



## Preadolescents with Immigrant Backgrounds: The Relationship between Emotional Problems, Parental Achievement Values, and Comparison

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### Abstract

**Background:** Although strong parental achievement values have been associated with positive outcomes among children (e.g., academic success), they have also been connected to emotional problems. The latter effect may be the result of pressure related to such things as parental comparison of filial achievement, which appears to be more predominant among immigrant parents as compared with non-immigrant parents.

**Objectives:** Our goals were to assess the following: 1) whether higher levels of parental achievement values and comparison are found among immigrant preadolescents; and (2) whether comparison (i.e., comparing a child's achievements with those of siblings and peers) can account for the link between strong parental achievement values and emotional problems among the children of immigrants.

**Methods:** The sample included 902 preadolescents between the ages of 10 and 12 years from two Norwegian cities: Oslo (79%) and Bergen (21%). Forty-seven percent of the sample had immigrant parents, and the others had non-immigrant parents. A self-administered questionnaire was completed by fifth, sixth, and seventh graders from fourteen schools during normal school hours; the questionnaires were completed after school by students from Turkey and Sri Lanka. The questionnaire included measures of emotional problems, parental achievement values, comparison, and school hassles. We used a moderated mediation model to test whether the relationship between parental achievement values and emotional problems was accounted for by comparison and to look at whether this mediation was stronger for preadolescents with immigrant backgrounds as compared with their non-immigrant peers. Background and academic factors that could confound the unique relationships among the main variables were adjusted for in the analyses.

**Results:** The association between parental achievement values and emotional problems was found to be mediated by comparison. Higher levels of parental achievement values were associated with more comparison, and this relationship was stronger for preadolescents with immigrant backgrounds. Comparison was only linked to emotional problems in preadolescents with immigrant backgrounds.

**Conclusions:** This study suggests that stronger parental achievement values among immigrants as compared with non-immigrants in Norway are found as early as preadolescence and that comparison may be part of the link between strong parental achievement values and emotional problems.

**Keywords:** Internalizing symptoms, pressure, comparison, parental achievement, academic expectations, ethnic minority, Strengths and Difficulties Questionnaire (SDQ), Egna Minnen Beträffande Uppfostran (EMBU)

## Background

“...disproportionate emphasis on children’s achievement...not only has the potential to engender distress among children but also has real constraints in terms of the capacity to generate the successes so pervasively exhorted...” (Luthar and Becker, 2002, p. 1605).

### *The link between immigrant backgrounds and parental achievement values*

For many immigrant parents, the importance assigned to academic achievement is particularly high (1). Upward social mobility is a powerful factor that drives immigrants to settle in new countries, especially among those who have moved from developing to industrialized countries. Immigrant parents tend to perceive education as a primary avenue through which social mobility can be achieved by their children in the new country (2). It has been proposed that immigrant parents are optimistic about their offspring’s educational and socioeconomic prospects (3,4). This may prompt their children to try harder to achieve academically. It is unclear, however, how immigrant parents’ optimism leads their children to adopt behaviors that influence their emotional health. Given that social mobility is usually an integral motivation for immigrants, higher levels of parental achievement values (i.e., attitudes that emphasize academic achievement) are expected among immigrant parents as compared with non-immigrant parents. Several studies have supported this finding (5-7), particularly among Asian immigrant groups in the United States, and this has given rise to the Asian “model minority” stereotype (8-10). This stereotype permeates American society and refers to the general tendency to regard Asian immigrants as high-achieving students and employees.

### *The link between parental achievement values and emotional problems*

Although parental achievement values have been linked to positive outcomes among adolescents (11-14), they have also been linked to emotional problems in groups such as the Chinese (15) and Korean (16) immigrants as well as among affluent American suburban adolescents (17). The latter suggests that the link between strong parental achievement values and emotional problems may not necessarily be limited to immigrant groups. Although research in these areas has been in demand (17-19), not much is known about the relationship between parental achievement values and emotional problems among adolescents, particularly immigrant adolescents. Why might strong parental achievement values be related to emotional problems? Strong feelings of pressure to

achieve in accordance with parental (or the child’s own) values may be part of the explanation for this.

