When Insecure Self-Worth Drains Students' Energy: Academic Contingent Self-Esteem and Parents' and Teachers' Perceived Conditional Regard as Predictors of School Burnout

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Abstract
Whereas both the family and school environment have been suggested to affect school burnout risks, the role of conditionally regarding parenting or teaching, in which affection is granted conditional on student achievement, in the development of school burnout has not yet been examined. This longitudinal study investigated students' academic contingent self-esteem and parental and teacher conditional regard as antecedents of school burnout. The study sample consisted of Flemish early adolescents ($n = 3409$; $M_{age} = 12.4$ years (SD = 0.49) at the first measurement occasion; 50.3% males), which were surveyed twice (start of Grade 7 and Grade 8). Using Latent Change Modeling, academic contingent self-esteem was found to predict school burnout. Parental and teacher conditional regard both contributed to school burnout, partly through academic contingent self-esteem. Whereas negative conditional regard had the strongest implications for school burnout, positive conditional regard contributed most strongly to contingent self-esteem. Associations were systematically found both at the between-student level (i.e., high levels of antecedents were related to high levels of school burnout) and at the within-student level (i.e., increases in antecedents over time were related to concomitant increases in school burnout). These findings emphasize that communicating conditional approval to adolescents may increase school burnout risks, thus jeopardizing their healthy academic development.

Keywords School burnout · Parenting · Teaching · Conditional regard · Academic contingent self-esteem

Introduction

Originally studied within the work context (Maslach et al., 2001), the phenomenon of burnout has increasingly been investigated within the educational domain (e.g., Söderholm et al., 2022). For children and adolescents, school represents a key developmental context in which they (are supposed to) "do their job": attending classes, studying lessons, doing assignments, and pursuing degrees. However, students sometimes feel unable to meet these demands, or they perceive schoolwork to lack personal relevance and value.

School burnout is then defined as a combination of exhaustion, cynicism, and reduced self-perceived efficacy (Walburg, 2014). Prior research has associated school burnout with a range of adverse academic outcomes, such as diminished academic performance (Madigan & Curran, 2021), truancy (Virtanen et al., 2021) and dropout (Bask & Salmela-Aro, 2013). To better understand how contextual factors predict school burnout in students, this study considered the longitudinal development of school burnout over time in a sample of early adolescents. In particular, it investigated academic contingent self-esteem as a potential antecedent of school burnout, and examined how teachers' and parents' use of conditional regard might fuel the development of school burnout, partly through students' academic contingent self-esteem.

School Burnout

School burnout is a multidimensional concept comprising exhaustion due to school demands, a cynical attitude towards

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school, and feelings of inadequacy (Walburg, 2014). These three subdimensions are closely interrelated (Salmela-Aro et al., 2009). School burnout has been demonstrated to be a major threat to students' academic development, in particular in secondary and higher education. For example, a recent meta-analysis comprising 29 studies with 109,396 students found that school burnout was significantly negatively related to academic achievement, presumably because it undermines both students' willingness (because of the disengagement resulting from cynicism and feelings of inadequacy) and capability (because of the lack of energy due to exhaustion) to invest in their studies (Madigan & Curran, 2021). In the longer term, the loss of interest, frustration and tension that go along with school burnout may lead students to withdraw both emotionally and physically from their studies, inflicting substantial harm on their educational careers (Bask & Salmela-Aro, 2013). Accordingly, it is of prime importance to understand the development of school burnout, and to identify the factors that either contribute to or buffer against school burnout.

Recently, the Study Demands-Resources Model (SD-R) has been proposed to explain the development of school burnout (Salmela-Aro et al., 2022). The SD-R model describes school burnout as resulting from an imbalance between study demands and student resources. Herein, demands are conceptualized as all factors that can make learning challenging to students, whereas resources refer to those factors that support students in their learning. Crucially, the SD-R model posits that also in highly demanding situations, students can thrive and advance. In particular, whether high demands promote or hinder learning depends on whether student resources are kept at par with demands. For example, even in classes with a high level of difficulty, strong teacher support may encourage students to engage in their learning energetically (Strati et al., 2017). When, on the other hand, study demands exceed student resources, this may deplete students' energy and put students at risk for school burnout (Salmela-Aro et al., 2022).

Furthermore, the SD-R model outlines various forms of demands and resources, both at the individual and the environmental level. Resources at the individual level include students' cognitive abilities, as advanced cognitive resources make it easier for students to meet high school demands. Indeed, research has shown that the risk for burnout tends to be lower among high than among low achievers (Korhonen et al., 2014; Paloş et al., 2019). In addition, student personality has been associated with school burnout, with in particular the personality trait of neuroticism predicting school burnout in students (David, 2010). Arguably, students who easily experience negative affect (e.g., anxiety) are more prone to perceive high school demands as stressful and frightening. Finally, research has suggested school burnout to be somewhat more prevalent among girls than among boys, a finding explained by a higher sensitivity to academic stress and

competitive pressure in girls (Salmela-Aro & Tynkkynen, 2012; Walburg, 2014).

Beyond these individual-level factors, the SD-R model also identifies factors at the contextual level affecting the development of school burnout. In particular, both the family and the school environment are considered to either provide students with resources that buffer against school burnout, or to aggravate demands imposed on students. For example, strong parental support has been shown to serve as a resource, increasing students' capacity to confront challenges at school (Duineveld et al., 2017). However, parental involvement that is experienced by students as pressuring may deplete their energy for studying, making it only more difficult for students to meet school demands (Aunola et al., 2018; Raufelder et al., 2015). Similarly, appropriate support by teachers and schools has been demonstrated to promote students' resilience in challenging situations (Strati et al., 2017; Quin et al., 2018), but when students experience their teachers to be harsh, uninterested or unsupportive of their needs, this may lead to conflict and disaffection rather than engagement (Salmela-Aro et al., 2022).

Whereas school burnout is associated with adverse academic outcomes across different age periods, adolescence may be a key developmental stage in which school burnout risks are particularly salient (Madigan & Curran, 2021). First, adolescence is generally marked by an increased vulnerability to feelings of insecurity and self-worth concerns (Brummelman et al., 2014; Orth et al., 2010). Second, the transition into secondary education often signifies a move into a more competitive, rigid and less supportive environment (Evans et al., 2018), and is often accompanied with a general decline in students' school engagement (Scherrer & Preckel, 2019). Particularly during the first years of secondary education, there is often a mismatch between adolescents' developmental needs (such as room for independent decision-making and relational support) and the school context, which is more demanding and rigid and less emotionally supportive than the elementary school context (Eccles et al., 1993). Moreover, many adolescents do not yet have sufficiently advanced coping strategies to deal effectively with the increases in school demands (Hampel & Petermann, 2005).

To date, many studies have considered differences in school burnout between students (e.g., Herrmann et al., 2019). However, from a developmental perspective, studying changes in school burnout over time within students' own functioning would be highly informative (Aunola et al., 2018; Curran & Bauer, 2011; Parviainen et al., 2021). Hence, the present study considered both interindividual differences and intra-individual changes in school burnout over time. In particular, the study considered conditional self-worth as a possible source of school burnout in early adolescents, and subsequently investigated how parents and teachers may play a role in the development of

school burnout by communicating to students that their affection is conditional on school performance.

