomic status, perceived discrimination, social support

Samenvatting

In tegenstelling tot andere Europese studies, blijkt uit Nederlands onderzoek dat Nederlandse jongeren met een migratieachtergrond in vergelijking tot jongeren zonder een dergelijke achtergrond, meer externaliserende problemen vertonen en evenveel internaliserende problemen. In deze cross-sectionele studie is er onderzocht welke mechanismen het verband tussen immigratie en psychische problemen onder Nederlandse jongeren kunnen verklaren, door te onderzoeken in hoeverre SES, ervaren discriminatie en sociale steun deze associatie mediëren. Hierbij is er gebruik gemaakt van data van 8,190 jongeren (M_{leeftijd} =13.38, *SD* =1.63), die deelnamen aan het Nederlandse HBSC (2017) onderzoek. Uit Lineaire Regressieanalyses bleek dat jongeren met een migratieachtergrond meer externaliserende en evenveel internaliserende problemen, een aanzienlijk hogere mate van ervaren discriminatie, een lagere SES en minder sociale steun rapporteerden in vergelijking tot jongeren zonder een migratieachtergrond. Ervaren discriminatie was sterker positief gerelateerd aan externaliserende dan aan internaliserende problemen. Welvaart van familie en steun van vrienden waren negatief gerelateerd aan internaliserende problemen, terwijl opleidingsniveau negatief geassocieerd was aan externaliserende problemen. Er zijn vergelijkbare negatieve verbanden gevonden tussen ouderlijke steun en externaliserende en internaliserende problemen. Deze bevindingen benadrukken dat interventies zich moeten richten op het terugdringen van ervaren discriminatie onder jongeren met een migratieachtergrond, om zo hun relatief hoge mate van externaliserende problemen te verminderen.

Trefwoorden: immigratie, psychische problemen, sociaaleconomische status, ervaren discriminatie, sociale steun

Introduction

Intriguingly, research has consistently shown that immigrant adolescents growing up in the Netherlands show more externalizing problems than their Dutch non-immigrant peers, while they report equally high or even lower amounts of internalizing problems (Dorsselaer et al., 2010; Dorsselaer, Zeijl, Eeckhout, Bogt, & Vollebergh, 2007, Looze et al., 2014). As other (European) studies have found that immigrant youth show both more externalizing and internalizing problems than non-immigrant youth (Dimitrova, Chasiotis, & Vijver, 2016; Kouider, Koglin, & Petermann, 2014), the question is why Dutch immigrant adolescents show this divergent pattern. In order to improve interventions targeting immigrant adolescents, research into this vulnerable and growing population is of great importance (22.6% of the Dutch population has an immigrant background (Central Bureau for Statistics (CBS), 2017). This study is aimed at investigating the mechanisms explaining the link between immigration and internalizing and externalizing problems (together defined as mental health problems) among Dutch adolescents. This is done by focussing on the mediating effects of socioeconomic status (SES), perceived discrimination, parental and peer support. Externalizing problems affect others and involve aggression, misconduct, anger, and uncontrolled behaviour. Internalizing problems affect the self and include worries, social withdrawal, overcontrol, fear, and somatic complaints (Wenar & Kerig, 2000). Based on the aforementioned literature, we expect that Dutch immigrant adolescents show more externalizing problems than their Dutch non-immigrant peers, and equally high or lower amounts of internalizing problems (see Figure 1, Hypothesis 1).

Theoretical explanations

Two contrasting theories can explain the relation between immigration and adolescent mental health: the stress perspective and the resilience perspective (Stevens, 2018). The stress perspective suggests that immigrants are at increased risk of mental health problems compared to non-immigrants, through processes of stress. Reasons for increased risk may be, firstly, that immigrant adolescents experience more stress than their non-immigrant peers because of the migration process (Stevens, 2018). This entails, among others, that immigrants are confronted with unemployment, accommodation problems, poverty, and loss of family and friends (Adriaanse, Veling, Doreleijers, & Domburgh, 2014; Euser, IJzendoorn, Prinzie, & Bakermans-Kranenburg, 2011). Secondly, according to this perspective, immigrant adolescents may have more mental health problems due to asymmetric acculturation within their families (i.e., immigrant children integrate more easily than their parents), which can cause intergenerational stress and conflicts (Dinh, Weinstein, Tein, & Roosa, 2013; Schwartz,

Zamboanga, & Jarvis, 2007). Thirdly, the stress perspective argues that immigrant adolescents suffer more often from discrimination, which may negatively affect their mental health (Stevens & Thijs, 2018). Perceived discrimination is defined as behaviour that "involves unequal treatment based on group characteristics that are often beyond the victim's control" (Stevens & Thijs, 2018, p. 560). In conclusion, according to the stress perspective, immigrant adolescents show more mental health problems than non-immigrant youth.

