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ORIGINAL PAPER

Peer Dislike and Future School Adjustment in Early Adolescence: Recognizing Consequences for both Boys and Girls

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Abstract

Background Negative outcomes of peer dislike may be especially severe in early adolescence, when peers play a crucial role in individual adjustment. However, it remains unclear whether peer dislike predicts later emotional and motivational aspects of school adjustment, and if the negative outcomes are more pronounced in certain gender contexts.

Objective Therefore, this study focused on longitudinal effects of peer dislike on academic motivation, school attachment, and feelings of safety at school, and examined the role of gender context of the dislike.

Methods Early adolescents ($N=751$; 50.6% female; Time 1 M_{age} = 12.9 years, $SD=5$ months) filled a set of self-reported and peer nomination procedures at two time points (with a six-month interval).

Results Multilevel modeling showed that while peer dislike was negatively associated with school attachment and feelings of safety at school only concurrently, it had both concurrent and longitudinal negative associations with academic motivation. Importantly, being disliked by peers in the fall negatively predicted academic motivation six months later. The longitudinal effect of peer dislike was consistent across boys and girls, as well as across same- and cross-gender peer dislike.

Conclusions The findings show that targeted interventions are needed for all students who experience peer dislike, regardless of the gender context of the dislike. In addition to fostering respectful and inclusive relations in classrooms, it is important for teachers to offer specific support for academic motivation to students who experience peer dislike in order to keep them academically engaged and successful.

Keywords Academic motivation · Gender · Early adolescence · Peer dislike · Peer rejection · School adjustment

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Introduction

Peer dislike, sometimes conceptualized as peer rejection, refers to receiving antipathy from the side of peers and reflects a key aspect of peer status (Cillessen & Marks, 2011). Peer dislike is often measured by nominations from peers, either for being "most disliked" or "least liked" (Cillessen & Marks, 2011). Another approach is to measure it in specific contexts, like nominations for being "least liked" as a partner for activities such as spending time together, playing, or working. This contextual approach has been shown to be useful especially in understanding classroom dynamics (Berger et al., 2011; Card & Hodges, 2007). Being disliked by peers represents an interpersonal stressor that is linked to low social adjustment (Xiao et al., 2021), higher risk for peer conflicts (Card & Hodges, 2007), peer exclusion (Lansu & Cillessen, 2012), and victimization by bullying (Pouwels et al., 2018), as well as to low school achievement and classroom disengagement (e.g., Danneel et al., 2019; Fite et al., 2013; Lessard & Juvonen, 2020; Lorijn et al., 2021). In early adolescence, addressing the negative consequences of peer dislike becomes particularly important since this period of development is characterized by growing importance of peer relations (Killen et al., 2013; Ladd & Ettekal, 2013; Yang et al., 2020). Moreover, students encountering peer dislike face heightened challenges in adjusting to the school environment (Lessard & Juvonen, 2020; Scherrer & Preckels, 2018). To date, however, research has not systematically addressed the effects of peer dislike on later motivational and emotional school adjustment in early adolescence. While the gender context of peer dislike, referring to the genders of the student who is disliked and the classmate who dislikes the student, might play a role in its negative outcomes (McDougall et al., 2001), it remains largely unexamined in relation to school adjustment. To expand the existing knowledge, this study addresses this gap by investigating associations between peer dislike and later motivational and emotional school adjustment in early adolescents with a special focus on the role of gender context in these processes.

Peer Dislike and School Adjustment

School adjustment refers to a broad area of student success in adapting to the school environment and includes academic achievement, academic engagement and positive school-related emotions, and motivation (e.g., Bardach et al., 2022; Ryan, & Ladd, 2012). Peer difficulties, such as social exclusion from groups and activities, however, can limit learning opportunities at school (Juvonen et al., 2019; Killen & Rutland, 2011). While peer dislike has consistently been found to be associated with lower engagement in school (e.g., Buhs et al., 2006; Danneel et al., 2019; Lessard & Juvonen, 2020; Lopez & DuBois, 2005), less is known about the role of peer dislike regarding academic motivation and emotional school adjustment.

First, it is not clear whether peer dislike hinders *academic motivation*. Academic motivation refers to the motivational factors that stimulate and sustain a student's desire to engage in and persist with academic tasks (Schunk et al., 2008). Academic motivation drives progress throughout school years and has long-term positive consequences, including decisions to pursue a higher education qualification (e.g., Guo et al., 2015; Wentzel, 1996; Wigfield et al., 2006). Academic motivation could be expected to be diminished by peer dislike, because much of the academic work unfolds in classroom peer context. Being disliked in

this context could hinder the motivation to work on academic tasks. In line with this expectation, lower peer support has been found to contribute to negative appraisals about oneself in the academic domain (Galand & Hospel, 2013) and peer dislike predicts later negative self-evaluations in academic contexts and lower academic aspirational levels (Bagwell et al., 1998).

