

Perceived Ethnic and Gender Discrimination and Depressive Symptoms Among Adolescents: Examining the Moderating Role of Family Support, Ethnicity, and Gender



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Abstract

Depressive symptoms among adolescents are a growing societal problem with multiple adverse outcomes. These adverse outcomes underline the need to identify processes which may lead to the development of depressive symptoms among adolescents. One potential predictor of depressive symptoms among adolescents is perceived discrimination. Family support is a protective factor that might mitigate the association between perceived discrimination and depressive symptoms, but has received little empirical attention. This mitigating effect might be more pronounced for members of stigmatized groups, such as adolescents with a migration background and girls. The present cross-sectional study examines the association between two types of perceived discrimination and depressive symptoms among adolescents, and the moderation effect of family support. Also, the moderation effects of ethnicity (when perceiving ethnic discrimination) and gender (when perceiving gender discrimination) are explored. Data from 2148 adolescents ($M = 13.57$ years, $SD = 0.53$) participating in a large cohort study were used. Multiple linear regression analyses showed a significant positive association between perceived ethnic and gender discrimination, respectively, and depressive symptoms. No moderation effects were found for family support, ethnicity, or gender. Future research should examine other factors that might mitigate the association between perceived discrimination and depressive symptoms among adolescents.

Keywords: adolescents, perceived discrimination, depressive symptoms, family support

Samenvatting

Depressieve symptomen zijn een groeiend probleem onder adolescenten en hebben meerdere nadelige gevolgen. Deze nadelige gevolgen benadrukken de noodzaak om processen te identificeren die kunnen leiden tot de ontwikkeling van depressieve symptomen bij adolescenten. Een mogelijke voorspeller van depressieve symptomen is ervaren discriminatie. Steun door het gezin is een beschermende factor die de associatie tussen ervaren discriminatie en depressieve symptomen zou kunnen verzwakken, maar is weinig onderzocht. Dit beschermende effect is mogelijk sterker voor leden van gestigmatiseerde groepen, zoals adolescenten met een migratieachtergrond en meisjes. De huidige cross-sectionele studie onderzoekt de associatie tussen twee soorten ervaren discriminatie en depressieve symptomen bij adolescenten, en het modererende effect van steun door het gezin. Daarnaast worden de modererende effecten van etniciteit (bij ervaren etnische discriminatie) en sekse (bij ervaren seksediscriminatie) onderzocht. Er is gebruikgemaakt van gegevens van 2148 adolescenten ($M = 13.57$ jaar, $SD = 0.53$) die deelnamen aan een groot cohortonderzoek. Meervoudige lineaire regressie analyses toonden een significant positieve associatie tussen ervaren etnische en seksediscriminatie, respectievelijk, en depressieve symptomen. Er zijn geen moderatie effecten gevonden voor steun door het gezin, etniciteit, of sekse. Toekomstig onderzoek moet andere factoren onderzoeken die de associatie tussen ervaren discriminatie en depressieve symptomen bij adolescenten kunnen verzwakken.

Kernwoorden: adolescenten, ervaren discriminatie, depressieve symptomen, steun door het gezin

Depressive symptoms among adolescents are a growing societal problem. Research in various Western countries shows an increase in depressive symptoms among adolescents in recent years (Bor, Dean, Najman, & Hayatbakhsh, 2014; Potrebny, Wiium, & Lundegård, 2017). This also applies to the Netherlands. In 2016, nearly 4 percent of young people aged 12 to 18 years reported having depressive symptoms for at least six months in the past year. This is twice the prevalence rate when compared to the one observed in 2014 (NJI, 2018).

Depressive symptoms among adolescents have multiple adverse outcomes, such as a lack of motivation, risk of school dropout, alcohol misuse during late adolescence, and underemployment during young adulthood (Glieb & Pine, 2002). These adverse outcomes underline the need to identify the processes which may lead to the development of depressive symptoms among adolescents.

One potential predictor of depressive symptoms among adolescents is perceived discrimination, the subjective assessment of unfair treatment toward members of a group (Grollman, 2012). In the Netherlands, 10 percent of the students in primary and secondary education experience perceived discrimination (Andriessen, Fernee, & Wittebrood, 2014). As young people go through adolescence, they become independent from their parents, develop their own identities, and become increasingly sensitive to acceptance by others. This makes them more vulnerable to perceived discrimination (Greene, Way, & Pahl, 2006; Rumbaut, 1994). Perceived discrimination is especially harmful for adolescents, because their strategies to cope with negative events are not fully developed yet. This makes it more difficult for adolescents to deal with the adverse outcomes caused by perceived discrimination, which in turn makes them more likely to develop depressive symptoms (Caputo, 2003; Juang & Alvarez, 2010).

