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Author(s): Tunkkari, Mari; Aunola, Kaisa; Hirvonen, Riikka; Silinskas, Gintautas; Kiuru, Noona

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Abstract

This study examined three aspects of maternal homework involvement (i.e., the quantity, quality, and source of initiative) and their direct and indirect associations with adolescents' task-avoidant behavior in homework situations and academic achievement. The sample consisted of Finnish mothers and their adolescents who were transitioning from primary to lower secondary school. Mothers rated the quantity of their homework involvement (i.e., monitoring and help), quality of their homework involvement (i.e., autonomy support and psychological control), and source of initiative (i.e., mother- vs. adolescent-initiated monitoring and help) at the beginning of Grade 6. They also reported on adolescents' task avoidance in homework situations in the beginning of Grade 7. Information on adolescents' academic achievement in the spring terms of Grades 5 and 7 was obtained from school registers. The results showed that high maternal psychological control and mother-initiated monitoring were associated with poorer subsequent academic achievement directly and indirectly through higher levels of adolescent task avoidance. Moreover, poor prior academic achievement was associated with higher levels of subsequent task avoidance directly and indirectly through high maternal psychological control and mother-initiated monitoring. Overall, the results highlight the importance of bringing mothers' knowledge and awareness to their self-initiated and controlling involvement practices and helping them to support adolescents' learning and motivation in more optimal ways.

Keywords: homework, maternal involvement, task avoidance, academic achievement

The Interplay Between Maternal Homework Involvement, Task Avoidance, and Achievement among Adolescents

Parental involvement with homework plays a role not only in skill development, but also in motivation (for reviews, see Barger et al., 2019; Patall et al., 2008). Parental involvement that supports a child's basic psychological needs might increase intrinsic motivation and persistence and hence contribute to higher achievement (Pomerantz et al., 2007; Ryan & Deci, 2017). Despite this, only a few studies have examined motivational behavior as a mechanism between parental homework involvement and students' achievement (Silinskas & Kikas, 2019b; Viljaranta et al., 2018). Particularly in adolescence, the need for autonomy is high and, therefore, controlling adolescents' psychological needs can have detrimental effects on their motivation and achievement (Eccles et al., 1993; Ryan & Deci, 2017). On the other hand, children's skills may also play a role in parental homework involvement (Bell, 1968; Pomerantz & Eaton, 2001). Because of a lack of research on the bidirectional relations between the different aspects of parental homework involvement (i.e., quantity, quality, and source of initiative) and adolescents' motivational behavior and achievement, better understanding is needed in order to prevent possible vicious circles of detrimental homework involvement practices and find ways how to best support adolescents' learning and motivation. Thus, the present study focused on examining these aspects of maternal homework involvement and their direct and indirect associations with adolescents' task avoidance in homework situations and academic achievement.

Parental Homework Involvement

Parental involvement with homework is a multidimensional construct that includes both quantitative (e.g., the frequency of helping a child with homework) and qualitative aspects (e.g., providing support for a child to do homework on their own; Grolnick & Slowiaczek, 1994). According to Hoover-Dempsey and Sandler (1997), the invitations parents perceive explicitly (i.e., a child requests the involvement of parents) and implicitly (i.e., parents get involved on their own initiative) are important promoters of parental involvement. However, previous studies often neglect this important aspect, that is, the source of initiative of homework involvement. In this study, to understand the relationship between these aspects of parental involvement and adolescents' achievement and behavior in homework situations, we rely on the self-determination theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2017). This broad theoretical framework suggests that students are more likely to function effectively and be intrinsically motivated when their basic psychological needs for autonomy, competence, and relatedness are satisfied. Natural aspirations toward self-fulfillment and mastery can be either supported or suppressed by the social context, such as parents. According to SDT, the ways in which parents are involved in their children's homework differently satisfies children's basic psychological needs and subsequently, can be assumed to make different contributions to children's motivation and achievement. Consequently, in the present study, three aspects of parental homework involvement, that are the quantity, quality, and source of initiative, were examined.

The *quantity of parental homework involvement* refers to the frequency of monitoring and help in homework situations (Pomerantz & Eaton, 2001; Silinskas et al., 2013). *Monitoring* refers to checking a child's homework for mistakes and making sure the child has done their homework, whereas *help* refers to teaching and guiding (Pomerantz & Eaton, 2001; Silinskas et al., 2013). Monitoring can be seen as a less direct form of involvement compared to help because

the definition of monitoring does not require extensive direct instruction (Silinskas et al., 2015). Helping, in turn, is a more direct way to be involved because it requires more active teaching and guidance, which can give the child the impression that they are not capable of doing homework independently (Silinskas et al., 2015). Consequently, these differences in the type of involvement between monitoring and help can reflect on adolescents' basic psychological needs.

The *quality of parental homework involvement*, in turn, has been conceptualized (building on the SDT; Ryan & Deci, 2017) in terms of autonomy support and control. *Autonomy support* refers to parental support that is sensitive to a child's needs and allows the child to solve problems independently (Pomerantz et al., 2007). *Control*, in turn, is defined as restricting parental behavior that regulates a child's opportunities to solve problems independently and, thus, is detrimental to a child's basic psychological needs (Grolnick & Pomerantz, 2009; Ryan & Deci, 2017). *Psychological control* (i.e., parental use of guilt, love withdrawal, and shame when the child disobeys; Barber 1996; Grolnick & Pomerantz, 2009), in particular, has been suggested to be harmful because it affects not only the child's behavior, but also their mind and feelings.

The *source of initiative* is the third aspect of parental homework involvement. Parents may help children with homework on their own initiative (Green et al., 2007; Hoover-Dempsey & Sandler, 1997). In turn, children may also invite parents to get involved with homework (Green et al., 2007). However, as children reach adolescence, they may desire and explicitly invite parents to get involved in their homework less frequently than younger children do because of their growing need for autonomy (Eccles et al., 1993; Pomerantz & Grolnick, 2017). We chose to study young adolescents because they are experiencing several developmental (e.g., puberty) and educational changes (e.g., transition from primary to lower secondary school), which can cause challenges for their motivation and achievement.

Task Avoidance as a Mediator of the Associations Between Parental Homework Involvement and Adolescents' Academic Achievement

According to SDT, parental involvement that is sensitive and supportive to children's psychological needs for autonomy, competence, and relatedness can promote children's achievement (Ryan & Deci, 2017). It has also been suggested that the association between parental involvement and achievement might be mediated by different motivational resources (Grolnick et al., 1991), such as task-focused vs. task-avoidant behavior. *Task-avoidant behavior* refers to a child's tendency to lose focus and engage in task-irrelevant activities when facing challenges (Aunola et al., 2002; Onatsu-Arvilommi & Nurmi, 2000). A task-avoidant child often becomes distracted and gives up easily when the task is too difficult, which increases the risk of failing in the future and can lead to poorer achievement (Onatsu-Arvilommi & Nurmi, 2000).

