

# FILIAL PIETY AS A UNIVERSAL CONSTRUCT: FROM CULTURAL NORMS TO PSYCHOLOGICAL MOTIVATIONS

EDITED BY: Olwen Bedford, Kuang-Hui Yeh and Chee-Seng Tan  
PUBLISHED IN: Frontiers in Psychology





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ISSN 1664-8714

ISBN 978-2-83250-081-1

DOI 10.3389/978-2-83250-081-1

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# FILIAL PIETY AS A UNIVERSAL CONSTRUCT: FROM CULTURAL NORMS TO PSYCHOLOGICAL MOTIVATIONS

Topic Editors:

**Olwen Bedford**, National Taiwan University, Taiwan

**Kuang-Hui Yeh**, Academia Sinica, Taiwan

**Chee-Seng Tan**, Universiti Tunku Abdul Rahman, Malaysia

**Citation:** Bedford, O., Yeh, K.-H., Tan, C.-S., eds. (2022). Filial Piety as a Universal Construct: From Cultural Norms to Psychological Motivations. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-83250-081-1

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EDITED AND REVIEWED BY  
Yulia Chentsova Dutton,  
Georgetown University, United States

\*CORRESPONDENCE  
Olwen Bedford  
olwen.bedford@gmail.com

SPECIALTY SECTION  
This article was submitted to  
Cultural Psychology,  
a section of the journal  
Frontiers in Psychology

RECEIVED 28 June 2022  
ACCEPTED 03 August 2022  
PUBLISHED 16 August 2022

CITATION  
Bedford O, Yeh K-H and Tan C-S  
(2022) Editorial: Filial piety as a  
universal construct: From cultural  
norms to psychological motivations.  
*Front. Psychol.* 13:980060.  
doi: 10.3389/fpsyg.2022.980060

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# Editorial: Filial piety as a universal construct: From cultural norms to psychological motivations

Olwen Bedford<sup>1\*</sup>, Kuang-Hui Yeh<sup>1,2</sup> and Chee-Seng Tan<sup>3</sup>

<sup>1</sup>Department of Psychology, National Taiwan University, Taipei, Taiwan, <sup>2</sup>Institute of Ethnology, Academia Sinica, Taipei, Taiwan, <sup>3</sup>Department of Psychology and Counseling, Tunku Abdul Rahman University, Kampar, Malaysia

## KEYWORDS

filial piety, adolescent wellbeing, intergenerational relations, authoritarian parenting, self-esteem, adolescent development, parent-child relations, Chinese culture

## Editorial on the Research Topic

Filial piety as a universal construct: From cultural norms to psychological motivations

Social science researchers often define *filial piety* as a set of norms, values, and practices regarding how children should behave toward their parents. In contrast, this Research Topic features a contextualized personality approach to the study of filial piety, the **Dual Filial Piety Model** (DFPM; Yeh and Bedford, 2003, 2004), which focuses on two universal human motivations in the context of the parent-child relationship: **reciprocal** filial piety (RFP: reflecting the need for interpersonal relatedness in terms of emotional safety and affective bonding with parents through expressions of love and affection) and **authoritarian** filial piety (AFP: reflecting the need for social belonging and collective identity by avoiding punishment and gaining social rewards through learning to obey parental demands and social norms). The focus on universal motivations extends the scope of filial piety research from Confucian societies to cross-cultural investigations and encompasses domains from adolescent development and psychosocial adjustment to intergenerational relations, population aging, and eldercare.

The 10 articles in this Research Topic demonstrate this scope by investigating four interrelated themes (1) mechanisms of parent-child interaction, (2) individual socio-emotional development and adaptation, (3) the link between individual differences in filial piety and the wider socio-demographic context, and (4) cross-cultural/national comparisons. Five articles investigated Chinese societies: Wu and Yeh examined the strategies Taiwanese adolescents use to practice filial piety when in conflict with their parents. Their findings broaden the understanding of filial piety in modern Chinese societies and have implications for adolescents' wellbeing and family life.

Lin and Wang explored the roles of parenting style and social ecology in the development of filial piety and examined all possible bidirectional paths with longitudinal data from China. Their work bridged filial piety and mainstream parenting theory and provided a comprehensive picture of parent-child interaction within the DFPM. Guo M. et al. demonstrated the differential role of the two filial motivations in mediating the relationships of parental autonomy support and parental control to academic autonomous motivation for adolescents in China. Guo X. et al. investigated the mechanism linking filial piety motivation and early adolescent psychosocial development by focusing on the unique effects of each aspect of filial piety on academic achievement and subjective wellbeing for adolescents in China. Pan and Tang found that for adolescents in China, RFP alleviated depressive symptoms by enhancing cognitive autonomy and reducing academic pressure, whereas AFP exacerbated depressive symptoms by hampering cognitive autonomy and increasing academic pressure.

Five articles extended the DFPM to non-Confucian societies: Zheng et al. applied the DFPM to moral psychology and culture (China and Indonesia). They examined four psychological mediators in the link between dual filial piety and altruistic behavior, as well as the moderating effects of nation on each mediating path (an alternative method of comparing cultures). Both types of filial piety facilitated development of prosocial behavior through different mediating paths conditioned by culture. Qiao et al. found that filial piety has an indirect relationship with moral disengagement through the dark triad personality among university students from Chinese and Islamic societies. Machiavellianism mediated the negative relationship between RFP and moral disengagement, and narcissism mediated the positive relationship between AFP and disengagement. Nainee et al. applied the Malaysian version of the Dual Filial Piety Scale (DFPS) to elucidate the relationships among parenting style, filial piety, and life satisfaction for adolescents in Malaysia. The results highlighted the benefits of culture-infused parenting. Tran et al. translated the DFPS into Polish and tested its psychometric properties. They demonstrated the factor structure invariance of the scale across gender and student-employee groups and the anticipated gender

difference in attitudes. This work extends the cross-cultural validity of the DFPM to Eastern Europe, and provides a counterpoint the standard paradigm of East-West differences. Lim et al. applied an English version of the DFPS to Asian and Caucasian Americans. Their work demonstrated the cross-cultural applicability of the model and the potential to reflect significant filial differences within an individualist society.

In sum, these 10 studies covered diverse samples from different cultures with four different language versions of the DFPS (Chinese, English, Polish, and Malay) to demonstrate theoretically consistent results that broaden the understanding of filial piety in modern societies. These studies provide evidence to support the rationale for redefining filial piety as a universal psychological construct, and also overturn some cultural stigmas associated with the traditional conceptualization of Chinese filial piety by demonstrating positive implications of filial piety through the DFPM perspective.

## Author contributions

OB, K-HY, and C-ST contributed to summarizing the articles in the topic and writing the editorial. All authors contributed to the article and approved the submitted version.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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# Self-Sacrifice Is Not the Only Way to Practice Filial Piety for Chinese Adolescents in Conflict With Their Parents

Chih-Wen Wu<sup>1</sup> and Kuang-Hui Yeh<sup>2,3\*</sup>

<sup>1</sup> Department of Human Development & Family Studies, National Taiwan Normal University, Taipei, Taiwan, <sup>2</sup> Institute of Ethnology, Academia Sinica, Taipei, Taiwan, <sup>3</sup> Department of Psychology, National Taiwan University, Taipei, Taiwan

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### Edited by:

Fanli Jia,  
Seton Hall University, United States

### Reviewed by:

Peizhen Sun,  
Jiangsu Normal University, China  
Li Lin,  
Hong Kong Polytechnic University,  
Hong Kong

### \*Correspondence:

Kuang-Hui Yeh  
ykh01@gate.sinica.edu.tw

### Specialty section:

This article was submitted to  
Cultural Psychology,  
a section of the journal  
Frontiers in Psychology

**Received:** 30 January 2021

**Accepted:** 20 April 2021

**Published:** 14 May 2021

### Citation:

Wu C-W and Yeh K-H (2021)  
Self-Sacrifice Is Not the Only Way  
to Practice Filial Piety for Chinese  
Adolescents in Conflict With Their  
Parents. *Front. Psychol.* 12:661335.  
doi: 10.3389/fpsyg.2021.661335

We applied the theoretical perspective of the dual filial piety model to consider the diversity of parent–child conflict resolution strategies in order to determine whether Chinese adolescents use strategies other than self-sacrifice to practice filial piety when in conflict with their parents. Study 1 utilized a cross-sectional design with 247 valid responses. The structural equation modeling analysis indicated that Taiwanese adolescents' authoritarian filial piety (AFP) beliefs are positively related to use of a self-sacrifice strategy, and reciprocal filial piety (RFP) beliefs are positively related to use of compatibility and compromise strategies. Adolescents' AFP and RFP beliefs are negatively related to use of utility and escape strategies. Study 2 applied a temporal separation procedure with a 1-year lag to remedy common method variance bias. Analysis of 1,063 valid responses replicated the findings of Study 1 and indicated that adolescents' function-oriented appraisal of conflict can play a mediating role between RFP and the use of the compatibility and compromise strategies. These findings broaden the understanding of filial piety in modern Chinese societies and have implications for adolescents' well-being and family life.

**Keywords:** filial piety, function-oriented appraisal of conflict, interpersonal conflict resolution strategy, parent–adolescent conflict, dual filial piety model

## INTRODUCTION

Conflict with parents is quite common in adolescence (Laursen and Collins, 2009). Researchers have focused on the different strategies adolescents tend to use to resolve conflict with parents (e.g., Van Doorn et al., 2008), and on the antecedent factors such as parental behavior (e.g., Merolla and Kam, 2017) that could influence an adolescent's decision to adopt a particular strategy. For Chinese families, filial piety (*xiao*), the core virtue of Confucian philosophy, advocates that children should pay attention to their relationship with their parents and fulfill their parents' expectations, even when conflict arises (Ho, 1994; Chen et al., 2007). This perspective on filial piety has resulted in the common perception that Chinese adolescents in conflict with their parents ought to practice filial piety by sacrificing their own volition.

However, since filial piety is a complex set of constructs with diverse aspects (Yeh, 2003; Yeh and Bedford, 2003), we expect that a variety of resolution strategies may be available for Chinese adolescents to practice filial piety and resolve conflict with their parents (Yeh and Bedford, 2004;



Wu et al., 2019). The purpose of this article is to investigate whether Chinese adolescents can use conflict resolution strategies other than self-sacrifice to practice filial piety. We examined the effect of adolescents' filial piety beliefs on their use of different conflict resolution strategies with two empirical studies. Study 1 used a cross-sectional design and Study 2 used a follow-up design with a 1-year lag. We also examined adolescents' function-oriented appraisal of conflict as a potential mediator between filial belief and conflict resolution strategy.

## Filial Piety Beliefs

Researchers have proposed many different interpretations of filial piety. For example, Ho (1994) claimed that filial piety is a principle for parent-child interaction related to authoritarian moralism and can be an obstacle to the individual's volition. Empirical findings have shown that filial belief is positively related to obedience to parental control, a neurotic disposition, and cognitive conservatism (Chen et al., 2007).

As another perspective, the dual filial piety model (DFPM; Yeh, 2003; Yeh and Bedford, 2003) suggests that filial piety encompasses two distinct aspects, namely reciprocal and authoritarian, which correspond to different Confucian ethical principles. Reciprocal filial piety (RFP) represents an aspect of parent-child interaction grounded in the interdependent affection and genuine gratitude of children toward their parents who made an effort to raise and support them. RFP reflects the intimacy principle (*qin-qin*) in Confucian philosophy, which requires that one favor those closest to oneself, as well as the reciprocity principle (*bao*), which suggests that one should be grateful and repay any kindness one receives. RFP reflects a basic need for relatedness and emotional safety between two individuals.

Previous research has found that RFP contributes to intimate parent-child relationships (Chen et al., 2016), fewer conflicts with parents (Li et al., 2014), a higher level of perspective taking and self-disclosure (Yeh and Bedford, 2003), and mature development of autonomy in terms of maintaining intergenerational harmony and expressing inner attributes (Yeh, 2014). RFP is also positively related to several personal adaptation indices, such as subjective happiness (Chen et al., 2016), life satisfaction (Leung et al., 2010), and mental health (Jen et al., 2019).

In contrast, authoritarian filial piety (AFP) represents another aspect of parent-child interaction based on the hierarchy in the family. Parents are the superordinate figures with legitimacy to govern, discipline, and even punish children. AFP reflects the respect principle (*zun-zun*) in Confucian philosophy, which states that one should submit to parental commands, expectations, and criticism. Because the contents of AFP have been deeply ingrained as a social constraint, obedience to parents is applied as a public standard for judging a person's morality as a "good child/person" (Kwan, 2000).

Empirical findings have indicated that AFP is related to perceived higher parental control (Li et al., 2014; Yeh, 2014), a higher level of particularism, authoritarian aggression, and conventionalism (Yeh and Bedford, 2003), and stronger belief in the legitimacy of parental authority (Liu, 2013). Because AFP

focuses on the hierarchical parent-child relationship, it provides a reason for children to worry about offending parental authority, and may result in children's obeying parental requirements despite a loss of personal volition. AFP is associated with some maladaptation indices corresponding to intrapersonal stress, such as lower self-esteem (Leung et al., 2010) and higher level of depression, anxiety, aggression, and deviant behavior (Yeh, 2006).

These empirical studies of the DFPM have broadened the understanding of filial piety with its comprehensive influence on modern Chinese family life, both positive and negative. However, few researchers have investigated the role of RFP and AFP beliefs in parent-adolescent conflict or the resolution strategies corresponding to each of these two distinct aspects. Although AFP would seem to be related to self-sacrifice, the role of RFP is difficult to hypothesize. Does RFP also support adolescents in sacrificing their own volition to fulfill parental expectations? What strategies may be available for Chinese adolescents to achieve their personal volition and still practice filial piety?

## The Conflict Resolution Strategies

In Chinese society, the myth that self-sacrifice is the only way to practice filial piety largely results from the presupposition that parental expectations and personal goals are as incompatible as two ends of a single dimension. However, these two concerns could be better viewed as two independent dimensions that give rise to more than one strategy to fulfill parental expectations (Hammock et al., 1990). For example, Yeh (1995) combined two independent dimensions, *achieve personal goals* and *fulfill parental expectations*, to propose a five-strategy model: The *compatibility* strategy leads to a win-win resolution in which children fulfill parental expectations and simultaneously achieve their own goals; neither side need yield their goals and expectations. The *self-sacrifice* strategy results in an obedience resolution in which the children carry out parental expectations as the top priority and demonstrate their submission to parents by giving up their own goals. In contrast, the *utility* strategy results in a resolution in which the children ignore parental expectations to pursue their own goals. The *escape* strategy results in a resolution in which children are passive with regard to conflict with their parents, and so have no ideas or motivation for either their own goals or parental expectations. The *compromise* strategy leads to a resolution in which children attempt to achieve a middle ground wherein both sides must make some concessions.

In Yeh's framework, the compatibility and compromise strategies are similar to the self-sacrifice strategy because all three involve a concern for parental expectations. This means that both the compatibility and compromise strategies could be alternative ways to practice filial piety and resolve conflict with their parents. Furthermore, these two strategies are better than self-sacrifice because they not only consider parental expectations but also target personal goals. If a child adopts either of these two strategies, s/he can still practice filial piety without totally sacrificing personal goals. Research has demonstrated that these two strategies are better than the self-sacrifice, utility, and escape strategies in that they have a greater association



with a high quality parent-child relationship, a low frequency of parent-child conflict, and better personal adaptation (i.e., greater life satisfaction and fewer psychological symptoms, such as depression, anxiety, and stress) (Yeh and Tsao, 2014; Wu et al., 2019).

Previous researchers have investigated the relationship between the dual aspects of filial piety and these parent-child conflict resolution strategies. Yeh and Bedford (2004) found that Chinese adolescents endorsing higher RFP are more likely to adopt compatibility and compromise strategies, but less inclined toward the escape strategy. Those endorsing higher AFP tend to adopt a self-sacrifice strategy, and are less likely to apply the utility strategy. However, two limitations in this work are noteworthy. First, the measurement of these resolution strategies may have been unreliable because each was assessed with only two items, and the reliability coefficients were absent in the article. In addition, the authors did not specify the underlying mechanism linking filial piety belief to these resolution strategies. To overcome these limitations, we investigated the relation of RFP and AFP to these different strategies using measurement tools with acceptable reliability, and focused on adolescents' appraisal of conflict as the potential mediator to explore the underlying mechanism.

## Conflict Resolution Strategies and Their Connections to Filial Beliefs

We suggest that adolescents who endorse AFP beliefs tend to interpret parental expectations in terms of the requirement to obey parental authority. With AFP, personal goals are seen as obstructions, which implies that adolescents' personal goals and parental expectations are mutually exclusive or in competition with one another. In order to meet their basic need to conform to a "good child" identity, adolescents endorsing high AFP tend to adopt the self-sacrifice strategy and demonstrate unconditional submission (Yeh and Bedford, 2004).

However, adolescents who endorse RFP beliefs care about their parents' expectations and the reasons those expectations are important to their parents. They do not just see conflict with their parents as obstacles to personal goals. The basic needs for relatedness and emotional safety, to which RFP corresponds, can coexist with the basic need for individuation without social constraint (Yeh and Yang, 2006). As RFP is positively associated with malleable thinking, such as perspective taking (Yeh and Bedford, 2003) and cognitive flexibility (Jen et al., 2019), it may broaden one's mindset allowing conflict to be regarded as an opportunity in which one can not only learn more about what one's parents expect, but also share their own goals that they want to pursue. Thus, adolescents endorsing high RFP tend to adopt compatibility and compromise strategies for meeting parental expectations and simultaneously pursuing personal goals.

## Appraisal of Parent-Child Conflict as a Mediator

As cognitive appraisal has a crucial role in the resolution of interpersonal conflict (Murray et al., 2006; Yeh, 2012), we propose cognitive appraisal of parent-child conflict as a

potential mediator to elaborate the mechanism between RFP and adolescents' use of compatibility and compromise strategies. RFP may contribute to a function-oriented appraisal of conflict (FAC), a concept Yeh (2012) proposed to reflect the belief that interpersonal conflict can be functional without necessarily requiring competition. Individuals adopting FAC believe that conflict can be an opportunity to foster mutual understanding, effectively eliminate a difference in opinion, and improve skill in parent-child interaction.

Existing research has demonstrated the tendency to adopt compatibility and compromise strategies (but not utility or escape strategies) is positively associated with FAC for parent-child relationships (Yeh and Tsao, 2014) and romantic relationships (Chiao et al., 2018). We thus believe that RFP may relate to the recognition that personal goals and parental expectations can be achieved simultaneously through FAC, which would allow adolescents' use of compatibility and compromise strategies to resolve conflict with parents.

## Overview

In this study, we first hypothesize that adolescent endorsement of AFP beliefs has a positive correlation with use of the self-sacrifice strategy when in conflict with their parents (Hypothesis 1), and that adolescent endorsement of RFP beliefs has a positive correlation with use of the compatibility and compromise strategies (Hypothesis 2). We also hypothesize that greater adolescent endorsement of both RFP and AFP beliefs, will correspond to reduced use of the utility and escape strategies (Hypothesis 3). We expect FAC to be a mediator between RFP belief and the tendency to adopt compatibility and compromise strategies (Hypothesis 4).

In accordance with previous research, fathers in Chinese families usually enact the authority role to maintain the hierarchy of the family, while mothers assume the role of caregiver to connect affection among family members (e.g., Shek et al., 2000; Ho et al., 2010). Considering that the role difference between fathers and mothers may confound our research findings, we asked participants to consider the separate contexts of father-child and mother-child interaction.

We conducted two empirical studies, Study 1 applied a cross-sectional design to test Hypotheses 1, 2, and 3, and Study 2 adopted a follow-up design with a 1-year lag to replicate the findings from Study 1 and tested Hypothesis 4.

## STUDY 1

### Participants and Procedures

A total of 253 high school students were recruited as participants. After gaining their and their parents' informed consent, participants answered the father-child and mother-child versions of the questionnaires in counterbalanced order. The total valid sample size was 247 (93 females), with 222 completing both versions of the questionnaire, and 9 and 16 completing only the father- or mother-child versions, respectively. The valid sample size was 231 and 238 for the father-child and mother-child versions, respectively. Participants' mean

age was 16.11 years ( $SD = 0.39$ ). The mean ages of the fathers and mothers were 47.59 years ( $SD = 5.60$ ) and 44.24 years ( $SD = 5.00$ ), respectively. The percentages of fathers and mothers with each education level was as follows: junior high school or below, 17% and 15%; senior high school, 50% and 51%; college, graduate school, or above, 34% for both.

## Measures

### Filial Piety Belief

We adopted the dual filial piety scale (Yeh and Bedford, 2003) and adjusted the parental term for father-child and mother-child versions. The RFP subscale has eight items to measure participants' beliefs that children ought to provide emotional support for and take authentic care of their father/mother (e.g., "Support my father's/mother's livelihood to make his/her life more comfortable"). The AFP subscale has eight items that measure participants' beliefs that children ought to respect the hierarchical relationship between parents and children (e.g., "Do whatever my father/mother asks me to do right away"). Participants responded on a six-point Likert scale ranging from 1 (*Extremely unimportant*) to 6 (*Extremely important*). The Cronbach's  $\alpha$  of the RFP subscale was 0.95 and 0.96 for father-child and mother-child versions, and that of AFP was 0.89 for both versions.

### Parent-Adolescent Conflict Resolution Strategy

We used the parent-adolescent conflict resolution strategy scale (Wu et al., 2019), which comprises five strategies: compatibility (e.g., I try my best to work with my father/mother to reach a consensus with which both parties are satisfied), compromise (e.g., I deal with the conflict with father/mother through a way that meets each other halfway), self-sacrifice (e.g., I give up my interest, giving priority to my father's/mother's request), utility (e.g., I stick to my opinion until my father/mother is willing to accept my claim), and escape (e.g., I leave the conflict with my father/mother alone, pretending it never happened). Each strategy contains four items with a five-point Likert scale ranging from 1 (*Never*) to 5 (*Always*). The Cronbach's  $\alpha$  of each subscale for father-child version were 0.86, 0.79, 0.77, 0.80, and 0.76, and

those for mother-child version were 0.88, 0.79, 0.81, 0.78, and 0.75, respectively.

## Analysis Strategy

We used Mplus (version 8) to calculate the descriptive statistics of the major variables and to test our hypothetical structural equation models. We adopted the item-to-construct balancing procedure (Little et al., 2002) to parcel out the RFP and AFP items into three indicators to simplify the measurement models. We did not parcel the subscales of resolution strategies as each has only four items, and thus would not contribute to simplification.

We used the ratio of  $\chi^2$  to  $df$  ( $\chi^2/df$ ), the comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR) to test the model-fit. The model fit is considered acceptable when  $\chi^2/df$  is lower than 5 (Schumacker and Lomax, 2004), CFI and TLI are higher than 0.90, and RMSEA and SRMR are lower than 0.080 (Hu and Bentler, 1999; McDonald and Ho, 2002). We computed the influence of participants' gender as a control variable because both the male and female sample sizes were too small to examine the effect of participants' gender. We also computed the influence of parental education level as another control variable (1 = junior high school or below; 2 = senior high school; 3 = college, graduate school, or above).

## Results and Discussion

The means, standard deviations, and correlation coefficients of the major variables are summarized in **Table 1**. For the father-child and mother-child datasets, both RFP and AFP had significantly positive correlations with compatibility, compromise, and self-sacrifice strategies, but a negative correlation with the utility and escape strategies.

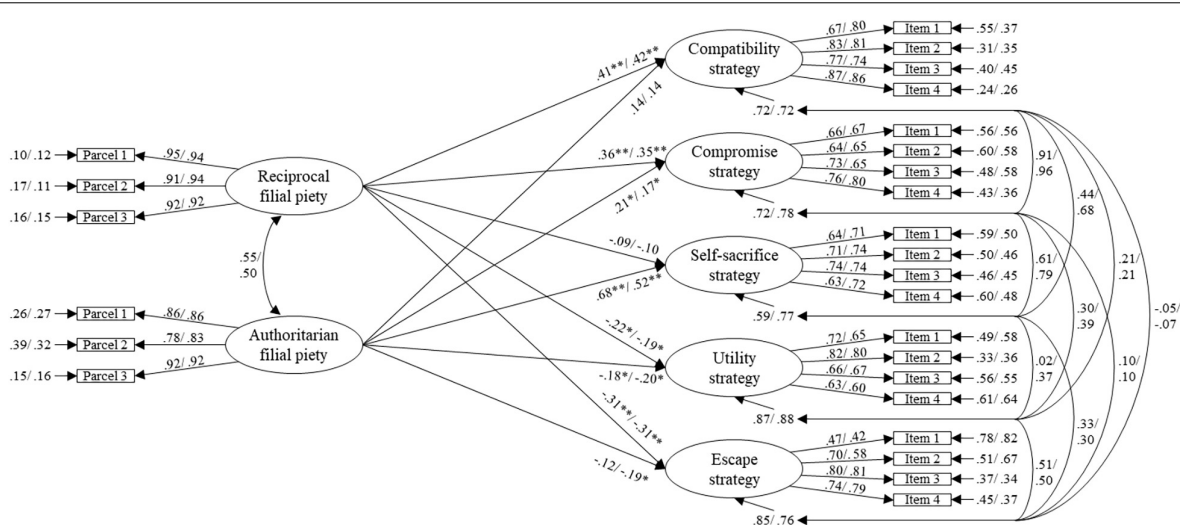
We investigated the effect of filial piety beliefs on different resolution strategies with the hypothetical model presented in **Figure 1**. For the father-child model, the model-fit was acceptable with  $\chi^2(316, N = 231) = 589.58, p < 0.001, \chi^2/df = 1.87$ , CFI = 0.92, TLI = 0.90, RMSEA = 0.061, SRMR = 0.055, and all loadings were significant ( $ps < 0.01$ ). For the mother-child model, the model-fit was also acceptable with  $\chi^2(316,$

**TABLE 1 |** Correlations, means, and standard deviations of the main variables in Study 1.

	Correlation coefficients							<i>M</i>	<i>SD</i>
	1	2	3	4	5	6	7		
1. Reciprocal filial piety		0.46**	0.45**	0.37**	0.14*	-0.25**	-0.31**	4.95	1.06
2. Authoritarian filial piety	0.50**		0.31**	0.27**	0.39**	-0.23**	-0.27**	3.25	1.08
3. Compatibility strategy	0.43**	0.35**		0.79**	0.56**	0.01	-0.22**	2.74	1.04
4. Compromise strategy	0.40**	0.34**	0.78**		0.61**	0.18**	-0.07	2.54	0.91
5. Self-sacrifice strategy	0.23**	0.52**	0.42**	0.50**		0.16*	0.07	2.07	0.85
6. Utility strategy	-0.28**	-0.26**	0.01	0.06	-0.10		0.44**	2.45	0.93
7. Escape strategy	-0.30**	-0.26**	-0.18**	-0.09	0.05	0.46**		2.36	0.97
<i>M</i>	4.82	3.14	2.49	2.28	1.90	2.35	2.42		
<i>SD</i>	1.04	1.05	1.03	0.85	0.77	0.98	1.00		

Numbers below the diagonal are from the father-child dataset ( $n = 231$ ); those above are from the mother-child dataset ( $n = 238$ ).

\* $p < 0.05$ ; \*\* $p < 0.01$ .



**FIGURE 1 |** Structural model of dual filial piety and parent-adolescent conflict resolution strategy in Study 1. The influence of the adolescent's gender has been controlled in this model. All coefficients are standardized solutions; the first coefficient is the father-child model ( $n = 231$ ), the second is the mother-child model ( $n = 238$ ). \* $p < 0.05$ , \*\* $p < 0.01$ .

$N = 238$ ) = 592.62,  $p < 0.001$ ,  $\chi^2/df = 1.88$ , CFI = 0.92, TLI = 0.91, RMSEA = 0.061, SRMR = 0.057, and all loadings were significant ( $ps < 0.001$ ).

For the compatibility strategy, the effect of RFP for both father-child ( $\gamma = 0.41$ , SE = 0.07) and mother-child models ( $\gamma = 0.42$ , SE = 0.07) was positively significant ( $ps < 0.001$ ), but that of AFP for both models was not significant. For the compromise strategy, RFP's effect for both father-child ( $\gamma = 0.36$ , SE = 0.08) and mother-child models ( $\gamma = 0.35$ , SE = 0.08) was positively significant ( $ps < 0.001$ ). AFP's effect was smaller, but it was still positively significant for both father-child ( $\gamma = 0.21$ , SE = 0.08,  $p = 0.01$ ) and mother-child models ( $\gamma = 0.17$ , SE = 0.08,  $p = 0.04$ ). For self-sacrifice strategy, although RFP's effect was not significant, AFP's for both models (father-child:  $\gamma = 0.68$ , SE = 0.07; mother-child:  $\gamma = 0.52$ , SE = 0.07) was positively significant ( $ps < 0.001$ ). For the utility strategy, RFP's effect was negatively significant for both models (father-child  $\gamma = -0.22$ , SE = 0.09,  $p = 0.01$ ; mother-child  $\gamma = -0.19$ , SE = 0.08,  $p = 0.02$ ), and so was AFP's effect ( $\gamma = -0.18$ , SE = 0.09,  $p = 0.04$ ;  $\gamma = -0.20$ , SE = 0.09,  $p = 0.02$ , respectively). For the escape strategy, RFP's effect for both models (father-child:  $\gamma = -0.31$ , SE = 0.09; mother-child:  $\gamma = -0.31$ , SE = 0.08) was negatively significant ( $ps < 0.01$ ), but AFP's effect was negatively significant only for the mother-child model ( $\gamma = -0.19$ , SE = 0.08,  $p = 0.02$ ), and not for the father-child model. These findings support Hypotheses 1 and 2. Our results verified the common perception that adolescents' tendency to sacrifice personal goals to fulfill parental expectations is associated with AFP beliefs. However, adolescents who endorsed RFP beliefs indicated use of compatibility and compromise strategies to meet filial requirements while pursuing personal goals. Hypothesis 3 was partially supported in that both RFP and AFP were negatively related to the strategies entailing a lack of concern for parental expectations, namely utility and escape, except for the relationship between AFP and escape

strategy for the father-child model. We discuss this exception in the final section.

Our results also indicated that AFP is related to the compromise strategy, which may be part of a compound strategy entailing use of the self-sacrifice and compromise strategies together. Adolescents who endorse AFP beliefs may first adopt the self-sacrifice strategy as a probe. If their parents respond with concessions, they may switch to the compromise strategy and propose some part of their personal goals.

Three limitations we further considered and tried to deal with in Study 2. First, to further elaborate the mechanism linking RFP and the tendency to use the compatibility and compromise strategies, Study 2 investigated adolescents' FAC as a mediator, which reflects the belief that interpersonal conflicts can facilitate mutual understanding and problem solving (Yeh, 2012). FAC is positively associated with the use of compatibility and compromise strategies to resolve interpersonal conflict (Yeh and Tsao, 2014; Chiao et al., 2018). In addition, common method variance bias could be confounding the findings from Study 1 due to the cross-sectional design. To remedy this bias, we adopted a follow-up design with temporal separation procedure suggested by Podsakoff et al. (2003) in Study 2. Last, previous research pointed out that daughters in Chinese families pay more attention to having an intimate connection with parents than sons do (e.g., Shek, 2000; Chao, 2008), so we further investigated whether gender differences exist by recruiting a sufficient sample size in Study 2.

## STUDY 2

### Participants and Procedures

We recruited Taiwanese adolescents who did not participate in Study 1. In this Study, participants have to complete the

measurements of predictor, mediator, and criteria variables at two time points. At these two time points, we obtained informed consent from them and their parents. The questionnaire at Time 1 measured participants' filial piety beliefs and FAC, while that at Time 2 measured their tendency to adopt different conflict resolution strategies. Participants completed the father-child and mother-child versions in counterbalanced order. The sample size was 1,174 at Time 1 and 1,096 at Time 2 after a 1-year lag. Thirty-three samples that had in-completed responses at Time 2 were excluded as well. The total valid sample completing the questionnaires at both time points was 1,063 (638 female), with 898 answering both versions, and 46 and 119 only answering the father- or mother-child version, respectively. We obtained, 944 and 1,017 valid responses for the father- and mother-child versions, respectively. Participants had a mean age of 16.05 years ( $SD = 0.39$ ) at Time 1. The mean ages of their fathers and mothers at Time 1 were 47.76 years ( $SD = 5.24$ ) and 44.74 years ( $SD = 5.05$ ), respectively. The percentage of fathers and mothers at each education level was as follows: junior high school or below, 18% and 17%; senior high school, 49% and 53%; and college, graduate school, or above, 33% and 30%, respectively.

## Measures

### Filial Piety Belief

We used the same scale as in Study 1. The Cronbach's  $\alpha$ s for the father-child and mother-child versions of the RFP subscales were 0.94 and 0.93, respectively. For the AFP subscales, they were 0.85 and 0.83.

### Function-Oriented Appraisal

We derived the function-oriented appraisal of conflict scale from Yeh (2012) model of the constructive transformation process. This scale contains 10 items to measure participants' agreement with some adaptive values when in conflict with their parents, such as the opportunity to foster mutual understanding, reduce discrepancy, and improve skill in parent-child interaction. The items are measured with a five-point Likert-type scale ranging from 1 (*Not agree at all*) to 5 (*Always agree*). The Cronbach's  $\alpha$  was 0.93 for both father-child and mother-child versions.

### Parent-Adolescent Conflict Resolution Strategy

We used the same scale as in Study 1. The Cronbach's  $\alpha$  of compatibility, compromise, self-sacrifice, utility, and escape strategy subscales for the father-child version were 0.90, 0.81, 0.76, 0.79, and 0.81. For the mother-child version they were 0.89, 0.80, 0.76, 0.80, and 0.79, respectively.

## Analysis Strategy

As in Study 1, we followed Little et al. (2002) item-to-construct balancing procedures to parcel the RFP, AFP, and FAC items into three indicators. We did not parcel the items for the conflict resolution strategies because each has only four items. The fit indices and their acceptability criteria were the same as those in Study 1. We also analyzed the influence of parental education level as a control variable.

To detect the influence of adolescents' gender, we adopted multi-group structural equation modeling with loading

invariance for father-son and father-daughter datasets, and for mother-son and mother-daughter datasets. According to Chen (2007), loadings can be considered invariant when a change is less than 0.010 in CFI and less than 0.015 in RMSEA. For further testing the mediation effects, we ran 5,000 bootstrapping processes as suggested by Hayes and Preacher (2010), and deemed a specific mediation effect significant if the boundary between the 125th and 4,875th (i.e., the 95% CI) excluded zero.

## Results and Discussion

The means, standard deviations, and correlation coefficients of the major variables are summarized in **Table 2**. For the four parent-child dyads, the pattern of correlations among RFP, AFP, and the use of different strategies was almost identical to that of Study 1. For all datasets, FAC was significantly and positively related to RFP, AFP, and the compatibility, compromise, and self-sacrifice strategies. FAC had a significant and negative correlation with the escape strategy, except for the father-son dataset. It had a significant and positive correlation with the utility strategy only for the father-son dataset.

We then investigated the mechanism linking the dual filial beliefs to different conflict resolution strategies by hypothesizing adolescents' FAC as a mediator variable. For the father-child model (see **Figure 2**), the model-fit was acceptable with  $\chi^2(769, N = 944) = 1874.74, p < 0.001, \chi^2/df = 2.44, CFI = 0.93, TLI = 0.92, RMSEA = 0.055, SRMR = 0.056$ . All loadings were significant ( $ps < 0.001$ ) and could be considered invariant. For the mother-child model (see **Figure 3**), the model-fit was also acceptable with  $\chi^2(769, N = 1017) = 1968.57, p < 0.001, \chi^2/df = 2.56, CFI = 0.93, TLI = 0.92, RMSEA = 0.055, SRMR = 0.060$ . All loadings were significant ( $ps < 0.001$ ) and could be considered invariant.

The total RFP effect on the compatibility strategy for the father-son (estimate = 0.46,  $SE = 0.05$ ), father-daughter (estimate = 0.45,  $SE = 0.06$ ), mother-son (estimate = 0.42,  $SE = 0.05$ ), and mother-daughter datasets (estimate = 0.43,  $SE = 0.05$ ) was positively significant ( $ps < 0.001$ ), as it was on the compromise strategy (in order: estimate = 0.33,  $SE = 0.06$ ; estimate = 0.33,  $SE = 0.07$ ; estimate = 0.25,  $SE = 0.06$ ; estimate = 0.31,  $SE = 0.06$ ;  $ps < 0.001$ ). However, the total AFP effect was not significant on either the compatibility or compromise strategy for all dyad datasets. For the self-sacrifice strategy, the total AFP effect for father-son (estimate = 0.33,  $SE = 0.07$ ), father-daughter (estimate = 0.50,  $SE = 0.06$ ), mother-son (estimate = 0.47,  $SE = 0.06$ ), and mother-daughter dataset (estimate = 0.43,  $SE = 0.06$ ) was positively significant ( $ps < 0.001$ ), but the RFP effect was not significant for any of the dyad datasets.

For the utility strategy, the total AFP effect on father- and mother-child interaction was negatively significant ( $ps < 0.001$ ) only for the female participants (father-daughter: estimate =  $-0.26, SE = 0.07$ ; mother-daughter: estimate =  $-0.24, SE = 0.06$ ), and not for the male participants. The total RFP effect was not significant for any of the dyads. For the escape strategy, the RFP effect was negatively significant for the father-son (estimate =  $-0.28, SE = 0.06, p < 0.001$ ), father-daughter (estimate =  $-0.17, SE = 0.07, p = 0.01$ ), mother-son



**TABLE 2 |** Correlations, means, and standard deviations of the main variables in Study 2.

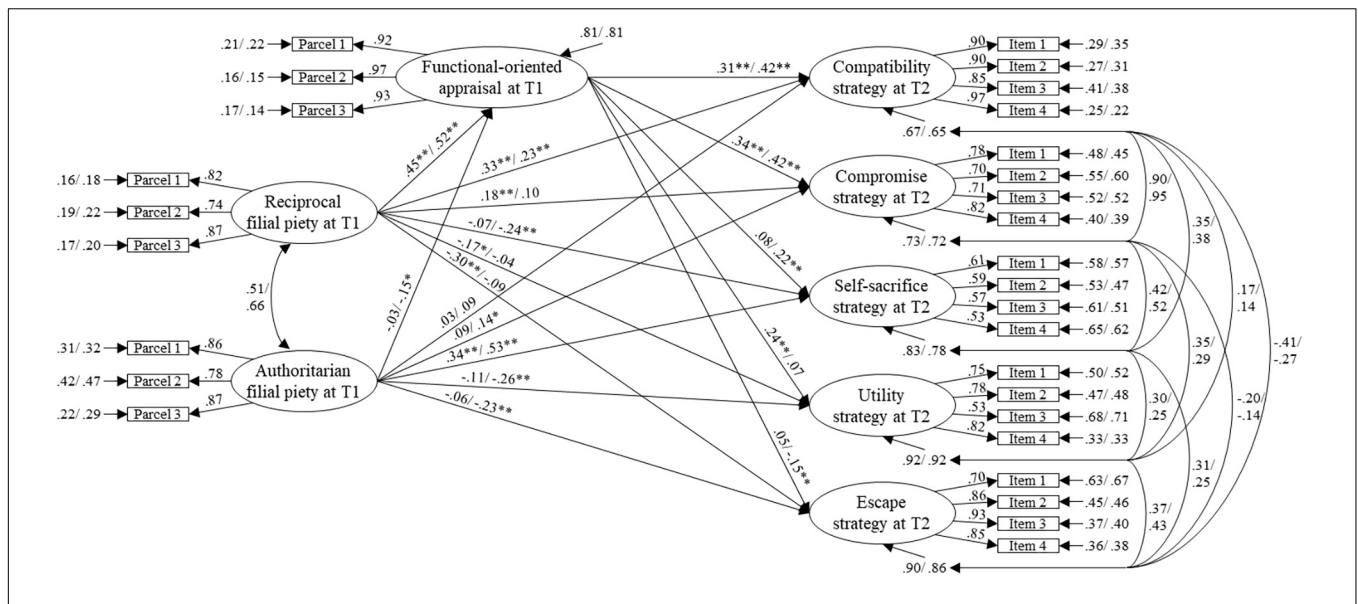
	Correlation coefficients								Male		Female	
	1	2	3	4	5	6	7	8	M	SD	M	SD
<b>Father-child dataset</b>												
1. Reciprocal filial piety (T1)		0.58**	0.39**	0.41**	0.29**	0.16**	−0.15**	−0.26**	4.97	0.83	5.13	0.84
2. Authoritarian filial piety (T1)	0.44**		0.18**	0.27**	0.22**	0.33**	−0.21**	−0.26**	3.25	0.86	3.31	0.94
3. Function-oriented appraisal (T1)	0.40**	0.17**		0.48**	0.40**	0.19**	−0.01	−0.19**	2.77	0.99	2.60	0.96
4. Compatibility strategy (T2)	0.45**	0.23**	0.44**		0.80**	0.38**	0.05	−0.32**	2.99	0.94	2.82	0.99
5. Compromise strategy (T2)	0.34**	0.21**	0.40**	0.77**		0.45**	0.18**	−0.20**	2.63	0.81	2.52	0.87
6. Self-sacrifice strategy (T2)	0.21**	0.28**	0.14**	0.34**	0.36**		0.13**	0.06	2.12	0.67	1.86	0.68
7. Utility strategy (T2)	−0.11*	−0.12*	0.13*	0.12*	0.26**	0.18**		0.40**	2.43	0.76	2.29	0.83
8. Escape strategy (T2)	−0.25**	−0.18**	−0.07	−0.38**	−0.21**	0.15**	0.32**		2.24	0.90	2.28	0.96
<b>Mother-child dataset</b>												
1. Reciprocal filial piety (T1)		0.49**	0.44**	0.38**	0.24**	0.13**	−0.07	−0.18**	5.08	0.80	5.34	0.72
2. Authoritarian filial piety (T1)	0.43**		0.22**	0.22**	0.13**	0.30**	−0.16**	−0.15**	3.36	0.86	3.53	0.90
3. Function-oriented appraisal (T1)	0.35**	0.15**		0.46**	0.33**	0.15**	0.06	−0.16**	2.89	0.96	2.78	0.96
4. Compatibility strategy (T2)	0.40**	0.18**	0.42**		0.76**	0.33**	0.07	−0.24**	3.10	0.91	2.93	0.92
5. Compromise strategy (T2)	0.22**	0.14**	0.37**	0.76**		0.40**	0.21**	−0.10*	2.75	0.79	2.62	0.83
6. Self-sacrifice strategy (T2)	0.12*	0.32**	0.13**	0.36**	0.32**		0.07	0.18**	2.13	0.70	1.96	0.69
7. Utility strategy (T2)	−0.09	−0.08	0.08	0.14**	0.26**	0.13**		0.36**	2.46	0.82	2.34	0.81
8. Escape strategy (T2)	−0.21**	−0.07	−0.21**	−0.36**	−0.19**	0.13*	0.27**		2.17	0.85	2.25	0.91

For both father- and mother-child datasets, in the matrix of correlation coefficients the numbers below the diagonal are from the male participants (in father-child dataset:  $n = 375$ ; in mother-child dataset:  $n = 407$ ); those above are from the female participants (in father-child dataset:  $n = 569$ ; in mother-child dataset:  $n = 610$ ).

