Early adolescent social anxiety: differential associations for fathers' and mothers' psychologically controlling and autonomy-supportive parenting

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Emerging Adolescent Social Anxiety: Differential Associations for Fathers' and Mothers' Psychologically Controlling and Autonomy-Supportive Parenting

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Abstract

Although psychologically controlling and autonomy-supportive parenting are important indicators of social anxiety during early adolescence, less research has explored distinct roles of father and mother parenting, especially in interdependent-oriented culture. This 3-year longitudinal study examined the reciprocal associations between such parenting and early adolescent social anxiety from multi-informants in the Chinese context. A sample of 1,140 Chinese early adolescents (51.1% boys; M_{age} = 10.50 years) and their parents participated at Wave 1. The results did not reveal reciprocal relations between fathers' reported parenting and social anxiety, but indicated paternal parenting effects from boys' perceptions of autonomy support to social anxiety, and child effects from social anxiety to girls' perceived psychological control. Maternal parenting effects were present for boys' perceptions of autonomy support and girls' perceptions of psychological control. The findings highlight the distinct roles of father and mother parenting across child gender and suggest differentiated relations of parenting to social anxiety during early adolescence in the Chinese context.

Keywords: autonomy support, psychological control, social anxiety, father, Chinese culture

Introduction

Social anxiety involves avoidance or distress of novel social situations in which the person is exposed to unfamiliar people (American Psychiatric Association, 2013). Psychologically controlling and autonomy-supportive parenting are important predictors of social anxiety (Scaini et al., 2018). Adolescent social anxiety has also been found to change parental psychological control and autonomy support (Nelemans et al., 2020). Although there have been numerous studies on psychological control and autonomy support and children's developmental outcomes, the current study contributes to the existing literature in three ways. First, to our knowledge, few studies have focused on different roles of fathers' and mothers' psychological control and autonomy support in adolescent development of social anxiety (Gómez-Ortiz et al., 2019). Although fathers' parenting behaviors affect child outcomes in ways that are different from the effects of mothers' parenting (Wang et al., 2021), the majority of studies exclude fathers in examining parenting in relations to social anxiety. For those studies that did include fathers, most of them aggregated mothers' and fathers' parenting behavior to represent a single parent score. Second, despite culturally unique meanings and functions of psychological controlling (Cheah et al., 2019), and autonomy support in interdependent-oriented contexts, such as China (Gao et al., 2021), to our knowledge, few studies have focused on the relations between two such parenting dimensions and social anxiety development (Luebbe et al., 2018). Third, although multi-informant designs can reduce bias (Hou et al., 2020), reporter discrepancies are rarely considered in the field of child social anxiety. Therefore, the current study employed four separate sets of longitudinal models to test bidirectional relations between parent- and child-reported mothers' and fathers' parenting and early adolescent social anxiety in the Chinese cultural context.

Parenting and Social Anxiety Development

The average age of onset for social anxiety ranges between 8 and 13 years (Kessler et al., 2005), when children have been in schools for at least a few years, and are exposed increasingly to novel social situations such as interacting with new peers and adults. In addition, youth anxiety is rapidly becoming a pressing health concern in China (Chen et al., 2015). Due to the cultural values of group affiliation and harmony in interdependent-oriented China, social anxiety may be particularly maladaptive as children withdraw from the collective (Liu et al., 2015). Thus, it is imperative to identify potential risk factors for Chinese children's social anxiety in a crucial early adolescence developmental phase.

According to the contemporary integrated aetiological and maintenance model (Wong & Rapee, 2016), parenting behaviors such as high psychological control or low autonomy support are important predictors of social anxiety (Scaini et al., 2018). Psychological control refers to parents' intrusive attempts to control their children through manipulation of thoughts and emotions, which might interfere with children's development of autonomy and independence (Barber & Harmon, 2002). Parental psychological control may threaten adolescent social confidence through emotional manipulation and negative labeling, so that adolescents tend to develop negative feelings about themselves and avoid opportunities to explore the environment and develop strategies to deal with novel situations (McShane & Hastings, 2009). Parent autonomy support is characterized by allowing children to make choices on their own and by encouraging children to express opinions freely (Soenens et al., 2007). Parenting behaviors that provide supportive and encouraging strategies to guide their children to approach novel situations facilitate children's social confidence in dealing with novel situations (Ollendick et al., 2014). Research has shown that autonomy-supportive parenting fosters preadolescent social confidence and competence through establishing a positive sense of self as an autonomous individual (Matte-Gagné et al., 2015). Indeed, there is some evidence that higher psychological control or lower autonomy support was related to

adolescent social anxiety. For example, in a cross-sectional study, maternal psychological control was positively related to adolescent social anxiety (Bynion et al., 2017). In a study examining direct relations between parenting practices, the results revealed a positive relation between psychological control and social anxiety, and a negative relation between promotion of autonomy and social anxiety (Gómez-Ortiz et al., 2019).

Transactional models of socialization propose a bidirectional interplay of parents and children (Sameroff & Mackenzie, 2003), suggesting that parenting behaviors might be also evoked by children's social anxiety. Children's avoidance and distress in novel social situations might elicit strong parental emotional responses, such as concern and anxiety. Parents might react to children's displays of avoidance or distress with disappointment and by negatively labeling their children as incompetent, which in turn aggravates children's social anxiety (McShane & Hastings, 2009). However, to our knowledge, relatively little research has examined how social anxiety would impact psychologically controlling or autonomy-supportive behaviors. For example, a 4-year longitudinal study using a cross-lagged panel model found that higher levels of adolescent social anxiety were related to higher levels of adolescent-reported maternal psychological control and lower levels of adolescent-reported maternal autonomy support one year later (Nelemans et al., 2020). However, another cross-lagged study demonstrated the contradictory results, which indicated that early adolescent social anxiety predicted decreases in perceived maternal psychological control one year later (Loukas, 2009). The inconsistent findings require more studies to examine the reciprocal associations between parenting and social anxiety. Overall, considering potential reciprocal effects between parents and adolescents in independent-oriented Western cultures, it is important to test bidirectional relations between parenting behaviors and adolescent social anxiety in the interdependent cultural context.

Although a universalist perspective suggests that psychological control undermines children's psychological development (Barber et al., 2005), culture-specific perspectives suggest that parental psychological control and autonomy support in interdependent culture might not have as evident effects as in independent cultures (Rothbaum & Trommsdorff, 2007). Specifically, in interdependent cultural contexts such as China, due to values on interdependence and obedience and the fact that group harmony and cohesion are highly emphasized, psychologically controlling parenting is more common and appears to be less harmful than in independent-oriented Western cultures (Fung & Lau, 2012; Liga et al., 2017). Further, parental autonomy support has been found to be less beneficial to adolescent development in interdependent cultures compared to individualistic cultural groups (Marbell-Pierre et al., 2019). However, there has been debate over the effects of psychological control and autonomy support in the Chinese cultural context. Researchers argued that the value of traditional Confucianism regarding authority may not characterize parent-adolescent relationships in contemporary China (Wang & Faldowski, 2014), and the effects of parental control on Chinese children's psychological functioning are similarly negative as in the independent Western culture (Pomerantz & Wang, 2009). Indeed, several studies demonstrated that perceived psychological control affected Chinese adolescents' social anxiety and psychological well-being (Luebbe et al., 2018; Shek, 2007), and that autonomy support is beneficial for Chinese children's emotional and academic functioning (Wang et al., 2007). Considering that the existing literature suggests that findings on this issue are rather mixed, the current study utilized a multi-informant longitudinal design including both maternal and paternal parenting to examine the relations between psychologically controlling and autonomy supportive parenting and early adolescent social anxiety in China.

