Adverse intergenerational effects of ethnically-divisive social contexts on children’s mental health: A prospective cohort study in the Netherlands

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ABSTRACT

Background: Around the world, international migration and growing economic inequality have contributed to heightened perceptions of intergroup threat (i.e., feeling that people outside of one’s social group are hostile to their physical or emotional well-being). Exposures related to intergroup threat, like negative intergroup contact, are inherently stressful and may contribute to higher levels of psychological distress in the population. This longitudinal study investigated whether maternal experiences of negative intergroup contact are related to poor mental health outcomes among ethnically diverse children in The Netherlands.

Methods: Data are from 4025 mother-child pairs in the Generation R Study, a multi-ethnic Dutch birth cohort initiated in 2005. Mothers’ experiences of negative intergroup contact were assessed during pregnancy. Child mental health was indexed by problem behavior reported by parents and teachers using the Child Behavior Checklist. Linear mixed-effects models tested longitudinal associations of maternal-reported negative intergroup contact with child problem behavior reported by mothers at ages 3, 5, and 9 years, considering a range of potential confounders. Sensitivity analyses examined whether results were replicated using child data from other informants.

Results: In fully adjusted models, higher levels of negative intergroup contact were associated with more problem behavior averaged across childhood for both non-Dutch (standardized $B = 0.10$, 95% CI $= 0.05, 0.14$) and Dutch children (standardized $B = 0.12$, 95% CI $= 0.08, 0.15$). Sensitivity analyses with data from other informants largely supported primary findings.

Conclusions: Comparable adverse intergenerational effects on mental health were observed among both ethnic minority and majority children whose mothers experienced negative intergroup contact. These findings suggest that ethnically divisive social contexts may confer widespread risks, regardless of a child’s ethnic background. To our knowledge, this study is the first to examine exposures related to intergroup threat from an epidemiologic perspective and provides proof of principle that such exposures may be informative for population health.

1. Introduction

Over the past 20 years, societies around the world have become more ethnically diverse and economically unequal, which has contributed to greater social discord and heightened intergroup threat (Craig et al., 2018; Oxendine, 2019). Intergroup threat is a psychological phenomenon in which individuals perceive people outside of their social group as hostile to their physical or emotional well-being (Stephan, 2014). At the individual level, a strong predictor of elevated threat is negative intergroup contact (Stephan et al., 2002). Negative intergroup contact is highly stressful and can lead individuals to experience a sense of ongoing hypervigilance towards those outside of their social group (Page-Gould et al., 2014; Paradies et al., 2008). Previous findings indicate that parent experiences of psychosocial stress can exert negative impacts on children’s psychological well-being (Lang and Gartstein, 2018), but no work has investigated whether exposures related to intergroup threat (i.e.,
negative intergroup contact) confer similar risks. Our study examines whether maternal-reported negative intergroup contact is related to poorer mental health in children over a six-year period in early to middle childhood.

Previous work on intergroup threat disproportionately focuses on socially advantaged groups’ attitudes toward marginalized groups (Riek et al., 2006), but numerous studies have also identified heightened threat perceptions among individuals from marginalized groups towards those who are more socially advantaged (Corenblum and Stephan, 2001; Stephan et al., 2002; Vedder et al., 2016). The integrated threat theory provides a useful framework to understand how threat manifests across diverse segments of the population, regardless of social status (Stephan and Stephan, 2017). According to the theory, intergroup threat can take four different forms: (1) a feeling that the political or economic power, health, or well-being of one’s social group is in danger; (2) a feeling that the morals or values endorsed by one’s social group are under attack; (3) a sense of anxiety about being rejected or ridiculed based on one’s social identity; and (4) holding negative stereotypes towards individuals outside of one’s social group. Evidence shows that these different manifestations of threat are prevalent at comparable levels among lower and higher status groups, ultimately contributing to feelings of mutual distrust (Corenblum and Stephan, 2001; Stephan et al., 2002; Vedder et al., 2016).