Conversely, the resilience perspective suggests that immigrant youth may have a decreased risk of mental health problems compared to non-immigrant adolescents. One of the central ideas behind this is that immigrants are a selection of the most resilient people of their home country, suggesting that immigrants may have better physical and mental health (Stevens, 2018). Furthermore, supporting this perspective, immigrants' strong ethnic support systems, academic aspirations, and sense of family obligations buffer against the development of mental health problems (Geel & Vedder, 2011, Jasinskaja-Lahti, Liebkind, Jaakkola, & Reuter, 2006; Walsh, Harel-Fisch, & Fogel-Grinvald, 2010). Thus, following the resilience perspective, immigrant adolescents are expected to show equally high or lower amounts of mental health problems compared to non-immigrant youth.

Neither the stress nor the resilience perspective makes a distinction between externalizing and internalizing problems, while Dutch immigrant adolescents have consistently been found to show more externalizing problems than their Dutch non-immigrant peers, and equally high or lower amounts of internalizing problems (Dimitrova, Chasiotis, & Vijver, 2016; Dorsselaer et al., 2007, 2010; Kouider, Koglin, & Petermann, 2014; Looze et al., 2014). This suggests that among Dutch immigrant adolescents, the stress perspective might best support the prevalence of externalizing problems, while the resilience perspective may apply to the prevalence of internalizing problems. Beneath we will explain why that might be the case.

SES and perceived discrimination

The stress perspective argues that immigrant adolescents have lower SES and higher levels of perceived discrimination than their non-immigrant peers, which may negatively affect their mental health (Stevens, 2018). Conversely, the resilience perspective suggests that immigrant adolescents have higher academic aspirations, which may serve as a buffer against the development of mental health problems (Geel & Vedder, 2011). Results from previous literature seem to be in line with the stress perspective. Dutch immigrant adolescents have lower parental (CBS, 2016) and adolescent SES (Education report, 2018) and experience

higher levels of perceived discrimination than their Dutch non-immigrant peers (Andriessen, Nievers, Dagevos, & Faulk, 2012).

Furthermore, several studies indicate that low SES and perceived discrimination may be more strongly related to externalizing than internalizing problems (e.g., Adriaanse et al., 2014; Althoff, Ametti, & Bertmann, 2016; Grant et al., 2003; Reiss, 2013; Stevens & Thijs, 2018). The main theoretical reasoning behind this comes from the general strain theory, which basically states that having a low SES and perceiving discrimination causes anger and frustration because it is often perceived as unfair and uncontrollable (Agnew, 2001). Subsequently, this anger and frustration may directly impact upon levels of externalizing problems (e.g., to retaliate against perceived discrimination by exhibiting aggressive behaviour) and only indirectly lead to more internalizing problems. Therefore, based on the aforementioned literature, we expect that Dutch immigrant adolescents have lower SES and higher levels of perceived discrimination compared to their Dutch non-immigrant peers, which is positively associated with externalizing and internalizing problems, but may be more strongly related to externalizing problems (see Figure 1, Hypothesis 2 and 3).

Parental and peer support

Based on the stress perspective, immigrant adolescents may have higher levels of mental health problems than their non-immigrant peers, because they receive less social support (Stevens, 2018). Social support is mostly defined as "perceived support and regard which significant others manifest towards the self"' (Harter, 2012, p.4). Following the stress perspective, immigrant adolescents receive less parental support than their non-immigrant peers because of processes of asymmetric acculturation in their families (Dinh et al., 2013; Schwartz, Zamboanga, & Jarvis, 2007). Moreover, immigrants are more often confronted with discrimination (Andriessen et al., 2012), which is linked to receiving less peer support (DeGarmo & Martinez, 2006). In contrast, following the resilience perspective, immigrant adolescents receive as much as, or even more social support than non-immigrants, due to a supportive family culture (Garcia Coll et al., 2012). Previous literature suggests that both the resilience and stress perspective are important as explanatory factors for the association between immigration and social support. Dutch immigrant adolescents have been found to receive as much peer support as their Dutch non-immigrant peers and slightly less parental support (Dorsselaer et al., 2007, 2010; Looze et al., 2014). These absent or small associations might reflect the importance of both contradictory theoretical mechanisms.