It has been found that achievement *pressure*, whether parental or personal, appears to increase emotional problems (15,17;20-25). According to this line of thought, the link between parental achievement values and emotional problems may depend on the amount of perceived achievement pressure. As compared with parental achievement *values* (which measure how strongly parents value their child’s achievement in terms of attitudes), the relationship between achievement *pressure* (which measures parental behavior with the aim of influencing children to achieve better) and emotional problems is more thoroughly studied and supported in the research literature (15,17,20-25). Although parental achievement values and pressure are usually linked, it is possible to hold strong achievement values without pressuring or actively coercing the child to excel academically. Parents can exert academic pressure in many ways, such as by offering conditional rewards (e.g., going to the cinema with friends) or punishments (e.g., not being allowed to participate in desired leisure activities) depending on the child’s academic results. Another way of exerting academic pressure is through comparison; this involves parents openly comparing their child’s achievements with those of others (e.g., siblings, peers) with the aim of coercing the child to exceed academically. Comparison is a type of psychological pressure or control that has been found to be more frequently used among groups with predominantly collectivistic values (16,26). Thus, comparison as an expression of pressure may mediate the relationship between parental achievement values and filial emotional problems. As such, strong comparison could explain why strong parental achievement values are sometimes related to high levels of filial emotional problems.

### *The unique effect of parental achievement values on emotional problems*

To properly assess the unique effect of parental achievement values on emotional problems, it is important to adjust for a series of factors related to the child’s academic situation. First and foremost, it is important to distinguish between the effects of parental achievement *values* from those of parental achievement *pressure*, because the latter could confound the relationship between the former and emotional problems. Actually, these terms have been used interchangeably in the research literature, thus making it difficult to tease their effects apart from each other (17,27). In studies based solely on children’s own self-reporting, there is also a need to adjust for factors that could influence the relationship between child-reported parental

achievement values and emotional problems. For example, academic competence, which is generally inversely related to emotional problems (22), can potentially confound the relationship between parental achievement values and emotional problems because all variables, including parental ones, are based on the child's perception. Perfectionistic students with high levels of perceived academic competence could report high levels of both perceived parental achievement values and personal emotional problems (21), because all of these are perceived by the same person at the same point in time. Other examples of potentially confounding variables are academic factors that have been associated with both emotional problems and parental achievement values, such as school hassles, lack of parental help with homework, and domestic chore burden, which is included as an academic factor as a result of its negative association with academic competence (28). More school hassles have been associated with emotional problems (29). Parental help with homework has been associated with positive academic outcomes (30), although general findings are mixed (31). Despite higher levels of parental achievement values, immigrant youth in Norway have not reported equivalently higher levels of parental help with homework as compared with their ethnic majority peers (28). Domestic chore burden has been suggested as a reason why some groups of immigrant children, especially girls, appear to engage less than their ethnic majority peers in leisure activities that seem to protect them from emotional problems (32). These perceived variables are likely to influence reported levels of either emotional problems, parental achievement values, or both in studies comparing immigrants with non-immigrants.

#### *The Norwegian context and hypotheses*

The contrast between non-Western immigrants and non-immigrant ethnic Norwegians is particularly interesting in terms of parental achievement values. This is both because Norway's non-Western immigrants are more traditionalistic and collectivistic as a group and because there is a relatively low emphasis on academic achievement among the non-immigrant population (again, as a group). Norway is one of the most socially egalitarian countries in the world in which additional higher education pays the least (33). It is possible that, within this social context, Norwegian parents may not have the same eagerness and urgency with regard to pushing their children toward academic achievement. By contrast, immigrant parents are willing to pay the price of a loss of social network and cultural competence

through immigration to achieve social mobility for themselves or their children in the new country (4). The fact that first-generation immigrants sometimes have to postpone social mobility for the next generation may explain why second-generation immigrants report more parental achievement values (5,28,34). As for collectivistic parenting strategies, they may promote interdependent bonds between generations, and they may strengthen the association between parental and child behavior (35). This suggests that the link between parental comparison and emotional problems could be stronger among children of immigrants as compared with non-immigrants.

This article attempts to bridge together two research domains: one attending to the link between achievement values in immigrants and the other addressing the link between pressure and emotional problems. This is a novel framework, especially for adding to studies of the mental health of children of immigrants. On the basis of the previously mentioned existing research, we first hypothesize that immigrant background will be associated with higher levels of both parental achievement values and comparison. Thus, we attempt to differentiate between the effects of parental achievement *values* and achievement *pressure*, which are operationalized by comparison in this study. Second, we suggest that the relationship between parental achievement values and emotional problems will be mediated through comparison and moderated by immigrant background in such way that the relationship will be stronger for those with immigrant backgrounds.

