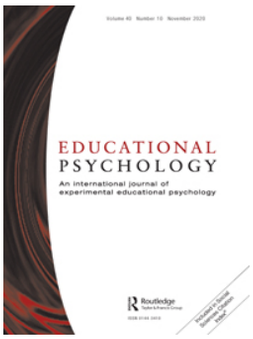

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Mothers' filial piety and children's academic achievement: the indirect effect via mother-child discrepancy in perceived parental expectations

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ABSTRACT

In the present study, we investigated the relationships among mothers' filial piety, mother-child discrepancy in perceived parental expectations, and children's academic achievement in 823 Chinese families. The results indicated that mothers' authoritarian filial piety hindered children's academic achievement, whereas reciprocal filial piety had no such effect. Compared to children whose reports of parental expectations were identical with their mothers, children whose reports were higher than their mothers had lower achievement. Mothers' reciprocal filial piety increased the odds of child-reported parental expectations that were lower than mother-reported parental expectations, while authoritarian filial piety increased the odds of child-reported parental expectations that were higher than mother-reported parental expectations. Furthermore, the indirect effect of authoritarian filial piety, via mother-child discrepancy, on academic achievement was significant. These findings highlight the importance of mothers' filial piety and mother-child discrepancy in perceived parental expectations in identifying culture-specific factors that influence academic achievement in China.

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Filial piety; the direction of mother-child discrepancy; parental expectations; academic achievement

Introduction

Filial piety is regarded as one of the most important virtues in Confucianism: it defines how children behave and treat their parents (Ho, 1996; Yeh & Bedford, 2003). Following the Confucian principles regarding filial piety, children should respect, love, and take care of their parents, respond to and meet their demands and submit to parental authority (Yeh, 2003). Given the high value placed on education in Confucian Heritage Culture (CHC), children's academic success is generally regarded as an essential way to repay their parents, because it gives the family a good reputation. For example, Mordkowitz and Ginsburg (1987) interviewed Asian-American college students and found that children tried to return love to their parents by doing their best in their academic work. Kim and Park (2006) reported that 62% of Korean students

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viewed studying as an obligation to please their parents. Therefore, some researchers have proposed that an emphasis on filial piety may enhance children's academic outcomes (Chow & Chu, 2007; Hui et al., 2011). However, recent studies have revealed that this relationship is much more complex than previously thought.

Yeh (2003) proposed that filial piety consists of two related but conceptually distinct aspects: reciprocity and authoritarianism. Reciprocal filial piety represents attending to and caring for one's parents out of spontaneous intimacy with and gratitude for parents. It arises from the desire for social affiliation. Conversely, authoritarian filial piety encompasses self-oppression and obedience to parental authority. It arises from the desire for collective identification (Yeh, 2003, 2006; Yeh et al., 2013). Previous empirical research has shown that the two aspects of filial piety have differential effects on children's academic achievement. In a study of 468 Taiwanese university students, Chen and Ho (2012) found that students' academic achievement improved when they perceived that their parents were heavily involved in and invested in their education, but only among those with reciprocal filial piety. Chen and Wong (2014), who directly examined the influence of filial piety on academic achievement among Hong Kong university students, found that reciprocal aspect of filial piety enhanced students' GPA, whereas authoritarian aspect diminished it.

These studies have mainly concentrated on the associations between students' filial piety and their own academic achievement. Little research, however, has considered the role of parents' filial piety. Developmental niche theory (Super & Harkness, 1986) proposes that each child develops within a culturally determined niche, and one important subsystem of the niche is parental ethnotheories, which refer to parents' cultural beliefs and values regarding childrearing. As a core value of normative socialisation in CHC, filial piety serves as a guiding principle for the way people interact not only with elders but also with their children. To a certain extent, it determines parents' beliefs regarding child development, their attitudes towards childrearing, and their parenting behaviours (Chao, 2000; Ismail et al., 2009). Hence, how a child develops may be influenced by parents' filial piety. Previous research has revealed that parents' filial piety was associated with children's autonomy motivation (Pan et al., 2013), subjective well-being (Lu et al., 2006), and psychosocial adjustment (Ismail et al., 2009). Moreover, it is through family socialisation processes that children learn beliefs about filial piety (Darling & Steinberg, 1993; Urdan et al., 2007), and the significant correlation between parents' and children's filial piety was confirmed in a recent study of Chinese culture (Li et al., 2016). Thus, parents' filial piety may have similar effects on academic achievement as children's own filial piety.