Mothers' and Father' Roles

Mothers have generally been the primary caregivers of their children whereas fathers tend to be playmates (Lamb & Lewis, 2010). According to the father-child activation relationship theory, compared to mothers, fathers are more likely to encourage their children to take initiative and to be braver in unfamiliar situations, fostering children's exploration and openness to new experiences (Paquette, 2004). An observational study focusing on father-child attachment revealed that children were less anxious and dependent when they were optimally activated during interactions with fathers in an unfamiliar, risky situation (Dumont & Paquette, 2013). In comparison to mothers, fathers involved their children in challenging activities that have the potential to develop children's sense of self-confidence, and encourage children to open themselves up to the outside world (Dumont & Paquette, 2013). However, fathers have been a neglected group in the study of child social anxiety. To our knowledge, in the only two studies that focus on psychologically controlling and autonomy-supportive parenting, the results were inconsistent. Specifically, a cross-sectional study revealed that child-reported maternal psychological control was positively related to child social anxiety; whereas such significant relations were not found in the paternal model (Bynion et al., 2017). By contrast, another cross-sectional study found that both maternal and paternal psychological control and autonomy support were independently related to child social anxiety (Gómez-Ortiz et al., 2019). Considering the few and inconsistent results about the unique roles of fathers in child outcomes, it is important to longitudinally explore both fathers' and mothers' parenting in relation to child social anxiety.

Child-Report and Parent-Report

Reporter discrepancies are often overlooked in the field of parenting and social anxiety, although adolescents and parents may vary in the perceptions of interactions among family members and provide distinct reports (De Los Reyes & Ohannessian, 2016). Meta-analyses have indicated a generally low level of congruence between parents' and adolescent

report on parenting (Korelitz & Garber, 2016). For example, a recent meta-analytic study revealed that parents perceive their parenting more positively than their children (Hou et al., 2020). According to the generation stake hypothesis (Welsh et al., 1998), parents tend to view their childrearing behaviors more optimistic than their children do because parents' mission is to provide a constructive environment such that they may project more positive feelings. However, children desire and focus on enhancing autonomy and independence from parents during early adolescence. Consequently, they might perceive too little autonomy and view their parents' behaviors in relatively negative ways (De Los Reyes & Ohannessian, 2016). Furthermore, several studies have indicated that child-perceived parenting might be more related to adolescent psychological functioning than parents' self-reports. For example, a multi-informant longitudinal study found that the links between parenting and adolescent emotion regulation were stronger for adolescent perceptions than for parents' reports of parenting (Van Lissa et al., 2019). However, the results of studies using child-reports for all the constructs may have been biased by shared method variance; the associations between parenting and child outcomes might be stronger if the information comes from the same reporter, and may result in artificially inflated relations (Brannick et al., 2010). Overall, due to the discrepancies in child- and parent-reported parenting, and considering the relations between parenting and social anxiety might vary as a function of such informant discrepancies, it is important to examine parent- and child-reports separately.

Previous research showed that family socioeconomic status (SES), including parents' education level and income, is related to adolescent social anxiety. Specifically, adolescents with lower SES families experience more uncontrollable life stressors and have less chance to take part in social events compared to adolescent from higher-SES families. This might undermine their self-esteem and social skills, and eventually the lack of social ability may result in social anxiety in new social situations (Cheng et al., 2015). Lower SES might also

lead to less positive parenting and parents who are distressed by heavy economic pressure might be less likely to engage in supportive parenting practices (Neppl et al., 2015). Therefore, parents' education level and income are included as covariates in the current study.

The Current Study

Given the importance of fathers' and mothers' psychological control and autonomy support with early adolescent social anxiety in interdependent-oriented contexts, this 3-year longitudinal study examined the cross-lagged relations between multi-informant reports of parenting and early adolescent social anxiety in China. Four sets of models were used to separately test reciprocal relations between social anxiety and autonomy supportive and psychologically controlling parenting as reported by early adolescents, mothers, and fathers. Specifically, based on the integrated aetiological and maintenance model and transactional models of socialization, psychologically controlling parenting was expected to be positively predictive of early adolescent social anxiety one year later, and vice versa. Autonomy-supportive parenting would negatively predict early adolescent social anxiety one year later, and vice versa. In addition, according to the father-child activation relationship theory and the generation stake hypothesis, fathers' and mothers' parenting would have unique roles in early adolescents' social anxiety by different informant source, which were explored without specific hypotheses in the current study.

Methods

Participants

Data in this study are from a large longitudinal project on studying development of child psychological functioning (Liu et al., 2018). At Wave 1, the data analytic sample included 1140 early adolescents and their parents after dropping 132 cases without child

birthdate or gender information or inconsistent input about these variables across the three waves (51.1% boys; M_{age} = 10.50, *SD* = 1.34, range = 8-13). Regarding the family structure, there were 46 % nuclear families, 26% extended families, 21% single-parent families, and 7% grandparent families. Approximately two-thirds of the families had only one child. Based on a scale of monthly income ranging from 1 (*1000RMB or below*) to 12 (*above 40,000RMB or above*), 52% of mothers had a monthly income less than 2000RMB (low class); 42% of mothers had a monthly income between 2000RMB and 5,000RMB (lower-middle class); and 6% of mothers had a monthly income above 5,000RMB (upper-middle class). Approximately 22% of fathers had a monthly income less than 2000RMB; 58% of fathers had a monthly income between 2000RMB and 5,000RMB; and 20% of fathers had a monthly income above 5,000RMB. In terms of education background, 90% of parents had a high school or lower education and 10% of parents attained university or higher education.

Among 1140 participating families, 1059, 974, and 838 families attended W1, W2, and W3, respectively. Attrition from W1 to W2 was 8.8%. Attrition analyses indicated that there were no significant differences between participants who completed the data for both W1 and W2 and those who dropped out of the study at W2 on child gender, $\chi^2(1) = 1.77$, $p = .183$, and other study variables, all $|t\text{s}| < 1.92$, all $p\text{s} > .06$, except for child age, t (133.86) = 3.53, $p = .001$, child-reported maternal autonomy support, t (117.02) = 2.49, $p = .014$, child-reported paternal autonomy support, t (1037) = 2.07, $p = .039$, and child-reported paternal psychological control, t (1037) = 2.32, $p = .021$. However, effect sizes (Cohen's d) were relatively small, with values between 0.23 to 0.28 (Cohen, 1988). Attrition from Wave 2 to Wave 3 was 21.7%. Attrition analyses indicated that there were no significant differences between participants who completed the data for both W2 and W3 and those who dropped out of the study at W3 on child gender, $\chi^2(1) = 0.15$, $p = .695$, and other study variables, all $|t\text{s}| < 1.56$, all $p\text{s} > .12$, except for child age, t (972) = 19.56, $p < .001$, Cohen's d = 1.52 (a

large effect size), and child-reported paternal autonomy support, t (945) = 2.07, p = .039, Cohen's d = 0.23. Specifically, older children had a higher probability of dropping out at W3.