## **Methods**

### *Data collection*

Data was provided by the Youth Culture and Competence (YCC) study undertaken by the Norwegian Institute of Public Health and approved by the Regional Committee for Medical Research Ethics (REC). During 2006 and 2007, the YCC invited preadolescents between the ages of 10 and 12 years from fourteen schools in Oslo and Bergen to participate in the first wave of this study. Although the proportion of immigrants in Bergen is equal to the 11%, which is the national average, 27% of the population of Oslo is foreign born, or Norwegian born with two foreign-born parents. Immigrants are from more than 200 different countries, most of which are non-Western (33). Although there are few ethnic enclaves in Norway, immigrants tend to settle together in areas where housing prices are reasonable. Schools in these areas were targeted during the initial stage of recruitment. In addition, children of Tamil and Turkish origin from other schools were recruited through

collaboration with immigrant non-governmental organizations.

Parents were informed about the YCC study through the preadolescents' school or the immigrant non-governmental organization and asked to provide written informed consent if their preadolescents were allowed to participate in the study, in accordance with REC guidelines.

The YCC questionnaire was completed by the preadolescents in their respective classrooms during two class hours. For those recruited through immigrant non-governmental organizations, questionnaire completion was performed after school hours. Research assistants were available if needed during data collection. Of the children invited, 1042 preadolescents in the fifth, sixth, and seventh grades participated in the YCC, which resulted a participation rate of 65%.

#### *Identifying immigrants and non-immigrants*

For ethical reasons, we were not allowed by the REC to directly ask participants about their ethnic backgrounds in the questionnaire. Thus, we relied on parental and grandparental place of birth to categorize participants according to parental immigrant background. During the first phase of categorizing the participants, we grouped participants into three broad categories according to parental immigrant background: 1) immigrant parents ( $n = 473$ ; parents born abroad and at least three grandparents born abroad); 2) non-immigrant parents ( $n = 476$ ; parents born in Norway and at least three grandparents born in Norway); and 3) dual parents ( $n = 91$ ; one parent born in Norway and one parent born abroad). Participants in the third category were excluded from further analyses, because their complex mix of immigrant and non-immigrant backgrounds required special attention that exceeded the scope of this study.

During the second phase of categorizing the participants, we grouped those with immigrant parents into national groups according to maternal place of birth. (There were a few participants whose parents were born in two different countries outside of Norway.) The result was a broad but scattered representation of a total of 49 national backgrounds. The only countries that made up more than 5% of the sample were Norway ( $n = 485$ ), Pakistan ( $n = 126$ ), Turkey ( $n = 45$ ), and Sri Lanka ( $n = 43$ ).

During the third phase of categorizing the participants, we divided the immigrant group into two main groups in accordance with a distinction used by Statistics Norway: 1) individuals originating in the European Union or the European Economic Area, the United States, Canada, Australia, and New Zealand; and 2) individuals originating in European

countries outside of the European Union, Asia, Africa, Latin America, and countries in Oceania other than Australia and New Zealand (36). Because there were only sixteen participants in group 1, they were excluded from analysis. In other words, the parents of the preadolescents included in this study have non-Western backgrounds.

#### *Sample*

The sample consisted of 902 preadolescents who were evenly divided across age and gender. Forty-seven percent of the sample had immigrant backgrounds, which means that minorities were overrepresented in line with the recruitment strategy of the YCC. The largest minority groups were from Pakistan (14%), Turkey (5%), and Sri Lanka (5%). Of those recruited through cultural centers, eighteen preadolescents with Turkish backgrounds (40% of the Turkish sample) and four with Tamil backgrounds (9% of the Tamil sample) completed the questionnaire. It was not possible to compare participants and non-participants in terms of background characteristics, because this was a convenience sample and information about non-participants was limited.

## **Measures**

#### *Outcome variables*

Emotional problems were measured by the self-report version of the emotional problems subscale of the Strengths and Difficulties Questionnaire, Norwegian version (see [www.sdqinfo.com](http://www.sdqinfo.com)) (34). This questionnaire has adequate psychometric properties that have been replicated in Norway (37-39). The emotional problems subscale consists of five items that indicate symptoms of somatization, anxiety, and depression. The items are as follows: "I get a lot of headaches, stomachaches, or sickness," "I worry a lot," "I am often unhappy, depressed, or tearful," "I am nervous in new situations. I easily lose confidence," and "I have many fears. I am easily scared" ( $\alpha = 0.68$ ). The items were rated 0 ("Not true") to 2 ("Certainly true"), and a sum score of between 0 and 10 was computed.