Academic Contingent Self-Esteem

In general, contingent self-esteem denotes individuals' tendency to hinge their self-worth on their achievements (Crocker & Knight, 2005). Specifically in the academic domain, academic contingent self-esteem involves the tendency to let one's self-esteem depend on school performance (Wouters et al., 2013). Conceptually, academic contingent self-esteem can be expected to increase the risk for school burnout because putting one's self-worth at stake comes with feelings of inner tension, anxiety and pressure at school (van der Kaap-Deeder et al., 2016); in terms of the SD-R model, associating schoolwork with self-worth may increase the perceived burden of school demands. Indeed, for students with high academic contingent self-esteem, achievements at school have high diagnostic value for their worth as a person. To preserve their self-worth and avoid a blow, such students may be tempted to put excessive effort in their schoolwork. As this investment comes with an ongoing pressure to validate one's ego, these self-worth strivings may be emotionally draining, thus putting them at risk for exhaustion. Moreover, when confronted with failures, students with high contingent self-worth may conclude that they just do not have what it takes, which could fuel feelings of personal incompetence. Students with high academic contingent self-esteem might then be tempted to protect their self-worth by devaluing schooling, leading them to adopt a cynical attitude towards school. In these ways, academic contingent self-esteem can be theoretically expected to contribute to exhaustion, feelings of inadequacy, and cynicism, the core characteristics of school burnout.

In general, academic contingent self-esteem has been associated with a range of maladaptive outcomes, such as reduced well-being, test anxiety, and stress (see Fairlamb (2022) for a review). For the link between academic contingent self-esteem and school burnout, there is some preliminary evidence. Two cross-sectional studies, one among 9th graders (Herrmann et al., 2019) and another among university students (Dahlin et al., 2007), found higher contingent self-worth to be concurrently relate with higher school burnout. Yet, as both studies adopted a cross-sectional design, the role of contingent self-worth in predicting dynamic increases in school burnout over time has not yet been addressed. In the work domain, a Swedish longitudinal study did find contingent self-esteem to significantly predict increases in job burnout over time (Blom, 2012). Along similar lines, prior research on Evaluative Concerns-perfectionism - the tendency to be overly concerned with mistakes that can easily arise when one's self-worth is at stake (Curran, 2018) - has been reliably related to burnout, in particular in the work and sports domains

(Hill & Curran, 2016) but also with regards to schooling (Kljajic et al., 2017; Luo et al., 2016). The present study went beyond this body of work by testing whether academic contingent self-esteem predicted both concurrent and longitudinal shifts in school burnout.

Conditional Regard

In addition, this study addressed contextual antecedents of school burnout. Earlier research indicated that both parents (Slivar, 2001) and teachers (Salmela-Aro et al., 2008) may affect the development of school burnout. Within the frame of the SD-R model of school burnout, parents and teachers may aggravate school burnout risks when their involvement with students' schoolwork is perceived by students as demanding rather than supportive. In particular, this study considered the role of parental and teacher academic conditional regard, that is, the degree to which these socialization figures make their approval, love, and warmth conditional on students' academic performance (Assor et al., 2004; Roth et al., 2009). This communication style is to be contrasted with unconditional acceptance, which bears the message that the child is inherently worthy of love and that appreciation does not depend upon school performance (Makri-Botsari, 2015).

First, conditional regard can be expected to affect the development of school burnout through its effects on children's academic contingent self-esteem. Indeed, when parents and teachers convey to children that their affection is conditional on children's school achievement, children risk to internalize the conditionality of their self-worth. The link between conditional regard and academic contingent self-esteem has already been soundly established for parental conditional regard (e.g., Otterpohl et al., 2021; Wouters et al., 2018), with a recent meta-analysis synthesizing results from 12 samples estimating the correlation between both to equal $r = 0.29$ (Haines & Schutte, 2022). As explained in the previous section, increases in student academic contingent self-esteem resulting from parental or teacher conditional regard might then subsequently fuel school burnout risks. Second, beyond effects through academic contingent self-esteem, conditional regard may have broader implications for student functioning which may also add to increased school burnout risks. For example, making affection conditional on school achievement might undermine students' authentic engagement with school (Cohen et al., 2020; Kaplan, 2018), which might make students more vulnerable to develop school burnout (Paloş et al., 2019). Whereas associations between conditional regard and school burnout have not yet been investigated, school burnout has been associated with the use of psychological control, a manipulative practice that shares with conditional regard the withdrawal of affection after failure, both for parents (Aunola et al., 2018) and for teachers (Shih, 2015).

In addition, two manifestations of conditional regard can be differentiated. In the case of *positive* conditional regard, more affection than usual is provided to children after school success, whereas love and affection are withdrawn after failure in the case of *negative* conditional regard (Roth et al., 2009; Steffgen et al., 2022). Hence, positive and negative conditional regard differ in terms of the condition that provokes parental feedback (i.e., child success versus failure) and in the subsequent change in the level of parental affection (i.e., increased or reduced). The adverse consequences of negative conditional regard have been documented most extensively (Hanis & Schutte, 2022). Yet, the costs of positive conditional regard remain somewhat more debated. For example, it has been argued that "rewarding" children with more affection after success could help to reinforce desired behaviors (Gewirtz & Peláez-Nogueras, 1991). However, when children learn that they are valued more than usual when achieving well, they may start to overinvest in their studies to maximize self-worth (Otterpohl et al., 2021; Wouters et al., 2018). The feeling of internal compulsion that goes along with such self-worth strivings may then further fuel school burnout risks (Assor & Tal, 2012; Roth et al., 2009). In general, whereas the most overt adverse student outcomes are usually associated with negative conditional regard, positive conditional regard is linked to more subtle vulnerabilities. For example, in a meta-analysis depression was primarily associated with negative conditional regard, whereas introjected regulation (i.e., behavior driven by a sense of inner compulsion or obligation, for example to avoid feelings of guilt or shame or to demonstrate one's worth as a person; Assor et al., 2009) was primarily linked to positive conditional regard (Haines & Schutte, 2022).

Finally, for children, parents are often the prime socialization figures (Wouters et al., 2013). However, when it comes to academic functioning, teachers are also important contextual agents (Salmela-Aro et al., 2008), as they are closely interacting with students and often the first source of feedback on students' performance (Makri-Botsari, 2015). Whereas the consequences of conditional regard by parents has been studied most intensively (Haines & Schutte, 2022), both parents' and teachers' unconditional acceptance have been found to uniquely affect students' motivational functioning (Makri-Botsari, 2015). This study thus considered the unique role of parental and teacher conditional regard on student burnout.