Procedure

The institutional review board at East China Normal University reviewed and approved this longitudinal study. The Western-based measures were translated into Chinese and then back-translated by psychology researchers independently. The initial pool of schools were in one of the urban districts in Shanghai, China. Researchers reached out to the principals of the schools and four of them agreed to participate in this study; such that the sampling procedure was a convenience sampling approach. Students from the third to seventh grade were invited. The participation rate was around 98% at Wave 1. Data were gathered at three waves, spaced approximately 1 year apart, from November 2013 through November 2015. Researchers obtained written informed consent from parents and children. Participation was voluntary and all information were treated confidentially to ensure participants' privacy. During data collection at schools, researchers introduced the purposes and procedures of the study and asked children to complete a set of questionnaires in a pencil-and-paper format without teachers' presence. Parenting measures were completed by parents in home settings and returned to researchers via mail. It took approximately 20 minutes to complete all the questionnaires. After data collection, each family received a gift for their participation.

Measures

Social anxiety. Children reported their social anxiety using a 5-item subscale from the Chinese version of the Social Anxiety Scale for Children-Revised (SASC-R; Liu et al., 2015). These five items tapped into the extent to which children experience nervousness and anxiety in novel social situations (e.g., "I feel nervous when I talk to new kids"). Each item was rated on a 5-point Likert scale, ranging from 1 (*never*) to 5 (*always*). Higher scores correspond to

higher levels of social anxiety. Cronbach's alphas ranged from 0.84 to 0.89 across three waves in the current sample.

Psychological control. Children's perceived psychological control was measured using an adapted 18-item scale (Yu et al., 2015; e.g., "My mother/father is less friendly with me if I do not see things her/his way", "My mother/father avoids looking at me when I disappoint her/him"). Children responded to each question on a 5-point Likert scale, ranging from 1 (*never*) to 5 (*always*). Higher scores reflect higher levels of perceived psychological control. This scale has demonstrated good reliability and validity in a sample of Chinese population (Olsen et al., 2002). Cronbach's alphas ranged from 0.83 to 0.89 across three waves for perceived maternal and paternal psychological control in the current sample. Parent-reported psychological control was assessed using the same scale as for child report. Cronbach's alphas of mother-reported psychological control ranged from 0.85 to 0.87 across three waves. Cronbach's alphas of father-reported psychological control ranged from 0.87 to 0.88 across three waves.

Autonomy support. Children reported their perceived parental autonomy support on an adapted 7-item measure (Mageau et al., 2017; e.g., "My mother/father allows me to give input into family rules", "My mother/father gives me reasons why rules should be obeyed"). Children rated how often their parents display each behavior on a 5-point Likert scale, ranging from 1 (*never*) to 5 (*always*). Higher scores indicate higher levels of perceived autonomy support. This measure has shown good reliability and validity in a sample of Chinese population (Hu et al., 2021). Cronbach's alphas ranged from 0.79 to 0.88 across three waves for perceived maternal and paternal autonomy support in the current sample. Parent-reported autonomy support was assessed using the same scale as for child report. Cronbach's alphas of mother-reported autonomy support ranged from 0.75 to 0.80 across

three waves. Cronbach's alphas of father-reported autonomy support ranged from 0.76 to 0.82 across three waves.

Statistical Analyses

Analyses of descriptive statistics and Pearson bivariate correlations were conducted in IBM SPSS Statistics 22. The intraclass correlation (ICC) and the design effect statistics were calculated to decide whether the nested dataset required multilevel modeling (Musca et al., 2011; Peugh, 2010). The results showed that the ICC values of all the study variables were below 0.07, and design effects were below 0.2, except for W1 child-reported maternal and paternal psychological control and W2 child-reported paternal autonomy support (design effects were 2.07, 2.14, and 2.01, respectively). Given that the ICC values were relatively small and design effects were below or close to the empirical cut-off value of 2 (Peugh, 2010), and theoretically parenting might not be considered as a school- or class-level variable, multilevel modeling was not employed in the data analyses. Furthermore, one-way MANOVA analyses were performed to test the differences of the study variables between the nuclear and nonnuclear families. There were no significant differences of parenting and social anxiety between nuclear families and nonnuclear families at the three waves: $F(9, 877) = 1.52$, $p = 0.136$ at W1, $F(9, 831) = 0.37$, $p = 0.950$ at W2, and $F(9, 602) = 0.76$, $p = 0.657$ at W3. Therefore, family structure was not included in later path analyses.

Regarding primary cross-lagged models, a series of path analyses were performed in R version 4.0.1 (R Core Team, 2020). Specifically, this study focused on four sets of the cross-lagged path models (i.e., child report and parent report on maternal and paternal parenting behaviors). For each of the four sets of analyses, multiple unconstrained and constrained models were performed to determine the most parsimonious good-fitting model. Thus, for each set of analyses, there are 4 submodels. Model 1 is the most complex model without any path constraints. In the model 2, for each construct, relations of W1 to W2 and

relations of W2 to W3 were constrained to be equal, to determine if the stability from W1 to W2 is similar to that from W2 to W3. In the model 3, covariance paths among constructs for W2 and W3 were further constrained. In the model 4, cross-lagged paths were further constrained to equality for testing whether the lagged relations between two constructs for the W1 to W2 is identical to W2 to W3. The model fit of each model was evaluated with the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Error of Approximation (RMSEA), the Standardized Root Mean Square Residual (SRMR), the Akaike Information Criterion (AIC), and Bayesian Information Criterion (BIC). CFI and TLI values greater than 0.90, and RMSEA and SRMR values smaller than 0.06 indicate a good model fit (Hu & Bentler, 1999). Chi-square difference tests were employed to determine the best fitting model among the 4 submodels.

Subsequently, because relations between parenting and social anxiety may differ by gender (Morris & Oosterhoff, 2016), multi-group analyses were performed to examine gender differences in the estimated path coefficients. Previous research with Chinese samples demonstrated that measurement invariance was achieved for the two parenting dimensions across different informants (i.e., mothers, fathers, and adolescents) and child gender, indicating that it is valid to compare the parenting dimensions across groups with the Chinese sample (Lu et al., 2018; Luo et al., 2020).

Regarding missing data, 65 cases had missing values at all three waves, 212 cases had missing values at two waves, and 338 cases had missing values at one wave. Little's MCAR test (Rubin, 1976) showed that the data were not missing completely at random, $\chi^2(2823) = 3157.87$, $p < 0.001$. However, aforementioned attrition analyses indicated that values of parenting and child social anxiety variables were likely to be missing at random (MAR), although without certainty due to the lack of information about the value of the variable that is missing (Schafer & Graham, 2002). To deal with missing data, full information maximum

likelihood estimation with robust standard errors was used, which requires that missing values to be at least MAR, to produce parameter estimates and standard errors with higher power and lower bias compared to data where no missing data is imputed (Enders & Bandalos, 2001). Child age, parents' education level, and income were included as covariates. All data exclusions and measures were reported in the study.