Parent-child discrepancy in perceived parental expectations and academic achievement

Contrary to the small number of studies on parents' filial piety, many studies of different cultures and ethnic groups have found a strong and positive association between parental expectations and children's academic performance (see Yamamoto & Holloway, 2010, for a review). Parental expectations are usually defined as realistic beliefs that parents hold concerning their children's future educational outcomes, such

as the highest level of schooling attained (Yamamoto & Holloway, 2010). Students whose parents set high educational goals for them usually perform better on exams, have higher grades, and demonstrate a greater likelihood of attending college (Benner & Mistry, 2007; Davis-Kean, 2005; Guo et al., 2018; Hossler & Stage, 1992). Longitudinal studies have further confirmed that parental expectations are a determining factor in students' subsequent academic performance and their highest educational attainment (Rutchick et al., 2009; Vartanian et al., 2007). Similar results are found in relation to children's perceived parental expectations (Au & Harackiewicz, 1986; Bowen et al., 2012). Au and Harackiewicz (1986) conducted an experimental study and found that Chinese children who perceived that their parents had high educational expectations tended to perform better on an arithmetic test. In a longitudinal study of sixth graders in North Carolina, students' perceptions of their parents' expectations were found to be an important determinant of their academic performance 3 years later, even after parental support was controlled for (Bowen et al., 2012).

Moreover, Gill and Reynolds (1999) investigated how parental expectations and children's perceptions of these expectations jointly influence school outcomes. Their results showed that both parents' actual expectations and children's perceived parental expectations had an independent predictive effect on mathematics and reading achievement in sixth grade. However, the correlation between parents' expectations and children's perceived parental expectations was not significant. This result indicated that parents' expectations for their children may not always be consistent with children's perceptions of those expectations. Findings from Wang and Benner's (2014) study provide more support for this assumption. Although their study did not directly compare parental expectations with children's perceived parental expectations, they found that parents' expectations were lower than adolescents' expectations of themselves, whereas adolescents' perceptions of parental expectations were higher than their own. It can be inferred that children's perceptions of their parents' expectations may be higher than the actual expectations.

Minuchin's family systems theory suggests that family members' distinct perspectives on family processes reflect family conflict, lack of cohesion, and disorganisation, which may in turn contribute to children's maladjustment (Minuchin, 1985). Empirical research has found that parent-child discrepancy in perceptions of family processes was associated with negative developmental outcomes in children, including academic outcomes (see a review by De Los Reyes, 2011). For example, a series of studies of poor families in China by Leung and his colleagues revealed that higher father-adolescent discrepancies in perceived parental responsiveness and higher mother-adolescent discrepancies in perceived parental control and sacrifice were related to lower achievement motivation in adolescents (Leung et al., 2016; Leung & Shek, 2014, 2016). Furthermore, research findings by De Los Reyes and his colleagues confirmed that mother-child reporting discrepancies in parental monitoring were positively associated with both internalising symptoms (e.g., depression) and externalising symptoms (e.g., disruptive behavior) in children (De Los Reyes et al., 2008, 2010). Thus, the inconsistency between parental expectations and children's perceived parental expectations may have negative impacts on children's academic achievement.

Filial piety and parent-child discrepancy in perceived parental expectations

Does parents' filial piety relate to parent-child discrepancy in perceived parental expectations? Based on Grusec and Goodnow (1994) model of value internalisation, the accuracy of children's perceptions of parental values is determined by the availability of parental information and the children's attention to the information. Because reciprocal filial piety is positively related to openness and self-disclosure (Yeh & Bedford, 2003), parents with reciprocal filial piety may discuss their expectations with their children openly, which can increase the availability of information. Meanwhile, because authoritarian filial piety emphasises obedience to parental demands, parents with authoritarian filial piety may explicitly express their demands and expectations regarding their children's education, which also can increase availability. However, as suggested by basic psychological needs theory, individual's intrinsic motivation depends upon the satisfaction of his or her needs for autonomy, competence, and relatedness (Deci & Ryan, 2000). The building warm and equal parent-child relationships, as advocated by reciprocal filial piety, can support children's need for autonomy and relatedness and thus enhance children's motivation to attend to their parents' messages. Conversely, authoritarian filial piety may reduce children's motivation to attend to their parents' messages as it emphasises hierarchy and submission, which may thwart the satisfaction of children's basic need. Indeed, previous studies have shown that adolescents' accuracy in perceiving parental values can be enhanced by parental warmth and responsiveness, which satisfy adolescents' needs for relatedness, and can be reduced by indifferent parenting and autocratic parenting, which leave adolescents' needs unfulfilled (Knafo & Schwartz, 2003). Accordingly, although both reciprocal and authoritarian filial piety can increase the availability of information regarding parental expectations, only reciprocal filial piety can help to capture children's attention. Therefore, parents' reciprocal filial piety may reduce the parent-child discrepancy in perceived parental expectations by promoting children's accurate perceptions of parental expectations, while authoritarian filial piety may not.