Existing research indicates an association between perceived discrimination and depressive symptoms (Brody et al., 2006; Pascoe & Smart Richman, 2009). However, not everyone who experiences perceived discrimination develops depressive symptoms. Protective factors may mitigate the negative consequences of perceived discrimination. Protective factors that have received most attention in research thus far are individual characteristics, such as ethnic identity and self-esteem (Juang, Ittel, Hoferichter, & Gallarin, 2016). Nevertheless, in order to prevent the negative effects of perceived discrimination, such as depressive symptoms, it is also important to identify protective factors beyond the individual (Roosa, 2000). One such protective factor is family support. Family support is generally defined as an individuals' perception of being able to rely on family members when in need of assistance (Pascoe & Smart Richman, 2009).

Most research on perceived discrimination and its relation to depressive symptoms has focused on adults (Simons et al., 2002). However, it is also important to examine this relation during adolescence because both perceived discrimination and depressive symptoms during adolescence can have adverse long-term consequences (Uchino, 2006). Also, the existing literature typically focuses on ethnic discrimination while multiple forms of discrimination exist (Grollman, 2012). Consequently, little is known about the similarities and differences between different forms of perceived discrimination. Therefore, this study will examine the association between multiple forms of perceived discrimination and depressive symptoms among adolescents and explore whether this association is affected by family support.

Perceived Discrimination and Depressive Symptoms

Multiple forms of perceived discrimination exist. Discrimination based on social group membership, such as ethnicity and gender, is the most recognizable form of discrimination for children and adolescents (Brown et al., 2000). In the Netherlands, perceived ethnic and gender discrimination are most prevalent (Andriessen et al., 2014). Therefore, this study will focus on perceived ethnic and gender discrimination.

Theoretical perspectives suggest that discrimination based on group membership consists of an external and an internal component, respectively the discriminator and the group membership of the person who is discriminated against (Schmitt & Branscombe, 2002a; 2002b). If individuals are discriminated because of their group membership, they may attribute negative outcomes of discrimination to their self. These self-attributions occur because group membership and group identity are aspects of the self, which are often enduring, important to one's overall identity, and uncontrollable, such as ethnicity and gender (Tajfel & Turner, 1986; Wirth & Williams, 2009). Because ethnic and gender group membership are mostly uncontrollable, perceived discrimination based on ethnicity or gender can create a sense of powerlessness. The discrimination implies that one's outcomes are caused by external, unpredictable, and uncontrollable factors. This can threaten one's sense of control and have negative effects on well-being, including depressive symptoms (Gee, Spencer, Chen, Yip, & Takeuchi, 2007; Verkuyten, 1998).

Empirically, the link between perceived ethnic discrimination and depressive symptoms among adolescents is shown in a 3-year longitudinal study by Greene et al. (2006), which found that perceived ethnic discrimination predicted an increase in depressive symptoms among 225 Black, Latino, and Asian American adolescents. Also, cross-sectional research found that perceived ethnic discrimination was significantly related to depressive symptoms among 867 African American adolescents (Simons et al., 2002). Similar results are

found for perceived gender discrimination. Cross-sectional research among 413 adolescents found a significant association between perceived gender discrimination and depressive symptoms among boys and girls (Cogburn, Chavous, & Griffin, 2011). Besides this, cross-sectional research by Grollman (2012) among 1,052 15 to 25-year-olds found a significant relationship between perceived gender discrimination and depressive symptoms among boys and girls.

In sum, the research discussed above shows an association between perceived ethnic and gender discrimination, respectively, and depressive symptoms among adolescents. Therefore, replicating existing research, we expect that adolescents who perceive ethnic or gender discrimination, experience more depressive symptoms than adolescents who do not perceive ethnic or gender discrimination (see Figure 1).

Family Support as a Moderator

Recently, theorizing on perceived discrimination and well-being has shifted from a focus on mediation towards a focus on moderation (Major, Quinton, & McCoy, 2002). A moderator that could mitigate the negative effects of perceived discrimination is family support. In the current study, family support is defined as an individual's perception of supportive behaviors from their family (Olson, Russell, & Sprenkle, 1983).

Family support remains an important source of support during adolescence (Barrera & Garrison-Jones, 1992). Higher levels of family support may indicate a higher propensity of being able to rely on family members when necessary. Being able to rely on family members, after perceiving discrimination, may strengthen one's feeling of self-worth and promote a positive sense of self. This may mitigate the association between perceived discrimination and depressive symptoms (Finch & Vega, 2003; Pascoe & Smart Richman, 2009).

Empirical evidence regarding the mitigating effect of family support for perceived ethnic and gender discrimination in adolescents is scarce. One longitudinal study among 714 African American adolescents (10-12 years old) found that family support buffered the relationship between perceived ethnic discrimination and depressive symptoms among adolescents (Brody et al., 2006). A similar protective effect of family support could be expected for perceived gender discrimination, because ethnic and gender groups have many similarities. Ethnicity and gender are both known as social position variables, which contribute to the experience of discrimination because they are linked to social status and associated with mostly negative stereotypes (Brown et al., 2000). However, to our knowledge, the protective effect of family support for perceived gender discrimination has not been investigated yet.