Social support has been found to be related to both internalizing and externalizing problems (Kendrick, Jutengren, & Stattin, 2012; Rueger, Malecki, & Demaray, 2010;

Stevens, Vollebergh, Pels, & Crijnen, 2005b; Wight, Botticello, & Aneshensel, 2006). However, there are indications that parental and peers support may be more strongly related to internalizing than to externalizing problems (Galambos, Barker, & Almeida 2003; Kemp, Overbeek, Wied, Engels, & Scholte, 2007; Stevens et al., 2005b; Stevens, Vollebergh, Pels, & Crijnen, 2005a; White & Renk, 2012). Galambos, Barker, and Almeida (2003, p. 591) suggested that: "Support may contribute to enhanced psychological, social, and academic wellbeing, but when it comes to limiting troublesome behaviour, behavioural control may be most effective." Strict parental discipline might be especially important among immigrant adolescents - immigrants often raise their children in adverse circumstances which makes strict parenting necessary in preventing their children from developing behavioural problems (Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004). For peer support, previous studies indicate that lower levels of peer support only indirectly serve as a risk factor for the development of externalizing problems; when adolescents receive low levels of peer support, they might get involved with more deviant peers, which increases the risk of developing externalizing problems (Burt, McGue, & Iacono, 2009; White & Renk, 2012). Therefore, we expect that Dutch immigrant adolescents receive slightly less parental support than Dutch non-immigrant adolescents and as much peer support, which are both negatively associated with internalizing and externalizing problems, but may be more strongly related to internalizing problems (see Figure 1, Hypothesis 4 and 5).

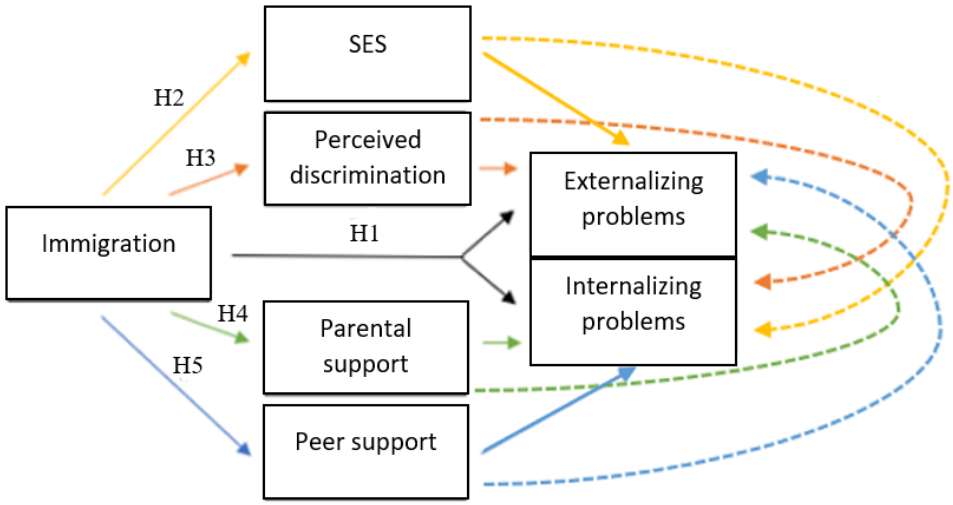

Figure 1. Visualisation of hypotheses explaining the link between immigration and adolescent mental health

Methods

Participants and procedure

Data of the national representative Dutch Health Behaviour in School-aged Children (HBSC) study from 2017 were used, which is a major international research project into the health behaviours, wellbeing and social context of adolescents (Stevens et al., 2018). Samples were randomly drawn using cluster sampling with mainstream primary and secondary schools and school classes as sampling units. The sample consisted of 8,190 11- to 16-year-old students (M_{age} = 13.38, *SD* = 1.63; 51.2% girls). 6,718 students attended secondary school, of whom 13.7% attended the vocational track, 24.4% intermediate secondary education, 20.6% higher education, and 23.3% pre-university education. Of the 1,315 immigrants, students with a Moroccan (27.2%), Turkish (16.8%), and Suriname background (12.2%) represented the largest ethnic minorities. Data of 65 students were excluded for analyses, because they did not complete the questionnaire or had an unreliable response. Of the remaining data, the percentages of missing values were low (varying between 0.0% for gender and 5.6% for communication father). Data were collected by means of digital questionnaire in October and November 2017 (Stevens et al., 2018). Active informed consent was obtained from students, and in addition passive consent was obtained from their parents. The questionnaires were anonymously administered under supervision of a trained research assistant in a classroom during one lesson (usually 50 min). More information about the data collection procedure can be found in the HBSC report (Stevens et al., 2018).