#### *Predictor, moderator, and mediator variables*

The predictor variable was *parental achievement values*, which was a measure of how preadolescents perceived parental attitudes regarding achievement and which was extracted from the Parental Pressure Questionnaire validated by Kim (35,40). Four items were rated on a Likert scale that ranged from 1 ("Never") to 5 ("Always") ( $\alpha = 0.70$ ), and a mean score was computed. The items were as follows: "My parents carefully monitor what I do in school," "My parents think that doing well in school is very



important,” “My parents say that I should work hard at everything I do,” and “My parents often ask me about schoolwork.” The moderator variable was immigrant background, which was dichotomized as 0 for those with non-immigrant backgrounds and 1 for those with immigrant backgrounds.

The mediator variable was *comparison*, which measured how parents actively compared the child’s achievement with that of others as a form of parental pressure or control (26). This is done as a parental strategy to coerce the child to desire to outperform his competitors, thereby conforming to parental expectations. These items were developed and validated by Sumer and Kagitsibaci (26) and added to the comparison subscale of the *Egna Minnen Beträffande Uppfostran* scale for children. This is a validated scale, and its name, translated from Swedish, means “My Memories of Upbringing” (41). These items were added as a result of their relevance for measuring parental rearing styles in collectivistic societies (26). Three of the items added measured achievement comparison and were included in the present study due to their relevance for exploring the construct of parental achievement pressure. The achievement comparison items were as follows: “My parents are more concerned about how I do relative to other children than what I actually accomplish,” “My parents compare my school performance with that of my friends,” and “My parents compare my school performance with that of my siblings or relatives” ( $a = 0.63$ ). Each question was rated on a scale that ranged from 1 (“Never”) to 5 (“Always”), and a mean score of the scale was computed.

#### *Background variables*

In addition to gender (dichotomized as 0 for boys and 1 for girls) and city background (0 for Bergen and 1 for Oslo), grade level (1 for fifth grade, 2 for sixth grade, and 3 for seventh grade) and economic hardship were included as background variables. The two latter variables were used as proxies for age and socioeconomic status, respectively. Age was computed by transforming grade level values from the fifth, sixth, and seventh grades into 10, 11, and 12 years of age, respectively. Economic hardship, which served as a proxy for socioeconomic status, was measured with four items from the scale Adolescent Perceptions of Family Hardship (42). The items were as follows: “How often do your parents argue with each other about not having enough money?”, “How often do you argue with your parents about not having enough money?”, “How much of a problem does your family have because your parents do not have enough money to buy things your family needs or wants?”, and “How upset or worried are your parents because they do

not have enough money?” ( $a = .65$ ). The first two items were rated on a scale that ranged from 1 (“Never”) to 5 (“Always”), whereas the latter two items were rated on a scale that ranged from 1 (“Never”) to 4 (“Very much”). All four economic hardship items were standardized, and a mean score was computed. The unstandardized scale, which consisted of the first two items, was used when reporting mean differences ( $a = .48$ ); otherwise, the standardized scale was used.

#### *Academic factors*

School hassles (i.e., everyday concerns related to schoolwork) were measured by five items from the General Everyday Hassles scale (43). The preadolescents listed how often during the last year they had experienced the following: “I am afraid of not doing well enough at school,” “Big problems in understanding the teacher when he/she is teaching,” “Strong pressure from those around me to succeed and do well at school,” “Problems with one or more teachers,” and “Arguments or problems with other(s) in class” ( $a = .57$ ). Each question was rated on a scale that ranged from 0 (“No, never”) to 3 (“Yes, very often”), and summed scale scores were computed.

Parental help with homework was measured by the mean score of two questions from the Lamborn Parenting Scale (44): one concerning maternal help and the other concerning paternal help. These were worded as follows: “My mother/father helps me with school assignments and home work if there is something I do not understand” ( $a = .54$ ). Adolescent domestic chore burden was measured with one question from the General Everyday Hassles scale (43): “Too much responsibility at home (for taking care of siblings or doing household chores).” Participants could rate this on a scale that went from 1 (“Not at all”) to 5 (“Always”). This measure is considered an academic factor because it has been associated with lower achievement and stronger emotional problems and because it is particularly relevant in specific immigrant communities in which girls are expected to contribute more than boys to household chores (32). Self-rated academic competence was measured by two questions concerning how competent preadolescents perceived themselves to be in math and Norwegian, respectively. Each subject was rated from 1 (“Not at all”) to 5 (“Very competent”), and the mean competence score was computed ( $a = .53$ ).