Current Study

School burnout, a major threat to the healthy academic development of students, has been argued to depend on factors in the family and school environment of students. This study considered whether parental and teacher conditional regard, in which affection is only granted conditional

on student achievement, would increase school burnout risks in students, partly through its effect on students' academic contingent self-esteem. To this end, this study examined the development of school burnout in a large sample of early adolescents from Flanders (the Dutch-speaking part of Belgium), considering both interindividual differences and intra-individual changes in school burnout over time. First, it was investigated whether student's academic contingent self-esteem predicted school burnout. It was expected that when students hinge their self-esteem on school achievement, the ongoing pressure to protect self-worth would increase the risk of school burnout. Second, the role of perceived parental and teacher conditional regard in the development of academic contingent self-esteem and school burnout was considered. It was expected that when adolescents perceive their parents or teachers as making their approval conditional on academic performance, this would increase school burnout in students, partly through academic contingent self-esteem. Beyond examining the consequences of overall conditional regard, this study also investigated the unique role of negative, relative to positive, conditional regard, expecting especially negative conditional regard to be associated with the greatest school burnout risks. All analyses controlled for three individual characteristics that have been associated with school burnout, that is, neuroticism, cognitive ability and gender.

Methods

Participants and Procedure

This study used data from a large longitudinal study (4 waves; November 2017, May 2018, November 2018, May 2019) among 3409 Flemish students (M_{age} = 12.4 years at the first measurement occasion, 50.3% males). For the present study, key data were collected at the first wave (i.e., start of Grade 7) and third wave (i.e., start of Grade 8)[1]; the control variables were assessed only at the start of Grade 7. From 27 regular schools[2], all students in Grade 7 were recruited to complete a number of surveys and tests in class, either with pen-and-paper or digitally (depending on school preferences). Students had a slightly more advantaged social background than average, with 21.2% of the sample

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[1] In the second and fourth wave, no measures capturing parental conditional regard were collected.

[2] In Flanders (the Dutch-speaking part of Belgium), about 85–90% of the students start secondary education in the regular stream with a large common core. A minority of students attend either special needs education or a vocationally preparatory track, which caters for students that did not successfully complete primary school and prepares for vocational education. In the present study, only students from the regular stream were recruited.

receiving a school allowance[3] (compared to 25.7% in the population), 11.9% speaking a different language at home (16.9% in the population), and 14.1% having a mother without a secondary school degree (18.0% in the population). The study was approved by the Ethical Committee of KU Leuven. Prior to conducting the study, informed consent was obtained from students, their parents and their teachers.

Measures

Unless stated otherwise, survey items were scored on 5-point Likert-type scales, ranging from 1 (*does not apply to me at all*) to 5 (*fully applies to me*). All measures were based on validated, widely-used measurement scales.

Parent conditional regard

An adjusted and translated version of the Domain-Specific Perceptions of Parental Conditional Regard Scale (Assor et al., 2004) was used to assess perceived parental conditional regard. Students completed the scale both for their mother and father separately; for each item, the average of student responses for mother and father were used (correlations between father/mother ratings: $r_{G7} = 0.83$; $r_{G8} = 0.84$). This scale consisted of six items, three of which referred to positive conditional regard (i.e., providing more affection after success) (e.g., *My mother/father shows me more affection and approval than usual if I achieve something important at school*), whereas the other three reflected negative conditional regard (i.e., providing less affection after failure) (e.g., *My mother/father shows me less affection than usual when I don't perform according to expectations at school*). Internal consistency of the scale was excellent ($\alpha_{G7} = 0.81$; $\alpha_{G8} = 0.84$).

Teacher conditional regard

Teacher conditional regard was measured by adapting scales for parental conditional regard to the classroom and teacher interaction context (Assor et al., 2004; Assor & Tal, 2012). Again, this scale consisted of six items, three capturing positive conditional regard (e.g., *When I pass a test, I feel that my teachers appreciate me more than usual*) and three assessing negative conditional regard (e.g., *When I get bad grades in school, my teachers don't pay attention to me for a while*). Internal consistency of the scale was good ($\alpha_{G7} = 0.72$; $\alpha_{G8} = 0.80$).

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[3] In Flanders (Belgium), families receive financial support for children attending school when the family income is under a certain limit (depending on family size).

Academic contingent self-esteem

Students' contingency of self-worth on school performance was measured with the Self-esteem Contingency Questionnaire for Adolescents (SCQA) (Wouters et al., 2016). From this scale, the six items referring to the academic domain (e.g., *I feel more worthwhile when my grades on my report card are higher than I expected*) were used. Internal consistency of the scale was good ($\alpha_{G7} = 0.72$; $\alpha_{G8} = 0.80$).

School burnout

Students' symptoms of school burnout were measured using the School Burnout Inventory (SBI; Salmela-Aro et al., 2009). The SBI consists of nine items measuring three related aspects of school burnout: (a) exhaustion at school (four items, e.g. *I feel overwhelmed by my schoolwork*), (b) cynicism toward the meaning of school (three items, e.g. *I'm continually wondering whether my schoolwork has any meaning*), and (c) sense of inadequacy at school (two items, e.g. *I often have feelings of inadequacy in my schoolwork*). Reliability and validity of the scale (e.g., associations with depressive symptoms, school engagement, and academic achievement) have been demonstrated before (Salmela-Aro et al., 2009), and the scale has been regularly used to assess school burnout in adolescent samples (e.g., Salmela-Aro, 2017; Salmela-Aro et al., 2016; Salmela-Aro & Tynkkynen, 2012). In the present study, internal consistency of the scale was good ($\alpha_{G7} = 0.77$; $\alpha_{G8} = 0.80$).

Intelligence

A two hour cognitive ability test (CoVaT-CHC; Magez et al., 2015) was administered in class under supervision of a trained member of the research team. The test assessed both fluid and crystallized intelligence; an IQ-score ($M = 100$, $SD = 15$) was calculated based on a comparison of test results with a representative norming sample.

Neuroticism

Students' neuroticism was measured with 6 items from the Quick Big Five (Vermulst & Gerris, 2005) (e.g., *I am an anxious person*). This scale had good reliability ($\alpha = 79$).

Gender

This was coded with males as the reference category ($=0$).

Plan of Analysis

To consider both interindividual differences and intra-individual changes in school burnout, making use of Latent

Change Modeling (Hertzog & Nesselroade, 2003). In Latent Change Models, the observed variance in school burnout is divided into students' baseline burnout levels on one hand and the degree to which students' burnout increases or decreases between time points on the other, and both level and change parameters are then associated with individual and contextual factors. Using two waves of data (i.e., Grade 7 and Grade 8 assessments), a LCM allows to estimate the between- and within-person variance in the study variables using latent variables for the intercept (between-person) and the slope (within-person change) (Howardson et al., 2017). Models were estimated in Mplus7 with Full Information Maximum Likelihood (FIML) estimation.