Within the theoretical framework of SDT, Deci and Ryan (1985; see also Ryan & Deci, 2017) introduced organismic integration theory (OIT), which describes how contextual factors can either promote or prevent internalization and integration of the regulation of motivational behaviors. According to OIT, it can be assumed that parental involvement that is child initiated and which supports the child's psychological needs can increase the internalization of parental values, beliefs, and goals related to homework. As a consequence, adolescents may be more autonomously motivated, have greater persistence, and perform better academically (Malmberg et al., 2015; Ratelle et al., 2007; Ryan & Deci, 2017). By contrast, when parental involvement is parent initiated and controlling, it may lead to amotivation, lack of persistence and subsequently, to poor achievement (Pomerantz et al., 2007; Ratelle et al., 2007; Ryan & Deci, 2017).

Previous empirical studies have suggested that parental homework involvement practices may differ in how they contribute to children's achievement and motivational behavior (Dumont

et al., 2014; Pomerantz & Eaton, 2001; Viljaranta et al., 2018). Previous findings regarding the role of the *quantity of parental homework involvement* have been mixed, although most show weak negative associations for monitoring and help (for meta-analyses, see Hill & Tyson, 2009; Patall et al., 2008). Help has been associated with lower levels of task persistence (Viljaranta et al., 2018) as well as poorer achievement (Cooper et al., 2000; Silinskas et al., 2013). In turn, parental monitoring has been associated with poorer achievement (Patall et al., 2008) but not with motivational behavior (Viljaranta et al., 2018). Regarding the role of the *quality of parental homework involvement*, previous research has shown that autonomy-supportive practices are related to higher levels of persistence (Silinskas & Kikas, 2019a; Viljaranta et al., 2018) and higher achievement (Dumont et al., 2014; Moroni et al., 2015), whereas parental controlling practices are related to lower levels of persistence (Silinskas & Kikas, 2019b) and poorer achievement (Dumont et al., 2014; Pomerantz et al., 2007). Finally, regarding *the source of initiative*, it has been assumed that parental involvement that is supportive and based on a child's invitation is less likely to cause negativity between the child and the parent and can therefore have a positive impact on motivation and achievement (Dumont et al., 2014; Pomerantz & Grolnick, 2017). In contrast to this, in a study by Pomerantz and Eaton (2001), mother-initiated monitoring and help were positively associated with subsequent performance in American elementary school children. However, parent-initiated involvement could have more negative consequences for adolescents' motivation and achievement because in line with OIT, by increasing self-initiated monitoring and help parents may hinder adolescents' increased need for autonomy, which can decrease their persistence and lead to poorer achievement (Patall et al., 2008; Ryan & Deci, 2017). Nevertheless, to our knowledge, the role of the source of initiative has not been examined in relation to adolescents' achievement and motivational behavior.

Despite theoretical assumptions that parental involvement may also be associated with achievement through different motivational resources (Grolnick et al., 1991), as far as we know, only one previous study (Viljaranta et al., 2018) has examined the indirect associations of parental homework involvement on subsequent achievement through motivational behavior. In that particular study, maternal help and autonomy support marginally predicted Finnish elementary school children's subsequent performance via task-persistent behavior, so that the more mothers helped their children with homework and the less they granted autonomy, the less children showed task persistence which, in turn, led to poorer academic performance. In the present study we examined the possible indirect associations in an adolescent sample of three different aspects of maternal homework involvement (i.e., quantity, quality, and source of initiative) on subsequent academic achievement via task avoidance.

Parental Homework Involvement as a Mediator of the Associations between Adolescents' Academic Achievement and Task Avoidance

In addition to parents influencing children's skills, it has been suggested that this association may also exist in the reverse direction. This assumption is based on the theories of evocative effect (Bell, 1968; Scarr & McCartney, 1983) that emphasize that children's characteristics, such as their academic achievement, may evoke certain behavior of their significant others, such as parents. These theories assume that children are not merely recipients or targets of parenting but have an equal role in the parent-child interaction influencing parents' behavior. A variety of empirical studies also seem to support this point of view by showing that poor academic achievement tends to evoke controlling involvement practices (Dumont et al., 2014; Pomerantz & Eaton, 2001). In turn, the better the child achieves, the more parents grant autonomy (Cooper et al., 2000; Dumont et al., 2014).

Children's academic achievement also plays a role in their own motivational beliefs and behavior (e.g., Aunola et al., 2002). It has been shown that children's poor skills contribute to higher levels of task avoidance (Aunola et al., 2002; Hirvonen et al., 2010). However, in line with SDT, the association between prior achievement and subsequent task avoidance might be partly mediated by parental homework involvement: children's skills might contribute to parental homework involvement, which can, in turn, either increase or decrease motivation and effort depending on the way it supports a child's basic psychological needs (Ryan & Deci, 2017; Scarr & McCartney, 1983). Thus far, only a few empirical studies have been conducted on this topic. One of them, Silinskas and Kikas (2019b) found no evidence for indirect associations from math performance on task persistence through perceived quality of homework involvement (i.e., parental support and control) among Estonian pupils in Grade 6. In the present study, we investigated whether associations of adolescent academic achievement with their subsequent task-avoidant behavior in homework situations were mediated by three aspects of maternal homework involvement (i.e., the quantity, quality, and source of initiative).

Research Questions and Hypotheses

The first aim of this study was to examine the extent to which maternal homework involvement (i.e., quantity, quality, and source of initiative) predicts adolescents' subsequent achievement directly and indirectly through adolescents' task-avoidant behavior. **H1.** In line with OIT (Ryan & Deci, 2017), we expected that maternal homework involvement would be related to subsequent achievement directly and indirectly through task avoidance (Aunola et al., 2002; Dumont et al., 2014; Viljaranta et al., 2018). Regarding indirect associations, we expected that higher levels of help and psychological control, and lower levels of autonomy support would be associated with poorer subsequent achievement through higher levels of task-avoidant behavior.

The second aim of this study was to examine the extent to which adolescents' prior achievement predicts their subsequent task avoidance directly and indirectly through maternal homework involvement (i.e., quantity, quality, and source of initiative). **H2.** In line with evocative theories (Bell, 1968; Scarr & McCartney, 1983) and SDT (Ryan & Deci, 2017), it was expected that prior achievement would be associated with subsequent task avoidance directly and indirectly through maternal homework involvement (Aunola et al., 2002; Silinskas & Kikas, 2019a; Viljaranta et al., 2018). Regarding indirect associations, we expected that lower prior achievement would be related to higher levels of subsequent task avoidance through higher levels of maternal help and psychological control and lower levels of autonomy support.