#### *Missing analysis*

We used a maximization-expectation algorithm to impute missing responses for each scale included in the analyses with more than one item. These were

emotional problems, parental achievement values, comparison, school hassles, domestic chore burden, academic achievement, and parental help with school work. Missing values were imputed if at least 50% of the items had been completed by each participant. The scale with the highest percentage of missing values was comparison (7.8% for non-imputed items and 3.2% with imputed items). The number of cases involving emotional problems was unchanged before and after imputation ( $N = 889$ ). After imputation, the number of valid cases increased from 742 to 849 (94.1%). The imputed variables were approximately normally distributed for emotional problems (skewness, 1.17; kurtosis, 2.08), parental achievement values (skewness,  $-0.73$ ; kurtosis,  $-0.08$ ), comparison (skewness, 0.54; kurtosis,  $-0.44$ ), and academic achievement (skewness,  $-0.49$ ; kurtosis, 0.08), whereas values for school hassles (skewness, 0.61; kurtosis,  $-0.28$ ) and parental help with school work (skewness, 1.74; kurtosis, 2.70) fell within acceptable values.

#### *Analytic strategy*

The level of significance was set at .05. We used PASW Statistics 18 software (45) to conduct correlations, to perform *t*-tests to investigate whether preadolescents with immigrant backgrounds reported higher levels of parental achievement values and comparison, and to determine the mediating role of comparison on the relationship between parental achievement values and emotional problems among minority and majority preadolescents with the macro 'Process' developed by Hayes (46). More specifically, we tested Model 59 in 'Process,' which tested moderated mediation; this looked at whether the effect of parental achievement values ( $X$ ) on emotional problems ( $Y$ ) was significantly mediated by comparison ( $M$ ) across immigrant background (the moderator,  $W$ ) (46). Background (i.e., gender, school grade, economic hardship, and city) and academic factors (i.e., school hassles, age, parental help with homework, domestic chore burden, and academic competence) were adjusted for in the model, because these variables could confound the relationship between  $X$  and  $Y$  given that all measures in the study stem from child self-reports at one point in time. Because sampling distributions of indirect effects are seldom normally distributed (47), bootstrapping was performed to test the significance of the indirect effect among minority and majority preadolescents and to address the difference between the magnitudes of the indirect effect in these two groups. To estimate 95% confidence intervals, 5000 bootstrap samples were drawn from the original sample, all of which had the same  $N$  as the original sample.

## **Results**

The sample included 902 participants, and sampling characteristics are presented in Table 1 in terms of percentages, means, standard deviations, and correlations among variables. Categorical variables were dichotomized so that immigrant background, female gender, and living in Oslo were given the value 1, whereas non-immigrant background, male gender, and living in Bergen were given the value 0. Positive correlations in Table 1 involving the remaining variables (which were continuous) indicated that girls, preadolescents with immigrant backgrounds, and those living in Oslo reported higher levels of emotional problems. The percentage of participants with immigrant backgrounds (47%), girls (50%), and citizens of Oslo (79%) are listed in the second column of Table 1. In the same column, there are mean values, standard deviations, and ranges for the continuous variables (i.e., emotional problems, school hassles, parental achievement values, economic hardship, age, comparison, parental help with homework, domestic chore burden, and academic competence). We see that preadolescents with immigrant backgrounds report more emotional problems, parental achievement values, and comparison but less parental help with homework. No relationship was found between immigrant background and perceived economic hardship. Those who reported more economic hardship also reported more parental achievement values, more comparison, more emotional problems, and more domestic chore burden as well as less parental help with homework.

When testing the first hypothesis, we found that immigrant background was indeed associated with higher levels of parental achievement values and higher levels of comparison. This is shown in Table 1, in which immigrant background is positively associated with these variables, as well as in Table 2, in which levels of these variables are significantly higher for those children with immigrant backgrounds as compared with those with non-immigrant backgrounds.

Table 2 describes mean scores for preadolescents with immigrant and non-immigrant backgrounds. Of all continuous variables, preadolescents with non-immigrant backgrounds only reported higher scores than those with ethnic Norwegian backgrounds for parental help with homework. However, to assess the unique relationship between immigrant background, parental achievement values, comparison, and emotional problems, we needed to test these variables simultaneously and adjust for background and potentially confounding academic factors. This was dealt with when testing the second hypothesis.