Measurement

Mental health problems were measured with the Strengths and Difficulties Questionnaire (SDQ), a widely used behavioural screening questionnaire consisting of five subscales measuring difficulties and strength (Goodman, 1997). In the current study, there is made use of the revised SDQ, the SDQ-R, which has a better factor structure and internal consistency than the original SDQ (Duinhof et al., 2019). Internalizing problems were measured with the emotional problems scale (five items) and externalizing problems with the conduct problems scale (four items). An example of the items is: “I worry a lot”. All items were scored on a 3-point Likert scale (1=not true to 3=certainly true). Internalizing problems were also assessed with a non-clinical instrument measuring psychosomatic complaints (e.g., headache, backache, bad mood) (Stevens et al., 2018). This instrument consists of ten items (α = .86), scored on a 4-point Likert scale (1=never to 4=every day). Higher scores on these continuous variables indicate more problems.

Parental SES was assessed with the Family Affluence Scale III (FAS), consisting of six items measuring common indicators of wealth (Torsheim et al., 2016). An example of the items is: "Do you have your own bedroom for yourself?". Even though the tested internal consistency was low (α = .46), former studies reported consistent relations between FAS and other indicators of family affluence and also better criterion validity compared to youth' reports of parental education attainment, occupation or household income (Currie et al., 2008; Torsheim et al., 2016). *Adolescent SES* was measured with adolescent education level, scored on a 4-point Likert scale (1=vocational track, 2=intermediate secondary education, 3=higher secondary education and 4=pre-university education). Higher scores on respectively these continuous and ordinal scales indicate higher SES.

Perceived discrimination was measured with the item (α = .80): "How often do the following people treat you unfairly or badly because of the country where you, your parents or your grandparents are born?". 'The following people' refers to peers, teachers, other adults outside school. Items are scored on a 5-point Likert scale (1=never to 5=very often). Higher scores on this continuous variable indicate higher levels of perceived discrimination. Studies reported a good internal consistency and a well-fitting factor structure for this widely used instrument (Berry, Phinney, Sam, & Vedder, 2006).

Parental and peer support were assessed with the multidimensional scale of perceived social support (Zimet, Powell, Farley, Werkman, & Berkoff, 1990). Students were asked to indicate on a 7-point Likert-scale (1=highly disagree to 7=highly agree) to what extent they perceived support from their family (four items, α = .91) and friends (four items, α = .93). Former studies reported a good internal consistency and a well-fitting factor structure for this scale (Torsheim et al., 2010). Parental support was also assessed by asking students to indicate on a 4-point Likert scale (1=very difficult to 4=very easy), to what extent it was easy to discuss things they were worried about with their father and mother. Higher scores on these continuous variables indicate higher social support.

Immigration status was measured by asking students to indicate the country of birth of their parents and themselves. In line with the CBS (2018) terminology, participants were considered as non-western immigrants, when at least one of their parents was born in a non-western country. Gender and age were included as control variables.

Analytic strategy

Prior to the analyses of the main hypotheses, descriptive analyses were conducted, assumptions were checked, and missing values and outliers were detected. The assumptions of homoscedasticity, multicollinearity and linearity were met. Even though residuals were not

always normally distributed, no corrections were made because of the large sample size. Cases with outliers on mediators or outcome variables were not excluded for further analyses, because the influence of outliers will be negligible due to the magnitude of the sample size.

To assess the mediating effects of SES, perceived discrimination, and parental and peer support in the association between immigration and mental health, the Baron and Kenny steps were used (Baron & Kenny, 1986). In the first step, it was assessed to what extent immigration was related to externalizing and internalizing problems. In the second step, the associations between immigration and the mediators were tested. In the third step, it was measured to what extend the mediators were related to the two types of mental health problems. If the associations of the first three steps were significant, the existence of complete or partial mediation was tested in a final step. Each of these steps were conducted with Linear Regression analyses. Finally, Sobel tests were conducted, to assess if the indirect effects between immigration and mental health problems were significant.

Results

Descriptive statistics

To provide an indication of the associations between immigration and the outcome variables and mediators, the means of immigrant and non-immigrant adolescents on all study variables were compared by use of an independent sample t-test (Table 1). Immigrant adolescents reported significantly more externalizing problems, but equally high amounts of internalizing problems compared to non-immigrant adolescents. Furthermore, immigrant adolescents reported significantly lower family affluence, lower education levels, less family and peer support, and higher levels of perceived discrimination. Immigrant adolescents were also less positive about the communication with their father than non-immigrant adolescents, while no differences between these groups were found concerning the quality of communication with their mother.