Second, as classroom peer interactions are a key part of school life, students who encounter peer difficulties, can exhibit lower levels of *school attachment* (Boulton et al., 2009). School attachment, sometimes defined as school liking, presents a critical emotional aspect of school adjustment that determines academic progress (Ladd et al., 2017). Previous research indicated that higher school absenteeism can be observed among students who are disliked (Buhs et al., 2006) and the authors point out that the absenteeism may not reflect only a general aversion to school but could also be a strategy to avoid specific peers or address specific peer issues. In adolescence, school attachment has already been found to be negatively associated with peer rejection, particularly with being least liked as a playmate, which may indicate multifaceted issues with adjustment both among peers and with school work (Zhang & Eggum-Wilkens, 2018). Thus, it would be helpful to verify whether students who experience peer dislike need targeted support in the area of school attachment.

Third, while all students deserve and need to feel safe at school, *feelings of safety at school* may be compromised by peer difficulties, such as victimization or peer exclusion (Boulton et al., 2012; Juvonen et al., 2006). The effects of peer dislike on feelings of safety at school are less well understood. Peer dislike may put students in social danger because it heightens the risk of having conflicts with peers (Card & Hodges, 2007), being excluded and victimized (e.g., Buhs et al., 2006; Demol et al., 2020; Norwalk et al., 2021; Pouwels et al., 2018; Salmivalli & Isaacs, 2005). Peer dislike was also found to positively associate with fear of becoming a target of bullying (Kollerová & Smolík, 2016) and feelings of social threat and worry about their future (Juvonen et al., 2006). Given these insights, it is critical to elucidate whether peer dislike may compromise feelings of safety at school over time.

Gender Context and Negative Outcomes of Peer Dislike

Developmental theories give rise to different expectations regarding the *role of gender context* (defined by the genders of both the student who is disliked and the classmate who dislikes the student) in negative outcomes of peer dislike. Developmental research examining intergroup contexts has shown that gender is one of the main group identity categories that contribute to peer dislike and related but distinct difficulty of peer exclusion (Conry-Murray et al., 2020; Horn & Sinno, 2014; Killen et al., 2013). For example, because gender segregation is common (Bohn-Gettler et al., 2010), cross-gender peer dislike and peer exclusion may be viewed as more legitimate and less harmful than same-gender exclusion (Killen et al., 2013). Intergroup research has also shown that girls are more sensitive than boys to unfairness in peer difficulties, which may be a function of having more experience with being a target of gender discrimination (Horn & Sinno, 2014). Thus, based on the developmental intergroup perspective, girls could be expected to have particularly detrimental effects on school adjustment when disliked by peers compared to boys.

On the other hand, the need-to-belong model (Baumeister, 2012) states that avoiding negative interpersonal experiences, such as peer dislike, stems from a fundamental and universal human need to belong to other people. The need is assumed to work as a pervasive

driving force of interpersonal behavior that is universal to all people regardless of their characteristics and social context. Meeting the need to belong is understood as a prerequisite of adjustment, and frustrating the need can become a source of maladjustment (Baumeister, 2012). Adopting this traditional perspective, peer dislike can be expected to be associated with decreased school adjustment regardless of whether a student is a boy or girl and regardless of whether a student is disliked by same- or cross-gender peers.

The empirical studies on the role of gender (understood as a facet of identity) of students who experience peer difficulties provide mixed results. While some studies documented similarities across genders (Boulton et al., 2009; Buhs et al., 2006; Eggum et al., 2022; Thijs & Verkuyten, 2008; Sandstrom et al., 2003, 2016), other studies found inconsistent differences in levels of maladjustment experienced by boys and girls in response to being disliked (for a review see McDougall et al., 2001). It should be noted that that the differences may vary depending on the specific outcomes studied and depending on whether peer dislike or related topics, such as peer exclusion, are being studied. For example, Martín-Antón and colleagues (2016) found that boys who were disliked exhibited more problems with empathy and prosocial behavior than girls who were disliked. However, studies focusing on internalizing problems, such as low self-esteem and sadness, in response to peer exclusion found more pronounced in girls compared to boys (Goodman & Southam-Gerow, 2010; Lopez & DuBois, 2005; Rudolph & Conley, 2005).