Results

The means, standard deviations, and correlation of the study variables at three waves can be found in the supplementary materials (see Table S1). Model fits and comparison for the four sets of cross-lagged panel models are presented in the Table 1. For each of the four sets, the model comparison results showed that there was no significant chi-square differences between model 1 and 2, model 2 and 3, model 3 and 4. Considering the parsimonious feature and good fit indices, this study employed model 4 of each of the sets for later testing multi-group analyses for gender differences. The acceptance of model 4 indicated that stability and the cross-lagged paths were identical from W1 to W2 and from W2 to W3. For the parent-reported parenting models, multi-group analyses for gender differences revealed no significant chi-square differences between the constrained and the unconstrained model, indicating that the relations among parent-reported parenting and social anxiety were similar for boys and girls. Therefore, the models with constrained paths between boys and girls were final models. However, for the child-reported maternal ($\Delta\chi^2$ (47) = 75.37, p = .005) and paternal parenting model ($\Delta\chi^2$ (47) = 70.67, p = .015), the constrained model was significantly different from the unconstrained model, indicating that relations between child-reported parenting and social anxiety were differentiated for boys and girls. Thus, the unconstrained models were employed as the final model. For each final model, standardized coefficients were presented (see Figure 1 to Figure 4) and clarified in the text below.

Child-Reported Parenting

The results for the exploratory research questions of mother's and father's roles demonstrated that the pattern of significant relations between child-perceived maternal parenting and social anxiety were different for mother's and father's parenting, as well as for boys and girls. Specifically, in the model with boy-perceived maternal parenting, only the significant relations between maternal autonomy support and later social anxiety were found (b = -0.10, p = .012), indicating that boys' perceptions of maternal autonomy support negatively predicted later social anxiety. In the model with girl-perceived maternal parenting, the result showed significant relations between maternal psychological control and later social anxiety (b = 0.11, p = .043), suggesting that girls' perceptions of maternal psychological control positively predicted later social anxiety. Regarding the child-perceived paternal parenting model, the relations between child-perceived paternal parenting and social anxiety differed between boys and girls. Specifically, boy-perceived father's autonomy support negatively predicted later social anxiety (b = -0.09, p = .011), and girls' social anxiety positively predicted later perceptions of paternal psychological control (b = 0.05, p = .021).

Parent-Reported Parenting

Contrary to the hypothesis that psychological control and autonomy support would predict subsequent social anxiety, mother-reported psychologically controlling and autonomy-supportive parenting did not predict early adolescent social anxiety over time. However, social anxiety was significantly predictive of later mother-reported psychological control (b = 0.04, p = .003). For father-reported psychologically controlling and autonomy-supportive parenting, there were no significant reciprocal relations with early adolescent social anxiety.

Overall, the findings revealed that the associations between parenting and early adolescent social anxiety differed by adolescent gender. For parenting effects, boys'

perceptions of both maternal and paternal autonomy support negatively predicted later social anxiety, and girls' perceptions of maternal psychological control positively predicted later social anxiety. Regarding child effects, social anxiety positively predicted later mother-reported psychological control for both sexes, and girls' social anxiety positively predicted later perceived paternal psychological control.

Discussion

Although many studies with independent-oriented Western samples show that psychologically controlling and autonomy-supportive parenting play important roles in social anxiety during early adolescence, the inconsistent research findings in interdependent-oriented cultures provide impetus for studying the effects of such parenting practices in relatively understudied Chinese families. The current 3-year longitudinal multi-informant study examined bidirectional relations between mothers' versus fathers' psychological control and autonomy support and early adolescent social anxiety in China. The findings from the cross-lagged analyses were differentiated by adolescent gender, and the pattern of significant paths were different in the maternal vs paternal parenting models, as well as in the child-reported vs parent-reported models. Specifically, the parenting effects were present for boys' perceptions of parental autonomy support and girls' perceptions of maternal psychological control. With regard to child effects, results showed that for early adolescents who reported more social anxiety, their mothers reported higher psychological control one year later. In addition, girls who reported greater social anxiety perceived higher paternal psychological control. There were no significant reciprocal relations between fathers' reported parenting and early adolescent social anxiety, which partly supported the distinct relations of fathers versus mothers to adolescent social anxiety development (Bynion et al., 2017). In addition, the findings of relations of psychological control to later social anxiety in the current study are different from those found in studies in independent-oriented Western

populations, which illustrate the importance of considering reciprocal associations between parenting and social anxiety in the interdependent-oriented cultural background (Lansford et al., 2018). Moreover, distinct results from children's and parents' reports further underline the importance of including multi-informant data in longitudinal parenting research.

Parenting in Interdependent Cultural Contexts

Psychological control and autonomy support are two components of parenting that have been related to social anxiety in independent-oriented Western cultures (McLeod et al., 2007; Wei & Kendall, 2014). However, there are inconsistent findings of effects of such two parenting practices in the interdependent-oriented Chinese culture (Marbell-Pierre et al., 2019; Pomerantz & Wang, 2009). The current study revealed that the significant longitudinal relations from psychological control to Chinese early adolescent social anxiety were only present in the girls' perceived maternal parenting model, and the coefficient effects were relatively small, which lends partial support to the cultural-specific perspective holding that psychological control is less detrimental in the interdependent cultural context (Liga et al., 2017). More specifically, in Chinese culture, parents use psychological control to regulate children's misbehavior through invoking children's feelings of guilt and humiliation, as well as to emphasize the social consequences of their misconduct. Such internally controlling tactics are an integral part of *Guan Jiao*, a type of control that has been argued to reflect parental concern rather than hostility or rejection (Fung & Lau, 2012). If such parenting behaviors are accepted by the cultural group, adolescents might not experience their parents as rejecting or punishing them, but rather as behaving in the way that parents are expected to behave (Lansford et al., 2018). Therefore, due to normative values of interdependence and obligations to others, such parenting strategies are likely to be less harmful in interdependent-oriented cultures than in independent-oriented Western cultures (Fung & Lau, 2012). However, future studies should further confirm that early adolescent perception or

interpretation of parenting behaviors alleviates the impact of the psychologically controlling parenting on social anxiety. Indeed, some researchers revealed that for Chinese adolescents who interpreted parental psychological control in a more positive way, parents' use of psychological control was not related to adolescent depressive symptoms (Cheah et al., 2019). The current study also indicated that early adolescent social anxiety predicted psychological control one year later, which was similar to the result from a study using cross-lagged panel models (Nelemans et al., 2020). It appears that early adolescents with greater social anxiety receive more psychologically controlling parenting rather than parenting that could provide support and decrease early adolescent social threat perceptions.