As additional analyses, the same research questions were examined using adolescent-perceived quality of maternal homework involvement. We controlled for the possible effects of adolescent gender and mothers' education on maternal homework involvement, achievement, and task avoidance because gender as well as parents' education may play a role in the level of parental homework involvement (Grolnick & Slowiaczek, 1994; Moroni et al., 2015).

Method

Participants and Procedure

The study participants were part of a broader longitudinal study following a community sample of Finnish adolescents in two towns in Central Finland across the transition from primary to lower secondary school. The study has received ethical approval from the ethics committee of the University of Jyväskylä (February 12, 2014). At the outset in Grade 6 a total of 848 (391 boys and 457 girls) Finnish young adolescents participated in this study. 96.7% of the adolescents had Finnish as their mother tongue, 1.6% were bilingual, and 1.4% were other than Finnish speakers. 0,3 % of the adolescents, information of their mother tongue was not available.

Overall, this is in line with the demographics of the Finnish population (Official Statistics of Finland, 2020) as 3.6% of the population outside the Helsinki metropolitan area were foreign-language speakers and 3.7% had a foreign background at the time of this study.

Parental written consent was required for student participation. Adolescents answered questionnaires during school lessons supervised by trained research assistants in the fall of Grade 6 (Time 1, T1). The adolescents' parents were also invited to participate in this study. Invitations were primarily targeted at mothers, but fathers were also given the opportunity to participate. We used only mothers' responses because, according to Grolnick and Slowiaczek (1994), mothers are typically more involved in their children's schooling than fathers are. Mothers received questionnaires by post or electronically when their children were in Grades 6 and 7 (Time 2, T2). For the Grade 6 pupils, 680 mothers provided answers, and for the Grade 7 pupils, 665 answered.

Measures

The psychometric properties of the study variables and their reliabilities are presented in Table 1. The items and their factor loadings and related confidence intervals on the respective factors obtained from confirmatory factor analyses are presented in Table 2.

Mothers' perceptions of the quantity of their homework involvement (Grade 6, fall, T1). Questions measuring the quantity of maternal homework involvement (i.e., monitoring and help) were adapted from Pomerantz and Eaton (2001) and Pomerantz and Ruble (1998; see also Silinskas et al., 2015 for validity in the Finnish sample). Monitoring and help were both measured with three items using a 5-point scale (1 = *never*, 5 = *always*, see Tables 1 and 2 for reliability and validity).

Mothers' perceptions of the quality of their homework involvement (Grade 6, fall, T1). Mother-perceived quality of maternal homework involvement was assessed through

autonomy support and psychological control. Autonomy support was measured with a short Finnish version of the Learning Climate Questionnaire (Black & Deci, 2000; for reliability and validity, see Yu et al., 2018) consisting of six items on a 5-point scale (1 = *never*, 5 = *always*). Psychological control was assessed with two items using a 5-point scale (1 = *never*, 5 = *always*; see Tables 1 and 2 for reliability and validity).

Mothers' perceptions of the source of initiative (Grade 6, fall, T1). The source of initiative was measured through mother-reported monitoring and help adapted from Pomerantz and Ruble (1998). The source of initiated monitoring and help were both measured with three items using a 6-point scale (0 = *from no one*, 1 = *always from the child*, 2 = *mostly from the child*, 3 = *sometimes from the child and sometimes from me*, 4 = *mostly from me*, 5 = *always from me*, see Tables 1 and 2 for reliability and validity).

Adolescents' task avoidance in homework situations (Grade 7, fall, T2). Mothers rated adolescents' task avoidance in homework situations using the Behavioral Strategy Rating Scale (Aunola et al., 2000; for validity see Zhang et al., 2011), which consists of five items on a 5-point scale (1 = *never*, 5 = *always*, see Tables 1 and 2 for reliability and validity).

Adolescents' academic achievement (Grade 5, spring, T0 and Grade 7, spring, T3). Adolescents' academic achievement was based on GPA across all school subjects (range = 5 – 10) in the spring of Grade 5 (T0) and in the spring of Grade 7 (T3) as gathered from registers.

Adolescents' perceptions of the quality of maternal homework involvement (Grade 6, fall, T1). Adolescent-perceived quality of maternal homework involvement was assessed through autonomy support and psychological control. Adolescent-perceived autonomy support was measured with a short version of the Learning Climate Questionnaire (Black & Deci, 2000; for reliability and validity, see Yu et al., 2018) consisting of six items on a 5-point scale (1 =

never, 5 = *always*; $\alpha = .87$). Psychological control was assessed with three items using a 5-point scale (1 = *never*, 5 = *always*; e.g., “If I get bad test results, my parents are ashamed”; $\alpha = .63$).

Data Analysis

The analyses were carried out as follows. First, we constructed measurement models for three types of maternal homework involvement and adolescent task avoidance separately. Second, we estimated three different SEM models, one for each aspect of maternal homework involvement (i.e., the quantity, quality, and source of initiative) due to multicollinearity between these aspects. We also estimated indirect paths from maternal homework involvement to subsequent achievement via task avoidance and from prior achievement to subsequent task avoidance via maternal homework involvement. We controlled for mothers’ education and adolescent gender in all the analyses. Control variables were entered into the models to predict maternal homework involvement, task avoidance, and achievement. Finally, as additional analyses, we examined adolescent-perceived quality of maternal homework involvement (i.e., autonomy support and psychological control) and their direct and indirect associations with adolescent task avoidance and achievement.

All the analyses were carried out using the Mplus statistical package version 8.0 (Muthén & Muthén, 1998–2017). The model parameters were estimated using MLR. The goodness-of-fit of the estimated models was evaluated using four indicators: the χ^2 test, comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Non-significant χ^2 values, CFI values above .95, an RMSEA value below .06, and an SRMR value below .08 indicated a good model fit (Hu & Bentler, 1999; Muthén & Muthén, 1998–2017). CFI values below .90 and RMSEA as well as SRMR values above .10 were considered indicators of poor model fit (Kline, 2011).