In addition, according to the developmental niche theory (Super & Harkness, 1986), parents' cultural beliefs and values can regulate child development by organising parental customs and practices of childrearing. Because parent-child discrepancy in perceived family processes has been found to associate with parenting style, parent-child relationships, and a lack of agreement between fathers and mothers (De Los Reyes & Kazdin, 2006; Knafo & Schwartz, 2003; Rohner et al., 2005), it can serve as a revealing window into the family environment and parenting practices. In view of the above-mentioned potential relationship of parent-child discrepancy in perceived parental expectations with parents' filial piety and children's academic achievement, parents' filial piety may have an indirect effect on children's academic development through its effect on parent-child discrepancy in perceived parental expectations.

The present research

The above-reviewed literature provides theoretical and empirical support for possible associations among parents' filial piety, parent-child discrepancy in perceived parental expectations, and children's academic achievement. However, these associations have

not been formally studied. Therefore, the current study aims to investigate: (a) the associations between parents' filial piety and children's academic achievement, (b) the associations between parent-child discrepancy in perceived parental expectations and children's academic achievement, (c) the associations between parents' filial piety and parent-child discrepancy in perceived parental expectations, and (d) the indirect effect of filial piety on academic achievement via parent-child discrepancy in perceived parental expectations.

Measuring the parent-child discrepancy in perceived parental expectations is of particular importance for this study. The difference score, which is calculated by subtracting the parents' reports from the children's reports, is the most commonly used approach for evaluating parent-child discrepancy (Laird & De Los Reyes, 2013). However, there are methodological problems and interpretative challenges in using difference score, such as low reliability, conceptual ambiguity, and untested constraints (Edwards, 1994, 2002; Laird & De Los Reyes, 2013). Recently, several researchers have proposed an alternative approach that separates the direction of the discrepancy from the magnitude of the discrepancy (Gallagher, 2016; Human et al., 2016; Lv et al., 2018; Nelemans et al., 2016; Wang & Benner, 2014). Focussing on the direction of parent-child discrepancy can avoid abovementioned methodological problems and can more simply and intuitively present the differences between parents' and children's reports. Moreover, a few studies that distinguished between the direction and magnitude of discrepancies have revealed the unique contribution of the direction to children's developmental outcomes beyond the magnitude (Gallagher, 2016; Human et al., 2016; Lv et al., 2018; Nelemans et al., 2016; Wang & Benner, 2014). For example, in a study on parent-adolescent discrepancy in educational expectations, Wang and Benner (2014) found that the degree (the absolute value of the difference score) of parent-adolescent discrepancy was negatively related to adolescents' academic grades. However, when the direction of the discrepancy was such that parental expectations were higher than adolescents' expectations, it was beneficial to adolescents' academic grades. The results indicate that the effects of parent-child discrepancies are not always negative and that the direction of discrepancies may play a decisive role in determining the positive or negative value of discrepancies. In addition, recent studies that aimed to identify distinct patterns of parent-child discrepancies in family processes consistently identified three distinct groups: children over-reported than parents, children under-reported than parents, and no discrepancies (De Los Reyes et al., 2010; Hou et al., 2018; Rote & Smetana, 2016). These results indicate that individual differences in parent-child discrepancies are mainly reflected in the direction of the discrepancy. Thus, we are especially interested in the direction of parent-child discrepancy in perceived parental expectations.

In addition, previous studies have confirmed the distinct roles and responsibilities that men and women have in the family. According to gender schema theory (Bem, 1974) and the gender-role orientations in CHC (Shek, 2002), women take more responsibility than men for raising and educating children. Moreover, research has revealed that the effect of parental expectations on children's development is stronger for mothers than for fathers (Henry et al., 2008; Smith, 1981). Therefore, in the present study, we will focus on mother-child dyads.

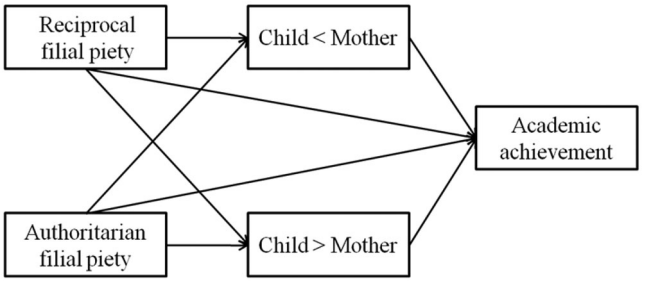

Figure 1. Conceptual model illustrating the hypothesised associations among filial piety, mother-child discrepancy in perceived parental expectations, and academic achievement.