Table 1

Mean differences between non-immigrant and immigrant adolescents in dependent variables and mediators

	Non-immigrants		**Immigrants**		
	M	*SD*	*M*	*SD*	*t*
Dependent variables					
Conduct problems	1.21	.31	1.29	.36	-7.27***
Emotional problems	1.49	.45	1.48	.44	.43
Psychosomatic complaints	3.07	1.02	3.11	1.07	-1.01
Mediating variables					
Family affluence	9.13	1.78	8.22	2.04	14.87***
Education level	2.67	1.06	2.49	1.09	5.08***
Perceived Discrimination	1.09	.37	1.48	.75	-17.84***
Family support	6.13	1.25	5.95	1.44	4.02***
Communication father	3.23	.79	3.12	.92	3.58***
Communication mother	3.49	.69	3.44	.77	1.84
Peer support	5.80	1.31	5.68	1.45	2.78**

Note. *M* = mean*; SD* = standard deviation*; t* = t-test statistic; * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$.

To assess the direction and size of the associations between the independent variable, mediators and dependent variables, Spearman's correlation coefficients were conducted. An overview of these results is presented in Table 2. Adolescents who reported higher family affluence, lower levels of perceived discrimination and more social support, showed less mental health problems. Furthermore, students attending higher education levels reported less externalizing problems. The older the students were, the more internalizing problems they reported, but the less externalizing problems. Older students more often attended higher education levels and reported less social support. Girls showed more internalizing problems, but less externalizing problems compared to boys. Girls also reported lower family affluence, lower levels of perceived discrimination, less parental support, and more peer support. Because gender and age were associated with almost all mediators and outcome variables, they were included as control variables in further analyses.

Table 2

Correlation matrix of study variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Immigrants												
2. Conduct problems	.09**											
3. Emotional Problems	-.01	.30**										
4. Psychosomatic Complaints	.02	.28**	.48**									
5. Family affluence	-.17**	-.05**	-.08**	-.03**								
6. Education level	-.06**	-.19**	-.01	-.02	.23**							
7. Perceived discrimination	.36**	.21**	.09**	.10**	-.07**	-.11**						
8. Family support	-.02	-.26**	-.24**	-.23**	.08**	.03*	-.13**					
9. Communication Father	-.03*	-.17**	-.31**	-.25**	.12**	-.01	-.06**	.39**				
10. Communication Mother	-.01	-.17**	-.21**	-.17**	.04**	-.01	-.07**	.41**	.58**			
11. Peer support	-.02	-.12**	-.11**	-.08**	.06**	-.00	-.09**	.37**	.16**	.16**		
12. Age	.01	-.04**	.10**	.10**	.01	.03*	.01	-.12**	-.15**	-.15**	-.02*	
13. Girls	.03*	-.10**	.30**	.14**	-.07**	.01	-.06**	.02	-.16**	-.03**	.25**	.02

Note. * = $p < 0.05$, ** = $p < 0.01$.

Direct effects of immigration on mental health

First of all, the main effects of immigration on mental health problems were assessed. Results were in line with the descriptive findings outlined above. As presented in Table 3, 4, and 5, immigrant adolescents showed significantly more conduct problems compared to their non-immigrant peers and equally high amounts of emotional problems and psychosomatic complaints.

Effects of immigration on the mediators

To test the indirect effects of immigration on mental health problems via the predisposed mediators, first it was examined whether immigration was associated with the four mediators. Almost all results were in consistent with the descriptive results outlined above. Immigrant adolescents reported lower education levels and family affluence (respectively, b = -.18, β = -.06, $p < .001$ and b = -.91, β = -.18, $p < .001$), and higher levels of perceived discrimination (b = .39, β = .30, $p < .001$). Furthermore, immigrant adolescents received less family and peer support (respectively, b = -.17, β = -.05, $p < .001$ and b = -.14, β = -.04, $p < .001$), and reported a lower quality of communication with their father (b = -.09, β = -.04, $p < .001$). Immigrant and non-immigrant adolescents were similarly positive about the quality of communication with their mother, and therefore this predisposed mediator was excluded in further analyses. Altogether, immigrant adolescents showed remarkably higher levels of perceived discrimination, and somewhat lower levels of SES, parental and peer support.

Effects of mediators on mental health

Subsequently, the effects of the mediators on externalizing and internalizing problems were examined. For conduct problems, the following associations were found. Adolescents with lower education levels and higher levels of perceived discrimination reported more conduct problems (respectively, b = -.06, β = -.18, $p < .001$ and b = .16, β = .24, $p < .001$). Furthermore, less family support and lower quality of communication with father were related to higher levels of conduct problems (respectively, b = -.06, β = -.22, $p < .001$ and b = -.05, β = -.13, $p < .001$). However, no significant associations of family affluence and peer support with conduct problems were found.