The results indicated that autonomy-supportive parenting alleviated early adolescent later social anxiety only in boys' perceived parenting models, which partially supports the relativist perspective on parenting that effects of autonomy support depend on cultural context (Soenens et al., 2015). Some scholars suggest that due to the value placed on group harmony and social hierarchy in China, children must learn to be obedient and respectful to authority, so that autonomy is not necessarily conducive to harmonious and close social relations; therefore, autonomy-supportive parenting may not have the same positive effects in interdependent Chinese culture as in independent-oriented Western cultures (Soenens et al., 2015; Tamis‐LeMonda et al., 2008). Similarly, a cross-cultural study showed that in collectivist-oriented Ghana, parental allowance of decision-making did not predict self-worth, depression, and academic engagement for adolescents (Marbell-Pierre et al., 2019). Overall, these findings suggest that future studies about parenting should take culturally relevant factors into account.

Mothers' and Fathers' Roles and Child Gender

In order to extend limited research on father effects, this study examined the relations between parenting and social anxiety separately for mothers and fathers. In line with the expectations, there were potentially differentiated contributions of paternal and maternal parenting to early adolescent social anxiety across boys and girls. Specifically, early adolescent girls' social anxiety was predicted by preceding perceived mothers' psychological control, but not by preceding fathers' psychological control. One possible explanations is the degree of early adolescent social anxiety symptoms. Previous research found that for early adolescents without social anxiety or with low social anxiety, mothers' behaviors were more influential than fathers', whereas for high socially anxious early adolescents, fathers' behaviors had more impact than mothers' behaviors (Bögels et al., 2011). In the sample of the current study, early adolescents had relatively low levels of social anxiety, such that fathers might not have salient impacts. However, when it comes to autonomy-supportive parenting behaviors, both perceived paternal and perceived maternal autonomy support negatively predicted later boys' social anxiety. It would be interesting for future studies to include children with varying levels of social anxiety in examining the underlying mechanisms of relations between different forms of parenting behaviors and unique roles of fathers and mothers.

In addition, the current results indicated child gender differences in the relations between early adolescent perception of parents' autonomy support and later social anxiety. Specifically, only boys' perception of autonomy support predicted lower social anxiety one year later. One possible explanation is that compared to boys, girls might be more likely to view themselves as being bonded to their parents, such that they may have a greater tendency to interpret autonomy promoted by parents as neglectful or lack of concern and caring (Worthen, 2011). Indeed, a study found that boys' parent-oriented interdependent self-construals decreased over time, whereas girls' remained stable (Pomerantz et al. 2009). For

adolescents with more interdependent self-construals, the more parents provide autonomy support involving allowance of decision-making, the higher their levels of depression (Marbell-Pierre et al., 2019).

Regarding child-driven effects, in line with the expectations, the findings showed that early adolescent social anxiety positively predicted mothers' subsequent reported psychological control. However, in paternal models, only girls' social anxiety predicted later, higher perceived fathers' psychological control. A recent research focusing on contemporary Chinese parenting profiles revealed that Chinese fathers are less authoritarian than mothers and use punitive parenting practices less often than mothers. Furthermore, Chinese fathers significantly outnumbered mothers in the supportive parenting profile (Xie et al., 2019). Therefore, fathers' psychologically controlling behaviors might be more likely to elicit children's perception, especially for girls, who are more sensitive to negative parenting than boys (Letcher et al., 2012).

Child- and Parent-Report

For parent effects, the results showed associations between child-reported parenting and social anxiety, not for parent-reported parenting, indicating that the impacts of parenting behaviors mainly depend on children's subjective feelings. Of note is that this study used children's self-report of social anxiety, so the significant relations between child-reported parenting and children's social anxiety could partly due to shared method variance (Brannick et al., 2010). Interestingly, for child effects, early adolescent social anxiety predicted high levels of mother-reported psychological control one year later, but did not predict early adolescent perception of their mothers' psychological control. These potential discrepancies between mothers' and early adolescent report of parenting behaviors might be due to unique cultural values. Specifically, maternal psychological control is more common in China than

in independent-oriented Western cultures (Helwig et al., 2014), and children might consider psychological control as mothers' concern rather than hostility (Fung & Lau, 2012), which might prevent children with higher social anxiety from being sensitive to high levels of maternal psychological control. The significant relations from girls' social anxiety to perceived paternal psychological control, however, seems contradict the argument that Chinese children might not tend to be sensitive to psychological control. Further research is needed to elucidate the underlying mechanisms of the effects of social anxiety on psychological control from multiple informants.

Strengths and Limitations

The current study has several significant strengths, such as the inclusion of both mothers and fathers, a longitudinal design, and a multi-informant approach, which provided cogent evidence for the effects of psychologically controlling and autonomy-supportive parenting in the Chinese context. Nevertheless, this study should be considered in light of some limitations. First, the study relied exclusively on questionnaires which could be biased (Smith, 2011). To overcome this limitation, future studies could measure parenting and children's social anxiety through another source, such as creating settings that might evoke children's social anxiety and observing interactions between parents and children (Majdandžić et al., 2014). Second, although these findings suggested potentially differentiated parental effects and reporter discrepancies, coefficient strengths were not directly compared within the same model, because in this study cross-lagged models were differentiated by maternal vs paternal parenting as well as child vs parent reported parenting. It might be more complex if multiple reports are also included in the same model, which may potentially cause the difficulty to interpret the results and potential multicollinearity problems (Grewal et al., 2004). Further studies are needed to draw conclusions on differentiated parental effects and reporter discrepancies. Third, China has undergone rapid social

development over the last ten years, which could potentially erode adolescent culture-specific interpretations of parenting behavior. Replication studies with updated data are therefore required to generalize the findings. Finally, although this study was conducted in China and discussed unique functions of psychologically controlling and autonomy-supportive parenting, specific cultural factors were not tested. Future studies could include measures of cultural factors and beliefs, such as children's interpretation of such parenting, perception of cultural normativeness and levels of self-construals in terms of independence. Such factors could be tested as moderators to explore how culture would relate to associations between parenting and children's psychological functioning (Cheah et al., 2019).

Conclusions

While research has begun to include both mothers and fathers as well as underrepresented cultural groups in development studies, mixed findings in the previous literature draw attention to the distinct roles of father and mother across child gender in early adolescent social anxiety in interdependent-oriented culture. This study provided important insights into reciprocal associations between parenting behaviors and early adolescent social anxiety in traditionally interdependent societies. Different from previous research using samples with independent-oriented Western populations, which indicated detrimental effects of parents' psychological control, the current study showed that psychological control is not detrimental to later early adolescent social anxiety in interdependent-oriented Chinese contexts, except for girls' perception of maternal psychological control with a relatively small effect. In addition, Chinese fathers' role in early adolescent development of social anxiety might not be as significant as expected. The findings of potential discrepancies in child- and parent-reported parenting confirm the need to use a multi-informant design to provide more comprehensive assessment of constructs. In conclusion, this study demonstrated longitudinal relations between parenting and early adolescent social anxiety in Chinese culture and the

findings are different from independent-oriented Western findings. Of note, however, is that the effects found in this study were relatively small, which requires replication studies in the future to draw robust conclusions. Moreover, future studies could focus more on cultural differences in parenting and child development, and take into account culturally related factors for exploring the influences of different parenting behaviors.