When testing for the second hypothesis, we adjusted for background and academic factors, and we tested a moderated mediation model. The model

tested whether the relationship between parental achievement values and emotional problems was mediated by comparison and it simultaneously

**TABLE 1.** Descriptives and correlation

Variable	Percentage or Mean (SD)	2	3	4	5	6	7	8	9	10	11	12
1. Emotional problems	3.1 (2.3) [0 to 10]	.37**	.14**	.19**	.07*	.17**	.12**	-.08*	.24**	-.13**	.26**	.07*
2. School hassles	1.6 (0.5) [0 to 3]		.14**	.09*	-.04	.21**	.01	-.05	.18**	-.15**	.25**	-.01
3. Parental achievement values	4.2 (0.7) [1 to 5]			.31**	-.07*	-.10**	-.22**	.07*	.32**	.05	.11**	.22**
4. Immigrant background (vs. non-immigrant background)	47%				.02	-.03	.36**	-.01	.39**	-.18**	.12**	.15**
5. Girls (vs. boys)	50%					-.01	.00	.00	-.14**	.09**	-.10**	.01
6. Economic hardship	1.3 (0.5) [1 to 5]						-.06	.02	.07*	-.13**	.18**	-.06
7. Living in Oslo (vs. Bergen)	79%							-.09**	.16**	-.06	.01	.05
8. Age	11.0 (0.8) [10 to 1]								-.11**	-.03	.02	-.08*
9. Comparison	2.8 (1.4) [1 to 6]									-.11**	.17**	.12**
10. Parental help with homework	4.4 (0.9) [1 to 5]										-.15**	.08*
11. Domestic chore burden	1.6 (0.8) [1 to 4]											.07*
12. Academic competence	3.7 (1.0) [1 to 5]											

Percentages given for categorical variables; means, standard deviations (SD), and ranges given for continuous variables. Categorical variables were dichotomized as 1 for variables outside parentheses and 0 for variables inside parentheses

\* $p < .05$ ; \*\* $p < .01$  (two-tailed)

**TABLE 2.** Mean scores, standard deviations (SD), and effect size of mean group differences

Variable	Immigrant background mean (SD)	Non-immigrant background mean (SD)	Partial eta-squared
Parental achievement values	4.40 (0.65)***	3.96 (.68)	.10
Comparison	3.34 (1.41)***	2.26 (1.10)	.15
Emotional problems	3.58 (2.42)***	2.71 (2.18)	.03
School hassles	1.63 (0.51)*	1.55 (.45)	.01
Parental help with homework	4.27 (0.99)	4.58 (.75)***	.03
Domestic chore burden	1.72 (0.87)**	1.53 (.71)	.01
Academic competence	3.96 (0.76)***	3.77 (.79)	.02

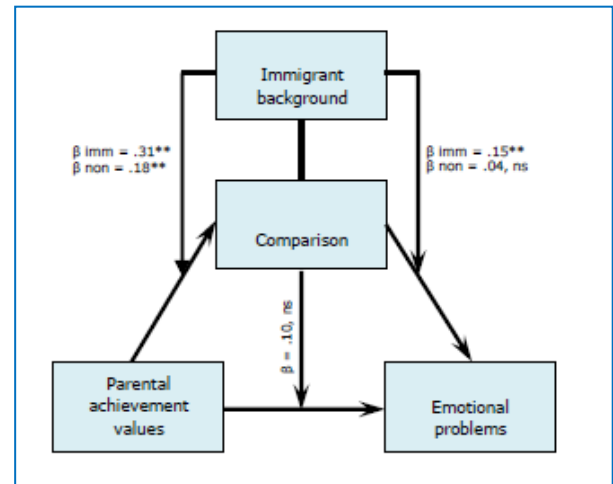
The partial eta-squared is the proportion of the variance in emotional problems that is explained by immigrant background as compared with non-immigrant background. Significance for group differences: \* $p < .01$ ; \*\*\* $p < .001$

tested whether immigrant background moderated the relationship between parental achievement values and comparison, between comparison and emotional problems, and between parental achievement values and emotional problems.