The first part of a latent change model consists of a longitudinal measurement model. Parcels for parental and teacher conditional regard and for academic contingent self-esteem were created by combining positive with negative items. For school burnout parcels were created along its three subdimensions. To evaluate the quality of these measurement models, model fit was assessed with the following indicators: the Comparative Fit Index (CFI), the Root Square Mean Error Approximation (RMSEA) and the Standardized Root Means Square Residual (SRMR). An acceptable fit is indicated by CFI values of 0.90 or above and by RMSEA and SRMR values of 0.08 or below (Hu & Bentler, 1999; Kline, 2015).

Furthermore, to establish measurement invariance between the two measurement waves, the fit of the unconstrained model was compared with the fit of a model constraining factor loadings to be equal across measurement waves (factorial invariance) and a model constraining intercepts to be equal across waves (scalar invariance). Whereas Little (1997) proposed that model invariance can be established when the decrease in CFI is equal to or below 0.05, Cheung and Rensvold (2002) proposed a more conservative criterion of 0.01 or less. Similarly, measurement invariance can be established when increases in RMSEA and SRMR are not larger than 0.01 and 0.025, respectively (Chen, 2007).

After establishing an adequate measurement model, LCM's were estimated describing the level and change in school burnout and its predictors between Grade 7 and 8. These models indicated whether there was significant variation in the baseline levels and the rate of intra-individual change in school burnout and its predictors across students. Changes contrasted ratings at the second assessment relative to the first; hence, a positive change parameter indicated an increase over time. To answer the research questions, LCM's were then estimated in which the latent level and change factors of school burnout were predicted by the latent level and change factors of the hypothesized predictors (Boncquet et al., 2020; Hertzog & Nesselroade, 2003). The full estimated LCM is depicted in Fig. 1a. In all

models, clustering in schools was accounted for (type = COMPLEX in Mplus). Standardized estimates (StdYX-standardization in Mplus) were reported as these are indicative of the effect size of a parameter in a regression model. In general, a standardized estimate $\beta < 0.20$ is considered to reflect a weak effect, a standardized estimate $0.20 < \beta < 0.50$ to correspond to a moderate effect, and a standardized estimate $\beta > 0.50$ to reflect a strong effect (Cohen, 1988).

Missing Data

Students not reporting on their level of school burnout were removed from the sample, bringing the analytical sample size to 3365 students. For the other key variables, non-response did not exceed 2.7% for any variable, and was mainly related to absence at the time of survey (e.g., illness). To ensure maximal use of the sample, Full Information Maximum Likelihood (FIML) estimation was used. This means that parameters were estimated by maximizing a likelihood function that indicates the probability to observe the available data. With this method, observations with missing values do not have to be discarded, and all available information is used to estimate the model.

Results

Descriptive Statistics

Table 1 provides the descriptive statistics and correlations between the main study variables. Bivariately, school burnout was moderately associated with academic contingent self-esteem and with perceived conditional regard both by parents and by teachers. Furthermore, negative and positive conditional regard were moderately interrelated (e.g., correlations in Grade 7 were 0.44 for parents and 0.25 for teachers).

Testing Measurement Invariance

Subsequently, measurement invariance over time was investigated. The fit indices of an unconstrained model were CFI = 0.982, RMSEA = 0.026, and SRMR = 0.034. Constraining factor loadings to be equal across waves yielded model fit indices equal to CFI = 0.981, RMSEA = 0.026, and SRMR = 0.035. As this corresponds to a decrease in CFI of 0.001, an increase in RMSEA of < 0.001 and an increase in SRMR of 0.001, factorial invariance was established. Subsequently, constraining both factor loadings and intercepts to be equal across waves yielded model fit indices equal to CFI = 0.977, RMSEA = 0.029 and SRMR = 0.038. As this corresponds to a decrease in CFI of

a. Hypothesized Model
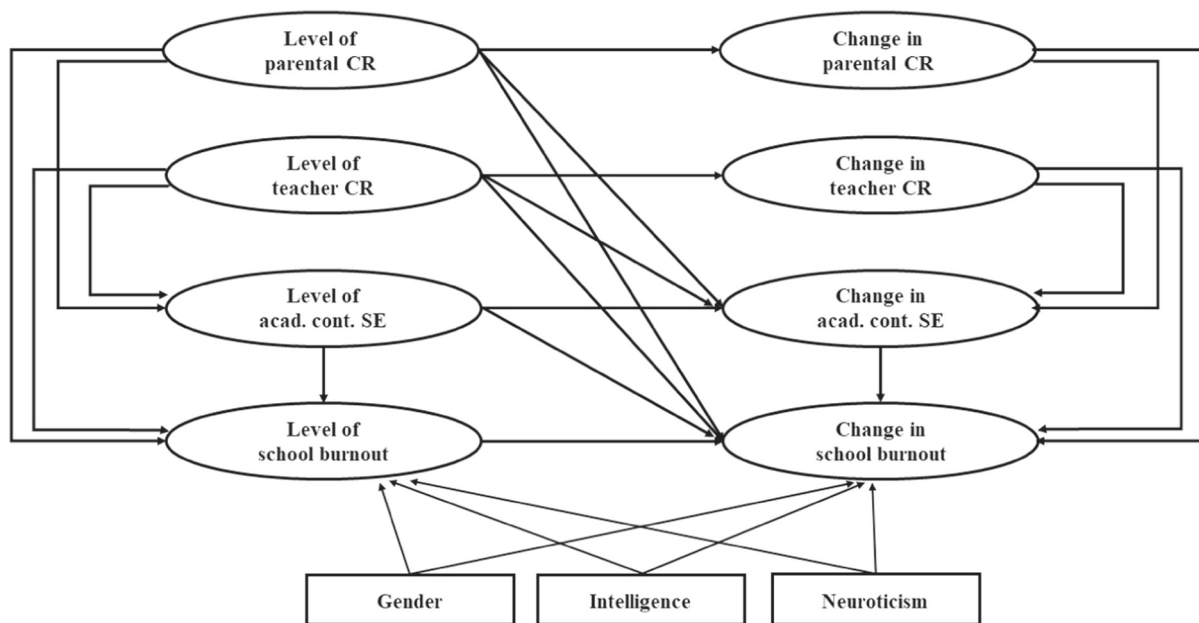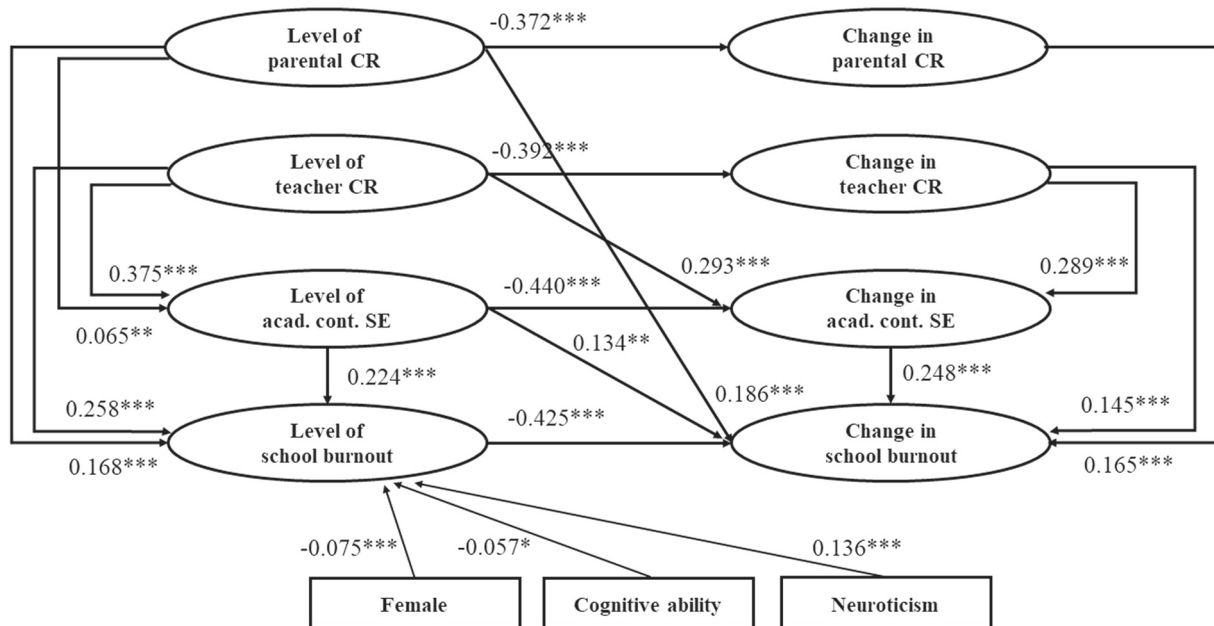

