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EMPIRICAL RESEARCH

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Teachers' Conditional Regard and Students' Need Satisfaction and Agentic Engagement: A Multilevel Motivation Mediation Model

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Abstract

Teachers' conditional positive regard and conditional negative regard are common motivational techniques in the classroom. This study investigated their respective effects on adolescent students' agentic engagement, while considering students' basic psychological needs for autonomy and relatedness as potential mediators. Data collected from 30 teachers and 651 7th to 10th graders (52% female) were used to test a multilevel mediation model. The results indicated that teachers' conditional negative regard undermined students' agentic engagement by frustrating both of their autonomy and relatedness needs. Teachers' conditional positive regard thwarted students' sense of autonomy, which consequently undermined their agentic engagement. The findings are discussed in terms of conditional positive and negative regard as undesirable classroom motivational practices and the mechanisms through which they operate. The discussion also notes the importance of investigating contextual factors at the classroom level.

Keywords Conditional regard · Basic psychological needs · Agentic engagement · Motivation · Self-determination theory

Introduction

Teachers have specific goals when entering the classroom. They want to cover particular content, teach specific skills, and meet certain academic criteria. Teachers are often characterized by unique motivating styles intended to coordinate students' efforts and behaviors with their teaching agenda and academic expectations (Heimlich and Norland 2002). One motivational style often endorsed to enhance students' academic performance is conditional regard (Assor et al. 2004; Garn et al. 2018). In the academic domain, conditional regard involves the educator's provision of affection and attention as dependent on the student's attainment and enactment of academic expectations. In essence, this practice harnesses students' need to feel accepted and belong (Baumeister and Leary 1995) to their ability to meet external academic demands. Because the need for relatedness is significant for individuals' well-being (Reis et al. 2000; Ryan and Deci 2017), it is commonly believed that, in order to direct students' behavior and effort toward academically desired goals, affection and attention can be delivered contingently, to be either granted or withheld.

Evidence that conditional regard is an engagement-enhancing practice comes primarily from the parenting literature. One of the earliest studies to directly examine conditional regard (Assor et al. 2004) found college students' perceptions of parental conditional regard in four domains (academic achievement, athletic success, prosocial behavior, and emotion regulation) to be positively associated with the enactment of behaviors that fulfilled parental expectations in those domains. In a subsequent study, however, Roth et al. (2009) refined the definition of parental conditional regard and differentiated between two forms: one is *conditional positive regard*, which involves parents providing more attention and affection than usual when a child enacts desired behaviors; the other is *conditional*

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negative regard, which involves providing less attention and affection than usual when the child does not enact desired behaviors. Roth et al. (2009) found students' perception of academic parental conditional positive regard to be positively associated with greater grade-focused engagement, as reported by teachers. Assor and Tal (2012) reported similar results, showing that academic parental conditional positive regard was positively associated with students' academic over-investment. However, whereas parental conditional positive regard has been positively linked to behavioral engagement (i.e., working hard), parental conditional negative regard has been positively linked to academic disengagement (Roth et al. 2009).

There is general consensus that children's behavioral engagement is key to school adjustment and educational outcomes (Fredricks et al. 2004; Skinner et al. 2008). Yet recent conceptualizations of school engagement emphasize the value of students' agency, or their *agentic engagement*, as opposed to more reactive types of engagement (e.g., Reeve 2013; Winstone et al. 2017). According to this view, behavioral engagement (i.e., working hard) is considered a reactive type of involvement in school work, in the sense that students' actions are merely reactions to teachers' instructions (Reeve and Tseng 2011; Reeve 2014). Students may show up as scheduled, not interrupt during class, and complete class and homework assignments according to the teacher's instructions. Agentic engagement, on the other hand, refers to students' intentional, proactive, and constructive contribution to the flow of the instruction they receive (i.e., working proactively). Agentically engaged students may offer suggestions to personalize the lesson, make recommendations on what to do and how to do it, ask questions, share their opinions and interests with the teacher, and ask for resources, including greater understanding and support from their teacher (Matos et al. 2018; Reeve 2013). Agentic engagement has been found to make a unique contribution to adolescents' school functioning, increasing motivation, self-efficacy, and school adjustment (Reeve 2014). Recent evidence also suggests agentic engagement explains unique and meaningful variance in students' achievement, even after accounting for other dimensions of engagement (Reeve 2013; Reeve and Tseng 2011).

Parents' conditional negative regard has been proposed to undermine children's proactive academic involvement due to its instances of love-withdrawal (Assor et al. 2004; Barber et al. 2005). Similar findings, albeit scant, have been observed for teachers' conditional negative regard (Garn et al. 2018; Kaplan. 2018). Yet, the extent to which teachers' conditional positive regard affects students' academic engagement is far less clear. While some studies have found positive associations between conditional positive regard and behavioral engagement, conditional positive regard was also found to be inversely associated with indicators of proactivity, such as task interest (Roth et al. 2009) and autonomous motivation (Roth and Assor 2012). Thus, whether teachers' conditional positive regard is important for students' agentic engagement remains largely unknown.

To conceptualize the overarching process by which teachers' conditional regard relates to students' agentic engagement, the study described here drew on the motivation mediation model (Jang et al. 2012; Skinner et al. 2008). This model seeks to specify the social-contextual factors and the psychological processes by which engagement is promoted or undermined in the classroom (Kanat-Maymon et al. 2015). The motivation mediation model includes three basic higher-order constructs: context, motivation, and action. In our investigation, *context* refers to teachers' conditional regard, reflecting the educational environment in which learning takes place; *motivation* refers to students' basic psychological needs, reflecting subjective motivational resources (Deci and Ryan 2000); *action* refers to students' agentic engagement, the observable manifestation of students' underlying motivation. In short, this motivation mediation model aims to specify the effects of teachers' conditional positive and negative regard on students' agentic engagement via its capacity to support or thwart students' basic psychological needs.

