



Universiteit Utrecht

**The Association between Perceptions of Ethnic Discrimination from Teachers, Adults
and Peers and Internalizing and Externalizing Problems among Adolescents**



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Abstract

English

This thesis examines the associations between perceived discrimination from teachers, adults and peers and internalizing and externalizing problems among Dutch adolescents while also examining gender as a moderator in these associations. In doing so, more clarity can be provided about whether the source of perceived discrimination matters for the association with adolescents' mental health. Data from the 2017 Dutch HBSC survey were used, with a sample of 8,190 11- to 16-year-old Dutch adolescents. Multiple separate linear regression showed that perceived discrimination from all three sources was positively associated with internalizing and externalizing problems among adolescents, with a stronger association between perceived discrimination and externalizing problems in comparison to internalizing problems. Furthermore, significant gender differences were found in the association between perceptions of discrimination and externalizing problems, with stronger associations for boys than for girls.

Key words: perceived discrimination, internalizing problems, externalizing problems, gender, emotional problems, conduct problems

Dutch

Deze scriptie onderzoekt de associatie tussen waargenomen discriminatie van docenten, volwassenen en leeftijdgenoten en internaliserende en externaliserende problemen onder Nederlandse adolescenten en neemt tegelijkertijd sekse als moderator mee in deze associaties. Op deze manier kan er meer duidelijkheid worden verschaft over of de bron van waargenomen discriminatie invloed heeft op de associatie met de mentale gezondheid van adolescenten. Data van de Nederlandse HBSC vragenlijst uit 2017 is gebruikt met een steekproef van 8,190 Nederlandse adolescenten tussen de 11 en de 16 jaar oud. Meervoudige afzonderlijke lineaire regressie laat zien dat waargenomen discriminatie van alle drie de bronnen positief was geassocieerd met internaliserende en externaliserende problemen, met een sterkere associatie tussen waargenomen discriminatie en externaliserende problemen ten opzichte van internaliserende problemen. Daarnaast zijn er significante sekseverschillen gevonden in de associatie tussen waargenomen discriminatie en externaliserende problemen met sterkere associaties voor jongens dan voor meisjes.

Sleutelwoorden: waargenomen discriminatie, internaliserende problemen, externaliserende problemen, sekse, emotionele problemen, gedragsproblemen

Introduction

Ethnic discrimination is a pervasive and highly problematic phenomena, especially in today's society in which demographic landscapes are becoming more ethnically diverse due to immigration (Heath, Rethon & Kilpi, 2008). Ethnic discrimination is defined as unequal treatment solely based on membership of a certain ethnic group by individuals and social institutions (Tobler, Maldonado-Molina, Staras, O'Mara, Livingston & Komro, 2012). Exposure to ethnic discrimination may be especially present during adolescence as sports, jobs and extracurricular activities move youngsters into a wider, more ethnically and racially diverse social circle (Aroian, 2012). Moreover, the cognitive ability to perceive discrimination, increases during childhood too and is already well-established during adolescence (Aroian, 2012).

Because discrimination is such a pressing issue, it is necessary to know what the consequences of being confronted with discrimination can be for adolescents. Childhood and adolescence are critical stages for human development. Evidence has suggested that experiencing chronic stress during this time might have long-term and irrevocable consequences for the health of the individual (Tobler et al., 2012). Ethnic discrimination can be an important cause of chronic stress for adolescents and may influence different aspects of adolescent health. Indeed, a substantial body of work has shown that perceptions of discrimination are significantly related to poor mental health and health behaviours such as anxiety, depression and delinquency (e.g. Bogart et al., 2013).

Relatively little is known about whether or not the influence of different sources of ethnic discrimination has different effects on adolescent internalizing and externalizing problems. This thesis will investigate to what extent perceptions of ethnic discrimination from three different sources (teachers, adults and peers) are associated with internalizing and externalizing problems of adolescents. Moreover, it will study whether gender impacts upon this association.

Perceived discrimination and adolescent internalizing and externalizing problems

There are multiple theoretical explanations that have been provided in the literature to describe the association between perceived ethnic discrimination and internalizing and externalizing problems. One of them is the biopsychosocial model of discrimination, which argues that perceived discrimination could cause stress responses that are harmful to the mental and physical health of the individual being discriminated. Chronic discrimination could lead to a

lower capacity of dealing with new stressors, which causes maladaptive coping responses such as aggression (Bogart et al., 2013; Tobler et al., 2012). The social identity theory states that an individual's self-concept could be threatened when his or her social group is devalued, which is what discrimination entails: unequal treatment based on the membership of a certain social group. This can lead to negative self-perceptions which affect someone's mental health (Umaña-Taylor, Wong, Gonzales & Dumka, 2012). These theoretical notions are supported by empirical research. With regard to internalizing and externalizing problems, a lot of studies report matching results: higher perceptions of discrimination among adolescents are associated with more internalizing problems (e.g. Stevens, Vollebergh, Pels, & Crijnen, 2005; Stevens & Thijs, 2018; Wong, Eccles, & Sameroff, 2003; Sanchez, Lambert & Cooley-Strickland, 2013; Cano et al., 2016) and more externalizing problems (e.g. Coker et al., 2009; Dubois, Burk-Braxton, Swenson, Tevendale & Hardesty, 2002; Tobler et al., 2012; Benner, Wang, Shen, Boyle, Polk & Cheng, 2018; Park, Schwartz, Lee, Kim & Rodriguez, 2013).