b. Observed Significant Paths.

Fig. 1 Latent change model associating level and change factors of school burnout with academic contingent self-esteem, and parent and teacher conditional regard. **a** Hypothesized Model. **b** Observed significant paths. CR Conditional Regard; SE Self-Esteem. $*p < 0.05, **p < 0.01, ***p < 0.001$

0.004 and increases in RMSEA of 0.003 and in SRMR of 0.003, also scalar invariance was established.

Furthermore, Table 2 reports the parameter estimates and fit indices of univariate latent change models describing the level and change in school burnout and its antecedents

between Grade 7 and 8. All variances, both around the level and the change factors, were significantly different from zero. This thus indicated that for all variables, students differed both in terms of their baseline levels and in the rate of intra-individual change. Mean levels of school burnout

Table 1 Means, Standard Deviations and Correlations Between the Main Study Variables

Variable		M	SD	Correlations									
				(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	School Burnout (G7)	2.22	0.66										
(2)	Academic Contingent Self-Esteem (G7)	3.33	0.73	0.33*									
(3)	Parental Conditional Regard (G7)	2.34	0.86	0.28*	0.20*								
(4)	Teacher Conditional Regard (G7)	2.28	0.69	0.33*	0.33*	0.42*							
(5)	School Burnout (G8)	2.38	0.76	0.49*	0.22*	0.24*	0.24*						
(6)	Academic Contingent Self-Esteem (G8)	3.12	0.85	0.22*	0.46*	0.20*	0.31*	0.35*					
(7)	Parental Conditional Regard (G8)	2.27	0.94	0.24*	0.16*	0.50*	0.29*	0.31*	0.24*				
(8)	Teacher Conditional Regard (G8)	2.11	0.79	0.20*	0.18*	0.30*	0.41*	0.30*	0.37*	0.44*			
(9)	Female	55%	-	−0.06*	0.01	−0.16*	−0.03	−0.03	0.08*	−0.20*	−0.11*		
(10)	Cognitive Ability	104.94	13.98	−0.05*	0.02	−0.14*	−0.11*	−0.03	−0.05*	−0.09*	−0.09*	−0.20*	
(11)	Neuroticism	3.81	1.15	0.23*	0.21*	0.04	0.11*	0.17*	0.21*	0.02	0.05*	0.14*	−0.04

Range [1–5] for School Burnout, Academic Contingent Self-Esteem, Parental Conditional Regard, Teacher Conditional Regard. Range [1–7] for Neuroticism

*$p < 0.05$

Table 2 Parameter Estimates and Fit Indices of Univariate Latent Change Models for Each Variable

Variable	Parameter Estimates				Fit Indices		
	Level		Change				
	M	s^2	M	s^2	CFI	RMSEA	SRMR
School Burnout	2.284***	0.191***	0.126***	0.192***	0.989	0.036	0.020
Academic Contingent Self-Esteem	3.401***	0.244***	−0.142***	0.293***	0.992	0.040	0.040
Parental Conditional Regard	2.522***	0.665***	−0.100***	0.639***	0.998	0.020	0.009
Teacher Conditional Regard	2.507***	0.351***	−0.157***	0.437***	0.985	0.049	0.042

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

increased between Grades 7 and 8, while there were mean decreases in academic contingent self-esteem and in perceived parental and teacher conditional regard.

Structural Associations

In this section, results from the main analysis of the structural associations between the study variables are presented. Figure 1b displays the statistically significant paths from a structural model including associations between the level and change factors of school burnout, academic contingent self-esteem, perceived parental conditional regard and perceived teacher conditional regard, controlling for gender, intelligence and neuroticism. Direct, indirect (through academic contingent self-esteem) and total paths from both contextual antecedents to school burnout can be found in

Table 3. The LCM-model demonstrated good fit (CFI = 0.96; RMSEA = 0.03; SRMR = 0.06). Together, all variables explained 31.8% of the between-person variance in school burnout and 26.3% of the variance in within-person changes in school burnout. Control variables were significantly related to the level of school burnout, with cognitive ability and female gender relating negatively and neuroticism relating positively to school burnout. Control variables were unrelated to intraindividual changes in school burnout. For all structural variables (school burnout, academic contingent self-esteem, parental conditional regard, teacher conditional regard), the initial level was related negatively to subsequent changes.

The first research hypothesis put forward a positive association between academic contingent self-esteem and school burnout. Indeed, at the between-person level, students with

Table 3 Direct Paths, Indirect Paths (Through Academic Contingent Self-Esteem), and Total Paths from Parental and Teacher Conditional Regard to School Burnout

	Direct path	Indirect path	Total path
Parental Conditional Regard			
Level => Level	0.168***	0.015**	0.183***
Level => Change	0.186***	0.004	0.190***
Change => Change	0.165***	0.012	0.177***
Teacher Conditional Regard			
Level => Level	0.258***	0.084***	0.342***
Level => Change	0.023	0.039**	0.062***
Change => Change	0.145***	0.072***	0.217***

$*p < 0.05, **p < 0.01, ***p < 0.001$

higher academic contingent self-esteem reported higher levels of school burnout ($\beta = 0.24$, $p < 0.001$) and stronger increases in school burnout over time ($\beta = 0.13$, $p < 0.001$). Also at the within-person-level, intra-individual increases in contingent self-esteem related positively to increases in school burnout over time ($\beta = 0.25$, $p < 0.001$).