Understanding the effects of teachers' conditional regard on adolescents' lives in and outside the school is important for several reasons. First, practices similar to conditional positive regard are often recommended in popular education and parenting guides (e.g., McGraw 2005; Steinberg 2004). Conditional positive regard has been considered a relatively benign disciplinary practice, as it entails additional provision of affection and acceptance, yet it may carry emotional costs such as feelings of being pressured or controlled. Second, perhaps even more so than parents who usually discipline no more than a handful of children, teachers' educational and disciplinary acts potentially influence dozens of students each year and should thus be well-grounded in theory and research. Third, the scant research on teachers' conditional regard and students' school outcomes is based solely on students' reports (Garn et al. 2018; Kaplan 2018) and is therefore susceptible to common method bias and other idiosyncratic biases (Podsakoff et al. 2003). Overcoming this methodological limitation can add to the validity of research on conditional regard.

Basic Psychological Needs Theory: Teachers' Conditional Regard and Students' Need Satisfaction

Basic psychological needs theory is one mini-theory (out of six) within self-determination theory (Ryan and Deci 2017). Self-determination theory postulates three basic psychological needs as causal mechanisms that energize and direct students' proactivity: the need for autonomy, the need for competence,

and the need for relatedness (Deci and Ryan 2000). Autonomy is the need to self-regulate behavior in accordance with one's sense of self, interests, and values (Ryan and Deci 2000). Relatedness is the need to belong and feel socially connected to and cared for by others, such as teachers or classmates (Baumeister and Leary 1995; Deci and Ryan 2000). Competence is the need to develop personal capabilities and interact effectively with one's environment, for example, to feel capable of completing an academic task (Deci and Ryan 2000; White 1959). According to self-determination theory, not all environmental conditions trigger all three basic needs; in some cases, only one or two needs are particularly involved (Ryan and Deci 2017). For instance, playing chess against a computer may involve autonomy and competence but not relatedness, whereas having an argument with a romantic partner may involve relatedness and autonomy but not competence.

Several self-determination theory scholars have recently suggested that conditional positive and negative regard can be conceptualized as reflecting inherent conflicts or tensions between the needs for autonomy and relatedness, as both may require individuals to trade some of their autonomy in exchange for relatedness (Kanat-Maymon et al. 2016). Specifically, conditional negative regard requires sacrificing autonomy to avoid a decreased sense of relatedness. Teachers' conditional negative regard may therefore undermine not only students' need for relatedness, but also their need for autonomy. It thwarts relatedness because the teacher's acceptance is likely to be withheld unless they meet certain academic demands. These ideas are supported by Assor et al. (2004) who found that parental conditional negative regard invoked children's resentment of the parent. Similarly, Garn et al. (2018) found school children reported lower relatedness with teachers they perceived as using conditional negative regard. Teachers' conditional negative regard may also undermine students' sense of autonomy because it conveys to students that the teacher does not trust or believe they will volitionally meet teachers' expectations. Thwarting others' sense of autonomy has been demonstrated in both the education and the interpersonal literature. A recent study by Kanat-Maymon et al. (2016) found that when one romantic partner used conditional negative regard, the other felt less autonomous in the relationship. Similarly, Garn et al. (2018) found students' perceptions of teachers' conditional negative regard to be inversely associated with their sense of autonomy in the classroom.

In contrast to the coercive and need-thwarting nature of conditional negative regard, conditional positive regard appears to be more benign. In essence, conditional positive regard requires students to give up some of their autonomy and behave in ways they may not fully endorse in exchange for a greater sense of relatedness. That is, if students comply with the teacher's expectations, they are guaranteed greater acceptance and appreciation than they normally receive. For instance, a teacher may praise students only when they succeed in competitive exams. Hence, teachers' conditional positive regard may thwart students' need for autonomy but enhance their feelings of relatedness. Nevertheless, in line with self-determination theory, children's autonomy and relatedness are equally important and essential, therefore the provision of one (i.e., relatedness) may not compensate for the denial of the other (autonomy). To promote well-being and high-quality engagement, satisfying the need for autonomy and satisfying the need for relatedness may be equally important, with limited capacity for compensation (Perreault et al. 2007; Sheldon and Niemiec 2006). As an analogy, conditional positive regard is like watering a plant more frequently to compensate for a lack of sunlight—an excess of one element cannot make up for the absence of the other. In fact, it is argued that the ability of conditional positive regard to support the need for relatedness may be limited. When teachers employ conditional positive regard, their acceptance may be perceived by students as temporary, far from guaranteed, and it may disappear if they do not comply (e.g., Assor et al. 2004; Assor and Tal 2012). Students of teachers endorsing conditional positive regard may feel that the teachers' affection is at stake; that is, they are accepted only to the extent to which they meet specific expectations, not for who they are. Hence, when autonomy is sacrificed for relatedness, a true sense of relatedness cannot be achieved (Ryan 1993).

Research on romantic partners supports this notion; conditional positive regard does not fully support relatedness, and its benign effect is, at best, temporary. A recent diary study found that daily fluctuations in perceptions of a partner's conditional positive regard were positively associated with daily fluctuations in relationship satisfaction, a proxy of relatedness. Over time, however, perceptions of the partner's conditional positive regard were negatively related to relationship satisfaction (Kanat-Maymon et al. 2017). Another recent study found that when individuals reported employing conditional positive regard, their partners reported a decreased sense of autonomy, yet their sense of relatedness did not increase (Kanat-Maymon et al. 2016). These researchers argue that although conditional positive regard promises to satisfy the need for relatedness, it cannot fully keep this promise. Similarly, teachers' conditional positive regard may not necessarily thwart students' need for relatedness, as is the case for teachers' conditional negative regard (e.g., feeling of rejection), but it certainly will not satisfy it in a deep, reliable way.

Students' sense of relatedness, and to an even greater degree—their sense of autonomy, have both been found to predict proactive classroom behaviors. Skinner et al. (2008) found that students' relatedness and autonomy predicted early-to-late-year increases in proactive involvement, yet

autonomy was a more potent predictor of involvement than relatedness. Jang et al. (2012) discovered that students' mid-year reports of teachers' autonomy supportive behaviors fully mediated the relations between early and late-year student engagement (for similar results, see Reeve et al. 2004; Vansteenkiste et al. 2010). Given the importance of need satisfaction to agentic engagement in general and autonomy satisfaction in particular, the present study expected that both autonomy and relatedness need satisfaction would be positively associated with agentic engagement.