For emotional problems and psychosomatic complaints, results are presented in Table 4 and 5. Lower family affluence was significantly related to more emotional problems, while no association with psychosomatic complaints was found. Education level was unrelated to both internalizing problems indicators. Furthermore, higher levels of perceived discrimination were significantly related to more emotional problems and psychosomatic complaints, while

less family and peer support and lower quality of communication with father were significantly associated with higher levels of both internalizing problems indicators. In sum, all mediators were related in the predicted direction to at least one of the mental health problems.

Direct or indirect mediation

As can been seen in Table 3, in the fourth step it was tested if there were still direct effects of immigration on mental health problems, after controlling for the mediators. Additionally, it was assessed if the indirect effects of immigration on mental health problems were significant. For conduct problems, the following associations were found. Education level, family support and communication with father partially mediated the link between immigration and conduct problems (respectively, $Z = 4.86$, $p < .001$; $Z = 4.18$, $p < .001$; $Z = 3.15$, $p = .002$). Conversely, perceived discrimination completely mediated this association ($Z = 17.65$, $p < .001$). Because there were no main effects of immigration on emotional problems and psychosomatic complaints, the analyses of the fourth step were not conducted for internalizing problems.

However, we did investigate whether there were indirect effects from immigration to the two internalizing problems indicators via the different mediating factors. Immigration was indirectly related to emotional problems, through family affluence ($Z = 5.90$, $p < .001$), perceived discrimination ($Z = 8.30$, $p < .001$), family support ($Z = 4.06$, $p < .001$), communication with father ($Z = 3.47$, $p < .001$) and peer support ($Z = 3.37$, $p < .001$). Furthermore, immigration and psychosomatic complaints were indirectly related through perceived discrimination ($Z = 7.88$, $p < .001$), family support ($Z = 3.89$, $p < .001$), communication with father ($Z = 3.42$, $p = .001$), and peer support ($Z = 3.27$, $p = .001$). In conclusion, significant direct mediating effects were found for perceived discrimination, education level and parental support in the association between immigration and externalizing problems. Perceived discrimination was the only variable which completely mediated this association. Although no direct effects were found, there were significant indirect effects of immigration to internalizing problems through family affluence, perceived discrimination, parental and peer support.

Table 3

Association between immigration and conduct problems, mediated by SES, perceived discrimination, and social support

	Conduct problems											
	Model 1			**Model 2**			**Model 3**			**Model 4**		
	b	*SE*	*β*	*b*	*SE*	*β*	*b*	*SE*	*β*	*b*	*SE*	*β*
Immigrants	.08	.01	.09***	.07	.01	.08***	.02	.01	.02	.07	.01	.08***
Control variables												
Age	-.01	.00	-.03*	-.00	.00	-.02	-.01	.00	-.04**	-.02	.00	-.08***
Girls	-.06	.01	-.10	-.06	.01	-.10***	-.06	.01	-.09***	-.08	.01	-.12***
Mediators												
Family affluence				-.00	.00	-.01						
Education level				-.06	.00	-.18***						
Perceived discrimination							.16	.01	.24***			
Family support										-.05	.00	-.22***
Communication father										-.05	.01	-.13***
Peer support										-.00	.00	-.02

Note. *b* = beta; *SE* = standard error; *β* = standardised coefficient; * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$.

Table 4

Association between immigration and emotional problems, mediated by SES, perceived discrimination, and social support

	Emotional problems											
	Model 1			**Model 2**			**Model 3**			**Model 4**		
	b	*SE*	*β*	*b*	*SE*	*β*	*b*	*SE*	*β*	*b*	*SE*	*β*
Immigrants	-.02	.01	-.01									
Control variables												
Age	.03	.00	.10***	.03	.00	.10***	.03	.00	.10***	.01	.00	.05***
Girls	.27	.01	.30***	.26	.01	.29***	.27	.01	.30***	.26	.01	.29***
Mediators												
Family affluence				-.02	.00	-.08***						
Education level				.00	.01	.00						
Perceived discrimination							.09	.01	.10***			
Family support										-.04	.00	-.11***
Communication father										-.13	.01	-.23***
Peer support										-.04	.00	-.11***

Note. *b* = beta; *SE* = standard error; *β* = standardised coefficient; * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$.