Based on the described literature, we expect that the association between perceived ethnic and gender discrimination, respectively, and depressive symptoms among adolescents is moderated by family support: More family support decreases the strength of the association between perceived ethnic and gender discrimination, respectively, and depressive symptoms. Also, it seems plausible that the mitigating effect of family support would be more pronounced for members of stigmatized groups, such as adolescents with a migration background and girls. They perceive ethnic and gender discrimination more frequently than other adolescents, which increases their risk of developing depressive symptoms (Ryuff, Keyes, & Hughes, 2003; Spears Brown & Bigler, 2005). Therefore, for perceived ethnic discrimination, we expect the moderation effect of family support to be especially strong for adolescents with a migration background (see Figure 1, Submodel 1). For perceived gender discrimination we expect the moderation effect of family support to be especially strong for girls (see Figure 1, Submodel 2).

The Present Study

The present cross-sectional study examines the association between perceived discrimination and depressive symptoms among adolescents, and the possible moderation effect of family support. Perceived discrimination is differentiated between perceived ethnic discrimination and perceived gender discrimination. Also, the moderation effects of ethnicity (when perceiving ethnic discrimination) and gender (when perceiving gender discrimination) are examined. The main research question is: What is the association between perceived ethnic and gender discrimination, respectively, and depressive symptoms among adolescents, and is this association moderated by family support? To answer this question, the following sub questions are formulated:

- I. What is the association between perceived ethnic and gender discrimination, respectively, and depressive symptoms among adolescents?
- II. Does family support moderate the association between perceived ethnic and gender discrimination, respectively, and depressive symptoms among adolescents?
- III. Is the moderation effect of family support more pronounced for adolescents with a migration background (moderation effect of ethnicity, Submodel 1) and girls (moderation effect of gender, Submodel 2)?

The present study takes into account potential confounders. Since gender and ethnicity are associated with both perceived discrimination and depressive symptoms (Ryuff et al., 2003), we will control for gender and ethnicity in Submodel 1 and Submodel 2, respectively.

Also, we will control for age in both submodels, because age is positively correlated with both perceived discrimination and depressive symptoms (Hankin, 2006; Romero & Roberts, 1998).

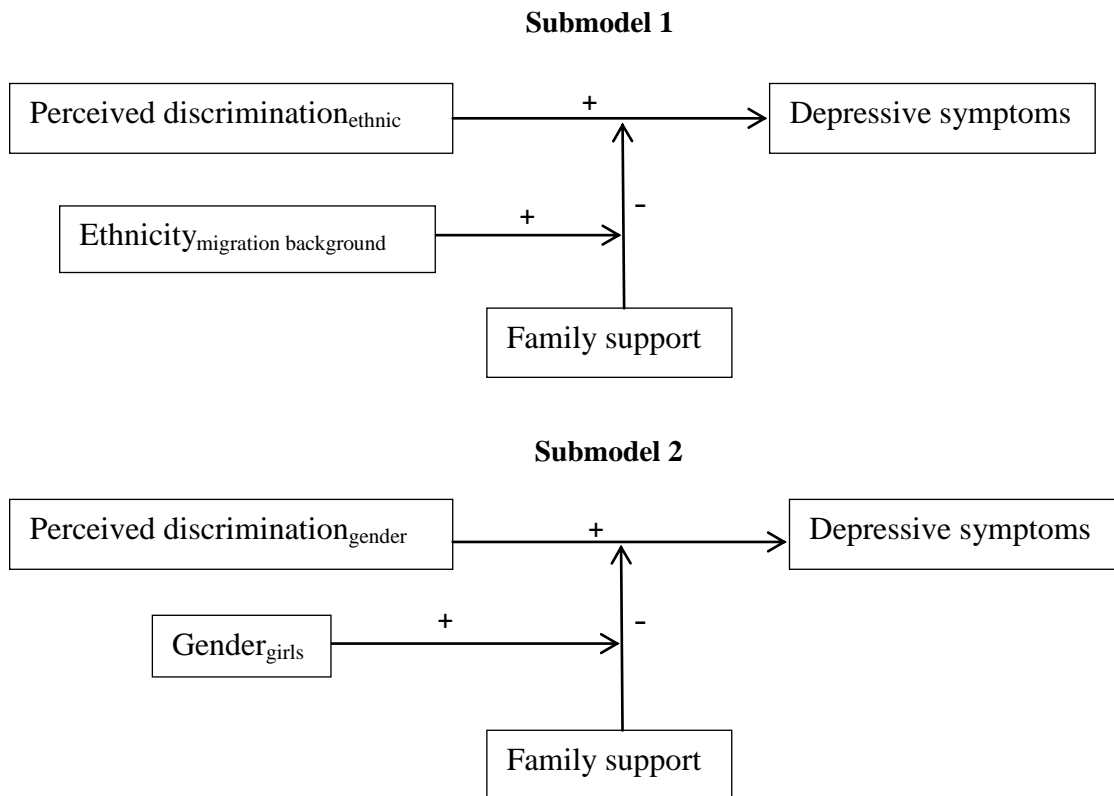


Figure 1. Research model of the association between perceived ethnic discrimination and depressive symptoms (Submodel 1) and perceived gender discrimination and depressive symptoms (Submodel 2), including the moderation effects of family support, ethnicity (Submodel 1), and gender (Submodel 2).