Developmental Considerations

Although the basic rationale for the negative consequences of teachers' conditional regard applies to students of all ages, it may be particularly relevant when children become adolescents. The significance of teachers' conditional regard for students' autonomy, relatedness, and agentic engagement might be heightened by developmental changes in identity, self-consciousness, awareness of being observed, and relationships with others, including teachers. Cognitive changes during adolescence generally lead to an increased capacity for abstract and conceptual thought beyond the largely egocentric thinking of childhood. The heightened self-awareness or self-consciousness that accompanies this cognitive development (Sebastian et al. 2008) may have significant negative implications for agentic engagement by increasing adolescents' sense of public exposure and thus their potential for embarrassment and shame in class. Indeed, several studies have found an increased carefulness in the classroom behavior of adolescents (e.g., Klem and Connell 2004). In their seminal analysis of student passivity in K-12 classrooms, for example, Good et al. (1987) noted an increase in student passivity and a decrease in student-initiated questions during adolescence. Although low-performing students are particularly unlikely to seek teachers' academic assistance during adolescence, the emotional riskiness of class participation may increase for virtually all students at this stage, thereby undermining agentic engagement (Amemiya and Wang 2017). Yet recent findings on the effects of age on agentic engagement are mixed. Whereas some note that agentic engagement decreases with age (Reeve and Tseng 2011), others find no association (Molinari and Mameli 2018; Reeve and Lee 2014). Given the limited theory and mixed findings, these developmental considerations were addressed in the present investigation by examining associations with adolescents' grade level.

Unit of Analysis

Teachers' conditional regard is considered a teaching style reflecting a pervasive quality in the educational activities of the teacher that is expected to persist across time, classes, and students (Assor et al. 2004; Heimlich and Norland 2002). Although teachers' use of conditional regard depends, to some extent, on the context and the student, there is general consensus that endorsing conditional regard reflects a global orientation towards enhancing motivation. In other words, some teachers are more likely than others to use conditional regard to motivate their classes. As such, teachers' conditional regard is an aspect of the context or the learning environment. This has implications for the unit of analysis because assessments of the effects of the learning environment on individual students must be based on analyses carried out at the environment level, not the individual level (Marsh et al. 2012). Students' individual perceptions could reflect individual differences or idiosyncratic biases and interpretations rather than contextual influences, making it difficult to reach conclusions about the teachers (Lüdtke et al. 2009; Roth et al. 2007). Arguably, if teachers differ in their general tendency to use conditional regard in the classroom, the effects of their teaching style should be evident at the between-class level.

In terms of measurement, classroom-level constructs, such as teaching style or class need satisfaction, can be based on natural classroom-level measures (e.g., teachers' gender, teachers' reports) or responses by students within the class. When data are obtained from various students within a single class, these data can be aggregated at the class level to yield a measure of the "shared perception" (i.e., the mean ratings of students in each class). Yet it first must be determined whether the aggregated student responses provide a psychometrically sound measure of a class-level construct. This practice is similar to that of Cronbach's alpha, which derives indices describing the reliability of an aggregated multi-item scale score. Intraclass correlations such as ICC(1) and ICC(2), along with ANOVA, are common and acceptable methods to evaluate the extent to which within-class ratings are reliable indicators of class-level constructs (Bliese 2000; Lüdtke et al. 2009).

Previous research on the effects of teachers' conditional regard has focused exclusively on students' reports and does not disentangle class-level effects from student-level ones (e.g., Kaplan 2018). Moreover, when students report on both teachers' conditional regard and their own school-related outcomes, the associations between them are susceptible to common method bias (i.e., single reporter; see Podsakoff et al. 2003). To go beyond previous student-level investigations, the present study adopted a multilevel framework, with data gathered from both teachers and students. Students' perceptions were constructed at the class level, and hypotheses were thus examined at the class level, while accounting for student-level effects.

Current Study

In line with the motivation mediation model and previous research emphasizing the detrimental effects of conditional negative regard on autonomy and relatedness need satisfaction (Garn et al. 2018; Kanat-Maymon et al. 2016), it was hypothesized that teachers' conditional negative regard would undermine classroom autonomy (Hypothesis 1a) and classroom relatedness (Hypothesis 1b) need satisfaction. Given previous findings on the negative effect of conditional positive regard on autonomy need satisfaction (Kanat-Maymon et al. 2016, 2017), conditional positive regard was hypothesized to undermine classroom autonomy (Hypothesis 2). As the evidence for the association between conditional positive regard and relatedness is inclusive, a hypothesis regarding this link was not formulated, but it was empirically examined. Based on the theoretical and empirical evidence, conditional positive regard was expected to neither support nor fully suppress relatedness need satisfaction. Following the literature suggesting the energizing effect of need satisfaction on students' agentic engagement (Jang et al. 2012; Reeve and Tseng 2011), it was hypothesized that autonomy need satisfaction (Hypothesis 3) and relatedness need satisfaction (Hypothesis 4) would be positively associated with agentic engagement. Finally, to examine the mediation paths of the motivation mediation model, it was hypothesized that teachers' conditional negative regard would be associated with agentic engagement via classroom autonomy need satisfaction (Hypothesis 5a) and classroom relatedness need dissatisfaction (Hypothesis 5b). It also hypothesized that teachers' conditional positive regard would be positively associated with agentic engagement via classroom autonomy (Hypothesis 5c). Because previous research has shown that conditional positive regard neither supports nor thwarts relatedness satisfaction, there was no specific hypothesis for the indirect effect of conditional positive regard on agentic engagement via relatedness.