Results

Measurement Models

Descriptive statistics and correlations between major study variables are presented in Table 1. First, we constructed separate measurement models by using confirmatory factor analysis for each type of maternal homework involvement (i.e., the quantity, quality, and source of initiative) and adolescent task avoidance. The measurement models for adolescent task avoidance ($\chi^2 [3] = 9.25, p < .05, CFI = .99, RMSEA = .06, SRMR = .01$), the quantity ($\chi^2 [7] = 53.28, p < .001, CFI = .97, RMSEA = .10, SRMR = .05$), quality ($\chi^2 [16] = 64.76, p < .001; CFI = .96, RMSEA = .07, SRMR = .04$), and source of initiative of maternal homework involvement ($\chi^2 [6] = 27.19, p < .001, CFI = .98, RMSEA = .07, SRMR = .02$) showed reasonably good model fits after freeing some of the residual correlations between items measuring the same latent construct. In particular, the first and the fifth items (standardized estimate of freed residual correlation = .52, $SE = .04, p < .001$) as well as the second and the fourth items (i.e., positively worded items; standardized estimate of freed residual correlation = .40, $SE = .08, p < .001$) of task avoidance were allowed to correlate (see also Zhang et al., 2011 for similar findings). The first and the second items (standardized estimate of freed residual correlation = .32, $SE = .05, p < .001$) as well as the fifth and the sixth items (standardized estimate of freed residual correlation = .32, $SE = .09, p < .001$) of autonomy support were let to correlate. The second and the third items of monitoring (i.e., items measuring general monitoring and subject-specific monitoring, standardized estimate of freed residual correlation = .42, $SE = .05, p < .001$), the source of initiative for monitoring (i.e., items measuring general initiated monitoring and subject-specific initiated monitoring, standardized estimate of freed residual correlation = .52, $SE = .04, p < .001$) as well as the first and the third items (i.e., items measuring general initiated help and subject-

specific initiated help, standardized estimate of freed residual correlation = .47, $SE = .06$, $p < .001$) of the source of initiative for help were allowed to correlate. Factor loadings and their confidence intervals are presented in Table 2.

The Direct and Indirect Associations from Maternal Homework Involvement to Subsequent Academic Achievement via Task Avoidance

We next estimated three different SEM models, one for each aspect of maternal homework involvement (i.e., the quantity, quality, and source of initiative). For the final SEM models, only statistically significant paths were included by trimming the non-significant paths. The estimated models including information about model fits are presented in figures 1, 2 and 3, whereas the results for the indirect associations are presented in Table 3.

Our first research question aimed to investigate the extent to which maternal homework involvement predicted adolescents' subsequent achievement directly and indirectly through adolescents' task-avoidant behavior in homework situations. The results for the *quantity* of maternal homework involvement (Figure 1) showed that help or monitoring did not predict subsequent achievement. Similarly, no indirect associations from help on subsequent achievement via task avoidance were found (see Table 3).

The results for the *quality* of maternal homework involvement and subsequent achievement (Figure 2) showed that only psychological control—but not autonomy support—predicted subsequent achievement: the more mothers used psychological control in the fall of Grade 6, the poorer was adolescents' subsequent achievement in the spring of Grade 7. One significant indirect association was also found (Table 3). Psychological control predicted subsequent achievement via task avoidance: the more mothers used psychological control in the fall of

Grade 6, the more adolescents showed task avoidance in homework situations in the fall of Grade 7, which, in turn, led to poorer subsequent achievement in the spring of Grade 7.

The results for *the source of initiative* (Figure 3) showed that mother-initiated monitoring—but not mother-initiated help—predicted adolescents' subsequent achievement: the more mothers' monitoring of their child's homework in the fall of Grade 6 was initiated by the mothers, the poorer was adolescents' subsequent achievement in the spring of Grade 7. One significant indirect association was also found (Table 3). Mother-initiated monitoring predicted subsequent achievement via task avoidance: the more mothers' monitoring of their child's homework in the fall of Grade 6 was initiated by the mothers, the more adolescents showed task avoidance in homework situations in the fall of Grade 7, which, in turn, led to poorer subsequent achievement in the spring of Grade 7.

Direct and Indirect Associations from Prior Academic Achievement to Subsequent Task Avoidance via Maternal Homework Involvement

The second research question examined the extent to which adolescents' prior achievement predicted their subsequent task-avoidant behavior directly and indirectly through maternal homework involvement. The results for direct associations showed that prior achievement negatively predicted subsequent task avoidance (see Figures 1 and 3): the poorer adolescents' prior achievement was in the spring of Grade 5, the more they showed task-avoidant behavior in homework situations in the fall of Grade 7.

The results for indirect associations for the *quantity* of homework involvement showed no indirect association from prior achievement to subsequent task avoidance via help (Table 3). For the *quality* of maternal homework involvement one significant indirect association was found. Prior achievement predicted subsequent task avoidance via psychological control: the poorer

adolescents achieved in the spring of Grade 5, the more their mothers used psychological control in the fall of Grade 6, which, in turn, led to higher levels of task avoidance in homework situations in the fall of Grade 7. The indirect association from prior achievement on subsequent task avoidance via autonomy support was not significant. Finally, one significant indirect association was also found for the *source of initiative*. Prior achievement predicted subsequent task avoidance via mother-initiated monitoring: the more poorly adolescents achieved in the spring of Grade 5, the more mothers' monitoring of their child's homework in the fall of Grade 6 was initiated by the mothers, which, in turn, led to higher levels of task avoidance in homework situations in the fall of Grade 7.

Additional Analyses

As additional analyses, we conducted a similar set of analyses as described above using adolescent-perceived quality of maternal homework involvement. The results resembled those reported above except adolescent-perceived autonomy support played a larger role than mother-perceived autonomy support. The results for the indirect associations revealed that only adolescent-perceived autonomy support predicted their subsequent achievement via task avoidance (standardized indirect estimate $\beta = .03$, $SE = .01$, $p < .01$; 95% CI [.01, .05]): the less adolescents perceived autonomy support from their mothers in the fall of Grade 6, the more they showed task avoidance during homework situations in the fall of Grade 7 which, in turn, led to poorer achievement in the spring of Grade 7. The results further showed that only adolescents' prior achievement predicted their subsequent task avoidance via adolescent-perceived autonomy support (standardized indirect estimate $\beta = -.04$, $SE = .01$, $p < .01$; 95% CI [-.07, -.02]): the better adolescents achieved in the spring of Grade 5, the more they perceived autonomy support

from their mothers in the fall of Grade 6 which, in turn, led to lower levels of task avoidance in the fall of Grade 7.

Discussion

Although parental homework involvement plays an important role in children's academic development (Barger et al., 2019; Patall et al., 2008; Pomerantz et al., 2007), only a few prior studies have investigated mediating mechanisms between parental homework involvement, adolescents' achievement, and motivational behavior. The present study examined three aspects of maternal homework involvement (i.e., the quantity, quality, and source of initiative) and their direct and indirect associations with adolescent task-avoidant behavior and achievement in the Finnish context. The results showed that high levels of maternal psychological control and mother-initiated monitoring undermined adolescents' subsequent achievement directly and indirectly through elevated levels of task avoidance. Moreover, poor prior achievement was related to higher levels of subsequent task avoidance directly and indirectly through elevated levels of maternal psychological control and mother-initiated monitoring. Overall, the results suggest that mothers might benefit from knowledge of how to support adolescents' learning and motivation in more optimal ways.