Method

Participants

The present cross-sectional study uses data from the TRacking Adolescents' Individual Lives Survey (TRAILS). TRAILS is a prospective cohort study which examines the psychological, physical, and social development of Dutch adolescents into adulthood. To date six measurement waves have been completed (Richards et al., 2018). The present study includes 2148 participants and focused on the second wave (T2), which ran from September 2003 to December 2004. Gender was almost equally divided (49.3% male). The mean age of the adolescents was 13.57 years ($SD = 0.53$). The majority of adolescents had a native Dutch background (89.4%).

Procedure

Participants of TRAILS were adolescents recruited from five municipalities in the north of the Netherlands, including both rural and urban areas. The municipalities were requested to provide the names and addresses of all inhabitants born between 10-01-1989 and

09-30-1991, resulting in a total of 3483 names. At the same time, 135 primary schools in those municipalities were asked to participate in the TRAILS study, of which 122 schools (90.4%) agreed. Adolescents with mental retardation and without a Dutch-speaking parent or parent surrogate were excluded. This resulted in 2230 participating adolescents at the first wave. The attrition rate was 3.6% during measurement wave two, resulting in data from 2149 adolescents (Oldehinkel et al., 2014; Zandstra, Ormel, Hoekstra, & Hartman, 2018). We did not receive data from one participant, leading to 2148 participants in our study.

When a school approved to participate, adolescents and their parents (typically the mother) or guardians filled in a couple of questionnaires during each measurement wave. Adolescents filled in the questionnaire at school under the supervision of one or more well-trained assistants. Parents and guardians filled in the questionnaire at home. Also, parents and guardians were interviewed by well-trained interviewers who visited the parents or guardians at home. Both adolescents and parents or guardians actively agreed to participate in TRAILS by written informed consent. Respondents received a voucher as a reward for participating in TRAILS (Oldehinkel et al., 2014; Zandstra et al., 2018). TRAILS was approved by the Dutch Central Committee on Research Involving Human Subjects (CCMO) (Richards et al., 2018).

Measures

Depressive symptoms. The dependent variable depressive symptoms was measured using the questionnaire Revised Child Anxiety and Depression Scale (RCADS), which consisted of 10 items (Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000). Examples of items are: 'I feel sad or empty', 'I feel restless', and 'I am very tired'. Adolescents could indicate the extent to which the statements applied to them on a four-point Likert scale (1 = *never*, 2 = *sometimes*, 3 = *often*, 4 = *always*). A scale was created based on the sum of the responses to the 10 items. A reliability analysis showed a reliable scale ($\alpha = .81$). A higher score represented a higher level of depressive symptoms.

Perceived ethnic and gender discrimination. The independent variables perceived ethnic discrimination and perceived gender discrimination were measured using adolescents' self-report (Huisman et al., 2009). Adolescents could indicate whether they felt discriminated based on ethnic background or gender in the past year (2 items). The items were: 'Have you been discriminated by others based on skin color/ethnic background in the past year?' and 'Have you been discriminated by others based on gender (because you are a girl/a boy) in the past year?'. Adolescents could indicate whether they have been discriminated or not using a two-point Likert scale (1 = *no*, 2 = *yes*). A higher score represented the experience of ethnic or gender discrimination.

Family support. The moderator family support was measured using four items from the Family Assessment Device (FAD) (Epstein, Baldwin, & Bishop, 1983). This questionnaire was part of the parent reports. A factor analysis showed that all four items measured the same component. The items were: ‘We can count on each other’s support when there are difficulties’, ‘We can express our feelings towards each other’, ‘We cannot talk to each other about the grief we feel’, and ‘We avoid talking about our fears and worries’. Parents or guardians could indicate the extent to which the statements applied to their family on a four-point Likert scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, 4 = *strongly agree*). The last two items were reverse scored so that a higher score represented a higher level of family support. A scale was created based on the sum of the responses to the 4 items. A reliability analysis showed a reliable scale ($\alpha = .75$), which indicated that these items can be considered to represent family support.

Ethnicity (migration background). Ethnicity was the second moderator in Submodel 1 (see Figure 1). An adolescent was identified as having a migration background if at least one of his/her parents was born outside the Netherlands (Vollebergh et al., 2005). Because in the present study the majority of the respondents had a native Dutch background, a dichotomous variable was used (1 = *native Dutch background*, 2 = *migration background*).