To date, most work on intergroup threat has sought to understand how it contributes to prejudice in society (Riek et al., 2006), with little consideration of its broader effects on population mental health. Experiencing a threat based on one’s social identity can elicit negative emotions, including hypervigilance (Page-Gould et al., 2014; Paradies et al., 2008) and a sense of collective angst (Wohl and Branscombe, 2008), which may contribute to elevated levels of psychological distress. Although no epidemiologic studies have investigated the psychological impact of intergroup threat on children, studies of threat-related factors like negative intergroup contact (i.e., being harassed, abused, or discriminated against by members of other social groups) (Stephan et al., 2002; Stephan and Stephan, 2017), provide evidence of potential associations. Discrimination is a form of negative intergroup contact that has been studied extensively in relation to children’s mental health (Anderson et al., 2015; Becares et al., 2015; Cave et al., 2020; Ford et al., 2013; Heard-Garris et al., 2018; Kelly et al., 2013; Tran, 2014). A recent longitudinal study of over 1600 youth of color in the United Kingdom found that higher levels of discrimination reported by mothers when children were 5 years old were associated with greater psychosocial difficulties (Becares et al., 2015). There is also evidence that white parents’ experiences of discrimination can contribute to poorer mental health outcomes in their children, despite the relatively low levels of exposure reported in white populations (Tran, 2014).

Although studies of discrimination provide some evidence of negative intergroup contact’s potential impact on children, they also raise critical questions. First, discrimination is a common experience among marginalized, low social status groups, but is less frequently encountered by non-marginalized, higher status groups. To study the population impact of negative intergroup contact more comprehensively, it is necessary to also consider other exposures that may have broader salience among both high and low social status individuals. Feeling rejected or denigrated by those outside of one’s social group is a psychological form of negative intergroup contact that may also offer important insights (Quillian, 1995; Stephan et al., 2002). For example, the social conditions that contribute to a person of color’s feelings of rejection by white individuals are quite different from those that shape a white individual’s feelings of rejection by people of color. However, even if these circumstances vary by social group, the experience of negative intergroup contact itself is believed to be inherently stressful (Hayward et al., 2017), making these exposures particularly informative for the study of intergroup threat-related impacts on children from socially diverse backgrounds.

In this study, we sought to examine the longitudinal relationship between maternal-reported negative intergroup contact during pregnancy and children’s mental health in a multi-ethnic sample of children enrolled in the Generation R Study in the Netherlands, where there is both a high prevalence of intergroup threat (Vedder et al., 2016) and striking ethnic disparities in child mental health (Flink et al., 2012). Following prior work on discrimination (Anderson et al., 2015; Becares et al., 2015; Cave et al., 2020; Ford et al., 2013; Heard-Garris et al., 2018; Kelly et al., 2013; Tran, 2014), we hypothesized that high levels of negative intergroup contact would predict worse mental health among marginalized, racial/ethnic minority (i.e., non-Dutch) children. On the other hand, we expected that negative intergroup contact would have less of an impact on non-marginalized Dutch children, given their lower levels of exposure and privileged status as members of the dominant racial/ethnic group. To ensure our assessment of negative intergroup contact was relevant to both Dutch and non-Dutch populations, we measured it with respect to two domains: experiences of ethnic discrimination and perceiving hostility from members of other social groups (perceived out-group hostility). All associations were examined stratified by ethnic majority status to account for the different conditions that likely shape experiences of negative intergroup contact among Dutch and non-Dutch mothers. In line with past research, child mental health was indexed by maternal reports of child problem behaviors (Ivanova et al., 2010). To mitigate reporter bias, we adjusted for maternal depressive symptoms at the time negative intergroup contact was assessed, and also examined associations with ratings of child behavior provided by other informants. To our knowledge, this population-based study is the first to investigate the mental health impact of exposures related to intergroup threat.

2. Methods

2.1. Sample

Participants are from the Generation R Study, a Dutch birth cohort (Kooijman et al., 2016). From April 2002 to January 2006, 9778 pregnant women in Rotterdam were recruited into the study (61% participation rate) (Hofman et al., 2004). Data on their children were collected through questionnaires administered in fetal life through mid-childhood to primary caregivers (primarily mothers), their partners (primarily fathers), and teachers. Questionnaires were available in Dutch, Turkish, and Arabic. Generation R was approved by the Medical Ethical Committee of the Erasmus Medical Center, Rotterdam, and written informed parental consent was obtained from all participants.