The literature on the role of same- vs. cross-gender peer dislike is scant. Regarding the development of peer dislike, Zettergren (2005) found that students who were disliked remained similarly disliked among both same-gender and cross-gender students. Gender differences were documented in the area of peer liking, such as that both boys and girls benefited especially from being liked by their same-gender peers, which was linked to more reduced feelings of loneliness (Betts et al., 2012). In the area of victimization by school bullying, it was found that being bullied by opposing gender peers was more strongly associated with low social self-esteem, and for girls, only other-gender victimization had longitudinal negative outcomes (Sainio et al., 2013). To date, no studies have systematically examined distinctions between same-gender and cross-gendered peer disliking boys and girls in relation to school adjustment. Thus, the present study examined the effects of same- and cross-gender dislike with a general expectation that they would both have significant negative effects on later school adjustment.

The Present Study

The purpose of the study was to elucidate whether peer dislike experienced in fall of the academic year is related to adolescents' academic motivation, school attachment, and feelings of safety at school six month later, in spring, and whether the associations vary as a function of the gender context of peer dislike (whether the student who is disliked is boy or a girl and whether he/she is disliked by same- or cross-gender peer). Following the existing studies on social dynamics in early adolescents (Berger et al., 2011; Card & Hodges, 2007), the study operationalized peer dislike as receiving nominations for being a least liked peer for a free time activity. To achieve high ecological validity, the activity chosen was talking during breaks, because in the Czech Republic, where the study was conducted, classes are divided by unstructured breaks that students spend with their peers according to their own preferences. The effects were examined after controlling for school adjustment variables at

Time 1 and gender of the student who is disliked. The theoretical models reviewed above served as a basis for formulating the three basic hypotheses that referred to longitudinal associations of peer dislike and school adjustment. The first two hypotheses addressed peer dislike as measured by nominations from all classmates. The third hypothesis addressed same- and cross-gender peer dislike separately. Both same- and cross-gender peer dislike was expected to be negatively associated with school adjustment. The main hypotheses of the present study were as follows:

Hypothesis 1 Peer dislike at Time 1 would have unique negative effects on school adjustment variables (academic motivation, school attachment, and feelings of safety at school) at Time 2.

Hypothesis 2 For those school adjustment variables at Time 2 that would be predicted by peer dislike at Time1, gender of the student who is disliked would interact with peer dislike at Time 1, with the negative associations being stronger for girls than for boys.

Hypothesis 3a Same-gender peer dislike at Time 1 would have a negative effect on school adjustment variables at Time 2.

Hypothesis 3b Cross-gender peer dislike at Time 1 would have a negative effect on school adjustment variables at Time 2.

Given the lack of empirical findings about differences in negative outcomes between same- vs. cross-gender dislike, it was explored whether the sizes of significant effects of cross-gender peer dislike would be different than the sizes of significant effects of same-gender peer dislike. To complement the study, we further examined whether the interaction of the gender of the student who is disliked and same- vs. cross-gender peer dislike plays a role in school adjustment outcomes. No specific hypothesis was derived for this explorative research question.

In sum, this study primarily aimed to broaden the understanding of associations between peer dislike and later school adjustment in early adolescence by addressing understudied motivational and emotional facets of school adjustment. Next goal of this study was to help resolve different notions regarding the role of gender context of peer dislike for its negative outcomes on school adjustment. Answering these questions can provide useful information for interventions targeting the improvement of the lives of students who experience peer dislike.

Methods

Participants

The sample comprised 751 students (50.6% female) from 39 classrooms of 20 elementary schools located in the capital of the Czech Republic. Data were collected at two time points: during the fall of the 7th grade and after a 6-month interval. The age of the participants ranged from 11 to 15 years at the first measurement (M_{age} at Time 1 = 12 years and 11

months, *SD* = 5 months). Almost all students were aged 12 to 13 years, reflecting a relatively homogeneous sample of seventh graders. Specifically, there was one student who was 11 years old, four students who were 14 years old, and one student who was 15 years old. The majority of participants were native Czech (Caucasian), representing 88.1%. Ethnicities of the remaining participants included unspecified (8.4%), Vietnamese (1.5%), and Roma (0.5%). Additionally, 1.5% of participants did not provide information about their ethnicity. Socioeconomic status was not evaluated, but it is noted that Czech elementary schools serve students from a broad spectrum of socioeconomic backgrounds.

Procedure

Researchers invited 28 randomly selected Prague elementary schools and 20 of them agreed to participate in the study. All participating schools had general preventive policies in place to address bullying and discrimination. They did not receive specific training on managing peer rejection or fostering academic motivation before or during data collection. All students attending the 7th grade in 20 participating schools were informed about the study and invited. The number of classrooms per school ranged from 1 to 4 and the average size of the classrooms was 23 (*SD* = 4), with an average of 19 students participating in the study. The participation rate reached 77% at Time 1 and 73% at Time 2. The study followed the principles of the Declaration of Helsinki and was approved by the Ethics Committee of the first author's institution. Written informed consent from parents was required before data collection. On the days of data collection, students were verbally informed that their participation was voluntary, that they could withdraw at any time, and that by completing the questionnaire, they gave their assent to participate in the study. Paper-and-pencil instruments were administered in fall 2015 and, after 6 months, in spring 2016, in classroom settings. The data were collected by trained researchers who followed ethical guidelines and a standardized protocol for assessment, which ensured consistency and comparability across all classrooms.