Adolescents' Task Avoidance as a Mediator in the Associations Between Maternal

Homework Involvement and Subsequent Academic Achievement

Our first research question examined the extent to which maternal homework involvement (i.e., quantity, quality, and source of initiative) predicted adolescents' subsequent achievement directly and indirectly through task avoidance. First, our results for the quantity of maternal homework involvement showed, in contrast to our expectations (H1) and previous findings among elementary school children (Silinskas et al., 2015; Viljaranta et al., 2018), that quantity of

maternal help was not associated with adolescents' subsequent achievement directly or indirectly through task avoidance. Because previous studies have documented that parental involvement decreases as the child reaches adolescence (Cooper et al., 2000), it is possible that mothers engage less in helping and, therefore, their involvement does not contribute to adolescents' subsequent achievement. Nevertheless, our results showed that higher levels of maternal help were related to higher levels of adolescents' subsequent task avoidance. Overall, this would suggest that maternal help contributes more significantly to proximal achievement-related outcomes, such as motivational behavior, than in achievement itself (see also Patall et al., 2008).

Second, our results for the quality of maternal homework involvement showed, in line with our expectations and previous findings (Dumont et al., 2014; Viljaranta et al., 2018), that high levels of maternal psychological control were related to adolescents' poorer subsequent achievement directly and indirectly through task avoidance. In addition, we found that higher levels of mother-initiated monitoring were related to adolescents' poorer subsequent achievement directly and indirectly through task avoidance. In line with organismic integration theory, these findings suggest that maternal self-initiated, dominant, and pressuring behaviors may leave adolescents' psychological needs unmet and hinder the internalization of parental values, beliefs, and goals related to homework (Ryan & Deci, 2017). This, in turn, may lead to lowered motivation and diminished persistence, which eventually manifests itself as poor achievement (Malmberg et al., 2015; Ryan & Deci, 2017). To our knowledge, no previous study has examined the role of the source of initiative in relation to adolescents' task avoidance and achievement. Overall, these findings provide support for OIT according to which maternal self-initiated and controlling involvement may have a detrimental role on adolescents' later achievement due to low satisfaction of basic psychological needs, hindered internalization of

values, beliefs and goals related to homework and possible lack of persistence in homework situations (Ratelle et al., 2007; Ryan & Deci, 2017).

In contrast to our expectations and some previous findings (Moroni et al., 2015; Viljaranta et al., 2018), mother-perceived autonomy support was not associated with adolescents' subsequent achievement. However, the results for the additional analyses showed that lower levels of adolescent-perceived autonomy support were associated with adolescents' poorer subsequent achievement but only indirectly through their task avoidance. These findings suggest that adolescents' perceptions of maternal autonomy support may be more significant predictors of their achievement than are mothers' perceptions (see Dinkelmann & Buff, 2016). In line with OIT, mothers and adolescents might perceive adolescents' need for and satisfaction of autonomy support differently (Ryan & Deci, 2017). It is possible that when adolescents' psychological need for autonomy is not fulfilled, it diminishes their intrinsic motivation to learn and further shows as an increase in task avoidance in homework situations and subsequently, manifests itself as poor achievement.

Maternal Homework Involvement as a Mediator in the Associations Between Adolescents' Prior Academic Achievement and Subsequent Task-Avoidant Behavior

Building on the theoretical perspectives of evocative models (Bell, 1968; Scarr & McCartney, 1983) and self-determination theory (Ryan & Deci, 2017), our study is among the first to investigate the role of parental homework involvement as a mediator between adolescents' achievement and motivational behavior. Consistent with previous findings (Aunola et al., 2002; Hirvonen et al., 2010), and our hypothesis (H2), adolescents' poor achievement was associated with higher levels of subsequent task avoidance in homework situations. The results of the present study add to previous literature by showing further that part of this association was

mediated via maternal homework involvement. In line with our expectations, poor achievement was associated with higher levels of subsequent task avoidance through higher levels of maternal psychological control. Moreover, we found that prior achievement was associated with higher levels of subsequent task avoidance through higher levels of mother-initiated monitoring. One explanation for these results may be that mothers may be worried about adolescents' poor achievement and perceive that their children are not able to do homework independently, which leads them to exhibit more self-initiated and pressuring homework involvement practices (Pomerantz & Eaton, 2001; Silinskas et al., 2015). By monitoring adolescents' homework without being requested to do so, pressuring and expressing their disappointment, mothers may communicate their lack of trust in their children's abilities to take care of their homework independently, which then undermines adolescents' psychological needs and leads to task avoidance (Pomerantz et al., 2007; Ryan & Deci, 2017). It is possible that repeated failures and negative feedback (e.g., disappointment expressed by mothers) dampen adolescents' beliefs about their own abilities, which leads them to lose focus and give up easily when they face difficulties with homework (see Eccles et al., 1993; Eccles, 2005; Hirvonen et al., 2010).

In contrast to our expectations, mother-perceived autonomy support or help did not significantly mediate the associations between achievement and task avoidance. However, the results for the additional analyses showed that higher prior achievement was related to lower levels of subsequent task avoidance both directly and indirectly through higher levels of adolescent-perceived autonomy support. This finding suggests that when adolescents are achieving well at school, they also perceive more autonomy support from their mothers which might increase their intrinsic motivation and lead to lower task avoidance (Ryan & Deci, 2017).

Limitations and Conclusions

There are some limitations that should be taken into account when interpreting our results. First, we did not examine maternal homework involvement and adolescents' task avoidance longitudinally. Second, our measures of maternal homework involvement were primarily based on mothers' evaluations because only mother-perceived quantity of homework involvement and source of initiative were available. In future studies, it would be important to examine all three aspects of homework involvement from both mothers' and adolescents' perspectives because previous studies have shown that there is a difference in predictive power between children's and mothers' perceptions of maternal behavior (Dinkelmann & Buff, 2016). In addition, aside from investigating longitudinal associations as was done in our study, it would also be worthwhile to examine parents' and adolescents' real-time experiences of homework involvement using interviews and observations (see Hyde et al., 2006). Third, we did not use fathers' perceptions of their homework involvement. In future studies, it would be important to include fathers as well to examine possible differences among maternal and paternal involvement. Fourth, the scale of psychological control had relatively weak reliability. However, because measurement error was taken into account in the SEM analyses, it adds some confidence for the findings of this study.

Finally, this study was conducted among Finnish adolescents and their mothers. This fact should be taken into account when generalizing our results to other cultures and school systems. In future studies, it would be advisable to compare different cultural and educational systems when examining parental homework involvement. Our study was conducted in Finland, in individualist culture which may impact the generalizability of our findings to collectivist cultures. For example, previous findings suggest that collectivist cultures do not hold autonomy as high regard as individualist cultures do and consequently, do not express desire to autonomy satisfaction as much as people from individualist cultures (Chen et al., 2015). At the same time,

there is some evidence to suggest that individuals from collectivistic cultures may also benefit from having their psychological needs (including autonomy) satisfied (Chen et al., 2015). Future studies are needed to shed more light on the related mechanisms in individualistic versus collectivistic countries.