Table 5

Association between immigration and psychosomatic complaints, mediated by SES, perceived discrimination, and social support

	Psychosomatic complaints											
	Model 1			**Model 2**			**Model 3**			**Model 4**		
	b	*SE*	*β*	*b*	*SE*	*β*	*b*	*SE*	*β*	*b*	*SE*	*β*
Immigrants	.02	.03	.01									
Control variables												
Age	.06	.01	.10***	.06	.01	.10***	.06	.01	.09***	.04	.01	.06***
Girls	.29	.02	.14***	.29	.03	.14***	.30	.02	.15***	.25	.02	.12***
Mediators												
Family affluence				-.01	.01	-.02						
Education level				.00	.01	.00						
Perceived discrimination							.19	.02	.09***			
Family support										-.08	.01	-.10***
Communication father										-.23	.02	-.19***
Peer support										-.04	.01	-.05***

Note. *b* = beta; *SE* = standard error; *β* = standardised coefficient; * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$.

Discussion

In line with previous Dutch studies and in contrast to studies in other European countries, this research showed that immigrant adolescents growing up in the Netherlands reported more externalizing problems than their non-immigrant peers, and equally high amounts of internalizing problems. To find out which mechanisms might be responsible for this divergent pattern of findings, this study investigated several mechanisms that have been proposed to explain the link between immigration and mental health problems among Dutch adolescents. Our results revealed that immigrant adolescents, when compared to their non-immigrant peers, showed remarkably higher levels of perceived discrimination, lower family affluence and education level, and less social support. However, the association of immigration with perceived discrimination was considerably stronger than with education level, family affluence and social support. Furthermore, perceived discrimination was positively related to both types of mental health problems, but the association with externalizing problems was more pronounced. Family affluence and peer support were negatively related to internalizing problems, while education level was negatively associated with externalizing problems. Comparably strong negative associations of family support with both types of mental health problems were found. Together, these results suggest that the divergent pattern of externalizing problems among Dutch immigrant adolescents when compared to their non-immigrant peers, might be explained by their relatively high risk of perceived discrimination.

Effects of immigration on the mediators

In line with our expectations, immigrant adolescents showed remarkably higher levels of perceived discrimination and slightly lower parental and adolescent SES. These findings are consistent with earlier studies (Andriessen et al. 2012; Education report, 2018; CBS, 2016), and could be explained by the stress perspective, which states that immigrant adolescents are more often confronted with discrimination and poverty compared to their non-immigrant peers (Stevens, 2018). The small differences in SES may reflect the relatively low socioeconomic inequality rates in the Netherlands compared to other European countries (Badir, 2015). Furthermore, consistent with our expectations, the current study demonstrated that when compared to non-immigrant adolescents, immigrant adolescents showed slightly less parental and peer support. Former studies reported comparable findings (Dorsselaer et al., 2007, 2010; Looze et al., 2014). These small associations might be a reflection of a combination of the stress and resilience perspective in explaining the association between immigration and social support. On the one hand, the stress perspective argues that immigrant

adolescents experience less social support because of processes such as asymmetric acculturation within their families (Dinh et al., 2013). On the other hand, according to the resilience perspective, immigrant adolescents might perceive more social support because of a supportive family culture (Garcia Coll et al., 2012). Our findings may indicate that there are both positive and negative processes at play within immigrant families, which together result in a modest effect of immigration on family support. The small relations of immigration with SES and social support explain why these variables were relatively unimportant mediators in explaining the associations between immigration and either internalizing or externalizing problems.

Effects of the mediators on mental health

In accordance with what was expected and in line with former studies, perceived discrimination had a stronger positive contribution to externalizing than to internalizing problems (Adriaanse et al., 2014; Stevens & Thijs, 2018). Our results support the general strain theory, which argues that heightened levels of stress, for instance caused by perceptions of discrimination, positively affect externalizing problems more than internalizing problems. Following the general strain theory, perceived discrimination more strongly affects externalizing problems, because it is often perceived as uncontrollable and unfair, and creates incentives to assert the self by aggressive behaviour towards the perpetrator (Agnew, 2001). In the long-term, this could result in a more generalized pattern of externalizing problems (Pascoe & Smart Richman, 2009).

Furthermore, in line with our expectations, education level was negatively related to externalizing problems and unrelated to internalizing problems. However, unexpectedly, family affluence was negatively associated with internalizing problems, and unrelated to externalizing problems. As a possible explanation for this finding, Grant et al. (2003) suggested based on a review of longitudinal and cross-sectional studies, that as a result of poverty, internalizing problems may emerge in a shorter time frame than externalizing problems. There is evidence that in a poor socioeconomic environment, internalizing symptoms may appear first as a reaction to community violence. However, to provide protection in a dangerous environment, in the long term externalizing symptoms may become a more common and effective coping strategy (Barnow, Lucht, & Freyberger, 2001; Gorman-Smith, Tolan, & Henry, 2000).