Based on the literature review, we first hypothesised that mothers' higher reciprocal filial piety and lower authoritarian filial piety would relate to children's greater academic achievement. Second, we hypothesised that congruence between mother-reported and child-reported parental expectations would relate to children's greater academic achievement. Third, we hypothesised that mothers' reciprocal filial piety would contribute to congruence between mother-reported and child-reported parental expectations, while authoritarian filial piety would result in incongruence. Finally, we hypothesised that mother-child discrepancy in perceived parental expectations would act as an indirect mechanism through which filial piety affects academic achievement. These hypothesised associations are illustrated in Figure 1.

Method

Participants

The participants were 823 Chinese children and their mothers, who were recruited from primary schools in the city of Hengshui, located in Hebei province in northern China. In the child sample, 439 (53.3%) were boys, and 384 (46.7%) were girls; 304 (37.0%) were in 4th grade, 258 (31.3%) were in 5th grade, and 261 (31.7%) were in 6th grade. Approximately half of the children (50.1%, $n = 412$) were only children. The average age of participating children was 10.07 years (SD = 0.86). The average age of the participating mothers was 36.19 years (SD = 4.15). Regarding maternal education level, 41.9% had not finished high school, 26.4% had a high school degree, 30.4% had a 4-year college degree, and 1.3% had an education beyond the 4-year college level. A majority of the mothers (84.2%, $n = 693$) were currently working.

Procedure

All procedures were approved by the Institutional Review Board of [blinded for review]. Written informed consent to participate in the study was obtained from the parents of each child before enrolment. Children were measured during regular classes at school by trained research assistants (all of whom were postgraduate students studying psychology) and a teacher to ensure confidentiality and to provide assistance when needed. Mothers received a letter with information about the study, a consent

form and the mothers' questionnaire, and they completed the questionnaire at home. School administrators provided the children's grades.

Measures

Parental expectations

Children's perceptions of parental expectations were measured with a single item: 'How far in school do your parents want you to go?' and response ranged from 1 (less than high school) to 4 (more than 4-year college). Mothers' actual expectations for their children were measured with a single item: 'How far in school do you want your child to go?' on the same response.

Based on a comparison of parental expectations reported by the mothers and the children, the mother-child dyads were divided into three groups: (1) those in which the children's reports were identical to their mothers' reports (Child = Mother); (2) those in which the children's reports were higher than their mothers' reports (Child > Mother); and (3) those in which the children's reports were lower than their mothers' reports (Child < Mother).

Academic achievement

Academic achievement was determined based on school transcripts. The children's end-of-term grades (with the highest possible grade of 100) in reading and mathematics for the current year were used in this investigation. Scores were standardised within each grade to permit comparisons among grades (Cheung & Pomerantz, 2011). Reading scores and mathematics scores were averaged to form a single index of academic achievement.

Filial piety

Mothers' filial piety was measured by the Dual Filial Piety Scale-Chinese version (DFPS) (Yeh & Bedford, 2003), a 16-item measure with a six-point Likert response scale ranging from 'strongly disagree' to 'strongly agree'. Mothers indicated how important each statement was to them. Previous research has supported the validity and reliability of the DFPS (Yeh et al., 2013). In our sample, an analysis of internal consistency revealed that Cronbach's α for reciprocal and authoritarian filial piety were 0.84 and 0.68, respectively.

Covariates

Several child and mother characteristics that have been confirmed as being associated with parental beliefs or child outcomes (e.g., Davis-Kean, 2005; Guo et al., 2018; Wei et al., 2016) were used as covariates for the current study. We controlled for the children's sex (0 = boys, 1 = girls), the children's sibling status (0 = non-only child, 1 = only child), and the maternal education level. The information was collected from the mothers.

Data analyses

To examine the relationships among mothers' filial piety, mother-child discrepancy in perceived parental expectations, and children's academic achievement, we conducted four separate analyses. Children's gender, grade, and sibling status and maternal education level were used as control variables in all analyses.

First, the associations between mothers' filial piety and children's academic achievement were examined by hierarchical linear regression analysis, with control variables entered in step 1 and mother's filial piety entered in step 2.