Second, perceived parental conditional regard was hypothesized to relate positively to both academic contingent self-esteem and school burnout. The level of parental conditional regard was found to be weakly related to the level of academic contingent self-esteem ($\beta = 0.07$, $p = 0.007$). Yet, neither the level of parental conditional regard ($\beta = 0.03$, $p = 0.337$) nor intraindividual changes in parental conditional regard ($\beta = 0.05$, $p = 0.119$) were related to intraindividual changes in academic contingent self-esteem over time. As for the association between perceived parental conditional regard and school burn-out (total effect; Table 3), the level of parental conditional regard was related positively to both between-student differences in school burnout ($\beta = 0.18$, $p < 0.001$) and to intraindividual changes in school burnout over time ($\beta = 0.19$, $p < 0.001$). Also at the within-person level, intraindividual changes in parental conditional regard were related positively to changes in school burnout over time ($\beta = 0.18$, $p < 0.001$).

Third, perceived teacher conditional regard was expected to relate positively to both academic contingent self-esteem and school burnout. Higher teacher conditional regard indeed predicted both higher levels of academic contingent self-esteem ($\beta = 0.38$, $p < 0.001$) and stronger intra-individual increases in academic contingent self-esteem over time ($\beta = 0.29$, $p < 0.001$). In addition, increases in perceived teacher conditional regard moderately predicted increases in academic contingent self-esteem over time ($\beta = 0.29$, $p < 0.001$). As for the association with school burn-out (total effect), higher levels of perceived teacher

conditional regard predicted higher levels of school burnout ($\beta = 0.34$, $p < 0.001$) and stronger increases in school burnout over time ($\beta = 0.06$, $p < 0.001$). In addition, increases in perceived teacher conditional regard were associated with concomitant increases in school burnout over time ($\beta = 0.22$, $p < 0.001$).

In conclusion, perceived conditional regard by parents and teachers was found to be weakly to moderately associated with school burnout; these associations consistently emerged both at the between- and within-person-level. Associations between parental conditional regard and school burn-out occurred mostly directly, as parental conditional regard was only marginally associated with academic contingent self-esteem. Teacher conditional regard predicted school burnout both directly and indirectly, that is, through academic contingent self-esteem.

Differentiating between Negative and Positive Conditional Regard

Finally, the structural model outlined in Fig. 1 was adapted to differentiate conditional regard between negative and positive conditional regard. This model demonstrated good fit with the data (CFI = 0.95; RMSEA = 0.03; SRMR = 0.06). Table 4 reports the standardized estimates for all paths in this model, whereas Table 5 summarizes the direct and indirect effects of contextual antecedents on school burnout.

First, negative conditional regard by parents was virtually unrelated to academic contingent self-esteem (with the exception of a very weak negative relation at the within-person-level). Whereas the level of parental negative conditional regard was not significantly directly associated with the level school burnout, higher levels of parental negative conditional regard predicted stronger increases in school burnout over time, and increases in parental negative conditional regard were associated with concomitant increases in school burnout. Similarly, negative conditional regard by teachers was only weakly associated with academic contingent self-esteem, but higher levels of teacher negative conditional regard consistently predicted higher levels of school burnout and stronger increases in school burnout over time, and increases in teacher negative conditional regard were associated with concomitant increases in school burnout. In sum, negative conditional regard both by parents and teachers uniquely and consistently predicted school burnout in students, and these associations occurred mostly directly, rather than through academic contingent self-esteem (Table 5).

Second, positive conditional regard by parents consistently predicted higher academic contingent self-esteem, both at the between-person and within-person level. Whereas parental positive conditional regard did not have a direct effect on school burnout, it weakly contributed to

Table 4 Standardized Estimates from the Latent Change Model Differentiating Negative and Positive Conditional Regard

	β	SE	β /SE	p		β	SE	β/SE	p
Paths from level to change in each variable					**Paths from control variables**				
School Burnout	−0.458***	0.048	−9.535	<0.001	**… to level of school burnout**				
Parental Negative CR	−0.389***	0.040	−9.675	<0.001	Female	−0.059	0.022	−2.712	0.007
Parental Positive CR	−0.419***	0.023	−18.097	<0.001	Cognitive Ability	−0.040	0.025	−1.603	0.109
Teacher Negative CR	−0.433***	0.033	−13.226	<0.001	Neuroticism	0.109	0.021	5.227	<0.001
Teacher Positive CR	−0.435***	0.018	−24.199	<0.001	**… to change in school burnout**				
					Female	0.029	0.028	1.014	0.311
					Cognitive Ability	0.026	0.022	1.185	0.236
					Neuroticism	−0.003	0.032	−0.086	0.931
Paths from ACSE to School Burnout									
Level => Level	0.289***	0.031	9.340	<0.001					
Level => Slope	0.194***	0.040	4.815	<0.001					
Slope => Slope	0.303***	0.023	13.052	<0.001					
Parental antecedents									
Paths from Parental Negative CR…					**Paths from Parental Positive CR…**				
… to ACSE					**… to ACSE**				
Level => Level	−0.041	0.036	−1.144	0.253	Level => Level	0.135***	0.031	4.353	<0.001
Level => Change	−0.033	0.043	−0.770	0.441	Level => Change	0.092*	0.042	2.183	0.029
Change => Change	−0.061*	0.026	−2.339	0.019	Change => Change	0.151***	0.032	4.648	<0.001
… to School Burnout					**… to School Burnout**				
Level => Level	0.074	0.046	1.629	0.103	Level => Level	0.075	0.040	1.874	0.061
Level => Change	0.197***	0.046	4.310	<0.001	Level => Change	−0.005	0.053	−0.093	0.926
Change => Change	0.145***	0.035	4.104	<0.001	Change => Change	−0.011	0.034	−0.335	0.737
Teacher antecedents									
Paths from Teacher Negative CR…					**Paths from Teacher Positive CR…**				
… to ACSE					**… to ACSE**				
Level => Level	0.065*	0.030	2.198	0.028	Level => Level	0.359***	0.031	11.413	<0.001
Level => Change	0.028	0.029	0.952	0.341	Level => Change	0.317***	0.029	10.909	<0.001
Change => Change	0.006	0.034	0.184	0.854	Change => Change	0.325***	0.030	11.003	<0.001
… to School Burnout					**… to School Burnout**				
Level => Level	0.404***	0.040	10.021	<0.001	Level => Level	−0.074*	0.036	−2.085	0.037
Level => Change	0.174***	0.043	4.014	<0.001	Level => Change	−0.142***	0.035	−4.033	<0.001
Change => Change	0.324***	0.033	9.765	<0.001	Change => Change	−0.138***	0.035	−3.956	<0.001

CR conditional regard, *ACSE* academic contingent self-esteem.

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

school burnout through academic contingent self-esteem, both at the between- and within-person-level (Table 5; indirect and total effect). Similarly, positive conditional regard by teachers was moderately associated with academic contingent self-esteem, both at the between- and within-person-level, and thus indirectly positively affected school burnout (Table 5; indirect effect). However, unexpectedly, the direct association between teacher positive conditional regard and school burnout turned out to be weakly negative, which canceled out the positive indirect effect to arrive at a null total effect (Table 5; total effect). In sum, positive conditional regard consistently predicted

academic contingent self-esteem in students, and contributed to school burnout only when expressed by parents.