Mediation was tested by the indirect pathway from parental achievement values through comparison to emotional problems. The indirect pathway was significant among both immigrants ( $\beta = .04$ ; bootstrap 95% confidence interval, 0.01-0.07) and non-immigrants ( $\beta = .02$ ; bootstrap 95% confidence interval, 0.01-0.04). However, small mediation effects are generally expected to be so, because they are the product of two regression coefficients. This particular mediation effect was borderline significantly stronger among immigrant adolescents as compared with non-immigrant preadolescents (bootstrap 95% confidence interval for the difference, 0.004-0.04). This suggests that the relationship between parental achievement values and emotional problems among preadolescents is mediated through comparison in both immigrants and non-immigrants but to a stronger degree among immigrant preadolescents. In addition, the relationship between comparison and emotional problems is only significant among those with immigrant backgrounds.

Figure 1 shows moderation results, which involve whether immigrant background moderates these three paths in the model. It also shows the different  $\beta$  values for those with immigrant and majority backgrounds, which indicate that moderation was found in the particular path (i.e., values are significantly different in these groups). Notice that only moderation values are presented and that the significance of the moderation effect of an immigrant background is indicated by separate  $\beta$  values for preadolescents with immigrant (“imm”) and non-immigrant backgrounds (“non”).

Results indicated that immigrant background moderated the relationship between parental achievement values and comparison ( $p < .01$ ;  $\beta_{imm} = .31^{**}$ ;  $\beta_{non} = .18^{**}$ ), as well as the relationship between comparison and emotional problems ( $p < .01$ ;  $\beta_{imm} = .15^{**}$ ;  $\beta_{non} = .04$ , not significant). However, it did not moderate the relationship between parental achievement values and emotional problems (as signified by one single value for both groups, even though the coefficient size was larger for preadolescents with immigrant backgrounds [ $\beta = .10$ ;  $P = .05$ ] than for those with non-immigrant backgrounds [ $\beta = .00$ ;  $p = .94$ ]).



**FIGURE 1.** Moderated mediation model with immigrant background as the moderator and comparison as the mediator  
 $\beta$ ,  $\beta$  value;  $\beta_{imm}$ ,  $\beta$  value for immigrants;  $\beta_{non}$ ,  $\beta$  value for non-immigrants; ns, not significant; Significance  $^{**}p < .001$

## Discussion

In this study, we first found that preadolescents with immigrant backgrounds reported higher levels of parental achievement values, comparison, and emotional problems. Second, we learned that comparison mediated the relationship between parental achievement values and emotional problems, whereas immigrant background moderated this mediated relationship. The relationship between comparison and emotional problems is only significant among preadolescents with immigrant backgrounds. Thus, the results support both hypotheses of this study.

In addition to the main findings presented above, this study also supports the implication of academic factors such as school hassles and domestic chore burden in preadolescents' emotional problems. Higher levels of parental achievement values among preadolescents with immigrant backgrounds do not seem to be accompanied by proportional levels of parental help with homework. A comparable study supports this finding as well as that of the link between self-reported academic competence and parental help with homework (32).

Hence, this study supports the findings of the only known peer-reviewed study of the topic, which assessed the relationship between parental achievement values and emotional problems among adolescents. That study found that increased levels of parental achievement values were related to increased levels of both comparison and emotional problems (17). Having parents who focus more on achievement appears to be a common denominator between affluent suburban adolescents as well as adolescents with immigrant parents. Whether this



applies to comparison as well remains to be tested in future studies.

According to preadolescent self-reports, immigrant parents display higher levels of achievement values than non-immigrant parents. This appears to be positive given that earlier studies have linked positive parental achievement values to academic success during adolescence (12,14). Research shows that immigrant children may benefit from positive parental academic involvement (4,31), although this beneficial effect may only apply in the absence of parental pressure such as comparison (and other unknown variables that were not investigated in this study). However, according to preadolescent self-reports, immigrant parents also display higher levels of comparison; such levels are directly related to emotional problems in our hypothesis, and they have been found to be indirectly related through pressure in other studies.

Future longitudinal studies should examine whether parental academic values in fact precede emotional problems in preadolescents and whether parental support (or emotional warmth) can suppress the effect between achievement pressure (personal or parental) and emotional problems. It would also be valuable to assess whether the findings of this study can be supported among immigrants from predominantly individualistic countries, where filial agreement with parental values are less widespread than in predominantly collectivistic countries. In the latter group of countries, parents tend to emphasize filial agreement, which could explain why there is a stronger link between parental achievement values and emotional problems among immigrants in this study (who are predominantly collectivistic on a group level) as compared with non-immigrants.