The present study increased our understanding of three aspects of maternal homework involvement (i.e., the quantity, quality, and source of initiative) and their direct and indirect associations with adolescent task avoidance and achievement. First, our results showed that the quantity, quality, and source of initiative were differently related to adolescents' subsequent motivational behavior and achievement. Second, our study increased our understanding of the fact that maternal controlling behaviors in terms of psychological control and self-initiated monitoring are associated with adolescents' subsequent achievement through their motivational behavior, which can partly help to explain previous contradictory findings regarding the impact of parental homework involvement on achievement. Third, our study highlighted the significance of adolescents' achievement for maternal self-initiated and controlling behaviors, which, in turn, played a detrimental role in adolescents' subsequent motivational behavior. Overall, the results of the present study suggest that it would be important to increase mothers' awareness of their own controlling and self-initiated involvement practices and the detrimental role of these practices in adolescents' motivational behavior and achievement. This awareness may help in looking for possibilities to support adolescents' learning and motivation during homework in a more optimal way.

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Table 1
Descriptive Statistics and Correlations of Major Study Variables

	<i>n</i>	<i>M</i>	<i>SD</i>	Min-Max	α	1	2	3	4	5	6	7	8	9
1 Adolescent GPA (T0)	694	8.25	0.66	5.75–9.83										
2 Adolescent GPA (T3)	768	8.15	0.89	5.50–9.94		.84***								
3 Adolescent task avoidance (T2)	659	2.19	0.79	1–5	.89	-.44***	-.53***							
4 Maternal monitoring (T1)	661	2.89	0.87	1–5	.83	-.28***	-.29***	.16**						
5 Maternal help (T1)	661	2.96	0.62	1–5	.73	-.32***	-.26***	.22***	.76***					
6 Maternal autonomy support (T1)	659	3.87	0.48	2.17–5	.74	.37***	.34***	-.54***	-.16*	-.17**				
7 Maternal psychological control (T1)	660	2.29	0.84	1–4.50	.55	-.54***	-.61***	.72***	.35***	.27***	-.60***			
8 Mother vs. adolescent initiated monitoring (T1)	657	3.02	1.35	0–5	.80	-.37***	-.42***	.30***	.80***	.35***	-.30***	.57***		
9 Mother vs. adolescent initiated help (T1)	659	2.31	0.88	0–5	.77	-.39***	-.41***	.30***	.66***	.67***	-.30***	.57***	.83***	

Note. T0 = Grade 5, spring; T1 = Grade 6, fall; T2 = Grade 7, fall; T3 = Grade 7, spring. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 2

Standardized factor loadings of the confirmatory factor analysis for major study variables

Items	Standardized CFA factor loadings with 95% CI
Maternal monitoring perceived by mothers	
1. <i>Do you check your child's homework?</i>	.83 (.77, .88)
2. <i>Do you make sure that your child has done his/her homework?</i>	.54 (.46, .61)
3. <i>Do you make sure that your child has done his/her homework related to reading and writing, math, and foreign language?</i>	.73 (.67, .80)
Maternal help perceived by mothers	
1. <i>Do you help or guide your child in his/her homework?</i>	.75 (.69, .79)
2. <i>Do you help or guide your child with preparing for tests?</i>	.55 (.47, .61)
3. <i>Do you help or guide your child in his/her homework related to reading and writing, math, and foreign language?</i>	.92 (.88, .96)
Maternal autonomy support perceived by mothers	
1. <i>I provide choices and options for my child</i>	.27 (.17, .36)
2. <i>I try to understand the child's point of view</i>	.56 (.47, .65)
3. <i>I've conveyed confidence in my child's ability to do well in homework</i>	.40 (.31, .48)
4. <i>I encourage my child to ask questions</i>	.59 (.51, .66)
5. <i>I listen to how my child would like to do things</i>	.80 (.72, .88)
6. <i>I try to understand how my child sees things before suggesting a new way to do things</i>	.76 (.68, .84)
Maternal psychological control perceived by mothers	
1. <i>I have to pressure my child to do homework/prepare for tests</i>	.69 (.55, .90)
2. <i>I show how disappointed I am if the child has not done his/her homework/gets a bad grade on test</i>	.47 (.34, .61)
Source of initiated monitoring perceived by mothers	
1. <i>By whose initiative do you check your child's homework?</i>	.79 (.72, .85)
2. <i>By whose initiative do you make sure that your child has done his/her homework?</i>	.55 (.47, .63)
3. <i>By whose initiative do you make sure that your child has done his/her homework related to reading and writing, math, and foreign language?</i>	.72 (.65, .78)
Source of initiated help perceived by mothers	
1. <i>By whose initiative do you help or guide your child in his/her homework?</i>	.65 (.57, .72)
2. <i>By whose initiative do you help or guide your child with preparing for tests?</i>	.68 (.61, .75)
3. <i>By whose initiative do you help or guide your child in his/her homework related to reading and writing, math, and foreign language?</i>	.68 (.60, .75)
Adolescents' task avoidance	
1. <i>Does the child have a tendency to find something else to do instead of focusing on the task at hand?</i>	.79 (.75, .83)
2. <i>Does the child actively attempt to solve even difficult situations and tasks?</i>	.79 (.71, .86)
3. <i>Does the child give up easily?</i>	.81 (.74, .86)
4. <i>Does the child demonstrate initiative and persistence in his/her activities and tasks?</i>	.71 (.63, .78)
5. <i>If the activity or task is not going well, does the child lose his/her focus?</i>	.74 (.68, .79)