Second, the associations between mother-child discrepancy in perceived parental expectations and children's academic achievement were examined by hierarchical linear regression analysis, with control variables entered in step 1 and mother-child discrepancy entered in step 2. In this analysis, mother-child discrepancy in perceived parental expectations was dummy-coded into two variables, 'Child < Mother' and 'Child > Mother', with 'Child = Mother' as the reference category.

Third, the associations between mothers' filial piety and mother-child discrepancy were examined by multinomial logistic regression, with mothers' filial piety and control variables entered simultaneously. In this analysis, the dependent variable—the direction of mother-child discrepancy—was a categorical variable with three levels (Child > Mother, Child = Mother, and Child < Mother), and 'Child = Mother' was taken as the reference category. Thus, multinomial logistic regression examined the following: (1) the extent to which filial piety increases or decreases the probability of being in the 'Child < Mother' group compared to being in the 'Child = Mother' group; (2) the extent to which filial piety increases or decreases the probability of being in the 'Child > Mother' group compared with being in the 'Child = Mother' group.

Finally, to test the indirect effect hypothesis, hierarchical linear regression analysis was conducted with control variables entered in step 1 and mothers' filial piety and mother-child discrepancy entered in step 2 as independent variables, following the procedures outlined by Baron and Kenny (1986). In this analysis, mother-child discrepancy was represented by two variables ('Child > Mother' and 'Child < Mother'), as previously mentioned. The indirect effect was tested using the bias-corrected bootstrap method with 10000 bootstrap samples and 95% confidence intervals.

SPSS (Statistical Product and Service Solutions, developed by IBM corporation) version 22.0 was used for all statistical analyses in this study. All continuous variables were standardised before analysis.

Results

Preliminary analysis

Descriptive statistics and zero-order correlations among all study variables were presented in Table 1. Children's academic achievement was negatively correlated with mothers' authoritarian filial piety, positively correlated with mothers' and children's reports of parental expectations, and not correlated with mothers' reciprocal filial piety.

Table 1. Descriptive statistics and intercorrelations for all study variables.

	1	2	3	4	5	6	7	8	9
1. Child gender	–								
2. Child grade	−0.01	–							
3. Child sibling status	−0.18***	−0.08*	–						
4. Maternal education	−0.00	−0.08*	0.22***	–					
5. Reciprocal filial piety	−0.04	0.03	0.02	−0.07	–				
6. Authoritarian filial piety	−0.02	0.01	−0.07	−0.11**	0.21***	–			
7. Mother actual expectations	0.05	−0.08*	0.15***	0.20***	0.11**	−0.08*	–		
8. Child perceived expectations	0.05	−0.07*	0.06	0.08*	0.02	0.04	0.11**	–	
9. Academic achievement	0.09*	0.03	0.11**	0.24***	−0.00	−0.13***	0.23***	0.10**	–
M	0.47	4.95	0.50	1.91	5.06	3.02	3.42	3.56	0.00
SD	0.50	0.83	0.50	0.88	0.68	0.72	0.58	0.56	0.89

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

Mother-child discrepancy in perceived parental expectations

A small number of children reported parental expectations less than high school (0.1%) or high school (3.2%). A total of 37.7% of children reported 4-year college expectations, and 59.1% reported more than 4-year college expectations. Similarly, a minority of mothers reported expectations for their children of less than high school (0.9%) or high school (1.9%), while 51.8% of mothers reported 4-year college expectations, and 45.4% of mothers reported more than 4-year college expectations. On average, children perceived that parents expected them to attend 4-year college (M = 3.56, SD = 0.56), while their mothers actually held lower expectations (M = 3.42, SD = 0.58). The difference between children's and mothers' reports was significant, $t = 5.21$, $p < .001$, Cohen's $d = 0.24$, and these two types of reports were slightly correlated with each other, $r = 0.11$, $p < .01$. Concerning the direction of the mother-child discrepancy, 147 (17.9%) children's reports of parental expectations were lower than their mothers' reports, 423 (51.4%) children's reports were identical to their mothers' reports, and 253 (30.7%) children reported higher parental expectations than their mothers did.

Associations between mothers' filial piety and children's academic achievement

Hierarchical linear regression analysis (see Table 2, Model 2) showed that mothers' authoritarian filial piety negatively predicted their children's academic achievement ($\beta = -0.11$; $p < .01$), while mothers' reciprocal filial piety did not predict their children's academic achievement ($\beta = 0.03$; $p > .05$).