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Table 1

Model Comparison and Fit Indices.

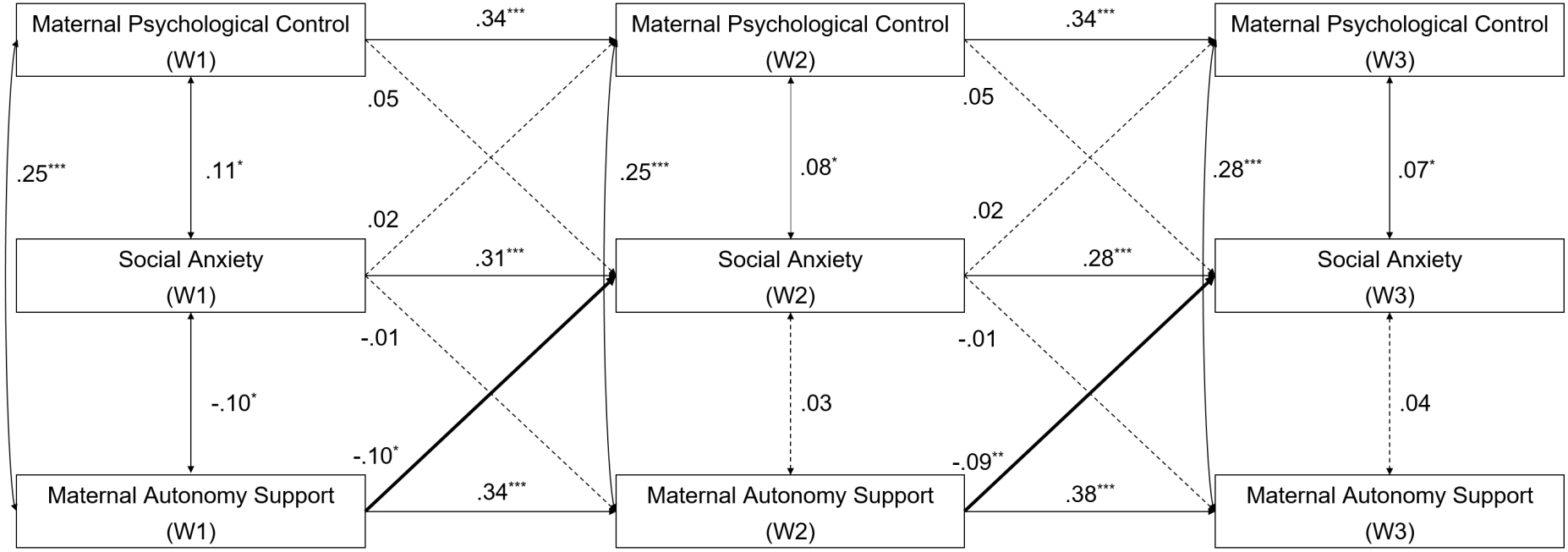
Model	χ^2	*df*	scf	AIC	BIC	CFI	TLI	RMSEA	SRMR	$\Delta\chi^2$ *p* value
Child-reported maternal parenting										
Model 1 unconstrained	73.02	25	1.01	36217.77	36691.42	0.96	0.87	0.04	0.04	
Model 2 constrained stability paths	72.00	28	1.02	36212.00	36670.53	0.96	0.89	0.04	0.04	0.98
Model 3 constrained covariance paths	76.60	31	1.04	36211.71	36655.13	0.96	0.90	0.04	0.04	0.18
Model 4 constrained cross-lagged paths	79.29	35	1.04	36206.97	36630.23	0.96	0.91	0.03	0.04	0.56
Multi group analyses for gender										
Unconstrained	116.32	70	1.03	36199.21	37045.73	0.96	0.91	0.04	0.04	
Constrained	191.69	117	1.01	36179.36	36789.05	0.94	0.92	0.03	0.05	**0.005**
Child-reported paternal parenting										
Model 1 unconstrained	65.69	25	1.00	36174.84	36648.49	0.97	0.88	0.04	0.03	
Model 2 constrained stability paths	65.50	28	1.02	36169.89	36628.42	0.97	0.91	0.04	0.03	0.83
Model 3 constrained covariance paths	70.55	31	1.03	36170.12	36613.52	0.97	0.91	0.03	0.04	0.15
Model 4 constrained cross-lagged paths	73.00	35	1.04	36164.97	36588.23	0.97	0.92	0.03	0.04	0.61
Multi group analyses for gender differences										
Unconstrained	117.32	70	1.02	36141.96	36988.47	0.96	0.91	0.04	0.04	
Constrained	187.99	117	1.00	36117.16	36726.86	0.94	0.92	0.03	0.05	**0.015**
Mother-reported maternal parenting										
Model 1 unconstrained	94.74	25	1.03	32967.59	33441.23	0.94	0.79	0.05	0.04	
Model 2 constrained stability paths	95.87	28	1.06	32965.29	33423.82	0.94	0.82	0.05	0.04	0.41
Model 3 constrained covariance paths	97.49	31	1.06	32961.15	33404.56	0.94	0.84	0.05	0.04	0.63
Model 4 constrained cross-lagged paths	101.04	35	1.06	32956.78	33380.04	0.94	0.86	0.04	0.05	0.48
Multi group analyses for gender differences										
Unconstrained	151.59	70	1.04	33026.98	33873.49	0.92	0.83	0.05	0.05	
Constrained	191.50	117	1.04	32974.35	33584.04	0.93	0.91	0.03	0.05	0.76
Father-reported paternal parenting										
Model 1 unconstrained	103.08	25	1.01	33445.12	33918.76	0.92	0.74	0.05	0.04	

Model 2 constrained stability paths	103.97	28	1.03	33442.46	33900.99	0.92	0.77	0.05	0.05	0.44
Model 3 constrained covariance paths	101.85	31	1.05	33436.72	33880.13	0.93	0.80	0.05	0.05	0.98
Model 4 constrained cross-lagged paths	107.87	35	1.05	33434.64	33857.90	0.92	0.82	0.04	0.05	0.21
Multi group analyses for gender differences										
Unconstrained	158.63	70	1.02	33463.87	34310.40	0.91	0.79	0.05	0.05	
Constrained	208.69	117	1.02	33422.06	34031.75	0.91	0.87	0.04	0.06	0.34

Note. Model fit indices are robust estimates. Significant chi-square differences between constrained and unconstrained models are bolded.

Figure 1.1

Reciprocal relations between boy-reported maternal parenting and social anxiety.