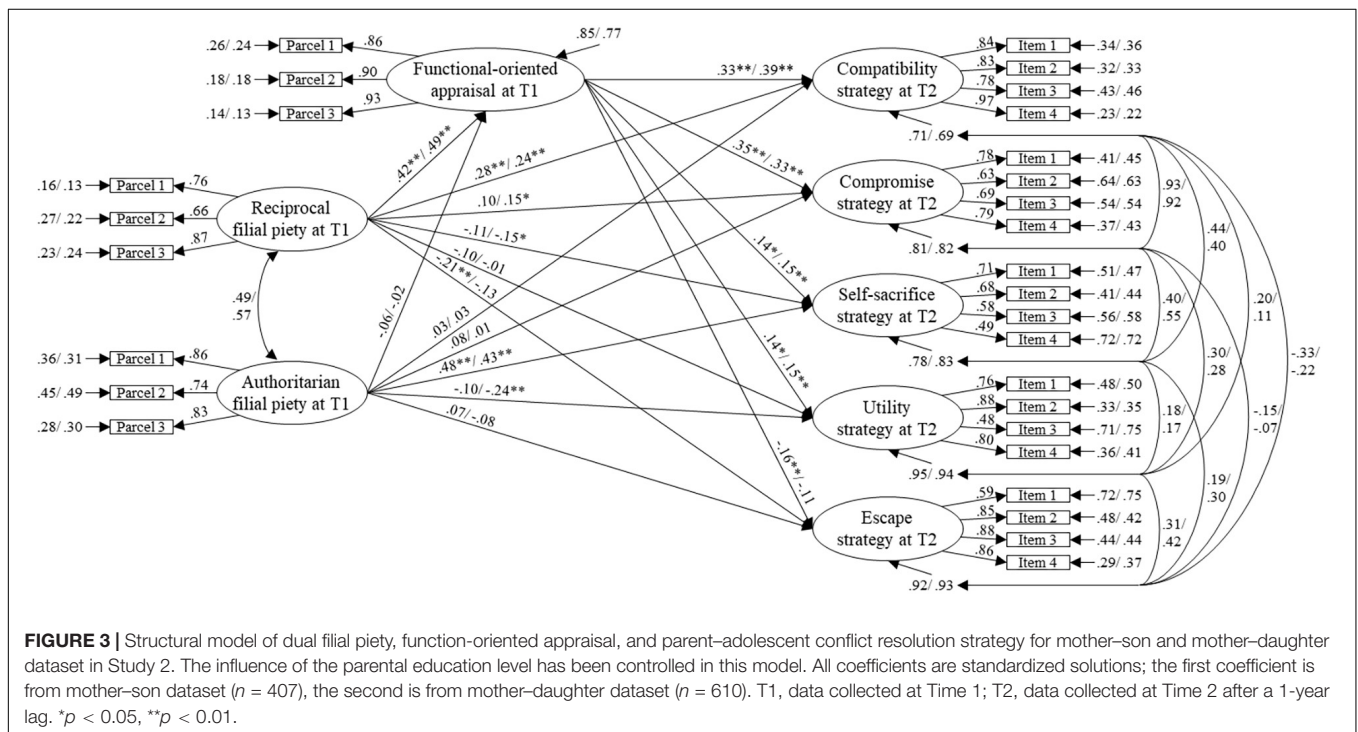
T1, data collected at Time 1; T2, data collected at Time 2 after a 1-year lag.

The degree of freedom in father-child dataset is 943, while that in mother-child dataset is 1016.

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



**FIGURE 2 |** Structural model of dual filial piety, function-oriented appraisal, and parent-adolescent conflict resolution strategy for father-son and father-daughter dataset in Study 2. The influence of the parental education level has been controlled in this model. All coefficients are standardized solutions; the first coefficient is from father-son dataset ( $n = 375$ ), the second is from father-daughter dataset ( $n = 569$ ). T1, data collected at Time 1; T2, data collected at Time 2 after a 1-year lag. \* $p < 0.05$ , \*\* $p < 0.01$ .



**FIGURE 3 |** Structural model of dual filial piety, function-oriented appraisal, and parent-adolescent conflict resolution strategy for mother-son and mother-daughter dataset in Study 2. The influence of the parental education level has been controlled in this model. All coefficients are standardized solutions; the first coefficient is from mother-son dataset ( $n = 407$ ), the second is from mother-daughter dataset ( $n = 610$ ). T1, data collected at Time 1; T2, data collected at Time 2 after a 1-year lag. \* $p < 0.05$ , \*\* $p < 0.01$ .

(estimate =  $-0.27$ ,  $SE = 0.06$ ,  $p < 0.001$ ) and mother-daughter datasets (estimate =  $-0.19$ ,  $SE = 0.06$ ,  $p < 0.01$ ), but the AFP effect was only negatively significant for the father-daughter dataset (estimate =  $-0.21$ ,  $SE = 0.07$ ,  $p < 0.01$ ) and not for the other dyads.

The RFP effect on FAC for the father-son ( $\gamma = 0.45$ ,  $SE = 0.06$ ), father-daughter ( $\gamma = 0.52$ ,  $SE = 0.06$ ), mother-son ( $\gamma = 0.42$ ,

$SE = 0.06$ ), and mother-daughter datasets ( $\gamma = 0.49$ ,  $SE = 0.04$ ) was positively significant ( $ps < 0.001$ ). The effect of AFP was only negatively significant for the father-daughter ( $\gamma = -0.15$ ,  $SE = 0.07$ ,  $p = 0.03$ ) but not for the other three dyads. For all dyads, the effect of FAC was positively significant ( $ps < 0.001$ ) on compatibility (father-son:  $\beta = 0.31$ ,  $SE = 0.06$ ; father-daughter:  $\beta = 0.42$ ,  $SE = 0.04$ ; mother-son:  $\beta = 0.33$ ,  $SE = 0.05$ ;



mother-daughter:  $\beta = 0.39$ ,  $SE = 0.04$ ) and compromise (father-son:  $\beta = 0.34$ ,  $SE = 0.06$ ; father-daughter:  $\beta = 0.42$ ,  $SE = 0.05$ ; mother-son:  $\beta = 0.35$ ,  $SE = 0.06$ ; mother-daughter:  $\beta = 0.33$ ,  $SE = 0.05$ ). The effect of FAC on self-sacrifice was positively significant for father-daughter ( $\beta = 0.22$ ,  $SE = 0.05$ ,  $p < 0.001$ ), mother-son ( $\beta = 0.14$ ,  $SE = 0.06$ ,  $p = 0.02$ ), and mother-daughter ( $\beta = 0.15$ ,  $SE = 0.06$ ,  $p < 0.01$ ), but not for the father-son dataset. The effect of FAC on utility was positively significant for father-son ( $\beta = 0.24$ ,  $SE = 0.07$ ,  $p < 0.001$ ), mother-son ( $\beta = 0.14$ ,  $SE = 0.06$ ,  $p = 0.02$ ), and mother-daughter ( $\beta = 0.15$ ,  $SE = 0.06$ ,  $p < 0.01$ ), but not for the father-daughter dataset. The effect of FAC on escape was negatively significant for father-daughter ( $\beta = -0.15$ ,  $SE = 0.06$ ,  $p < 0.01$ ) and mother-son ( $\beta = -0.16$ ,  $SE = 0.06$ ,  $p = 0.01$ ), but not for the father-son and mother-daughter dataset.

We summarize the mediation effects in **Table 3**. For all parent-child dyad datasets, FAC significantly positively mediated the effect of RFP on the compatibility and compromise strategies. Except for the father-son dataset, the mediation effect of FAC between RFP and self-sacrifice for the father-daughter, mother-son, and mother-daughter datasets was positively significant. The mediation effect of FAC between RFP and utility was positively significant for the father-son, mother-son, and mother-daughter datasets, except for the father-daughter model. The mediation effect of FAC between RFP and escape was positively significant for only the father-daughter and mother-son datasets. For the relationship between AFP and resolution strategies, FAC significantly mediated on only use of compatibility and compromise strategy for only father-daughter dataset.

Hypotheses 1 and 2 were again supported. Self-sacrifice strategy is an intuitive way for adolescents to perform AFP; compatibility and compromise strategies are ways to practice RFP. Hypothesis 3 was partially supported. The results showed that RFP was only negatively associated with the escape strategy for all parent-child dyads, and AFP was negatively related to utility and escape strategies for some dyads.

Hypothesis 4 was also supported. Chinese adolescents valuing RFP could apply FAC to frame conflict with parents as an opportunity to improve mutual understanding, to realize what their parents expect of them, and to share intentions they want their parents to know. The adolescents could then turn this functional appraisal into behavior by adopting a compatibility or compromise strategy. The unexpected findings, those dissimilar to Study 1, and those that differed among parent-child dyads are discussed in the following.

## GENERAL DISCUSSION

Based on results from the two empirical studies, we conclude that obedience through self-sacrifice is not the only way that Chinese adolescents practice filial piety. They can also adopt a compatibility or compromise strategy to resolve conflict, which allows them to consider parental expectations and simultaneously pursue personal goals. In addition, according

**TABLE 3** | The summary of mediation effects through function-oriented appraisal in Study 2.

	Father-son dataset			Father-daughter dataset			Mother-son dataset			Mother-daughter dataset		
	Estimate	SE	95% CI	Estimate	SE	95% CI	Estimate	SE	95% CI	Estimate	SE	95% CI
<b>Mediation effect from reciprocal filial piety to</b>												
Compatibility strategy	<b>0.14**</b>	<b>0.03</b>	<b>[0.09, 0.21]</b>	<b>0.22**</b>	<b>0.03</b>	<b>[0.16, 0.29]</b>	<b>0.14**</b>	<b>0.03</b>	<b>[0.09, 0.21]</b>	<b>0.19**</b>	<b>0.03</b>	<b>[0.14, 0.25]</b>
Compromise strategy	<b>0.15**</b>	<b>0.03</b>	<b>[0.10, 0.22]</b>	<b>0.22**</b>	<b>0.04</b>	<b>[0.16, 0.29]</b>	<b>0.15**</b>	<b>0.03</b>	<b>[0.09, 0.22]</b>	<b>0.16**</b>	<b>0.03</b>	<b>[0.11, 0.22]</b>
Self-sacrifice strategy	0.04	0.03	[-0.02, 0.10]	<b>0.11**</b>	<b>0.03</b>	<b>[0.06, 0.19]</b>	<b>0.06*</b>	<b>0.03</b>	<b>[0.01, 0.12]</b>	<b>0.08*</b>	<b>0.03</b>	<b>[0.02, 0.14]</b>
Utility strategy	<b>0.11**</b>	<b>0.03</b>	<b>[0.05, 0.18]</b>	0.04	0.03	[-0.02, 0.10]	<b>0.06*</b>	<b>0.03</b>	<b>[0.01, 0.12]</b>	<b>0.08**</b>	<b>0.03</b>	<b>[0.02, 0.13]</b>
Escape strategy	0.02	0.03	[-0.03, 0.08]	<b>-0.08*</b>	<b>0.03</b>	<b>[-0.14, -0.02]</b>	<b>-0.07*</b>	<b>0.03</b>	<b>[-0.12, -0.02]</b>	-0.06	0.03	[-0.12, 0.00]
<b>Mediation effect from authoritarian filial piety to</b>												
Compatibility strategy	-0.01	0.03	[-0.06, 0.04]	<b>-0.06*</b>	<b>0.03</b>	<b>[-0.12, -0.01]</b>	-0.02	0.03	[-0.07, 0.03]	-0.01	0.02	[-0.05, 0.04]
Compromise strategy	-0.01	0.03	[-0.07, 0.04]	<b>-0.06*</b>	<b>0.03</b>	<b>[-0.13, -0.01]</b>	-0.02	0.03	[-0.08, 0.03]	-0.01	0.02	[-0.05, 0.03]
Self-sacrifice strategy	-0.00	0.01	[-0.04, 0.01]	-0.03	0.02	[-0.08, 0.00]	-0.01	0.01	[-0.04, 0.01]	-0.00	0.01	[-0.03, 0.02]
Utility strategy	-0.01	0.02	[-0.05, 0.03]	-0.01	0.01	[-0.04, 0.00]	-0.01	0.01	[-0.04, 0.01]	-0.00	0.01	[-0.02, 0.02]
Escape strategy	-0.00	0.01	[-0.03, 0.01]	0.02	0.01	[0.00, 0.06]	0.01	0.01	[-0.01, 0.04]	0.00	0.01	[-0.01, 0.02]

Bootstrapping sample size = 5,000. Coefficients in boldface denote significance. CI, confidence interval.

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

to the DFPM, use of these different resolution strategies can be attributed to the reciprocal and authoritarian aspects of adolescents' filial beliefs.

## Resolution Strategies in Line With Filial Piety

We found that the tendency to adopt a self-sacrifice strategy in parent-child conflict was associated with AFP belief. This result is in line with previous findings that adolescents endorsing AFP emphasize the hierarchical aspects of the family (Liu, 2013; Li et al., 2014; Yeh, 2014), which can lead to some maladaptive behaviors (Yeh, 2006; Leung et al., 2010). Adolescents who self-sacrifice also have problems related to maladaptation (Wu et al., 2019). These findings give rise to a common criticism of filial piety practices: If authoritarian moralism is the essential element of filial piety that causes adolescents to self-sacrifice and that consequentially results in maladaptation, why should filial piety continue to be regarded as an important virtue in modern Chinese societies?

Our findings highlight the answer. Sole consideration of AFP does not provide the full picture of filial practices. RFP is associated with other strategies for handling conflict with parents that allow adolescents to both fulfill parental expectations and achieve personal goals. In addition, previous research has indicated that those who endorse RFP may not only maintain harmonious interaction with their parents (Li et al., 2014; Chen et al., 2016), but also acquire strong individuating autonomy (Sun et al., 2019). Existing evidence also supports the association of the compatibility and compromise strategies with better adaptation in the parent-child relationship and in personal life (Yeh and Tsao, 2014; Wu et al., 2019). These findings reveal that Chinese adolescents can apply the compatibility and compromise strategies to meet their filial obligations without enduring personal sacrifice. In this respect, as a far-reaching cultural virtue, filial piety may truly balance the human need for relatedness with the need for individuation (Tsao and Yeh, 2019).

Although the effect of AFP on the compromise strategy was significantly positive in Study 1, it was not in Study 2. A possible explanation is that the effect of AFP is more variable and affected by some situational features such as parental responses (Yeh, 2012; Merolla and Kam, 2017). The surrender of an adolescent with higher AFP may first facilitate their parents in discussing conflict in a kinder manner, which then allows both parties to compromise. However, this effect may not stable enough to last for a 1-year lag.

These findings suggest a potential application. Parent-adolescent conflict is unavoidable for most adolescents (Robin and Foster, 1989), and it can cause Chinese adolescents to struggle (Kwan, 2000). On the one hand, they hope to display their inner attributes without social constraint, but on the other, they want to practice filial piety by fulfilling parental expectations (Tsao and Yeh, 2019). Based on our findings, we suggest that practitioners such as family life educators can elaborate the difference between RFP and AFP and emphasize how RFP can guide adolescents through parent-child conflict by facilitating

mutual understanding, especially for those Chinese adolescents who hold only high AFP.

## Resolution Strategies in Conflict With Filial Piety

Our results indicate that both the utility and escape strategies, which reflect lower concern for parental expectations, are negatively associated with adolescents' endorsement of the dual aspects of filial piety. These findings correspond to the conceptualization of filial piety, and reveal some noteworthy differences between RFP and AFP as well as some differences among the four parent-child dyads.

First, AFP has a more compelling effect than RFP in preventing Chinese adolescents from adopting a utility strategy. The negative effect of RFP was only significant in Study 1. It was not stable enough to reach significance with the 1-year lag in Study 2. However, the negative effect of AFP was quite robust in both studies. Previous research has likewise found that adolescents' perceived role constraints and awareness of the obligation to obey their parents were positively correlated only with AFP, and not with RFP (Liu, 2013; Yeh, 2014). We also found that the negative effect of AFP on the utility strategy only reached significance for female adolescents, but not male adolescents. It might be because the belief in AFP stemming from Chinese authoritarian moralism also cultivates a gender frame for male youths that as the successive family leader in the future, they should demonstrate their bravery, perseverance, and determination (Shek and Lai, 2000; Li and Lamb, 2013). Thus, male adolescents highly endorsing AFP may sometimes moderately rebel against their parents to subdue this gender frame imposed on them.

Second, we found that the effect of RFP on the escape strategy was significant for the father-child and mother-child dyads in both studies, but that of AFP was fragile and differed between Study 1 (only significant for mother-child model) and Study 2 (only significant for father-daughter model). We speculate that this unstable effect of AFP could be confounded by some situational features such as parental awareness. If parents have noticed the conflict, adolescents with higher AFP would be more likely to adopt a self-sacrifice strategy to demonstrate their obedience. If parents were unaware of the conflict, however, adolescents with higher AFP may try their best to avoid going against parental authority by using the escape strategy. In contrast, because adolescents who highly endorse RFP authentically care about their parent's expectations, they are less likely to escape whether or not their parents know about the conflicts.

## FAC as a Mediator Between Filial Piety and Conflict Resolution Strategies

We confirmed that FAC may be the underlying mechanism linking adolescents' RFP belief to use of the compatibility and compromise strategies. This finding echoes the conceptualization of *functional conflict* that scholars proposed as a condition in which people freely express their inner attributes (e.g., Baron, 1991). FAC is defined as a key component of functional conflict

(Yeh, 2012), and its adaptive effects have been identified in both parent-child (Yeh and Tsao, 2014) and romantic relationships (Chiao et al., 2018). An additional contribution from our findings is that RFP belief may be a potential antecedent for functional conflict in parent-child relationships. It can contribute to family life educators' efforts to promote Chinese adolescents' ability to respond to conflict with their parents.

We also found that some unexpected mediation mechanisms resulted from some significant effects of FAC on the conflict resolution strategies, namely self-sacrifice, utility, and escape. For the self-sacrifice and utility strategies, our results showed that FAC had a positively significant effect. These findings may indicate that the self-sacrifice and utility strategies can be appropriate in some situations. In some cases, adolescents may accept the rationale of their parents' opinion and consequentially abandon their original position. In other cases, they may attempt to stand on their original position to facilitate their parents' better understanding of their opinions. We also found that FAC had a negatively significant effect on the escape strategy. The more adolescents believe that conflict with their parents can be functional and meaningful, the less they use the escape strategy to abandon both their personal goals and parental expectations.

It is worth emphasizing, in the father-child context, the significance of the FAC' effect on these three strategies was eliminated by the adolescents' gender. For the father-daughter context, the effect of FAC on the utility strategy was not significant. It might be because daughters in Chinese families are generally expected to value harmony (Shek, 2000; Chao, 2008). Especially in conflict with their fathers who assume the dominant position in the family, female adolescents with high FAC might be less likely to take the risk of breaking the relationship to resist their fathers' authority.

For the father-son context, the effect of FAC on the self-sacrifice strategy was not significant. It might be because fathers in Chinese families have the responsibility to discipline their adolescent sons as the successive leaders (Shek and Lai, 2000; Li and Lamb, 2013), and male adolescents might face a dilemma when in conflict with their fathers. Although adopting a self-sacrifice strategy can let them avoid rebellion against their fathers' authority, it also violates their fathers' expectation to develop them as the successive authority figure. This dilemma might weaken the negative effect of FAC on the escape strategy because some male adolescents endorsing high FAC would perceive escape as an acceptable choice in this complex situation.

Unexpectedly, we found that AFP had significantly negative impact on FAC within father-daughter dyad, and the latter in turn on the compatibility and compromise resolution strategies. As mentioned above, Chinese female adolescents who value family harmony (Shek, 2000; Chao, 2008) would try to avoid challenging the authority of their fathers. In particular, female adolescents who identify AFP would be more worry about conflicts with their fathers and do not regard conflicts with their fathers as a kind of functional event in parent-child interaction.

## Limitations and Future Directions

Several limitations are evident. The first is common method variance bias, which could have confounded the relationship

between RFP and FCA in Study 2 because they were assessed at the same time. Second, although we adopted a follow-up design in Study 2, we still do not suppose the causal relationship and directionality among the changes of these variables. Further research could adopt a more precise design, such as the panel model, to remedy this limitation. Third, although previous research has verified the disparate influences of the various resolution strategies, it would be more complete if future research could directly investigate the entire mechanism of filial belief, conflict appraisal, tendency to apply particular resolution strategies, and the different adaptations in just one model. Fourth, the understanding of the detailed mechanism linking AFP to the self-sacrifice strategy is still very limited and needs further exploration and examination.

Fifth, in Study 2 we found the missing data that only participated at Time 1 but didn't at Time 2 had significantly lower scores on RFP, AFP, and FAC than the valid data. It could be that adolescents with lower scores on these variables may be more likely to have a poor parent-child relationship and lower willingness to continue participating in our follow-up survey. This unexpected finding highlights that our results may not be fully representative and thus requires additional research to replicate the findings in future research.

Sixth, many factors that could have affected our findings were not considered in these studies, such as parental awareness, rationale of the parental advice, and parental responsiveness. Future research could investigate whether these factors might influence our findings. In addition, the factors that determine whether adolescents who emphasize RFP tend to adopt a compatibility or compromise strategy is still an unresolved issue. It is possible that the better the adolescent's efficacy in dealing with parent-child conflict, the more likely the adolescent is to adopt compatibility rather than compromise as a strategy.

The final limitation relates to external validity. Recent research found a within-culture difference in dual filial piety among emerging adults from Taiwan, Hong Kong, and China due to the unique societal social flux, political climate, and economic development (Yeh et al., 2013). This implies that our findings with Taiwanese adolescents may not be analogous to adolescents who grow up in other Chinese societies. Future research should investigate whether our findings are supported in different Chinese societies.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved from the appropriate review board of the National Taiwan University, and oral informed consent was obtained from

the participants. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

## AUTHOR CONTRIBUTIONS

C-WW and K-HY substantial contributions to the conception or design of the work and analysis and interpretation of concepts, revising it critically for important intellectual content, final approval of the version to be published, agreement to be accountable for all aspects of the work in ensuring that

questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Both authors contributed to the article and approved the submitted version.

## FUNDING

This study was funded by Ministry of Science and Technology, Taiwan (Grant/Award Number: NSC 100-2410-H-001-010-MY3).

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- Conflict of Interest:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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# The Relations of Parental Autonomy Support, Parental Control, and Filial Piety to Chinese Adolescents' Academic Autonomous Motivation: A Mediation Model

Mingchun Guo<sup>1\*</sup>, Long Wang<sup>1</sup>, Jamin Day<sup>2,3</sup> and Yanhan Chen<sup>4</sup>

<sup>1</sup> School of Psychology, Fujian Normal University, Fuzhou, China, <sup>2</sup> School of Psychology, Faculty of Health and Behavioural Sciences, The University of Queensland, Brisbane, QLD, Australia, <sup>3</sup> School of Creative Industries, College of Human and Social Futures, The University of Newcastle, Callaghan, NSW, Australia, <sup>4</sup> School of Psychology, South China Normal University, Guangzhou, China

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Malaysia

### \*Correspondence:

Mingchun Guo  
mingchun.guo@foxmail.com

### Specialty section:

This article was submitted to  
Developmental Psychology,  
a section of the journal  
Frontiers in Psychology

**Received:** 14 June 2021

**Accepted:** 09 August 2021

**Published:** 27 August 2021

### Citation:

Guo M, Wang L, Day J and Chen Y (2021) The Relations of Parental Autonomy Support, Parental Control, and Filial Piety to Chinese Adolescents' Academic Autonomous Motivation: A Mediation Model. *Front. Psychol.* 12:724675. doi: 10.3389/fpsyg.2021.724675

This study attempted to examine the mediating role of filial piety in the relationships between parental autonomy support and control and Chinese adolescents' academic autonomous motivation. A set of questionnaires were administered to 492 adolescent students at two senior high schools in Fuzhou, China. Confirmatory Factor Analysis and Structural Equation Modeling were employed to analyze the data. The results showed that reciprocal filial piety (RFP) fully mediated the relationships of parental autonomy support and behavioral control with adolescents' academic autonomous motivation. RFP did not significantly mediate the relationship between psychological control and academic autonomous motivation. Comparatively, authoritarian filial piety (AFP) did not play a significant mediating role in the relationship between the three parenting dimensions and adolescents' academic autonomous motivation. The findings provide a new perspective for understanding the relationship between parenting behaviors and Chinese adolescents' academic autonomous motivation.

**Keywords:** autonomy support, parental control, filial piety, self-determination theory, academic autonomous motivation

## INTRODUCTION

Autonomous motivation means that individuals engage in activities out of their own choice, volition, or values, which consists of two forms of motivation, including intrinsic motivation and identified motivation (Deci and Ryan, 1985; Ryan and Connell, 1989). Intrinsic motivation refers to individuals doing an activity for joy or pleasure, whereas identified motivation refers to individuals engaging in an activity because of their own values or goals (Deci and Ryan, 1985; Ryan and Connell, 1989). Individuals with autonomous motivation tend to enjoy what they are doing and persist in challenging situations (Ryan and Deci, 2000). Moreover, research has consistently shown that autonomous motivation for academic learning contributes significantly to students' academic



achievement and subjective well-being across different grades, subjects, and cultures (e.g., Ahmed and Bruinsma, 2006; Velki, 2011; Feri et al., 2016).

## Parental Autonomy Support and Control and Children's Academic Motivation

In the past decades, researchers have paid much attention to the impact of parental autonomy support and parental control on children's academic motivation. Reviews of previous research have shown that parental autonomy support characterized by respecting children's viewpoints, allowing children to make their own choices and supporting children's initiatives and problem-solving efforts is positively related to children's academic intrinsic motivation, autonomous self-regulation and metacognitive skills, which in turn contribute to their academic performance (Grolnick, 2009; Pino-Pasternak and Whitebread, 2010). Conversely, parental control characterized by asserting their authority, directing children's behavior and problem solving for children is linked to children's academic extrinsic motivation, performance goal orientation and poor academic performance (Grolnick, 2009; Pino-Pasternak and Whitebread, 2010).

Researchers have distinguished two types of parental control: psychological control and behavioral control (Barber et al., 1994). Psychological control refers to parents' intrusion into children's psychological and emotional life by guilt induction, love withdrawal and authority assertion (Barber et al., 2005; Wang et al., 2007); Comparatively, behavioral control is conceptualized as parents controlling and managing children's activities and behaviors in the physical world and providing children with needed guidance. Some research has found that psychological control was negatively related to children's self-determined motivation and self-directed learning (Lee and Kwon, 2012), and contributed to children's learned helplessness (Filippello et al., 2018). In contrast, Lee et al. (2012) found that parental behavioral control was positively associated with children's self-regulation, which in turn contributed to their school adjustment and academic achievement.

Chinese parents have high expectations of children's academic achievement (Leung and Shek, 2011), and have higher levels of home-based involvement in children's education compared with European American parents (Huntsinger and Jose, 2009; Wu et al., 2013). It implies that Chinese parents play an important role in Chinese children's academic lives. Although some research has examined the underlying mechanism in the relationship between parenting behaviors and Chinese children's academic motivation using mediators such as personality (Guo and Wu, 2011) and self-efficacy (Sun et al., 2021), little research has investigated the mechanism from a Chinese cultural perspective. We argue that one important Chinese cultural factor, that is filial piety, can help to further understand the process by which parental autonomy support and parental control relate to adolescents' academic autonomous motivation. Filial piety is a crucial value in Chinese culture and emphasized in Chinese family life (Yeh, 2003), which contributes to children's academic motivation (Chow and Chu, 2007). However, more empirical research is needed to examine the role of filial piety in the relationship

between parenting behaviors and Chinese adolescents' academic autonomous motivation.

## Parenting and Children's Filial Piety Toward Parents

Filial piety contains a set of rules and ideas around how children should treat their parents (Ho, 1996). The duties that filial piety requires children range from material to emotional support for parents, including taking care of elderly parents, showing respect, deference and compliance to parents as well as memorializing them after parents pass away (Yeh and Bedford, 2003).

Yeh (2003) and Yeh and Bedford (2003) have developed a dual model of filial piety, classifying it into two dimensions: reciprocal filial piety (RFP) and authoritarian filial piety (AFP). RFP refers to children showing respect and love, and supporting and caring for parents out of gratitude for their efforts in raising and taking care of them; AFP means that children suppress their own wishes and comply with parents' wishes due to their seniority, and protect parents' reputation and continue the family lineage to meet cultural expectations within Chinese society (Yeh, 2003; Yeh and Bedford, 2003). Filial piety is shaped and developed primarily via parenting, hence how parents interact with and care for their children influence children's development of filial piety toward parents (Yeh and Bedford, 2004; Chen, 2014).

Indeed, some research has shown that authoritative parenting (Huang and Yeh, 2013; Chen, 2014) and supportive parenting (Chen et al., 2015) were associated with both RFP and AFP, whereas authoritarian parenting (Huang and Yeh, 2013; Chen, 2014) was only related to AFP. Huang and Yeh (2013) further found that adolescents experiencing authoritative parenting had gratitude for their parents, which in turn was related to their RFP toward parents. Moreover, adolescents experiencing authoritative parenting also felt committed to suppress their own wishes and comply with parents' wishes (i.e., committed compliance), thus developing high levels of AFP as well. In contrast, under authoritarian parenting, children complied with parents only because of external forces such as parents' authority or others' judgment (i.e., situational compliance), and thus developed high levels of AFP. Therefore, the findings imply that there are two ways for children to develop high levels of AFP, one through positive parenting and the other through negative parenting.

## Filial Piety and Children's Academic Motivation

A few studies have examined the relationship between filial piety and children's academic motivation. Early research has demonstrated that adolescents' filial piety could significantly predict their academic motivation (Chow and Chu, 2007; Hui et al., 2011), even after controlling for a series of parent and child variables. Chow and Chu (2007) pointed out that making efforts and achievement in learning is a common way for Chinese children to bring honor to their parents and to repay their parents' efforts and sacrifice in raising them, which contributes to children's high levels of academic motivation.

Further, Chen (2016) found that Hong Kong university students with high levels of RFP tended to be motivated

to study based on their own interests and desire to learn knowledge and skills (i.e., mastery orientation), which in turn was associated with their better academic achievement. Comparatively, those with high levels of AFP were likely to adopt performance-approach and performance-avoidance goals, which subsequently contributed to better and worse academic achievement, respectively. Chen (2016) explained that students with AFP might tend to conduct filial behaviors to satisfy cultural role requirements for students, thus contributing to their development of performance-oriented goals.

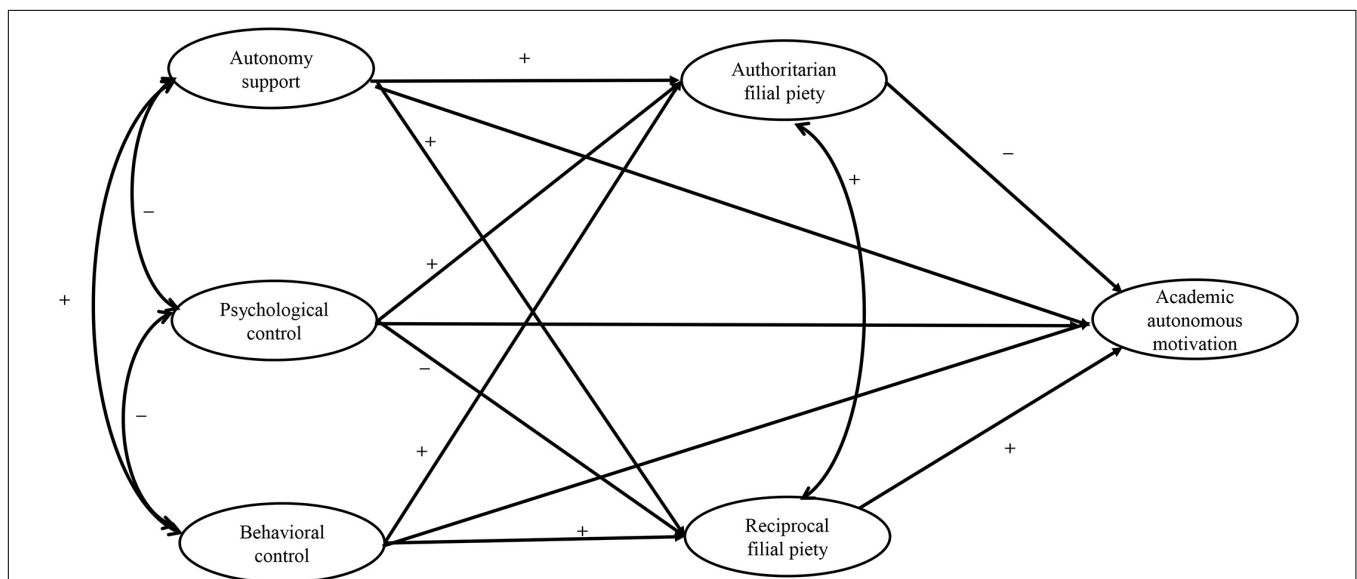
## Theoretical Framework

According to self-determination theory (Ryan and Deci, 2000; Grolnick, 2009), parents can help to facilitate children's autonomous motivation by meeting their basic psychological needs, including needs for autonomy, competence, and relatedness. Further, Grolnick (2009) conceptualized three parenting dimensions, including parental autonomy support versus control, parental structure, and parental involvement, which can satisfy the three basic needs, respectively and thus promote children's autonomous motivation, by facilitating children's intrinsic motivation and increasing autonomy for extrinsic motivation. Although Grolnick (2009) conceptualized parental autonomy support and parental control as two opposite constructs of the same continuum, empirical research has demonstrated that autonomy support, behavioral control and psychological control are relatively independent (Wang et al., 2007). Therefore, this study treated them as three independent variables and examined their relationships with adolescents' filial piety and academic autonomous motivation.

Integrating the existing findings (Huang and Yeh, 2013; Chen, 2016) into the framework of self-determination theory (Ryan and Deci, 2000; Grolnick, 2009), we speculate that parental autonomy support can satisfy Chinese adolescents'

autonomy need, so that they have genuine gratitude for parents and develop high levels RFP toward their parents; subsequently, these adolescents would experience themselves as active agents and tend to enjoy learning activities, thus enhancing their academic intrinsic motivation. Moreover, it can also facilitate adolescents' autonomous integration of parents' academic expectations into their own values, thus they are likely to develop academic identified motivation. Both academic intrinsic motivation and academic identified motivation are parts of academic autonomous motivation (Deci and Ryan, 1985; Ryan and Connell, 1989). Comparatively, parental psychological control cannot satisfy adolescents' need for autonomy, hence they only develop high levels of AFP toward parents because of cultural requirements or fear of parental authority. Consequently, the adolescents would be less likely to experience as active agents in academic learning or integrate parents' academic expectations into their own values, thus not developing academic autonomous motivation.

Regarding behavioral control, since parents control children without intrusion into their psychological world, but with respect and guidance, it can be seen as a kind of parental structure (Grolnick, 2009; Grolnick and Pomerantz, 2009). As such, parental behavioral control can help adolescents to understand "how to achieve success and avoid failure in school (i.e., have a sense of perceived control)" (Grolnick, 2009), thus meeting their need for competence. As a result, adolescents have gratitude for parents and develop high levels of RFP toward their parents. Adolescents with high levels of RFP also tend to feel competent in academic learning, which helps to develop their academic intrinsic motivation for learning. Moreover, they are also likely to internalize parents' expectations into their own values, thus developing academic identified motivation. Therefore, RFP would also mediate the relationship between behavioral control and academic autonomous motivation.



**FIGURE 1 |** Conceptual model (+ refers to the positive relation and - refers to the negative relation).

Moreover, adolescents experiencing parental autonomy support and behavioral control might also feel committed to comply with parents' wishes, thus developing AFP toward parents. Although adolescents with AFP might tend to learn due to their compliance with parents' expectations rather than out of their own willingness, they are less likely to integrate parents' expectations into their own beliefs. Therefore, we believe that AFP would not mediate the relationship between autonomy support/behavioral control and academic autonomous motivation.

## The Present Study

This study aimed to examine the mediating role of filial piety in the relationships of parental autonomy support, psychological control, and behavioral control with Chinese adolescents' academic autonomous motivation. Because senior high school students strive for autonomy and independence from parents at their age (Berk and Meyers, 2016), it is important to understand how parents can really facilitate their academic autonomous motivation. The hypothesized relationships among variables are presented in **Figure 1**.

## METHODS

This study employed a cross-sectional research design and used convenience sampling for data collection. Because some researchers suggested at least five cases/observations per free parameters in a SEM (Structural Equation Modeling) model (Bentler and Chou, 1987; Bentler, 1995), with 63 free parameters in the SEM model, we tried to collect data from more than 315 adolescents for our study.

## Participants

Participants were 492 students in grades 10 and 11 from two senior high schools in Fuzhou, which is the capital city of Fujian Province in China. Forty-five students were removed from data analysis, because the participants: (1) selected the "disagree to participate" option on the informed consent form ( $n = 20$ ); (2) completed questionnaires with no response variance (e.g., ticked one choice for the entire questionnaire;  $n = 17$ ); or (3) did not fill out questionnaires ( $n = 8$ ). Valid data were obtained from  $N = 447$  students. Detailed demographic information is shown in **Table 1**.

## Procedure

All procedures were approved by the Academic Ethics Committee of Fujian Normal University. In this study, both adolescent participants and their parents read an information sheet and signed a consent form prior to participation. Nine different classes in the two senior high schools were randomly selected and 508 hardcopies of questionnaires were distributed to students in classrooms. Trained data collectors explained how to complete the questionnaires to students, and they received a notebook and a pen for completing the questionnaires. Finally, 492 students returned the questionnaires to data collectors and thus the response rate of the survey was 96.85%.

**TABLE 1 |** Demographic characteristics of the sample.

	N	%
<b>Child gender</b>		
Boys	205	45.86
Girls	241	53.91
<b>Single child or not</b>		
Yes	198	44.34
No	219	49.02
<b>Family status</b>		
Single-parent family	21	4.70
Intact family	420	93.96
<b>Multi-generation or nuclear family</b>		
Multi-generation family	186	41.61
Nuclear family	257	57.49
<b>Mother education</b>		
Elementary or lower	69	15.44
Junior middle school	129	28.86
Senior high school	92	20.58
Associate degree	71	15.88
Bachelor degree	67	14.99
Master or doctoral degree	10	2.24
<b>Father education</b>		
Elementary or lower	35	7.83
Junior middle school	122	27.29
Senior high school	113	25.28
Associate degree	57	12.75
Bachelor degree	97	21.70
Master or doctoral degree	16	3.58

*Note. Percentages may not add up to 100 due to missing data.*

## Measures

### Demographic Information

Demographic information was collected using a number of items asking participants about their gender, family status, number of siblings, father and mother education and etc.

### The Parental Autonomy Support Scale

The Parental Autonomy Support Scale is a 12-item scale assessing perceived parental autonomy support (Wang et al., 2007). It has two dimensions including choice making, which has six items about parents allowing children to make their own choices/decisions (e.g., "My parents allow me to make choices whenever possible"), and opinion exchange, which consists of six items assessing the extent to which parents respect children's opinions and exchange opinions with children (e.g., "My parents listen to my opinion or perspective when I've got a problem"). The items are rated on a 5-point scale. The measure has been used in a Chinese sample and obtained good concurrent validity and internal consistency (Chen et al., 2019).

### The Psychological Control Scale

The Psychological Control Scale was used to measure perceived psychological control (Wang et al., 2007). It is an 18-item scale with three dimensions: guilt induction (10 items, e.g., "My parents tell me about all the things they have done for me"), love

withdrawal (5 items, e.g., “My parents avoid looking at me when I have disappointed them”), and authority assertion (3 items, e.g., “My parents say, when I grow up, I will appreciate all the decisions they make for me”). Items are rated on a 5-point scale. The measure has shown adequate psychometric properties in a Chinese sample (Li et al., 2019).

### The Behavioral Control Scale

The Behavioral Control Scale was used to assess perceived behavioral control (Wang et al., 2007). It is a 16-item scale including two factors, including solicitation (8 items, e.g., “My parents ask me to tell them what happens in school”) which assesses the extent to which parents ask or talk with children about their activities, friends and schoolwork and etc., and restriction (8 items, e.g., “My parents require me to speak with them before I decide on plans for weekends with my friends”) which measures parents’ restrictions on children’s activities and behaviors. The psychometric properties of this scale has been demonstrated among Chinese adolescents (Li et al., 2015). Participants are asked to rate how often their parents engage in a range of parenting practices on a 5-point scale.

### The Dual Filial Piety Questionnaire

The Dual Filial Piety Questionnaire was used to assess children’s beliefs about RFP and AFP by asking participants to rate how important they think the ways children should treat their parents are for them (Yeh, 2003). It has two dimensions: AFP (8 items, e.g., “Live with parents even after marriage”) and RFP (8 items, e.g., “Talk with parents to know about their thoughts and feelings”). The psychometric properties of the measure has been demonstrated in Chinese samples (e.g., Chen and Ho, 2012). Participants are asked to respond to the items on a 6-point Likert scale.

### The Chinese Motivated Strategies for Learning Questionnaire (MSLQ)

The Chinese Motivated Strategies for Learning Questionnaire (MSLQ) was used to assess students’ academic motivation and self-regulated learning strategies (Rao and Sachs, 1999), which consists of two subscales: motivation subscale (22 items) and self-regulated learning subscale (22 items). The motivation subscale consists of three factors: intrinsic value, self-efficacy and test anxiety. Only the factor of intrinsic value was used in this study, because the items mainly assess students’ interest in learning (e.g., “I like what I am learning in school”) and their beliefs about the importance of learning (e.g., “It is important for me to learn what is being taught in this class”) (Pintrich and De Groot, 1990), which are actually student academic intrinsic motivation and academic identified motivation. Moreover, intrinsic value has been found to be significantly related to students’ task-involved motivation, self-regulated learning strategies and academic achievement (e.g., Rao and Sachs, 1999; Rao et al., 2000). Therefore, we believe it can be used to measure academic autonomous motivation. The items are rated on a 7-point scale.

The CFA models of all the scales used in this study had good fit to the data, and Cronbach’s alpha coefficients ranged from 0.80 to 0.88. Detailed information about model fit indices

and internal consistency can be obtained by contacting the corresponding author.