Associations between mother-child discrepancy and children's academic achievement

Hierarchical linear regression analysis (see Table 2, Model 3) showed that the 'Child > Mother' direction was a significant predictor of academic achievement ($\beta = -0.13$; $p < .001$). This indicated that the children whose reports of parental expectations were higher than their mothers' reports had lower academic achievement than the children whose reports were identical with their mothers' reports. Meanwhile, the 'Child < Mother' direction did not predict academic achievement ($\beta = -0.04$; $p > .05$),

Table 2. Results of hierarchical linear regression analyses predicting academic achievement.

	Model 1	Model 2	Model 3	Model 4
Step 1				
Child gender	0.10**	0.10**	0.10**	0.10**
Child grade	0.05	0.05	0.05	0.05
Child sibling status	0.09*	0.09*	0.09*	0.09*
Maternal education	0.23***	0.23***	0.23***	0.23***
Step 2				
Reciprocal filial piety		0.03		0.03
Authoritarian filial piety		−0.11**		−0.09**
Child < Mother			−0.04	−0.04
Child > Mother			−0.13***	−0.12**
R^2	0.08	0.09	0.09	0.10
ΔR^2		0.01**	0.01**	0.02***
F	17.55***	13.43***	13.98***	11.57***

which indicated that the academic achievement of the children whose reports were lower than their mothers' reports was not significantly lower than that of the reference group.

Associations between mothers' filial piety and mother-child discrepancy

The results of multinomial logistic regression indicated that mothers' filial piety can predict the direction of mother-child discrepancy ($\chi^2 = 32.39$, $df = 14$, $p < .01$). The odds ratio (*OR*) was used as a measure of the association between the explanatory variables and the direction of the mother-child discrepancy (see Table 3). Specifically, a higher level of maternal reciprocal filial piety increased the odds of being in the 'Child < Mother' group rather than the 'Child = Mother' group ($OR = 1.23$; $p < .05$), while a higher level of maternal authoritarian filial piety increased the odds of being in the 'Child > Mother' group rather than the 'Child = Mother' group ($OR = 1.22$; $p < .05$). In other words, when mothers' reciprocal filial piety increased by 1 SD, children were 1.23 times more likely to report lower levels of parental expectations than their mothers than to report identical parental expectations to their mothers. In contrast, when mothers' authoritarian filial piety increased by 1 SD, children were 1.22 times more likely to report higher levels of parental expectations than their mothers than to report identical parental expectations to their mothers.

Indirect effects of filial piety on academic achievement via mother-child discrepancy

According to the guidelines of Baron and Kenny (1986), the above results show that the preconditions for testing the indirect effect of mothers' filial piety on children's academic achievement were fulfilled. Hierarchical linear regression with both mothers' filial piety and parent-child discrepancy as independent variables (see Table 2, Model 4) showed that the direct effect of mothers' authoritarian filial piety on children's academic achievement was still significant even when parent-child discrepancy were controlled ($\beta = -0.09$; $p < .01$). The results of bootstrapping analyses indicated that the indirect effect of authoritarian filial piety on academic achievement via the 'Child > Mother' direction was significant ($\beta = -0.011$, 95%CI [−0.025, −0.004]).

Table 3. Multinomial logistic regression: effect of mothers' filial piety on the direction of mother-child discrepancy in perceived parental expectations.

				95% CI for odds ratio	
Group	*B*	SE	Odds ratio Exp (B)	Lower bound	Upper bound
Child < Mother vs. Child = Mother					
Intercept	−1.19	0.24			
Reciprocal filial piety	0.21	0.10	1.23*	1.00	1.51
Authoritarian filial piety	−0.06	0.10	0.95	0.78	1.15
Maternal education	0.04	0.10	1.04	0.87	1.29
Child gender (boys)	0.13	0.20	1.13	0.77	1.67
Child gender (girls)	0				
Child grade (4th grade)	0.37	0.23	1.45	0.92	2.28
Child grade (5th grade)	0.00	0.25	1.00	0.61	1.64
Child grade (6th grade)	0				
Only child	−0.22	0.20	0.81	0.54	1.20
Non-only child	0				
Child > Mother vs. Child = Mother					
Intercept	−0.74	0.20			
Reciprocal filial piety	−0.11	0.08	0.90	0.77	1.06
Authoritarian filial piety	0.20	0.08	1.22*	1.04	1.44
Maternal education	−0.19	0.08	0.83*	0.68	0.95
Child gender (boys)	0.05	0.16	1.05	0.76	1.44
Child gender (girls)	0				
Child grade (4th grade)	0.26	0.20	1.29	0.88	1.91
Child grade (5th grade)	0.24	0.20	1.27	0.86	1.89
Child grade (6th grade)	0				
Only child	0.01	0.17	1.01	0.72	1.41
Non-only child	0				

Notes. CI: confidence interval.