Sources of perceived ethnic discrimination

In line with the bioecological theory of Bronfenbrenner (1979) which states that the inherent qualities of children and their environment interact to influence how they develop, it has been hypothesized that people within the adolescent's environment have the strongest influence on developmental domains most closely tied to the context they are part of (Benner et al., 2018). For example, perceptions of discrimination by teachers are expected to be most closely tied to the academic field, while perceptions of discrimination by peers are expected to be most closely tied to risky behaviour and socioemotional stress (Benner et al., 2018; Rosenbloom & Way, 2004). Moreover, the effects of ethnic discrimination by peers may be particularly harmful during adolescence as there is a developmental tendency to place increased emphasis on peer feedback and acceptance (Douglass, Mirpuri, English & Yip, 2016).

Unfortunately, research on the association between the perceptions of different sources of discrimination and internalizing and externalizing problems is scarce. This might be due to the fact that it is often assumed that different sources of discrimination have the same effect. In accordance with the bioecological theory and the notion of the central role of peers during adolescence, previous research has found that perceived discrimination by peers has greater mental health implications than perceived discrimination by adults (Greene, Way & Pahl, 2006; Rivas-Drake, Hughes & Way, 2009) and teachers (Benner & Graham, 2013). As to externalizing problems, a study by Wong et al. (2003) showed that the effects for perceptions

of discrimination by teachers and peers on externalizing problems were roughly the same (Wong et al., 2003).

Although literature is scarce, there is some theoretical notions and empirical research to suggest that the association between perceptions of discrimination and internalizing and externalizing problems would be stronger for peer perpetrators than for teacher and adult perpetrators.

Gender differences

Gender role beliefs and expectations and sex role stereotypes might influence the way adolescent boys and girls react to perceptions of ethnic discrimination (Tummala-Narra & Claudius, 2013), resulting in a differential impact of perceptions of discrimination on internalizing and externalizing problems. For example, differences in gender socialization (Leadbeate, Kuperminc, Blatt & Hertzog, 1999), would lead to the expectation that boys display more externalizing behaviour and girls more internalizing behaviour as a consequence of perceived ethnic discrimination. Girls are socialized to focus on self-regulation and be sensitive to personal concerns which could make them vulnerable to internalizing problems. Boys on the other hand, are socialized to emphasize self-assertion, which may make them more vulnerable to externalizing problems.

The subordinate male hypothesis states that discrimination is more harmful for men than women since they have a higher preference for dominance and hierarchy (Assari & Lankarani, 2017). Based on this latter notion, adolescent boys might be more affected by perceptions of ethnic discrimination in general than girls, resulting in a stronger association between perceived discrimination and internalizing and externalizing problems among boys than girls. Moreover, girls have been found to be more likely to use constructive coping strategies (such as seeking social support) after setbacks, which could also buffer the negative effects of ethnic discrimination (Cano et al., 2016).

Literature on the moderation effect of gender for the association between perceived ethnic discrimination and internalizing and externalizing problems is inconsistent. In line with the gender socialization theory, some studies found that the girls had a higher chance to experience internalizing problems because of perceived ethnic discrimination than boys (Tummala-Narra & Claudius, 2013). However, a study by Assari & Lankarani (2017) showed a stronger association of perceived ethnic discrimination and internalizing problems among male Arab American than female Arab Americans, which is in line with the subordinate male

hypothesis. With regard to externalizing problems, a study by Umaña-Taylor and colleagues (2012) showed that perceived discrimination is a significant risk factor for externalizing behaviour in male adolescents, but not in female adolescents. However, there is also evidence for comparable associations between ethnic discrimination and internalizing and externalizing problems for both genders (Pascoe & Richman, 2009).

Since there are contradictory theoretical notions and empirical findings, no conclusive expectation can be formulated about how gender would impact upon the association between perceived discrimination and adolescent internalizing and externalizing problems. However, there is enough evidence to assume there *is* a gender difference in the association.

Current study

In the present study we extend previous research on the association between perceived discrimination and internalizing and externalizing problems by examining teacher, adult and peer discrimination within a national representative sample of Dutch adolescents. Moreover, it will look at the moderation effects of gender within these associations. This study will aim to examine the following questions: (a) To what extent are perceptions of ethnic discrimination from teachers, adults and peers associated with adolescent internalizing and externalizing problems? (b) To what extent does the association between perceptions of ethnic discrimination from teachers, adults and peers and adolescent internalizing and externalizing depend upon the gender of the adolescent?

As previous research has indicated a relatively consistent association between perceived discrimination and internalizing and externalizing problems, it is expected that (H1a) perceptions of ethnic discrimination from teachers, adults and peers are all positively associated with adolescent internalizing and externalizing problems. In line with Bronfenbrenner's bioecological theory it is expected that (H1b) perceived discrimination from peers will have the strongest association with adolescent internalizing and externalizing problems. Considering evidence and theories indicating there are differences between adolescent boys and girls, but no consistent findings in *how* adolescents boys and girls differ, it is expected that (H2) the association between ethnic discrimination and internalizing and externalizing problems of adolescents is dependent on the gender of the adolescent.