## Data Analysis

Using Harman’s single-factor test (Podsakoff et al., 2003), exploratory factor analysis was performed, and the results showed that the first factor explained 14.14% of total variance, indicating insignificant common method bias in this study. The proportion of missing data in the dataset was 0.43%. Full Information Maximum Likelihood (FIML) was used in Mplus 8.3 to handle missing data (Graham, 2009). The measurement model of the six latent constructs including the three parenting dimensions, RFP, AFP and academic autonomous motivation was examined by CFA and then the proposed mediation model was estimated using SEM in Mplus 8.3 (Muthén and Muthén, 1998–2017). The chi-square index ( $\chi^2$ ), the root mean square error of approximation (RMSEA), the Tucker-Lewis index (TLI), the comparative fit index (CFI) and the standardized root mean square residual (SRMR) were used to assess the model fit. Model fit was deemed acceptable using the following cutoffs: TLI and CFI > 0.90 (Hu and Bentler, 1999; Marsh et al., 2004) and SRMR and RMSEA < 0.08 (Hu and Bentler, 1999; Browne and Draper, 2006).

Item parcels were created and used as indicators of latent variables to reduce model complexity and achieve good model fit (Little et al., 2002). For parental autonomy support, behavioral control and psychological control, we used average scores of items for each dimension as indicators of latent variables according to the internal-consistency approach (Kishton and Widaman, 1994). Three parcels were created for dual filial piety and academic autonomous motivation based on the item-to-construct balance approach (Little et al., 2002). Because adolescent gender was significantly correlated with filial piety and academic autonomous motivation, it was included in the SEM model as a controlling variable. The mediation effects of filial piety was examined using the bias-corrected percentile bootstrap method with 1,000 resamples (Mackinnon, 2011). If the 95% CI (bias-corrected confidence intervals) of the indirect effects in the mediation model did not include zero, we considered the indirect effects to be statistically significant (Mackinnon, 2011).

## RESULTS

### The Measurement Model

The results showed that the measurement model fit was satisfactory ( $\chi^2 = 307.71$ ,  $df = 89$ , CFI = 0.94, TLI = 0.92, SRMR = 0.06, RMSEA = 0.07). The correlation matrix of latent constructs is shown in **Table 2**.

### The Mediation Model

The results showed that the mediation model obtained good fit indices,  $\chi^2 = 355.47$ ,  $df = 102$ , CFI = 0.93, TLI = 0.91, RMSEA = 0.07, SRMR = 0.07. Standardized parameter estimates are presented in **Figure 2**. As the figure shows, both autonomy support and behavioral control were significantly and positively associated with RFP, which in turn was significantly related



**TABLE 2 |** Correlations, means and standard deviations of the study variables.

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Child gender	—	0.50	—													
2. Child age	16.76	0.70	−0.12*	—												
3. Child grade	—	0.50	−0.07	0.73**	—											
4. Single child or not	—	0.50	0.16**	−0.06	−0.01	—										
5. Family status	—	0.21	0.04	0.02	0.02	−0.03	—									
6. Multi-generation or nuclear family	—	0.49	−0.05	−0.07	−0.05	−0.01	0.00	—								
7. Mother education	2.92	1.38	−0.02	−0.00	0.05	−0.33**	−0.10*	0.02	—							
8. Father education	3.24	1.36	−0.01	−0.06	−0.01	−0.35**	−0.02	−0.04	0.67**	—						
9. Autonomy support	3.43	0.75	0.06	0.09	0.13**	0.04	−0.03	0.05	0.08	0.04	—					
10. Psychological control	2.79	0.88	−0.09	−0.07	−0.13**	0.08	0.00	0.04	−0.09	−0.06	−0.47**	—				
11. Behavioral control	3.13	0.71	0.10*	−0.10*	−0.09	−0.01	−0.09	−0.02	0.07	−0.06	0.02	0.25**	—			
12. Authoritarian filial piety	2.82	0.89	−0.16**	0.08	0.06	0.02	−0.07	0.02	−0.07	−0.03	0.24**	0.10*	0.21**	—		
13. Reciprocal filial piety	5.01	0.71	0.15**	−0.03	−0.01	0.08	−0.01	0.01	−0.06	−0.06	0.41**	−0.13**	0.28**	0.29**	—	
14. Academic autonomous motivation	4.56	1.01	−0.21**	−0.07	−0.02	−0.06	−0.05	−0.01	0.06	0.08	0.20**	0.02	0.13**	0.16**	0.32**	—

Note. \* $p < 0.05$ . \*\* $p < 0.01$ ; missing values were treated using the expectation maximization (EM) approach; the means of binary variables such as child gender are not presented.

to academic autonomous motivation. The three parenting dimensions were positively associated with AFP, but AFP was not related to academic autonomous motivation. Finally, the direct paths from the three parenting constructs to academic autonomous motivation were all not significant.

In terms of the indirect effects, RFP had a full mediation effect in the relations of autonomy support ( $\beta = 0.13$ ,  $SE = 0.05$ , 95% CI [0.01, 0.22]) and behavioral control ( $\beta = 0.15$ ,  $SE = 0.06$ , 95% CI [0.04, 0.32]) to academic autonomous motivation. In contrast, AFP did not mediate the relations of the three parenting dimensions to autonomous motivation. Autonomy support ( $\beta = 0.19$ ,  $SE = 0.10$ , 95% CI [0.05, 0.34]) and behavioral control ( $\beta = 0.18$ ,  $SE = 0.10$ , 95% CI [0.03, 0.43]) had significant total effects on academic autonomous motivation, whereas psychological control did not have significant total effect on academic autonomous motivation ( $\beta = 0.07$ ,  $SE = 0.09$ , 95% CI [−0.21, 0.21]). The mediation model explained 23.50% of the variance in academic autonomous motivation.

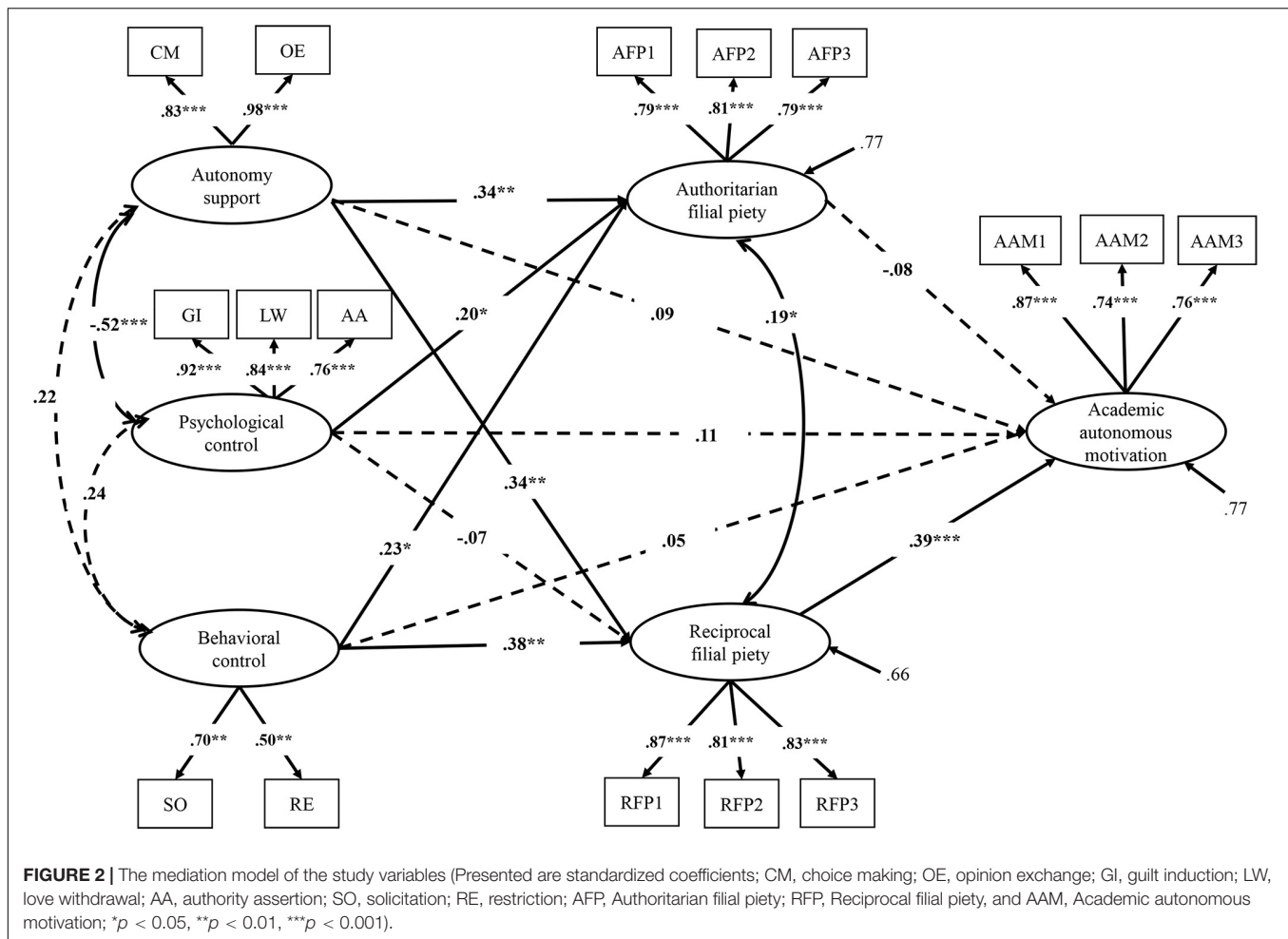
## DISCUSSION

This study administered a set of questionnaires to Chinese adolescents to examine the mediating role of filial piety in the relationship between perceived parental autonomy support and control and adolescents' academic autonomous motivation. The results showed that parental autonomy support and behavioral control were positively associated with adolescents' RFP, which in turn contributed to their academic autonomous motivation. Moreover, RFP fully mediated the relationship between autonomy support and behavioral control and academic autonomous motivation. In addition, psychological control was significantly associated with AFP, which was not significantly related to adolescents' academic autonomous motivation, and AFP did not significantly mediate the relationship between

psychological control and academic autonomous motivation. It should also be noted that parental autonomy support and behavioral control were also positively related to adolescents' AFP, but AFP did not significantly mediate the relationship between autonomy support and behavioral control and academic autonomous motivation. These results largely provide support for the hypothesized model.

With respect to the relationship between the three parenting constructs and adolescents' filial piety, the results of the present study are consistent with the findings of the existing research, which showed significant relationships of children's perceptions of authoritative parenting (Huang and Yeh, 2013; Chen, 2014) and supportive parenting (Chen et al., 2015) with both RFP and AFP, whereas perceived authoritarian parenting (Huang and Yeh, 2013; Chen, 2014) was only related to AFP. It is not surprising since parental autonomy support and behavioral control can be seen as part of authoritative parenting, which means that parents place appropriate demands on children while being responsive, warm, supportive and providing autonomy for children; and psychological control can be seen as part of authoritarian parenting because authoritarian parents have high demands on children but are parent-centered and do not respond to children's psychological needs (Baumrind, 1967; Darling and Steinberg, 1993). These findings indicate that RFP have distinctive relationships with positive and negative parenting, but AFP relates to both positive and negative parenting statistically in a similar pattern.

Regarding the association of filial piety with academic autonomous motivation, the results showed that RFP but not AFP was related to adolescents' academic autonomous motivation. Considering the similarity between mastery goal orientation and academic autonomous motivation, the results can be seen as consistent with Chen (2016)'s findings. RFP is based on warm, close parent-child relationships (Yeh and Bedford, 2004) and have their autonomy need satisfied (e.g.,



Zhou et al., 2020), thus adolescents with high levels of RFP tend to be interested in learning. In the meantime, they are also likely to integrate parents' academic expectations into their own values. Hence these adolescents tend to develop academic autonomous motivation. In contrast, AFP is based on parent-child hierarchy (Yeh, 2006), Adolescents with high levels of AFP might be likely to see learning as fulfilling an obligation for their parents, so that they only learn to meet child and student role requirements rather than out of their own interest or values. Therefore, adolescents are unlikely to develop academic autonomous motivation.

In addition to the similar pattern of relationship between AFP and positive and negative parenting, previous research also found that AFP was related to both individuals' positive and negative psycho-social functioning. For example, some research found that AFP was significantly associated with individuals' social competence, life satisfaction (Yao and Wei, 2016) and performance-approach goal orientation (Chen, 2016), whereas other research revealed significant relationship between AFP and individuals' maladaptive cognitions, internet addiction (Wei et al., 2019) and performance-avoidance goal orientation (Chen, 2016). Therefore, we speculate that there might be different types of AFP which have different relations to different parenting behaviors and children's developmental outcomes.

In summary, this study attempted to integrate filial piety into the framework of self-determination theory and the findings can provide a new perspective for understanding the mechanism in the relationship between parenting and children's academic motivation. Moreover, the results also indicate that psychologists and educators can probably enhance adolescents' RFP and academic autonomous motivation by encouraging and guiding their parents to provide autonomy support and use behavioral control for their adolescent children. However, there are three limitations in this study, including the limited area for recruiting participants, using cross-sectional research design, and employing self-report measures. Future studies can test the model in other areas of China and other cultural contexts, use longitudinal research design and multiple-informant approach to remedy the limitations.

## DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary materials, further inquiries can be directed to the corresponding author/s.



## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Academic Ethics Committee of Fujian Normal University. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

## AUTHOR CONTRIBUTIONS

MG designed the research, wrote, and revised the manuscript. LW analyzed the data and wrote the manuscript with MG. JD

proofread and revised the manuscript. YC involved in research design and collected the data. All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

## FUNDING

This study was supported by the Chinese National Education Sciences Planning Fund for Young Scholars (No. CBA170255).

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# A Measurement Invariance Investigation of the Polish Version of the Dual Filial-Piety Scale (DFPS-PL): Student-Employee and Gender Differences in Filial Beliefs

Joanna Różycka-Tran<sup>1\*</sup>, Paweł Jurek<sup>1</sup>, Michał Olech<sup>1,2</sup> and Tadeusz Dmochowski<sup>3</sup>

<sup>1</sup> Institute of Psychology, University of Gdansk, Gdańsk, Poland, <sup>2</sup> Department of Psychology, Medical University in Gdansk, Gdańsk, Poland, <sup>3</sup> Institute of Political Sciences, University of Gdansk, Gdańsk, Poland

## OPEN ACCESS

### Edited by:

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### \*Correspondence:

Joanna Różycka-Tran  
joanna.tran@ug.edu.pl

### Specialty section:

This article was submitted to  
Cultural Psychology,  
a section of the journal  
Frontiers in Psychology

**Received:** 22 May 2021

**Accepted:** 23 August 2021

**Published:** 28 September 2021

### Citation:

Różycka-Tran J, Jurek P, Olech M and  
Dmochowski T (2021) A Measurement  
Invariance Investigation of the Polish  
Version of the Dual Filial-Piety Scale  
(DFPS-PL): Student-Employee and  
Gender Differences in Filial Beliefs.  
*Front. Psychol.* 12:713395.  
doi: 10.3389/fpsyg.2021.713395

Filial beliefs are defined as a cognitive script or even a contextualized personality construct for social exchanges, which shapes the attitudes of individuals. In the given study, we investigate the factorial structure of the Polish version of the Dual Filial Piety Scale (DFPS-PL) and verify whether measurement of filial piety is invariant among students and employees, and among men and women. Two studies were conducted on different age samples: 489 students aged 18–24 and 849 employees aged 25–64. In order to verify the hypotheses, the DFPS-PL was administered. As a result of confirmatory factor analyses (CFA), it has been demonstrated that the structure of filial piety measured by the DFPS-PL among students and employees, and men and women, could be interpreted as two-factorial, and that there is partial scalar measurement invariance for the tested model across these groups (MGCFA). The comparison of the average latent mean scores suggests that employees declare a lower level of AFP (Authoritarian Filial Piety; need of social belonging and collective identity) than students. There were no significant differences between students and employees when RFP (Reciprocal Filial Piety; need of interpersonal relatedness) was compared. In addition, the results showed that women score higher in RFP than men. The given findings are discussed in the context of values transition in non-Asian countries. The main contribution is to confirm the factorial structure of the DFPS-PL and introduce the novel Eastern concept of Filial Piety to Western culture.

**Keywords:** filial piety, DFPS-PL, measurement invariance, cultural psychology, gender, employee

## INTRODUCTION

Traditional views of filial beliefs (*filial piety*) refer to the attitudes of children toward how they should treat their parents, as well as an emphasis on respect and care for elders, containing important ideas about social relations (Ho, 1986; Yeh, 2003). In modern psychological studies, we can observe the evolution of the conceptualization of filial piety: initially treated as a Chinese value-based cultural norm; nowadays, filial piety is viewed as universal construct, defined as a cognitive script or even a contextualized personality construct for social exchanges (Bedford and Yeh, 2019, 2021). Having considered the foregoing, the concept of filial piety was transferred from the cultural

dimension (*emic*) to the personality dimension (*etic*), demonstrating the universal mechanism of child-parent relationships found in diverse cultures, such as Korea, Japan, Malaysia, Thailand, Vietnam, USA, and even Poland.

In contemporary studies, the most popular model is the Dual Filial Piety Model (DFPM; Yeh, 2003), composed of two higher-order factors that correspond to the two focal filial piety attributes in the parent-child interaction: horizontal reciprocal filial piety (RFP), i.e., need of interpersonal relatedness, and vertical authoritarian filial piety (AFP), i.e., need of social belonging and collective identity, which have been shown to have distinct implications for social adaptation and psychological functioning of individuals (see: Yeh and Bedford, 2004; Yeh, 2017; Truong et al., 2020, for review). This model “links the surface content of a cultural norm at the collective level to its underlying psychological needs at the individual level” (Tsao and Yeh, 2019, p. 197). In other words, the psychological function of filial piety is linked to personal motives of children to care for their parents (a universal mechanism), but depending on the cultural context—which reinforces rights and well-being of parents to varying degrees (cultural specificity). Reconceptualizing filial piety has had numerous benefits: It reveals the vertical-horizontal duality of parent-child relationship and at the same time, highlights individual differences in patterns of interaction with parents—as a specific personality trait that is recorded as a response to kin relationships early in the life of a child (the social relationship matrix), also enables research in the field of cross-cultural psychology.

Modern studies confirmed that filial beliefs provide the social and ethical foundations for maintaining social order and influence: moral decision-making (Yeh and Bedford, 2020), academic choices (Hui et al., 2011), motivation and academic achievement (Chen and Wong, 2014; Różycka-Tran et al., 2021; Sappor, 2021), psychosocial adjustment (Leung et al., 2010), or leadership and organizational culture (Low and Ang, 2012). What is more, filial beliefs are correlated (RFP negatively/AFP positively) with hostile attribution bias and cyberbullying perpetration (Wei and Liu, 2020); related with lower psychological difficulties, behavioral problems, and hyperactivity (Ismail et al., 2009); RFP is positively associated with life satisfaction and social competence, while AFP is negatively associated with the self-esteem and social competence of children (Leung et al., 2010; Sun et al., 2019); RFP and AFP positively moderate the relationship between work stress and turnover intention to leave the employer through job satisfaction (Li et al., 2021).

## Filial Piety Among Employees and Students

Filial piety is an important psychological construct because young adults play a number of social roles (e.g., an employee or a leader). According to career construction theory (Savickas, 1995), cultural beliefs represent a social construct that may shape the career path of an individual in the future. It is believed that social environment, including the family of an individual, neighborhood, and school, as well as cultural norms, interacts and influences the career of the individual (Savickas, 2011); it was found that filial piety of employees was positively related to

their task performance and organizational citizenship behavior or that career-related RFP (but not AFP) was regarded as important and was associated with career adaptability dimensions (Porfeli and Savickas, 2012). However, because the filial concept comes from Asian culture with a patriarchal system (Hu and Chou, 2000; Liu and Kendig, 2000), it seems that the gender differences in caregiving probably reflect the patriarchal values, where women as wives are expected to perform caregiving duties for their husbands, as sons of aging parents and relatives (Chappell and Kusch, 2007) and could be different in more egalitarian cultures.

Based on these findings, we investigated the filial piety beliefs among employees (regardless of gender) and students. In Poland, parents generally expect obedience from their children but ultimately want them to be independent and self-reliant (Evason, 2017). As the children continue their education, living at home and are dependent on their parents, they are expected to obey the orders and act according to the wishes of their parents. After moving away from home, starting a professional career and starting a family, expectations toward children change dramatically. Parents expect to maintain interpersonal relatedness, but they do not interfere so much in the lives of adult children. In Polish society, the turning point in the life of an adult, affecting the relationship with parents, is starting living with a partner (Żadkowska et al., 2018) and getting married, which for those who continue education, generally occurs after graduation. Graduation is also the turning point of students entering society; it is associated with the start of a permanent job in the learned profession. For adult-working Polish, work very often becomes one of the central values in life (Grabowski, 2016), which redefines their responsibilities and social roles. On the one hand, being employed consumes time and efforts; on the other, it gives a sense of autonomy and independence, including from parents (Greenhaus and Beutell, 1985). Hence, we hypothesize that employees declare lower AFP than do students, and both groups will not differ in terms of RFP since these beliefs are also beneficial from the perspective of working life (see Porfeli and Savickas, 2012).

## Filial Piety and Gender

Because Western culture is more egalitarian (less patriarchal) and is especially fluid with respect to stereotyping and gender roles in society (World Economic Forum, 2020), we investigated the differences between Polish men and women in filial beliefs as they stand today, especially in the work place. Although previous studies had pointed out that adult daughters provide more assistance for their elderly parents than do adult sons (i.e., Zhan and Montgomery, 2003), this finding did not mean that the women have a higher level of filial piety than do the men. In Poland, women describe themselves as more communal than men (e.g., Kosakowska-Berezecka, 2012), which is associated with their greater identification with role, including caring, supporting, and integrating the family. Although the caregiving practices could be urged by both RFP and AFP beliefs, only RFP (as driven by the relational need for social connections) is consistent with stereotypical expectations toward Polish women of being warm, empathetic, and forgiving. Hence, we hypothesize



that Polish men declare lower RFP than women. However, we do not expect gender differences regarding AFP since, in the Polish context (a moderately gender equality country, see World Economic Forum, 2020), women and men are equally likely to endorse/not endorse authoritarian values (see Brandt and Henry, 2012).

In our opinion, already-described studies on the literature of filial beliefs (coming from different samples) suggest that the filial piety construct is rather a universal construct; however, it is underlined by specific psychological motivations that depend on culture, in a fashion similar to values (see: Różycka-Tran et al., 2017). So, in the given study, we would like to introduce the concept that filial piety beliefs are represented also by Polish people (universality) but are shaped by specific factors (e.g., employment or gender). In order to perform tests of mean differences, the invariance of the Polish version of the Dual Filial Piety Scale (DFPS-PL) must be evaluated across different social groups, so we investigated if filial piety could be explained by two dimensions (i.e., reciprocal and authoritarian) in the Polish culture and if DFPS-PL demonstrates scalar measurement invariance across student-employee and gender groups.

## Measures of Filial Piety

Since the beginning of the psychological research on filial piety in the 1970s, several measures have been employed in past studies to evaluate filial piety, and many standardized tools for measuring filial piety have emerged (e.g., Ho and Lee, 1974; Yang et al., 1989; Sung, 1995) that underline different aspects of this construct, e.g.: the Filial Behavior Scale (Chen et al., 2007), the Filial Expectation Scale (Wang et al., 2010), or the Filial Piety Scale for Chinese Elders (FPSCE; Fu et al., 2020).

For example, Ho (1994) developed the Filial Piety Scale, which focuses on attitudes toward filial piety, but it overlooks the actual filial behaviors of individuals, or the aspect of love and gratitude that benefit adaptation of adolescents. Gallois et al. (1999) developed a filial piety questionnaire, which emphasizes the cognitive aspect related to subjective norms. However, the questionnaire paid little attention to the underlying motives or reasons for filial behaviors and focuses more on an authoritarian component. To address the limitations of the abovementioned scales and to resolve the beneficial and harmful effects of the filial piety debate (see: Yeh, 2003), Yeh and Bedford (2003) developed the Dual Filial Piety Scale (DFPS), consisting of 16 items loaded on two subscales to measure reciprocal and authoritarian filial piety based on earlier studies (Yang et al., 1989; Yeh, 1997), which was found to have a good model fit in different samples (e.g., Yeh et al., 2013).

Because of cultural change, some authors claim that a majority of people no longer regard filial piety as an authoritative obligation in the twenty-first century. Although newer measures, such as the Contemporary Filial Piety Scale (CFPS, Lum et al., 2015) and the Three-Dimensional Filial Piety Model (TDFPM, Shi and Wang, 2019) are available, there are limitations to these measures, which hinder their applicability across cultures. It seems that “DFPM has been the most important theory, and the DFPS has been the most widely used scale in current filial piety research thus far” (Shi and Wang, 2019, p. 2). This is the

reason why DFPS is translated to many languages, e.g., Chinese (Fu et al., 2020), Malay (FPS-M; Tan et al., 2019), South Korean (Sung, 1995), Spanish (Kao and Travis, 2005), Arabic (AFPS; Khalaila, 2010), Vietnamese (DFPS-V; Truong et al., 2020), and now, Polish (DFPS-PL). The factorial structure of the DFPS-PL as an example of the Western culture was not investigated before. What is more, so far, there has been no study on the investigation of group differences of filial beliefs in society (e.g., student-employee or between gender groups).

## CURRENT STUDY

This article aimed to investigate the invariance and difference of the DFPS-PL between Polish students and employees as well as those between men and women. These two groups seem perfect as a “vehicle” for filial piety values, as parent-child relationships translate into later hierarchical employer vs. employee relationships, where there may be differences based on occupational position or gender. Poland is a country aspiring to egalitarian gender equality, especially in the professional sphere; therefore, it was interesting to study the level of filial piety separately among men and women. Additionally, in order to perform tests of mean differences, the invariance of the DFPS-PL must be evaluated, and latent mean differences must be investigated across different social groups in this scale.

The current paper aims to: (1) investigate the factorial structure of the DFPS-PL; (2) verify whether measurement of filial piety is invariant among students and employees, as well as among men and women; and (3) test the student-employee and gender differences in filial beliefs in the Western culture. Referring to the foregoing research purposes, we hypothesize that the two-factor filial piety model in the Polish population fits substantially better than the one-factor solution. Our hypotheses are based on the DFPM developed by Yeh and Bedford (2003), who found that two distinctive factors, fundamental values underlying the filial piety concept (RFP, AFP), are not mutually exclusive but coexist within an individual and may promote the same outcome (Bedford and Yeh, 2019).

We hypothesize that measurement of filial piety is invariant in the samples of students and in employees, and the samples of male and female, as well, i.e., we expect that the meaning and understanding of reciprocal and authoritarian filial piety should be similar in the above-mentioned samples, since filial piety is considered as a strong belief that is shaped by the culture in which an individual grows up (Bedford and Yeh, 2019). We hypothesize also that employees declare lower AFP but not lower RFP than do students, and men declare lower RFP but not lower AFP than women (see rationale in the *Introduction* section).

## METHOD

### Participants and Procedure

The back-to-back translation procedure was utilized to develop the Polish version of the DFPS-PL and followed the recommendations of ITC Guidelines for Translating and Adapting Tests (International Test Commission, 2017). Specifically, the original English version was first translated into

Polish by a bilingual psychology lecturer. Every effort was made to ensure semantic, idiomatic, and conceptual equivalence, and to preserve overall meaning and nuance. Next, the translated Polish version was then back-translated into English without referring to the original English version by another bilingual language expert. Then, both original and translated versions of DFPS were compared to ensure that the items were consistent. The authorisation of the translation of the DFPS was approved by the author, Kuang-Hui Yeh.

In the current study, a mix of non-probability sampling techniques was incorporated. A group of research assistants was asked to send a survey invitation to people who met one of the following criteria: being employed for at least 1 year, or being a full-time undergraduate or graduate student.

### Sample of Students

We collected data from 489 students (356 females and 133 males) aged from 18 to 24 years ( $M = 20.38$ ,  $SD = 1.27$ ) from various universities all over Poland, who completed an on-line or paper-pencil version of the scale. The questionnaire was preceded by demographic information and instructions for everyone.

### Sample of Employees

We collected data from 849 employees (580 females and 269 males) from a variety of industries operating in various regions of Poland. Some of these organisations are global companies with branches on the Polish market. Participants aged from 25 to 64 years ( $M = 37.06$ ,  $SD = 10.08$ ) completed an on-line or paper-pencil version of the scale supplemented with demographic questions. The sample included 132 managers, 426 specialists, and 291 employees in entry-level positions. As it can be seen, the employee sample is highly heterogeneous in terms of age, which may indicate the variety of life stages of the respondents. Considering the developmental periods were identified by Levinson (1978), the participants could be divided into the following age groups: early adulthood, age 25–39 ( $n = 516$ , 61%); middle adulthood, age 40–59 ( $n = 313$ , 37%), and late adulthood, age 60 onwards ( $n = 20$ , 2%).

The protocol of this study was approved by the Ethics Board for Research Projects at the Institute of Psychology, University of Gdansk. According to the local law of different universities, no written permission from the participants was required, as data were collected and analysed anonymously. The participants were assured that their data would remain anonymous and confidential, as we followed APA standards and the Declaration of Helsinki during data collection.

### Measures

The participants filled in the DFPS-PL, which consists of 16 items developed by Yeh and Bedford (2003). Eight items measure reciprocal and another eight items authoritarian filial piety. The respondents indicated how important each statement was to them, using seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Examples of the items measuring reciprocal filial piety include “Be grateful to parents for raising you”; the authoritarian items include “Live with

parents even after marriage” (for all scale items and their translation, see Table 2).

### Statistical Analyses

We used R environment (R Core Team, 2020) and lavaan package (Rosseel, 2012) to conduct confirmatory factor analysis (CFA) using maximum likelihood estimation with robust standard errors and a Satorra-Bentler scaled test statistic (MLM), which is better suited for non-normality of the data. First, two models were tested for a total sample, including a two-factor model, which was proposed by the authors of the original scale, and a one-factor model. Overall, the model fit was evaluated using the comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardised root mean square residual (SRMR). Although there are no universally accepted metrics of the model fit (McDonald, 2010), higher values indicate a better fit for the CFI, whereas lower values indicate a better fit for the RMSEA and SRMR. The following criteria for an adequate model fit were adopted:  $CFI > 0.90$  and  $RMSEA$  and  $SRMR < 0.08$  (Kline, 2016). Model-based reliability was estimated with coefficient omega (McDonald, 1999).

Second, we assessed through multigroup confirmatory factor analysis (MGCFA) three levels of measurement invariance across the compared samples: the configural invariance requires that a given set of indicators is predicted by the same latent variables with the same pattern of factor loadings; metric invariance requires that factor loadings are equal across the groups; and scalar invariance requires that factor loadings and all intercepts are equal across the groups (e.g., Milfont and Fisher, 2010). Partial invariance is established when the parameters of at least two indicators per construct are equal across groups (Byrne et al., 1989). We started investigating measurement invariance by testing for configural invariance across samples, using commonly used criteria to assess goodness of fit of the models. Next, to identify metric and scalar measurement invariance, we used the cut-off criteria suggested by Chen (2007):  $\Delta CFI < 0.01$  and  $\Delta RMSEA < 0.015$ .

Finally, in order to test student-employee and gender differences in filial piety, we conducted a comparison in standardised latent mean scores in groups.

## RESULTS

### Structural Validity of the Polish Version of the Dual Filial Piety Scale

Table 1 presents descriptive statistics for each item of the DFPS-PL in the total sample.

Although we found that the two-factor model fit substantially better than the one-factor (see Table 2), it does not meet the adopted fit criteria. Using the “modification Indices” function, we determined that item 2 significantly loads both AFP and RFP factors, so we decided to skip this item in the next models. As can be seen in Table 2, considering the 15-item version of the scale, the two-factor model fit substantially better than the one-factor.

When we examined the absolute fit statistics, we found that the fit of the two-factor model was acceptable (i.e.,  $CFI > 0.90$  and  $RMSEA < 0.08$ ), whereas the one-factor model fit poorly.



**TABLE 1 |** Descriptive statistics for DFPS-PL items.

Item	FP factor	M	SD	Skewness	Kurtosis
1 Be frequently concerned about my parent's health conditions/ Interesowanie się zdrowiem i kondycją rodziców	RFP	6.15	1.19	−1.81	3.85
2 Take my parents' suggestion even when I do not agree with them/ Uwzględnianie opinii rodziców, nawet jeżeli się z nimi nie zgadzam	AFP	4.62	1.61	−0.55	−0.28
3 Talk frequently with my parents to understand their thoughts and feelings/ Często rozmawianie z rodzicami aby lepiej ich rozumieć	RFP	5.01	1.60	−0.66	−0.16
4 Let my income be handled by my parents before marriage/ Pozwalanie rodzicom by kontrolowali moje dochody przed małżeństwem	AFP	2.11	1.52	1.37	1.11
5 Be frequently concerned about my parents' general well-being/ Interesowanie się samopoczuciem rodziców	RFP	5.87	1.36	−1.54	2.51
6 Disregard promises to friends in order to obey my parents/ Stawianie posłuszeństwa rodzicom ponad lojalność wobec przyjaciół	AFP	3.16	1.62	0.29	−0.67
7 Be concerned about my parents as well as understand them/ Okazywanie troski i zrozumienia rodzicom	RFP	5.72	1.37	−1.37	2.03
8 Give up my aspirations to meet my parents' expectations/ Rezygnacja z własnych aspiracji, aby spełnić oczekiwania rodziców	AFP	2.41	1.59	0.98	0.10
9 Support my parents' livelihood to make their life more comfortable/ Wspieranie rodziców aby żyli bardziej komfortowo	RFP	5.33	1.52	−0.95	0.51
10 Do whatever my parents ask right away/ Natychmiastowe wykonywanie poleceń rodziców	AFP	2.98	1.59	0.38	−0.75
11 Be grateful to my parents for raising me/ Okazywanie wdzięczności wobec rodziców za to, że mnie wychowali	RFP	5.29	1.65	−1.00	0.38
12 Avoid getting married to someone my parents dislike/ Unikanie małżeństwa z partnerem/partnerką którego/której rodzice nie lubią	AFP	2.15	1.48	1.23	0.82
13 Hurry home upon the death of my parents, regardless of how far away I am/ Bezzwłoczne pojawienie się w domu rodzica po jego śmierci, niezależnie jak daleko jestem	RFP	6.09	1.57	−1.85	2.64
14 Have at least one son for the succession of the family name/ Posiadanie syna w celu zachowania nazwiska rodzowego	AFP	2.26	1.83	1.32	0.51
15 Take the initiative to assist my parents when they are busy/ Pomaganie z własnej inicjatywy rodzicom w ich obowiązkach	RFP	5.25	1.55	−0.92	0.45
16 Live with my parents (or parents-in-law) when married/ Mieszkanie z rodzicami po zawarciu małżeństwa	AFP	1.69	1.33	2.20	4.46

*N*, 1,338; *RFP*, reciprocal filial piety; *AFP*, authoritarian filial piety.

**TABLE 2 |** CFA fit statistics for the two structural models of the DFPS-PL (total sample).

No of items	Model	Chi-square	df	CFI	SRMR	RMSEA	RMSEA 90% CI
16	One-factor	2,116.79	104	0.734	0.127	0.135	0.130–0.140
	Two-factor	894.04	103	0.898	0.086	0.084	0.079–0.089
15 (without item 2)	One-factor	1,870.87	90	0.741	0.132	0.136	0.131–0.142
	Two-factor	456.38	89	0.947	0.052	0.062	0.056–0.067

df, degrees of freedom; CFI, comparative fit index; SRMR, standardised root mean square residual; RMSEA, root mean square error of approximation; CI, confidence interval.

**Figure 1** presents standardised loadings for the two-factor model accepted in the Polish population. The omega coefficient for the reciprocal filial piety factor was 0.93, and for the authoritarian filial piety factor, it was 0.85.

### Measurement Invariance of the DFPS-PL

**Table 3** presents the global fit coefficients for the three levels of measurement invariance (configural, metric, and scalar) of the DFPS-PL across studied samples. As can be seen, the scale displayed configural and metric invariance across groups, according to the cut-off criteria suggested by Chen (2007). It showed that the students and the employees, as well as the men and the women understood the meaning of the latent construct of filial piety in the same way. However, because of lack full of scalar invariance, we tested for partial scalar invariance, releasing selected items (item 13 and item 16 from student-employee groups and item 14 and item 16 for gender groups) that varied most between the samples. Results indicated partial scalar invariance of the DFPS-PL, and thus, the means of latent variables can be compared between the groups.

### Differences in Filial Piety Between the Examined Groups

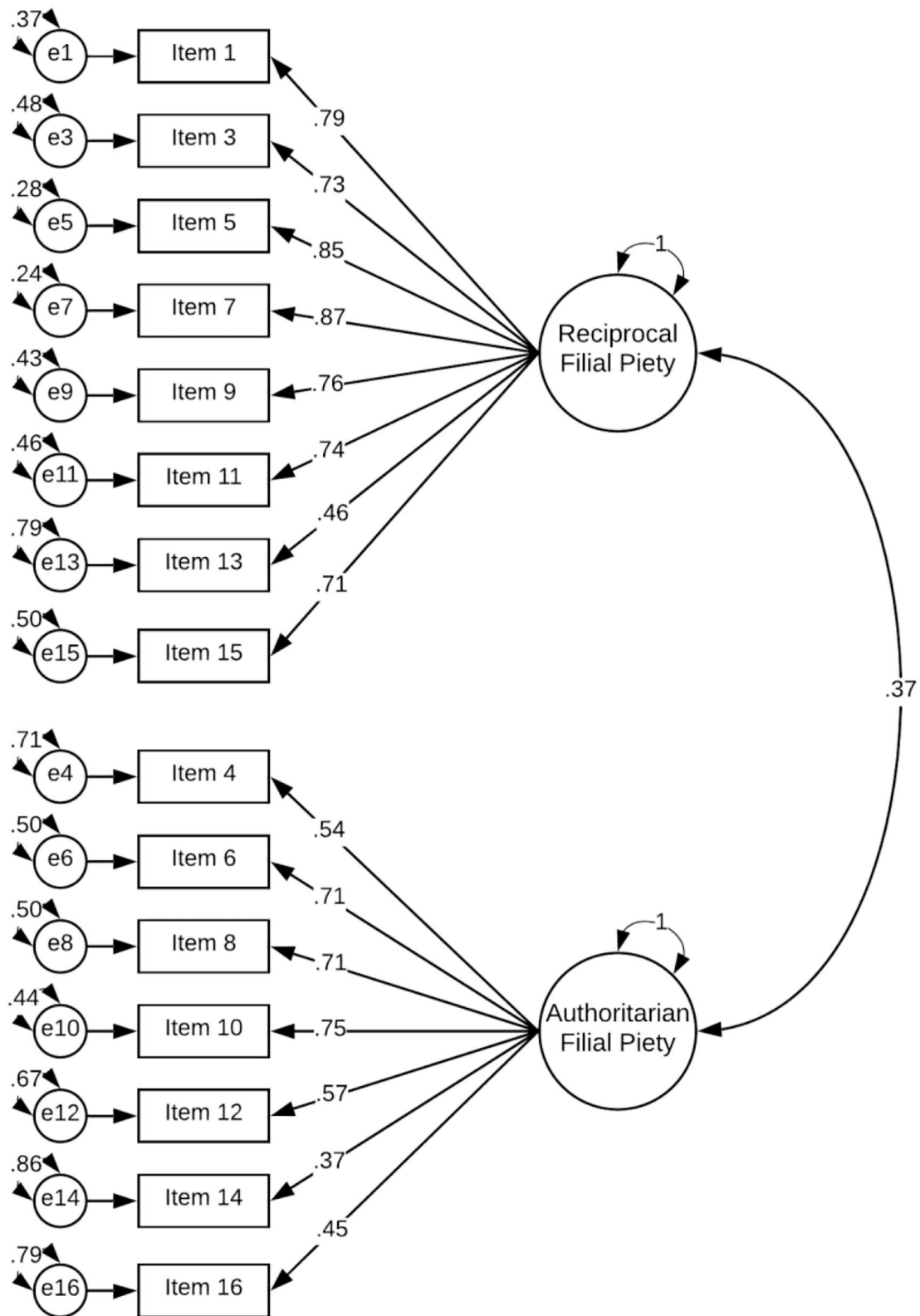
To demonstrate differences in reciprocal and authoritarian filial piety among women and men in different study groups (students vs. employees), we used a two-factor ANOVA ( $2 \times 2$ ) scheme. We used standardised factor scores of the dependent variables to compare. As hypothesised, men ( $M = -0.28$ ,  $SD = 0.97$ ), regardless of whether they study or work, obtained significantly lower latent mean scores for RFP than women ( $M = 0.12$ ,  $SD = 0.86$ ), ( $F = 56.71$ ,  $p < 0.01$ ). However, we found no significant differences between the students and the employees in RFP ( $F = 0.89$ ,  $p = 0.35$ ). The interaction between these terms was also nonsignificant ( $F = 0.09$ ,  $p = 0.77$ ). Additionally, as expected, the employees ( $M = -0.03$ ,  $SD = 0.78$ ) obtained significantly lower latent mean scores for AFP than did the students ( $M = 0.05$ ,  $SD = 0.68$ ), ( $F = 3.81$ ,  $p < 0.05$ ). However, there were no significant differences between the men ( $M = -0.01$ ,  $SD = 0.74$ ) and the women ( $M = 0.01$ ,  $SD = 0.75$ ), ( $F = 0.12$ ,  $p = 0.73$ ) nor for the interaction effect ( $F = 0.02$ ,  $p = 0.88$ ) when AFP was compared.

## DISCUSSION

In the given study, two main hypotheses were tested: (1) in the Polish context, filial piety attitude can be explained by two dimensions: reciprocal and authoritarian filial piety; (2) the

Polish version of the DFPS demonstrates scalar measurement invariance across student-employee and gender groups; also, we investigated the student-employee and gender differences in filial beliefs in the Western culture.