Discussion

School burnout, as the combination of exhaustion, cynicism, and feelings of inadequacy, has been shown to impact on student's healthy academic development (Madigan & Curran, 2021). Whereas the family and school environment have been argued to affect school burnout risks in students (Salmela-Aro et al., 2022), the role of conditionally

Table 5 Direct Paths, Indirect Paths (through Academic Contingent Self-Esteem) and Total Paths from Parental and Teacher Conditional Regard to School Burnout, Differentiating between Negative and Positive Conditional Regard

	Direct path	Indirect path	Total path
Parental Negative Conditional Regard			
Level => Level	0.074	−0.012	0.062
Level => Change	0.197***	−0.006	0.191***
Change => Change	0.145***	−0.018	0.127***
Parental Positive Conditional Regard			
Level => Level	0.075	0.039***	0.114**
Level => Change	−0.005	0.018	0.013
Change => Change	−0.011	0.046***	0.035*
Teacher Negative Conditional Regard			
Level => Level	0.404***	0.019*	0.423***
Level => Change	0.174***	0.005	0.179***
Change => Change	0.324***	0.002	0.326***
Teacher Positive Conditional Regard			
Level => Level	−0.074*	0.104***	0.030
Level => Change	−0.142***	0.061***	−0.081
Change => Change	−0.138***	0.098***	−0.040

$*p < 0.05, **p < 0.01, ***p < 0.001$.

regarding parenting or teaching, in which affection is made conditional on student achievement, in the development of school burnout has not yet been examined. This study longitudinally investigated the development of school burnout in a large sample of adolescents from Flanders (Belgium), which were surveyed in Grade 7 and Grade 8. Using Latent Change Modeling, both differences between students (i.e., the between-person level) and changes within students over time (i.e., the within-person-level) were considered. The study identified academic contingent self-esteem as a meaningful precursor of school burnout, and found parents' and teachers' conditional regard to predict both academic contingent self-esteem and school burnout.

Academic Contingent Self-Esteem as a Precursor of School Burnout

A first important finding of this study was that academic contingent self-esteem, as the tendency to let self-esteem depend on school performance (Wouters et al., 2013), predicted school burnout. Arguably, when students hinge their self-worth on their school performance, the possibility of failure, inherent to learning processes, would be perceived as a threat to students' self-worth. For these students, school experiences might get permeated by feelings of

tension and anxiety (van der Kaap-Deeder et al., 2016). Over time, this internal compulsion and stress might then culminate in school burnout (Hill & Curran, 2016). Indeed, this study observed that adolescents who hinged their self-worth on their school performance were more susceptible to school burnout. Moreover, this association was also observed at the within-person-level: students who, over time, increasingly let their self-esteem depend on their school achievement, concomitantly became more vulnerable to develop school burnout. In addition, students with high initial levels of academic contingent self-esteem also subsequently reported stronger increases in school burnout. This suggests that regarding academic performance as indicative for one's value as a person might pave the way for feelings of exhaustion, cynicism, and inadequacy. All in all, observing the association between academic contingent self-esteem and school burnout at different levels (i.e., both between- and within-persons) testifies to its robustness.

The Role of Conditionally Regarding Parenting and Teaching

Beyond establishing academic contingent self-esteem as a precursor of school burnout, a second important contribution of this study was the investigation of contextual antecedents of school burnout, in particular, the use of conditional regard by parents and teachers. In a conditionally regarding parenting or teaching style, affection is made dependent on children's performance, in this case their academic performance (Assor et al., 2004; Roth et al., 2009). Because children may then start to incorporate the conditionality of their value as a person into their self-evaluations, conditional regard by parents and teachers would fuel contingent self-esteem in children (e.g., Otterpohl et al., 2021), potentially increasing their vulnerability to school burnout (Aunola et al., 2018).

First, the association between conditional regard and academic contingent self-esteem was established, particularly for teachers. Indeed, students who felt only appreciated by their teachers when achieving well were more prone to let their own self-esteem depend on achievement. In addition, when students felt that their teachers, over time, increasingly granted their affection conditional on their performance, they increasingly hinged their self-worth on achievement. Arguably, for students, teachers are a prime source of feedback on their performance - how teachers communicate this feedback may be decisive for students' self-image. Regarding parental conditional regard, adolescents who perceived their parents' affection to be conditional on school performance reported higher levels of academic contingent self-esteem. However, this association was weak at the between-person level and was not observed at the within-person-level.

Second, the central aim of this study was then to see whether child-perceived use of conditional regard by parents and teachers would affect school burnout risks. Indeed, both socialization actors were found to contribute additively to the development of school burnout in adolescents. Of note, these associations were observed at all levels of the analysis. This means that not only the level to which adolescents were vulnerable to school burnout depended on the perceived level of conditional regard, but also that school burnout risks tended to rise over time when parents or teachers increasingly communicated that their affection would only be granted conditional on achievement. Hence, this study established that the negative consequences of parent and teacher conditional regard expand beyond self-esteem contingency and other adverse outcomes previously associated with this communication style (Haines & Schutte, 2022): communicating to adolescents that they are not inherently worthy of affection, but that affection needs to be deserved through school performance, makes students vulnerable to feelings of exhaustion, inadequacy, and cynicism, that is, to school burnout.

The finding that, beyond individual determinants such a cognitive ability, neuroticism, and gender, the family and school environment accounted for significant variance in school burnout, fits well with existing theoretical models on the development of school burnout, such as the Study Demands-Resources Model (Salmela-Aro et al., 2022). Whereas parents' and teachers' involvement and support represent important contextual resources students, which may help them to meet challenging school demands, parents and teachers can also aggravate risks for school burnout. In particular, when they let their acceptance of the student depend on the student's accomplishments, this may be perceived by students as only aggravating the weight of school demands, thus shifting the balance between resources and demands.

Negative and Positive Conditional Regard

In a final step, this study differentiated between negative conditional regard (i.e., withdrawing affection after failure) and positive conditional regard (i.e., providing more affection after school success). Overall, both dimensions contributed to school burnout, although to a different degree and in a somewhat different way. First, for both parents and teachers, *negative* conditional regard proved to be an important determinant of school burnout, with weak-to-moderate effects. Apparently, the overt adverse consequences of denying children affection after failure, which have been documented before for other outcomes (Haines & Schutte, 2022), extend to the development of school burnout. Of note, these associations occurred mostly directly, that is, they did not stem from an increase in academic

contingent self-esteem. There are a number of other possible channels that might explain why negative conditional regard would increase adolescents' vulnerability to school burnout. For example, it might be that experiencing parents or teachers to withdraw their affection after failure impacts on the quality of the relationship between students and these socialization figures (Haines & Schutte, 2022), thus undermining supportive relationships which could shield students from becoming disengaged or cynical towards school (Roorda et al., 2011). To avoid parental or teacher rejection, adolescents might also feel compelled to over-invest in their schoolwork (Roth et al., 2009), a quest that may eventually lead to exhaustion and disappointment (Garn & Jolly, 2015; Itzhaki-Braun et al., 2020). Conditional regard may also install a more controlled form of academic motivation in students: instead of studying for autonomously motivated reasons (e.g., interest), studying out of internal compulsion may make academic tasks more demanding and exhausting (Assor et al., 2009; Vansteenkiste et al., 2010).