Based on the above research questions and hypotheses the following research model has been made (Figure 1):

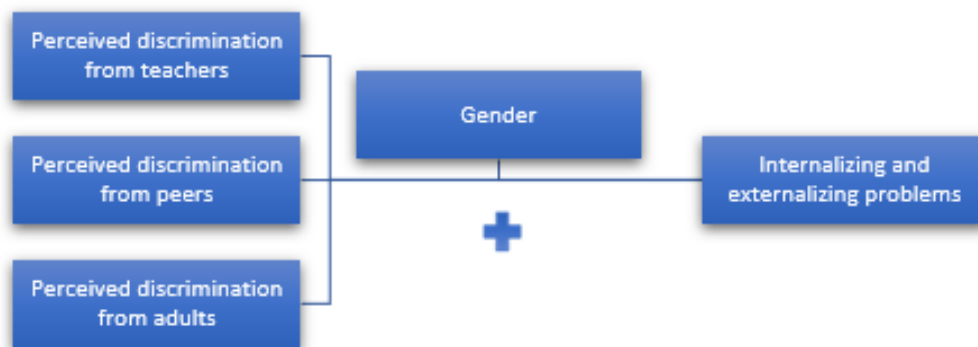


Figure 1. Research model

Methods

Sample and procedure

Data were drawn from the Dutch 2017 Health Behaviour in School-aged Children (HBSC) study. This is part of a cross-national study that gains insight into the health and well-being of young people across more than 40 countries in Europe and North America. The sampling frame of the Dutch HBSC study used in this research were 8,190 11 to 16-year-olds attending last year of primary education and all of secondary education. The mean age of adolescents in the sample was 13.38 (SD = 1.63) and 48.8% of the sample consisted of boys (SD = 0.50). Across the sample, 17.0% of participants had a non-western immigrant background. With regard to school level in secondary education, 16.8% of the participants followed pre-vocational low, 29.8% followed pre-vocational high, 25.1% followed intermediate and 28.4% followed pre-university.

Participants were recruited by means of a random stratified cluster sampling. First there was a separate sampling for primary and secondary education, based on the Dutch database for all schools. Next, all students from a class were selected as a cluster. Each class had the same chance to participate in the research. The samples were stratified on basis of urbanity level in order to ensure a sufficient geographical spread. 210 primary schools and 300 secondary schools were selected. The final sample included 72 primary schools and 85 secondary schools. The most important reasons for schools not to participate in the study were getting a request too often to participate in a study, or they were already participating in another study.

The completion of the survey was managed by research assistants from the Trimbos-Institute who visited the school and ensured that the standard protocol was followed. In primary education, the research was conducted with paper and pencil questionnaires and in secondary education with a digital questionnaire. Prior to the investigation, the primary caregiver of the child received a letter including information about the purpose of the research and the planned participation of the child. Parents could object to the participation of their child if they wanted to. Moreover, adolescents were asked to actively give consent for participating by means of ticking a box.

Measuring instruments

Instruments

Perceived ethnic discrimination. To measure perceived ethnic discrimination, a shortened version of the instrument developed by Phinney and colleagues (1998) was used. Participants were asked how often they were treated unfairly because of their birth country, their parents birth country or their grandparents birth country by 1. Teachers at school 2. Adults outside of school and 3. Peers at school. Answer categories ranged from never (1) to very often (5). However, variables of perceived ethnic discrimination were made dichotomous (0 = no perceived discrimination, 1 = perceived discrimination) because not a lot of the participants reported high levels of discrimination (often and very often) and the difference between the levels was quite small. The chosen instrument is one of the most widely used instruments for assessing adolescents' experiences of discrimination. These items had a high reliability, low number of missing values and were predictive of physical fighting and psychosomatic health complaints for both immigrants and non-immigrants (Berry, Phinney, Sam & Vedder, 2006).

Strength and Difficulty Questionnaire. A Dutch version of the SDQ (Muris, Meesters & van den Berg, 2003) was used to distinguish internalizing and externalizing problems by measuring the behaviour and emotions of the participant in the last six months. To assess the presence of symptoms of internalizing problems, the subscale 'emotional problems' was used. Emotional problems belong to the spectrum of internalizing disorders such as mood and anxiety disorders. Participants were asked to what extent certain statements about emotional problems were true (0 = not true; 1 = somewhat true; 2 = definitely true), such as 'I am often unhappy, downhearted or tearful'. Externalizing symptoms were measured through the subscale 'conduct problems'. Conduct problems concern symptoms of externalizing disorders ranging from aggressive

behaviour (fighting and getting angry) to lying and stealing. Participants were asked to what extent certain statements with respect to conduct problems were true (0 = not true; 1 = somewhat true; 2 = definitely true), such as 'I fight often. I get people to do what I want'. The construct validity of the SDQ has been questioned in previous research (e.g. Goodman, Lamping & Ploubidis, 2010). In the current study, Cronbach's alphas were acceptable for emotional problems ($\alpha_{range} = 0.63-0.68$), but for conduct problems Cronbach's alphas were unacceptably low ($\alpha_{range} = 0.32-0.54$).

Socio-demographic characteristics. With respect to socio-demographic characteristics data on age, educational level, ethnicity, gender and family affluence were collected.

Age. Age was measured using a single-item measure. Respondents were asked about their month and year of birth. Outliers ($> 10.50, < 16.49$) were deleted from the variable age.

Educational level. With respect to educational level, participants could choose between the following four options: (1) pre-vocational low (2) pre-vocational high (3) intermediate and (4) pre-university. When the educational level of a student was a combination of two levels, the student was assigned to the lowest level of the two.