The findings supported the hypothesis about two-dimensional structure of DFPS-PL and measurement invariance between the groups, which means that the scale could be used in cross-cultural comparison in future studies. However, the results revealed that not all the items of the original scale had high-factor loadings. First, one item (No. 2. *Take suggestions of my parents even when I do not agree with them*), which was removed from the final model tested in a Polish sample, loads equally both the AFP (originally assigned) and the RFP factor. In the Polish context, taking the suggestions of parents may mean listening to what the parents have to say, not necessarily acting coercively, so the Polish wording of this item may not sound strongly authoritarian. Second, there were three items (No. 13. *Hurry home upon the death of my parents, regardless of how far away I am*; No. 14. *Have at least one son for the succession of the family name*; and No. 16. *Live with my parents or parents-in-law when married*) that comprised a lot of residual variances, which may indicate that these items do not measure the constructs well in the Polish context. Item 13 in the Polish culture is associated with a very emotional situation. Considering that the studied sample consists of students and employees living in Poland, and the distances between the most distant parts of the country can be covered in a maximum of several hours, arriving at the family home due to the death of a parent is not problematic. Moreover, according to the Polish Labour Code, an employee is entitled to a special leave due to the death of the closest family members. This context explains the relatively high average score for this item. In the case of items 14 and 16, they relate to issues that may be inappropriately recognised by the respondents, especially the younger generation. Traditionally, in Poland, women take surnames of their husbands after marriage, and children are given their surnames after their fathers. Nevertheless, the law allows women to keep their maiden names or take two-part surnames, and give their children two-part surnames after both parents. Moreover, in Poland, a man may change his surname to that of his wife. Therefore, since the change of the surname is a decision of the partners, item 14 may be ambiguous for the Polish respondents. Finally, item 16 refers to living with parents after marriage. In the Polish context, this is a rarity dictated by economic considerations rather than obligations towards parents. Moving out of the family home is most often a decision supported by the parents; it indicates the independence of a child and is considered a natural course of



**FIGURE 1** | CFA results (standardised loading coefficients) of the DFPS-PL (the total sample).

**TABLE 3 |** Global fit measures in measurement invariance tests for the DFPS-PL.

Grouping variable	Level of invariance	$\chi^2$	df	CFI	RMSEA	$\Delta$ CFI	$\Delta$ RMSEA
Students vs. employees	Configural invariance	590.31	178	0.942	0.065	–	–
	Metric invariance	621.61	191	0.940	0.064	0.002	0.001
	Partial scalar invariance <sup>a</sup>	697.61	202	0.932	0.066	0.008	0.002
	Scalar invariance	757.51	204	0.924	0.069	0.016	0.005
Men vs. women	Configural invariance	548.73	178	0.945	0.063	–	–
	Metric invariance	579.71	191	0.943	0.062	0.002	0.001
	Partial scalar invariance <sup>b</sup>	697.60	202	0.933	0.066	0.010	0.004
	Scalar invariance	708.00	204	0.928	0.067	0.015	0.005

$\chi^2$ , chi square; df, degrees of freedom; CFI, comparative fit index; RMSEA, root mean square error of approximation; <sup>a</sup>intercepts for items 13 and 16 were released; <sup>b</sup>and intercepts for items 14 and 16 were released.

events. Adult children live with their parents as their parents grow older and require care. Hence, once again, this item may be ambiguous for the Polish respondents.

According to other hypotheses, the lower level of AFP among employees compared to students may be related to self-reliance and the loosening of the bonds between adult children and parents. Students, who are often financially supported by their parents or are fully dependent on them, may feel grateful and have a moral obligation to take into account the views of their parents on vital issues, such as choosing a partner or a career path. For working adults in Poland, the norm seems to be fading. However, the question still remains: is it characteristic of the Western culture only? Our result, which shows that Polish women declare a higher level of RFP, suggests the gendered nature of filial piety even in the Western (i.e., Polish) culture: filial beliefs seem to be connected with defining the role of women in society as providing care for others. However, future studies are needed in this domain, especially in cross-cultural comparisons.

The present study contributes to the literature in two ways. First, the results suggest that the two-factor structure of the DFPS-PL is confirmed, and the development of the Polish DFPS adds another measure of filial beliefs for the Polish population. Also, the given study is a useful expansion of the DFPS to access filial attitudes in a new Western context (i.e., the Polish sample). Moreover, the test of its utility is understanding how transfer of filial beliefs (or do not transfer) from the role of a student to that of an employee has the potential to serve several important theoretical and practical benefits to this domain. In future studies, we would like to verify the fit of this model and elaborate on how different cultures exhibit these beliefs over time. Such a useful tool opens the door to the advancement of local as well as cross-cultural filial piety research.

Our findings suggesting the school-to-work transition and gendered nature of filial beliefs in the Western culture are consistent with Hui et al. (2018), showing that filial beliefs can be used as self-regulatory strengths, and only reciprocal (gratitude-based) filial piety supports the career ability, whereas authoritarian (submissive-based) filial piety decreases during the school-to-work transition. As filial piety is said to be the root of all virtues of social order, it deeply impacted individual attitudes and organisational behaviours (Li et al., 2021), working

towards a peaceful and harmonious society (executing their social responsibilities, e.g., in business; Low and Ang, 2012).

To summarize, this paper delivers the proof that DFPS-PL is valid and could be used also in Western cultures for different social groups, i.e., both for women and men, students, and employees. What is more, the given studies suggest the school-to-work transition of filial beliefs in the society. The theoretical implication and the main conclusion are that our findings support both the *etic* nature of DFPM underlying its universal characteristic but also the *emic* character of filial piety, depending on culture (i.e., individual differences in gender or social position). Our research broadens the context for diagnosing the Eastern concept of filial piety in the Western culture by also taking ongoing social changes into account (i.e., tighter or looser cultures; Gelfand et al., 2011).

The practical implication is to provide a Polish version of a tool to measure filial piety, i.e., DFPS-PL, which can be utilised in the study of relationships and behavioural patterns in the family according to culture, where, for example, it has been proved that Chinese families attach more importance to the father-son axis rather than the husband-wife axis as compared to the Western culture (Fei, 1983). This major cultural difference may explain many communication misunderstandings within the organisation, in the employer-employee relationship, and in the relationships between men and women from different cultures brought together in a single corporation. The practical application of DFPS-PL appears on different levels and concerns different factors, such as the elder care policy due to population ageing (the social welfare system in Western countries with financial and health care support vs. child support in Asian countries), elder well-being depending on a provider of financial, housework, and health care support (i.e., the social system vs. the responsibilities of children), multicultural counselling, or academic success depending on motivational beliefs defined as filial duty, which could be analysed in cross-cultural/societal comparisons (see also: Tsao and Yeh, 2019).

## LIMITATIONS AND FUTURE STUDIES

In our study, some items seem to be problematic, as was already discussed; in the context of future cross-cultural comparisons,

we recommend using the full 16-item scale and to monitor the problem. Partial scalar (not scalar) measurement invariance across student-employee and gender groups indicates that the employees and the students (as well as the women and the men) presenting the same level of latent variables of RFP and AFP responded differently. Fortunately, in our study, we found a problem with only two items per group—this does not significantly limit the possibility of comparing latent mean scores, but the problem should be subjected to monitoring and control in future studies.

It must be noted that the Polish population (Poland represents the Western culture) has its own specificity, which may limit the generalisation of results in the context of the child-parent relationships. Other Western cultures should be investigated, and the findings should be compared with Eastern societies. Another potential limitation is such that the differences between the employee and student groups could be due to differences in the average age between the groups, which was 17 years. The generational differences between both samples could bias the research results, showing not only the differences resulting from the stage of life (studying vs. work) but also from changing social norms regarding the relationship between children and parents over the years. Since accession of Poland to the European Union in 2004, Polish society has experienced many changes that have an impact on the system of values and attitudes (e.g., Favero, 2020), which most likely have an impact on filial beliefs.

Furthermore, given the importance of close relationships and whether people move away from home in explanation of student-employee differences in filial piety beliefs, a certain limitation of the current study is that these variables (e.g., relationship status, living with parents or not) were not collected. Nevertheless, there

is, to date, little research on filial piety in the Western psychology. Our findings and the confirmed DFPS-PL scale open the door for future investigations.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation. Requesting data should be addresses to Paweł Jurek, pawel.jurek@ug.edu.pl.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethics Board for Research Projects at the Institute of Psychology, University of Gdansk. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

## AUTHOR'S NOTE

Correspondence concerning this article should be addressed to JR-T, Institute of Psychology, University of Gdansk, Bazynskiego 4, 80-309 Gdansk, Poland; e-mail: joanna.tran@ug.edu.pl.

## AUTHOR CONTRIBUTIONS

JR-T and PJ designed the study and wrote the paper. PJ and MO collected the data and made statistical analysis. TD gave the comments and suggestions. JR-T and TD collected funding.

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# The Prosocial Outgrowth of Filial Beliefs in Different Cultures: A Conditional Mediation Model Analysis

Wang Zheng<sup>1</sup>, Qingke Guo<sup>1,2\*</sup>, Taian Huang<sup>1</sup>, Jianli Lu<sup>1</sup> and Chaoxiang Xie<sup>1</sup>

<sup>1</sup> Department of Psychology, Guangxi Normal University, Guilin, China, <sup>2</sup> Department of Psychology, Shandong Normal University, Jinan, China

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### \*Correspondence:

Qingke Guo  
guoqingke@163.com

### Specialty section:

This article was submitted to  
Cultural Psychology,  
a section of the journal  
Frontiers in Psychology

**Received:** 28 July 2021

**Accepted:** 29 September 2021

**Published:** 21 October 2021

### Citation:

Zheng W, Guo Q, Huang T, Lu J and  
Xie C (2021) The Prosocial  
Outgrowth of Filial Beliefs in Different  
Cultures: A Conditional Mediation  
Model Analysis.  
Front. Psychol. 12:748759.  
doi: 10.3389/fpsyg.2021.748759

Filial piety is a concept originated from ancient China which contains norms of children's feelings, attitudes, and behaviors toward their parents. The dual filial piety model (DFPM) differentiated two types of filial belief: reciprocal vs. authoritarian filial piety (RFP vs. AFP). Recent scholars suggest that the functions of filial piety may differ across cultures. This study examined the mediating effects of empathy, moral identity, gratitude, and sense of indebtedness in the relationship between filial piety and prosocial behavior (PB) and the moderating effects of nation. Questionnaires measuring filial piety, PB, moral identity, gratitude, and sense of indebtedness were administered to Chinese and Indonesian participants. Moderated mediation modeling was conducted to analyze data. The results showed that empathy, moral identity, gratitude, and a sense of indebtedness have significant mediating effects in the association of filial piety and PB. And nation served as a moderator. (1) RFP could promote PB *via* enhanced empathy, moral identity, gratitude, and a sense of indebtedness, both among Chinese and Indonesian participants, while AFP did the same job only among Indonesian participants. (2) Among Chinese participants, AFP was not directly associated with PB, but was negatively associated with PB *via* reduced gratitude and a sense of indebtedness. (3) Nation (China vs. Indonesia) moderated the direct or indirect effect of RFP/AFP on PB, with RFP exerting stronger positive effects on outcome variables among Chinese (relative to Indonesian) participants and AFP exerting stronger positive effects on outcome variables among Indonesian (relative to Chinese) participants. These results showed that RFP can promote prosocial development by the cultivation of empathy, moral identity, gratitude, and a sense of indebtedness, regardless of whether the participants grew up in China or other cultural backgrounds. But the effect of AFP on PB was significantly conditioned by culture. This suggests that the function of RFP may be a cultural universal. However, the mechanisms that AFP influences PB can differ considerably across cultures. Findings of this study further indicate that filial piety beliefs may facilitate prosocial development in the ways conditioned by cultures.

**Keywords:** filial piety, prosocial behavior, empathy, moral identity, gratitude, indebtedness, moderated mediation model

## INTRODUCTION

Prosocial behavior (PB) refers to spontaneous and intentional behaviors that bring benefits to others, such as helping, comforting, cooperating, and caring for others (Eisenberg and Miller, 1987; Gross et al., 2017). PB can enhance the welfare of both the recipient and the actor. By acting prosocially, the helpers can build better interpersonal relationships with others, have greater life satisfaction and well-being, and get better academic performance (Caprara et al., 2000; Sun and Shek, 2010; Yang et al., 2017). Therefore, what factors contributing to PB and related influential mechanisms have become important topics in psychological research. Researchers believe that cultural value is an important factor that shapes individual prosocial development (Hofstede, 1980; Luria et al., 2015; Martí-Vilar et al., 2019). Socialization has been identified as a key mechanism by which cultural values can be transmitted from generation to generation, with family as the primary agent (McClintock et al., 1983). Consistent with this, numerous studies found that obligation to family plays an important role in promoting psychosocial development (Calderón-Tena et al., 2011; Knight et al., 2015). Familism, as a construct equivalent to filial piety that emphasizes responsibility and obedience to family, can facilitate prosocial outgrowth in different cultures (Schwartz et al., 2010).

Filial piety, as a primary ethical standard that affects Chinese people's social behavior, is a cultural value that emphasizes respect, obedience, and respect for parents (Yeh, 2009). It has been a fundamental virtue and the core pillar of moral ideals in Chinese and other Confucianism-influenced societies. Filial piety has been the golden rule regulating parent-child relations for thousands of years (You et al., 2019; Brasher, 2021). Yeh and Bedford (2003) proposed the dual filial piety model (DFPM) to integrate the researches on filial piety in modern societies. DFPM can effectively address individual inferences in filial beliefs and can be used as the theoretical framework for cross-cultural comparisons (Shi and Wang, 2019; Tan et al., 2019; Beckert et al., 2020). It divides filial piety into two factors: reciprocal filial piety (RFP) and authoritarian filial piety (AFP). RFP focuses on close relationships formed by children and parents in long-term interactions, featured by children's gratitude and love for their parents (Yeh and Bedford, 2004; Sun et al., 2019). On the contrary, AFP emphasizes family order and role norms that require the children to obey their parents (Yeh, 2006). Both types of filial piety (RFP and AFP) are advocated because they function interactively to enhance family cohesion. However, they have different effects on psychosocial functioning at the individual level (Yeh et al., 2013). This suggests that two types of filial piety may have different effects on PB.

According to the bioecological model (Bronfenbrenner and Morris, 2006), family is an environment where individuals interact frequently and directly, generating fundamental and tremendous impact on children's psychological development. As a culture-specific value system, filial piety reflects one's perception of social norms of obligation to parents (Chao and Tseng, 2002). Different types of filial piety correspond to different ways of parenting (Chen et al., 2015). Warm and rational

parenting styles can cultivate children's gratitude to their parents and consequently facilitates the development of children's RFP (Huang and Yeh, 2013). Strict and demanding parenting styles lead to involuntary compliance with the parents' wishes, which consequently leads to the development of children's AFP (Huang and Yeh, 2013). Literature shows that warm, responsible, and supportive parenting can promote PB in children (Chen et al., 2015; Padilla-Walker et al., 2016; Kanacri et al., 2020), while strict and harsh parenting are negatively related to the child's PB (Carlo et al., 2007; Padilla-Walker et al., 2016). Based on the above theorizing, we propose the following hypothesis:

*Hypothesis 1: RFP positively predicts PB (H1a), while AFP negatively predicts PB (H1b).*

## Mediating Roles of Empathy, Moral Identity, Gratitude, and Indebtedness

Many variables can account for the association of filial piety and PB. We selected empathy, moral identity, gratitude, and indebtedness as mechanisms because their mediating roles have not been statistically determined. These four variables are important moral dispositions that are responsible for individual differences in social behavior (Greenberg, 1980; Eisenberg and Miller, 1987; Hardy and Carlo, 2011; Bono et al., 2019). This study is interested in whether filial beliefs can foster the development of these dispositions thereby exerting influences on PB.

### Empathy

As an important premise of filial piety attitude, family cohesion can promote the development of offspring's empathy toward their parents (Cheung et al., 1994). And this kind of emotional care within the family is of great significance to the development of individual empathy (Main and Kho, 2020). In addition, researchers also found that the two types of filial piety beliefs (RFP and AFP) are significantly related to at least one of the two components of empathy (perspective-taking and empathic concern; Yeh and Bedford, 2003).

A large number of studies have shown that empathy can promote PB (Eisenberg and Miller, 1987; Telle and Pfister, 2015; Van der Graaff et al., 2018). Batson (1987) developed the empathy-altruism hypothesis, positing that when people perceive someone was suffering, they produce emotions, such as compassion and sympathy, which motivate prosocial actions to help the sufferer get rid of trouble. To date, the mediating role of empathy in the relationship between filial piety and PB has not been confirmed empirically. Therefore, we put forward the following hypothesis:

*Hypothesis 2: Empathy mediates the relationship between filial piety (RFP and AFP) and PB.*

### Moral Identity

Moral identity generally refers to the extent to which being an ethical person is important to one's identity (Hardy and Carlo, 2011). According to Hart et al. (1999), family environment



and parents are important factors that affect the formation of children's moral identity. Several family factors, including family support, parenting style, parental involvement, and parental harshness, are important predictors of moral identity (Hart et al., 1998; Pratt et al., 2003; Hardy et al., 2010; Fatima et al., 2020). Therefore, we speculate that filial piety (both RFP and AFP) can predict moral identity, though no direct evidence on their relation is available.

As a construct bridging moral cognition and moral conduct, moral identity has been considered a significant predictor of PB (Aquino and Reed, 2002; Hardy, 2006; Hardy et al., 2015). Evidence shows that moral identity is associated with voluntary service, informal helping, empathy, and prosocial tendency (Aquino and Reed, 2002; Detert et al., 2008; Fatima et al., 2020). In view of these findings, we infer that filial piety is associated with PB *via* moral identity.

*Hypothesis 3: Moral identity mediates the relationship between filial piety (RFP and AFP) and PB.*

## Gratitude

Family may be the first place where gratitude is cultivated (Scabini et al., 2006). In the family, individuals observe the sacrifice their parents have made for them and experience gratitude (Scabini, 2011). And they can extend these experiences to other interpersonal settings. Studies have found that children whose parents are warm, caring, and supportive (these parenting styles are closely associated with RFP) can develop a higher level of gratitude and apply it to other people (Lin, 2021). In contrast, children who are over controlled and interfered by their parents (these parenting styles are closely associated with AFP) tend to have lower levels of gratitude (Lin, 2021). Therefore, the two types of filial piety corresponding to different parenting styles may also have different effects on gratitude.

Gratitude, whether as a state or a disposition, is in itself prosocial. It encourages individuals to engage in PB in return for the help they receive from others (Bartlett and DeSteno, 2006; Tsang, 2006; Grant and Gino, 2010). For example, Oguni and Otake (2020) found that participants in the experiment group (recalling autobiographical memories of gratitude events) reported more PB than participants in the control group (recalling autobiographical memories of morning routines). A 4-year longitudinal investigation also found that growth in gratitude positively predicted growth in PB (Bono et al., 2019). Based on the above theorizing, we infer that filial piety (RFP and AFP) influences the development of gratitude which serves as a predictor of PB. Thus, Hypothesis 4 was proposed.

*Hypothesis 4: Gratitude mediates the relationship between filial piety (RFP and AFP) and PB.*

## Indebtedness

Indebtedness is an emotional state originating from the norm of reciprocity that makes people who receive favor feel obligated to repay others (Greenberg, 1980). Ho (1994) argued that filial piety emphasizes obedience to parents and therefore can elicit

a greater sense of indebtedness. Many studies have also found that compared to individualist societies, such as the United States, East Asian countries (such as Japan and South Korea) that emphasize filial piety tend to have higher levels of indebtedness (Hitokoto et al., 2008; Shen et al., 2011; Kang and Raffaelli, 2016). Therefore, we infer that filial piety can predict a person's feeling of indebtedness.

Researchers have different views on the influence of indebtedness on PB. Tsang (2007) believes that there is no significant relationship between indebtedness and repaying behavior. Some researchers believe that indebtedness may lead to a lower willingness to repay, which inhibits PB of an individual (Watkins et al., 2006). There are also researchers who believe that indebtedness will prompt an individual to develop moral motivations, leading to more PB (Naito et al., 2005; Peng et al., 2018). Based on findings of recent experimental studies (Naito and Sakata, 2010; Peng et al., 2018), we believe that individuals in a negative mood of indebtedness tend to help others in order to alleviate their own negative feelings (Baumann et al., 1981). Greenberg (1980) also believed that when an individual cannot directly repay the helper, s/he tends to help the people who are similar to the benefactor or people who appear in situations similar to that one receive the favor. This kind of compensation behavior can reduce an individual's feeling of indebtedness. Based on the above discussion, we put forward the following hypothesis.

*Hypothesis 5: Indebtedness mediates the relationship between filial piety (RFP and AFP) and PB.*

## The Moderating Role of Nation

Research on the function of filial piety has not been limited to Confucianism-influenced societies. It has been applied to a broad range of cultural contexts by many scholars (Bedford and Yeh, 2019; Rózycka-Tran et al., 2020; Zhou et al., 2020; Bedford and Yeh, 2021). In this study, we are aiming to explore the function of two dimensions of filial piety on prosocial engagement in different nations (China and Indonesia). Culture influences every individual in a unique way (Schwartz, 2013). Therefore, cultural differences can be indicated by the personality, values, and beliefs of individuals from different nations. Here, we used nation rather than culture as a variable for easier understanding. But actually, we are addressing cultural differences rather than national differences. We first made a brief comparative review of the societal and cultural backgrounds in China and Indonesia.

As the core of Confucian collectivist value, filial piety has always been one of the most important moral principles in Chinese society (Bedford and Yeh, 2019). The foundation of filial piety is ancestor worship in ancient China (Hsu, 1975; Bedford and Yeh, 2019). However, with rapid social and economic development, traditional filial piety beliefs in contemporary China are changing (Zhang et al., 2021). Chinese people are becoming more individualistic and self-expressive in the process of urbanization and modernization. Accordingly, filial piety beliefs in China are becoming more reciprocal and less



authoritarian. Young people still respect their parents but refuse to completely obey them (Feng, 2013). In Indonesia, however, the traditional cultural values featured by hierarchy and patriarchy (these cultural values are closely associated with AFP) are still prevailing. In this context, obedience and compliance of children to their parents are still highly valued (Riany et al., 2017). Indonesia has the largest Muslim population in the world, with 86.1% of Indonesians considering Islam as their religious belief (Riany et al., 2017). The Islam teachings highly emphasize children's obedience to and respect for their parents, believing that "obedience to their parents is obedience to God" (Oweis et al., 2012). In addition, Yeh et al. (2013) believed that RFP, which is closely connected with modern democratic values, tends to be more strongly endorsed by women and individuals with higher levels of education and higher levels of socioeconomic status. On the contrary, AFP, which is closely connected with patriarchal values, tends to be more strongly endorsed by males and individuals with lower levels of education and lower levels of socioeconomic status. According to social indicators of economic development, urban population, and education provided by the World Bank (2020), China is relatively more modernized and industrialized than Indonesia. Based on the discussion of cultural values in China and Indonesia, we believe that the Indonesians place more emphasis on parental authority (i.e., AFP) than the Chinese, while the Chinese tend to prefer RFP over AFP.

According to the bioecological model, filial piety, as perceived guiding principles of intergenerational relationships in family and society, can exert direct and indirect impact on people's psychology and behavior (Bronfenbrenner and Morris, 2006). We believe that the endorsement of different filial piety beliefs in China and Indonesia, as well as religious and cultural values regarding intergenerational relationships, can account for differences in ethical behaviors between the two countries. Bedford and Yeh (2019) posit that the function of RFP tends to show consistency across cultures because RFP is based on feelings deeply rooted in human nature. The function of AFP, however, tends to vary by culture because AFP reflects principles of intergenerational relationships that change with social development. Therefore, we infer that the effects of filial piety (especially AFP) on PB and related mechanisms are different in China and Indonesia.

*Hypothesis 6:* The mediating effects of empathy, moral identity, gratitude, and indebtedness in the association of filial piety (RFP and AFP) and PB can be moderated by nation.

## MATERIALS AND METHODS

### Participants and Procedure

The Chinese and Indonesian participants in this study were both from Guangxi Normal University in Southern China. They were local or international students studying at this university. Indonesian students have studied in China for less than 2 years and have not been deeply influenced by

Chinese culture. Because we knew in advance that all the participants had no problems in English reading comprehension, English versions of research questionnaires were administered to all of them. The answer time is about 30 min, and each person was paid 20 yuan after the investigation. After deleting the invalid cases with unqualified answers or too short response time, the total number of participants was 693 (the initial sample size was 723, with 95.85% were valid cases). Among them, there were 332 Chinese students, with an average age of 20.43 years ( $SD = 2.49$ , ranged from 18 to 30 years; 58.4% female); 361 Indonesian students, with an average age of 21.36 years ( $SD = 2.81$ , ranged from 16 to 30 years; 45.7% female). This study was conducted in accordance with the 1964 Helsinki declaration and its later amendments or comparable ethical standards and was approved by the academic committee at Guangxi Normal University.

## Measures

### Dual Filial Piety

Filial piety was measured the Dual Filial Piety Scale (DFPS) compiled by Yeh and Bedford (2003). DFPS contains 16 items, each adopting a six-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Eight items of DFPS measures RFP (e.g., Be frequently concerned about my parents' health conditions), and the other eight items measure AFP (e.g., Give up my aspirations to meet my parents' expectations). The total scores were taken, respectively, with higher scores indicating higher levels of RFP or AFP. In this study, Cronbach's alpha of DFPS was 0.85 (among Chinese, it was 0.70, and among Indonesians, it was 0.92), while Cronbach's alpha of the RFP subscale was 0.77 (among Chinese, it was 0.88, and among Indonesians, it was 0.90), and Cronbach's alpha of the AFP subscale was 0.68 (among Chinese, it was 0.52, and, among Indonesians, it was 0.82).

### Empathy

The Interpersonal Reactivity Index (IRI; Davis, 1983) was used to assess trait empathy. Based on previous literature (Guo et al., 2019), we selected 22 items (IRI contains 28 items) to measure four dimensions of empathy: perspective-taking (PT), fantasy (FS), empathic concern (EC), and personal distress (PD). Each item (e.g., Imagine how people feel before I criticize them) was rated using a five-point scale from 0 (does not describe me well) to 4 (describes me well). The total score of all items was taken, with a higher score indicating a higher level of empathy. Cronbach's alpha of IRI in this study was 0.82 (among Chinese, it was 0.80, and among Indonesians, it was 0.84).

### Moral Identity

Moral identity was evaluated by Moral Identity Measure (MIM) compiled by Aquino and Reed (2002). This measure firstly requires the participants to read a list of nine characteristics (compassionate, fair, caring, friendly, helpful, generous, hardworking, kind, and honest) of a fictional person. Then, they were asked to imagine how people with these characteristics

would think, feel, and act. Then, they were further asked to respond to 10 items (e.g., Being a person who has these characteristics makes me feel good) according to their true experiences. Each item is scored using five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The total score of all items was taken. In this study, Cronbach's alpha of MIM was 0.84 (among Chinese, it was 0.84, and among Indonesians, it was 0.78).

### Gratitude

This study used the six-item form of the gratitude questionnaire (GQ-6) compiled by McCullough et al. (2002). A sample item is "I have so much in life to be thankful for." Participants were asked to answer each item on a scale ranging from 1 (strongly disagree) to 7 (strongly agree). We used the total score of all items for further analysis. Cronbach's alpha of the gratitude scale in this study was 0.80 (among Chinese, it was 0.83, and among Indonesians, it was 0.72).

### Indebtedness

We used the Revised Indebtedness scale (IS-R; Bernabé-Valero et al., 2019) to assess the participants' sense of indebtedness. It was originally developed by Greenberg (1980), containing 22 items ranging from 1 (strongly disagree) to 6 (strongly agree). A sample item is "To owe someone a favor makes me uncomfortable." The total score of all items was taken. Cronbach's alpha of IS-R in this study is 0.72 (among Chinese, it was 0.78, and among Indonesians, it was 0.56).

### Prosocial Behavior

PB is measured by the Self-Reported Altruism Scale Distinguished by the Recipient (SRAS-DR) developed by Oda et al. (2013). SRAS-DR contains a total of 21 items divided into three subscales, measuring PB toward family members, friends, and strangers. Example items are "Kept in tune with one of my

family members when they were in a bad mood," "Phoned or sent an e-mail to a friend who was depressed," and "Offered help when a stranger was looking for something." Participants were asked to report how often they participate in PB in their daily lives on a scale ranging from 1 (never) to 5 (very often). This study took the total score of all items. Cronbach's alpha of SRAS-DR is 0.93 (among Chinese, it was 0.93, and among Indonesians, it was 0.93).

### Data Analysis

In this study, SPSS (version 23) was used for data analysis. We examined the differences in scores between Chinese and Indonesian students on filial piety, empathy, moral identity, indebtedness, gratitude, and PB. The PROCESS macro for SPSS was used for conditional mediation model analysis (Hayes, 2017). Eight models were established based on different independent variables (RFP and AFP) and different mediating variables (empathy, moral identity, gratitude, and indebtedness). We use model 59 in PROCESS to estimate the effects in the moderated mediation models.

## RESULTS

### Preliminary Analyses

Means and SDs of research variables and their correlations in the Chinese and Indonesian samples are presented in **Table 1**. Among Chinese participants, RFP and AFP were not related, and RFP was positively correlated with PB and other mediating variables, but AFP was only positively correlated with empathy, negatively correlated with gratitude and indebtedness, and was not significantly correlated with PB and moral identity. Among Indonesian participants, RFP and AFP were positively correlated with a coefficient larger than 0.71. These two types of filial piety were positively correlated with all other research variables. In addition, *t*

**TABLE 1** | Means, SDs, and correlations in different nations (*n* = 693).

	1	2	3	4	5	6	7
1.RFP	1	0.71***	0.39***	0.57***	0.50***	0.35***	0.35***
2.AFP	-0.02	1	0.41***	0.41***	0.44***	0.16**	0.35***
3.Empathy	0.27***	0.13*	1	0.29***	0.32***	0.08	0.34***
4.Moral Identity	0.55***	-0.02	0.38***	1	0.54***	0.44***	0.37***
5.Gratitude	0.62***	-0.20***	0.26***	0.58***	1	0.39***	0.52***
6.Indebtedness	0.54***	-0.12*	0.14*	0.48***	0.65***	1	0.30***
7.PB	0.66**	0.02	0.32**	0.61**	0.64**	0.53**	1
<b>China (n = 332)</b>							
Mean	39.64	28.69	75.51	38.98	33.36	82.29	84.60
SD	6.25	4.72	10.88	5.91	6.23	10.38	12.82
<b>Indonesia (n = 361)</b>							
Mean	36.90	32.76	69.52	33.28	30.59	77.24	78.50
SD	7.30	6.28	10.72	5.55	4.81	6.87	12.24
<i>t</i>	5.31***	-9.68***	7.29***	13.09***	6.50***	7.47***	6.41***

Correlations for Indonesia are above the diagonal, while correlations for China are below the diagonal; PB, prosocial behavior; the *t* test for the scores of participants from both nations on each variable is presented in the last row. \**p* < 0.05; \*\**p* < 0.01; \*\*\**p* < 0.001.

tests showed that the scores of all variables among Chinese and Indonesian participants were significantly different. Except that Chinese participants scored lower on AFP than Indonesian participants, Chinese participants had higher scores than Indonesian participants on other variables.

## Testing Mediation and Moderation Effects

Since Models 1 to 4 are not conditional mediation models, we tested them separately. In Model 1 of **Table 2**, it showed that RFP predicted empathy, and RFP explained 14% of empathy's total variance [ $R^2 = 0.14$ ,  $F(1,691) = 108.32$ ,  $p = 0.00$ ]. At the same

**TABLE 2 |** Testing the mediation and moderation effects.

Predictors	$\beta$	SE	<i>t</i>	<i>p</i>	95% CI
<b>Model 1:</b>					
Outcome: empathy					
RFP	0.59	0.06	10.41	0.00	(0.48, 0.71)
Outcome: PB					
RFP	2.04	0.20	10.30	0.00	(1.65, 2.43)
Empathy	0.23	0.04	5.79	0.00	(0.15, 0.30)
Nation	27.79	4.64	5.99	0.00	(18.67, 36.90)
RFP * Nation	-0.79	0.12	-6.67	0.00	(-1.02, -0.56)
Conditional direct effects					
China	1.25	0.09	13.44	0.00	(1.07, 1.44)
Indonesia	0.46	0.08	5.91	0.00	(0.31, 0.62)
Indirect effect of X on Y					
Empathy	0.13	0.02			(0.09, 0.18)
<b>Model 2:</b>					
Outcome: moral identity					
RFP	0.53	0.03	18.57	0.00	(0.47, 0.59)
Outcome: PB					
RFP	1.71	0.20	8.59	0.00	(1.32, 2.11)
Moral identity	0.67	0.08	8.22	0.00	(0.51, 0.83)
Nation	26.50	4.52	5.86	0.00	(17.62, 35.39)
RFP * Nation	-0.71	0.12	-6.09	0.00	(-0.93, -0.48)
Conditional direct effects					
China	1.01	0.10	10.19	0.00	(0.81, 1.20)
Indonesia	0.30	0.08	3.71	0.00	(0.14, 0.46)
Indirect effect of X on Y					
Moral identity	0.36	0.06			(0.24, 0.47)
<b>Model 3:</b>					
Outcome: gratitude					
RFP	0.47	0.03	18.14	0.00	(0.42, 0.52)
Outcome: PB					
RFP	1.27	0.20	6.35	0.00	(0.87, 1.66)
Gratitude	0.95	0.08	11.59	0.00	(0.79, 1.11)
Nation	16.79	4.40	3.81	0.00	(8.15, 25.44)
RFP * Nation	-0.49	0.11	-4.35	0.00	(-0.71, -0.27)
Conditional direct effects					
China	0.77	0.10	7.78	0.00	(0.58, 0.97)
Indonesia	0.28	0.08	3.73	0.00	(0.13, 0.43)
Indirect effect of X on Y					
Gratitude	0.44	0.05			(0.34, 0.55)
<b>Model 4:</b>					
Outcome: empathy					
AFP	0.32	0.07	4.58	0.00	(0.19, 0.46)
Outcome: PB					
AFP	-0.58	0.29	-2.00	0.04	(-1.15, -0.01)
Empathy	0.95	0.08	11.59	0.00	(0.79, 1.11)
Nation	-20.96	5.20	-4.03	0.00	(-31.18, -10.74)
AFP * Nation	0.52	0.17	3.09	0.00	(0.19, 0.85)
Conditional direct effects					
China	-0.06	0.14	-0.43	0.67	(-0.33, 0.21)
Indonesia	0.46	0.10	4.51	0.00	(0.26, 0.66)
Indirect effect of X on Y					
Empathy	0.11	0.03			(0.06, 0.16)

AFP, authoritarian filial piety; Nation = 1 (Chinese) or 2 (Indonesian); PB, prosocial behavior; RFP, reciprocal filial piety.

time, RFP, empathy, and nation all predicted PB, and the interaction between RFP and nation was significant. Nation moderated the direct effect of RFP on PB. All predictors explain 35% of the total variance of PB [ $R^2=0.35$ ,  $F(4,688)=93.93$ ,  $p=0.00$ ]. In addition, the indirect effect of RFP on PB was significant. That is, the mediating effect of empathy was significant. Detailed descriptions of Model 1 are shown in **Figure 1**.

In Model 2, a higher level of RFP was associated a higher level of moral identity, and the total variance of moral identity explained by RFP was 33% [ $R^2=0.33$ ,  $F(1,691)=344.91$ ,  $p=0.00$ ]. RFP, moral identity, and nation all predicted PB, and the interaction between RFP and nation was also significant. Nation moderated the direct effect of RFP on PB, and the total variance of PB explained by all predictors was 38% [ $R^2=0.38$ ,  $F(4,688)=106.47$ ,  $p=0.00$ ]. Moral identity's mediating role was also significant. Detailed descriptions of Model 2 are shown in **Figure 2**.

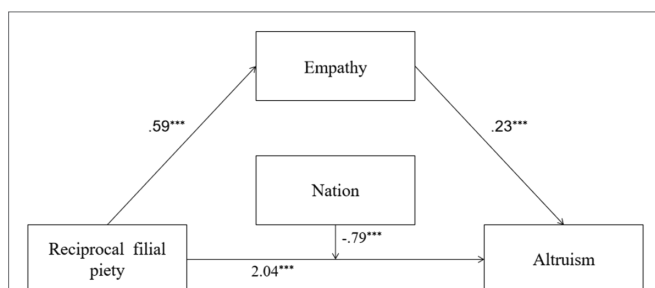
In Model 3, RFP positively and significantly predicted gratitude, explaining 32% of the total variance of gratitude [ $R^2=0.32$ ,  $F(1,691)=328.88$ ,  $p=0.00$ ]. RFP, gratitude, and nation significantly predicted PB, and the interaction between RFP and nation was also significant. The predictors explained 43% of PB's total variance [ $R^2=0.43$ ,  $F(4,688)=131.12$ ,  $p=0.00$ ]. Gratitude played a mediating role in the relation between RFP and PB. Detailed descriptions of Model 3 are shown in **Figure 3**.

In Model 4, AFP predicted empathy positively. AFP only explained 3% of the total variance of empathy [ $R^2=0.03$ ,  $F(1,691)=21.00$ ,  $p=0.00$ ]. AFP and nation negatively predicted

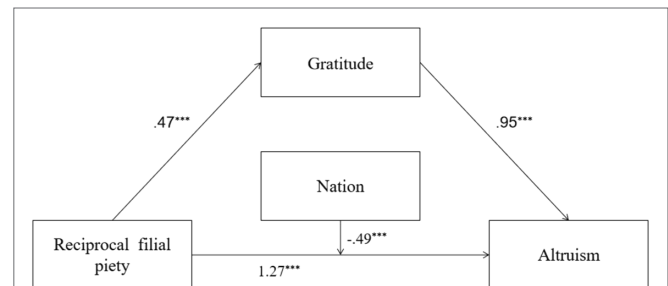
PB, while empathy positively predicted PB. The interaction between AFP and nation was significant. The predictors explained 18% of the total variance of PB [ $R^2=0.18$ ,  $F(4,688)=38.47$ ,  $p=0.00$ ]. The AFP of Indonesian students directly predicted PB, but the AFP of Chinese students did not. Empathy mediated the connection between AFP and PB. Detailed descriptions of Model 4 are shown in **Figure 4**.

## Testing for the Moderated Mediation Effects

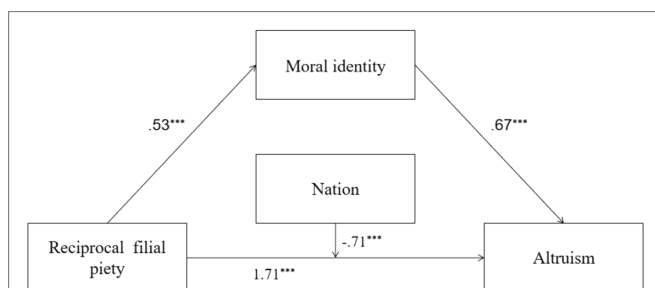
In **Table 3**, we conducted a conditional mediation model analysis for Models 5 to 8 with RFP/AFP as the independent variable and indebtedness, moral identity, or gratitude as the mediating variable. In Model 5, a higher level of RFP was associated with a higher level of indebtedness; nation positively predicted indebtedness, and the interaction between RFP and nation was also significant. All predictors explained 30% of the total variance of indebtedness [ $R^2=0.30$ ,  $F(3,689)=96.39$ ,  $p=0.00$ ]. At the same time, both RFP and nation positively predicted PB, and indebtedness did not predict PB. And the interaction between RFP and nation was significant, while the interaction between indebtedness and nation was not significant. The total variance of PB explained by all predictors was 36% [ $R^2=0.36$ ,  $F(5,687)=77.08$ ,  $p=0.00$ ]. In this model, the indirect effects in the two countries were both significant, which need to be further tested. Detailed descriptions of Model 5 were shown in **Figure 5**.



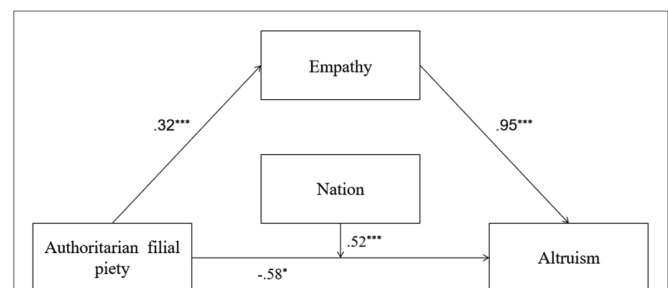
**FIGURE 1 |** Mediation and moderation model showing standardized coefficients (Model 1); \*\*\* $p < 0.001$ .



**FIGURE 3 |** Mediation and moderation model showing standardized coefficients (Model 3); \*\*\* $p < 0.001$ .



**FIGURE 2 |** Mediation and moderation model showing standardized coefficients (Model 2); \*\*\* $p < 0.001$ .



**FIGURE 4 |** Mediation and moderation model showing standardized coefficients (Model 4); \* $p < 0.05$ ; \*\*\* $p < 0.001$ .

**TABLE 3 |** Testing for moderated mediation.

Predictors	$\beta$	SE	<i>t</i>	<i>p</i>	95% CI
<b>Model 5</b>					
Outcome: indebtedness					
RFP	1.47	0.15	10.12	0.00	(1.18, 1.76)
Nation	18.51	3.40	5.44	0.00	(11.82, 25.19)
RFP*Nation	-0.57	0.09	-6.57	0.00	(-0.74, -0.40)
Outcome: PB					
RFP	1.69	0.23	7.34	0.00	(1.24, 2.15)
Indebtedness	0.25	0.16	1.58	0.11	(-0.06, 0.55)
Nation	16.36	7.80	2.10	0.04	(1.04, 31.68)
Indebtedness * Nation	0.06	0.11	0.55	0.58	(-0.15, 0.27)
RFP * Nation	-0.61	0.13	-4.54	0.00	(-0.87, -0.35)
Conditional indirect effects					
China	0.27	0.06			(0.17, 0.39)
Indonesia	0.12	0.04			(0.04, 0.22)
<b>Model 6:</b>					
Outcome: moral identity					
AFP	-0.42	0.14	-3.07	0.00	(-0.68, -0.15)
Nation	-18.30	2.41	-7.58	0.00	(-23.04, -13.56)
AFP * Nation	0.39	0.08	4.92	0.00	(0.23, 0.54)
Outcome: PB					
AFP	-0.31	0.27	-1.16	0.25	(-0.83, 0.21)
Moral identity	2.06	0.23	9.06	0.00	(1.61, 2.50)
Nation	12.54	6.57	1.91	0.06	(-0.35, 25.43)
Moral identity * Nation	-0.73	0.15	-4.89	0.00	(-1.02, -0.43)
AFP * Nation	0.39	0.16	2.47	0.01	(0.08, 0.70)
Conditional indirect effects					
China	-0.04	0.10			(-0.24, 0.15)
Indonesia	0.22	0.06			(0.11, 0.35)
<b>Model 7:</b>					
Outcome: gratitude					
AFP	-0.86	0.13	-6.63	0.00	(-1.12, -0.61)
Nation	-21.39	2.31	-9.27	0.00	(-25.93, -16.86)
AFP * Nation	0.60	0.08	7.97	0.00	(0.45, 0.75)
Outcome: PB					
AFP	0.51	0.26	1.99	0.04	(0.01, 1.02)
Gratitude	1.60	0.22	7.31	0.00	(1.17, 2.03)
Nation	6.34	6.23	1.02	0.31	(-5.90, 18.58)
Gratitude * Nation	-0.22	0.15	-1.45	0.15	(-0.52, 0.08)
AFP * Nation	-0.11	0.15	-0.71	0.48	(-0.41, 0.19)
Conditional indirect effects					
China	-0.36	0.12			(-0.59, -0.14)
Indonesia	0.39	0.07			(0.26, 0.54)
<b>Model 8:</b>					
Outcome: indebtedness					
AFP	-0.68	0.21	-3.15	0.00	(-1.10, -0.25)
Nation	-17.88	3.81	-4.69	0.00	(-25.36, -10.40)
AFP * Nation	0.42	0.12	3.40	0.00	(0.18, 0.67)
Outcome: PB					
AFP	-0.19	0.27	-0.69	0.49	(-0.73, 0.35)
Indebtedness	0.89	0.14	6.13	0.00	(0.60, 1.17)
Nation	0.09	9.37	0.01	0.99	(-18.30, 18.49)
Indebtedness * Nation	-0.22	0.10	-2.11	0.04	(-0.42, -0.01)
AFP * Nation	0.40	0.16	2.52	0.01	(0.09, 0.71)
Conditional indirect effects					
China	-0.17	0.08			(-0.33, -0.01)
Indonesia	0.08	0.04			(0.02, 0.16)

AFP, authoritarian filial piety; Nation = 1 (Chinese) or 2 (Indonesian); PB, prosocial behavior; RFP, reciprocal filial piety.