Discussion

The current study explored the associations among mothers' filial piety, mother-child discrepancy in perceived parental expectations and children's academic achievement in China. The results supported some of the hypothesised associations. First, mothers' authoritarian filial piety negatively predicted children's academic achievement, whereas reciprocal filial piety could not predict academic achievement. Second, the 'Child > Mother' direction in perceived parental expectations, but not the 'Child < Mother' direction, was related to the children's academic achievement. Third, both maternal authoritarian and reciprocal filial piety were related to the direction of mother-child discrepancy in perceived parental expectations. Finally, maternal authoritarian filial piety had an indirect effect on children's academic achievement through the 'Child > Mother' direction in perceived parental expectations.

Previous research has suggested that parent-child discrepancies in perceived family processes, regardless of their direction, may have negative effects on children's development (De Los Reyes et al., 2008, 2010; Leung & Shek, 2014, 2016). Our findings extend the results of previous studies by demonstrating that the direction of the discrepancy plays an important role in determining its effects on outcome variables. Specifically, compared to children whose reports were identical to their mothers' reports, children whose reports were higher than their mothers' had worse academic achievement, but this was not true for children whose reports were lower than their mothers'. These results were partially consistent with our hypothesis.

Children's academic stress could be one possible explanation for the negative association between the 'Child > Mother' direction and academic achievement. Students report higher levels of distress and social maladjustment when they perceive that they are not fulfilling parents' high expectations (Agliata & Renk, 2008, 2009). It is well known that Chinese parents hold high educational goals for their children (Hao & Bonstead-Bruns, 1998; Oishi & Sullivan, 2005). Therefore, children who perceive unrealistically high parental expectations may experience more academic stress, and this stress may take a toll on their academic performance (Elias et al., 2011; Liu & Lu, 2011).

Another explanation could be related to the dissonance between what mothers say and what they actually do. On the one hand, children's perceived parental expectations are influenced by the frequency and content of the value discussions they have with their parents regarding education (Grusec & Goodnow, 1994; Okagaki & Bevis, 1999; Smith, 1991). High levels of children's reports of perceived parental expectations reflect parents' emphasis on doing well academically. On the other hand, parental expectations determine the extent to which parents actually become involved in their children's studies (Guo et al., 2018; Halle et al., 1997; Yamamoto & Holloway, 2010). High levels of parents' reports of parental expectations reflect parents' high educational investment and involvement. Thus, the discrepancies in which children's reports were higher than their mothers' reports indicate that those mothers stress the importance of good grades but provide very limited academic support for their children; thus, the resulting gaps may compromise children's academic achievement. In contrast, when children do not perceive high expectations from their parents, they may not feel stressed. Meanwhile, children can benefit from their mothers' actual high expectations, as high parental expectations can foster greater parental involvement in children's academic activities.

Concerning the association between mothers' filial piety and mother-child discrepancy in perceived parental expectations, it was found that mothers' reciprocal filial piety increased the odds of child-reported parental expectations that were lower than the mother-reported parental expectations, while authoritarian filial piety increased the odds of child-reported parental expectations that were higher than the mother-reported parental expectations. These results were somewhat different from our hypothesis. On the one hand, the negative effect of authoritarian filial piety on the congruence between mother-reported and child-reported parental expectations was confirmed, which was in line with basic psychological needs theory (Deci & Ryan, 2000). Several studies have revealed significant associations between authoritarian filial piety and negative parenting behaviours such as harshness or psychological control (Ho, 1994; Pan et al., 2013; Yeh, 2003). Thus, authoritarian filial piety may therefore alienate children from their mothers, thereby reducing children's opportunities and motivations to communicate and accept parental beliefs.

In addition, because authoritarian filial piety is motivated by a need for collective identification and emphasises hierarchy and rigid role requirements (Yeh et al., 2013), children in such an environment may be more susceptible to social stereotypes of parents when they form perceptions of parental expectations, such as the Chinese cultural belief of 'wang zi cheng long (hope that one's child will become a dragon—achieve high above

other people)'. Moreover, authoritarian filial piety emphasises children's obligation to maintain the family reputation and honour their parents and ancestors through extraordinary achievements (Yeh, 2003, 2006). Thus, mothers with high levels of authoritarian filial piety may have a tendency to express such beliefs more often in daily life, and it is easy for children to get the incorrect impression that their mothers hold high expectations for them.