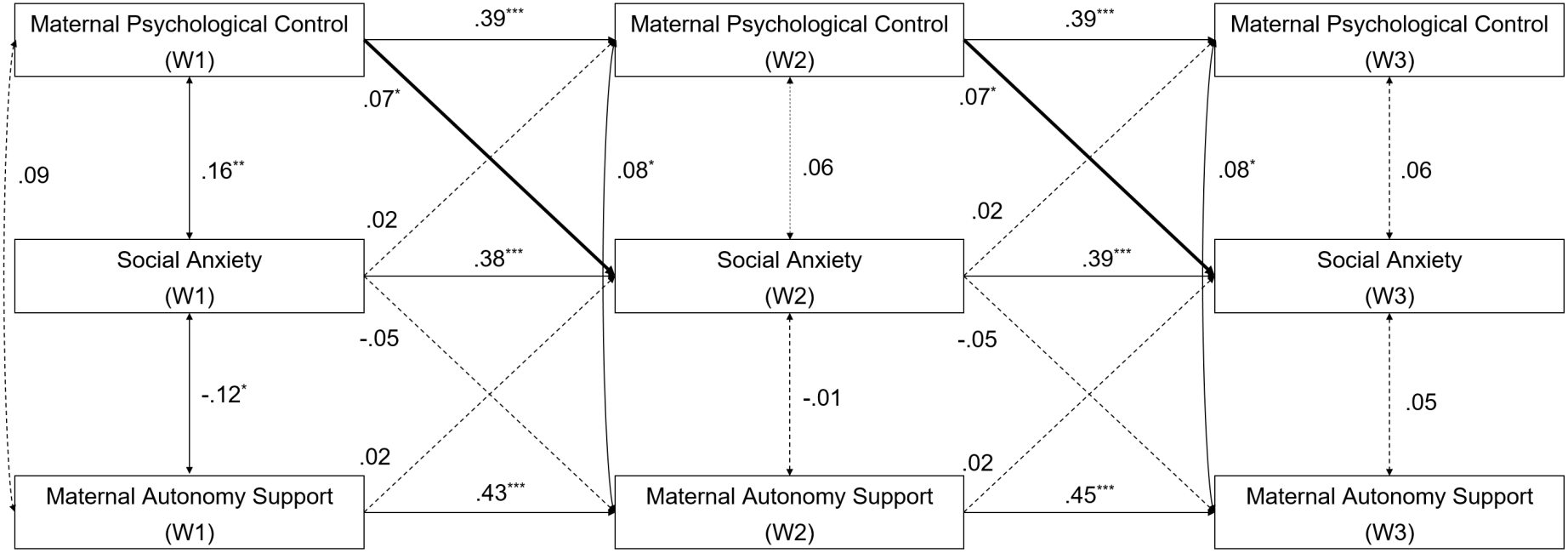


Note. Standardized coefficients are displayed. Significant paths are represented in solid lines.

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Figure 1.2

Reciprocal relations between girl-reported maternal parenting and social anxiety.

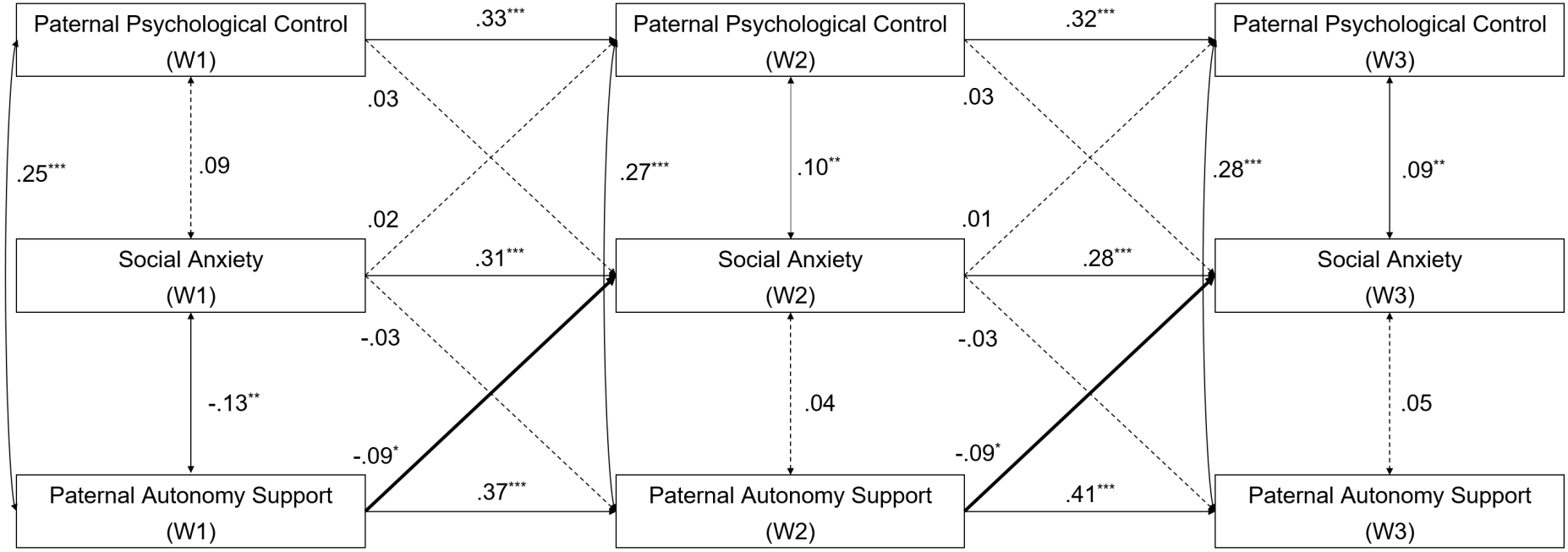


Note. Standardized coefficients are displayed. Significant paths are represented in solid lines.

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Figure 2.1

Reciprocal relations between boy-reported paternal parenting and social anxiety.

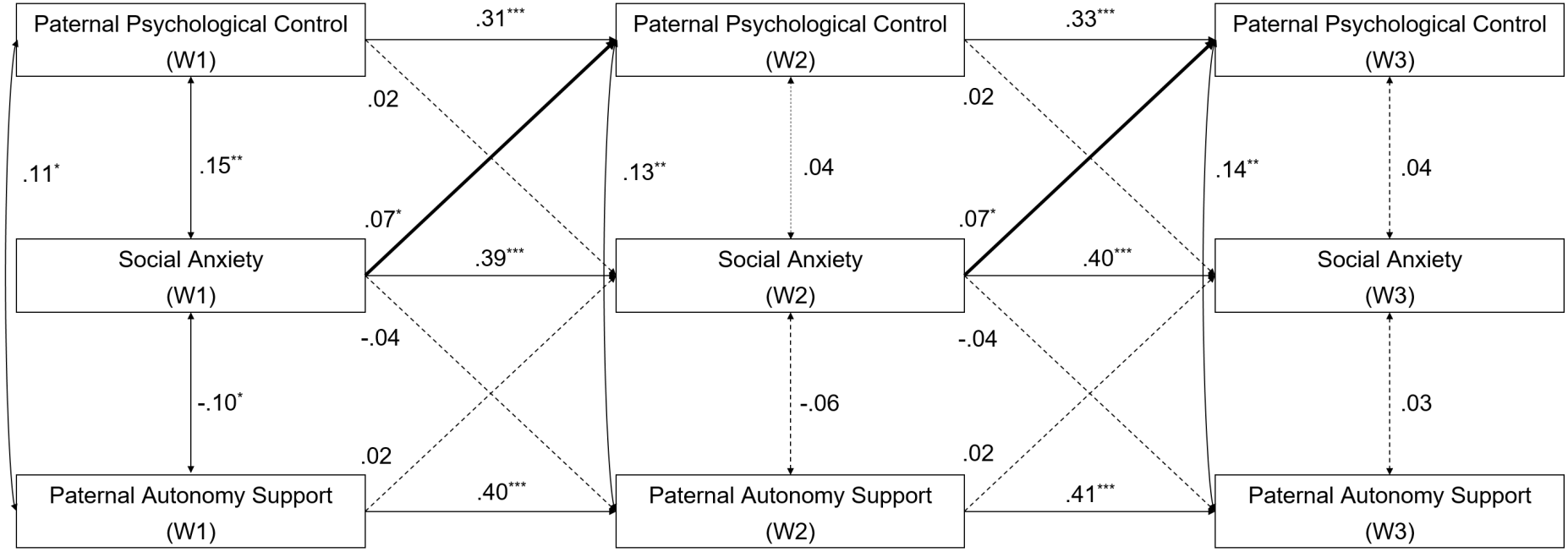


Note. Standardized coefficients are displayed. Significant paths are represented in solid lines.