Ethnicity. Ethnicity was measured using a single-item measure. In the current study, a distinction was made between Dutch adolescents (0) and non-western immigrants (Surinamese, Antillean/Aruban, Moroccan, Turkish and other non-Western) (1). Whether or not a participant has a migration background is determined based on the country of birth of the participant itself and of his or her parents, which is in line with the CBS criteria (2003). Results in studies using reports of parents and children (aged 11) have shown that children as young as 11 years old are able to provide valid responses (Nordahl, Krolner, Pall, Currie & Andersen, 2011)

Gender. Gender was assessed using a single-item measure (0 = boy, 1 = girl respectively).

Family affluence. To measure affluence in the respondents' home, the Family Affluence Scale (FAS) has been used (Currie, Roberts, Morgan, Smith, Settertobulte, Samdal & Barnekow-Rasmussen, 2004). Respondents were asked to answer 6 items respecting car ownership, own bedroom, computer ownership, number of bathrooms and owning a dishwasher. FAS is sensitive in distinguishing different levels of affluence as has been shown by its validation against other SES-measures such as parental occupation and macro-economic indicators. Moreover, FAS is a reliable measurement as adolescents report on the items in agreement with their parents' report (Currie, Molcho, Boyce, Holstein & Richter, 2008).

Data analysis

Regression analysis in IBM SPSS Statistics 25 was used to examine the association between perceived discrimination from teachers, adults and peers and internalizing and externalizing problems among Dutch adolescents. First, a partial correlation analyses was performed to measure the strength and direction between the variables of perceived discrimination, emotional and conduct problems, gender and ethnicity whilst controlling for the effect of age, educational type and family affluence.

As the correlation matrix showed a significant correlation between all sources of discrimination, it was decided to perform two kinds of linear regressions were conducted. First, six separate linear regressions were performed to investigate the association of the different sources of perceived discrimination with emotional and conduct problems separately. Moreover, these regression analyses looked for gender differences within these associations by including 'gender' as an interaction variable. Each model consisted of three blocks with emotional problems and conduct problems as the dependent variable. Either perceived teacher, adult or peer discrimination were the independent variables. Gender was an interaction variable with either perceived teacher, adult or peer discrimination. To limit the effect of potential confounding factors, all analyses controlled for the effects of the socio-demographics age, educational level, ethnicity, gender and family affluence. Finally, a linear regression was conducted where the different sources of discrimination were combined in one model to test which of the perceptions of discrimination appeared to be most strongly associated with the outcomes. An alpha level of $p < 0.05$ will be used to test for statistical significance.

Results

Intercorrelations of the study variables

Table 1 shows the intercorrelations, means and standard deviations for the study variables. There were significant correlations between almost all the variables, except for ethnicity with emotional problems and ethnicity with gender. Perceived teacher, adult and peer discrimination and emotional and conduct problems were all positively associated with one another. Regarding the variable gender, boys perceived more discrimination from all sources and scored higher on conduct problems in comparison to girls. Girls scored higher on emotional problems. As to ethnicity, non-western immigrants perceived more discrimination from all sources and scored higher on conduct problems in comparison to Dutch adolescents.

Linear regression analyses

Perceived discrimination and emotional problems

In the regression analyses that investigated emotional problems as outcome measure (Table 2), all control variables except for school level were significant. Moreover, all sources of perceived discrimination were positively associated with emotional problems, meaning that higher levels of perceived discrimination from teachers, adults and peers were correlated with more emotional problems ($\beta = .07$, $\beta = 0.10$ and $\beta = 0.11$ respectively). Perceived discrimination from teachers seems to be slightly less strong associated with emotional problems, which becomes even more visible in the model which includes all sources of perceived discrimination ($\beta = -.02$ versus $\beta = .06$ and $\beta = .09$). The association between perceived adult and peer discrimination and emotional remained significant in this model, while the association between perceived teacher discrimination and emotional problems became non-significant. No significant gender interactions were found in the analysis.

Perceived discrimination and conduct problems

Regression analyses with conduct problems as outcome measure (Table 3), revealed significant associations for all control variables except for family affluence. Similar to emotional problems, all sources of perceived discrimination were positively associated with conduct problems, indicating that higher levels of perceived discrimination from teachers, adults and peers were correlated with more conduct problems ($\beta = 0.19$, $\beta = 0.19$ and $\beta = 0.16$ respectively). Perceived discrimination from peers seems to be slightly less strong associated with conduct problems in comparison to perceived teacher and adult discrimination, but this difference becomes negligible when looking at the model which includes all sources of perceived discrimination ($\beta = .09$ versus $\beta = .09$ and $\beta = .07$). All associations with perceived discrimination and conduct problems remained significant when putting them in one model. Moreover, a moderation effect of gender was found in the separate analyses, in which the association between perceived discrimination and conduct problems was stronger for boys ($\beta = .23$, $\beta = .24$ and $\beta = .20$ respectively) than for girls ($\beta = .14$, $\beta = .13$ and $\beta = .11$ respectively).