Method

Participants and Procedure

Participants were 30 homeroom teachers and 651 students from five schools in central Israel. Homeroom teachers in Israel are responsible for helping students adjust and maintain their well-being and are the main educational figures with whom students interact in the school. Homeroom teachers teach their homeroom class between 4 and 8 h weekly. Participating students were 147 7th graders, 234 8th graders, 111 9th graders, and 166 10th graders. Students' ages ranged from 12 to 15 ($M = 14.14$, SD = 1.28), and 52% were female. Approximately 80% of the students reported that their parents were married, and 70% reported average to very good economic status. Of the 30 homeroom teachers, 6 were 7th grade teachers, 10 were 8th grade teachers, 5 were 9th grade teachers, and 9 were 10th grade teachers. Teachers' ages ranged from 26 to 51 ($M = 42.83$, SD = 8.99), and 87% were female. Teachers' years of education ranged from 13 to 21 ($M = 17.12$, SD = 1.76), and seniority ranged from 3 to 38 years ($M = 15.29$, SD = 10.88).

The institutional review board and the Israel Ministry of Education's ethics committee approved this study. Written informed consent was obtained from both students and parents, and there were no objections to participating in the study. Students and teachers were assured their identity would remain confidential and anonymous. An identification coding system was used to ensure confidentiality. Participants were allowed to withdraw at any point, without having to provide a reason for doing so. The data collection started in the middle of the school year (March).

Measures

Homeroom teachers were asked to refer to the teaching practices they used with their students, and students were asked to refer to their learning experience in classes taught by their homeroom teacher. All self-report measures were rated using a 5-point Likert scale ranging from 1 = *not at all* to 5 = *very much*. The measures are presented at the between- and within-group level, followed by a measurement model.

Teacher-reported conditional positive and negative regard

Teachers' conditional positive and negative regard were assessed using a modified version of the 10-item parental academic conditional regard scale (Assor and Tal 2012; Roth et al. 2009). The original scale assesses the extent to which participants perceive their parents as using conditional positive and negative regard upon their fulfillment of parental expectations of academic engagement and achievement. The scale was modified to assess the extent to which homeroom teachers used conditional positive and negative regard to increase their students' academic engagement. The new scale included items such as "When students succeed in learning, I let them feel that I appreciate them more than usual" (conditional positive regard), and "When students fail the test, I let them feel that I am less appreciative of them because of it" (conditional negative regard). To support the psychometric properties of the modified teacher-reported scale, the 10 items were subjected to a confirmatory factor analysis (CFA). CFA results revealed the two-factor model had poor goodness of fit ($\chi^2(34) = 62.05$, $p = 0.002$, CFI = 0.85, TLI = 0.79,

RMSEA = 0.19). Inspection of the loadings showed one of the conditional negative regard items had a surprisingly low loading. Removal of this item improved model fit ($\Delta\chi^2(8) = 30.13$, $p < 0.001$), and the 9-item CFA fit the data well ($\chi^2(26) = 31.92$, $p = 0.19$, CFI = 0.96, TLI = 0.95, RMSEA = 0.08), with all items loading on their intended latent factor, ranging from 0.34 to 0.98. This two-factor model fit the data better than a one-factor model in which all items loaded on a single latent factor ($\chi^2(27) = 83.82$, $p = 0.000$, CFI = 0.63, TLI = 0.51, RMSEA = 0.27, $\Delta\chi^2(1) = 53.69$, $p < 0.001$). The teachers' conditional positive regard subscale had a Cronbach's alpha coefficient of 0.89, and the conditional negative regard subscale had a Cronbach's alpha coefficient of 0.80.

Student-reported need satisfaction

Autonomy and relatedness need satisfaction were measured using the 9-item Basic Psychological Needs Scale (BPNS; Filak and Sheldon 2008). This scale assesses the extent to which the needs for autonomy, relatedness, and competence are satisfied. For this study's purpose, only the three items for autonomy (e.g. "I feel free to express my opinions in the teacher's class") and the three items for relatedness (e.g. "The teacher cares about me") were used. Cronbach's alphas were 0.70 for autonomy need satisfaction and 0.75 for relatedness need satisfaction.

Students' agentic engagement

Agentic engagement was measured using Reeve and Tseng's (2011) 5-item agentic engagement scale. This scale assesses student-initiated constructive change in the learning environment. It assesses how students make proactive and transactional contributions to their learning and learning environment during work on personal projects, class assignments, or independent work during class. Sample items include "During class, I ask questions that will help me learn" and "I let my teacher know that I'm interested in the subject". Cronbach's alpha for this scale was 0.78.

Students' and teachers' demographics

Students reported their age, gender, parents' marital status, socioeconomic status, and religion. Teachers reported their age, gender, years of education, and seniority in the education system.

Control variables

Given theory and research suggesting students' agentic engagement decreases as they grow older, grade level was used as a control variable. Student and teacher gender were also controlled for, in light of theories on gender socialization, suggesting that autonomy is less important for females (Helgeson 1994) and relatedness is less important for males (Gilligan 1982). Lastly, the small school sample size ($N_{school} = 5$) was insufficient to include it as a third level in the multilevel model, yet it was important to account for its potential covariance.

Measurement Model

To examine the psychometric properties of the need satisfaction and engagement measures, the study subjected all relevant items to a CFA. Results revealed the three-factor solution fit the data well ($\chi^2(41) = 223.44$, $p < 0.001$, CFI = 0.93, TLI = 0.89, RMSEA = 0.08). All items had significant loadings (ranging from 0.48 to 0.83, $p < 0.001$) on their intended latent factor. This three-factor model fit the data better than a one-factor model in which all items loaded on a single latent factor ($\chi^2(44) = 360.00$, $p < 0.001$, CFI = 0.88, TLI = 0.81, RMSEA = 0.10, $\Delta\chi^2(3) = 136.56$, $p < 0.001$), and a two-factor model of engagement and need satisfaction ($\chi^2(43) = 294.92$, $p = 0.000$, CFI = 0.90, TLI = 0.85, RMSEA = 0.09, $\Delta\chi^2(2) = 71.48$, $p < 0.001$), in which the autonomy and relatedness items were constrained to load on an overall need satisfaction factor.