Missing Data

Of the 751 students who consented to be included in the dataset, there were 109 students with missing data. For the nonrespondents in the dataset, we used multiple imputation to accommodate missingness. The multilevel imputation model included gender, outcome variables at time 1 and at time 2, proportion of dislike and class membership. We imputed 100 datasets such that all models fit on all 100 datasets. Thus, the parameters presented here are aggregated across all model fits. There did not appear to be patterns in missing data; the amount of missingness in a classroom at time 1 was not related to the amount of missingness at time 2. Similarly, the students who were missing at time 1 are not necessarily the same students who were missing at time 2; a total of 4 students were missing at both time points. Further, we did not find any evidence that students with missing data at either time were different from students without missing data in terms of peer rejection or any measures described below based on t-tests.

Measures

Gender

Gender was assessed by offering students the option to choose between two grammatically gendered versions of the questionnaire: one for students who identified as males and one for students who identified as females. The students' selection was used as a measure of gender. This procedure relied on the binary grammatical structure of the Czech language and did not account for non-binary or other gender identities.

Peer Dislike

Being disliked was assessed by the aggregate number of nominations received from classmates in response to a sociometric question targeting unstructured free time activity at school: *With whom do you least like talking during breaks?* This single-item measure is considered a valid indicator of peer dislike, similar to a general question about "least liked" classmates (Kollerová et al., 2018). The item focusing on "least liked" partners for talking during breaks was selected as a developmentally appropriate indicator for early adolescents and particularly relevant to classroom social dynamics (Berger et al., 2011; Card & Hodges, 2007). Talking during breaks was chosen because it is a common free-time activity for early adolescents which enhances the measure's ecological validity. In the Czech school system, classes typically take 45 min and are divided by 5 to 20-minute breaks that offer students time to socialize with their classmates. Each student is assigned to a single classroom (of a maximum of 30 students), spends almost all classes in this group and proceeds with it across grades. When responding to the peer dislike question, students were presented a list of their classmates' names with numbers assigned and were asked to write numbers in response to the question. The nominations were unlimited. Peer dislike scores were calculated for each student by taking the number of dislike nominations received from other students and dividing them by the total number of possible nominators. Note that in each class, an average of 7% of students were missing network data, with a range from 0 to 23% across the 39 classrooms. For example, if 2 students were missing in a class of 20, the dislike proportions were calculated to be out of 18. Because students could nominate anyone in their class, including those who did not take the survey (but consented to being in the study), all 20 students could be nominated by their 18 peers. Thus, peer dislike was quantified as a proportion, ranging from 0 to 1, which reflected the extent to which each student was disliked by their peers in the classroom. (A student with a peer dislike score of 1 indicates that every other student in the classroom who took the survey nominated that student.) Most classrooms ($n=26$) had at least one student who was considered an outlier based the large number of dislike nominations. For example, in one classroom, 1 student was nominated by 25% of the other students whereas the rest of the students were nominated by 0–8% of their classmates. There were 5 classrooms in which one student was nominated by 70% or more of their classmates.

Same- and Cross-Gender Peer Dislike

The same-sex peer dislike score was calculated as the number of dislike nominations received from classmates of the same sex divided by the total number of possible nomina-

tors. Cross-gender peer dislike was calculated as the proportion of dislike nominations from classmates of the opposite gender out of the total number of possible nominators.

Academic Motivation

Academic motivation, similar to the other two school adjustment indicators, was assessed using scales retrieved from a larger Social and Health Assessment survey (SAHA; Ruchkin et al., 2004) that was validated for Czech adolescents by Blatny and colleagues (2006). The academic motivation scale consisted of 6 questions regarding motivation to achieve well at school (e.g., "it is important to me to get at least a B average this year"; "I try hard at school"; "education is so important that it is worth it to put up with things I do not like"). Respondents marked their responses on a 4-point scale ranging from definitely not true (1) to definitely true (4). The scale was previously validated for Czech adolescents (e.g., Blatny et al., 2006; Václaviková et al., 2020) and showed acceptable reliability in this study: The McDonald's ω coefficient (McDonald, 1999) was 0.63 for Time 1 and 0.69 for Time 2.

School Attachment

School attachment was measured by another SAHA (Ruchkin et al., 2004) scale. Participants assessed their attachment to school in response to 4 items (e.g., "most mornings I look forward to going to school"; "when I am at school I would rather be someplace else"). Answers ranged from definitely not true (1) to definitely true (4). The coding of negatively worded items was reversed so that higher scores corresponded to higher school attachment. The scale was found to have good reliability (McDonald's ω coefficients of 0.83 for Time 1 and 0.83 for Time 2).