By contrast, *positive* conditional regard affected school burnout only for parents, and this association was small and indirect (i.e., through academic contingent self-esteem). The more modest association between positive conditional regard and school burnout is in line with prior research suggesting that whereas negative conditional regard often has overt disadvantages, positive conditional regard creates a more subtle, latent vulnerability (Haines & Schutte, 2022). For example, in the domain of student motivation, negative conditional regard has been found to predict overt student amotivation, whereas positive conditional regard rather increases grade-focused engagement (Roth et al., 2009) and introjected motivation (Haines & Schutte, 2022). Similarly, in this study, whereas positive conditional regard was at best only weakly tied to school burnout, it was a sound antecedent of academic contingent self-esteem, both for parents and teachers. Hence, when parents and teachers communicate to adolescents that academic success is needed to earn their affection, adolescents may start to connect their self-worth to their school performance. In the longer run, however, compulsively chasing academic success to protect self-esteem may still lead students to disidentify and disengage from school, in particular when academic difficulties emerge (Crocker et al., 2003; Snyder et al., 2019). Hence, also rewarding adolescents with more affection after good performances might increase their vulnerability to disengagement and school burnout, although this may be less clear in the short run. Of note, positive conditional regard by teachers had a negative *direct* effect on school burnout, which canceled out a positive *indirect* effect (through academic contingent self-esteem). Whereas this negative direct effect was unexpected, it could be that students experiencing their teachers to reward them with more

affection after good performance could exploit this as an encouragement to "go on" and temporarily defer discontent. However, in the end, chasing teachers' appreciation in this way does not solidly reduce school burnout risks, as exemplified in the null total association between teacher positive conditional regard and school burnout.

Implications

In the past, a number of interventions have been developed to tackle school burnout in students (Tang et al., 2021), often focusing on the individual's ability to cope with academic stress (e.g., Skodova & Lajciakova, 2013). Findings from this study indicate that academic self-worth contingency might be another relevant target for interventions dealing with school burnout. Of note, an experimental study has shown that having early adolescents to reflect on previous experiences of unconditional regard subsequently reduced their susceptibility to negative self-feelings after receiving low course grades (Brummelman et al., 2014). Future research could further develop interventions targeting early adolescents' academic contingency of self-worth, as a key predictor of school burnout.

Furthermore, the findings from the present study highlight the importance of the family and school environment in preventively buffering against school burnout. In particular, school burnout risks could be reduced when parents and teachers refrain from using conditional regard, and instead engage in more autonomy-supportive communication. The basic attitude behind autonomy-supportive communication is indeed an unconditional acceptance of students irrespective of their academic performance (Roth et al., 2016). Intervention-based research has suggested that parents can be trained to adopt more autonomy-supportive parenting practices in general (Allen et al., 2019) and to display more autonomy-supportive school involvement in particular (Froiland, 2015). Similarly, interventions have been developed to enhance teachers' autonomy-supportive communication (Aelterman et al., 2014; Cheon and Reeve (2015)) and for creating a school learning environment in which students do not fear criticism or disapproval (Bartholomew et al., 2018). For example, teacher training programs can empower teachers in providing feedback to students in a supportive manner, for example by paying attention not to communicate, either verbally or nonverbally, disappointment to students that fail to meet demands (Pianta et al., 2002).

Limitations and Strengths

A number of limitations of this study have to be acknowledged. First, the study relied on adolescent reports of the use of conditional regard by their parents and teachers. Whereas this provided valuable insights in how children *perceived* the behavior of their parents and teachers, having children evaluating both the antecedents and the outcomes under study may give rise to common-method bias. Future research could consider parent- and teacher-rated reports on their use of conditional regard, although these might be susceptible to social desirability biases. Second, whereas this short-term longitudinal study with a one year interval pointed out some associations between conditional regard and burnout, studies with larger intervals between measurement points could investigate the longer term development of school burn-out over time and the longer term consequences of conditional regard. Third, as a contextual phenomenon, the prevalence and development of school burnout might be somewhat different between countries. The present study was conducted at the start of secondary education in Flanders (Belgium); future research could consider how school burnout develops in other educational contexts (e.g., in systems with a stronger emphasis on high stakes testing).

This study also had considerable strengths, such as the large sample size, the simultaneous assessment of conditional regard by both parents and teachers, and the conservative approach in which other antecedents of school burnout (i.e., cognitive ability, gender, and neuroticism) were controlled for. A particular strength of this study was that it did not only assess how students' level of school burnout was associated with the level of the hypothesized antecedents (i.e., between-person effect), but also how intraindividual change in school burnout over time was associated with changes in the antecedents (i.e., withinperson effect). This approach allowed us to conclude that, for example, the use of conditional regard by parents and teachers was not only associated with the level of school burnout in students relative to other students, but also that students who experienced an increase over time in the use of conditional regard by their parents and teachers also reported an increase in school burnout over time. In particular, studying intra-individual changes over time is also of prime importance from an applied perspective, as in particular processes at the within-person level are salient to students and can be targeted by interventions (Curran & Bauer, 2011). Finally, this study included both parental and teacher antecedents of school burnout simultaneously. The finding that both were uniquely associated with school burnout emphasizes that both teaching and parenting styles matter for the development of school burnout.

Conclusion

School burnout, a major threat to students' academic development, can either be buffered or aggravated by teachers and parents. This study investigated the antecedents of

school burnout in a large sample of early adolescents from Flanders (Belgium). In particular students who hinged their self-worth on their school performance were found to be vulnerable to school burnout. Furthermore, the degree to which parents and teachers made their acceptance of students conditional on school performance predicted risks for school burnout, partly because such conditionally regarding parenting and teaching increased academic contingent self-esteem in students. Whereas school burnout risks were particularly increased when conditional regard was demonstrated in a negative fashion (i.e., withdrawing affection after failure), positive conditional regard (i.e., providing more affection after success) predicted increases in self-worth contingency and was indirectly predictive of school burnout (in the case of parents). These findings highlight the importance of the family and school environment in preventing school burnout, and particularly point out the risks associated with conditionally approving communication.

Data Sharing and Declaration The datasets generated and/or analyzed during the current study are not publicly available but are available from the corresponding author on reasonable request.

Compliance with Ethical Standards

Conflict of interest The authors declare no competing interests.

Ethical approval The study was approved by the Ethical Committee of KU Leuven (protocol code G-2017 08 897, September 2017).

Informed consent Prior to conducting the study, informed consent was obtained from students, their parents and their teachers.

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