Analytical Strategy

Data from the 651 participating students were nested within data from 30 homeroom teachers, thereby requiring a multilevel approach. Data were analyzed using multilevel structural equation modeling (MSEM) in Mplus 7.2 (Muthén and Muthén 2014). This method offers considerable advantages over conventional multilevel modeling procedures by allowing simultaneous estimation of complex models with multiple mediators and outcome variables and of both direct and indirect effects (Preacher et al. 2010). Adopting notation proposed by Krull and MacKinnon (2001), the study tested a 2-1-1 multilevel mediation model in which teachers' conditional positive and negative regard were measured at the between-class level (level 2), autonomy and relatedness need satisfaction were measured at the within-class level or student level (level 1), and agentic engagement was measured at the within-class level (level 1).

Because the antecedent variables, teachers' positive and negative conditional regard, vary only between teachers or classes, they cannot be associated with within-class variance in the dependent variable (Kanat-Maymon and Reizer 2017; Preacher et al. 2010). Therefore, even though agentic engagement was measured at the student level, any effect on agentic engagement, direct or indirect, that originated in teachers' conditional regard (class level) captured

differences between classes, not idiosyncratic student differences within classes. This issue became even more complicated in the study's mediation model, as the mediators were measured at the lower level as well. Specifically, the mediators, autonomy and relatedness need satisfaction, were measured at the student level; hence, their associations with agentic engagement could exist at both the between and the within-class level. It was therefore important to decompose the overall variance in the mediators into class level and student level variance components. Accordingly, indirect effects of teachers' conditional regard through need satisfaction used the between-class variance of need satisfaction. Within-class effects of need satisfaction on agentic engagement were included in the model for purposes of statistical control, yet excluded from the estimation of the class-level indirect effects (Preacher et al. 2010).

To meet these types of requirements, multilevel mediation models such as 2-1-1 designs are commonly tested through grand mean centering of the level-1 mediators (Krull and MacKinnon 2001). This procedure, however, was recently criticized because it constrains the within-level coefficient of the mediator to be equal to its between-level coefficient, possibly resulting in underestimation or overestimation of the mediation effects (Preacher et al. 2010). For example, false positives can occur when within-level effects are present but between-level mediation is absent. To overcome the limitations of grand mean centering in multilevel mediation, and following recent suggestions by Zhang et al. (2009), the study's design was analyzed employing the CWC(M) multilevel mediation approach. This method decomposes the mediator (need satisfaction) into its between-class and within-class components. Following Zhang et al.'s (2009) guidelines, to decompose the mediators to their within and between-class components, students' need satisfaction were group-centered (students' deviation from class mean) and class means were introduced at the class-level.

It is important to note that before constructing the need satisfaction variables at the class-level, it was necessary to establish the validity of the aggregated ratings in order to assess the extent to which students' need satisfaction was a shared class experience. Doing so required assessing both within-class agreement and between-class variability. To support the aggregation of students' need satisfaction ratings, class member reliability was calculated using ICC(1) and ICC(2), as explained below, and the F test of the one-way random ANOVA was used to determine whether average scores differed significantly across classes. ICC(1) indicates the proportion of variance in ratings related to class membership, and ICC(2) indicates the reliability of class mean differences (Bliese 2000). The ICC(1) values were statistically significant for both autonomy (ICC[1] = 0.05, $p < 0.05$) and relatedness (ICC[1] = 0.11, $p < 0.01$) need satisfaction. The ICC(2) value for relatedness (ICC[2] = 0.73) was above the 0.70 recommended value, yet for autonomy, this criterion was not achieved (ICC[2] = 0.50). In addition, results of a one-way random ANOVA indicated significant differences between classes for both autonomy, $F(29, 625) = 1.98$, $p < 0.01$, and relatedness, $F(29, 625) = 3.75$, $p < 0.001$. In sum, these results provided support for aggregating students' ratings of need satisfaction to the class level.

As for the indirect effects, the CWC(M) MSEM estimates the a-path at the between-class effect of the antecedent on the mediator, and the b-path is calculated as the between-class effect of the mediator on the outcome, accounting for its own within-class effect and the between-class effect of the antecedent. Doing so improves the reliability of the estimates of the mediation effect (see Zhang et al. 2009 for a detailed explanation of the CWC(M) approach and its advantages). The significance of the indirect effects was estimated using a Monte Carlo 95% confidence interval in Mplus (Muthén and Muthén 2014; Tofighi and MacKinnon 2016). Cases in which the 95% CIs do not contain zero are considered statistically significant.

As the proposed model has multiple antecedents and mediators, path coefficients were estimated in a single model, in which all antecedent and mediators were tested simultaneously. To allow all predictors and mediators to compete for shared variance, the study specified a between-class covariance between teachers' conditional positive and negative regard and a covariance between the two mediators at both the within- and between-class. To test the robustness of the findings, demographic variables that had potential covariances with the variables of interest were controlled.

Results

Descriptive Statistics

Table 1 presents descriptive statistics for and correlations among the study's main and demographic variables at the between- (teacher) and within- (student) class levels. At the between-class level, teachers' conditional positive and negative regard were both negatively associated with class-level agentic engagement, autonomy need satisfaction, and relatedness need satisfaction. Classroom autonomy and relatedness need satisfaction were positively associated with agentic engagement. Grade level was not significantly associated with any of the variables of interest. Teachers' gender, however, was significantly related to conditional negative regard, classroom relatedness, and agentic engagement. Specifically, female teachers reported using less conditional negative regard than male teachers, and students reported a greater sense of relatedness and higher

Table 1 Descriptive statistics and correlations between the research variables

	1	2	3	4	5	6	7	8
	Between-level ($n = 30$)							
1. Agentic engagement								
2. Autonomy	0.83***							
3. Relatedness	0.81***	0.61***						
4. TCPR	−0.46*	−0.51**	-0.41*					
5. TCNR	−0.53**	−0.51**	−0.43*	0.36*				
6. Teacher's age	−0.15	−0.20	−0.37*	−0.17	0.04			
7. Year of teaching	−0.06	−0.16	−0.24	−0.05	−0.02	0.87***		
8. Grade level	−0.01	−0.02	−0.05	−0.03	0.32	−0.06	−0.15	
9. Teacher's gender	0.47**	0.34	0.48**	−0.16	−0.46**	−0.05	0.19	−0.06
Mean	3.16	3.26	3.67	2.97	1.43	42.56	14.93	–
SD	0.30	0.30	0.39	1.02	0.46	9.17	10.88	–
	Within-level ($n = 651$)							
1. Agentic engagement								
2. Autonomy	0.66***							
3. Relatedness	0.43***	0.42***						
4. Student's age	0.04	0.01	0.06					
5. Student's gender	0.01	−0.04	0.05	−0.02				
Mean	3.16	3.26	3.67	14.16	–			
SD	0.86	0.92	0.93	0.49	–			