Table 1 Intercorrelations, means/percentages and standard deviations for the study variables

Variable	1	2	3	4	5	6	M/%	SD	Min	Max
1. Perceived teacher discrimination ^a							0.08	0.27	0	1
2. Perceived adult discrimination ^b	0.70**						0.08	0.27	0	1
3. Perceived peer discrimination ^c	0.52**	0.56**					0.12	0.32	0	1
4. Emotional problems	0.04**	0.07**	0.08**				2.52	2.29	0	10
5. Conduct problems	0.20**	0.20**	0.18**	0.24**			1.86	1.51	0	10
6. Gender ^d	-0.04**	-0.03*	-0.05**	0.32**	-0.10**		0.52	0.50	0	1
7. Ethnicity ^e	0.25**	0.31**	0.28**	-0.02	0.09**	0.02	0.17	0.37	0	1

Note. Controlled for age, educational type and family affluence.

* $p < 0.05$ ** $p < 0.01$. ^{abc}0 = no perceived discrimination; 1 = perceived discrimination; ^d0 = boy; 1 = girl; ^e0 = Dutch; 1 = non-western immigrant.

Table 2 Results of multiple regression analyses for association between perceived discrimination and emotional problems

Variable	Model 1: teacher disc.			Model 2: Adult disc.			Model 3: Peer disc.		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Age	.12	.02	.07**	-.12	.02	.07**	.12	.02	.07**
Educational level	-.00	.03	.00	.00	.03	.00	-.00	.03	.00
Ethnicity ^a	-.18	.08	-.03*	-.18	.08	-.03*	-.18	.08	-.03*
Gender ^b	1.44	.06	.31**	1.44	.06	.31**	1.44	.06	.31**
Family affluence	-.12	.02	-.09**	-.12	.02	-.09**	-.11	.02	-.09**
Perceived disc. ^a	.58	.11	.07**	.81	.11	.10**	.78	.09	.11**
Perceived disc. x gender	-.38	.21	-.07	-.18	.20	-.03	-.29	.17	-.06
<i>R</i> ²		.12			.12			.13	
<i>F</i> for change in <i>R</i> ²		121.24			125.57			129.08	

p* < .05. *p* < .01. ^a0 = Dutch; 1 = non-western immigrant; ^b0 = boy, 1 = girl; ^cdiscrimination.

Table 3 Results of multiple regression analyses for conduct problems and perceived discrimination

Variable	Model 1: teacher disc.			Model 2: Adult disc.			Model 3: Peer disc.		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Age	-.03	.01	-.03*	-.03	.01	-.03*	-.03	.01	-.03*
Educational level	-.27	.02	-.19**	-.27	.02	-.19**	-.27	.02	-.19**
Ethnicity ^a	.36	.05	.09**	.36	.05	.09**	.36	.05	.09**
Gender ^b	-.30	.04	-.10**	-.30	.04	-.10**	-.30	.04	-.10**
Family affluence	.01	.01	.02	.01	.01	.02	.01	.01	.02
Perceived disc. ^c	1.06	.07	.19**	1.05	.07	.19**	.75	.06	.16**
Perceived disc. x gender	-.42	.14	-.12**	-.53	.14	-.15**	-.32	.11	-.11**
<i>R</i> ²		.09			.09			.08	
<i>F</i> for change in <i>R</i> ²		86.90			88.01			77.98	

* $p < .05$. ** $p < .01$. ^a0 = Dutch; 1 = non-western immigrant; ^b0 = boy, 1 = girl; ^cdiscrimination.

Table 4

Results of multiple regression analyses for emotional and conduct problems and all sources of perceived discrimination

Variable	Model 1: Emotional problems			Model 2: Conduct problems		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Age	.12	.02	.07**	-.03	.01	-.03*
Educational level	-.00	.03	.00	-.27	.02	-.19**
Ethnicity ^a	-.18	.08	-.03*	.36	.05	.09**
Gender ^b	1.44	.06	.31**	-.30	.04	.10**
Family affluence	-.11	.02	-.09**	.01	.01	.02
Perceived teacher disc. ^c	-.13	.15	-.02	.54	.10	.09**
Perceived adult disc.	.52	.15	.06**	.49	.10	.09**
Perceived peer disc.	.60	.11	.09**	.33	.07	.07**
<i>R</i> ²		.13			.10	
<i>F</i> for change in <i>R</i> ²		83.68			62.01	

* $p < .05$. ** $p < .01$. ^a0 = Dutch; 1 = non-western immigrant; ^b0 = boy, 1 = girl; ^cdiscrimination.

Discussion

The main purpose of this study was to investigate to what extent perceived discrimination from teachers, adults and peers are related to internalizing and externalizing problems among Dutch youth and to look for possible gender differences within these associations. The findings of this research match some of the findings in previous research on perceived discrimination and its association with internalizing and externalizing problems, however there are also some results that differ from what has been found before which has implications for future research. All sources of perceived discrimination were positively associated with emotional problems and conduct problems, although perceived discrimination was more strongly associated with

conduct problems than with emotional problems. With regard to differences between the sources of discrimination, perceived teacher discrimination was less strongly associated with emotional problems in comparison to perceived adult and peer discrimination. Within the association of conduct problems, all sources of perceived discrimination were comparably strong. Gender differences revealed that boys are more likely than girls to show conduct problems as a result of perceived teacher, adult and peer discrimination. As to emotional problems, no gender differences could be found.