Gender (girls). Gender was the second moderator in Submodel 2 (see Figure 1). Parents were asked to indicate whether their child was a boy or a girl (1 = *female*, 2 = *male*).

Control variables. This study takes into account potential confounders in order to exclude potential alternative explanations. Gender and ethnicity were measured as described above and were taken into account in Submodel 1 and Submodel 2, respectively. Age was measured by asking parents to indicate the age of their child in years. Age was taken into account in both submodels.

Data Analyses

Analyses were performed using SPSS version 23. Missing values were checked using missing value analyses. Each variable had less than 20% of missing values, which were deleted listwise during the analyses. Also, outliers were checked. Outliers were found, mainly in the variable family support. However, these outliers were included in the analyses, because of the large sample size. Descriptive analyses were performed to get insight in the characteristics of the study sample. Spearman and Pearson correlations were used to examine the relations between all variables.

A multiple linear regression analysis was conducted to study the association between the independent variable perceived ethnic discrimination and the dependent variable

depressive symptoms among adolescents, and the moderating roles of family support and ethnicity (Submodel 1). The assumptions of multiple linear regression analysis were tested before the analysis was conducted. The multiple linear regression analysis was conducted in four steps. The control variables were included in the first step. In the second step, the main effects of the independent variables (i.e., perceived ethnic discrimination, family support, ethnicity) were included. To test for possible moderation by family support, an interaction term was created by multiplying the independent variable perceived ethnic discrimination with the moderator family support, after the moderator was mean-centered. This interaction term was included in step three. To test for possible moderation by ethnicity, an interaction term was included by multiplying perceived ethnic discrimination, family support, and ethnicity. This interaction term was included in step four.

Also, a multiple linear regression analysis was conducted to study the association between the independent variable perceived gender discrimination and the dependent variable depressive symptoms among adolescents, and the moderating roles of family support and gender (Submodel 2). The assumptions of multiple linear regression were tested before the analysis was conducted. The multiple linear regression analysis was conducted in four steps, which were the same steps as the ones mentioned in the previous analysis.

Results

Descriptive Statistics

An overview of the descriptive statistics for all study variables of Submodel 1 and Submodel 2 are presented in Table 1. The overall mean of perceived ethnic discrimination ($M = 1.09$, $SD = 0.28$) was significantly higher than the overall mean of perceived gender discrimination ($M = 1.04$, $SD = 0.18$), $t(2076) = 7.64$, $p < .001$. However, the percentage of participants who perceived ethnic or gender discrimination was low, respectively 8.6% and 3.5%. This should be kept in mind when reading the results of this study, given that results regarding both types of discrimination are driven by a very small sample of participants. The mean of the sum score was used for the variables family support and depressive symptoms. The overall mean of family support was 13.36 ($SD = 1.90$). The overall mean of depressive symptoms was 14.20 ($SD = 3.63$).

Table 1

Descriptive Statistics of Research Variables of Submodel 1 and Submodel 2

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Range</i>
Age	2148	13.57	0.53	12.15-15.15
Perceived ethnic discrimination	2081	1.09	0.28	1-2
Perceived gender discrimination	2079	1.04	0.18	1-2
Family support	1909	13.36	1.90	3-16
Ethnicity ^a	2148	1.11	0.31	1-2
Gender ^b	2148	1.49	0.50	1-2
Depressive symptoms	2083	14.20	3.63	10-36

Note. Perceived ethnic discrimination is only part of Submodel 1. Perceived gender discrimination is only part of Submodel 2. All other variables are part of Submodel 1 and Submodel 2. *n* = number of participants; *M* = mean; *SD* = standard deviation.

^aEthnicity is a moderator in Submodel 1 and a control variable in Submodel 2. ^bGender is a moderator in Submodel 2 and a control variable in Submodel 1.

Correlations

Table 2 shows the Pearson and Spearman correlations between all variables of Submodel 1 and Submodel 2. As expected, perceived ethnic and gender discrimination were both significantly positively correlated with depressive symptoms. The correlation between perceived ethnic discrimination and perceived gender discrimination was significant, indicating that adolescents who perceived ethnic discrimination were more likely to perceive gender discrimination as well. Given the small percentage of participants who perceived ethnic or gender discrimination, the small correlations found might not be robust. As expected, family support was significantly negatively correlated with depressive symptoms, indicating that adolescents with more family support experienced fewer depressive symptoms. As expected, ethnicity was significantly positively correlated with perceived ethnic discrimination, indicating that adolescents with a migration background perceived more ethnic discrimination than native Dutch adolescents. Gender was not correlated with perceived gender discrimination, in contrast to what we expected. However, gender was significantly negatively correlated with depressive symptoms, indicating that girls were more likely to experience depressive symptoms than boys.