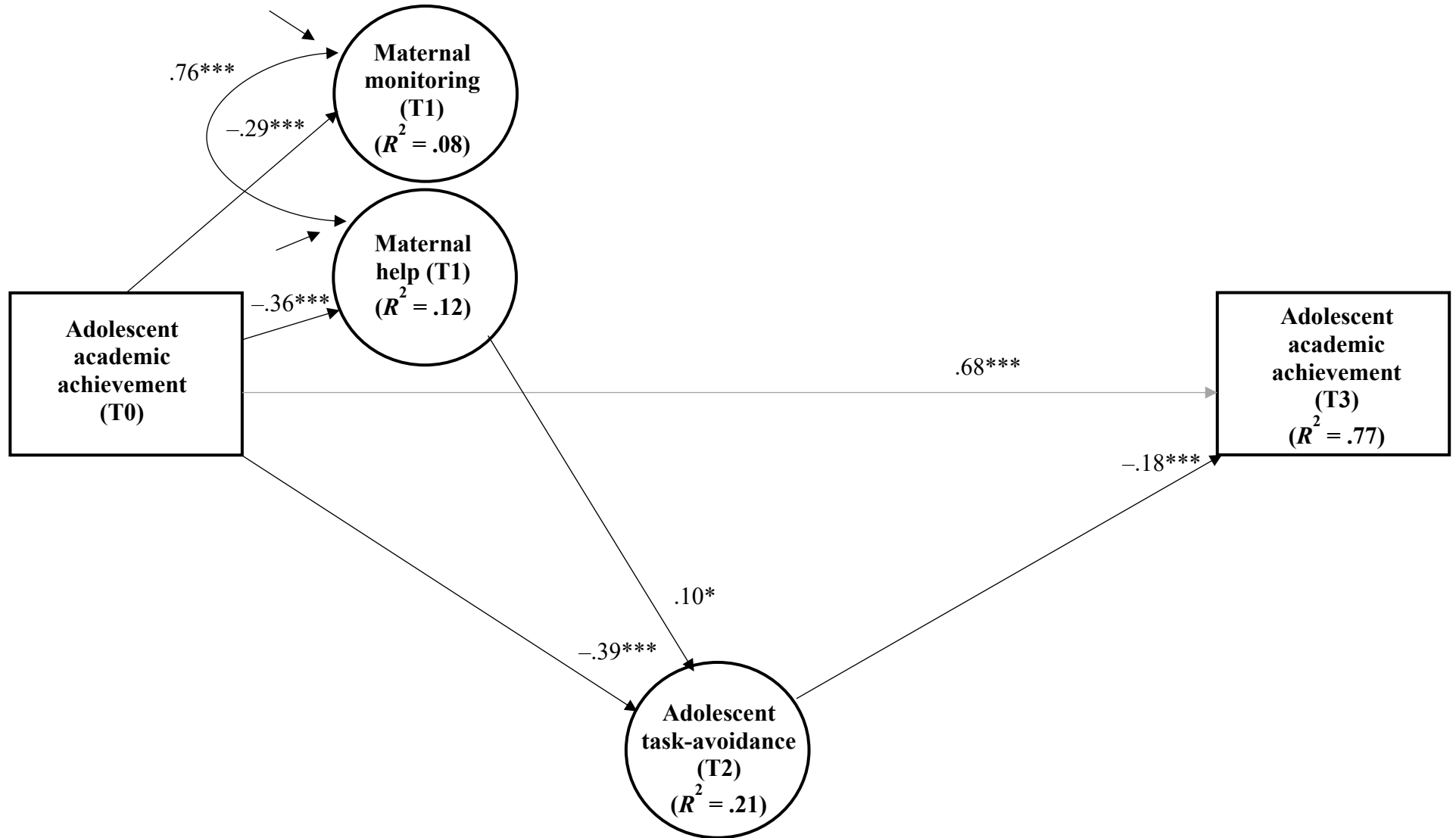
Table 3*Estimates of Indirect Associations: Maternal Homework Involvement and Task Avoidant Behavior as Mediators*

Indirect association	Standardized estimate (<i>SE</i>)	95% CI	
		Upper	Lower
From maternal help via task avoidance to subsequent academic achievement Help (T1) → task avoidance (T2) → GPA7 (T3)	-.02 (.01) ⁺	-.00	-.04
From maternal autonomy support via task avoidance to subsequent academic achievement Autonomy support (T1) → task avoidance (T2) → GPA7 (T3)	.02 (.01)	.04	.00
From maternal psychological control via task avoidance to subsequent academic achievement Psychological control (T1) → task avoidance (T2) → GPA7 (T3)	-.08 (.03) [*]	-.03	-.14
From mother-initiated monitoring via task avoidance to subsequent academic achievement Mother-initiated monitoring (T1) → task avoidance (T2) → GPA7 (T3)	-.03 (.01) ^{**}	-.01	-.05
From academic achievement via maternal help to subsequent task avoidance GPA5 (T0) → help (T1) → task avoidance (T2)	-.04 (.02) ⁺	.00	-.07
From academic achievement via maternal autonomy support to subsequent task avoidance GPA5 (T0) → autonomy support (T1) → task avoidance (T2)	-.05 (.03)	.00	-.11
From academic achievement via maternal psychological control to subsequent task avoidance GPA5 (T0) → psychological control (T1) → task avoidance (T2)	-.28 (.06) ^{***}	-.19	-.41
GPA5 (T0) → psychological control (T1) → task avoidance (T2) → GPA7 (T3)	.04 (.02) [*]	.08	.01
From academic achievement via mother-initiated monitoring to subsequent task avoidance GPA5 (T0) → mother-initiated monitoring (T1) → task avoidance (T2)	-.06 (.02) ^{**}	-.03	-.11
GPA5 (T0) → mother-initiated monitoring (T1) → task avoidance (T2) → GPA7 (T3)	.01 (.00) ^{**}	.02	.00

Note. *SE* = standard error.⁺*p* < .10, ^{*}*p* < .05, ^{**}*p* < .01, ^{***}*p* < .001.