For both students and teachers, gender was coded as 1 = male, 2 = female. Grade level refers to 7th to 10th grades. Agentic engagement, autonomy, and relatedness at the between-level are based on aggregated scores

TCPR Teacher's conditional positive regard, *TCNR* Teacher's conditional negative regard

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

levels of agentic engagement in classes taught by female teachers. Caution is warranted, however, when interpreting these results, as the number of male teachers in the sample was relatively small. No other demographic variables for the teachers were related to any of the predictors or the outcome.

At the student level, autonomy and relatedness need satisfaction were both positively associated with agentic engagement. No significant correlations were found between the main variables and students' age and gender.

Multilevel Mediation Analyses

Total effects of teachers' conditional positive and negative regard on students' agentic engagement are presented at the top of Table 2. Results of the multilevel structural equation modeling revealed significant negative associations between teacher-reported conditional positive and negative regard and class agentic engagement. More specifically, classes whose teachers reported using more conditional positive and negative regard tended to have lower ratings of agentic engagement.

Results for path parameter estimates and the estimates of the indirect effects are presented in Table 2 and in the text below. The bottom part of Table 2 shows the effects of teachers' conditional regard on students' need satisfaction (i.e., the left side of the motivation mediation model or the a-paths), as well as the effects of need satisfaction on agentic engagement (i.e., the right side of the motivation mediation model or the b-paths). Starting with the left side of the motivation mediation model, results indicated that teachers' conditional negative regard was significantly and negatively associated with class ratings of autonomy need satisfaction and relatedness need satisfaction. The more teachers used conditional negative regard in the classroom, the less classroom autonomy and relatedness need satisfaction were reported. This finding supported Hypotheses 1a and 1b. Teachers' conditional positive regard was also a significant and negative predictor of class ratings of autonomy need satisfaction, a finding supporting Hypothesis 2. The more teachers used conditional positive regard, the less class autonomy satisfaction was evident in students' reports. Nevertheless, teachers' conditional positive regard had only a marginally significant negative association with class relatedness need satisfaction.

Examination of the right side of the motivation mediation model revealed that the between-class autonomy and relatedness need satisfaction were significantly and positively associated with students' agentic engagement. These

Table 2 Total, direct, and indirect effects of TCPR and TCNR on agentic engagement trough need satisfaction: Unstandardized MSEM coefficients

			B	SE	*t*	*p*	[95% CI]
Total effects model							
B. TCPR	→	W. Engagement	−0.09	0.04	2.54	0.011	[−0.16, −0.02]
B. TCNR	→	W. Engagement	−0.26	0.08	3.40	0.001	[−0.42, −0.11]
Direct and indirect effects model							
B. TCPR	→	B. Autonomy	−0.11	0.04	2.53	0.011	[−0.19, −0.03]
B. TCNR	→	B. Autonomy	−0.26	0.07	3.55	<0.001	[−0.38, −0.11]
B. TCPR	→	B. Relatedness	−0.11	0.06	1.85	0.065	[−0.24, 0.01]
B. TCNR	→	B. Relatedness	−0.27	0.13	2.10	0.036	[−0.52, −0.02]
B. TCPR	→	W. Engagement	−0.01	0.02	0.29	0.770	[−0.06, 0.04]
B. TCNR	→	W. Engagement	−0.10	0.05	2.01	0.044	[−0.19, −0.01]
B. Autonomy	→	W. Engagement	0.41	0.15	2.63	0.009	[0.10, 0.71]
B. Relatedness	→	W. Engagement	0.29	0.09	3.11	0.002	[0.11, 0.47]
W. Autonomy	→	W. Engagement	0.54	0.03	18.17	<0.001	[0.48, 0.59]
W. Relatedness	→	W. Engagement	0.15	0.03	4.52	<0.001	[0.09, 0.22]

B Between-class effect, *W* Within-class effect, *TCPR* Teacher's conditional positive regard, *TCNR* Teacher's conditional negative regard

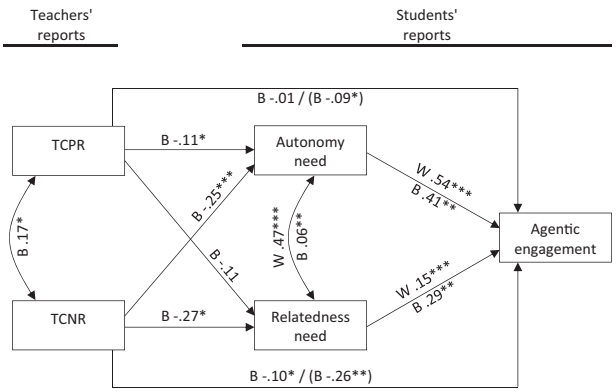

Fig. 1 Direct and indirect effects of teachers' conditional positive and negative regard on agentic engagement through students' need satisfaction: Unstandardized 2-1-1 MSEM coefficients. Note. B = Between-level (class-level), W = Within-level (student-level), TCPR = Teacher's conditional positive regard, TCNR = Teacher's conditional negative regard. Values in parentheses are total effects estimated prior to the inclusion of the mediators. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

findings supported Hypotheses 3 and 4, indicating that independently of the within-class need satisfaction, students in classrooms with higher satisfaction of both autonomy and relatedness needs were more agentically engaged in the learning process. These findings are summarized in Fig. 1.