In Model 6, both AFP and nation significantly predicted moral identity, and the interaction between AFP and nation was also significant. The total variance of moral identity explained

by these predictors was 26% [ $R^2 = 0.26$ ,  $F(3,689) = 82.28$ ,  $p = 0.00$ ]. At the same time, AFP and nation did not predict PB, but moral identity predicted PB, and the interaction between moral



identity and nation was significant, and the interaction between AFP and nation was significant too. The total variance of PB explained by all predictors was 32% [ $R^2=0.32$ ,  $F(5,687)=65.29$ ,  $p=0.00$ ]. The indirect effect of AFP on PB through moral identity was significant in Indonesian students, but not significant in Chinese students, indicating that the moderated mediation model was supported. Detailed descriptions of Model 6 are shown in **Figure 6**.

In Model 7, both AFP and nation significantly and negatively predicted gratitude, and the interaction between AFP and nation was also significant. All predictors explained 15% of the total variance of gratitude [ $R^2=0.15$ ,  $F(3,689)=41.82$ ,  $p=0.00$ ]. In addition, both AFP and gratitude positively predicted PB, while nation did not predict PB. The interaction between AFP and nation was not significant. The interaction between gratitude and the nation was not significant too. These predictors explained 40% of the total variance of PB [ $R^2=0.40$ ,  $F(5,687)=90.34$ ,  $p=0.00$ ]. In this model, the conditional indirect effects were significant. Therefore, further analysis of this model was conducted. Detailed descriptions of Model 7 are shown in **Figure 7**.

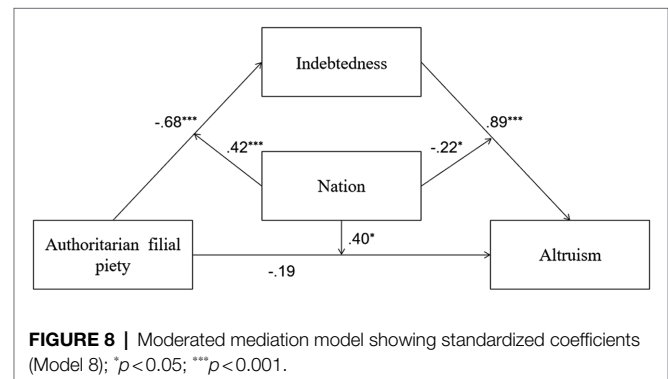
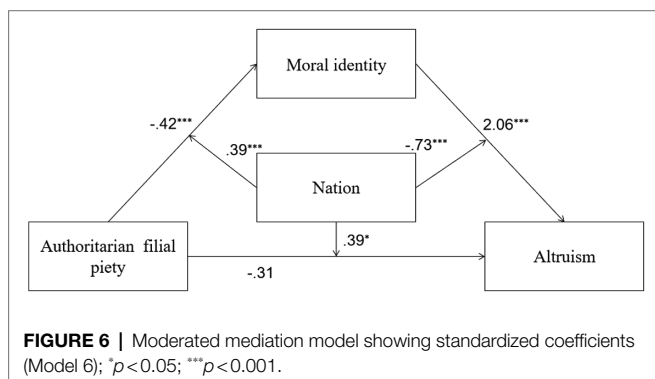
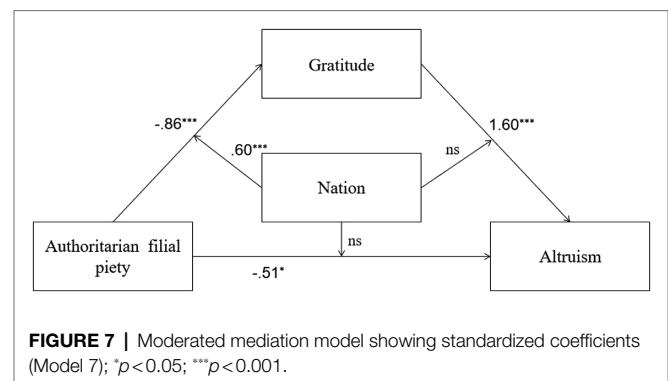
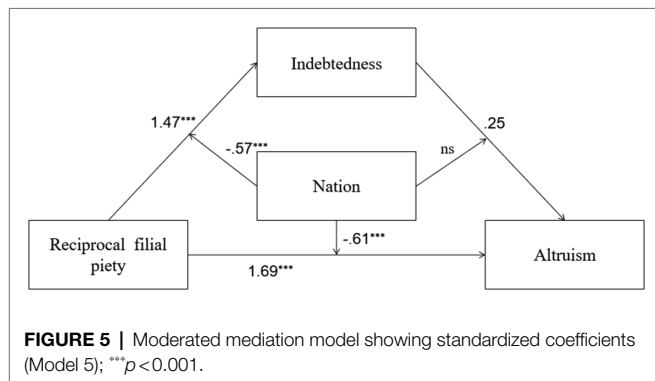
In Model 8, both AFP and nation significantly predicted indebtedness, and the interaction between AFP and nation was also significant. All predictors explained 9% of the total variance of indebtedness [ $R^2=0.09$ ,  $F(3,689)=23.41$ ,  $p=0.00$ ]. At the same time, AFP and nation did not predict PB, but indebtedness predicted PB, and the interaction between

indebtedness and nation was significant, and the interaction between AFP and nation was significant. All predictors explained 28% of the total variance of PB [ $R^2=0.28$ ,  $F(5,687)=53.73$ ,  $p=0.00$ ]. The conditional indirect effects of this model are also significant. Therefore, further analysis of this model was conducted. Detailed descriptions of Model 8 are shown in **Figure 8**.

Since the indirect effects of some models were significant in both China and Indonesia, it is impossible to directly determine whether the moderated mediation model holds. Therefore, according to Hayes (2015), we used the index for moderated mediation to further determine whether the conditional mediation model is supported. The indices of moderated mediation are listed in **Table 4**. All CI did not contain zero, indicating that these conditional mediation models were all supported.

## DISCUSSION

Researchers believe that filial piety is a universal contextualized personality construct that can be applied to parent-child relationships in a global context (Bedford and Yeh, 2019; Beckert et al., 2020). Based on DFPM, we tested the similarities and differences in the psychological functions of RFP/AFP in Chinese and Indonesian students. First, we observed different RFP and AFP scores in the two samples. As expected, individuals in China, a more industrialized and modernized



**TABLE 4** | Indices of moderated mediation.

Models	Index	SE	95% CI
Model 5	-0.15	0.07	(-0.30, -0.01)
Model 6	0.26	0.11	(0.04, 0.49)
Model 7	0.75	0.14	(0.49, 1.02)
Model 8	0.25	0.09	(0.07, 0.43)

society, had higher RFP levels, while participants who grew up in Indonesia, a society still emphasizes hierarchies, had higher AFP levels (Yeh et al., 2013; Riany et al., 2017). Another interesting phenomenon is the difference in correlation between the RFP and AFP in the two countries. In China, the correlation coefficient between RFP and AFP was not significant, but RFP and AFP of Indonesian students showed a high correlation. In China, the distinction between RFP and AFP can be explained by increased individualism and the impact of rapid modernization. The core of filial piety has changed from absolute obedience to parental authority to equality and mutual care in parent-child relationships (Yeh et al., 2013). Indonesian society emphasizes authority and obedience, coupled with the influence of Islam (Oweis et al., 2012; Riany et al., 2017), which may be responsible for why different dimensions of filial piety are connected rather than separated.

In addition, this study investigated the relationships between key research variables among Chinese and Indonesians, as well as the potential moderated mediation effects. Consistent with Hypothesis 1a, RFP positively and significantly predicted PB in all models, indicating that individuals with higher RFP levels are more likely to engage in PB. This finding links RFP with PB and verified that RFP has similar functions in different cultures (Bedford and Yeh, 2019). But unlike Hypothesis 1b, we found contradictory results regarding the function of AFP. The results of model 4 showed that AFP significantly and negatively predicted PB, and AFP in model 7 positively predicted PB, but in models 6 and 8, AFP did not predict PB. In **Table 1**, we found that the correlation between AFP and PB was only 0.02 among Chinese participants, while the correlation between AFP and PB was positive and significant among Indonesian participants. We believe that this contradictory result is caused by the cultural differences between the two countries, which will be discussed in the next model.

Consistent with Hypothesis 2, the results of model 1 and model 4, respectively, confirmed the influence of RFP and AFP on PB through empathy (i.e., RFP/AFP → empathy → PB). It is easy to understand that high RFP individuals are more likely to empathize with others' misfortunes and take others' perspectives (Yeh and Bedford, 2003), and high empathic ability is associated with stronger motivation to help others (Telle and Pfister, 2015; Van der Graaff et al., 2018). It is worth noting that nation did not moderate the indirect effect of RFP on PB through empathy, but moderated the direct effect of RFP on PB. RFP can directly promote PB in two countries, but the effect is

greater in China (compared to Indonesia). Generally to say, the function of RFP showed more similarities than differences in the two countries.

But when the predictor was AFP (see model 4), the result was exactly the opposite. Nation also did not moderate the influence of AFP on PB through empathy but moderated the direct effect of AFP on PB. As to the conditioned direct effect, Indonesian AFP can positively and significantly predict PB, while Chinese AFP did not significantly predict PB. This reflects that the function of AFP in the two countries is completely opposite.

In consistent with Hypothesis 3, both RFP and AFP can affect PB through moral identity. This study found that filial piety, as an important component of family factors, can predict a person's moral identity. And moral identity can stimulate moral motivation, thereby promoting PB (Aquino and Reed, 2002; Hardy, 2006). But this indirect link showed national differences. When the predictor was RFP, its positive influence on PB *via* moral identity was not moderated by nation. However, the direct effect of RFP on PB was stronger among Chinese (compared to Indonesian) participants. The situation was reversed when AFP was the predictor. Among Chinese participants, AFP did not directly and indirectly (*via* moral identity) predict PB (model 6). Among Indonesian participants, AFP positively predict PB and did so indirectly *via* moral identity.

In consistent with Hypothesis 4, two types of filial piety (RFP and AFP) can influence PB through gratitude. Gratitude is firstly developed in family and can predict a person's PB in other interpersonal settings (Scabini et al., 2006; Bono et al., 2019). This study found that gratitude played a mediating role in the association of RFP and PB and this mediating effect did not differ by nation. However, the mediating effect of gratitude in the association of RFP and PB was positive among Indonesian participants, but negative among Chinese participants.

In consistent with Hypothesis 5, indebtedness mediated the relationship between filial piety (RFP and AFP) and PB. Filial piety, as an important Confucian virtue, emphasizes the importance of obeying and repaying the parents (Kang and Larson, 2014; Bedford and Yeh, 2019). This suggests that filial piety can enhance the sense of indebtedness (Kang and Larson, 2014). This study successfully established a connection between filial piety and PB through indebtedness. Indebtedness could promote PB directly in two nations, with a stronger positive effect observed among Chinese (relative to Indonesian) participants. Additionally, the mediating effect of indebtedness was also stronger among Chinese (relative to Indonesian) participants. The results turned out to be complicated again when AFP was the predictor. Indonesian AFP positively predicted PB through indebtedness, but Chinese AFP negatively predicted PB through indebtedness.

Partly consistent with Hypothesis 6, national culture moderated the influence of AFP on PB through various mediating variables (moral identity, gratitude, and indebtedness) and also moderated the influence of RFP on PB through indebtedness. Inconsistent with Hypothesis 6, national culture did not moderate the influence of RFP on PB through empathy, moral identity, or gratitude nor did it moderate the influence

of AFP on PB through empathy. But it moderated the direct effects of RFP/AFP on PB in these three models. This also reflects the similarities across cultures in the functions of RFP which is based on the emotional connection (Bedford and Yeh, 2019). In this study, we argue that AFP has a greater impact on PB than RFP in a society that places relatively more emphasis on hierarchy and obedience, while in a more modernized and industrialized society where individual well-being and self-expression are more emphasized, RFP has a stronger effect on PB.

## LIMITATIONS AND FUTURE DIRECTIONS

There are some limitations expected to be solved by future researches. First, Tsao and Yeh (2019) believe that the cross-cultural study of filial piety should focus on identifying cultural similarities and differences in the psychological functions of RFP and AFP. Although this study has explored the similarities and differences in the roles of RFP/AFP in China and Indonesia, it has not explored the reasons and mechanisms in depth. Mutual relationships and possible interactions between four mediators, which may be important in understanding how filial piety influences PB, were not assumed in this study. Further research can make further exploration on how cultural factors condition the mechanisms of RFP and AFP. Second, we only tested the similarities and differences in the functions of RFP and AFP and the influential mechanism in two cultures (China and Indonesia). It is not known whether the results of this study can be extended to more cultures. This should be addressed in a broader range of cultural contexts. Third, this study cannot determine causality due to using a cross-sectional design. Future research can consider the use of experimental or longitudinal methods to confirm causal links. Additionally, participants in this study are all college students that cannot represent the general population of a country. Future research can overcome this limitation by using samples of different occupational and age groups.

Despite these limitations, this study is the first to examine relevant mechanisms in the relationships between different dimensions of dual filial piety and PB. We found that RFP and AFP affect PB in different ways and are moderated by

national culture. This made an advance in understanding the functions of filial piety in different cultures. RFP can consistently promote PB in China and Indonesia *via* the cultivation of several character strengths, while AFP can do so only in Indonesia. In a modernized society like China, parents should adopt a more humanitarian manner to cultivate their children's RFP to promote their prosocial development. In a more hierarchical society like Indonesia, it seems both RFP and AFP are encouraged to be cultivated to promote prosocial development. However, we still believe that parents should consider cultivating children's RFP more than AFP to promote the development of positive psychological outcomes.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Academic Committee at Guangxi Normal University. The patients/participants provided their written informed consent to participate in this study.

## AUTHOR CONTRIBUTIONS

WZ analyzed the data, wrote the original manuscript, and revised the manuscript. QG designed the work, provided data analysis ideas, and revised the manuscript. TH and JL helped to revise the manuscript. CX provided data analysis software. All authors contributed to the article and approved the submitted version.

## ACKNOWLEDGEMENTS

This research was supported by the National Social Science Fund (BMA170029) of People's Republic of China for CX.

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# Chaos May Prevail Without Filial Piety: A Cross-Cultural Study on Filial Piety, the Dark Triad, and Moral Disengagement

Xiuqing Qiao<sup>1</sup>, Yiqing Lv<sup>1</sup>, Aamer Aldbyani<sup>1,2</sup>, Qingke Guo<sup>1,4\*</sup>, Tianyi Zhang<sup>3\*</sup> and Minghang Cai<sup>1\*</sup>

## OPEN ACCESS

### Edited by:

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### \*Correspondence:

Qingke Guo  
guoqingke@163.com  
Tianyi Zhang  
daywalkerzty@sina.com  
Minghang Cai  
727162136@qq.com

### Specialty section:

This article was submitted to  
Cultural Psychology,  
a section of the journal  
Frontiers in Psychology

**Received:** 08 July 2021

**Accepted:** 28 September 2021

**Published:** 22 October 2021

### Citation:

Qiao X, Lv Y, Aldbyani A, Guo Q, Zhang T and Cai M (2021) Chaos May Prevail Without Filial Piety: A Cross-Cultural Study on Filial Piety, the Dark Triad, and Moral Disengagement.  
Front. Psychol. 12:738128.  
doi: 10.3389/fpsyg.2021.738128

<sup>1</sup> School of Psychology, Shandong Normal University, Jinan, China, <sup>2</sup> Department of Educational and Psychological Science, Thamar University, Dhamar, Yemen, <sup>3</sup> Department of Psychological Counseling, Shandong Xinkang Prison, Jinan, China, <sup>4</sup> Guangxi University and College Key Laboratory of Cognitive Neuroscience and Applied Psychology, Guangxi Normal University, Guilin, China

In traditional Chinese society, filial piety (FP) served as the philosophical foundation of social governance, without which chaos would prevail. It indicates that the function of FP is not limited to family. FP can predict attitudes and behaviors in other social contexts. This study examined the relationship between FP and moral disengagement, and the mediating roles of the dark triad personality, and cultural differences regarding these mechanisms. An online self-report survey was conducted in two different culture groups- university students from China ( $N = 400$ , 37% male,  $M_{age} = 20.41$ ,  $SD_{age} = 2.52$ ) and Islamic countries who are studying in China ( $N = 378$ , 59.25% male,  $M_{age} = 24.29$ ,  $SD_{age} = 4.77$ ). Correlation analysis showed that authoritarian FP was positively associated with moral disengagement among students from China and Islamic countries, while reciprocal FP only negatively correlated with moral disengagement among Chinese students. Moreover, reciprocal FP directly and negatively affected moral disengagement, and did so indirectly through the mediating role of Machiavellianism. However, authoritarian FP directly and positively influenced moral disengagement, and did so indirectly through the buffering role of narcissism. These two parallel mediating models are not affected by culture. Though FP varies from culture to culture, reciprocal FP and authoritarian FP play critical roles in influencing personality and moral development. Reciprocal FP reduces moral disengagement directly and indirectly by weakening Machiavellianism. The role of authoritarian FP is conflicting. It can strengthen moral disengagement, but may also weaken it by deterring the development of the narcissistic personality. The findings enlighten us to view authoritarian FP dialectically. These two parallel mediating models are not affected by culture, indicating the applicability of DFPM in other societies. Future studies are encouraged to involve participants from more divergent countries and cultural backgrounds.

**Keywords:** dual filial piety model (DFPM), dark triad (DT), moral disengagement, narcissism, Machiavellianism, psychopathy, culture

## INTRODUCTION

Morality is the foundation of Confucianism. In traditional China, filial piety (FP) plays a primary role in shaping an individual's moral development. "One cannot successfully pursue the ethical life outside of fulfilling certain familial and social obligation" (Ivanhoe, 2000, p. 17; Yeh, 2006). However, few empirical studies have so far explored the direct relationship between filial piety and moral development. Previous research considers filial piety as the root of Confucian beliefs. The universality of filial piety's function in other cultures has seldom been investigated. For example, "pietas" in Latin and "sawab" in Islam both mean filial piety to parents and are regarded as one of the most important virtues. Extant literature on filial piety focused on its influences on care giving behavior and aging policy in Confucian-influenced countries, but neglected its role in influencing individuals' psycho-social functioning (Chen et al., 2016; Bedford and Yeh, 2020). Recently some researchers called for expanding the scope of filial piety studies, both in the research fields and in applications in other cultural backgrounds (Tan et al., 2019; Zhou et al., 2020; Bedford and Yeh, 2021). Yeh and Bedford (2003) have proposed a revised dual filial piety model (DFPM), shifting the focus of conceptualization of filial piety from cultural norms to the inherent structure of the relationship between parents and children. DFPM focuses on two aspects of parent-child interaction in daily life, authoritarian filial piety (AFP) and reciprocal filial piety (RFP). RFP reflects the egalitarian interaction between parents and children based on mutual love and emotional warmth (Chen and Ho, 2012); AFP reflects the social norms requiring children to satisfy their parental demands and is driven by a need for group identification or social belonging (Yeh et al., 2013; Chen et al., 2016; Yeh and Bedford, 2019). The DFPM stresses that the dual mechanisms underlying parent-child relations are universal and not specific to one cultural context, providing a theoretical foundation for filial piety in non-Chinese societies. The current study was designed to explore the link between filial piety and moral disengagement and the mediating roles of dark triad personality traits. Additionally, this study examined the universality of the function of filial piety by comparing students from China and Islamic countries.

### The Relationship Between Filial Piety and Moral Disengagement and Its Cross-Cultural Universality

People sometimes engage in immoral conduct that violates the ethical principles they stick to. However, some people may be psychologically convinced that ethical standards do not apply to themselves or that their destructive behaviors are morally acceptable in a particular situation. This self-defending or self-serving social cognition process is conceptualized as moral disengagement (MD) by Bandura (Bandura, 1999; Moore, 2015). According to Bandura's theory of moral agency, moral disengagement is a socialization process embedded within specific cultural contexts (Bandura, 2016, p7). This suggests that filial piety belief, as a variable integrating the roles of individuals, society, and cultural norms, can greatly influence moral cognition

and moral decision-making (Bedford and Yeh, 2019). As the primary moral agency, parent-children interaction can significantly influence the development of moral disengagement (Campaert et al., 2018). Correspondingly, previous literature shows that inductive discipline and adequate monitoring can reduce children's moral disengagement, while harsh parenting may lead to greater moral disengagement (Ball et al., 2017; Campaert et al., 2018). Surprisingly, few empirical studies have so far directly investigated the relationship between filial piety and moral disengagement.

In traditional China, disrespect to parents is labeled as immoral because being filial is compulsory. Filial piety emphasizes children's responsibility to parents (Bedford and Yeh, 2019; Wei and Liu, 2020), which can be manifested in children's moral cognition (showing deference and obedience to parents and give priority to interests of the family over that of one's own), moral emotion (showing love, gratitude, respect to parents), and moral conduct (caring for parents and family elders, providing material support). Filial beliefs can influence children's interpersonal relationships and social roles even after entering adulthood and beyond (Yeh and Bedford, 2019). Empirical studies indicated that the two types of filial piety beliefs have different effects on young adults' psychological and social adaptation (Chen, 2015). RFP showed a positive effect in enhancing interpersonal relationships, decreasing parent-child conflicts, and increasing academic achievement (Chen and Ho, 2012; Zhou et al., 2020); AFP is significantly associated with maladaptive emotions and behaviors (Yeh, 2006). A recent study found that the parenting style featured by higher levels of rejection, over-protection, and lower level of emotional warmth (all of these overlaps with AFP essentially) has a role in promoting cyber-aggression of postgraduate students in universities through the mediating of moral disengagement (Zhang et al., 2021).

On the contrary, secure parental attachment and high-quality family function, closely associated with RFP, can inhibit moral disengagement (Bao et al., 2015; Mazzone and Camodeca, 2019). Based on the above theorizing, we proposed that AFP and RFP have opposite effects on individuals' moral disengagement. It should be noted that Chinese filial piety overlaps with family ethics or values in other cultures and filial piety can be regarded as a universal dual mechanism of parent-child interaction beyond ethical norms root in Confucian culture (Bedford and Yeh, 2019, 2021). This laid the foundation for cross-cultural studies of the functions of FP. Consistent with this proposition, the relationships between filial piety and psychological outcomes found in non-Confucian-influenced societies (Bergelson et al., 2015; Toro et al., 2019) replicate those revealed by studies conducted in Chinese societies (2016; Chen, 2015; Zhou et al., 2020). These findings suggest that filial piety can be seen as a universal construct, even if its effects on psychological outcomes differ across cultures (Bedford and Yeh, 2019). Therefore, we supposed that the FP-MD association has cross-cultural stability. Accordingly, this study proposes the following hypotheses:

H1a: RFP is negatively correlated with moral disengagement in both Chinese and Islamic cultures.

H1b: AFP is positively correlated with moral disengagement in both Chinese and Islamic cultures.

## The Dark Triad as Mediators

The term dark triad refers to the constellation of three traits: Machiavellianism, Narcissism, and Psychopathy (Paulhus and Williams, 2002). Machiavellianism can be characterized by a cynical disregard for morality, lack of empathy, and focusing on personal interest and ambition. To maximize personal gain, Machiavellians often manipulate and exploit others (Muris et al., 2017). Narcissism is characterized by a grandiose sense of self-value and a strong need for appreciation and admiration. Narcissists are self-centered and often consider themselves deserving of special treatment (Muris et al., 2017). Psychopathy can be characterized by aloofness, an absence of empathy, remorse or guilt, poor behavioral control, and irresponsibility (Muris et al., 2017). Finally, the dark triad reflects a non-communal, manipulative, exploitative, and self-focused approach to interpersonal relations (Furnham et al., 2013; Miller et al., 2019). The above features suggest that people high in Machiavellianism and psychopathy are more likely to cross moral boundaries to engage in unethical behavior than those scoring low in Machiavellianism and psychopathy (Sijtsema et al., 2019). Individuals high in narcissism may be prone to commit moral transgression because their own interests have been given priority over the interests of others (Egan et al., 2015). Therefore, the dark triad can be considered as an antecedent of moral disengagement.

In the DFPM, RFP, and AFP co-exist within an individual, influencing the development of personality (Bedford and Yeh, 2019). RFP, originated from secure attachment style in parent-child bonds, adequate parental care, and appropriate discipline, can prevent children from manipulating others (Machiavellianism), being self-centered (Narcissism), and acting in the absence of guilt (Psychopathy, see Jonason et al., 2014; Liu et al., 2019). According to life history theory, negative early life experiences, such as harsh parenting and unpredictable parental behavior, may result in pathological personality development (e.g., exploitation, manipulation; Csathó and Birkás, 2018). AFP, which emphasizes obedience and obligations, is more likely to originate from families featured by harsh parenting (Bedford and Yeh, 2019). This suggests that high AFP individuals tend to adapt a fast life history strategy conducive to dark triad personality, while high RFP individuals tend to do the opposite (Jonason et al., 2017; Csathó and Birkás, 2018). Therefore, we propose that filial piety beliefs play essential roles in the development of dark triad personality that is closely associated with unethical decision making (Jonason et al., 2014; Frankenhuys et al., 2016; Csathó and Birkás, 2018; Mazzone and Camodeca, 2019; Abdollahi et al., 2020; Li et al., 2020). Specifically, dark triad traits play mediating roles in the relationship between filial piety and moral disengagement.

As previous literature has suggested, three components of the dark triad may influence moral development in different ways (Egan et al., 2015; Sijtsema et al., 2019; Abdollahi et al., 2020; Kay and Saucier, 2020). We propose that the three dark triad traits serve as multiple parallel mediators in the filial piety-moral disengagement relation. Meanwhile, considering that RFP

and AFP are related but distinct constructs, we proposed the following hypotheses:

H2a. The three dark triad traits serve as parallel mediators in the associations between RFP and moral disengagement.

H2b. The three dark triad traits serve as parallel mediators in the associations between AFP and moral disengagement.

## The Current Study

Previous studies have mainly focused on parenting styles and parent-child interactions on children's moral disengagement. There is a literature gap in how filial piety influences moral disengagement. The current study explored whether the dark triad personality mediated the relations between filial piety beliefs and moral disengagement. In addition, we planned to explore whether the above mediation models show cross-cultural stability. There are many similarities and dissimilarities between Chinese culture and Islamic culture (Khalaila, 2010). To our knowledge, no previous studies have compared the mechanism of moral disengagement between the two cultural groups. Therefore, we try to use culture background as a moderating variable to explore whether the above mediation models are different in these two cultural groups. **Figure 1** illustrates the conceptual model.

## MATERIALS AND METHODS

### Participants and Procedures

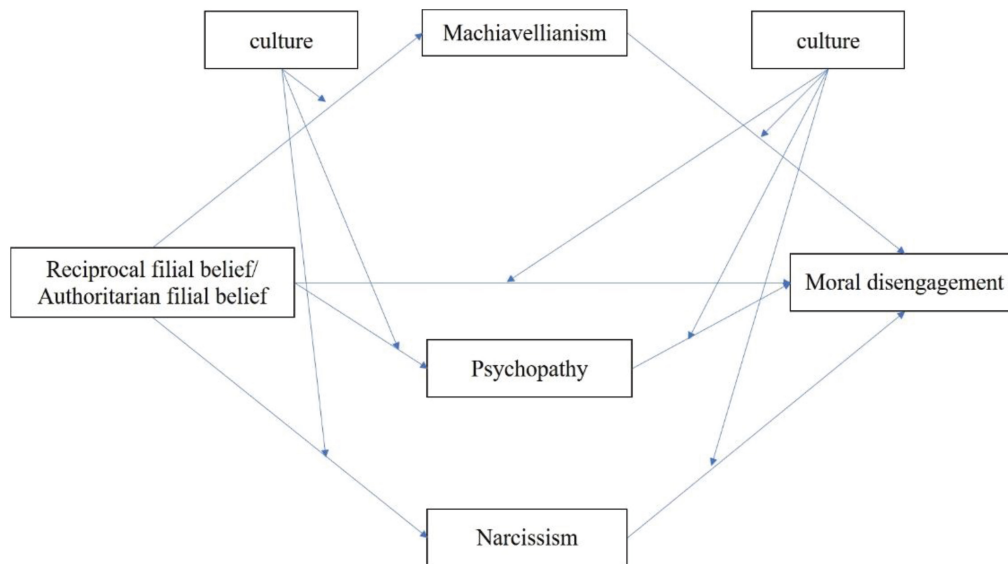
A total of 807 university students from three countries (China, Indonesia, and Yemen) were recruited. They were required to complete the measures of the dark triad personality, filial piety beliefs, and moral disengagement online. To Indonesia and Yemen students, the English versions of these measures were administrated. To Chinese participants, the Chinese versions were administrated. Participants had informed of the voluntary nature of the investigation and were encouraged to complete all items honestly. Participants were also told that their scores would be kept anonymously and confidentially. Participants were also asked to report their demographic characteristics (e.g., gender, age, family economic status). Participants who omitted at least one questionnaire item, who were Indonesians or Yemenis but reported non-Muslim faith, and who were Chinese but reported religious faith were excluded (16 Chinese participants were excluded on account of their religious beliefs). Finally, we had 778 valid cases (96.41% were valid in total). Of the total number of participants, 400 were students from China ( $N_{female} = 253$ ,  $M_{age} = 20.41$ ,  $SD_{age} = 2.52$ ), 378 were international students in China from Islamic countries, Indonesia, and Yemen (Indonesia,  $N = 250$ ,  $N_{female} = 125$ ,  $M_{age} = 22.13$ ,  $SD_{age} = 2.61$  and Yemen,  $N = 128$ ,  $N_{female} = 29$ ,  $M_{age} = 28.51$ ,  $SD_{age} = 5.20$ ). After the administration, participants were thanked and paid 20 yuan for compensation.

### Measures

#### Dark Triad

The 12-item Dirty Dozen scale (DD; Jonason and Webster, 2010) measured participants' dark triad traits. Each item was rated on





**FIGURE 1 |** The proposed moderation effects of culture in the mediation models.

a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Example items of three subscales are “I tend to manipulate others to get my way” (Machiavellianism), “I tend to lack remorse” (Psychopathy), and “I tend to want others to admire me” (Narcissism). In the Chinese population, DD has showed good reliability and validity (Geng et al., 2015). In this study, Cronbach’s alpha of the three subscales were 0.72 (Machiavellianism), 0.74 (Psychopathy), and 0.75 (Narcissism) among Chinese participants, and 0.89 (Machiavellianism), 0.88 (Psychopathy), and 0.87 (Narcissism) among participants from Islamic countries.

### Filial Beliefs

Filial beliefs, including reciprocal filial and authoritarian filial beliefs, were measured by the Filial Piety Scale (FPS; Yeh and Bedford, 2003; Chen, 2014). FPS consists of 16 items, each uses a 6-point scale ranging from 1 (extremely unimportant) to 6 (extremely important). The reciprocal filial belief dimension (e.g., be frequently concerned about my parents’ general well-being) and the authoritarian filial belief dimension (e.g., taken my parents’ suggestions even when I do not agree with them) each includes eight items. The total scores of all items of each dimension were taken to represent the levels of filial beliefs. FPS has shown acceptable reliability and validity in previous research among Chinese samples (Yeh et al., 2013). In this study, Cronbach’s alpha for reciprocal and authoritarian filial beliefs were 0.88 and 0.61 among Chinese participants, and 0.89 and 0.80 among Islamic participants.

### Moral Disengagement

The 32-item Moral Disengagement Scale (MDS; Bandura et al., 1996) was used to assess eight moral disengagement tactics (e.g., telling small lies is permitted because no one is hurt). The Chinese version of MDS shows good reliability and validity in

young adults (Wang et al., 2017). For brevity, only the total score of MDS was used in this study. Participants are instructed to rate each item using a 5-point scale (1 = strongly disagree; 5 = strongly agree). In this study,  $\alpha$  coefficients were 0.95 (Chinese participants) and 0.93 (Islamic participants).

### Control Variables

Considering the correlation between gender, age, socioeconomic status, and moral disengagement in previous studies (Bandura, 2016; Alexandra et al., 2021; p. 290; Charalampous et al., 2021), gender, age, and monthly family income were used as control variables to enhance the validity of research findings. The participants were asked to report their monthly family income using a scale with 6 response options, namely, 1000–1999¥, 2000–2999¥, 3000–3999¥, 4000–4999¥, 5000–5999¥, and  $\geq 6000¥$ .

## RESULTS

Harman’s single factor test was conducted to identify common method bias (Podsakoff et al., 2003). All three scales were subjected to exploratory factor analysis, yielding 10 factors with eigenvalue over one, with the first unrotated factor accounting for 25.00% of the total variance, suggesting that the relations among research variables may not be contaminated by common method bias.

### Correlations Among Research Variables

Pearson correlation analysis was conducted to estimate the relationships among research variables. The results (Table 1) showed that AFP was positively correlated with MD among participants from both China ( $r = 0.34$ ,  $p < 0.00$ ) and Islamic countries ( $r = 0.25$ ,  $p < 0.001$ ), while RFP only



**TABLE 1** | Descriptive statistics and Pearson correlations among research variables.

	1	2	3	4	5	6
1 R.F.P	—	−0.14***	−0.36***	−0.02	−0.26***	−0.52***
2 A.F.P	0.63***	—	0.17**	−0.10*	−0.00	0.34***
3 Machiavellianism	−0.15**	0.10	—	0.44***	0.64***	0.45***
4 Psychopathy	0.08	0.16**	0.19***	—	0.58***	0.24***
5 Narcissism	−0.17**	0.09	0.75***	0.23***	—	0.41***
6 M.D.	−0.07	0.25***	0.63***	0.24***	0.52***	—
Mean (SD) <sub>Islamic</sub>	39.00 (7.03)	33.29 (7.01)	8.79 (4.10)	12.47 (3.90)	8.85 (3.96)	88.92 (19.98)
Mean (SD) <sub>China</sub>	39.00 (6.57)	25.20 (5.07)	13.06 (4.49)	18.20 (4.71)	14.03 (5.16)	70.27 (22.05)
F(1, 776)	0.01	342.29***	190.27***	340.60***	245.27***	152.40***

R.F.P., Reciprocal filial piety, A.F.P., Authoritarian filial piety, M.D., Moral Disengagement.

The upper right part of the diagonal of the table is the results of the Chinese sample, and the lower left part is the results of the Islamic sample.  $N_{\text{Chinese}} = 400$ ,  $N_{\text{Islamic}} = 378$ .

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

negatively correlated with MD among Chinese participants ( $r = -0.52$ ,  $p < 0.001$ ). So far, H1a is partially supported and H1b is completely supported. Besides, three dark triad traits, Machiavellianism, Psychopathy, and Narcissism, were all positively associated with MD, regardless the participants were Chinese ( $r = 0.45, 0.24, 0.41$ ,  $ps < 0.001$ ) or Muslims ( $r = 0.63, 0.24$ , and  $0.52$ ,  $ps < 0.001$ ).

## The Relationship Between Filial Piety Belief and Moral Disengagement: Across-Cultural Comparison

### The Mediation Effects of the Dark Triad

Model 4 (a template for mediation analysis) of PROCESS macro for SPSS (Hayes, 2012) was used to examine the indirect effect of filial piety on moral disengagement through three dark triad traits (H2a and H2b). Gender, age, and monthly family income were entered as control variables. As shown in **Table 2** and

**Figure 2** (Model 1), RFP had a significant negative direct effect on moral disengagement ( $b = -0.19$ ,  $SE = 0.11$ ,  $p < 0.01$ ,  $95\%CI = [-0.87, -0.44]$ ). And the total mediation effect of the dark triad between RFP and moral disengagement was significant ( $b = -0.07$ ,  $SE = 0.01$ ,  $95\%CI = [-0.10, -0.05]$ ). More specifically, the mediation effect via Machiavellianism was significant ( $b = -0.06$ ,  $SE = 0.01$ ,  $95\%CI = [-0.09, -0.03]$ ), the mediation effects via psychopathy and narcissism were not significant considering that a2 (R.F.P.→Psychopathy), b2 (Psychopathy→M.D.), and b3 (Narcissism→M.D.) in **Table 2** were not significant ( $ps > 0.05$ ). This suggested that RFP had a direct effect and Machiavellianism played a mediating role in the whole model.

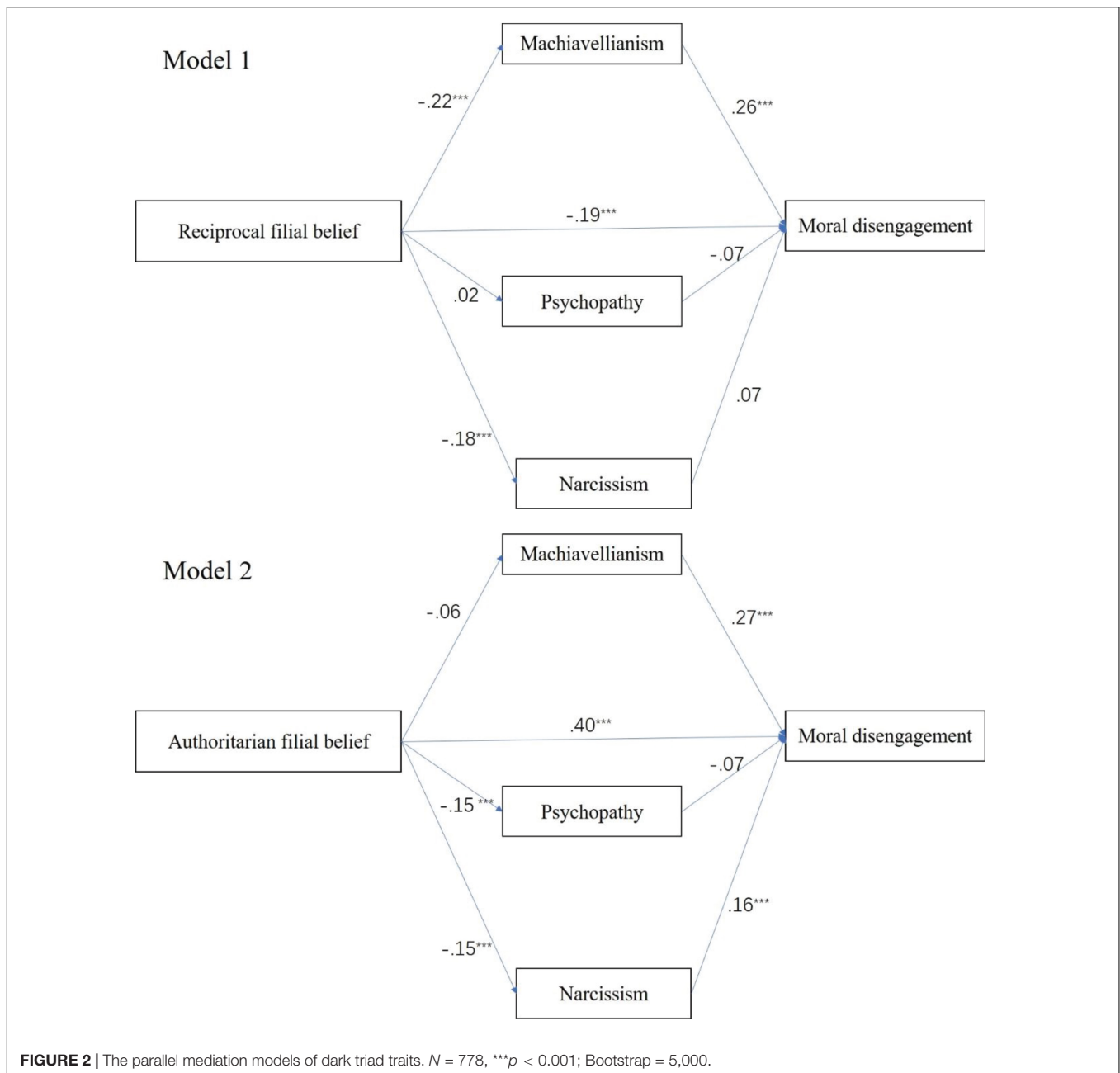
Model 2 estimated the parallel mediation of dark triad between AFP and moral disengagement (**Table 3** and **Figure 2**). Results showed that AFP had positive direct effect on moral disengagement ( $b = 0.40$ ,  $SE = 0.10$ ,  $95\%CI = [1.06, 1.46]$ ) and the total mediation effect was significant ( $b = -0.03$ ,  $SE = 0.01$ ,

**TABLE 2** | Mediation models of reciprocal filial beliefs ( $N = 778$ ).

Model 1	b	SE	t	95% CI
R.F.P.→Machiavellianism(a1)	−0.22	0.02	−6.80***	[−0.20, −0.11]
R.F.P.→Psychopathy(a2)	0.02	0.03	0.53	[−0.04, 0.06]
R.F.P.→Narcissism(a3)	−0.18	0.03	−5.56***	[−0.19, −0.09]
Machiavellianism→M.D. (b1)	0.26	0.23	5.40***	[0.79, 1.70]
Psychopathy→M.D.(b2)	−0.07	0.18	−1.68	[−0.67, 0.05]
Narcissism→M.D.(b3)	0.07	0.22	1.34	[−0.13, 0.73]
R.F.P.→M, D. (c')	−0.19	0.11	−5.95***	[−0.87, −0.44]
Age	0.11	0.19	3.41***	[0.26, 0.97]
Gender	−0.18	1.49	−5.67***	[−11.37, −5.22]
Monthly family income	−0.28	0.43	−8.50***	[−4.55, −2.84]
Mediation effects				
Total	−0.07	0.01		[−0.10, −0.05]
R.F.P.→Machiavellianism→M.D.	−0.06	0.01		[−0.09, −0.03]
R.F.P.→Psychopathy→M.D.	−0.01	0.01		[−0.08, 0.01]
R.F.P.→Narcissism→M.D.	−0.001	−0.003		[−0.01, 0.004]

R.F.P., Reciprocal filial piety, M.D., Moral Disengagement.

\*\*\* $p < 0.001$ ; Bootstrap = 5,000.



95%CI =  $[-0.06, -0.01]$ ), among them, only the mediation effect of narcissism was significant ( $b = -0.02$ ,  $SE = 0.01$ , 95%CI =  $[-0.04, -0.01]$ ).