Figure 1

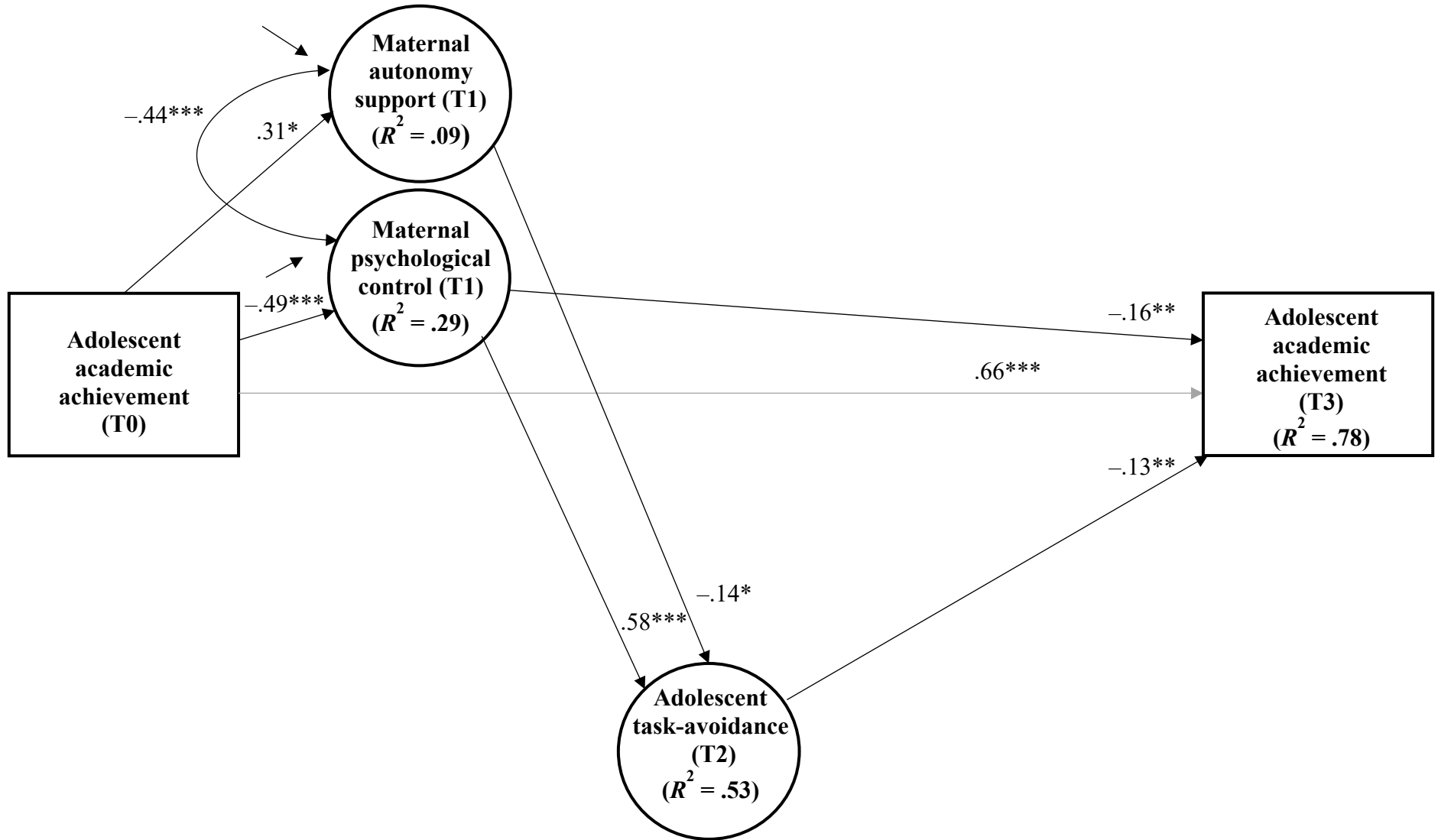
Associations between the quantity of maternal homework involvement, adolescent task avoidance and academic achievement



Note. Standardized solution. $\chi^2 [81] = 225.00, p < .001$; CFI = .97; RMSEA = .05; SRMR = .05. *** $p < .001$, ** $p < .01$, * $p < .05$.

Figure 2

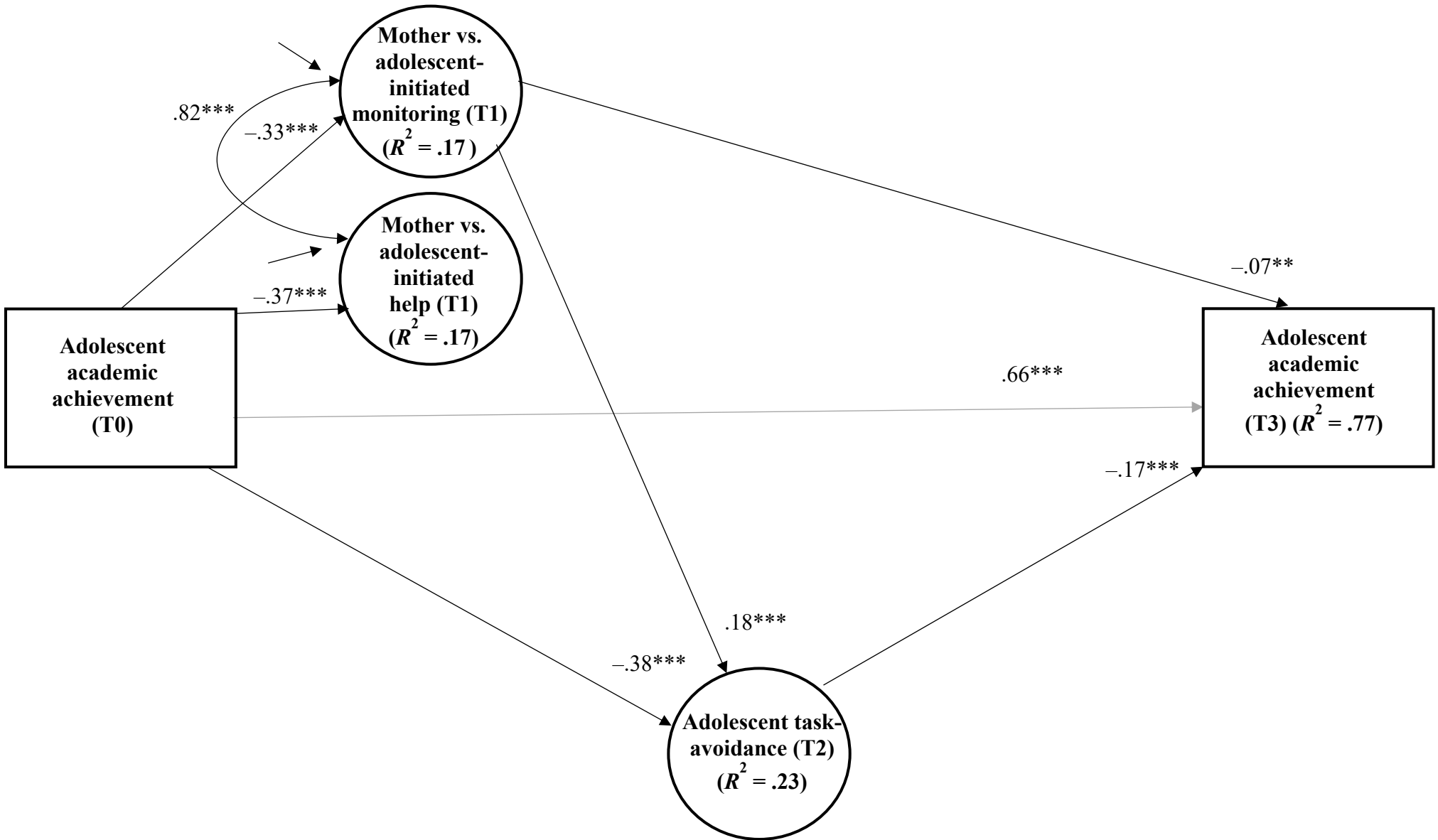
Associations between the quality of maternal homework involvement, adolescent task avoidance and academic achievement



Note. Standardized solution. $\chi^2 [107] = 370.54, p < .001$; CFI = .93; RMSEA = .06; SRMR = .08. $*** p < .001$, $** p < .01$, $* p < .05$.

Figure 3

Associations between mother vs. adolescent-initiated homework involvement, adolescent task avoidance and academic achievement



Note. Standardized solution. χ^2 [79] = 174.52, $p < .001$; CFI = .98; RMSEA = .04; SRMR = .04. *** $p < .001$, ** $p < .01$, * $p < .05$.