Table 2

Pearson and Spearman Correlations between Depressive Symptoms, Perceived Ethnic Discrimination, Perceived Gender Discrimination, Family Support, Ethnicity, Gender, and Control Variables for Submodel 1 and Submodel 2

Variable	1	2	3	4	5	6	7
Age	1.00						
Perceived ethnic discrimination ^a	.04*	1.00					
Perceived gender discrimination ^b	.02	.19***	1.00				
Family support	-.08**	-.06**	-.00	1.00			
Ethnicity ^c	.09***	.29***	.03	-.09***	1.00		
Gender ^d	-.01	.04*	.00	-.02	-.01	1.00	
Depressive symptoms	-.02	.09***	.11***	-.06**	.01	-.23***	1.00

Note. Perceived ethnic discrimination is only part of Submodel 1. Perceived gender discrimination is only part of Submodel 2. All other variables are part of Submodel 1 and Submodel 2. Pearson correlations are underscored, Spearman correlations are not underscored.

^a1 = no, 2 = yes. ^b1 = no, 2 = yes. ^c1 = native Dutch background, 2 = migration background; Ethnicity is a moderator in Submodel 1 and a control variable in Submodel 2. ^d1 = girl, 2 = boy; Gender is a moderator in Submodel 2 and a control variable in Submodel 1.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Testing the Hypotheses

Two multiple linear regression analyses were conducted in four steps to test the hypotheses related to Submodel 1 and Submodel 2.

Submodel 1: Perceived ethnic discrimination. In the first step, the control variables age and gender were added (see Table 3). The control variable gender was significant, with female sex ($\beta = -.22, p < .001$) being associated with more depressive symptoms, but age was non-significant.

To examine the association between perceived ethnic discrimination and depressive symptoms, in the second step, we added the main effects of perceived ethnic discrimination, family support, and ethnicity. As expected, perceiving ethnic discrimination ($\beta = .12, p < .001$) and lower family support ($\beta = -.06, p < .01$) were associated with more depressive symptoms, but ethnicity was non-significant.

In the third step, we added 3 two-way interaction terms to examine the moderating effect of family support. The interaction term between perceived ethnic discrimination and

family support was not significant ($\beta = .02, p = .85$), indicating that family support did not moderate the association between perceived ethnic discrimination and depressive symptoms. Thus, in contrast to what we expected, family support was a predictor of depressive symptoms among adolescents (see step 2), rather than a moderator of the association between perceived ethnic discrimination and depressive symptoms.

In the fourth step, we added the three-way interaction term to examine the moderating effect of ethnicity. In contrast to what we expected, the interaction term was not significant ($\beta = .29, p = .26$), indicating that the mitigating effect of family support was not more pronounced for adolescents with a migration background.

Submodel 2: Perceived gender discrimination. To examine Submodel 2, we conducted the same multiple linear regression analysis as reported above. Here, the control variables age and ethnicity were not significant (see Table 4). To examine the association between perceived gender discrimination and depressive symptoms, in the second step, we added the main effects of perceived gender discrimination, family support, and gender. As expected, perceiving gender discrimination ($\beta = .17, p < .001$), lower family support ($\beta = -.07, p < .01$), and female sex ($\beta = -.22, p < .001$) were associated with more depressive symptoms.

In the third step, we added 3 two-way interaction terms to examine the moderating effect of family support. The interaction term between perceived gender discrimination and family support was not significant ($\beta = -.17, p = .26$), indicating that family support did not moderate the association between perceived gender discrimination and depressive symptoms. Thus, in contrast to what we expected, family support was a predictor of depressive symptoms among adolescents (see step 2), rather than a moderator of the association between perceived gender discrimination and depressive symptoms.

In the fourth step, we added the three-way interaction term to examine the moderating effect of gender. In contrast to what we expected, the interaction term was not significant ($\beta = -.62, p = .17$), indicating that the mitigating effect of family support was not more pronounced for girls. However, as was seen in step 2, gender was a significant predictor of depressive symptoms among adolescents.

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Table 3

Multiple Linear Regression Analysis of Submodel 1 with Depressive Symptoms as Dependent Variable, Perceived Ethnic Discrimination as Independent Variable, Family Support and Ethnicity as Moderators, and Control Variables

Variable	Step 1				Step 2				Step 3				Step 4			
	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>t</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>t</i>
Age	-.27	.15	-.04	-1.73	-.30	.15	-.04	-1.95	-.30	.15	-.04	-1.96	-.31	.15	-.05	-1.99*
Gender	-1.56	.16	-.22	-9.69***	-1.62	.16	-.23	-10.09***	-1.61	.16	-.23	-10.01***	-1.60	.16	-.23	-9.99***
Perceived ethnic discrimination	-	-	-	-	1.64	.31	.12	5.24***	1.11	.95	.08	1.17	.88	.97	.07	.91
Family support	-	-	-	-	-.12	.04	-.06	-2.76**	-.27	.20	-.14	-1.31	.36	.59	.19	.61
Ethnicity	-	-	-	-	-.44	.31	-.03	-1.44	-.91	.94	-.07	-.97	-1.16	.97	-.09	-1.20
Perceived ethnic discrimination * Family support	-	-	-	-	-	-	-	-	.03	.16	.02	.19	-.48	.48	-.29	-1.00
Perceived ethnic discrimination * Ethnicity	-	-	-	-	-	-	-	-	.42	.71	.07	.60	.61	.73	.09	.84
Family support * Ethnicity	-	-	-	-	-	-	-	-	.11	.15	.06	.70	-.39	.46	-.24	-.84
Perceived ethnic discrimination * Family support * Ethnicity	-	-	-	-	-	-	-	-	-	-	-	-	.39	.35	.29	1.13

Note. *B* = unstandardized coefficient; *SE* = standard error; β = standardized coefficient.