### Testing for the Moderated Mediation Models: Cross-Cultural Comparison

So far, this study has tested the mediating role of the dark triad. To further explore the possible differences in the mediating models, Model 59 of PROCESS macro for SPSS was adopted, using culture as a common moderator (Hayes, 2015). Gender, age, and monthly family income were entered as control variables. The index of moderated mediation was presented in **Table 4**. Results showed that all 95% bootstrap confidence intervals

(the index of moderation mediation) contained zero, suggesting that the mediation path of filial piety- dark triad traits-moral disengagement did not differ across the two samples.

## DISCUSSION

For thousands of years, filial piety has been regarded as the moral foundation for interpersonal relationships in China and other Confucianism-influenced East Asian countries (Bedford and Yeh, 2019). Little empirical research has investigated whether and how filial piety influences individuals' moral disengagement. More specifically, questions about the

**TABLE 3 |** Mediation models of authoritarian filial beliefs ( $N = 778$ ).

Model 2	<i>b</i>	SE	<i>t</i>	95% CI
A.F.P.→Machiavellianism (a1)	−0.06	0.02	−1.74	[17.45, 22.89]
A.F.P.→Psychopathy (a2)	−0.15	0.03	−4.16***	[−0.16, −0.06]
A.F.P.→Narcissism(a3)	−0.15	0.03	−4.16***	[−0.16, −0.06]
Machiavellianism→M.D. (b1)	0.27	0.21	6.05**	[0.87, 1.71]
Psychopathy →M.D. (b2)	−0.07	0.17	−1.80	[−0.63, 0.03]
Narcissism→M.D. (b3)	0.16	0.21	3.31***	[0.28, 1.10]
A.F.P.→M.D. (c')	0.40	0.10	12.41***	[1.06, 1.46]
Age	0.08	0.17	2.59**	[0.11, 0.77]
Gender	−0.12	1.41	−4.18***	[−8.63, −3.11]
Monthly family income	−0.17	0.42	−5.29***	[−3.07, −1.41]
Mediation effects				
Total	−0.03	0.01		[−0.06, −0.01]
A.F.P.→Machiavellianism→M.D.	−0.02	0.02		[−0.04, 0.004]
A.F.P.→Psychopathy→M.D.	0.01	0.01		[−0.00, 0.03]
A.F.P.→Narcissism→M.D.	−0.02	0.01		[−0.04, −0.01]

A.F.P., Authoritarian filial piety, M.D., Moral Disengagement.

\*\*\* $p < 0.001$ , \*\* $p < 0.01$ ; Bootstrap = 5,000.

**TABLE 4 |** Culture differences in the mediation effect.

			Effect	SE	95%CI	INDEX	SE	95%CI
Model 3	R.F.P.→Machiavellianism→M.D.	China	−0.17	0.08	[−0.34, −0.03]	−0.03	0.11	[−0.24, 0.19]
		Islamic	−0.20	0.07	[−0.35, −0.07]			
	R.F.P.→Psychopathy→M.D.	China	−0.01	0.01	[−0.04, 0.03]	0.04	0.02	[−0.01, 0.09]
		Islamic	0.03	0.02	[−0.00, 0.07]			
	R.F.P.→Narcissism→M.D.	China	−0.13	0.05	[−0.24, −0.04]	0.09	0.06	[−0.02, 0.21]
		Islamic	−0.04	0.03	[−0.11, 0.01]			
Model 4	A.F.P.→Machiavellianism→M.D.	China	0.12	0.07	[0.01, 0.29]	−0.01	0.10	[−0.20, 0.18]
		Islamic	0.12	0.06	[−0.005, 0.26]			
	A.F.P.→Psychopathy→M.D.	China	−0.01	0.03	[−0.07, 0.04]	0.06	0.04	[−0.01, 0.14]
		Islamic	0.046	0.02	[0.006, 0.103]			
	A.F.P.→Narcissism→M.D.	China	−0.03	0.06	[−0.16, 0.10]	0.05	0.07	[−0.08, 0.19]
		Islamic	0.054	0.02	[0.009, 0.099]			

R.F.P., Reciprocal filial piety, A.F.P., Authoritarian filial piety, M.D., Moral Disengagement;  $N_{\text{Chinese}} = 400$ ,  $N_{\text{Islamic}} = 378$ .

Both models were controlled for age, gender, and monthly family income.

mediating mechanisms (i.e., how AFP or RFP predicts moral disengagement) and the universality of this relationship in other cultural contexts remain largely unanswered. Therefore, in this study, we constructed two moderated mediation models to address these questions. The results showed that RFP reduced moral disengagement directly and did so indirectly by weakening Machiavellianism. The role of AFP is complicated, which has a direct strengthening effect on moral disengagement but can weaken it by suppressing the narcissistic personality. Furthermore, these two mediation models were not significantly different across different cultural groups. Besides, there were many interesting findings regarding the function of filial piety in different cultural groups in this study.

We first examined the relationship between AFP/RFP and moral disengagement in China and Islamic countries separately. As expected, AFP is significantly and positively associated

with moral disengagement in both two cultural groups. This confirms that AFP can generally be seen as an unfavorable family obligation belief regarding individual moral socialization (Yeh, 2003). But the negative association of RFP and moral disengagement is only significant in the Chinese sample. One of the possible explanations is that, in Confucian societies, parent-child interactions are more important in children's moral development; while in Islam, moral norms are laid down by Allah Almighty but not human beings (Naeem and Shah, 2013). This can partly explain why the positive effects of RFP on moral responsibility are absent among Muslim participants.

Based on previous findings that the dark triad traits are predictors of moral disengagement (Sijtsema et al., 2019), and poor parent-child relationships contribute to the development of the dark triad (Jonason et al., 2014), this study introduced the dark triad traits as the mediating mechanisms in the

link of filial piety and moral disengagement. The two parallel mediation models indicated that individuals with higher levels of RFP, who emphasized personal choices and authentic love to parents (Yeh and Bedford, 2004), are less likely to manipulate others or disregard personal moral standards. AFP, which advocates personal sacrifice and suppression of individual needs to fulfill obligations to parents (Yeh and Bedford, 2004), may be responsible for a higher level of moral disengagement. High-level AFP often represents strict parental demands and a disadvantaged position of children in the family hierarchy (Bedford and Yeh, 2019). In such a raising environment, children are more inclined to shirk responsibility to avoid punishment from parents. When external forces mainly control one's behaviors, it is impossible to require an individual to take responsibility for his/her behaviors (Bandura, 2016). Surprisingly, we found that AFP could reduce moral disengagement by inhibiting the development of narcissism, suggesting that AFP is not entirely negative, as past findings have suggested (Yeh and Bedford, 2004). AFP means that duties to families come before the interests of an individual. One must suppress personal needs and make sacrifices to enhance the well-being of the whole family. Therefore, a filial individual is less likely to show characteristics of high narcissism, such as "I tend to expect special favors from others."

The insignificant moderation effect of culture indicates that the association of filial piety and moral disengagement via the dark triad is justifiable among Chinese and Muslim participants. First, as a contextualized personality, filial piety can profoundly affect personality development, which in turn influences moral cognition and behavior even in adulthood. Moreover, this provides empirical support for DFPM, which posits that filial piety should be conceptualized mainly in terms of parent-child relationships but not only culture norms (Bedford and Yeh, 2019). Therefore, the function of filial piety is comparable in China and non-Confucian-influenced countries. As Bedford and Yeh (2021) demonstrated, DFPM can be used as the framework to understand inter-generational and inter-personal relationships in different cultures.

Some interesting findings in this study are noteworthy. More specifically, the endorsement of AFP in the Chinese sample is significantly lower than that in the Islamic sample. There are three reasons to explain this difference. Firstly, previous literature has observed a decrease of AFP in modern Chinese societies with industrialization and urbanization (Yeh and Bedford, 2003). Second, past cross-culture studies supported a stronger endorsement of filial duty among Muslims. For example, Duguet et al. (2016) found that the Muslims show a stronger willingness to host elderly parents than Europeans. Third, previous research has found that filial piety beliefs in Arabic cultures involve seven components (i.e., sacrifice, obligation, respect, face-saving, repay, intergenerational exchange, family unity), most of which fit the definition of AFP (Khalaila, 2010). Therefore, it is plausible that the international students from Islamic countries scored higher in AFP than Chinese college students. In addition, we found opposite results regarding the correlations between AFP and RFP

in two culture groups. Among Chinese participants AFP and RFP were negatively correlated. This can be interpreted as the effect of modernization and industrialization, which considerably changed Chinese people's values and beliefs. More and more Chinese people endorse RFP but refuse AFP (Yeh et al., 2013). That is, they yearn for mutual affection and intimacy (RFP) in parent-child relationships and oppose traditional teachings requiring individuals to suppress their needs for the sake of collective interests. Among Muslim participants, however, AFP and RFP were positively correlated. This may reflect the fact that discipline and psychosocial well-being of the children are both highly valued in Islamic cultures. Children are strictly disciplined (AFP) to cultivate obedience to parents and God; meanwhile, the Qur'an, the holy book of Muslims, also requires parents to ensure the development of good psychosocial functioning of their children, which needs a positive parent-child interaction (RFP). This suggests that AFP and RFP are closely connected in Islamic countries (see Oweis et al., 2012; Riany et al., 2017).

It is noteworthy that all the dark triad traits were significantly higher, but moral disengagement was significantly lower in Chinese relative to Muslim participants. This is consistent with Jonason et al. (2020) who found that narcissism, Machiavellianism, and psychopathy of China (4.41, 2.83, and 2.55) were generally higher than Egypt (4.14, 2.13, and 2.43), and Indonesia (3.72, 2.66, and 2.80), two Muslim countries. We have no evidence regarding the difference in moral disengagement scores between Chinese and Muslim students and its cultural implications. We hope future studies can address this issue. Another unexpected finding inconsistent with previous studies (e.g., Egan et al., 2015; Sijtsma et al., 2019) is that narcissism significantly affected moral disengagement. Specifically, in this study, narcissism is not only positively related to moral disengagement but also played a mediating role between AFP and moral disengagement. This can be accounted for by cultural differences between the Eastern and Western societies. Most of the previous studies are conducted in Western individualistic societies, where there is a popularity of cultural products eliciting narcissism, such as song lyrics, reality television and advertisements (Twenge and Campbell, 2009), narcissism is accepted and even encouraged in such situations. Therefore, the different findings on the relation between narcissism and moral disengagement can be accounted for by how strongly the individualistic value is endorsed across cultures. High individualistic individuals tended to make internal attributions when they were asked to explain social events (Oyserman et al., 2002). They tend to assume social responsibilities rather than shirk them. However, in societies that attach great importance to collective goals, such as Islamic countries and China, narcissism is more strongly indicative of selfishness and irresponsibility thus has a stronger relationship with moral disengagement. Nevertheless, these comparable findings in Chinese and Muslim participants illustrate that filial piety is rooted in parent-child interactions rather than behavioral norms shaped by culture (Bedford and Yeh, 2019). Moreover, these findings suggest that family obligation beliefs continued to affect on moral cognition,

emotions, and behaviors even after the children enter adulthood and beyond (Wei and Liu, 2020).

## LIMITATIONS AND FUTURE DIRECTIONS

Several limitations should be addressed. Filial piety originates from parent-child interaction and can be indicated by children's perception of family obligation and duty to host the elderly parents (Schwartz et al., 2010). It can be considered as a family environmental factor that can shape personality development. Previous literature has explored a broad range of psychosocial outcomes of the dark triad personality, but few studies have investigated its antecedent (Furnham et al., 2013). This study found that RFP can prevent the development of Machiavellianism and narcissism regardless of cultural contexts. However, no conclusion can be drawn on which filial piety belief can prevent psychopathy. Future research may consider conducting replication studies or using a longitudinal design to confirm the stability of these relationships. This study revealed culturally universal and specific aspects of filial piety beliefs. Relevant findings should be treated with caution because this study involved only young adults from Chinese and Islamic societies who are well educated. For instance, a study found that the two dimensions of filial piety are significantly related to age among participants ranging from 20 to 69 years old (Yeh et al., 2013). Furthermore, nationally representative samples with more divergent cultural backgrounds are expected to be included in future studies.

In many societies, filial obligations imposed on females are quite different from those on males (Brasher, 2021). This suggests that the effects of filial obligations on psychosocial outcomes may be conditioned by gender (Duguet et al., 2016; Wang et al., 2016; Szabó and Jones, 2019). However, this study has not addressed the moderating role of gender in the relationships among research variables because it is beyond our research scope. Finally, filial piety was operationalized in this study as a contextualized personality trait (namely a continuous variable) but not personality type (namely a categorical variable). According to Yeh and Bedford (2004), there are four filial piety types (high reciprocal-low authoritarian; low reciprocal-high authoritarian; low on both, and high on both). Future studies are encouraged to use a larger sample size to explore whether these

four filial piety types are differently associated with personality and moral development. In so doing, the interaction between RFP and AFP may be revealed more clearly.

## CONCLUSION

Using samples from Chinese and Islamic cultures, we introduced filial piety as an antecedent of the dark triad personality and moral disengagement. Results supported the direct positive effect of RFP on reducing moral disengagement and the mediating effect of Machiavellianism. In contrast, the role of AFP is conflicting. It directly strengthens moral disengagement and concurrently weakens moral disengagement by suppressing Narcissistic personality, enlightening us to view AFP dialectically. In addition, due to that, the effects of filial piety on moral disengagement were considerably consistent across two cultural groups, the applicability of DFPD was empirically supported to a large extent. Future studies are encouraged to involve participants from more divergent countries and cultural backgrounds.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Institutional Review Board (IRB) at Shandong Normal University. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

## AUTHOR CONTRIBUTIONS

XQ and QG designed the research and wrote the manuscript. YL, TZ, MC, and AA collected and analyzed the data. All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

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# The Effect of Filial Piety and Cognitive Development on the Development of Adolescents' Depressive Symptoms: A Longitudinal Study

Yingqiu Pan\* and Ruheng Tang

*Institute of Psychology, School of Public Policy, Xiamen University, Xiamen, China*

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### \*Correspondence:

Yingqiu Pan  
ypan001@xmu.edu.cn

### Specialty section:

This article was submitted to  
Developmental Psychology,  
a section of the journal  
Frontiers in Psychology

**Received:** 31 July 2021

**Accepted:** 29 September 2021

**Published:** 27 October 2021

### Citation:

Pan Y and Tang R (2021) The Effect of  
Filial Piety and Cognitive Development  
on the Development of Adolescents'  
Depressive Symptoms: A Longitudinal  
Study. *Front. Psychol.* 12:751064.  
doi: 10.3389/fpsyg.2021.751064

The present study aims to investigate the pathways through which filial piety and cognitive development work on the development of depressive symptoms in adolescents as well as the trigger of adolescents' depressive symptoms (e.g., academic pressure). Two hundred fifty-seven Chinese adolescents (128 females and 129 males) participated in the study from Grade 7 to Grade 9. Results showed that both filial piety and cognitive autonomy significantly contribute to the development of adolescents' depressive symptoms and academic pressure. But reciprocal filial piety (RFP) and authoritarian filial piety (AFP) as two coexisting aspects of filial piety contribute to depressive symptoms in opposite directions. RFP provides significant protection against adolescents' depressive symptoms directly and indirectly through promoting the development of adolescents' cognitive autonomy and alleviating adolescents' academic pressure. In contrast, AFP positively contributes to adolescents' depressive symptoms by hindering the development of cognitive autonomy and intensifying academic pressure.

**Keywords:** reciprocal filial piety, authoritarian filial piety, cognitive autonomy, depression, academic pressure

## INTRODUCTION

Adolescence is a critical transition period from childhood to adulthood. At this stage, adolescents must learn how to deal with psychosocial challenges in their daily interactions with surrounding environments, such as independence from parents and academic competition in school. Failure to manage various psychosocial challenges put adolescents at great risk for mental health problems, such as depression. Results of national mental health survey showed the prevalence of depression rises substantially throughout adolescence, with the cumulative probability of depression rising from 7.4% in early adolescence to as high as 25% by the end of adolescence (China National Mental Health Development Report, 2019–2020). Compared with normal adolescents, adolescents with depressive symptoms are more likely to develop psychiatric disorders or maladaptive behaviors in the long run, such as anxiety disorders, disruptive disciplinary behaviors, self-injurious and suicidal behaviors (Blakemore, 2019; Wang et al., 2021; Xu et al., 2021). Adolescents' vulnerability to depression and the negative consequence of depression for individual development call for a thorough understanding of the pathogenesis of adolescents' depressive symptoms as well as the process that may protect adolescents from depression.

Research showed that stress is an important trigger for depressive symptoms in adolescents (Fu et al., 2018). Among the various psychological stressors that may trigger depressive symptoms in adolescents, academic pressure merits extra attention. A recent meta-analysis study showed that academic pressure has a stronger association with Chinese adolescents' depressive symptoms as compared with loss-, health-, relationship-, and punishment-related stressful events (Miao, 2020). The strong bearing of academic pressure or low academic achievement on adolescents' depressive symptoms are also documented in various Eastern or Western nations, such as India, UK and Finland (Pelkonen et al., 2008; Jayanthi et al., 2015; López-López et al., 2021). It suggests that helping adolescents to better manage academic pressure is essential for protecting them from depression. In light of this, the present study aims to investigate the process of how individual and social factors protect adolescents from depression as well as academic pressure.

From an intrapersonal perspective, Biegler (2010) argued that whether an individual can successfully manage stressors largely depends on his/her capacity to reevaluate false negative thoughts associated with the stressful situation and employ "debiasing" or coping strategies to respond to stressors in an autonomous way. It implies that being able to autonomously reassess negative thoughts and feelings associated with academic learning in an adaptive manner is critical for adolescents to cope with academic pressure. Evidence from clinical studies also suggested that the efficacy of evidence-based psychotherapy and antidepressant medication for depression is closely related to their success in promoting autonomy in clients with depression (Biegler, 2008). In short, autonomy is an important enabling factor in protecting individuals against stressors as well as depressive symptoms. Given that adolescence is a period during which the drive for autonomy ramps up, it is sensible to assume that the rapid development of autonomy during adolescence may serve as an important protective factor against stressors such as academic pressure, and the development of depressive symptoms in adolescents.

From an interpersonal perspective, social relationship is another important predictor of individual mental health and well-being throughout lifespan (Feeney and Collins, 2015). Among the various social relationships, close parent-child relationships have been reported to be negatively linked to adolescents' academic pressure (Pan, 2015) and depressive symptoms (Rutten et al., 2016). Conversely, insecure attachment to primary caregivers plays a facilitative role in the development of depressive symptoms in children and adolescents (Spruit et al., 2020). Based on these findings, a supportive parent-child relationship can be an important factor in relieving adolescents' academic pressure and protecting them from depressive symptoms.

Although findings of previous studies suggested that personal autonomy and supportive parent-child relationships are protective against depressive symptoms in adolescents, however, the exact pathways through which autonomy and parent-child relationships work together to contribute to adolescents'

depressive symptoms and academic pressure are unclear. To further shed light on the process, a 3-year longitudinal study is conducted to investigate how personal autonomy and the parent-child relationship characterized by filial piety work on the development of depressive symptoms in adolescents and its triggering factors, such as academic pressure.

## Autonomy and Depression

Although the importance of autonomy for individual growth is well-established, the conceptualizations of autonomy are far from consistent. Erikson (1963) defines autonomy as a child's learning to "act" for him/herself from a behavioral approach. Later researchers adopted a domain-specific view of behavioral autonomy and operationalized it as adolescents' decision-making on their own over conventional, prudential, personal or multifaced issues (Smetana et al., 2004). It was found that adolescents' perceived behavioral autonomy over personal and multifaced issues is a negative predictor of their depressive symptoms but such relationship is not found between behavioral autonomy in conventional/prudential domain and depressive symptoms (Smetana et al., 2004; Eagleton et al., 2016).

The emotional approach of autonomy conceptualizes autonomy as adolescents' emotional separation or detachment from their parents (Steinberg and Silverberg, 1986; Pace and Zappulla, 2010). It implies that social relatedness to significant others and autonomy development are incompatible. However, self-determination theory and a large body of empirical evidence suggested that social connectedness is an important facilitator of individual autonomy development (Ryan and Deci, 2000). Regarding the relationship between emotional autonomy and psychosocial development, previous findings are also inconsistent. Some authors reported a positive correlation while others identified a reverse one (Chou, 2000).

The perplexing findings of the associations between behavioral and emotional autonomy and depression counter to the well-established belief that the development of autonomy is important and healthy for adolescents' psychosocial development. Revisiting the traditional conceptualizations of autonomy and the relationship between autonomy and depression is necessary. Beckert (2007) proposed to conceptualize autonomy from a cognitive approach, defining cognitive autonomy as a person's capacity to evaluate, judge, and make decisions on events or information according to one's own volition. The findings of clinical research suggested that psychotherapy affording people with depression greater autonomy to reevaluate and manage negative thoughts related to stressful situations is important for them to learn to manage stressors and can better prevent the relapse of depressive symptoms in clients (Biegler, 2008, 2010). That is, improved cognitive autonomy may help people cope with stressors and depressive symptoms. So, the present study assumes that the development of cognitive autonomy during adolescence may provide adolescents protection against depressive symptoms directly and indirectly through helping them better cope with psychosocial stressors (e.g., academic pressure). The specific hypotheses are presented as follows:



H<sub>1</sub>: The development of cognitive autonomy has a direct negative prediction to the development of depressive symptoms in adolescents;

H<sub>2</sub>: The development of cognitive autonomy has an indirect negative prediction to the development of depressive symptoms in adolescents by helping them better cope with academic pressure.

## Filial Piety and Depression

In Chinese society, filial piety is the core tenet of ethics that guides the way Chinese children behave toward their parents and defines the characteristics of their relationship with parents. Yeh and Bedford (2003) proposed a dual model of filial piety which categorizes filial piety into two dimensions: reciprocal filial piety (RFP) and authoritarian filial piety (AFP). RFP emphasizes the warm and supportive interpersonal connections between parents and children. AFP emphasizes hierarchy and children's submission to parents. The model shifts the traditional investigation of filial piety from the focus on cultural norms of hierarchy to the inherent structure of the parent-child relationship, which provides an important medium to characterize the relationships between parents and children in cultures where the family is seen as an important basic unit of social relations (Bedford and Yeh, 2021).

Few studies examined the association between filial piety and adolescents' depression. However, previous research showed that adult children's (or caregivers') filial piety is a significant and negative predictor of old parents' depressive symptoms in different cultural groups, such as rural China (Yang and Wen, 2021) and the Greater Chicago area in the US (Li and Dong, 2018). For adolescents, it was found that RFP positively contributes to adolescents' psychosocial development, such as perceived life satisfaction and social competence, but AFP does not show a contribution (Leung et al., 2010). Based on these findings, it is hypothesized that RFP and AFP will contribute to adolescents' depression in opposite directions (see H<sub>3</sub>).

For school learning, research showed that RFP plays a significant facilitating role in college students' academic achievement and the endorsement of intelligence incremental beliefs (Chen and Wong, 2014), as well as study engagement and satisfaction (Rózycka-Tran et al., 2021) while AFP plays an inhibiting or trivial role. These findings suggested that the supportive and affective parent-child relationship embedded in RFP is important for students' academic development. In addition, it was found that supportive parent-child relationships can provide critical protection against elementary school students' academic pressure (Liao et al., 2021). Based on these findings, it is assumed that the warm and close parent-child relationships associated with RFP can help adolescents reduce academic pressure whereas hierarchy and submission associated with AFP will increase adolescents' academic pressure. Hypotheses (4) and (5) are proposed below.

H<sub>3</sub>: RFP and AFP have a positive and negative prediction to the development of depressive symptoms among adolescents, respectively.

H<sub>4</sub>: RFP negatively predicts the development of depressive symptoms in adolescents mediated through relieving adolescents' academic pressure;

H<sub>5</sub>: AFP positively predicts the development of depressive symptoms in adolescents mediated through increasing adolescents' academic pressure.

To develop a more thorough understanding of the process through which cognitive autonomy and filial piety regulated the development of depressive symptoms in adolescents, the association between filial piety and cognitive autonomy is also examined. Previous research suggested that parents' RFP beliefs significantly facilitate adolescents' autonomous motivation via parental autonomy granting whereas parents' AFP beliefs significantly inhibit adolescents' autonomous motivation via parental psychological control (Pan et al., 2013). In addition, enhanced autonomy is documented to be an important protective factor in the treatment of depression (Biegler, 2008). Based on these findings, the present study proposes two hypotheses regarding the association between filial piety and cognitive autonomy as follows:

H<sub>6</sub>: RFP negatively predicts the development of depressive symptoms in adolescents through fostering adolescents' cognitive autonomy;

H<sub>7</sub>: AFP positively predicts the development of depressive symptoms in adolescents through suppressing adolescents' cognitive autonomy.

## METHOD

### Participants

A total of 321 seventh grade students participated in the study. All participants were recruited from eight randomly selected classes in three middle schools in a city in southern China, with 2–3 classes from each school. Two hundred fifty-seven students (128 girls and 129 boys) participated in the study for three consecutive years. The sample attrition rate was between 8 and 10% in the second and third wave of data collection. The primary reasons for the sample attrition were that some students transferred to other schools and some were not available at the time of data collection. The mean age of participants in seventh grade was 13.26 years, SD = 0.55 years. Twenty-eight percentage of mothers and 32% of fathers had two or more years of higher education. To check whether the attrition sample was selective, the mean scores for the variables of interest were compared between the attrition and longitudinal samples. No significant mean differences were found.

### Procedure

Each wave of data collection was completed by the same experimenter during the Spring Semester of each school year. Students completed questionnaires in their classroom at the scheduled time. For each wave of data collection, all students were given 30 min to complete questionnaires. Participation was voluntary and each participant received a pen as a reward for his or her participation.



## Measures

Questionnaires or scales were used to assess participants' depressive symptoms, academic pressure, cognitive autonomy, RFP and AFP. Scales used to assess depression and cognitive autonomy were initially developed in English. Translated Chinese version of these scales have demonstrated good validity and reliability among Chinese adolescent samples in previous research. Participants completed all questionnaires or scales in Chinese.

### Depression

Children's Depression Inventory (CDI, Kovacs and Beck, 1977) was used to assess adolescents' depressive symptoms and related feelings (27 items), such as sadness, pessimism, and sense of failure. CDI has been widely used in Chinese youth and adolescent samples (Hou et al., 2012). In the present study, the internal consistency reliability coefficients (Cronbach's  $\alpha$ ) for the CDI were 0.93, 0.92, and 0.92 in the 1st, 2nd, and 3rd waves of data, respectively.

### Academic Pressure

The Questionnaire of Academic Pressure (Chen, 2004) was used to assess adolescents' perceived academic pressure, referring to the extent to which adolescents feel stressed in school-related activities including course work, academic competition from peers, and academic performance etc. (15 items), e.g., I often feel overwhelmed by academic tasks. The reliability coefficients (Cronbach's  $\alpha$ ) for the questionnaire were 0.85, 0.90, and 0.89 in the 1st, 2nd, and 3rd waves of data, respectively.

### Cognitive Autonomy

Cognitive Autonomy Inventory (CAI, Beckert, 2007) was used to assess cognitive autonomy (20 items), representing adolescents' capacity to think independently, express opinions, make decisions, and evaluate thoughts. The inventory has demonstrated good validity and reliability among Chinese adolescent samples (Beckert et al., 2012). In the present study, the reliability coefficients (Cronbach's  $\alpha$ ) for the inventory were 0.85, 0.90, and 0.89 in the 1st, 2nd, and 3rd waves of data, respectively.

### Reciprocal Filial Piety

The Respecting and Caring Parents Subscale of the Filial Piety Scale (Yeh and Yang, 2009) was used to assess RFP, referring to the extent to which adolescents show their respect and caring for parents' feelings and life, including 19 items, e.g., When I go out or get home, I report to my parents so that they won't worry. The reliability coefficients (Cronbach's  $\alpha$ ) for the subscale were 0.93, 0.93, and 0.95 in the 1st, 2nd, and 3rd waves of data, respectively.

### Authoritarian Filial Piety

The Protecting and Upholding Honor for Parents Subscale of the Filial Piety Scale (Yeh and Yang, 2009) was used to assess AFP, representing the extent to which adolescents believe that they should avoid trouble and bring honor to their parents (8 items), e.g., "I rarely quarrel with siblings in front of my parents so as not to make them unhappy." The reliability coefficients (Cronbach's  $\alpha$ ) for the subscale were 0.79, 0.77, and 0.81 in the 1st, 2nd, and 3rd waves of data, respectively.

**TABLE 1 |** The development of adolescents' depressive symptoms and its predictors.

Variables	Grade 7 <i>M (SD)</i>	Grade 8 <i>M (SD)</i>	Grade 9 <i>M (SD)</i>	<i>F</i>
Depressive symptoms	2.41 (0.66)	2.41 (0.67)	2.32 (0.64)	3.56*
Academic pressure	3.17 (0.68)	3.14 (0.79)	3.13 (0.74)	0.42
Reciprocal filial piety	3.93 (0.65)	3.87 (0.65)	3.92 (0.66)	1.78
Authoritarian filial piety	3.83 (0.66)	3.87 (0.63)	3.88 (0.58)	0.92
Cognitive autonomy	3.53 (0.56)	3.79 (0.53)	3.86 (0.53)	62.29***

\* $p < 0.05$ ; \*\*\* $p < 0.001$ .

## RESULTS

Data analysis of the present study consists of two parts: (1) using a one-way repeated measures ANOVA to analyze the developmental trajectories of adolescents' depressive symptoms, academic pressure, RFP, AFP, and cognitive autonomy from Grade 7 to Grade 9; (2) using Hierarchical Linear Modeling (HLM; Raudenbush and Bryk, 2002) to analyze the associations between adolescents' depressive symptoms and its predictors.

### The Development of Adolescents' Depressive Symptoms and Its Predictors

As shown in Table 1, depressive symptoms in adolescents showed a declining trend from Grade 7 to Grade 9,  $p = 0.03$ , partial  $\eta^2 = 0.01$ , with a significant decrease between Grade 8 and Grade 9, Bonferroni  $t = 2.74$ ,  $p = 0.02$ . Cognitive autonomy showed a steady increase from Grade 7 to Grade 9,  $p < 0.001$ , partial  $\eta^2 = 0.20$ . No significant changes were found in adolescents' academic pressure, reciprocal filial piety, and authoritarian filial piety. In addition, no gender differences were found in the developmental trajectories of depressive symptoms and its predictors.

### The Prediction of Filial Piety and Cognitive Autonomy to the Development of Depressive Symptoms

HLM was used to analyze the prediction of filial piety and cognitive autonomy to the development of depressive symptoms in adolescents. First, the intraclass coefficient (ICC) was computed based on the null model. About 61% of the variance in depressive symptoms was accounted for by the inter-individual variables,  $ICC = \tau_{00}/(\tau_{00} + \sigma^2) = 0.27/(0.27 + 0.17) = 0.61$ . The estimates of variance components for the null model were significant at 0.001 level, indicating that it is appropriate to use a two-level HLM model to analyze the longitudinal data.

To test the hypotheses about the mediating role of academic pressure in the relationship between filial piety and cognitive autonomy and the development of adolescents' depressive symptoms, three two-level HLM analyses were conducted in a

**TABLE 2 |** Results of HLM analyses for adolescents' depressive symptoms.

	Model 1		Model 2		Model 3	
	Coefficient	S.E.	Coefficient	S.E.	Coefficient	S.E.
<b>Fixed effect</b>						
Intercept, $\gamma_{00}$	2.39***	0.02	3.15***	0.03	2.39***	0.02
Year, $\gamma_{10}$	−0.06***	0.02	−0.04	0.02	−0.04**	0.02
Reciprocal filial piety, $\gamma_{20}$	−0.35***	0.04	−0.17*	0.08	−0.30***	0.03
Authoritarian filial piety, $\gamma_{30}$	0.03	0.04	0.20**	0.08	−0.09**	0.03
Cognitive autonomy, $\gamma_{40}$	−0.40***	0.03	−0.44***	0.04	−0.26***	0.03
Academic pressure					0.32***	0.03
<b>Random effect</b>						
Intercept, $u_0$	0.11		0.13		0.07	
Level 1, $r_{it}$	0.14		0.24		0.12	

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

row. In the first analysis, level-1 model examined the prediction of filial piety and cognitive autonomy to the development of depressive symptoms in adolescents at the intra-individual level, as shown in Equation (1). To justify the interpretation of  $B_{0i}$ , the variable year in Equation (1) was centered (i.e., the number of years minus 1). When centered,  $B_{0i}$  represents the average level of depressive symptoms in adolescents at Grade 7. In the level-2 model, the dependent variables were the individual intercepts and slopes derived from the level-1 model (see Equation 2–6). Given that the results of previous one-way repeated measures ANOVA showed that there were no gender differences in the developmental trajectories of depressive symptoms in adolescents and its predictors, the inter-individual variable of gender was not included in level-2 model. As shown in **Table 2**, both RFP and cognitive autonomy had a significant negative contribution to the development of depressive symptoms in adolescents,  $ps < 0.001$ . No significant association between AFP and the development of depressive symptoms was found,  $p > 0.05$ .

Level-1 model:

$$Y_{it}(\text{depression}) = B_{0i} + B_{1i}(\text{Year} - 1) + B_{2i}(\text{reciprocal filial piety}) + B_{3i}(\text{authoritarian filial piety}) + B_{4i}(\text{cognitive autonomy}) + r_{it} \quad (1)$$

Level-2 model:

$$B_{0i} = \gamma_{00} + \mu_0 \quad (2)$$

$$B_{1i} = \gamma_{10} \quad (3)$$

$$B_{2i} = \gamma_{20} \quad (4)$$

$$B_{3i} = \gamma_{30} \quad (5)$$

$$B_{4i} = \gamma_{40} \quad (6)$$

In the second analysis, level-1 model examined the prediction of filial piety and autonomy to adolescents' academic pressure, as shown in Equation (7). Level-2 model was consistent with Equation (2)–(6). Results showed that both RFP and cognitive autonomy had an inhibiting effect on adolescents' academic

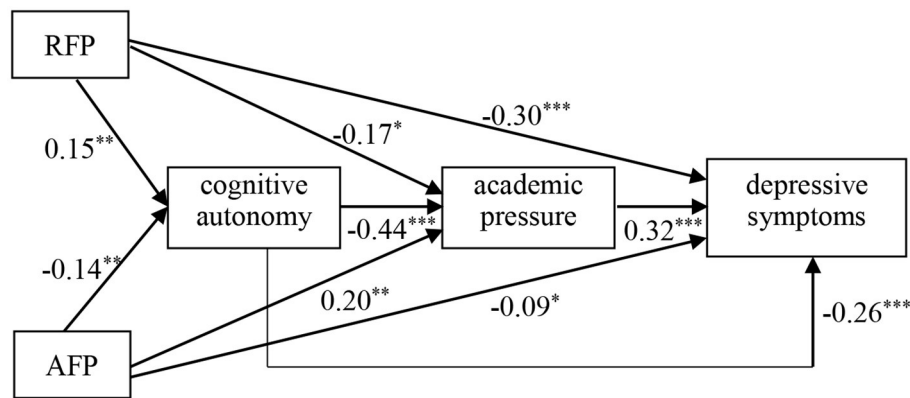
pressure while AFP showed a facilitating effect (see Model 2 in **Table 2**).

$$Y_{it}(\text{academic pressure}) = B_{0i} + B_{1i}(\text{Year} - 1) + B_{2i}(\text{reciprocal filial piety}) + B_{3i}(\text{authoritarian filial piety}) + B_{4i}(\text{cognitive autonomy}) + r_{it} \quad (7)$$

In the third analysis, level-1 model examined the prediction of filial piety, autonomy and academic pressure to the development of depressive symptoms in adolescents, as shown in Equation (8). Level-2 model was consistent with Equation (2)–(6). Results showed that RFP, AFP and cognitive autonomy all negatively contributed to the development of depressive symptoms. Adolescents' academic pressure has a positive contribution to depressive symptoms (see Model 3 in **Table 2**).

$$Y_{it}(\text{depression}) = B_{0i} + B_{1i}(\text{Year} - 1) + B_{2i}(\text{reciprocal filial piety}) + B_{3i}(\text{authoritarian filial piety}) + B_{4i}(\text{cognitive autonomy}) + B_{6i}(\text{academic pressure}) + r_{it} \quad (8)$$

Putting the results of three HLM analyses together, it can be concluded that RFP and the development of cognitive autonomy provide strong protection against the development of depressive symptoms in adolescents directly and indirectly through alleviating adolescents' academic pressure. Notably, AFP was not associated with depressive symptoms when academic pressure was not taken into account. However, the relationship between AFP and depressive symptoms changed after considering academic pressure. That is, AFP demonstrated a negative contribution to the development of depressive symptoms in adolescents directly. Meanwhile, AFP positively contributed to depressive symptoms through intensifying adolescents' academic pressure. This suggests that academic pressure may play an important suppressing role in the relationship between AFP and depressive symptoms. That is, the direct inhibitory effect of AFP on depressive symptoms is counteracted by the indirect



**FIGURE 1 |** The prediction of filial piety and cognitive autonomy to adolescents' depressive symptoms. \* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ .

facilitative effect of AFP on depressive symptoms by intensifying adolescents' academic pressure.

## The Prediction of Filial Piety to Autonomy Development

To examine the correlations between filial piety and cognitive autonomy, a two-level HLM was conducted. ICC for the null model was calculated,  $\tau_{00}/(\tau_{00} + \sigma^2) = 0.31/(0.31 + 0.19) = 0.62$ . That is, 62% variance of cognitive autonomy was accounted for by inter-individual variables. The estimation of variance components for the null model was significant at 0.001 level. It suggested that a two-level HLM model is appropriate for the data analysis. The level-1 and level-2 models are presented below (see Equation 9–13). The results showed that RFP had a positive contribution to the development of cognitive autonomy in adolescents,  $\gamma_{20} = 0.15$ ,  $p = 0.005$ , whereas AFP had an opposite contribution,  $\gamma_{30} = -0.14$ ,  $p = 0.003$ .

Level-1 model:

$$Y_{it}(\text{cognitive autonomy}) = B_{0i} + \beta_{1i}(\text{Year} - 1) + B_{2i}(\text{reciprocal filial piety}) + B_{3i}(\text{authoritarian filial piety})(9)$$

Level-2 model:

$$B_{0i} = \gamma_{00} + \mu_0 \quad (10)$$

$$B_{1i} = \gamma_{10} \quad (11)$$

$$B_{2i} = \gamma_{20} \quad (12)$$

$$B_{3i} = \gamma_{30} \quad (13)$$

To better illustrate the associations between the development of depressive symptoms in adolescents and its predictors, the results of HLM analyses were summarized in **Figure 1**. Both filial piety and cognitive autonomy significantly contribute to the development of depressive symptoms in adolescents directly and indirectly through the mediating role of adolescents' academic pressure.

## DISCUSSION

The present study investigated the pathways through which filial piety and cognitive autonomy shape the development of depressive symptoms in adolescents and their academic pressure during early adolescence. Consistent with the findings of previous studies (Miao, 2020), it was found that academic pressure in early adolescence is a significant positive contributor to the development of depressive symptoms in adolescents. Filial piety and cognitive autonomy contribute to the development of depressive symptoms in adolescents in multiple ways.

According to the dual filial piety model, caring and obedience are the core features of RFP and AFP, respectively. The results showed that the development of RFP and AFP was relatively stable from Grade 7 and Grade 9, indicating filial piety in terms of caring and obedience to parents is largely formed at a relatively young age. Notably, both RFP and AFP are associated with the development of depressive symptoms in adolescents. RFP is a reliable inhibitor, negatively contributing to depressive symptoms directly and indirectly through the mediated effect of academic pressure. Different from RFP, the relationship between AFP and depressive symptoms is somewhat complicated.

As shown in **Table 2**, when academic pressure was considered, the positive association between AFP and depression became negative. It suggested that academic pressure has a suppressing effect on the relationship between AFP and depression. That is, although AFP has a direct negative prediction to depression, AFP may increase adolescents' perceived academic pressure, which in turn, contributes to depression.

The finding of the associations of RFP and AFP with adolescents' depression extended the understanding of exiting literature on the relationship between filial piety and depression. That is, children's filial piety is not only important to their parents' depressive symptoms as disclosed in previous research (Yang and Wen, 2021) but also shapes the development of their own depressive symptoms. It is worthy to note that it is the emotional and caring component of filial piety or RFP that provides important protection against depressive symptoms rather than the obedient component of filial piety or AFP. The direct negative contribution of AFP on depression is largely

counteracted by its indirect positive contribution to depressive symptoms through academic pressure.

Not surprisingly, cognitive autonomy showed a rapid increase in early adolescence. Results showed that the rapid growth of cognitive autonomy provides important protection against the development of depressive symptoms in adolescents during early adolescence. It not only inhibits depressive symptoms directly but also exerts an indirect inhibitory effect through attenuating adolescents' academic pressure. This suggests that cognitive autonomy is important for adolescents to evaluate academic stressful situations in a constructive way and cope with depressive feelings successfully. Additionally, RFP and AFP have a positive and negative contribution to the development of adolescents' cognitive autonomy, respectively. It indicates that children's emotional bonding and caring for parents is beneficial for the development of their cognitive autonomy whereas obedience to parents has an opposite effect.

One limitation associated with the present study is that it did not provide a broad examination of the association of emotional autonomy, behavioral autonomy, and cognitive autonomy with adolescents' depressive symptoms. A whole picture of how filial piety and autonomy contribute to the development of depressive symptoms in adolescents is still unclear. We expect that future studies may reconsider the traditional conceptualizations of emotional and behavioral autonomy to develop a more comprehensive understanding of parent-child relationships characterized by filial piety and individual growth in autonomy shape adolescents' depressive symptoms. In addition, the ICCs calculated based on the null HLM models suggested a high percentage of variance in adolescents' depressive symptoms is related to inter-individual variables but few inter-individual variables were included in the present study. More research efforts about the relationship between inter-individual variables and adolescents' depressive symptoms are expected in future studies.

Putting together, reciprocal filial piety and the growth of cognitive autonomy not only provide direct protection against the development of depressive symptoms in adolescents but also significantly attenuate the triggering effect of academic pressure on adolescents' depressive symptoms. In addition, RCP is also an important facilitator to the development

of cognitive autonomy in adolescents. In contrast, AFP facilitates depressive symptoms through a negative contribution to the development of cognitive autonomy and a positive contribution to academic pressure. In conclusion, the cultural belief of filial piety adopted by Chinese adolescents is deeply intertwined with their psychosocial development and mental health. To promote adolescents' healthy development and well-being, more parenting emphasis should be placed on children's tending and caring for their parents or RCP and less emphasis on children's obedience to parents in academic learning.

## DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Xiamen University. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

## AUTHOR CONTRIBUTIONS

YP: responsible for data collection, data analysis, and manuscript writing. RT: responsible for format checking and proofreading. All authors contributed to the article and approved the submitted version.