In addition to its substantial strengths, which will be presented below, this study has some limitations. One of them is that we in fact do not know the direction of the relationship between parental academic values and filial emotional problems. It is possible that high levels of emotional problems lead to high reports of parental achievement values. If this is the case, changing parental overemphasis on academic success will not alleviate filial emotional symptoms, because the cause of the emotional problems would be entirely different. However, this relationship may be bidirectional, in which case less emphasis on achievement by immigrant parents may alleviate emotional symptoms. Perhaps the largest limitation is that the relationship between parental achievement values and emotional problems may be the result of an unknown third variable. With this in mind, we have attempted to control for several variables that have been proposed as possible third

variable candidates by studies from relevant fields. Although the present study focused on what preadolescents with immigrant background have in common, there are substantial differences among immigrant groups in Norway, and future studies should attend to these differences.

We lack information about non-participants, and the study sample is not representative of Norway's population. However, a lack of representativeness does not undermine the significance of the correlations found in this study (48). Another limitation is that some of our measures could have been more precise, such as the use of proxies for age (grade level), academic competence (perceived rather than actual test results), and socioeconomic status (perceived economic hardship). These variables were implicated in somewhat unexpected results: higher age was related to lower levels of emotional problems, and preadolescents with immigrant backgrounds did not report significantly lower economic hardship as compared with their ethnic majority peers. Although we controlled for these variables, having data about participants' actual ages, academic results, and socioeconomic backgrounds (preferably based on parental education level before immigration rather than on the current type of parental employment, because the former may also influence academic aspirations) would constitute an improvement in future studies. Several measures in the study had low Cronbach's alpha values, which may indicate imprecise operationalization. However, some of these scales simply include few items (e.g., academic competence), which decreases the reliability of the scale. Alternatively, others are composite scales (e.g., school hassles), and Cronbach's alpha values do not accurately reflect the reliability of composite scales (49). Future studies would benefit from operationalizing parental academic values in a way that more readily distinguishes between intrinsic and extrinsic goals (17). In this way, adaptive and maladaptive parental academic values could be more readily distinguished from each other.

This study has also major strengths, and it fills a gap in the research literature. To the best of the authors' knowledge, this is the first peer-reviewed study to assess the relationship between parental academic values and emotional problems in preadolescents with and without immigrant backgrounds. The moderated mediation model in this study offers a methodologic framework for the testing of theoretic assumptions in this uncharted field, and it also suggests in which path of the model that immigrant background exerts its moderator effect. In this case, it was the path between parental achievement values and comparison. The fairly large sample size enabled the

control of a number of potentially confounding variables, which supports the robustness of the findings. Thus, the effects of this study may be small, but they are also significant and robust. This study also connects findings from national Norwegian reports to those of the international research community, which can now refine or refute our findings. Because research in this field is lacking, we support the call for more research into the relationship between parental achievement values and emotional problems among adolescents, especially in those groups in which comparison is common parenting strategy.

### Conclusions

This study particularly supports the role of immigrant background in moderating the relationship between comparison and emotional problems. In addition, it supports the role of comparison in accounting for the relationship between higher levels of parental achievement values and more emotional problems among immigrant preadolescents. Although high levels of parental achievement values have, in other studies, also been linked to positive outcomes such as academic success, the present study adds to the research literature that links high levels of parental achievement values to a negative outcome: in this case, emotional problems. We suggest that strong comparison, whether parental or personal, may have a detrimental effect on emotional problems.

More research is needed to better assess the role of comparison—as well as other aspects of parental achievement pressure—in mediating the effect of parental achievement values on emotional problems in children and adolescents. Until further studies are conducted, parents in general, and especially parents of preadolescents who appear to be emotionally distressed, may do well to substitute comparison with other strategies to encourage their children's achievement.

### Competing interests

The authors declare that they have no conflicts of interest.

### Authors' contributions

DEA participated in data collection, conducted literature search and data analyses, and drafted the article. KG conducted data analyses, made a substantial contribution to the methodology of the study and the interpretation of results, and helped draft the manuscript. ER made a substantial contribution to the manuscript structure and methodology and helped draft the manuscript. BO was the Principal Investigator of the YCC project

from which data from this study was drawn and helped draft the manuscript, particularly the background section. HDZ made a substantial contribution to the design, methodology, and interpretation of the results of the study and helped draft the manuscript. All authors read and approved the final manuscript.

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