Fig. 1 depicts the sample composition over the study period. At age 3, parents of 7094 children provided consent for their child’s continued participation. Among this group, 276 children who did not have maternal ethnicity data recorded and 2320 additional children whose mothers did not respond to any negative intergroup contact survey items during pregnancy were considered ineligible. Compared to mothers who responded to ≥1 negative intergroup contact item, those with incomplete data were more likely to be non-Dutch and were more socially disadvantaged. From the total eligible sample of 4498 participants, children missing behavioral data at all assessments were excluded (n = 473, 10.5% lost to follow-up), resulting in an analytic sample of 4025 children. In the final analytic sample, only missing negative intergroup contact items and covariate data were multiply imputed.

2.2. Participant non-response and missing data analyses

Our eligible sample excluded the mothers of roughly one-third of participants (n = 2320) who did not respond to any survey items on negative intergroup contact. Compared to mothers who responded to at least one negative intergroup contact item (n = 4498), those with
incomplete data were more likely to be non-Dutch (46.3% vs. 43.2%; \( p = 0.02 \)), to have a secondary school or lower level of education (55.4% vs. 45.8%; \( p < 0.001 \)), and to be over the age of 35 years at the time of their child’s birth (23.7% vs. 20.2%; \( p = 0.001 \)). They were also more likely to be a first-generation Dutch citizen, and less likely to speak Dutch as their native language. Notably, maternal depression during pregnancy was not associated with non-response.

Although our final analytic sample excluded participants who were missing data on all four negative intergroup contact items, 465 mothers (11.6%) had incomplete data on less than four items. Maternal non-response to individual negative intergroup contact items was not significantly associated with child behavior at follow-up assessments. Yet, when compared to those with complete responses, mothers who did not complete all negative intergroup contact items were more likely to be Dutch (87.1% vs. 56.5%; \( p < 0.001 \), report a monthly family income more than €2000 (25.7% vs. 22.3%; \( p = 0.08 \)), and to be over the age of 35 years at the time of their child’s birth (26.5% vs. 21.3%; \( p = 0.01 \)). Mothers with partial negative intergroup contact data were also less likely to experience depression during pregnancy (4.3% vs. 7.9%, \( p = 0.01 \)) and to be a first-generation Dutch citizen, and more likely to speak Dutch as their native language compared to those with complete data.

Among participants in the analytic sample, missing data on individual study covariates ranged from 0% to 28.4%, with family income and maternal native language measures having the highest proportion of missingness (28.4% and 12.5%, respectively). Concerning child problem behavior data, 59.3% of the final analytic sample had measurements at all three assessments, 26.4% had data from two assessments, and 14.3% had data from only one assessment. Only missing negative intergroup contact items and covariate information were multiply imputed in 50 datasets using chained equations (Azur et al., 2011).

2.3. Measures

**Child Mental Health.** Mothers reported child problem behaviors at ages 3, 5, and 9 years using the Child Behavior Checklist (CBCL) (Achenbach, 2000). A 99-item instrument was administered at ages 3 years \( (n = 3373; \alpha = 0.93) \) and 5 years \( (n = 3580; \alpha = 0.94) \), and a 118-item instrument at age 9 years \( (n = 2906; \alpha = 0.94) \). To examine changes in child problem behavior over time using different versions of the CBCL, scores were transformed onto a common scale (range = 0–100) with higher values denoting more problem behavior. Problem behaviors were also assessed via questionnaires completed by fathers at age 9 years \( (n = 2221; \alpha = 0.89) \) and teachers at age 7 years \( (n = 2222; \alpha = 0.96) \). For those who were missing \( \leq 25\% \) of CBCL items, scores were weighted to account for missingness. To allow for the estimation of standardized coefficients that could be compared across stratified models, all behavior scores (mother, father, teacher) were standardized within ethnic groups.