As expected, perceptions of ethnic discrimination from teachers, adults and peers were all positively associated with internalizing and externalizing problems among Dutch adolescents (H1a), meaning that a higher perception of ethnic discrimination was associated with more internalizing and externalizing problems. This finding is supported by previous studies (e.g. Stevens & Thijs, 2018 and Coker et al., 2009) and in line with the biopsychosocial model of discrimination and the social identity theory that explain the negative effects of perceived discrimination on well-being. Perceived discrimination could cause stress responses, leading to maladaptive coping responses such as aggression (Bogart et al., 2013; Tobler et al., 2012). Moreover, negative self-perceptions can arise when someone's social group is devalued as a consequence of discrimination, affecting one's mental health (Umaña-Taylor et al., 2012). Besides that, this study found that perceived discrimination was more strongly associated with conduct problems than with emotional problems. This is in contrast with previous studies (e.g. Dimitrova, Chasiotis & Van de Vijver, 2016; Sanchez et al., 2013) who found that discrimination is more strongly linked to internalizing problems in comparison to externalizing problems. Thus, these results suggest that perceived discrimination is negatively associated on multiple mental health outcomes, but the relative strength of this association varies depending on the aspect of mental health that is being measured. More research must be done to investigate the results found in this study regarding the strength of association between perceived discrimination and internalizing and externalizing problems.

Results about the different sources of discrimination and their association with internalizing problems and externalizing problems show that hypothesis H1b is only partly confirmed. In the association with emotional problems, perceived peer discrimination was more strongly associated, but only in comparison to perceived teacher discrimination. This difference became especially clear within the analyses in which all sources of perceived discrimination were added, where the association between perceived teacher discrimination and emotional problems became non-significant. One possible explanation for this particular finding could have something to do with the perceived subjectivity of the discrimination. Educational

discrimination may be perceived more subjectively (such as unfairly receiving a bad grade) while peer and adult discrimination (such as being excluded by peers or by being hassled in stores) may be more objective (Hershberger, Zapolski & Aalsma, 2016). Perhaps, subjective discrimination could be more malleable to certain buffers, that have not been explored in this study, which reduces the impact of the discrimination on adolescents' emotional well-being. This should be further investigated in future research. With regard to conduct problems, all sources of perceived discrimination were comparably strong, suggesting that, when it comes to adolescents' externalizing problems, all sources of perceived discrimination are equally detrimental. Thus, the theoretical notion that especially perceived discrimination from peers is harmful for adolescents' health (Douglass et al., 2016) must be rejected. Literature about why perceived discrimination from teachers and adults could be just as harmful for adolescents' internalizing and externalizing problems as perceived peer discrimination is scarce, however some studies emphasize the impact that perceived discrimination from adults and teachers can have on adolescents' health. For example, perceiving unfair treatment from adults could have quite an impact on adolescents' health as adults often symbolically represent institutions, such as teachers, police and shopkeepers (Seaton & Yip, 2009). Institutionalized discrimination is, as some studies show, even more associated to internalizing problems (Seaton & Yip, 2009) and externalizing problems (Hershberger et al., 2016) than individual discrimination (e.g. discrimination by peers). More research must be done to confirm if the different sources of discrimination used in this study are actually comparable in predicting emotional and conduct problems.

Support for significant gender differences in the associations between perceived ethnic discrimination and conduct problems was found, confirming hypotheses H2 partly. Associations between perceived discrimination from all sources and conduct problems were stronger for boys than for girls. Other studies, in which adolescent boys were found to be more likely to respond to life stress by expressing anger and frustrations and losing inhibitory controls than adolescent girls, support this finding (Rutter, 1990). The gender difference that has been found in this study is supported partly by the subordinate male hypotheses and partly by the gender socialization theories. As the subordinate male hypothesis states, perceptions of ethnic discrimination are more harmful for men than for women, however only when externalizing problems are being taken into account. In line with gender socialization theories, boys display more externalizing problems than girls, however girls do not display more internalizing problems than boys. Thus, in the light of the current findings with regard to gender differences, both theories should be reconsidered in the future. No significant gender differences were found

within the link between perceived discrimination and emotional problems. This finding suggests that experiences of perceived discrimination affect boys and girls similarly when it comes to emotional adjustment. Although there are multiple studies who found that gender is not a moderator in the association between perceived discrimination and internalizing problems (e.g. Tobler et al., 2013; Pascoe & Richman, 2009; Montgomery & Foldspang, 2008), no plausible theories have been given as to why adolescent boys and girls are affected similarly by perceived discrimination when it comes to emotional problems. More research is needed to interpret this finding.

Methodological strengths and limitations

To evaluate the current study, some strengths and limitations need to be discussed. One of the strengths of this study is the fact that it has made use of a large sample of nationally representative data from the Dutch 2017 HBSC survey. Furthermore, distinguishing between specific sources of perceived discrimination is an improvement over prior studies that used general measures of discrimination and gives more insight into the negative effects of different sources of perceived discrimination on the mental health of adolescents.

However, this research also presents some limitations. For example, self-report measures were used. This could mean that not all participants responded to the questions truthfully as a consequence of social desirability bias or because situations were not remembered correctly. A second limitation of this research was its cross-sectional design, which cannot examine causal relations. For instance, the current design cannot support any claims with regard to the direction of the associations. It could be the case that experiencing more internalizing and externalizing problems lead to increased feelings of perceived discrimination instead of the other way around. Future research should investigate the associations between perceived discrimination and internalizing and externalizing problems within a longitudinal research design so it could test for causation. Moreover, there are some limitations within the measures used in this study. This study used only one question to measure perceived discrimination. However, perceived discrimination is a broad concept, that entails not only experiences of being treated unfairly, but also experiences of being teased, threatened or feeling unaccepted (Berry et al., 1994). Including more items could have resulted in more cases of perceived ethnic discrimination. Likewise, internalizing and externalizing problems were only measured through emotional and conduct problems even though there are many more forms of internalizing and externalizing problems. In addition to that, the items of conduct problems in

this study showed low Cronbach's alpha's indicating an unacceptable level of reliability. Future research should include more items of perceived discrimination and internalizing and externalizing problems to measure these concepts more accurately.