## FUNDING

This study was supported by the Fundamental Research Funds for the Central Universities (2072021076).

## ACKNOWLEDGMENTS

We are grateful to the schools, parents, and students who participated in this study.

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# Asian “Guan” Parenting and Life Satisfaction Among Adolescents in Malaysia: The Mediating Role of Filial Piety

Sarvarubini Nainee<sup>1</sup>, Soon-Aun Tan<sup>1\*</sup>, Chee-Seng Tan<sup>1</sup>, Su-Wan Gan<sup>1</sup> and Jo-Pei Tan<sup>2</sup>

<sup>1</sup>Department of Psychology and Counselling, Faculty of Arts and Social Science, Universiti Tunku Abdul Rahman, Perak, Malaysia, <sup>2</sup>Faculty of Health, Psychology and Social Care, Manchester Metropolitan University, Manchester, United Kingdom

## OPEN ACCESS

### Edited by:

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### \*Correspondence:

Soon-Aun Tan  
tansa@utar.edu.my

### Specialty section:

This article was submitted to  
Developmental Psychology,  
a section of the journal  
Frontiers in Psychology

**Received:** 24 July 2021

**Accepted:** 03 November 2021

**Published:** 26 November 2021

### Citation:

Nainee S, Tan S-A, Tan C-S,  
Gan S-W and Tan J-P (2021) Asian  
“Guan” Parenting and Life  
Satisfaction Among Adolescents in  
Malaysia: The Mediating Role of Filial  
Piety.  
Front. Psychol. 12:746540.  
doi: 10.3389/fpsyg.2021.746540

Literature on adolescent development has shown that parenting practices have positive relationships with adolescents’ life satisfaction. Adolescents’ life satisfaction improves when they have parents low in psychological control who uphold reciprocal self-disclosure in their communication. Guan parenting was found to correlate positively with adolescents’ development. Therefore, it is methodologically important to replicate the investigation on the relationship between adolescents’ life satisfaction and Guan parenting. Literature suggests that filial piety is shaped by parenting practices and adolescents who perceived intense parental concern, care, and involvement tend to uphold filial piety and express gratitude toward parents which may promote the adolescents’ life satisfaction. In this study, mediation analysis was done to elucidate the relationship among parents’ guan parenting style, filial piety, and life satisfaction on 606 adolescents ( $M_{age} = 15.07$ ;  $SD_{age} = 1.03$ ; 52.1% females) in Malaysia. The adolescents were sampled through cluster sampling, and data were collected using self-administered questionnaires. The results showed positive relationship between paternal and maternal guan parenting with filial piety and adolescents’ life satisfaction. Greater parents’ filial piety was linked to higher life satisfaction among adolescents. Findings from the mediation models indicated the association among guan parenting with filial piety, gratitude toward parents, and higher life satisfaction. The findings also offered empirical evidence to the underlying mechanism of how guan parenting could affect adolescent life satisfaction via the mediating role of filial piety. The findings also supported the importance of culture-infused parenting in inculcating adolescents’ filial piety besides establishing its link to life satisfaction in Asian families.

**Keywords:** adolescents, filial piety, guan parenting, life satisfaction, Malaysia, statistical mediation, well-being

## INTRODUCTION

### Life Satisfaction Among Adolescents

Life satisfaction plays a key role in adolescents’ achievement of developmental tasks and fulfilling social roles. In recent years, there has been increased attention and interest in the field of life satisfaction and quality of life especially among children and adolescents (Orben et al., 2019). A birth cohort study from Fergusson et al. (2015) revealed that life dissatisfaction was

associated with mental health issues such as depression among youth.

Life satisfaction is an umbrella concept consisting of the contentment derived from the closest social circle which includes family (Huebner, 1991; Zhou et al., 2020). Life satisfaction also refers to an individual's cognitive and subjective evaluation of well-being (Salimi, 2011; Tsurumi et al., 2021) that reflects the level of happiness or unhappiness. This may be related to the individuals' perceptions toward their lives from satisfactory levels to life expectations, demands, and desires (Diener and Lucas, 1999). In short, high life satisfaction is linked to happiness and the achievement of a "good life," whereas negative evaluations of one's life mean the opposite (Proctor et al., 2008; Lado et al., 2021).

A recent study in Malaysia found that adolescents with a higher level of life satisfaction were reported to be less likely to engage in delinquent behavior (Mohamad et al., 2018). A past study also reported that adolescents' satisfaction toward family and school life was a significant predictor of their internalizing and externalizing behavior (Haranin et al., 2007). For a nation with multi-ethnic people, cultural differences or lifestyles may impact one's satisfaction toward life. Knowing that life satisfaction can be taken as a vital indicator of optimal outcomes for adolescents, it is therefore important to examine the impact of family factors like parenting styles and cultural factor like filial piety on adolescents' life satisfaction.

## Guan Parenting

Chao (1994) proposed "guan" as an Asian parenting construct that entails structure and control for achieving the parental goal, investment, intense involvement, and physical closeness with children. Guan, also referred to as training, is defined as parental control in cultivating expected social values and guiding appropriate behavior of children (Chao, 1994; Luo et al., 2013). Choi et al. (2013) have described guan as the manifestation of affection and monitoring from parents. The concept of guan is also hypothesized to be distinct from dimensions of warmth and control (Chao, 1994) and may be particularly important for promoting positive outcomes in Asian children. A study by Stewart et al. (2002) that recruited samples from Hong Kong, Pakistan, and the United States reported that a greater level of guan parenting predicted a higher level of self-esteem and life satisfaction well-being of children. Theoretically, the transactional model of development discusses the importance of parenting practices on positive child development outcomes (Sanson et al., 2018). Empirical evidence also showed the effect of parenting practices on adolescents' life satisfaction (Pérez-Fuentes et al., 2019; Kim and Choi, 2021). Over decades, previous studies have found a high level of guan parenting being associated with children's life satisfaction (Stewart et al., 1999; Fok and Shek, 2011). However, little is known about the role of guan parenting in predicting the life satisfaction of Malaysian adolescents. Thus, it is crucial to examine the role of parenting in Malaysian families using a more culturally specific dimension like guan parenting.

Malaysia is a collectivist and multiracial society that consists of three major ethnic groups (i.e., Malays, Chinese, and Indians). Islamic, Chinese, and Indian cultures may exhibit universal parenting traits that share some similar expectations and view on the child-rearing process (Stewart et al., 1999; Yeh and Bedford, 2004; Ali and Frederickson, 2011; Tuli, 2012). As one of the fastest developing countries in Asia, Malaysia is currently at a crossroad whereby globalization led to the westernization and individualization of values which also intersect with strong traditional values and cultural expectations among each ethnic group. Thus, it can be predicted that parenting styles from the western societies may not be appropriate for the Malaysian family context as Malaysian parents may adopt a more localized and culturally specific parenting style. As reviewed, the impact of parenting style can vary across countries, societies, and cultures (Sangawi et al., 2015; Martinez et al., 2020). It is thus widely viewed that guan as an Asian parenting construct may be a unique parenting behavior to contribute to the development of filial piety belief among Malaysian adolescents.

It has commonly been assumed that the mother, as the main caregiver, may contribute more significantly to child upbringing than the father. However, Li and Lamb (2015) revealed the rise of paternal involvement in the child-rearing process. For many years, the finding on the simultaneous effect of paternal and maternal roles in child development is inconsistent and yet to be fully discovered (Putnick et al., 2012; Chen et al., 2016; Nijssens et al., 2020). A past study found that perceived maternal guan is higher than paternal guan among early adolescents; while only a high level of maternal guan significantly contributes to adolescent development (Lan et al., 2019). There is an apparent lack of study to identify the different role of paternal and maternal guan in adolescent development (Fok and Shek, 2011; Lan et al., 2019). As each parent might mediate adolescent development in a different way (Wang and Supple, 2010), this study aimed to investigate the respective relations of paternal and maternal guan with the developmental outcomes of adolescents.

Guan parenting and filial piety derived from Confucianism are the core values of Asian families. Guan that involves training may promote the development of filial piety belief among adolescent children. Chao (2000), who first introduced the concept of guan parenting, also further discussed the parents who endorse a high level of guan that emphasizes filial piety as a cultural notion in the family. It is believed that parents who perform guan tend to promote expected social behavior and moral values (i.e., loyalty to family and respect to elderly) and encourage conformity of children that could in turn instill the filial piety belief of children.

## Filial Piety

Filial piety or "xiao," a customarily practiced family virtue that originated from Confucian teachings, has been a guiding principle for the younger generations on how to treat their parents and elderlies in the families (Wong et al., 2010; Woo, 2020). In the current society, the amalgamation of modern lifestyle and traditional value systems demonstrated that filial

piety is no longer a pure Chinese notion but persists as a psychological concept that focuses on intergenerational relations. Filial piety has evolved as a part of Asian culture in maintaining family harmony (Carol, 2017).

Yeh and Bedford (2003) integrated the classic filial piety principle from Confucian teaching with current needs and constructed a dual-factor model of filial piety with two attributes namely reciprocal filial piety (RFP) and authoritarian filial piety (AFP). RFP focuses on the children's readiness to build emotionally close relationships with and care for their elders as a way of paying gratitude for raising them. Children portray respect and obedience to their parents using AFP to conform to the social norm. FP as a strong factor in maintaining good relationships and harmony within family members (Woo, 2020) may impact the personal and social development of individuals including their life satisfaction. Existing literature indicated that RFP strongly brings a positive impact on one's contentment which in turn makes them satisfied with their life and living. However, the underlying mechanism of the influence of FP on life satisfaction is still disputed (Sun et al., 2019). Hence, the interplay between filial piety and life satisfaction shall not be disregarded.

## Guan and Dual Filial Piety Model

It is a widely held view that adolescents who perceived a higher level of guan parenting tend to perform a higher level of RFP to repay care, concern, and love from parents. Past research into filial piety found that young adults who internalized guan parenting have a higher tendency to obey their parents and repay them as they received care and support from parents (Wang and Supple, 2010; Chen et al., 2016). Choi et al. (2013) have described guan as the manifestation of affection and monitoring from parents. A qualitative study in fact revealed that a higher level of covert parental control in the form of parental guidance, coaching, and monitoring motivated a sense of family loyalty among Asian Chinese adolescents (Lam, 2003). Thus, guan parenting which emphasized guidance and control can promote reciprocal support from children to voluntarily repay the benevolent upbringing effort from parents. A longitudinal study by Chen et al. (2016) revealed that young adults who perceived their mothers and fathers as supportive and highly involved parents reported higher levels of RFP. Leung et al. (2017) also reported that a high level of maternal control increases the level of filial piety of adolescents.

Besides, guan parents may also cultivate children's filial piety belief and absolute obedience through instilling the importance of adhering to family rules and parental authority (Kim and Wong, 2002). Past studies found that authoritarian parenting that provides strict guidance contributed to a high level of AFP of adolescent children (Chen, 2014); in addition, parents with high demands on child behavior promote children's conformity and unconditional compliance. Adolescent children who reported parental devotion and investment are more likely to repay *via* respecting and supporting parents as well as striving their best to honor the family. For example, Leung and Shek (2018) showed that a high level of paternal and

maternal investment and selfless support positively predicted a higher level of AFP and RFP.

## Reciprocal Filial Piety and Life Satisfaction

Past studies among adolescents from Taiwan (Chen et al., 2016), Hong Kong (Leung et al., 2010; Chen, 2014), and China (Yeh et al., 2013; Sun et al., 2016) suggested that RFP positively contribute to their life satisfaction. This is further supported by recent research conducted among 716 school-going teenagers in Hong Kong that showed high RFP results in higher life satisfaction. The results were obtained upon controlling the sample's age and perceived parental warmth (Leung and Shek, 2018). The significant positive associations between RFP and life satisfaction among adolescents were rationalized by the pleasure one experiences after fulfilling some payback to a person whom they owe. Consequently, the pleasure they experience results in higher satisfaction in their life. Healthy intergenerational communication not only improves RFP but also enhances interpersonal skills, for instance, empathy and self-disclosure. Subsequently, it provides a form of happiness to the individuals which includes an increase in their life satisfaction (Chen et al., 2018).

## Authoritarian Filial Piety and Life Satisfaction

Unlike RFP, AFP demands the suppression of a child's desire to obey parents, the seniors, and family customs. AFP explains the need to fulfill parents' wishes to maintain the family's reputation. As the family is highly valued in Asian culture, many conform to the social norm to bring glory to their parents as it is associated with family status.

Results from previous studies on the effect of AFP on life satisfaction are inconclusive. For instance, a multinational study conducted in Hong Kong, Macau, and Taiwan reported that the samples which include teenagers and young adults practiced both RFP and AFP; however, their impacts on life satisfaction differ. AFP has a significant positive correlation with students' life satisfaction in Taiwan and Hong Kong but not in Macau. Only RFP contributed to the life satisfaction of samples in Macau (Chen et al., 2019). On the other hand, a recent study conducted among 583 multi-ethnic adolescents in Malaysia showed a moderate positive association between both RFP and AFP with adolescents' life satisfaction (Tan et al., 2018; Yan and Chen, 2018; Chen et al., 2019).

Some research with child samples reported a significant negative association between AFP and life satisfaction (Leung et al., 2010; Chen et al., 2019). Respondents who reported high AFP may need to compromise in many aspects for the sake of family harmony which in turn impacts their satisfaction toward life (Chen et al., 2019). The suppression of an individual's desire to fulfill their obligation toward parents may result in lower self-worth (Leung et al., 2010), feelings of helplessness and frustration which subsequently reduces their satisfaction toward life (Yan and Chen, 2018; Chen et al., 2019). A study testing the association of AFP and life satisfaction was conducted among various age groups (children, adolescence, young adults),

but the inconsistency of the findings further intrigues us to study the impact of AFP on one's life satisfaction.

## Mediating Role of Filial Piety

Although guan parenting styles have been a widely studied topic in the field of parenting (Wu, 2012; Choi et al., 2013; Ang and Sin, 2021), the potential mechanism to explain the link between guan parenting and life satisfaction is still uncertain. Guan parenting and FP are closely affiliated as both originated from the traditional Chinese family socialization system. Guan parenting as the essential parental socialization element in Asian families may internalize filial piety values and promote better developmental outcomes for adolescent children.

Meanwhile, the association of guan parenting, filial piety, and also life satisfaction has been understudied in previous research. Filial piety might be one of the value aspects that linked guan parenting and life satisfaction (Yeh et al., 2013; Hsu, 2019). In a study by Wang and Supple (2010), a high level of guan parenting may mitigate adolescent depression *via* the internalization of filial piety belief as a feeling of filial devotion. However, this study also reported guan parenting in that high control can contribute to better academic achievement but not significantly reduce adolescent depression *via* filial piety. As previous studies found inconsistent findings to explain the relations between parenting behavior, filial piety, and adolescent well-being, this study aimed to investigate the mediating role from two aspects of filial piety (i.e., authoritarian and reciprocal filial piety) in the relation between parenting behavior and life satisfaction. This proposed idea is supported by the transactional model of development (Sanson et al., 2018) and the dual filial piety model (DFPM; Yeh and Bedford, 2003). The transactional model of development highlights the influential role of parents' child-rearing belief on child positive development outcomes. It may explain the adolescents' perceived life satisfaction that could be affected by their perception of parent-child interaction. On the other hand, DFPM posits that the two core filial piety values consist of potential benefits and risks to children's psychological development (Leung et al., 2010). By integrating the propositions of these two models, a high level of guan parenting is implied to promote adolescents' life satisfaction and the path may be varied by the mediating roles of AFP and RFP. Therefore, our study hypothesized that filial piety (AFP and RFP) acts as a mediator in the relationship between maternal and paternal guan parenting with life satisfaction among adolescents in Malaysia.

## MATERIALS AND METHODS

### Participants

The respondents of this study consisted of 606 school-going adolescents selected from three states (Penang, Selangor, and Negeri Sembilan) in Peninsular Malaysia. A total of 12 secondary schools participated and were selected *via* the multistage cluster sampling method. The mean age of the respondents was 15.07 years old with a standard deviation of 1.03. More than half of the respondents are females (52.1%).

The respondents consist of 47.0% Malays, 27.6% Chinese, 23.6% Indians, and 1.8% Others (i.e., Dusun, Iban, Serani, and Thai).

### Procedure

Data collection approvals were obtained from the ministry of education, Malaysia (MOE), the department of education (JPN) from each selected state, and school principals. Respondents were provided with information about the study, and parental consent was obtained before data collection. During the data collection day, the research team briefed all the respondents about the study's background and objectives, reassured the privacy and confidentiality of their responses, their rights, and benefits of participation as well as potential risks of participation. The questionnaire and procedure of data collection were reviewed and approved by the Institutional Scientific and Ethical Review Committee.

### Measures

Paper-and-pencil questionnaires were prepared in the Malay language as the Malay language is the national language and medium of instruction in all the national schools in Malaysia. A backtranslation procedure was applied to translate the original English language questionnaire to the Malay language.

Filial piety scale (FPS; Yeh and Bedford, 2003) was used to measure adolescents' filial piety. This scale consists of 16 items with eight items for each subscale on reciprocal filial piety and authoritarian filial piety. Respondents were required to respond on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). A mean score was computed where a higher score corresponds to higher filial piety. Sample item for reciprocal filial piety was "Be grateful to my parents for raising me," and sample item for authoritarian filial piety was "Take my parents' suggestions even when I do not agree with them." The Cronbach alpha for the scales was 0.79 for reciprocal filial piety and 0.70 for authoritarian filial piety, respectively.

Satisfaction with life scale (SWLS; Diener et al., 1985) was used to measure global cognitive judgment of satisfaction with one's life. SWLS consists of five items on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). A mean score computed with a higher score indicates higher life satisfaction. The Cronbach alpha of 0.83 was reported in this study.

Guan parenting scale (Chao, 1994) was used to assess adolescents' perceived parenting behavior. This scale focuses on the aspects of Chinese parenting which reflect "training" literally referring to parental control in cultivating expected social values and guiding appropriate behavior of children (Chao, 1994). This scale consists of eight items for the respective paternal and maternal guan perspectives. Respondents were requested to respond on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). A mean score computed with a higher score indicates a higher guan parenting. A sample item was "Mother/father presents his/her expectations to me." The Cronbach alpha for the scales was 0.85 for Father guan and 0.80 for Mother guan in this study.



## Data Analysis Plan

The results of this study were analyzed using IBM SPSS version 22. The data were first computed to examine the association between guan parenting, filial piety, and life satisfaction using Pearson's product-moment correlation. The hypothetical mediating model was tested using the SPSS macro-PROCESS (Hayes, 2013) with bias-corrected bootstrap confidence interval (CI) based on 5,000 bootstrapped samples. All the mediation analyses treated adolescent sex and ethnicities as covariates. The indirect effect was considered statistically significant if the CI does not contain zero. There were no missing data detected in this dataset.

## RESULTS

**Table 1** presents the correlation results between variables of this study. Results found guan parenting (i.e., paternal and maternal) positively associated with filial piety (i.e., reciprocal and authoritarian). Results also revealed that adolescents' life satisfaction positively linked with guan parenting and filial piety sub-scales. Thus, the results offered support to our hypothesis.

### The Mediating Role of Reciprocal and Authoritarian Filial Piety

**Figure 1A**, **Table 2** present the findings for the hypothesized indirect effect of paternal guan parenting on the adolescents' life satisfaction *via* reciprocal and authoritarian FP. The findings indicated that paternal guan parenting was positively associated with adolescents' life satisfaction ( $B=0.26$ ,  $t=3.93$ ,  $p=0.001$ ), reciprocal FP ( $B=0.15$ ,  $t=5.09$ ,  $p<0.001$ ), and authoritarian FP ( $B=0.28$ ,  $t=7.64$ ,  $p<0.001$ ) after controlling the effects of sex and ethnicities. Positive relationships were also found between life satisfaction with reciprocal FP ( $B=0.63$ ,  $t=6.43$ ,  $p<0.001$ ) and authoritarian FP ( $B=0.37$ ,  $t=4.83$ ,  $p<0.001$ ). The association between paternal guan parenting and life satisfaction became not significant ( $B=0.06$ ,  $t=1.00$ ,  $p=0.317$ ) after controlling the effects of reciprocal and authoritarian filial piety as well as the covariates (i.e., Chinese,  $B=0.52$ ,  $t=5.02$ ,  $p<0.001$ ). As expected, the mediating effect of reciprocal filial piety,  $B=0.09$ ,  $SE=0.02$ , 95% CI [0.05, 0.14] and authoritarian filial piety,  $B=0.10$ ,  $SE=0.03$ , 95% CI [0.06, 0.16] were both found to be significant for the association between paternal guan parenting and life satisfaction.

Besides, almost similar results were obtained for the association among maternal guan parenting, reciprocal and authoritarian FP, and life satisfaction (see **Figure 1B**). There was a positive

linkage between maternal guan parenting with life satisfaction ( $B=0.20$ ,  $t=2.67$ ,  $p=0.008$ ), reciprocal filial piety ( $B=0.16$ ,  $t=4.97$ ,  $p<0.001$ ) and authoritarian filial piety ( $B=0.28$ ,  $t=6.83$ ,  $p<0.001$ ). Meanwhile, life satisfaction was associated positively with reciprocal filial piety ( $B=0.64$ ,  $t=6.49$ ,  $p<0.001$ ) and authoritarian filial piety ( $B=0.39$ ,  $t=5.13$ ,  $p<0.001$ ). The association between maternal guan parenting and life satisfaction became not significant,  $B=-0.01$ ,  $t=-0.21$ ,  $p=0.835$  after controlling the effects of both reciprocal and authoritarian filial piety and the covariates (i.e., sex,  $B=0.17$ ,  $t=1.99$ ,  $p=0.047$ ; Chinese,  $B=0.49$ ,  $t=4.68$ ,  $p<0.001$ ). The indirect effect of maternal guan parenting on life satisfaction *via* reciprocal filial piety was found to be significant,  $B=0.10$ ,  $SE=0.03$ , 95% CI [0.05, 0.17]. The mediating effect of authoritarian filial piety,  $B=0.11$ ,  $SE=0.03$ , 95% CI [0.06, 0.17], was significant in the association between maternal parenting and life satisfaction (refer to **Table 2**).

## DISCUSSION

The present study proposed and tested two parallel mediation models to clarify the relationships among (paternal and maternal) Guan parenting, reciprocal filial piety (RFP), authoritarian filial piety (AFP), and life satisfaction among adolescents in Malaysia. The results support that both paternal and maternal Guan parenting have an indirect relationship with life satisfaction through RFP and AFP, respectively.

Paternal and maternal Guan parenting were examined in the present study to address the necessity of understanding the unique role of father and mother in adolescent development (Fok and Shek, 2011; Lan et al., 2019). Both types of Guan parenting were found to have a positive relationship with life satisfaction. The result is consistent with past findings in that adolescents who received Guan parenting tend to report a higher level of well-being (e.g., Stewart et al., 2002). Moreover, in line with past studies (e.g., Leung et al., 2010; Chen, 2014), both paternal and maternal Guan parenting are positively associated with RFP and AFP, respectively. In other words, for parents who employ Guan parenting, their children tend to perceive the obligation of paying back to and obeying them. Taken together, the results imply that Guan parenting practiced by a father or mother is beneficial to adolescents' filial piety and life satisfaction. Note that, although traditionally the mother is the primary caregiver who plays a dominant role in children's development, our findings are not uncommon. Indeed, some studies have shown that fathers also play an important role in children's socioemotional and behavioral development (e.g., Cabrera et al., 2014; Parke and Cookston, 2019; Sifaki et al., 2020). For instance, Gao et al. (2021) collected data from 466 Chinese middle and high school students using a longitudinal design with an 8-month interval. Consistent with the findings from maternal parenting styles, Gao and colleagues found that paternal emotional warmth reported at Time 1 had a positive relationship, while paternal harsh discipline measured at Time 1 had a negative relationship, with life satisfaction reported at Time 2.

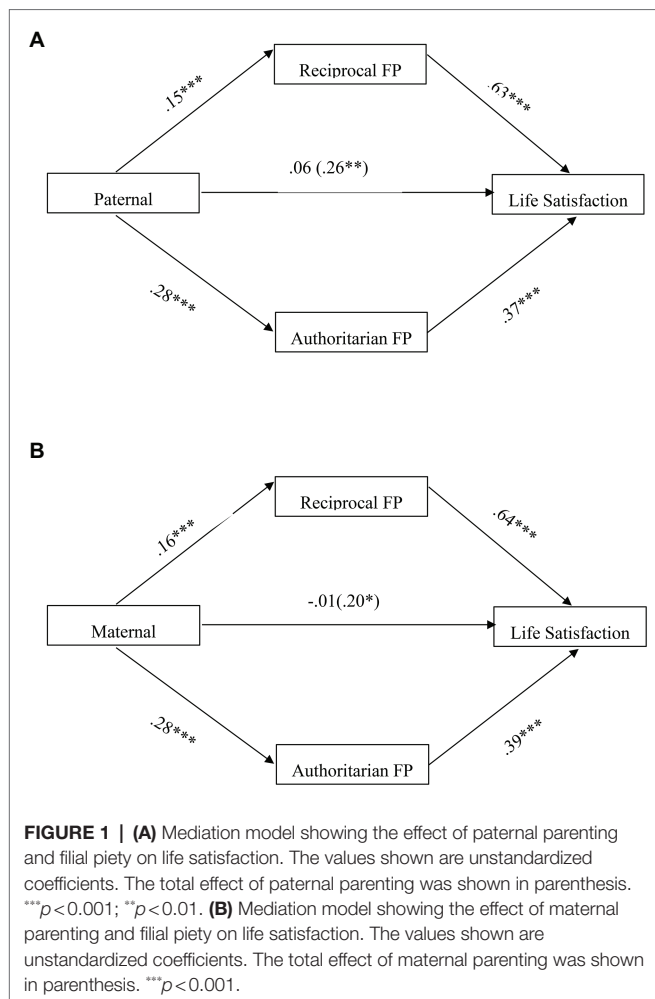
Consistent with the findings derived from college students in Taiwan (Yan and Chen, 2018; Chen et al., 2019), both RFP

**TABLE 1** | Correlation analysis between variables.

	2	3	4	5
1. Maternal parenting	0.76***	0.23***	0.32***	0.09*
2. Paternal parenting	–	0.23***	0.34***	0.13**
3. Reciprocal FP		–	0.55***	0.38***
4. Authoritarian FP			–	0.35***
5. Life satisfaction				–

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





and AFP were found to have a positive relationship with life satisfaction in the present study. While the results indicate that both types of filial piety matter to our participants, it is noteworthy that the RFP showed a stronger relationship with life satisfaction than AFP. The result could be due to children having to compromise their desires or plans to meet the needs of the family when practicing AFP. Such suppression may reduce self-worth (Leung et al., 2010) and satisfaction toward life (Chen et al., 2019).

Overall, the present study expands the literature by offering empirical support for indirect relationship between paternal and maternal Guan parenting with life satisfaction through both reciprocal and authoritarian filial piety, respectively. The mediation model not only provides insights into the underlying mechanism of the beneficial relationship between Guan parenting and adolescents' life satisfaction but also serves as a baseline for future researchers to develop a theoretical framework of Guan parenting and adolescents' well-being. For instance, future researchers may collect qualitative data and then use the grounded theory approach to develop a theory to explain the role of Guan parenting in adolescents' well-being.

Although the results are promising, we acknowledge that the mediation model is not saturated and can be further

**TABLE 2 |** Summary of the mediation model results.

	<i>B</i>	<i>SE</i>	<i>t</i>	95% <i>CI</i>
<b>Paternal</b>				
Pat → LS (total)	0.26**	0.07	3.93	[0.13, 0.23]
Pat → LS (direct)	0.06	0.06	1.00	[-0.06, 0.19]
Pat → RFP	0.15***	0.03	5.09	[0.09, 0.20]
RFP → LS	0.63***	0.10	6.43	[0.09, 0.20]
Pat → AFP	0.28***	0.04	7.64	[0.21, 0.35]
AFP → LS	0.37***	0.08	4.83	[0.09, 0.20]
Indirect effect (Total)	0.20	0.04		[0.13, 0.27]
Indirect effect (RFP)	0.09	0.02		[0.04, 0.14]
Indirect effect (AFP)	0.10	0.03		[0.06, 0.16]
Indirect effect (RFP - AFP)	-0.01	0.04		[-0.09, 0.06]
<b>Maternal</b>				
Mat → LS (total)	0.20**	0.07	2.67	[0.05, 0.34]
Mat → LS (direct)	-0.01	0.07	-0.21	[-0.15, 0.12]
Mat → RFP	0.16***	0.03	4.97	[0.10, 0.22]
RFP → LS	0.64***	0.10	6.49	[0.45, 0.83]
Mat → AFP	0.28***	0.04	6.83	[0.20, 0.36]
AFP → LS	0.39***	0.08	5.13	[0.24, 0.54]
Indirect effect (Total)	0.21	0.05		[0.13, 0.30]
Indirect effect (RFP)	0.10	0.03		[0.05, 0.17]
Indirect effect (AFP)	0.11	0.03		[0.06, 0.17]
Indirect effect (RFP - AFP)	-0.01	0.04		[-0.09, 0.07]

Pat, Paternal parenting, Mat, Maternal parenting, LS, Life satisfaction, RFP, Reciprocal filial piety, AFP, Authoritarian filial piety, total, total effect, direct, direct effect, CI, 95% bias-corrected confidence interval. \*\*\* $p < 0.001$ , \*\* $p < 0.01$ .

expanded. For example, it is important to know why Guan parenting is beneficial to filial piety and whether the positive relationship is conditional on adolescents' attitudes toward Guan parenting. In the same vein, future researchers are suggested to collect data on parenting from fathers and mothers, instead of measuring adolescents' perceived parenting, to avoid the high correlation between paternal and maternal parenting scores. Moreover, the present study is unable to demonstrate the causal relationship among the variables with a cross-sectional design. However, it does not seem reasonable to assume that life satisfaction precedes Guan parenting and filial piety. Similarly, filial piety perceived by adolescents is less plausible to be an antecedent factor of parents' child-rearing techniques. This is because parenting styles have been found to shape filial piety (e.g., Chen, 2014; Chen et al., 2016) but not vice versa. Finally, the data of the present study were collected from three states (out of the 13 states and 3 federal territories) in Malaysia using the multistage cluster sampling method. The generalizability of the findings to other states and cultural contexts remains open. Future researchers are thus recommended to replicate the present study in other states of Malaysia or even other countries.

## CONCLUSION

Parental and maternal Guan parenting are indirectly and positively associated with adolescents' life satisfaction through reciprocal and authoritarian filial piety, respectively. The findings highlight that this unique Asian parenting style is beneficial.

Researchers in future studies are warranted to further explore the positive role of this Asian parental control.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Scientific and Ethical Review Committee of Universiti Tunku Abdul Rahman, Malaysia. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

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## AUTHOR CONTRIBUTIONS

SN and S-WG have made a considerable contribution to the concept or design of the article. All authors were largely involved in the acquisition of the data. S-AT and C-ST were involved in the analysis and interpretation of data for the article. All authors drafted the article, and J-PT revised it critically for important intellectual content. Upon several revision, all authors approved the version to be submitted and agreed to be accountable for all aspects of the work related to the accuracy or integrity of any part of the work.

## FUNDING

This study was funded by Universiti Tunku Abdul Rahman Research Fund [IPSR/RMC/UTARRF/2014-C2/T04].

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# Adolescents' Filial Piety Attitudes in Relation to Their Perceived Parenting Styles: An Urban–Rural Comparative Longitudinal Study in China

Li Lin<sup>1,2\*</sup> and Qian Wang<sup>3</sup>

<sup>1</sup> School of Graduate Studies and Department of Applied Psychology, Lingnan University, Tuen Mun, Hong Kong SAR, China, <sup>2</sup> Department of Applied Social Sciences, The Hong Kong Polytechnic University, Kowloon, Hong Kong SAR, China, <sup>3</sup> Department of Psychology, The Chinese University of Hong Kong, Shatin, Hong Kong SAR, China

## OPEN ACCESS

### Edited by:

Kuang-Hui Yeh,  
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### \*Correspondence:

Li Lin  
jocelyn.lin@ln.edu.hk

### Specialty section:

This article was submitted to  
Developmental Psychology,  
a section of the journal  
Frontiers in Psychology

**Received:** 31 July 2021

**Accepted:** 13 December 2021

**Published:** 24 January 2022

### Citation:

Lin L and Wang Q (2022)  
Adolescents' Filial Piety Attitudes  
in Relation to Their Perceived  
Parenting Styles: An Urban–Rural  
Comparative Longitudinal Study  
in China. *Front. Psychol.* 12:750751.  
doi: 10.3389/fpsyg.2021.750751

The Dual Filial Piety Model (i.e., the model of reciprocal and authoritarian filial piety) offers a universally applicable framework for understanding essential aspects of intergenerational relations across diverse cultural contexts. The current research aimed to examine two important issues concerning this model that have lacked investigation: the roles of parental socialization (i.e., authoritative and authoritarian parenting styles) and social ecologies (i.e., urban vs. rural settings that differ in levels of economic development and modernization) in the development of reciprocal and authoritarian filial piety attitudes. To this end, a two-wave short-term longitudinal survey study was conducted among 850 early adolescents residing in urban ( $N = 314$ , 49.4% females, mean age = 13.31 years) and rural China ( $N = 536$ , 45.3% females, mean age = 13.72 years), who completed questionnaires twice, 6 months apart, in the spring semester of grade 7 and the fall semester of grade 8. Multigroup path analyses revealed bidirectional associations over time between perceived parenting styles and adolescents' filial piety attitudes, with both similarities and differences in these associations between urban and rural China. In both settings, perceived authoritative parenting predicted increased reciprocal filial piety 6 months later, whereas perceived authoritarian parenting predicted reduced reciprocal filial piety among urban (but not rural) adolescents over time. Moreover, in both settings, reciprocal filial piety predicted higher levels of perceived authoritative parenting and lower levels of perceived authoritarian parenting 6 months later, with the latter effect being stronger among urban (vs. rural) adolescents. Adolescents' perceived parenting styles did not predict their authoritarian filial piety over time; however, authoritarian filial piety predicted higher levels of perceived authoritative parenting (but not perceived authoritarian parenting) 6 months later in both settings. The findings highlight the roles of transactional socialization



processes between parents and youth as well as social ecologies in the development of filial piety, thus advancing the understanding of how the universal human motivations underlying filial piety may function developmentally across different socioeconomic and sociocultural settings.

**Keywords:** bidirectional associations, filial piety attitudes, parenting styles, urban–rural comparison, Chinese adolescents

## INTRODUCTION

Filial piety entails a set of psychological schemas of parent–child interactions, guiding intergenerational relationships across diverse family settings (Bedford and Yeh, 2019, 2021). Filial piety has been acknowledged to be a core pillar of Confucianism—a guiding ideology in Chinese culture (Ho, 1994)—and socializing children to endorse and practice filial piety is an important child-rearing goal for Chinese parents (Chao, 2000; Rao et al., 2003). However, rapid socioeconomic development in Chinese societies and the blending of cultures through globalization have presumably caused a transformation in Chinese people's understanding and values concerning filial piety (Cheung and Kwan, 2009; Sun et al., 2019), resulting in changes in how children develop their filial piety in contemporary China.

According to the Dual Filial Piety Model (Yeh and Bedford, 2004; Bedford and Yeh, 2019), filial piety is comprised of two related but distinct types of psychological schemas: reciprocal filial piety, which entails a provision of support and care for parents due to affection and gratitude, and authoritarian filial piety, which entails child obedience and sacrifice due to parental authority or prescribed cultural norms. The Dual Filial Piety Model focuses on attitudes toward a set of filial behaviors, such as supporting parents when they are aged, rather than actual enactment of filial behaviors (Yeh and Bedford, 2004). Assessing attitudes enables us to understand individuals' affections, values, or even behavioral tendencies toward a certain pattern of intergenerational relationships; however, cautions should be taken due to the potential mismatch between filial attitudes and behaviors (Chen et al., 2007). Research focusing on filial piety attitudes has found that reciprocal and authoritarian filial piety attitudes contribute to the quality of the parent–child relationship (e.g., Chen et al., 2016), children's well-being (e.g., Sun et al., 2019), academic engagement (e.g., Chen, 2016), and psychosocial competences (e.g., Leung et al., 2010) in different ways. Yet, only minimal emerging research exists that examines how these two types of filial piety attitudes develop (e.g., Chen, 2014), leaving notable gaps in the extant literature. First, the current understanding is limited to “parent effects,” that is, how parenting styles or practices shape children's filial piety attitudes (Chen, 2014; Chen et al., 2016). According to the transactional model of socialization (Sameroff and Mackenzie, 2003), socialization takes place through bidirectional influences between children and their environment (e.g., family), which points to a need to investigate “child effects,” that is, how children's filial piety attitudes affect their parents' parenting styles or practices. Filial piety prescribes how children should treat their parents, and thus, parents might adjust their parenting in response to the

different filial piety attitudes of their offspring. Therefore, both parent effects (parenting→ children's filial piety) and child effects (children's filial piety→ parenting) should be considered in the study of the development of filial piety attitudes. Second, relatively little research has investigated the socio-ecologies in which the socialization of filial piety occurs, despite a call for understanding filial piety's connection to individuals and the environment (Bedford and Yeh, 2021). Thus, it is crucial to investigate how socioeconomic and sociocultural changes (e.g., from rural to urban settings in China) make a difference in the socialization of filial piety.

To address these gaps, this study used a 6-month longitudinal design to examine bidirectional relationships between parenting styles and dual filial piety attitudes among Chinese early adolescents. We assessed attitudes rather than behaviors because young adolescents have not reached an age that can fulfill filial obligations, such as financially supporting their parents. Early adolescence was targeted because this is a critical period of identity formation that includes exploration and understanding of one's role and duties in the family (Erikson, 1994). Furthermore, we compared these relationships between urban and rural China, as the uneven levels of socioeconomic development and modernization in urban and rural regions in China have presumably resulted in different understandings and values concerning filial piety (Chen and Li, 2012) and, in turn, may lead to different dynamics in the development of filial piety.

## The Dual Filial Piety Model

Filial piety is better understood in a dual model than as a single entity. Reciprocal filial piety is differentiated from authoritarian filial piety because the two are distinct in their motivation, manifestation, and implications for human adjustment (Yeh and Bedford, 2003). Reciprocal filial piety concerns children providing support and care to their parents, especially when their parents age, due to children's gratitude for their parents' nurturing and their intimate relationships with their parents. In contrast, authoritarian filial piety entails children showing unquestionable obedience toward their parents and protecting the family interests unconditionally, such as continuing the family lineage even at the cost of self-interests, because of parents' authority status and prescribed cultural norms (Bedford and Yeh, 2019). Briefly stated, reciprocal filial piety emphasizes physical and emotional reciprocity between parents and children, while authoritarian filial piety stresses the family hierarchy and suppression of children's desires for the sake of the family.

Mounting evidence has revealed different associations of reciprocal versus authoritarian filial piety with youth's life



satisfaction, psychosocial competence, and academic and behavioral adjustment. Reciprocal filial piety relates to higher levels of life satisfaction (e.g., Sun et al., 2019), academic achievement (e.g., Zhou et al., 2020) and interpersonal competence (Leung et al., 2010; Wang et al., 2021), and less cyberbullying perpetration (Wei and Liu, 2020), whereas authoritarian filial piety has opposite relationships with these outcomes. Given the well-documented conducive effects of reciprocal filial piety and the detrimental effects of authoritarian filial piety on youth development, it is imperative to examine how these two types of filial piety develop. Yet, to date, only a small body of research has investigated the socialization of filial piety attitudes, primarily using a cross-sectional design (e.g., Chen, 2014) or adult samples (e.g., Chen et al., 2016). Compared with adulthood, in which filial piety attitudes may already be quite formed, adolescence is a period of identity formation in which filial piety attitudes are still under development (Erikson, 1994; Hernández and Bámaca-Colbert, 2016). Additionally, teenagers may go through dramatic changes in their connections to their parents, including tendencies to challenge and redefine parental authority with their increasing needs for autonomy and independence, and may gain more exposure to new values and social experiences (McElhaney et al., 2009). It is thus important to understand the dynamics between youth's filial piety attitudes and parenting, particularly during adolescence, using a longitudinal design.

## Effects of Parenting Styles on Filial Piety Attitudes

Filial piety is, to some extent, shaped through parental socialization, whereby children observe and acquire culturally sensitive schemas of parent–child interactions (Chen et al., 2016). During adolescence, despite the increasing influence of peer, parents remain an important socialization agent (Darling and Steinberg, 1993; Garcia et al., 2020). Through different parenting styles, parents create different socialization environments in which children perceive and understand what their parents desire from their intergenerational relationships, learn about how their parents expect to be treated by them, and gradually develop their filial piety attitudes. Parenting styles refer to constellations of parental attitudes and behaviors toward child, which creates a general emotional climate for parent–child interaction and parental socialization (Darling and Steinberg, 1993). Baumrind (1991) categorized parenting styles by two dimensions – responsiveness and demandingness. Responsiveness indicates the extent to which parents foster independence and self-regulation by attuning to their children's specific needs, while demandingness indicates the extent to which parents request for children's maturity and compliance. Authoritative (i.e., high responsiveness and demandingness) and authoritarian (i.e., low responsiveness but high demandingness) parenting styles represent two socialization climates that vary in parents' responsiveness and demandingness (Baumrind, 1991; Darling and Steinberg, 1993), which are highly relevant to the socialization of filial piety (Chen, 2014). Authoritative

parents are responsive and warm toward their children. Meanwhile, they have age-appropriate expectations and rules for their children and use reasonable strategies for discipline. They also grant their children freedom and autonomy to make decisions so as to develop their individuality and self-regulation. In contrast, authoritarian parents are cold or even hostile to their children and use high levels of control; they discipline their children harshly and demand unquestionable compliance without granting their children sufficient autonomy (Baumrind, 1991; Darling and Steinberg, 1993). Literature has suggested that authoritative parenting style is associated with desirable developmental outcomes in adolescents regardless of cultural backgrounds (e.g., Garcia et al., 2020; see a review, Wang and Chang, 2010), while authoritarian parenting style is associated with maladaptive outcomes in adolescents including Chinese ethnics (e.g., suicidal ideation: Lai and McBride-Chang, 2001; school performance: Pong et al., 2010).