**Negative Intergroup Contact.** In the third trimester of pregnancy, mothers reported their experiences living in a multicultural society. Negative intergroup contact was assessed using a 4-item measure addressing two types of contact: experiences of *ethnic discrimination* (“I have been taunted or insulted due to my ethnic background,” “I have been threatened or attacked due to my ethnic background”) and *perceived out-group hostility* (“I do not feel accepted by [Dutch people/people of other ethnic groups],” “I feel that [Dutch people/people of other ethnic groups] have something against me”). Separate threat measures were constructed for non-Dutch and Dutch participants (see Supplemental Table S1). For each group, overall scores (range = 0–16) were derived by summing mothers’ responses across all 4 items, with higher values indicating higher levels of negative intergroup contact. Continuous scores were standardized within Dutch and non-Dutch
groups and used as the main exposure in all analyses. A 3-category measure was also created to differentiate mothers who experienced no negative intergroup contact (0) from those who reported low (1–4) or high levels (>5). For sensitivity analyses, subscale measures of ethnic discrimination and perceived out-group hostility were constructed by summing mothers’ ratings on the two items corresponding to each domain, then standardizing within each group.

Our measure of negative intergroup contact had adequate internal consistency in this sample ($\theta_{\text{non-Dutch}} = 0.77$, $\theta_{\text{Dutch}} = 0.75$). Construct validity was assessed by exploratory factor analysis using iterated principal axis factoring (Hendrickson and White, 1964). Results confirmed that the instrument adhered to a one-factor structure, which accounted for 79.7% of the variance in responses among non-Dutch mothers, and 70.9% of the variance among Dutch mothers (Eigenvalue\_non-Dutch = 2.0; Eigenvalue\_Dutch = 2.1). Convergent validity was tested by examining differences in reports of negative intergroup contact by mothers’ social network composition since lower levels are commonly reported in ethnically diverse social networks (ten Berge et al., 2017). During pregnancy, mothers were asked how many people with whom they spent leisure time were Dutch or from other ethnic groups. As expected, participants who spent leisure time with many versus no ethnic out-group friends had lower negative intergroup contact scores (Non-Dutch mean: 1.2 vs. 3.5, $p < 0.001$; Dutch mean: 1.9 vs. 3.1, $p = 0.1$). Divergent validity was assessed by testing associations between maternal reports of negative intergroup contact and the likelihood of having a female child, and no significant trends were observed.

**Covariates.** Data were collected through maternal questionnaires administered during pregnancy and when the participating child was 3 years old. Sociodemographic covariates included the child’s sex, advanced maternal age at the child’s birth (>35 years), low maternal education reported during pregnancy (primary or secondary school, lower vocational/higher vocational and university), and monthly family income reported at age 3 years ($<$2,000, $\geq$2,000–$3,999, $\geq$4,000). Additional maternal covariates included ethnicity defined as mothers’ self-reported country of birth (Dutch, Caribbean, Middle Eastern, African, Asian, other European, or other), native language (Dutch/non-Dutch), and Dutch citizenship (first generation Dutch/second generation Dutch or later). At mid-pregnancy, maternal depression was assessed using a 6-item subscale of the Brief Symptom Inventory (BSI) (De Beurs, 2004; Derogatis and Melisaratos, 1983). Following the BSI manual, responses were summed then divided by participants’ total endorsed symptoms (range = 0–4). Mothers were classified as experiencing depression (yes/no) if they scored above the clinical threshold of 0.80 (De Beurs, 2004).

2.4. Statistical analyses

Descriptive statistics were calculated in observed data. Differences in mean negative intergroup contact scores by study covariates were evaluated using linear regression in multiply imputed data, while differences in the proportion of mothers who ever experienced negative contact by covariates were assessed using logistic regression.

Associations between maternal-reported negative intergroup contact and repeated child behavior assessments were analyzed using linear mixed-effects models with random intercepts and a first-order autoregressive variance-covariance structure ( Laird and Ware, 1982; Littell et al., 2006). First, within-individual changes in raw problem behavior scores were examined both overall and by ethnic minority status. Next, standardized associations between maternal-reported negative intergroup contact and child problem behavior averaged over the follow-up period were evaluated separately among non-Dutch and Dutch children. Minimally adjusted models controlled for sex and ethnicity, and fully adjusted models controlled for all study covariates. We then added an interaction between threat and time to fully adjusted models to determine whether negative intergroup contact was related to children’s yearly rate of change in problem behavior. Continuous standardized negative intergroup contact scores were the primary exposure in all analyses however relationships were also assessed with discrete levels of negative intergroup contact (none, low, high) to identify potentially discontinuous associations. Domain-specific measures of negative intergroup contact were also examined as separate exposures to determine whether observed relationships might be driven more strongly by ethnic discrimination or perceived out-group hostility.