Conclusion and possible implications

The present study has clarified the association between different sources of perceived discrimination and internalizing and externalizing problems among Dutch adolescents, while at the same time checking for moderation effects of gender. The results indicate a positive association between all sources of perceived discrimination and internalizing and externalizing problems, with perceived discrimination having stronger associations with conduct problems than emotional problems. Moreover, there were reasonably consistent associations for emotional problems and conduct problems across different sources of perceived discrimination. Only perceived teacher discrimination had a weaker association with emotional problems in comparison to perceived adult and peer discrimination. Significant gender differences were found in the association between perceived discrimination and externalizing problems, with a stronger link between perceptions of discrimination and conduct problems for boys in comparison to girls.

This study shows how different sources of discrimination are associated with health outcomes and that gender can play a role in these health outcomes which has implications for future research and intervention. First of all, more research must be done to confirm if perceived discrimination is indeed more strongly related to conduct problems compared to emotional problems as this is in contrast with previous findings. Moreover, as the results of the current study show that the association between perceived discrimination and conduct problems is especially strong for boys in comparison to girls, extra attention should be given to boys when developing interventions around ethnic discrimination and its influence on adolescents' health. Besides that, as the consequences of perceived ethnic discrimination are different for adolescent boys than for adolescent girls, possible other outcomes associated with perceived discrimination should merit closer examination regarding the role of gender in future research. Lastly, this research suggests that despite small differences, perceived teacher, adult and peer discrimination are quite comparable in strongness. This implicates that perceived discrimination itself is a risk for emotional and conduct problems, regardless of the source. More longitudinal research must be done to confirm the equal importance of perceived teacher,

adult and peer discrimination in relation to internalizing and externalizing problems before suggestions about interventions on this topic can be made.

Appendix 1

Interdisciplinarity

When studying perceived ethnic discrimination among adolescents and its association with internalizing and externalizing problems, different levels of the Bronfenbrenner's Ecological Model contribute to understanding this topic.

At the *intrapersonal level*, individual biological and psychological characteristics influence the association between perceived ethnic discrimination and internalizing and externalizing problems. For example, as illustrated in the introduction, the gender of the individual in question can moderate the association. Gender role beliefs and sex role stereotypes could affect the way adolescent boys and girls react to perceptions of ethnic discrimination (Tummala-Narra & Claudius, 2013), resulting in different outcomes of internalizing and externalizing problems.

At the *interpersonal level*, the physical and social environment of the adolescent has an impact on the association between perceived ethnic discrimination and internalizing and externalizing problems. For instance, not only could different perpetrators of ethnic discrimination (teachers, adults and peers) lead to different outcomes for the discriminated individual (Benner et al., 2018), but also could social support from the close environment of the adolescent buffer the impact of perceived ethnic discrimination on the individuals mental health (Jasinskaja-Lahti, Liebkind, Jaakkola & Reuter, 2006).

At the *societal level*, mass media, politics and ideologies and attitudes of a culture can have an influence on the amount of ethnic discrimination in a country and thus indirectly its impact on adolescents' internalizing and externalizing problems. The media occupies a crucial role in the representation of different ethnic groups and social relations. Through these representations, members of the media audience are invited to create a sense of who 'we' are in relation to 'them' (Cottle, 2000). Depending on how certain groups are represented in the media, citizens can be encouraged to either embrace cultural diversity or oppress and discriminate those with a different ethnic background.

Appendix 2

Contract data use

Utrecht, 2019

This letter constitutes formal confirmation of the fact that the data from the Utrecht University Youth Studies 2019-2020 have been made available to Rachel van der Stouw of Utrecht University.

These data will not be made available to others, and the data may be used only for analysis and reporting on topics for the thesis, about which agreement has been reached with Gonneke Stevens.

Rachel van der Stouw will receive access to the data from the dataset in order to answer the following research questions within the framework of the thesis:

Research question: *To what extent are perceptions of ethnic discrimination from three different sources (teachers, adults and peers) associated with internalizing and externalizing problems of adolescents and how does gender impact upon this association?*

The following variables will be used:

Dependent variables: ‘Internalizing problems’ (five questions) and ‘Externalizing problems’ (five questions)

Independent variable: ‘Perceived ethnic discrimination’ (three questions)

Other variables: ‘Gender’ (one question)

No report based on the data from the project entitled ‘The association between perceptions of ethnic discrimination from teachers, adults and peers and internalizing and externalizing problems among adolescents: Differences in gender’ may be made public, unless permission has been obtained in advance from the Project Coordinator for the ‘The association between perceptions of ethnic discrimination from teachers, adults and peers and internalizing and externalizing problems among adolescents.’

After the expiration of this contract, dated Rachel van der Stouw shall delete the ‘The association between perceptions of ethnic discrimination from teachers, adults and peers and internalizing and externalizing problems among adolescents: Differences in gender’ data.