* $p < .05$. ** $p < .01$. *** $p < .001$.

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Table 4

Multiple Linear Regression Analysis of Submodel 2 with Depressive Symptoms as Dependent Variable, Perceived Gender Discrimination as Independent Variable, Family Support and Gender as Moderators, and Control Variables

Variable	Step 1				Step 2				Step 3				Step 4			
	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>t</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>t</i>
Age	-.26	.16	-.04	-1.65	-.29	.15	-.04	-1.88	-.30	.15	-.04	-1.94	-.30	.15	-.04	-1.98*
Ethnicity	.18	.30	.01	.58	-.05	.29	-.00	-.18	-.08	.29	-.01	-.25	-.07	.29	-.01	-.25
Perceived gender discrimination	-	-	-	-	3.29	.44	.17	7.44***	5.77	1.40	.29	4.13***	5.77	1.40	.29	4.13***
Family support	-	-	-	-	-.13	.04	-.07	-3.01**	.28	.30	.15	.94	-.74	.81	-.39	-.92
Gender	-	-	-	-	-1.58	.16	-.22	-9.98***	.13	.93	.02	.14	.15	.93	.02	.16
Perceived gender discrimination * Family support	-	-	-	-	-	-	-	-	-.29	.26	-.16	-1.13	.71	.77	.39	.91
Perceived gender discrimination * Gender	-	-	-	-	-	-	-	-	-1.66	.88	-.28	-1.88	-1.68	.88	-.28	-1.90
Family support * Gender	-	-	-	-	-	-	-	-	-.08	.08	-.06	-.89	.67	.55	.55	1.22
Perceived gender discrimination * Family support * Gender	-	-	-	-	-	-	-	-	-	-	-	-	-.73	.53	-.62	-1.37

Note. *B* = unstandardized coefficient; *SE* = standard error; β = standardized coefficient.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The aim of the current study was to examine the association between perceived discrimination and depressive symptoms among adolescents, and the possible moderation effect of family support. Perceived discrimination was differentiated between perceived ethnic discrimination and perceived gender discrimination. Also, the moderation effects of ethnicity (when perceiving ethnic discrimination) and gender (when perceiving gender discrimination) were examined. Results showed a significant positive association between perceived ethnic and gender discrimination, respectively, and depressive symptoms among adolescents. However, no moderation effects were found for family support, ethnicity, and gender.

Perceived Discrimination and Depressive Symptoms

In line with the first hypothesis of this study, adolescents who perceived ethnic or gender discrimination, experienced more depressive symptoms than adolescents who did not perceive ethnic or gender discrimination. Despite the small percentage of participants that perceived ethnic or gender discrimination, the results showed compelling evidence that these experiences are negatively associated with adolescents' mental health, here depressive symptoms.

Our findings are consistent with previous studies (Cogburn et al., 2011; Greene et al., 2006; Grollman, 2012; Simons et al., 2002). One explanation of the link between perceived ethnic and gender discrimination and depressive symptoms may be the internalization of negative feedback about the self, such as ethnic background or gender, when perceiving ethnic or gender discrimination (Brody et al., 2006). Another explanation is based on the learned helplessness theory (Abramson, Garber, & Seligman, 1980). Perceived ethnic and gender discrimination are uncontrollable events, because the discrimination is based on ethnic or gender group membership, which are mostly uncontrollable. The learned helplessness theory states that individuals who experience uncontrollable events, such as perceived discrimination, develop an expectation that some outcomes are uncontrollable, which gives them a feeling of helplessness. This in turn, can cause depressive symptoms (Abramson et al., 1980). Future research should examine these explanations and pit different underlying processes against each other.

Family Support as a Moderator

In contrast to the second hypothesis, family support did not moderate the association between perceived ethnic and gender discrimination, respectively, and depressive symptoms among adolescents. However, a negative main effect of family support on depressive

symptoms was found, indicating that higher levels of family support were associated with lower levels of depressive symptoms.