To mitigate reporter bias, we also assessed negative intergroup contact regarding child problem behavior rated by different informants. Since repeated measures were not available from all informants, linear regression models compared associations between negative intergroup contact and standardized child problem behavior rated by participants’ mothers at age 9 years, fathers at age 9 years, and teachers at age 7 years. All analyses were conducted in Stata MP v.15.1.

3. Results

3.1. Sample characteristics

The composition of the sample was ethnically diverse, with 39.9% of mothers reporting a non-Dutch ethnicity. Among non-Dutch mothers, the most represented ethnic groups were those from the Middle East (25.9%), Caribbean (22.3%), and other European countries (21.8%). Table 1 describes the non-Dutch and Dutch subsamples. Among non-Dutch participants, 59.7% had a mother who received a secondary school level education or lower (vs. 30.3% of Dutch), 39.4% reported a monthly family income ≤€2000 (vs. 12.5% of Dutch), and 12.5% had mothers who met criteria for depression during pregnancy (vs. 4.2% of Dutch). Only one-third of ethnic minority mothers reported speaking Dutch as their native language, and nearly two-thirds were first-generation citizens of the Netherlands.

3.2. Correlates of negative intergroup contact

Mean negative intergroup contact levels by study covariates are provided in Table 1. Middle Eastern mothers reported experiencing the highest levels of negative intergroup contact, followed by Dutch and Caribbean mothers. When ethnic groups were combined to examine mean levels of contact by ethnic minority status, a larger proportion of Dutch mothers indicated experiencing any negative contact (66.6%) compared to non-Dutch (52.3%; $p < 0.001$). For non-Dutch mothers, younger age, speaking a non-Dutch native language, and being a first-generation Dutch citizen predicted higher levels of negative intergroup contact, while low levels of education and income, and experiencing depression during pregnancy were associated with higher levels of exposure in both groups.

When negative intergroup contact was disaggregated into ethnic discrimination and perceived out-group hostility, a somewhat different picture emerged. A greater proportion of non-Dutch mothers (29%) reported experiencing discrimination compared to Dutch mothers (13.6%; $p < 0.001$), while more Dutch mothers (66.0%) reported perceiving out-group hostility compared to non-Dutch mothers (45.2%; $p < 0.001$). Social disadvantage also predicted higher levels of ethnic discrimination and perceived hostility among both groups, mirroring trends with overall levels of negative intergroup contact.

3.3. Longitudinal associations between negative intergroup contact and child mental health

Among all children, problem behavior significantly declined over time after adjusting for age at baseline, sex, and ethnicity ($b_{\text{per year}} = −0.53$, 95% CI = −0.57, −0.48). After stratifying by ethnicity status, problem behavior decreased at a faster rate for non-Dutch ($b_{\text{per year}} = −0.87$, 95% CI = −0.96, −0.78) compared to Dutch children ($b_{\text{per year}} = −0.35$, 95% CI = −0.40, −0.31; $p_{\text{interaction}}<0.001$).

For all children, regardless of ethnic minority status, higher levels of
follow-up period (Fig. 2). Adjusting for age at baseline, sex, and ethnicity, each standard deviation difference in negative intergroup contact at every time point over the follow-up period was associated with negative intergroup contact and maternal-reported negative intergroup contact were associated with higher problem behavior in both groups of children (non-Dutch and Dutch children), even for children whose mothers reported no exposure. Those whose mothers reported no exposure (b = −0.40, 95% CI = −0.48, −0.32) experienced a faster decline in problem behaviors than those whose mothers reported low (b = −0.37, 95% CI = −0.46, −0.28) and high levels (b = −0.31, 95% CI = −0.41, −0.22).

3.4. Associations of ethnic discrimination and perceived out-group hostility with child mental health

Results from fully adjusted analyses considering longitudinal associations with ethnic discrimination and perceived out-group hostility separately are provided in Table 3. Both forms of negative intergroup contact were associated with more problem behavior when compared to no exposure for all children, regardless of ethnic minority status. Among non-Dutch participants, the fully adjusted association between problem behavior and maternal-reported discrimination (B = 0.10, 95% CI = 0.06, 0.14) was comparable to that with perceived out-group hostility (B = 0.06, 95% CI = 0.01, 0.11). In contrast, for Dutch participants, the relationship of child behavior with ethnic discrimination was weak (B = 0.01, 95% CI = 0.01, 0.02), but more substantial and in the expected direction with perceived hostility (B = 0.11, 95% CI = 0.08, 0.15).