Feelings of Safety at School

A 7-item SAHA (Ruchkin et al., 2004) scale was used to assess feelings of safety at school. On a 4-point scale ranging from definitely not true (1) to definitely true (4), participants marked how safe they felt at school (e.g., "I feel safe at my school"; "I feel safe during activities organized by our school beyond the lessons"; "I feel safe in the bathrooms in our school"). McDonald's ω coefficients of 0.80 for Time 1 and 0.84 for Time 2 indicated good reliability.

Analytical Plan

To address each hypothesis, we fit random intercept models nesting students within the classroom. For the first hypothesis, we fit three models in which academic motivation, school attachment and feelings of safety at school were predicted by peer dislike. The model can be written in the following way, where *Y* is the outcome measure at time 2 and the time 1 measure is used as a predictor.

$$Y_{t=2} = \beta_{0j} + \beta_1 \mathrm{Rejection}_{t=1} + \beta_2 Gender + \beta_3 Y_{t=1} + \varepsilon$$

The second hypothesis was that peer dislike would have greater negative effects for girls than boys. This hypothesis suggested a moderation effect, so we fit a similar model predicting academic motivation, school attachment and feelings of safety at school, but we now included an interaction term between peer dislike and gender of the student who is disliked. An example of such a multilevel model is given as.

$$Y_{t=2} = \beta_{0j} + \beta_1 \mathrm{Re}ject ion_{t=1} + \beta_2 Gender + \beta_3 \mathrm{Re}ject ion_{t=1} Gender + \beta_4 Y_{t=1} + \varepsilon$$

Our third hypothesis focused on same-gender and cross-gender peer dislikes on school adjustment variables. For this model, we recalculated peer dislike scores in the following way. Same-gender dislike was the number of same-gender dislike nominations that a student received divided by the number of possible same-gender nominators; cross-gender dislike was similarly the ratio of cross-gender dislike nominations to the number possible nominators.

The models did not include grade or age as control variables, because they were computed on an age-homogeneous sample of seventh graders (nearly all students were aged 12 to 13 years). This consistency minimized variability related to age and grade and ensured that these factors did not confound the study's results.

Results

Table 1 provides numerical summaries of the three outcome variables, academic motivation, school attachment, and feeling safe at school. The number of items varied across these three constructs, so the ranges are also included. Overall, the mean scores of academic motivation and school attachment decreased slightly over time, and the mean scores of feeling safe at school were approximately the same. In addition, academic motivation and school attachment were more highly correlated than either school attachment and feeling safe at school or academic motivation and feeling safe at school, and this pattern was consistent over time. Missing data were removed to calculate these descriptive statistics.

Regarding the dislike networks, the students in our sample were nominated on average by 2 students for liking them least. Most students were nominated by 0 other students, and one student was nominated by 18 other students. In terms of the proportion of dislike nominations, we have an average of 0.11 peer dislike; a mode of 0 peer dislike, and a max of 0.75 peer dislike. While this may seem quite sparse, nomination data consists of 0s and 1s, and most students nominated few students for peer dislike. Thus, a given student who actively dislikes 1 student in the class, will have almost all 0s and only 1. An alternative summary is to examine the proportion of dislike nominations received by students. To do so, we present statistics from the first imputed dataset. Overall, the mean dislike proportion was 0.12 and 95% of students were nominated as being disliked by 0 to 48% of their classmates.

We present our statistical models in order of our hypotheses. Our first hypothesis is that peer dislike at Time 1 has unique negative effects on school adjustment variables (academic motivation, school attachment, and feelings of safety at school) at Time 2 after controlling for school adjustment variables at Time 1 and gender.

Table 1 Descriptive statistics and correlations for the continuous study variables for Time 1 and 2 separately

Study variables	Time 1									Time 2							
	Mean (SD)		Range	1.	2.	3.	4.	5.	6.	Mean (SD)	Range	1.	2.	3.	4.	5.	6.
1. Academic motivation	17.20	(2.88)	6–24	-						16.82	(3.13)	6–24	-				
2. School attachment	9.48	(2.82)	4–16	**0.42**	-					9.05	(2.80)	4–16	**0.47**	-			
3. Feelings of safety	21.94	(3.82)	7–28	**0.21**	**0.29**	-				22.02	(3.90)	7–28	**0.28**	**0.18**	-		
4. Peer dislike	0.12	(0.14)	0-0.83	**0.14**	**0.19**	**0.19**	-			0.13	(0.14)	0-0.90	**0.16**	**0.20**	**0.20**	-	
5. Same-gender peer dislike	0.11	(0.14)	0-0.86	**0.11**	**0.20**	**0.21**	**0.81**	-		0.12	(0.16)	0-0.88	**0.13**	**0.17**	**0.17**	**0.82**	-
6. Cross-gender peer dislike	0.14	(0.20)	0–1	**0.11**	**0.11**	**0.11**	**0.80**	**0.40**	-	0.18	(0.34)	0–3	**0.08**	**0.13**	**0.15**	**0.63**	**0.69**