Dates and signature:

28th of January 2020

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Appendix 3

Syntax

selecting respondents.

```
COMPUTE filter_$=(lft >= 10.5 & lft <= 16.49).  
VARIABLE LABELS filter_$ 'lft >= 10.5 & lft <= 16.49 (FILTER)'.  
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.  
FORMATS filter_$ (f1.0).  
FILTER BY filter_$.  
EXECUTE.
```

recoding variables.

```
RECODE v56_05 (1=3) (2=2) (3=1).  
EXECUTE.
```

```
RECODE v70a (1=0) (ELSE=1) INTO teacherdisc_dicho.  
EXECUTE.
```

```
RECODE v70b (1=0) (ELSE=1) INTO adultdiscr_dicho.  
EXECUTE.
```

```
RECODE v70c (1=0) (ELSE=1) INTO peerdiscr_dicho.  
EXECUTE.
```

computing interaction variables.

```
COMPUTE Teacherdiscxgender=teacherdisc_dicho * v2.  
EXECUTE.
```

```
COMPUTE Adultdiscxgender=adultdiscr_dicho * v2.  
EXECUTE.
```

```
COMPUTE Peerdiscxgender=peerdiscr_dicho * v2.
```

```
EXECUTE.
```

descriptive statistics of demographics.

```
FREQUENCIES VARIABLES=lft schnivo etn v2 FAS_III  
/STATISTICS=STDDEV MINIMUM MAXIMUM MEAN  
/ORDER=ANALYSIS.
```

reliability tests dependent variables.

```
RELIABILITY
```

```
/VARIABLES=v56_02 v56_06 v56_10 v56_13 v56_19  
/SCALE('ALL VARIABLES') ALL  
/MODEL=ALPHA  
/SUMMARY=TOTAL.
```

```
RELIABILITY
```

```
/VARIABLES=v56_03 v56_05 v56_09 v56_14 v56_17  
/SCALE('ALL VARIABLES') ALL  
/MODEL=ALPHA  
/SUMMARY=TOTAL.
```

correlation analysis.

```
PARTIAL CORR
```

```
/VARIABLES=teacherdisc_dicho adultdiscr_dicho peerdiscr_dicho sdqem1 sdqcon1 v2 etn  
BY lft schnivo  
FAS_III  
/SIGNIFICANCE=TWOTAIL  
/STATISTICS=DESCRIPTIVES  
/MISSING=LISTWISE.
```

separate linear regression analyses.

REGRESSION

```
/MISSING LISTWISE  
/STATISTICS COEFF OUTS R ANOVA  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT sdqem1  
/METHOD=ENTER lft schnivo etn v2 FAS_III  
/METHOD=ENTER teacherdisc_dicho  
/METHOD=ENTER Teacherdiscxgender.
```

REGRESSION

```
/MISSING LISTWISE  
/STATISTICS COEFF OUTS R ANOVA  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT sdqem1  
/METHOD=ENTER lft schnivo etn v2 FAS_III  
/METHOD=ENTER adultdiscr_dicho  
/METHOD=ENTER Adultdiscxgender.
```

REGRESSION

```
/MISSING LISTWISE  
/STATISTICS COEFF OUTS R ANOVA  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT sdqem1  
/METHOD=ENTER lft schnivo etn v2 FAS_III  
/METHOD=ENTER peerdiscr_dicho  
/METHOD=ENTER Peerdiscxgender.
```

REGRESSION

```
/MISSING LISTWISE
```

```
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT sdqcon1
/METHOD=ENTER lft schnivo etn v2 FAS_III
/METHOD=ENTER teacherdisc_dicho
/METHOD=ENTER Teacherdiscxgender.
```

REGRESSION

```
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT sdqcon1
/METHOD=ENTER lft schnivo etn v2 FAS_III
/METHOD=ENTER adultdiscr_dicho
/METHOD=ENTER Adultdiscxgender.
```

REGRESSION

```
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT sdqcon1
/METHOD=ENTER lft schnivo etn v2 FAS_III
/METHOD=ENTER peerdiscr_dicho
/METHOD=ENTER Peerdiscxgender.
```

separate linear regression analyses for conduct problems split by gender.

SORT CASES BY v2.

SPLIT FILE LAYERED BY v2.

REGRESSION

```
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT sdqcon1
/METHOD=ENTER lft schnivo etn FAS_III
/METHOD=ENTER teacherdisc_dicho
/METHOD=ENTER Teacherdiscxgender.
```

REGRESSION

```
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT sdqcon1
/METHOD=ENTER lft schnivo etn FAS_III
/METHOD=ENTER adultdiscr_dicho
/METHOD=ENTER Adultdiscxgender.
```

REGRESSION

```
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT sdqcon1
/METHOD=ENTER lft schnivo etn FAS_III
/METHOD=ENTER peerdiscr_dicho
/METHOD=ENTER Peerdiscxgender.
```

SPLIT FILE OFF.

regression analyses with the different sources perceived discrimination combined.

REGRESSION

```
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT sdqem1
/METHOD=ENTER lft schnivo etn v2 FAS_III
/METHOD=ENTER teacherdisc_dicho adultdiscr_dicho peerdiscr_dicho
/METHOD=ENTER Teacherdiscxgender Adultdiscxgender Peerdiscxgender.
```

REGRESSION

```
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT sdqcon1
/METHOD=ENTER lft schnivo etn v2 FAS_III
/METHOD=ENTER teacherdisc_dicho adultdiscr_dicho peerdiscr_dicho
/METHOD=ENTER Teacherdiscxgender Adultdiscxgender Peerdiscxgender.
```

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