Additionally, as expected, this study revealed that peer support was only associated with internalizing problems and not with externalizing problems. These findings are consistent with earlier research showing that the absence of peer support may only indirectly

serve as a risk factor for the development of externalizing problems through involvement with more deviant peers (Kemp et al., 2007; White & Renk, 2012). Moreover, although it was expected that parental support had a stronger negative contribution to internalizing than to externalizing problems, our results revealed that parental support was equally strongly related to both types of mental health problems. In earlier research it has been suggested that parental support might be important in the development of adolescents' emotional regulation. Good emotional regulation negatively affects the development of both externalizing and internalizing problems (Buckholdt, Parra, & Jobe-Shields, 2014).

Whereas the two major theoretical perspectives on the association between immigration and mental health problems do not make a distinction between internalizing and externalizing problems, the present study revealed that immigrant adolescents only show a divergent pattern concerning externalizing problems. For both types of mental health problems, different mediators turned out to be important. These findings indicate that the stress perspective might apply to the prevalence of externalizing problems, but not to the prevalence of internalizing problems. At least in the Dutch situation, for internalizing problems the resilient perspective may be more applicable. We realise that it might be difficult to apply nuance to these theoretical approaches, because the prevalence of immigrants' mental health problems differ across countries and ethnic minority groups (Dimitrova, Chasiotis, & Vijver, 2016; Kouider, Koglin, & Petermann, 2014; Stevens, 2018). However, our findings suggest that the stress and resilience perspective should make room for a new theoretical perspective that explains the prevalence of immigrants' internalizing and externalizing problems independently.

Since this study showed that perceived discrimination is important in explaining the relatively high amounts of externalizing problems among immigrant adolescents, it is important to know which factors make some immigrant adolescents resilient and others vulnerable to these perceptions. For example, Major and Sawyer (2009) suggested that differences in attribution styles might explain why some people perceive more discrimination than others, despite shared exposure. A closer examination of mechanisms explaining perceived discrimination would be helpful to develop more effective interventions targeting this risk factor.

Strengths and limitations

This study is based on a large national representative school-based sample. This sample is unique, because students of both Dutch rural areas and big cities were included, whereas earlier Dutch research exclusively included youth living in big cities (e.g., Jansen et

al., 2010; Zwirs et al., 2011). Notwithstanding the strength of this study, the results may be affected by limitations. Firstly, this study did not take into consideration the differences between ethnic minority groups, while earlier research revealed that ethnic minority groups show differences in the prevalence of mental health problems (Stevens, 2018). To illustrate, earlier studies revealed that Antillean-Dutch youth reported more internalizing problems compared to their non-immigrant peers, while Surinam-Dutch youth reported equally high amounts of internalizing problems (Bevaart et al. 2012; Flink et al. 2012). Secondly, it should be mentioned that mental health was only assessed by means of self-reports, while former studies indicate that the prevalence of mental health problems among immigrant adolescents varied with the type of informants (Stevens, 2018). Finally, it should be noted that we made use of cross-sectional data, which made it impossible to draw conclusions about the direction of the associations between the mediators and mental health problems. For example, it is as logical to assume that parental support protects against the development of adolescent mental health problems, as it is to assume that adolescent mental health problems lead to less parental support. Longitudinal research should be conducted, to develop a deeper understanding of the underlying mechanisms of these associations.

Conclusion and implications

As far as we know, this is the first study that explores mechanisms that could explain why Dutch immigrant adolescents show a divergent pattern concerning mental health problems compared to their non-immigrant peers. Perceived discrimination appeared to be of major importance in explaining the prevalence of immigrant adolescents' relatively high externalizing problems. Whereas the stress perspective and the resilience perspective do not make a distinction between the prevalence of internalizing and externalizing problems (Stevens, 2018), our results stress the need for interventions targeting immigrant adolescents' externalizing problems rather than immigrants' mental health problems in general. Due to its critical role in explaining externalizing problems, the present study provides some suggestions for interventions targeting perceived discrimination. Slotman, Snijder, Ikram, Schene, and Stevens (2017) revealed that higher levels of mastery (i.e., one's sense of control) is related to lower levels of perceived discrimination. As such, they recommended interventions aimed at strengthening one's sense of control, to decrease perceived discrimination (Slotman et al., 2017). Furthermore, interventions targeting social belonging and personal values could also be effective in incentivizing self-worth and, as a consequence, protect against perceptions of discrimination (Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski, 2009; Walton & Cohen, 2011).

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