However, on the other hand, the presence of a higher level of maternal reciprocal filial piety also resulted in incongruence between the mothers' and children's reports of parental expectations. There are two possible explanations for this result. One is that mothers with reciprocal filial piety do not advocate for their children's unconditional obedience to parental demands and sacrifice of their own desires (Yeh, 2003, 2006). Instead of talking openly and explicitly about their expectations for their children, mothers with reciprocal filial piety may be more inclined to encourage children to express their own opinions to prevent them from sacrificing their own wishes in favour of the wishes of their parents.

Another possibility is that mothers endorsing reciprocal filial piety may pay special attention to their children's feelings and emotions because reciprocal filial piety emphasises fulfilling the need for emotional intimacy on both sides (Yeh et al., 2013). High expectations from parents can burden children and thereby cause psychological problems. For example, Rutherford (2015) found a connection between parents' high expectations and children's low emotional well-being. Consequently, even if they have high expectations for their children, mothers with reciprocal filial piety may not transmit this belief to their children to avoid negative effects. It may lead to children having perceiving their mother's expectations as lower than they actually are. This can also explain why no positive association was found between mothers' reciprocal filial piety and children's academic achievement. Mothers with reciprocal filial piety are unlikely to encourage their children to see academic achievement as a way to pay back their parents; instead, they prioritise spontaneous affection and warm interpersonal connections (Yeh, 2003).

The findings from the indirect effects analysis supported our hypothesis by showing that mothers' authoritarian filial piety had an indirect effect on children's academic achievement via the 'Child > Mother' direction in perceived parental expectations. This result indicated that children whose mothers endorsed authoritarian filial piety were more likely to perceive higher-than-actual parental expectations, and this incongruence, in turn, was related to worse academic performance among children. The data confirmed the developmental niche theory that parental ethnotheories, such as filial piety, shape child development through their influence on the parenting practices and family environment. In addition, the partial indirect effect model suggests that there are other potential mediating factors between mothers' authoritarian filial piety and children's academic achievement. For example, as mentioned earlier, parents with authoritarian filial piety usually have more conflicts with their children (Yeh & Bedford, 2004) and tend to use authoritarian parenting behaviours, such as harshness and psychological control (Ho, 1994; Pan et al., 2013; Yeh, 2003), which may also lead to children's poor academic achievement.

The implications of these findings are that authoritarian filial piety could hinder children's academic achievement via its negative effect on parent-child interactions.

It is certain that filial beliefs and attitudes should still be encouraged and continued in modern China. However, given the negative influences of authoritarianism and its inadaptability to modern society, the authoritarian aspect of filial piety should be weakened, while the reciprocal aspect of filial piety should be emphasised. Moreover, parents should be aware that their filial beliefs and attitudes not only determine their relationship with their parents but also affect how they interact with their children, which, in turn, affects children's developmental outcomes. Therefore, it is important for parents to establish an intimate and reciprocal relationship with their children. In addition, psychologists and teachers need to communicate to parents that it is not just the parents' high educational expectations that are important, but also the accurate transmission of these expectations to the children.

Several shortcomings of this study should be acknowledged. First, due to the limitations of cross-sectional data, a causal relationship cannot be determined. Future studies should explore issues such as how parents' filial piety influences children's future academic performance or their final educational attainment. Another limitation of the present study is that the perceived parental expectations reported by the children did not distinguish between mothers and fathers. Although the mother is the primary caregiver in most families, the important role of the father should not be neglected. Future research should address children's reports of both fathers' and mothers' expectations. The third limitation is that we obtained the data on mothers' filial piety via self-report, which could be affected by social approval biases. Information from other informants, such as children or other family members is desirable. Fourth, the current study was based on a Chinese sample only. It would be interesting to verify this study in other ethnic groups and cultures to test whether the result has cross-cultural consistency. Moreover, future research should explore other possible impacts of parent-child discrepancies on children's development beyond academic achievement.

Conclusion

The current study contributes to the existing literature on filial piety by exploring the impact of filial piety on children's academic achievement from the perspective of parents, and by considering the indirect effect of filial piety through parent-child discrepancy in perceived parental expectations. Moreover, we applied Yeh and Bedford's (2003) dual-factor model to determine whether reciprocal and authoritarian aspects of filial piety have different impacts on outcomes. In particular, our study indicated that mothers' reciprocal filial piety did not relate to academic achievement, whereas authoritarian filial piety related to poor academic achievement. Moreover, the negative effect of authoritarian filial piety can be explained by the indirect mechanism through which authoritarian filial piety increased the odds of children's perceived maternal expectations being higher than their mothers' actual expectations, which in turn hindered the children's academic achievement. This may be because the hierarchical structure and pressure of role requirements represented by authoritarian filial piety cannot meet the psychological needs of children.

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