Finally, to test the mediational Hypotheses 5a–5c, 95% CIs were calculated to assess the significance of the indirect multilevel effects. Results indicated that teachers' conditional negative regard was negatively linked to students' agentic engagement via students' decreased autonomy (indirect effect = −0.10, $p < 0.05$, 95% CI = −0.167, −0.032) and relatedness need satisfaction (indirect effect = −0.08, $p < 0.05$, 95% CI = −0.153 −0.003). These findings supported Hypotheses 5a and 5b. Note that when need satisfaction was accounted for, teachers' conditional negative regard remained negatively associated with agentic engagement, suggesting the possibility of a partial mediation effect.

Hypothesis 5c was also supported, as findings indicated that teachers' conditional positive regard was inversely related to students' agentic engagement through decreased autonomy (indirect effect = −0.05, $p < 0.05$, 95%, CI = −0.087, −0.002). The lack of a significant association between teachers' conditional positive regard and students' relatedness need satisfaction was also evident in a non-significant indirect effect of conditional positive regard on agentic engagement via relatedness (indirect effect = −0.03, N.S., 95% CI = −0.068, 0.002). After the mediators were introduced, the link between teachers' conditional positive regard and students' agentic engagement was no longer statistically significant, implying full mediation.

At the within-class level, autonomy and relatedness need satisfaction were positively linked with agentic engagement. That is, regardless of teachers' overall conditional positive and negative regard, within the classroom, students who were more need-satisfied were also more agentically engaged.

Sensitivity Analyses

To examine the robustness of the findings, the data were analyzed while accounting for three additional covariates. As noted earlier, the model was examined while controling for grade level, teachers' gender, and school ID (entered as four dummy variables). Results indicated that grade level ($B = 0.03$, SE = 0.02, $p = 0.221$), teachers' gender ($B =$

0.08, SE = 0.07, $p = 0.247$), and school ID ($B_1 = -0.15$, $SE_1 = 0.108$, $p = 0.137$; $B_2 = -0.04$, $SE_2 = 0.12$, $p = 0.777$; $B_3 = -0.13$, $SE_3 = 0.10$, $p = 0.183$; $B_4 = 0.01$, $SE_4 = 0.09$, $p = 0.936$) were not significantly associated with agentic engagement, nor did they alter the significance of the tests reported for the main variables.

Discussion

Conditional regard is a widely endorsed teaching style, often intended to increase students' school engagement and achievement. Most previous research has shown that teachers' conditional negative regard undermines students' school involvement, whereas conditional positive regard enhances behavioral engagement. Little is known, however, about the association of teachers' conditional negative and positive regard with proactive aspects of student engagement, namely agentic engagement. The motivation mediation model, as conceived in self-determination theory, suggests that the satisfaction of students' basic psychological needs for autonomy and relatedness may underlie the link between teachers' teaching styles and students' agentic engagement. To test this possibility, this study examined the mediational role of autonomy and relatedness need satisfaction in the relations between teachers' conditional regard and students' agentic engagement. Because conditional regard is a fairly stable teaching orientation to which all students in a class are exposed, it is likely to have important class-level implications. Previous studies have not considered this issue, however, so the study included a multilevel approach to investigate class-level effects of teachers' conditional regard.

Analyses of the data from teachers' and students' reports showed that, despite its seemingly benign nature, teachers' conditional positive regard was inversely associated with students' agentic engagement. That is, the students of teachers who used conditional positive regard as a motivating teaching style were less proactively involved in their learning. As hypothesized, a potential explanation of this association comes from self-determination theory perspective on basic needs, whereby an unsatisfied need for autonomy has deleterious effects. Specifically, findings supported the idea that teachers' conditional positive regard undermines students' agentic engagement because it thwarts their need for autonomy. By conditioning affection and acceptance on meeting certain academic expectations, teachers deny students a true sense of autonomy, thereby devitalizing a major source of volitional motivation naturally required for self-initiated behaviors. Previous research has highlighted the importance of perceived autonomy for students' school and learning-related outcomes, such as classroom engagement (Jang et al. 2012), persistence (Vansteenkiste et al. 2004), positive emotionality (Patrick et al. 1993), conceptual understanding (Vansteenkiste et al. 2005), and a sense of agency (Reeve and Tseng 2011).

The association between teachers' conditional positive regard and students' agentic engagement was not mediated by students' sense of relatedness. This finding suggests that giving students more attention and appreciation than usual only when they meet certain academic expectations does not make them feel more accepted or cared for. As a matter of fact, the association between teachers' conditional positive regard and students' relatedness tended to be negative and non-significant. This finding is especially important, given teachers' common use of conditional positive regard as means of motivating students by increasing positive relational attention. This finding, together with findings reported by Kanat-Maymon et al. (2016), suggests that conditional positive regard does not live up to expectations of neither the provider, nor the receiver. Teachers endorsing conditional positive regard have students who are no more or less likely to be agentically engaged than those not endorsing it; students of teachers who use conditional positive regard are no more likely to feel accepted and appreciated than those whose teachers do not use it. It is possible that some sense of acceptance emerges for students as conditional positive regard is being delivered, yet its effect is temporary and far from guaranteed. Overall, although teachers' conditional positive regard does not seem to undermine students' sense of relatedness, it does not seem to satisfy it in any reliable way.

The finding of a negative association between teachers' conditional positive regard and students' agentic engagement, together with Assor and Tal's (2012) and Roth et al.'s (2009) findings on parental conditional positive regard and school children's behavioral engagement, indicates conditional positive regard may have differential effects on behavioral and agentic engagements. Both Assor and Tal (2012) and Roth et al. (2009) found parental conditional positive regard predicted behavioral engagement. That is, when parents were perceived as using conditional positive regard in the academic domain, children reported greater attempts to improve their achievements (i.e., they were more grade-focused). Nevertheless, academic engagement in these studies was not interest-focused, suggesting that children's motivation was less volitional. This latter possibility is in line with the current finding of the undermining effect of teachers' conditional positive regard on students' sense of autonomy and proactive involvement. That is, if teachers provide more appreciation and affection only when students behave according to their expectations, this reinforces particular behaviors which students learn they should endorse frequently. Nevertheless, such behavioral engagement lacks volition and agency. Students may be less engaged in deep meta-cognitive questions such as "How

should I learn?" or "What kind of a learning environment is best for me and for my needs?" Further research is needed to fully understand the effects of teachers' conditional positive regard on various dimensions of students' engagement.