The finding concerning the negative main effect of family support on depressive symptoms among adolescents is in line with previous research by Juang et al. (2016) and Stice, Ragan, and Randall (2004). However, the literature regarding the moderating role of family support is inconsistent. While research by Brody et al. (2006) did find a moderating effect, research by Juang et al. (2016) did not. Possibly, family support has a stronger effect when perceived discrimination is frequent or when adolescents perceive the support. In the present study, perceived discrimination was infrequent and family support was measured using parent reports. Adolescents could experience family support differently than their parents, which might be an explanation for the absence of a moderation effect of family support in the current study. Therefore, future research using adolescents' self-reports when measuring family support would be promising. It is also possible that over the course of adolescence, interactions with peers become more important than interactions with family (De Goede, Branje, & Meeus, 2009). Adolescents spend more time outside home and peer support becomes increasingly important (Cumsille, Darling, & Martínez, 2010). In turn, family support might be insufficient in moderating the association between perceived discrimination and depressive symptoms. Therefore, future research should include the moderation effect of both family support and peer support to examine which one is more important.

Ethnicity and Gender as Moderators

In contrast to the third hypothesis, no moderation effects were found for ethnicity (Submodel 1) and gender (Submodel 2). However, a negative main effect of gender on depressive symptoms was found, indicating that girls reported higher levels of depressive symptoms than boys.

The lack of findings is not consistent with the theory discussed, which stated that the mitigating effect of family support would be more pronounced for members of stigmatized groups, such as adolescents with a migration background and girls (Ryff et al., 2003; Spears Brown & Bigler, 2005). These groups were assumed to perceive ethnic and gender discrimination more frequently than other adolescents, which was expected to increase the risk of developing depressive symptoms. A study by Kessler, Mickelson, and Williams (1999) supported these assumptions.

The inconsistent results may be due to the small percentage of participants that perceived ethnic or gender discrimination in our study. Although it is likely that stigmatized groups perceive ethnic and gender discrimination more frequently than other adolescents, in

our study only a small percentage of participants reported perceiving ethnic or gender discrimination at all. Also, there is little discrimination in the Netherlands when compared to the United States, where most of the research around discrimination is conducted (Harris et al., 2006; Spears Brown & Bigler, 2005). Finally, only 10.6% of the participants indicated that they had a migration background. Therefore, our sample may not have been representative enough to examine the proposed hypothesis. Future research should involve a more representative and ethnically diverse sample. Furthermore, experiences of discrimination against adolescents with a migration background in the Netherlands may differ from discrimination against Black people in the United States. Future research should examine this possibility.

The finding concerning the negative main effect of gender on depressive symptoms among adolescents is consistent with previous studies (Hankin et al., 1998; Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993; Nolen-Hoeksema, 2001). Possibly girls are, when compared to boys, more likely to internalize negative feelings, have a disproportionate concern about social acceptance, and have a greater reactivity to stress. This makes girls more likely to experience depressive symptoms when compared to boys (Nolen-Hoeksema, 2001).

Strengths and Limitations

Our study has several strengths. First, to our knowledge, this study is the first to examine the association between two different types of discrimination and depressive symptoms among adolescents. It is important to examine perceived ethnic and gender discrimination separately, because they are targeted toward different social groups. Also, the correlation between perceived ethnic discrimination and perceived gender discrimination was less than one, which shows the importance to look at them separately. Second, we also examined the correlation between perceived ethnic and gender discrimination. This correlation was significant, indicating that people who perceive one type of discrimination are also prone to perceive other types of discrimination.

Our study also has some limitations that should be mentioned. First, because of the cross-sectional design of this study, no causal association between perceived ethnic and gender discrimination, respectively, and depressive symptoms could be established. Future longitudinal research should examine the direction of the association and exclude reverse causality. Second, data was measured using self-reports, which could have led to socially desirable answers. However, a study by Krieger, Smith, Naishadham, Hartman, and Barbeau (2005) showed that after correcting for social desirability bias the association between discrimination and health was still robust. Also, the use of questionnaires alone restricts our

understanding of adolescents' experiences with and perceptions of discrimination. Therefore, future research should use other data collection methods, such as interviews or observations. Third, there is limited generalizability of the results because only municipalities in the north of the Netherlands were included and most of the participants had a native Dutch background. This does not reflect the Dutch adolescent population (CBS, 2018). Therefore, future research should comprise a more representative sample and different municipalities throughout the Netherlands.

Conclusion and Implications

Despite the small percentage of participants who perceived ethnic or gender discrimination, the current study found a positive association between perceived ethnic and gender discrimination, respectively, and depressive symptoms among adolescents. No moderation effects of family support, ethnicity, and gender were found. Because family support did not moderate the association between perceived discrimination and depressive symptoms, future research should focus on identifying other factors in various contexts of adolescents' lives that can alleviate the negative consequences of perceived discrimination. Future research should also look into adolescents' perceptions of discrimination so interventions can be designed to help adolescents recognize and cope with perceived discrimination. The results of these future studies can be used to develop policies and guidelines about promoting acceptance in communities and schools. The results of the current research show that mental health policies should include perceived discrimination as a potential predictor of depressive symptoms and emphasize the need for effective interventions to mitigate the negative consequences of perceived discrimination.

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