3.5. Prospective analyses across multiple informants

Results from analyses using child behavior data from different informants are reported in Supplemental Table S3. Among non-Dutch participants, a significant association between negative intergroup contact and child problem behavior was observed only with maternal-reported behavior, but associations with paternal- and teacher-rated behavior were evident and in the expected directions. Among Dutch participants, significant associations were observed with both maternal-
4. Discussion

Numerous studies have identified factors in children’s immediate social environments that confer elevated psychiatric risk (Yap et al., 2014), but less research has examined exposures related to intergroup threats, like negative intergroup contact. In a diverse, community-based sample, we found that higher levels of negative intergroup contact reported by mothers during pregnancy were associated with poorer child mental health over a 6-year period. Moreover, findings were independent of mothers’ psychological distress at the time negative intergroup contact was assessed and were largely confirmed using evaluations of child behavior from other informants. Although the mechanisms

Table 2
Fully adjusted, standardized associations between levels of maternal-reported negative intergroup contact and child problem behavior scores averaged across the follow-up period, stratified by ethnic minority status. a, b.

<table>
<thead>
<tr>
<th>Child Problem Behaviors, Per 1-SD</th>
<th>Non-Dutch (N = 1607)</th>
<th>Dutch (N = 2418)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (95% CI)</td>
<td>p-value</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td>Negative Intergroup Contact, Per 1-SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>0.10 (0.05, 0.14)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>−0.00 (0.02, 0.01)</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td>0.12 (0.08, 0.15)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>0.002 (−0.01, 0.01)</td>
<td>0.57</td>
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</tbody>
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Table 3
Fully adjusted, standardized associations between (a) maternal-reported ethnic discrimination, and (b) perceived out-group hostility, respectively, and child problem behavior scores averaged across the follow-up period, stratified by ethnic minority status. a, b.

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<td>0.37</td>
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<td></td>
<td>0.01 (0.01, 0.02)</td>
<td>&lt;0.001</td>
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<tr>
<td></td>
<td>0.00 (−0.01, 0.01)</td>
<td>0.58</td>
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<tr>
<td>Perceived Out-Group Hostility, P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>0.06 (0.01, 0.11)</td>
<td>0.01</td>
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<tr>
<td></td>
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underlying this relationship remain poorly understood, research on discrimination indicates that the stress of such experiences may impair parents’ mental health and parenting practices, which can leave lasting effects on youth (Becares et al., 2015; McNeil et al., 2014; Tran, 2014).

Although we hypothesized that exposure to negative intergroup contact would be less impactful for Dutch children due to their lower levels of exposure as members of a non-marginalized group, our results showed remarkably comparable associations among both Dutch and non-Dutch participants (see Fig. 2 and Table 2). Prior work documenting the negative mental health effects of discrimination among white adults may help contextualize this unexpected finding (Malat et al., 2018). Some researchers hypothesize that since white (i.e., racial/ethnic majority) populations are infrequently targeted based on their social identity, poor outcomes may be attributable to insufficient coping resources to handle threats to their social standing (Kessler, 1979; Malat et al., 2018). It is important to recognize, however, that the negative intergroup contact reported by Dutch and non-Dutch mothers in our study are unlikely to be shaped by similar social conditions. Research in social psychology finds that intergroup threat exposure among people of color is largely driven by their experiences of poor treatment in society as well as negative public sentiment directed towards racial/ethnic minority groups (Stephan et al., 2002). On the other hand, perceptions of threat among white individuals are often psychologically based, deriving from normative prejudicial attitudes towards minorities (Quillian, 1995). Regardless, our findings may suggest that negative intergroup contact confers similar risks on mental health for both Dutch and non-Dutch children because it is inherently stressful, irrespective of the different social circumstances in which it occurs.