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Figure 2.2

Reciprocal relations between girl-reported paternal parenting and social anxiety.

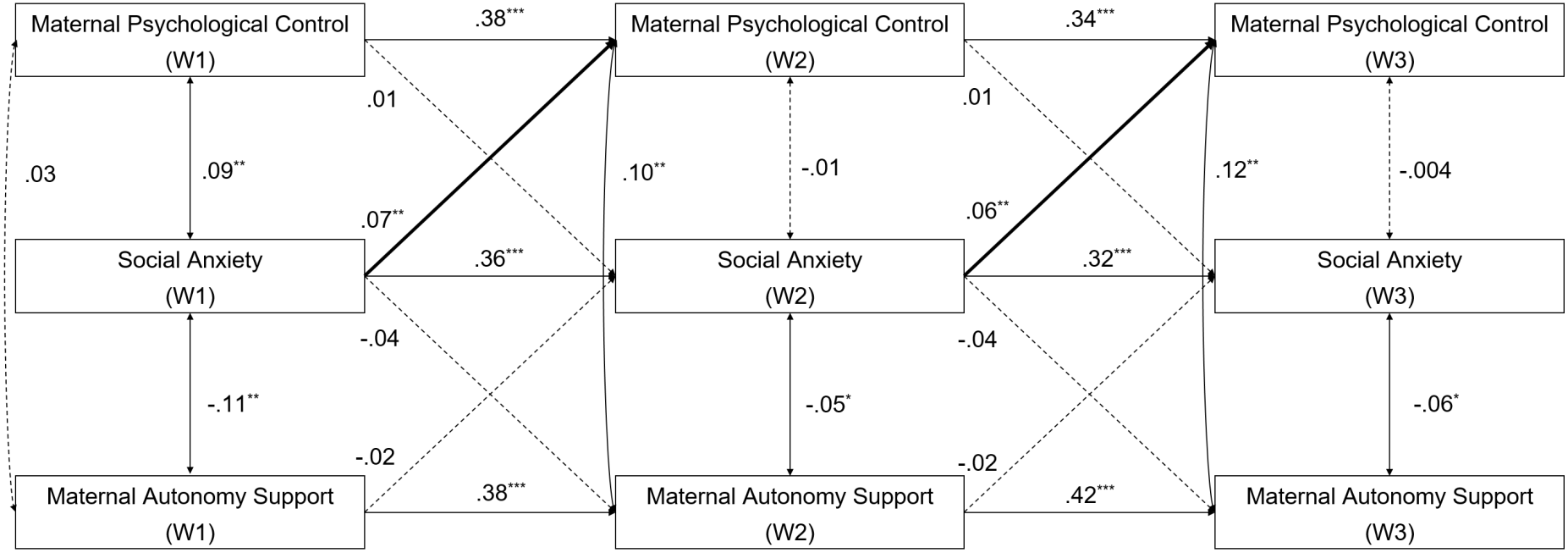


Note. Standardized coefficients are displayed. Significant paths are represented in solid lines.

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Figure 3

Reciprocal relations between mother-reported parenting and social anxiety.

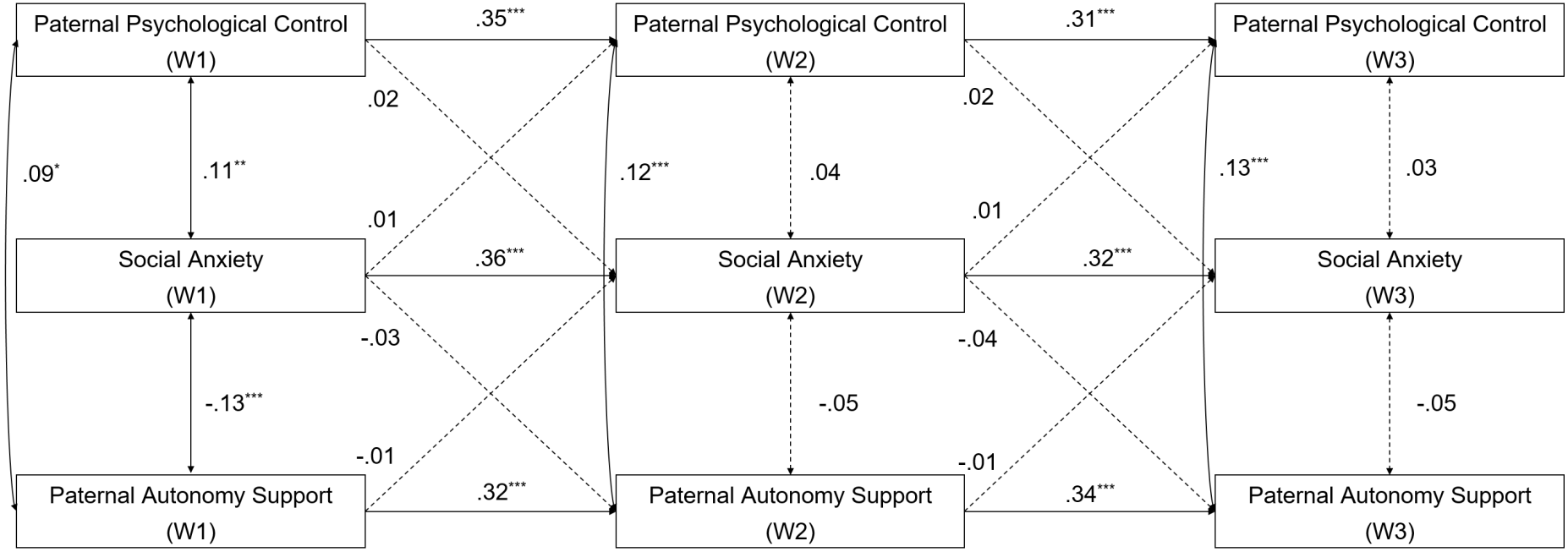


Note. Standardized coefficients are displayed. Significant paths are represented in solid lines.

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Figure 4

Reciprocal relations between father-reported parenting and social anxiety.



Note. Standardized coefficients are displayed. Significant paths are represented in solid lines.

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.