Teachers' conditional negative regard was negatively associated with students' agentic engagement. This was not surprising, as previous research on students' perceptions of their parents' and teachers' use of conditional negative regard has found this practice to be associated with a lack of motivation and desire to make an effort (Garn et al. 2018; Kaplan 2018; Roth et al. 2009). As expected, the negative association between teachers' conditional negative regard and students' agentic engagement was mediated via both decreased autonomy and decreased relatedness need satisfaction. These findings extend previous work where perceptions of teachers' conditional negative regard were found to be negatively associated with global measures of need satisfaction (Garn et al. 2018; Kaplan 2018).

Demonstrating the unique effects of each basic need is important in and of itself. Whereas several scholars have attributed the negative consequences of conditional negative regard to its love withdrawal or thwarted relatedness (Teyber 1997), others point to its autonomy thwarting nature (Kaplan 2018; Garn et al. 2018). The use of global measures of need satisfaction in previous studies makes it difficult to assess the mechanism through which conditional negative regard exerts its effects. By examining the unique effect of each need, this study suggests that both autonomy and relatedness are undermined by conditional negative regard, and both have negative consequences for students' agentic engagement.

Also noteworthy were the non-significant associations of students' grade level and gender with the main study variables. As noted previously in the paper, adolescents' heightened self-awareness and social sensitivity give a reason to assume that agentic engagement differs by age. In addition, theories of gender socialization posit that males and females behave differently in the classroom (e.g., Eccles 1994). Nevertheless, students' motivational sources for their agentic engagement in the classroom, namely autonomy and relatedness, have long been identified as universal (Chirkov et al. 2003). From a self-determination theory perspective, the relations between basic need satisfaction and positive academic outcomes apply across ages and genders. In other words, the underlying process in which need satisfaction relates to students' agentic engagement should be the same across these groups. Findings from the current research supports self-determination theory perspective.

The motivation mediation model posits that students' motivation and consequently their engagement are often products of environmental or classroom factors. Research on teachers' motivating style as a key contextual factor typically attempts to investigate how differences between teachers or classroom environments affect students' outcomes. The main purpose in such analyses should thus be the examination of class-level effects, and the primary unit of analysis should be the group (e.g., class or school) rather than the individual (Lüdtke et al. 2009). Although several studies have employed the motivation mediation model to explain how teachers' conditional regard relates to students' functioning, their data have been analyzed at the individual or student level (e.g., Kaplan 2018). When measurement is at the student level, as previously done, the theoretical implications of the motivation mediation model to the teachers or school context are difficult to assess. In such cases, students' perceptions of teachers' motivating styles may reflect numerous sources of influence, including teachers' behavior, shared classroom environment, differential experience of this environment, idiosyncratic or biased interpretation, and other general individual differences. Accordingly, making recommendations for educational practices based on lower-level results may entail a certain amount of risk. The present study was unique in that it was the first to investigate class-level effects of teachers' conditional regard. Future studies may benefit from incorporating both class-level and student-level indicators of teachers' conditional regard. It is reasonable to assume that teachers differ in the extent to which they use conditional regard, while also assuming that each individual teacher varies in the extent to which he or she uses conditional regard with different students. Whereas class-level effects may capture differences between teachers, student-level effects may capture variability within teachers. Such a design should provide a more complete description of how conditional regard works in school contexts.

A few important limitations should be considered when interpreting the results of this study. First, a cross-sectional design precludes causal conclusions and raises the possibility of alternative interpretations, such as reciprocal relations. For instance, in line with the motivation mediation model, the study hypothesized that teachers' motivating styles would manifest in students' agentic engagement by undermining their motivational state. However, it is also likely that students' agentic engagement elicits supportive teaching practices (Matos et al. 2018; Reeve 2013) and inhibits teachers' tendency to use conditional regard. Ultimately, the mediated associations examined here will need to be replicated with longitudinal data to shed light on the nature of these relations. Second, the findings lack generalizability. Given the small school and teacher sample size and the fact that most teachers were females, results for the teachers' gender and the stability of the conditional regard confirmatory factor analysis should be replicated using larger and more gender-balanced samples. Finally, scale

reliability is a concern. Specifically, the basic psychological needs were measured with only three items each, and their reliabilities were not very high. In addition, one of the items in the scale measuring conditional negative regard was removed because it lacked reliability; this may question the comparison of the current research results with those from other research on teachers' conditional negative regard.

Conclusion

Conditional regard is commonly used by school teachers to motivate students and improve their academic performance. This study demonstrates that despite common practice, this performance-contingent teaching style is associated with perceptions of a negative classroom environment and students' low proactive, volitional, and intentional contribution to their learning process. The results reported here, in fact, suggest teachers' conditional regard, whether positive or negative, undermines students' agentic engagement because it inhibits their basic psychological needs for autonomy and relatedness. In general, the findings point to the importance of psychosocial mechanisms in promoting adolescents' academic involvement and other school-related outcomes. More specifically, though, this study emphasizes the role of teachers' teaching style in adolescent students' psychological and academic experiences.

Authors' Contributions RC conceived of the study, participated in its design and coordination, and drafted the manuscript; AM conceived of the study and helped to draft the manuscript; AS participated in the design and coordination of the study and performed the measurement; GR conceived of the study and helped to draft the manuscript; YKM conceived of the study, participated in its design, performed the statistical analyses and coordination, and drafted the manuscript.

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 that they have no conflict of interest.

Ethical Approval All procedures performed in this study involving human participants were approved by the ethical standards of the Herzliya Interdisciplinary Center Academic Ethics Committee and the Israeli Ministry of Education and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments.

Informed Consent All the participants provided the informed consent. Students' parents gave written informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the Israeli Ministry of Education's ethics committee and the Herzliya Interdisciplinary Center Academic Ethics Committee.

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