While we were unable to test this directly in our study, it is supported by trends we observed with ethnic discrimination and perceived out-group hostility, respectively. In our main analyses, an overall exposure measure was created by equally weighting both forms of negative intergroup contact, yet, when each was examined separately, findings indicated that associations may depend on their respective salience to each group (see Table 3). Ethnic discrimination reflects lived experiences of negative intergroup contact and therefore may be a more relevant measure among marginalized groups. Indeed, this was affirmed in our sample, as discrimination was more commonly reported by non-Dutch than Dutch mothers, and also appeared to have a more substantial impact on non-Dutch children. On the other hand, perceived out-group hostility reflects a psychological dimension of negative intergroup contact that may be more meaningful to non-marginalized groups. Again, this was confirmed in our sample, as Dutch mothers reported higher levels of perceived hostility compared to non-Dutch mothers, and its impact on the mental health of Dutch children also appeared to be more sizable than that among non-Dutch children. Notably, these findings reflect broader trends in the Netherlands, where ethnic discrimination is frequently experienced by citizens of non-Dutch ethnicities and negative attitudes towards racial/ethnic minorities are widespread (Gonzalez et al., 2008; Savelkoul et al., 2012).

4.1. Strengths and limitations

This study has some limitations. Maternal perceptions of negative intergroup contact reported in childhood may be more predictive of behavior problems than those reported during pregnancy. Since negative intergroup contact was only assessed once in Generation R, we were unable to examine changes over time; still, we expect that associations with more proximal assessments may be stronger than what we observed. Data availability also precluded us from examining whether the impact of negative intergroup contact is distinct from maternal stress more generally. Although associations were robust to adjustment for maternal psychological distress, future work should assess exposures related to intergroup threat while accounting for other forms of psychosocial stress. Another limitation relates to participant non-response. Mothers who were included in our final sample differed from those who were excluded on important covariates, namely they were more likely to be Dutch and were more socially advantaged. As a result, non-Dutch mothers in our study may represent a somewhat resilient sub-sample, limiting generalizability and perhaps making our findings a somewhat conservative estimate of the impact of negative intergroup contact on non-Dutch children. Lastly, maternal ethnicity was assessed via mothers’ self-reported country of birth and therefore may have been susceptible to misclassification among Dutch citizens of non-Dutch ethnicities. Although we were unable to address this directly, fully adjusted analyses accounted for Dutch citizenship history and maternal native language in both subsamples.

This study also has numerous strengths. By expanding our focus beyond discrimination to also consider a psychological form of negative intergroup contact (perceived out-group hostility), we captured inter-group threat-related exposures that are as relevant to non-marginalized populations as they are to those who are more marginalized. Furthermore, we examined associations separately among Dutch and non-Dutch children to account for differences in the social conditions that may influence mothers’ exposure to negative intergroup contact within each group. Although this prevented us from formally testing for differences in the strength of associations between these groups, we were able to examine effect modification by ethnic subgroups among those from non-Dutch backgrounds. Relatedly, our study was conducted in a large, multi-ethnic cohort, which included a sizeable number of ethnic minority participants, providing sufficient statistical power to identify potential differences between these groups.

To our knowledge, this epidemiologic study is the first to examine the impact of exposures related to intergroup threat on children’s mental health. Notably, we found that both high and low levels of maternal-reported negative intergroup contact were associated with more problem behaviors among both ethnic minority and majority youth, suggesting that risk may be conferred even when parental exposure is less severe. From a public health perspective, this suggests that even small shifts in negative intergroup contact at the population level may lead to improvements in children’s mental health. Prior work finds that positive contact may reduce perceptions of threat (Christ et al., 2014), which in turn, might reduce child problem behavior in the population if encouraged through widespread policy or program initiatives. Among youth, positive contact can be promoted through diverse friendship networks, which may help mitigate intergroup threat-related exposures over time, particularly as young people form social relationships outside of the home (Davies et al., 2011). Future research should examine the mental health impact of socially inclusive policies that facilitate positive contact between diverse groups.

5. Conclusions

Intergroup threat is a widespread psychological phenomenon with particular relevance to the present sociopolitical climate of many diverse societies around the globe. Although well-documented in the social psychology literature, research exploring its potential health impact is scarce. Our findings serve as proof of the principle that intergroup threat-related exposures may be informative for children’s psychological well-being, warranting further study in relation to other health outcomes across the life course.

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