Note $N=751$; Statistically significant correlation coefficients at $\alpha=0.05$ are shown in bold

Our models fit across all 100 imputed datasets, so we first explored whether a random intercept was necessary for each of our three outcomes. We conducted likelihood ratio tests to determine whether the random intercept model was preferred over the least-squares regression model. For academic motivation, we found that the multilevel model was preferred for 97% of the datasets but was only preferred for 28% and 1% in models predicting school attachment and feelings of safety at school, respectively. Thus, we present fixed effects results for a random intercept model for academic motivation and multiple regression coefficients for the other two outcomes.

Table 2 shows the regression coefficient estimates and standard errors for our three models. There is no evidence that girls and boys differ in academic motivation, school attachment or feeling safe at school. We find a significant, negative effect of peer dislike on academic motivation, and although both effects of peer dislike on school attachment of feelings of safety at school are negative, neither effect is significant.

The second hypothesis stated that peer dislike at Time 1 and gender would have interactive effects on school adjustment variables at Time 2, after controlling for school adjustment variables at Time 1 and gender, in that the effects of peer dislike at Time 1 would be stronger for girls than boys. Because peer dislike was a significant predictor for academic motivation only, we proceed with only one outcome to test this hypothesis. Again, we consider both a random intercept multilevel model and multiple regression model, and again, the random intercept model was preferred 93% of the time. Our aggregated results are shown in the last column of Table 2; we do not find any evidence that gender moderates the effect of peer dislike on academic achievement.

For our third hypothesis, we examined same- and cross-gender peer dislike. These hypotheses are as follows: Same-gender peer dislike at Time 1 has a negative effect on school adjustment variables at Time 2 (after controlling for school adjustment variables at Time 1 and gender). Cross-gender peer dislike at Time 1 has a negative effect on school adjustment variables at Time 2 (after controlling for school adjustment variables at Time 1 and gender). We found that both same- and cross-gender peer dislike were negatively associated with academic motivation (see Table 3). Same-gender peer dislike has a larger negative effect on academic motivation than cross-gender peer dislike (-2.32 vs. -1.87), but this difference is not statistically significant. The standard deviation for academic motivation was 3.13, so we can heuristically interpret these parameters in the following way. Students who are disliked by 100% of their same-sex peers have roughly a 0.74 standard deviation decrease in academic motivation, whereas the same amount of cross-gender dislike results in 0.60 standard deviation decrease in academic motivation. Substantively, these results are quite similar. We did not find evidence that peer dislike is associated with either school attachment or feeling safe at school.

Discussion

Peer dislike presents a common interpersonal stressor that may have detrimental consequences for child and adolescent development, particularly in early adolescence when the importance of peer groups increases. Even though the negative effects of peer dislike for early adolescents have already been well documented, the knowledge on longitudinal effects of peer dislike on some important motivational and emotional school adjustment in

Table 2 Regression coefficients predicting Time 2 school adjustment indicators using Time 1 peer dislike based on nominations from all classmates

	Main effects models			Interactive effect model
	Academic motivation at T2	School attachment at T2	Feelings of safety at school at T2	Academic motivation at T2
Female	0.41(0.21)	0.12(0.18)	-0.19(0.28)	0.49 (0.28)
School adjustment at T1	0.60 (0.04)*	0.67(0.03)*	0.57(0.04)*	0.60 (0.04)*
Peer dislike at T1	-3.30(0.81)*	-1.10(0.67)	-2.06(1.10)	-2.98 (1.08)*
Peer dislike at T1*female				-0.67 (1.52)

Note. * $p<0.05$. T1 = Time 1, T2 = Time 2. School adjustment at T1 = Corresponding school adjustment indicator (i.e. academic motivation or school attachment or feelings of safety at school) at Time 1

Table 3 Multilevel and multiple regression models predicting Time 2 school adjustment indicators using Time 1 same- and cross-gender peer dislike separately

	Academic motivation at T2	School attachment at T2	Feelings of safety at school at T2
Models for same-gender peer dislike			
Female	0.44 (0.21)*	0.13 (0.18)	-0.16 (0.28)
School adjustment at T1	0.61 (0.04)*	0.67 (0.03)*	0.58 (0.04)*
Same-gender peer dislike at T1	-2.32 (0.75)*	-0.97 (0.62)	-0.99 (1.02)
Models for cross-gender peer dislike			
Female	0.46 (0.21)*	0.15 (0.18)	-0.16 (0.28)
School adjustment at T1	0.61 (0.04)*	0.68 (0.03)*	0.58 (0.04)*
Cross-gender peer dislike at T1	-1.87 (0.55)*	-0.22 (0.45)	-1.34 (0.72)

Note * $p<0.05$. T1 = Time 1, T2 = Time 2. School adjustment at T1 = Corresponding school adjustment indicator (i.e. academic motivation or school attachment or feelings of safety at school) at Time 1

this developmental period is still limited. Moreover, effects of peer dislike have not been systematically studied in varying gender context as defined by the gender of the student who is disliked and the gender of the classmate who dislikes the student. Therefore, the present study examined whether being disliked by peers in the classroom hinders later motivational and emotional facets of school adjustment in early adolescents across varying gender contexts. First, the study investigated the effects of fall peer dislike on spring academic motivation, attachment to school, and feeling of safety at school in a sample of early adolescents. Next, it took a closer look at the potential role of gender of the students who are disliked and the role of same- vs. cross-gender peer dislike on longitudinal effects of peer dislike on school adjustment. The main novel finding was that students who were disliked in fall were less academically motivated six months later, in spring of the school year. Peer dislike was also negatively associated with school attachment and feelings of safety at school, but only concurrently, not over time. Importantly, all the links found were consistent across various

investigated gender contexts which contributes to fill the gap in the existing literature on the role of gender context in negative outcomes of peer dislike.

The Effects of Peer Dislike on Later School Adjustment

The first hypothesis referring to the effects of peer dislike on all school adjustment domains was partially confirmed. The emotional facets of school adjustment, namely, school attachment and feelings of safety at school, solely showed cross-sectional negative associations with peer dislike. We may speculate that longitudinally, the examined emotional facets of school adjustment may not be undermined by peer dislike in the classroom because they refer to a broader social context of the school as a whole. The school context includes a variety of other activities and interactions (e.g., individual study and teacher-student interactions) apart from peer interactions in the classroom. Further research and replications of this study are of course needed to reach more confident conclusions. The lack of significant negative effects of peer dislike on later school attachment and feelings of safety at school could also result from not including other potentially relevant conditional processes, such as the presence of prejudice as a reason for peer dislike (Killen et al., 2018). Addressing the role of prejudice toward marginalized social groups, such as gender-diverse students, students from ethnic minorities, or those with special educational needs would be especially beneficial, because literature has documented more negative outcomes for bias-based peer adversities (Latina & Bayram Özdemir, 2021; Mulvey et al., 2018). More insights into the heterogeneity of the group of students who are disliked are warranted, and special attention should be devoted to students who are not only disliked but also excluded or victimized and may thus be particularly susceptible to emotional detachment from school and lack of feelings of safety at school (Boulton et al., 2012; Kollerová & Smolík, 2016; Salmivalli & Isaacs, 2005).

As predicted, students who were disliked by their classmates in the fall scored lower on academic motivation in the following spring, which is an important result suggesting that detrimental effects of peer dislike go beyond the documented areas of classroom disengagement and lower school achievement (e.g., Danneel et al., 2019; Lessard & Juvonen, 2022). The longitudinal negative effect of peer dislike on academic motivation expands the existing understanding of the negative impact of peer dislike on academic engagement (Buhs et al., 2006), negative self-appraisals in the academic domain (Galand & Hospel, 2013), and lower academic aspirational levels (Bagwell et al., 1998). It shows that in early adolescence, the experience of being disliked by classmates may contribute to future decreased academic motivation to work hard and achieve at school. This is an alarming finding given that academic motivation has been considered a key prerequisite of academic achievement and progress and represents an important educational outcome on its own (e.g., Guo et al., 2015; Wigfield et al., 2006). The results could help explain why peer dislike contributes to lower educational attainment in adulthood (Lorijn et al., 2021) and indicate that in early adolescence, peers in the classroom constitute an influential social context that may shape students' long-term attitudes toward academic learning and effort. The results implies that all students who are disliked by peers deserve targeted interventions to stay academically motivated.

The Role of Gender Context

The finding that the negative longitudinal effect of peer dislike on academic motivation was consistent across various gender contexts supports the need-to-belong model (Baumeister, 2012), which understands peer dislike as a frustration of a universal and fundamental human need to form positive and accepting social relations. Specifically, contrasting the second hypothesis, no interactive effects of peer dislike at Time 1 and gender were found on school adjustment variables at Time 2. Thus, it seems that the gender differential effects of peer dislike previously documented, including internalizing problems, lower self-esteem (Lopez & DuBois, 2005; Rudolph & Conley, 2005) or higher levels of sadness and worry for girls than boys (Goodman & Southam-Gerow, 2010), do not apply to the area of early adolescent motivational and emotional school adjustment. The results mirror the outcomes of Sandstrom and colleagues (2003, 2016), who documented similar levels of internalizing and externalizing problems in response to experimentally induced peer exclusion, an adversity closely related to peer dislike. The consistent negative effect of peer dislike on later academic motivation found in the present study is of practical relevance for teacher education. Literature shows that teachers seem to consider boys more resilient to the negative outcomes of peer difficulties than girls (Hughes et al., 2001; Kollerová & Killen, 2021) and feel that they need less support from authorities (Kochenderfer-Ladd & Pelletier, 2008). Moreover, they may tend to view same-gender exclusion as more harmful because, in many settings, gender segregation is common (Bohn-Gettler et al., 2010), and cross-gender exclusion is regarded as more common, legitimate, and less harmful than same-gender exclusion (Killen et al., 2013).

The comparison of findings for peer dislike based on nominations from same- or cross-gender peers showed comparable (not significantly different) negative effects of peer dislike on later academic motivation. This is an addition to the existing literature, given that gender context differences were documented for victimization by school bullying (Sainio et al., 2013) and teachers seem to view same-gender peer exclusion in some gender contexts as having more detrimental effects than cross-gender peer exclusion (Kollerová & Killen, 2021). Furthermore, peer dislike was harmful to a student's academic motivation regardless of whether the student was a boy or a girl and regardless of whether they were disliked by same- or cross-gender peers. Thus, the notions that girls are more vulnerable to negative outcomes of peer dislike than boys and that same-gender (girl-to-girl dislike or boy-to-boy) could be more devastating were not supported. In the examined area of academic motivation, peer dislike had the same negative effects on boys and girls and same-gender peer dislike was found equally devastating as cross-gender peer dislike. Therefore, teachers could provide more equitable and effective support for all students affected by peer dislike if they avoid previously documented gender biases and stereotypical assumptions (Kochenderfer-Ladd & Pelletier, 2008; Kollerová & Killen, 2021).

Limitations and Directions for Future Research

Despite many strengths, such as using both self-report and peer nomination data and taking a systematic look at the role of gender context, this study has some limitations. First, the present study focused on negative outcomes of peer dislike but not its classroom contexts. Major insights can be gained by future research on the moderating role of classroom

norms (Lessard & Juvonen, 2022). Second, although peer nomination procedures present highly valid and reliable indicators of peer dislike (Cillessen & Marks, 2011), the study did not trace subjective perceptions of belonging that could provide complementary information and unique contributions to the adjustment of students facing peer dislike (O'Neel & Fuligni, 2013). Additionally, because students assess their level of (dis)liking a classmate also by weighing their feelings towards different classmates and comparing them to one another (Cillessen & Bellmore, 2009), it would be beneficial to disentangle the role of comparative preferences in development of peer dislike. In future research, it may also be important to address various reasons for peer dislike, as they may involve distinct moral, group, or personal considerations, including stereotypes and prejudice (Killen et al., 2018). Next, the generalizability of the results is limited by the narrow age range of the participating students. The study focused on early adolescents and assessed only seventh graders to trace classrooms that had been in existence for the same period of time because peer status indicators, such as peer dislike, reflect long-term classroom peer relations (Cillessen & Marks, 2011). Future research could trace the effects studied over a longer course of adolescent development. Finally, although gender is a complex construct (Martin et al., 2017), this study focused solely on the binary distinction between students who identified as male or female. Future research should adopt a more comprehensive approach and measure the full spectrum of gender identities.

Conclusions

The findings underscore the need for strategies to prevent peer dislike among early adolescents, as it may negatively impact academic motivation. Students who are disliked by their peers require targeted interventions to foster their academic motivation. This need is crucial regardless of the gender context—whether the students who are disliked are boys or girls, or whether the dislike comes from same-gender or cross-gender peers. Therefore, teacher education should challenge teacher gender biases, namely underestimating of the harmfulness of peer adversities in some gender contexts. Teachers should be informed that peer dislike puts academic motivation of early adolescence at a substantial risk, regardless of its gender context. Then, educators can devote proper attention to peer dislike and ensure that all students affected by it receive the support they need. To improve prevention, educators can devote time to creating an inclusive classroom in which mutual respect and peer liking is emphasized to enable all students to succeed academically.

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Data availability Data and materials will be made available on request at the first author of the study (contact: kollerova@praha.psu.cas.cz).

Declarations

Ethics Approval This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of the Institute of Psychology, Czech Academy of Sciences (March 20, 2017, No. 656/Pha/17).

Consent for Publication Written parental informed consents were secured for all participants before the data collection.

Competing Interests The authors declare that they have no conflict of interest/competing interests.

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