The authoritative parenting style probably helps promote reciprocal filial piety attitudes. First, it can foster intimacy in the parent–child relationship, which is an affective building block of reciprocity. Through give-and-take with parents and experiences of warm parental involvement, children develop a relatively equalitarian relationship and an emotional bond with their parents, which enhance their mutuality and encourage their reciprocity. Previous research has revealed that the authoritative parenting style is related to higher quality of parent–child relationship (Chao, 2001). In addition, high levels of parental responsiveness and nurturing possibly foster children's gratitude toward their parents, which motivates them to repay their parents through voluntary care and support. Indeed, Chen (2014) found that perceived authoritative parenting style was related to reciprocal filial piety among Hong Kong university students. Chen (2016) also found that adult children's perceived supportive parenting (e.g., child-centeredness, positive reinforcement, and proactive teaching) was positively associated with their reciprocal filial piety 4 years later. Additionally, previous studies found that authoritative parenting style was positively associated with authoritarian filial piety (Chen, 2014) and that supportive parenting prospectively predicted authoritarian filial piety (Chen et al., 2016). According to self-determination theory (SDT; Ryan and Deci, 2000), people endorse cultural ideologies and practices with varying motivations. It is possible that one internalizes hierarchical values such as loyalty to a group or obedience to hierarchical relationships within one's group out of personal choice (Chirkov et al., 2003). Therefore, such positive parenting can encourage children to endorse parental authority out of personal will. However, since there is no solid evidence showing an autonomous form of authoritarian filial piety in the literature, we explored the relationship between authoritative parenting and authoritarian filial piety attitudes in this study without a specific hypothesis.

Authoritarian parenting is unlikely to foster reciprocal filial piety, as it does not enable parents to build an affective bond with their children. Parents' high demands for child obedience without appropriate reasoning and sufficient

responsiveness might also deter children's appreciation for their parents. Thus, authoritarian parenting may not be able to encourage reciprocal filial piety and may even dampen it. Chen (2014) did not find a significant association between authoritarian parenting and reciprocal filial piety. Rather, the authoritarian parenting style is likely to cultivate authoritarian filial piety. Chinese parents adopt authoritarian parenting, arguably out of a benign intention —“it is for your own good” (Chao, 1994; Camras et al., 2017). To train their children for a better future, Chinese parents adopt authoritarian parenting with an emphasis on parental authority and family solidarity, and they request children's deference. Hence, such a parenting style readily conveys to children the importance of authoritarian filial piety. Ho (1994) showed that authoritarian filial piety was related to parents' positive attitudes toward over-control and harshness. Chen (2014) also found that perceived authoritarian parenting style was positively related to authoritarian filial piety.

## Effects of Filial Piety Attitudes on Parenting Styles

While filial piety attitudes may be socialized by parents, children's filial piety attitudes may likely also influence their parents' parenting styles, according to the transactional model of socialization (Sameroff and Mackenzie, 2003). Indeed, much previous research has documented how parents act in response to children's characteristics (e.g., Padilla-Walker et al., 2012; Moilanen et al., 2015). For instance, Lewis (1981) has contended that parents' control may be an adaptation to children's preexisting dispositions for compliance. Therefore, the socialization of filial piety among youth can be best understood by examining bidirectional influences between youth's attitudes and parenting.

Filial piety attitudes reflect youth's thoughts about how they should interact with their parents. These attitudes and the subsequent behavior of youth may provide feedback to their parents regarding whether their current parenting styles are proper or effective and, in turn, strengthen parents' current parenting styles or lead parents to adjust their current styles. Adolescents with stronger reciprocal filial piety attitudes usually feel grateful of their parent's love and care, and thus they will probably pay back through showing love and support to their parents and working hard to achieve parents' expectations. The gratitude and good deeds of adolescents possibly encourage parents to show more warmth and support toward their children. Meanwhile, it also informs parents that it is not necessary to exert strict control over their children, and thus adolescents' reciprocal filial piety will be associated with perceived parents' decreased harshness and controlling behavior. In contrast, adolescents with stronger authoritarian filial piety attitudes usually show unquestionable obedience and reverence toward their parents out of parental authority, which informs parents that their current parenting style is legitimate and effective, regardless of which style they adopt. Thus, adolescents may perceive their parents to strengthen their existing parenting styles and show

more corresponding parenting behavior. Briefly, adolescents' reciprocal filial piety presumably encourages reciprocity of obligation and love in the parent-child relationship, whereas their authoritarian filial piety possibly strengthens parents' original child-rearing style.

## Urban-Rural Variations

Filial piety is a notion originated from Confucianism in China, a representative cultural tradition of collectivism, which emphasizes relational hierarchies, including those in the parent-child relationship, and the fulfillment of social roles and obligations in such hierarchies (Ho, 1994; Schwartz et al., 2010). This differs from individualism, which emphasizes attainment of autonomy and personal goals (Hofstede, 2001). Going beyond the somewhat dichotomous and static approach to culture in terms of differentiating collectivism from individualism, Greenfield (2016) pointed out that cultural values evolve in broad socioeconomic contexts in an adaptive response to environmental demands, which in turn shape the socialization of children. She differentiated broad socioeconomic contexts into two prototypic social ecologies: *Gesellschaft* ecology, which refers to modern and primarily urban environments characteristic of complex economic systems, advanced technology, high average education levels, great diversity, and much contact with the outside world; and *Gemeinschaft* ecology, which refers to agriculturally based and primarily rural environments characteristic of simple labor division, low technology, low average education levels, little diversity, and limited contact with the outside world. *Gesellschaft* ecology fosters individualist values that underscore self-reliance, assertiveness, and autonomy, whereas *Gemeinschaft* ecology cultivates collectivist values that emphasize interdependence, obedience to authorities, and fulfillment of social duties, even at the cost of self-interests (Zeng and Greenfield, 2015). Social change theories (Kagitçibasi, 2007; Chen et al., 2015; Greenfield, 2016) have also argued that socioeconomic environments are dynamically changing in levels of economic development and modernization, thereby bringing about changes in cultural values and, in turn, the socialization of children. Since its open-up policies were initiated in the 1980s, China has gone through marked changes from a *Gemeinschaft* to *Gesellschaft* ecology, which manifested in increasing individualism (Xu and Hamamura, 2014; Zeng and Greenfield, 2015; see a review by Sun and Ryder, 2016). Notably, such a transformation is more salient in urban than rural areas due to the uneven levels of economic development and modernization between these areas. Extant research has indeed shown the resultant urban-rural differences in parental socialization and child development, with the parent-child relationship becoming more egalitarian in urban (vs. rural) families. For instance, urban parents demonstrate greater encouragement of initiative-taking toward their children than rural parents (Chen and Li, 2012). Meanwhile, urban adolescents feel less obligated to assist, respect, and support their family members (Fuligni and Zhang, 2004) and perceive it more acceptable to disagree openly with their parents than their rural counterparts (Zhang and Fuligni, 2006).

Parental socialization of filial piety may also be subject to the affordances of different social ecologies. In urban (vs. rural) areas with a heightened individualist orientation, youth may be more accepting of and responsive to authoritative parenting that satisfies their needs for independence and autonomy, but they are more likely to find authoritarian parenting aversive, as it thwarts their needs for independence and autonomy (Chen et al., 2015). As such, authoritative parenting may be more effective in urban (vs. rural) areas at fostering youth's positive attitudes, such as filial piety, toward their parents, whereas authoritarian parenting may be less likely in urban (vs. rural) areas to foster, or even more likely to deter, the development of youth's filial piety attitudes (especially reciprocal filial piety). In addition, the more equalitarian parent-child relationship in urban (vs. rural) areas may make urban (vs. rural) parents more sensitive to their children's characteristics and more likely to adjust their parenting styles accordingly. Therefore, it can be expected that youth's filial piety attitudes may be more predictive of parenting styles in urban (vs. rural) areas.

## Overview of the Current Study

Based on the dual filial piety model, and guided by the transactional model of socialization and change theories, the current study employed a two-wave (6 months apart) short-term longitudinal survey among early adolescents in urban and rural China to address three research questions. First, how may youth's perceived parenting styles predict their filial piety attitudes over time? It was expected that, after adjusting for initial levels of filial piety at Time 1, perceived authoritative parenting at Time 1 would predict stronger reciprocal filial piety (Hypothesis 1) at Time 2, while perceived authoritarian parenting at Time 1 would predict weaker reciprocal filial piety (Hypothesis 2a) and stronger authoritarian filial piety (Hypothesis 2b) at Time 2. Second, how may youth's filial piety attitudes predict their perceived parenting styles over time? It was expected that, after adjusting for initial levels of perceived parenting at Time 1, reciprocal filial piety at Time 1 would predict higher levels of perceived authoritative parenting (Hypothesis 3a) and lower levels of perceived authoritarian parenting (Hypothesis 3b) at Time 2, while authoritarian filial piety at Time 1 would predict higher levels of both perceived authoritative (Hypothesis 4a) and authoritarian parenting (Hypothesis 4b) at Time 2. Third, how may the aforementioned bidirectional associations between perceived parenting and youth's filial piety attitudes vary between urban and rural areas in China? It was expected that the over-time positive links between youth's perceived authoritative parenting and their reciprocal (Hypothesis 5a) would be stronger in the urban (vs. rural) area, as would the over-time negative link between youth's authoritarian parenting and their reciprocal filial piety attitudes (Hypothesis 5b), while the over-time positive link between youth's perceived authoritarian parenting and their authoritarian filial piety attitudes would be weaker in the urban (vs. rural) area (Hypothesis 5c). It was also expected that, generally, the over-time links between youth's filial piety attitudes and their perceived

parenting styles would be stronger in the urban (vs. rural) area (Hypothesis 6).

Notably, in the current study, which sampled early adolescents from urban and rural China, youth's rather than parents' reports on parenting styles were examined for two reasons. First, young adolescents are generally reliable reporters of their parents' parenting behaviors, as they tend to be less biased than their parents, particularly in reporting harsh and controlling parental behaviors, including authoritarian parenting (Gonzales et al., 1996). Second, parenting behaviors as seen through the "eyes of the beholders" are conceptually meaningful (Steinberg et al., 1994; Barber, 1996) and have been widely found to influence youth's developmental outcomes (e.g., Shek, 2007; Wang et al., 2007). For parsimony, the term "parenting styles" instead of youth's "perceived parenting styles" was used when describing the results of the current study, while it is duly acknowledged that there may be differences in the findings based on adolescents' versus parents' reports on parenting (Pelegrina et al., 2003). It is also of note that a two-wave longitudinal design spanning 6 months was adopted, allowing for exploration of potential bidirectional effects between parenting styles and youth's filial piety attitudes, which have rarely been investigated in previous research.

## MATERIALS AND METHODS

### Participants and Procedure

A total of 850 secondary school students in China participated, including 314 urban students (155 boys and 159 girls) with a mean age of 13.31 years ( $SD = 0.36$ ) and 536 rural students (293 boys and 243 girls) with a mean age of 13.72 years ( $SD = 0.55$ ). The urban and rural samples did not differ significantly in gender composition [ $\chi^2(1) = 2.232, p > 0.05$ ], but the rural participants were generally older than the urban ones [ $t(799) = 11.770, p < 0.001$ ]. The urban students came from three schools serving middle and working classes in Shanghai, one of the most economically developed and modernized cities in China (see Liu et al., 2012). The per capita annual disposable income of urban residents was about USD\$ 5,603.0 in Shanghai; 46.1% of the Shanghai residents received education of high school or above; 96.6% of the working population was engaged in second and tertiary industries (Shanghai Statistics Bureau, 2012). The cultural communication and economic collaboration with foreign countries were also frequent, manifested in the 4,329 new contracted project and 227 international exhibitions in 2011.

The rural students came from one school serving rural residents of Shantou in Guangdong Province. The per capita annual disposable income was about USD\$ 1,204.0 in the rural area; 15.7% of the rural residents attained education level of high school or above (Shantou Statistics Bureau, 2012). The 23.1% of the rural working population were engaged in second industries due to the rapid growth of township industry, 57.8% in tertiary industries, while 24.2% of them remained in agriculture-related fields. Compared to Shanghai, the economic exchanges with foreign countries are less frequent, manifested in 46 new

contracted projects with foreign companies in the whole Shantou district (including urban and rural areas) in 2011. Moreover, as shown in **Table 1**, on average, parental education levels were higher in the urban sample than in the rural sample [for mothers:  $t_{(813)} = 37.946, p < 0.001$ ; for fathers:  $t_{(821)} = 31.334, p < 0.001$ ]. The majority of the students lived in intact families, with the proportion being slightly greater in the rural (vs. urban) sample [ $\chi^2_{(1)} = 12.648, p < 0.001$ ]. While the majority of the rural students had one or more siblings, the majority of the urban students were singletons [ $\chi^2_{(1)} = 611.920, p < 0.001$ ], likely due to the one-child policy that has been administrated strictly in cities but loosely in the countryside (Chen et al., 2009).

The students completed a battery of questionnaires at two time points spanning 6 months, in the spring semester of grade 7 and the fall semester of grade 8. Among the 850 students who participated at Time 1, 263 urban students (136 girls and 127 boys) and 493 rural students (276 girls and 217 boys) participated at Time 2 as well, with attrition rates of 16.2% and 8.0%, respectively, due to students transferring to different schools, being absent on the day of the assessment, or losing interest. Attrition analysis was conducted to compare the differences in the study variables between students who participated at both times and those who participated at Time 1 only. Independent  $t$ -tests showed no differences in the urban sample. However, in the rural sample, the remaining participants reported lower levels of authoritarian parenting [ $t_{(534)} = -2.885, p < 0.01$ ] and stronger reciprocal filial piety attitudes [ $t_{(534)} = 2.677,$

$p < 0.01$ ] than the non-remaining ones. At both times, the students completed the questionnaires during school hours in a self-administered manner with a trained research assistant or a teacher present in the classroom. School consent, parental consent, and students' individual consent were obtained before the administration of the questionnaires. We had obtained ethics approval from the Survey and Behavioral Research Ethics Committee in the second author's affiliated university before the implementation of the first wave of assessment.

## Measures

All measures were presented in Chinese and used a five-point Likert scale (1 = not at all true of me; 5 = very true of me). The means, standard deviations, internal reliability, and temporal stability of all measures are shown in **Table 2**.

### Filial Piety Attitudes

Students reported their attitudes toward different manifestations of filial piety using the Dual Filial Piety Scale (Yeh and Bedford, 2003), with eight items assessing reciprocal filial piety and eight items assessing authoritarian filial piety. Specifically, reciprocal filial piety taps into attitudes regarding support, care, and gratitude toward parents (e.g., "frequently concerned about my parents' general well-being"), whereas authoritarian filial piety taps into attitudes toward unquestionable obedience toward parents as well as shouldering traditional obligations (e.g., "take my parents' suggestions even when I do not agree with them"). We conducted a two-group confirmatory factor analysis (CFA) for the model with two latent factors representing reciprocal filial piety and authoritarian filial piety to test the measurement invariance across urban and rural samples. The results showed that metric equivalence was achieved between the urban and rural samples (CFI = 0.920; TLI = 0.913; RMSEA = 0.059), in which factor loadings were equal between the two groups (Kline, 2015). Compared to the configural model without any constraints, the model of metric equivalence showed similar model fit [ $\Delta\chi^2_{(14)} = 20.76, p > 0.05$ ;  $\Delta\text{CFI} = -0.002 < 0.01$ ].

### Parenting Styles

Students reported on their parents' parenting styles using the Parental Authority Questionnaire (PAQ; Buri, 1991), with 10 items assessing authoritative parenting and 10 items assessing authoritarian parenting. We adopted a Chinese version of the PAQ that has been used with Chinese adolescents (McBride-Chang and Chang, 1998). A sample item for authoritative parenting would be "My parents have always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable," while a sample item for authoritarian parenting would be "Whenever my parents told me to do something as I was growing up, they expected me to do it immediately without asking any questions." Two-group CFA was conducted to test the measurement invariance between the urban and rural groups for the model with two latent factors representing authoritative parenting and authoritarian parenting. The results showed metric equivalence between the two groups [CFI = 0.885; TLI = 0.876; RMSEA = 0.064;  $\Delta\chi^2_{(18)} = 25.13, p > 0.05$ ;  $\Delta\text{CFI} = -0.001 < 0.01$ ].

**TABLE 1 |** Demographic characteristics of the participants.

	Urban (N = 314)		Rural (N = 536)	
	No.	Percentage	No.	Percentage
<b>Gender</b>				
Male	155	49.4%	293	54.7%
Female	159	50.6%	243	45.3%
<b>Mother's education level</b>				
Primary education (1 <sup>a</sup> )	7	2.2%	328	61.2%
Secondary education (2–3 <sup>a</sup> )	113	36.0%	186	34.7%
Tertiary education (4–5 <sup>a</sup> )	156	49.7%	2	0.4%
Postgraduate degree (6–7 <sup>a</sup> )	23	7.3%	0	0.0%
No report	15	4.8%	20	3.8%
<b>Father's education level</b>				
Primary education (1 <sup>a</sup> )	5	1.6%	193	36.0%
Secondary education (2–3 <sup>a</sup> )	116	36.9%	320	59.7%
Tertiary education (4–5 <sup>a</sup> )	149	47.5%	8	1.5%
Postgraduate degree (6–7 <sup>a</sup> )	32	10.2%	0	0.0%
No report	12	3.8%	15	2.8%
<b>Sibling status</b>				
Having one or more siblings	44	14.0%	519	96.8%
<b>Family type</b>				
Intact family	287	91.4%	513	95.7%

The full sample was used in the data analysis. <sup>a</sup>Mother's/father's education level: 1 = completion of primary school, 2 = completion of middle school, 3 = completion of high school; 4 = college-level sub-degree, 5 = bachelor's degree, 6 = master's degree, 7 = doctoral degree.



**TABLE 2 |** Descriptive statistics of the study variables.

Variables	Urban						Rural					
	Time 1 (n = 314)			Time 2 (n = 263)			Time 1 (n = 536)			Time 2 (n = 493)		
	Mean	SD	$\alpha$	Mean	SD	$\alpha$	Mean	SD	$\alpha$	Mean	SD	$\alpha$
Authoritative parenting	3.56	0.79	0.89	3.46	0.79	0.90	3.20	0.64	0.86	3.20	0.66	0.88
Authoritarian parenting	2.88	0.81	0.86	2.73	0.79	0.86	2.75	0.60	0.81	2.65	0.62	0.84
Reciprocal filial piety	4.02	0.71	0.89	4.04	0.76	0.91	3.86	0.65	0.86	3.90	0.65	0.87
Authoritarian filial piety	2.56	0.67	0.77	2.51	0.70	0.79	2.74	0.57	0.71	2.57	0.56	0.72

**TABLE 3 |** Bivariate correlations among the study variables.

Variables	1	2	3	4	5	6	7	8	9	10
<b>Time 1</b>										
Authoritative parenting	–	–0.31***	0.47***	0.23***	0.68***	–0.43***	0.49***	0.21***	–0.04	0.23***
Authoritarian parenting	–0.05	–	–0.16***	–0.01	–0.38***	0.59***	–0.23***	–0.003	0.25***	0.05
Reciprocal filial piety	0.42***	–0.04	–	–0.46***	0.40***	–0.32***	0.62***	0.30***	–0.04	0.08
Authoritarian filial piety	0.26***	0.24***	0.41***	–	0.20**	–0.07	0.22***	0.59***	0.21***	0.10
<b>Time 2</b>										
Authoritative parenting	0.59***	–0.25***	0.35***	0.22***	–	–0.55***	0.57***	0.26***	–0.03	0.17**
Authoritarian parenting	–0.17***	0.61***	–0.12*	0.14***	–0.34**	–	–0.28***	–0.01	0.16*	–0.08
Reciprocal filial piety	0.32***	0.01	0.53***	0.27***	0.46***	–0.11*	–	0.37***	–0.09	0.11
Authoritarian filial piety	0.11*	0.17***	0.24***	0.53***	0.21***	0.22***	0.36***	–	0.16*	0.07
Gender	–0.02	0.16***	–0.13***	0.17***	0.02	0.14**	–0.13**	0.18***	–	0.00
Parents' education	0.08	0.04	–0.01	–0.02	0.05	0.08	0.01	0.08	0.05	–

Correlations for the urban sample are above the diagonal, and those for the rural sample are below the diagonal. Gender: 0 = female, 1 = male; parents' education was indexed by an average score of father's and mother's education levels, and their correlations ( $r$ ) were 0.62\*\*\* and 0.26\* for urban and rural samples, respectively. \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

## RESULTS

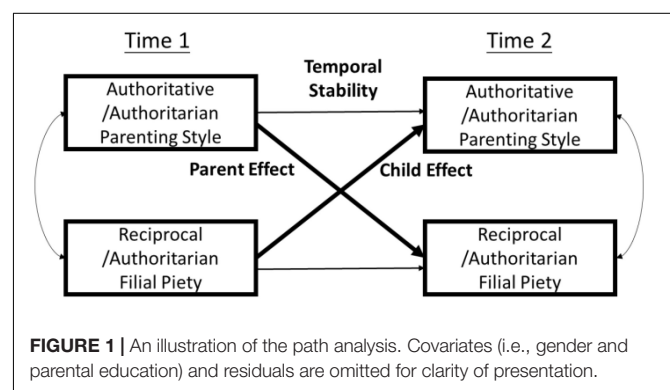
### Descriptive Analyses

As shown in **Table 2**, all measures were internally reliable in the current samples, and both filial piety attitudes and perceived parenting styles were quite stable over 6 months.

Four sets of multivariate analysis of variance were conducted to test urban–rural differences in the mean levels of filial piety attitudes and parenting styles at both times. At Time 1, urban students reported higher levels of reciprocal filial piety attitudes [ $F(1,848) = 11.366, p < 0.001, \eta_p^2 = 0.013$ ] and lower levels of authoritarian filial piety attitudes than their rural counterparts [ $F(1,848) = 18.755, p < 0.001, \eta_p^2 = 0.022$ ]. Yet the difference remained only in the reciprocal filial piety attitudes at Time 2 [ $F(1,754) = 6.659, p < 0.01, \eta_p^2 = 0.009$ ]. Additionally, at Time 1, urban students reported higher levels of authoritative parenting [ $F(1,847) = 52.527, p < 0.001, \eta_p^2 = 0.058$ ] and authoritarian parenting [ $F(1,847) = 7.359, p < 0.001, \eta_p^2 = 0.007$ ] than rural ones. Yet the difference remained only in the authoritative parenting at Time 2 [ $F(1,754) = 24.698, p < 0.001, \eta_p^2 = 0.032$ ].

### Cross-Lagged Path Analyses

The zero-order correlations among study variables are shown in **Table 3**. To explore potential transactional influences between parenting styles and students' filial piety attitudes, a set of four cross-lagged path analyses examining over-time



bidirectional associations between each perceived parenting style (i.e., authoritative or authoritarian parenting) and each type of attitude (i.e., reciprocal or authoritarian filial piety) was performed via AMOS 23.0 (Arbuckle, 2014). As shown in **Figure 1**, these analyses allow for stringent tests of the “parent effects” (indicated by the associations between Time 1 parenting and Time 2 filial piety) and the “child effects” (indicated by the associations between Time 1 filial piety and Time 2 parenting) simultaneously, while adjusting for the temporal stability of both parenting and filial piety (see **Figure 1**). We conducted separate analyses examining one parenting style vis-à-vis one type of filial piety attitudes. Compared with separate models, an

integrative model with all study variables might yield unstable and misleading estimates due to multicollinearity of the parenting variables and the filial piety variables (see Stice and Barrera, 1995). An integrative model excludes the overlaps between the two parenting styles and the two types of filial piety attitudes, which might pose the problem of underestimating either the parent effects or the child effects, especially when the effects were expected to be small in a longitudinal design that strictly controls for temporal stability of the variables. Second, partialling out the overlaps may make the urban–rural differences obscured in the integrative model, because the urban–rural differences may partially rest in the overlaps (see Wang et al., 2007). Therefore, we opted for separated models in this study. Additionally, given that parental education (e.g., Xu et al., 2005; Li et al., 2014) and child gender (e.g., Wong et al., 2010; Xia, 2020) have been found to be related to parenting styles and youth's filial piety attitudes, they were included as covariates in the path analyses. Missing data were handled by full information maximum likelihood (FIML), as this method has been found to outperform other *ad hoc* methods, such as listwise or pairwise deletion or mean imputation, for handling missing data (Byrne, 2013). FIML has been frequently used to address the issue of attrition in longitudinal studies with repeated measure (e.g., Van Ouytsel et al., 2019; Salmela-Aro et al., 2021). To identify potential urban–rural variations in the parent effects and child effects, two-group path analyses were performed by comparing pairs of models—an unconstrained

model where the aforementioned paths were freely estimated for the urban and rural samples and a constrained model where these paths were set to be equal in the two samples. Each model was evaluated in terms of model fit as indicated by the Comparative Fit Index (CFI) and the Tucker and Lewis's Index (TLI), with values greater than 0.95 suggesting a good fit and values greater than 0.90 but smaller than 0.95 suggesting adequate fit, and by the root mean square error of approximation (RMSEA), with values smaller than 0.03 indicating a good fit and values smaller than 0.06 but greater than 0.03 suggesting an adequate fit (Kline, 2015). In addition,  $\chi^2$  difference tests were conducted to compare pairs of unconstrained and constrained models. Specifically, a significant  $\chi^2$  difference between an unconstrained and a constrained model would indicate that the parent effect or the child effect under examination was different between the urban and rural samples; otherwise, the path would be deemed similar in the two samples, and the constrained model would be reported as the final model. **Table 4** shows the estimated path coefficients and the model fit for the final models. All final models fit the data well (CFIs > 0.99; TLIs > 0.95; RMSEAs < 0.03).

### Parenting Styles and Reciprocal Filial Piety Attitudes

The final model examining authoritative parenting vis-à-vis reciprocal filial piety contained equal parental and child effects. This constrained model did not differ from the unconstrained model in model fit [ $\Delta\chi^2_{(4)} = 6.406$ ,  $p > 0.05$ ]. As shown

**TABLE 4 |** Estimates of the parent effects and the child effects in the path analyses.

	Urban			Rural			Model	Fit		
	Unstd.	SE	Std.	Unstd.	SE	Std.	$\Delta\chi^2_{(1)}$	CFI	TLI	RMSEA
<b>Bidirectional associations between Authoritative PS and RFPA</b>								<b>0.998</b>	<b>0.987</b>	<b>0.019</b>
Parent effect: Authoritative PS → RFPA	0.171***	0.033	0.184	0.171***	0.033	0.163	3.285			
Child effect: RFPA → Authoritative PS	0.131***	0.033	0.121	0.131***	0.033	0.127	0.025			
Temporal stability: Authoritative PS	0.583***	0.032	0.594	0.583***	0.032	0.558	0.676			
Temporal stability: RFPA	0.501***	0.034	0.491	0.501***	0.034	0.486	0.534			
<b>Bidirectional associations between Authoritarian PS and RFPA</b>								<b>0.997</b>	<b>0.968</b>	<b>0.025</b>
Parent effect: Authoritarian PS → RFPA	−0.096*	0.046	−0.107	0.063	0.042	0.057	4.807*			
Child effect: RFPA → Authoritarian PS	−0.195***	0.053	−0.173	−0.078*	0.034	−0.083	4.733*			
Temporal stability: Authoritarian PS	0.589***	0.029	0.594	0.589***	0.029	0.581	2.508			
Temporal stability: RFPA	0.567***	0.046	0.551	0.567***	0.046	0.556	2.253			
<b>Bidirectional associations between Authoritative PS and AFPA</b>								<b>0.999</b>	<b>0.993</b>	<b>0.012</b>
Parent effect: Authoritative PS → AFPA	0.009	0.028	0.010	0.009	0.028	0.010	2.738			
Child effect: AFPA → Authoritative PS	0.077*	0.035	0.066	0.077*	0.035	0.065	0.045			
Temporal stability: Authoritative PS	0.623***	0.030	0.634	0.623***	0.030	0.596	0.356			
Temporal stability: AFPA	0.552***	0.032	0.643	0.552***	0.032	0.010	0.302			
<b>Bidirectional associations between Authoritarian PS and AFPA<sup>#</sup></b>								<b>1.000<sup>#</sup></b>	<b>1.002<sup>#</sup></b>	<b>0.020</b>
Parent effect: Authoritarian PS → AFPA	0.022	0.028	0.027	0.022	0.028	0.023	0.237			
Child effect: AFPA → Authoritarian PS	−0.004	0.033	−0.003	−0.004	0.033	−0.004	0.601			
Temporal stability: Authoritarian PS	0.606***	0.030	0.615	0.606***	0.030	0.593	0.939			
Temporal stability: AFPA	0.551***	0.031	0.542	0.551***	0.031	0.543	2.574			

This table shows the coefficients of final model with some paths constrained to be equal between the urban and rural settings.  $\Delta\chi^2$  indicates chi-square change by constraining the structural path to be equal in urban and rural settings, compared with the unconstrained model. CFI, TLI, and RMSEA represent the model fit of the final model. Gender and parental education were included as covariates in the models. <sup>#</sup>The CFI and TLI were equal to or larger than 1 because the model was just-identified; since the focus was on the relationships between the variables (i.e., the parent effect and the child effect), the fit was not of concern (see Valenzuela and Bachmann, 2017). \* $p < 0.05$ ; \*\*\* $p < 0.001$ . PS, parenting style; RFPA, reciprocal filial piety attitudes; AFPA, authoritarian filial piety attitudes.

in **Table 4**, there was a significant parent effect in both the urban and rural samples, such that authoritative parenting predicted students' increased reciprocal filial piety 6 months later (supporting Hypothesis 1), with this effect being of similar strength in the two samples (not supporting Hypothesis 5a). There was also a significant child effect in both the urban and rural samples, such that students' reciprocal filial piety predicted increased authoritative parenting 6 months later (supporting Hypothesis 3a), with this effect being of similar strength in the two samples (not supporting Hypothesis 6). The final model examining authoritarian parenting vis-à-vis reciprocal filial piety contained unequal child and parental effects [ $\Delta\chi^2_{(2)} = 4.730$ ,  $p > 0.05$ ]. Only in the urban sample was there a significant parent effect, such that authoritarian parenting predicted decreased reciprocal filial piety 6 months later (supporting Hypotheses 2a and 5b), while there was a significant child effect in both the urban and rural samples, such that students' reciprocal filial piety predicted decreased authoritarian parenting 6 months later, with this effect being stronger in the urban (vs. rural) sample (supporting Hypotheses 3b and 6).

### Parenting Styles and Authoritarian Filial Piety Attitudes

The final model examining authoritative parenting vis-à-vis authoritarian filial piety contained equal parent and child effects [ $\Delta\chi^2_{(4)} = 5.374$ ,  $p > 0.05$ ]. There was no significant parent effect in either the urban sample or the rural sample, such that authoritative parenting at Time 1 was unrelated to authoritarian filial piety at Time 2, after adjusting for authoritarian filial piety at Time 1 (not supporting Hypothesis 2b). Meanwhile, there was a significant child effect in both the urban and rural samples, such that students' authoritarian filial piety predicted increased authoritative parenting 6 months later (supporting Hypothesis 4a), with this effect being of similar strength in the two samples (not supporting Hypothesis 6). The final model examining authoritarian parenting vis-à-vis authoritarian filial piety contained equal parent and child effects [ $\Delta\chi^2_{(4)} = 4.446$ ,  $p > 0.05$ ]. In both the urban and rural samples, there was neither significant parent effect nor child effect, such that authoritarian parenting and authoritarian filial piety were unrelated to each other over time, after adjusting for their temporal stabilities (not supporting Hypotheses 2b and 4b).

## DISCUSSION

Going beyond previous research that has mainly focused on the effects of parenting on filial piety in a single social ecology (e.g., Chen, 2014), this study examined the bidirectional associations between perceived parenting and filial piety attitudes in a two-wave longitudinal study spanning 6 months and compared these associations between urban and rural Chinese early adolescents. As expected, over time, perceived authoritative parenting predicted increased reciprocal filial piety among both urban and rural adolescents, whereas perceived authoritarian parenting predicted decreased reciprocal filial piety among urban adolescents only. Moreover, in both urban and rural

areas, reciprocal filial piety predicted heightened perceived authoritative parenting and lessened perceived authoritarian parenting 6 months later, with the latter effect being stronger among urban adolescents. However, there was only one significant over-time association between perceived parenting styles and authoritarian filial piety, such that, in both the urban and rural areas, authoritarian filial piety predicted heightened perceived authoritative parenting 6 months later. The findings highlight transactional influences between parents and youth in the socialization process (Sameroff and Mackenzie, 2003) and testify to the role of socioeconomic and sociocultural changes in shaping parental socialization and youth development (Kagitçibasi, 2007; Chen et al., 2015; Greenfield, 2016).

### Transactions Between Parenting Styles and Filial Piety Attitudes

Adding to mounting evidence that parents are still influential in child development during adolescence (e.g., Wang et al., 2007; Chen, 2014), the current findings suggest that parenting styles affect the development of filial piety attitudes among early adolescents in China, even though this is during an age when youth increasingly strive for self-reliance and individuality. The findings show that, when youth perceived their parents to be authoritative (i.e., warm, responsive, and nurturing toward them), they were more likely to develop reciprocal filial piety attitudes over time, probably because such parenting satisfies youth's needs for independence and autonomy and may be better accepted and appreciated, thus more likely eliciting youth's reciprocal respect and care for their parents. In contrast, when youth perceived their parents to be authoritarian (i.e., cold and controlling), they were less likely to develop reciprocal filial piety over time, probably because such parenting thwarts youth's needs for independence and autonomy and may be aversive to youth, thus alienating them from feeling grateful and caring toward their parents. Furthermore, moving beyond extant research, the findings present first-time evidence on the potential effects of youth's filial piety attitudes on parenting. When youth endorsed reciprocal filial piety, over time, they were more likely to perceive increased use of authoritative parenting but decreased use of authoritarian parenting by their parents. This may be because parents sense and appreciate the youth's reciprocal filial piety attitudes through their respect and caring for their parents as well as their willingness to follow their parents' wishes, which, in turn, may lead parents to become warmer and more nurturing (i.e., adopting authoritative parenting) rather than harsher and more controlling (i.e., adopting authoritarian parenting) toward the youth.

The aforementioned findings of over-time bidirectional associations between parenting and youth's filial piety attitudes lend further support for the transactional model of socialization (Sameroff and Mackenzie, 2003) and, more generally, for systems perspectives on human development that highlight the active role of youth in shaping their own developmental niches (e.g., Bronfenbrenner and Morris, 1998; Lerner et al., 2015). The family is a system in which multiple members interact, and the child's role should not be downplayed (Cox and Paley, 1997).

As Kerr et al. (2012) argued, “parenting is in part a reaction to adolescent behavior” (p. 1550). This study indeed showcases such dynamic mutual influences between parents and youth in the development of filial piety.

In fact, the findings are particularly informative for a nuanced understanding of the Dual Filial Piety Model. Parents may believe that authoritarian parenting, which emphasizes absolute parental authority, would be effective at fostering filial piety among children in terms of unquestionable reverence and obedience, as parents who want their children to develop filial piety are more likely to use authoritarian parenting (Pearson and Rao, 2003; Rao et al., 2003). However, inconsistent with such expectations, the current study found that youth’s perceived authoritarian parenting did not predict their authoritarian filial piety over time. It is possible that parents’ simple use of authoritarian parenting does not get across to children their agenda to foster filial piety. Future research on potential antecedents of authoritarian filial piety could investigate more explicit and direct parental socialization attempts targeting filial piety, such as communication of parental expectations specifically regarding filial piety (e.g., “My father expects me to have good behavior so that I will not bring dishonor to the family”; Shek, 2007). The current study also found that, when youth endorsed authoritarian filial piety, over time, they were more likely to perceive increased use of authoritative parenting by their parents. This is consistent with previous research showing that, when children demonstrated proper attitudes and behavior, parents used more authoritative parenting (e.g., Moilanen et al., 2015).

Taken together, the different patterns of the over-time bidirectional associations of reciprocal versus authoritarian filial piety with parenting styles reaffirm the importance of differentiating these two types of filial piety. Key to their distinction from each other is the degree to which they are compatible with youth’s need for autonomy (i.e., striving to make decisions for oneself and being in control of one’s own important life affairs; Ryan and Deci, 2000). Researchers and practitioners as well as parents should be aware of the differences between filial piety that results from mutual love and care (i.e., reciprocal filial piety) and filial piety indoctrinated through dogma and authority (i.e., authoritarian filial piety), including their distinct socialization processes and adjustment outcomes. Filial piety, though originated in Confucian ethics, may represent a universal psychological schema of the parent–children relationship (Bedford and Yeh, 2021) that bears broad and profound implications for research on intergenerational relationships beyond the Chinese context. As argued by Bedford and Yeh (2019), filial piety encompasses two fundamental psychological needs: the need for interpersonal relatedness and the need for collective identity in the context of the intergenerational relationship. The dual filial piety model relates these two needs to filial norms that may vary across cultures by attending to another fundamental psychological need—the need for autonomy. Notions that share a common element of family primacy but have been conceptualized in research with other ethnic and cultural groups and are based on other ethnic and cultural ethos (e.g., family obligation, see Fuligni and Pedersen, 2002; familism,

see Padilla et al., 2016) may also be guided by either reciprocity, authoritarianism, or both and, hence, correspond to reciprocal and/or authoritarian filial piety. The dual filial piety model is thus of great heuristic value for research examining the parent–child relationship across cultures. For instance, emotional reciprocity may be a particular focus of study in the affection-based parent–child relationship typically upheld in individualist cultures.

## Urban–Rural Variations

When it comes to urban–rural variations, the current study found both similarities and differences in the over-time bidirectional associations between parenting style and filial piety. Among both urban and rural adolescents, perceived authoritative parenting predicted stronger reciprocal filial piety over time, while both reciprocal and authoritarian filial piety predicted higher levels of perceived authoritative parenting over time. These urban–rural similarities support the views that the growing need for autonomy during adolescence (Helwig, 2006) and the transactional nature of socialization (Sameroff and Mackenzie, 2003) may be universal developmental processes. Self-determination theory (Ryan and Deci, 2000) argues that people across cultures have the basic psychological need for autonomy, and this need becomes increasingly salient during adolescence. Much previous research has documented that, regardless of the sociocultural context where adolescents reside, parenting that nurtures their autonomy tends to be well received and appreciated, whereas parenting that dampens their autonomy may be detrimental, which is consistent with the current findings of the positive transactions between authoritative parenting and reciprocal filial piety. Notably, there has been a concern that socioeconomic development and modernization might lead to the decay of filial piety and other family values in societies (Aboderin, 2004; Cheung and Kwan, 2009). Nonetheless, the current findings indicate that filial piety based on reciprocity and parenting characterized by warmth and the allowance of autonomy may well mutually facilitate each other in not only a traditional rural area but also a highly modernized urban area in contemporary China.

In terms of urban–rural differences, the current study found that only among urban adolescents was perceived authoritarian parenting a predictor of weaker reciprocal filial piety over time, while perceived authoritarian parenting was unrelated to reciprocal filial piety over time among rural adolescents. Moreover, while reciprocal filial piety predicted lower levels of perceived authoritarian parenting over time in both the urban and rural samples, this effect was stronger among urban (vs. rural) adolescents. These findings suggest a greater need for autonomy among urban (vs. rural) adolescents in that authoritarian parenting, which thwarts this need, is more likely to alienate them from their parents than is the case for rural adolescents. This greater need for autonomy may, in large part, have resulted from socioeconomic development in the cities toward a market-oriented economy, which demands independent workers who are good at self-expression and self-governance. Greater exposure in the cities (vs. the countryside)



to Western ideologies that stress the self as a separate and distinct entity from others (Kagitçibasi, 2007; Chen and Li, 2012) may also have contributed to heightened value placed on independence and autonomy that is shared by socialization influences on them (e.g., peers and social media; Arnett, 1995; Chen et al., 2015) other than their parents. With a greater need for and heightened value placed on independence and autonomy, urban (vs. rural) adolescents may be more likely to find authoritarian parenting aversive, resulting in the finding that perceived authoritarian parenting predicted weaker reciprocal filial piety among urban (but not rural) adolescents. In addition, in line with previous research (e.g., Zhang and Fuligni, 2006; Chen and Li, 2012), the current findings suggest a more equalitarian parent-child relationship in urban (vs. rural) China in that the over-time link from reciprocal filial piety to lower levels of perceived authoritarian parenting was stronger among urban (vs. rural) adolescents. Socioeconomic development and exposure to Western ideologies in the cities may have transformed not only youth's views and values but also parents' socialization goals and practices (e.g., heightened emotional value emphasizing enjoyment in the parent-child relationship, and lessened instrumental value in terms of expecting financial returns from children in parents' old age). With such transformed values, urban (vs. rural) parents may more readily adjust their parenting styles (especially changing a style that is contrary to an egalitarian parent-child relationship) to their children's characteristics, thus resulting in a stronger association of adolescents' reciprocal filial piety with lower levels of perceived authoritarian parenting over time in the urban (vs. rural) sample.

## Limitations and Future Directions

Despite its notable contributions in revealing the dynamic socialization and developmental processes of dual filial piety and the role of social ecologies in shaping these processes, the current study had a number of limitations, pointing toward directions for future research. First, the current study relied solely on adolescent self-reports. Previous studies have suggested that there are discrepancies between parent reports and adolescent reports on family processes (e.g., De Los Reyes et al., 2016). More importantly, parent-reported parenting and adolescent-reported parenting may have dissimilar impacts on adolescent adjustment (e.g., Pelegrina et al., 2003; Chen et al., 2016). The question remains whether parent reports on parenting may yield different findings from the current ones based on adolescent reports, and future studies would benefit from including multiple informants regarding parenting. Second, the current study employed stringent longitudinal analyses that adjusted for temporal stabilities of parenting and filial piety and is thus more informative regarding the direction of effects between parenting and filial piety than previous research that has not adjusted for temporal stabilities (e.g., Chen et al., 2016). However, caution is still warranted in drawing causal conclusions and replication from future research. Third, the current study examined parenting by addressing both parents as one unit instead of assessing maternal and paternal parenting

as well as youth's filial piety attitudes toward mothers and fathers separately. Some preliminary findings have shown that Hong Kong school-aged children have reported stronger filial piety attitudes toward their mother than father, while maternal and paternal warmth and traditional Chinese parenting (e.g., expecting children to be obedient) related similarly to children's general filial piety attitudes (Lin and Yip, 2011). Future research examining mother-child dyads and father-child dyads separately could provide a refined picture of the socialization processes of filial piety. Fourth, the current urban and rural samples were each recruited from one site only and are not representative of vast urban and rural areas in China, thus limiting the generalizability of the findings. Despite salient socioeconomic differences between the two sites chosen for the current study, the rural sample was from a relatively less underdeveloped area in the countryside of China with its average per capita net income (i.e., USD\$ 1,220.7) higher than the national average of rural districts (i.e., USD\$ 1,079; National Bureau of Statistics of the P.R. China, 2012). More and larger urban-rural differences than those documented in the current study may be observed between urban areas and highly underdeveloped rural area. Additionally, the current sample size for each site was limited, which influences the statistic power to detect small longitudinal effects. Therefore, future studies are needed to investigate multiple regions with different levels of socioeconomic development and recruit a larger sample (see Chen and Li, 2012). Moreover, the urban and rural samples were recruited from different parts of China (i.e., Shanghai in the east coast vs. Guangdong Province in the south-east coast), and thus we could not exclude the possibility that the observed differences were due at least in part to subcultural variations between these two geographically distant parts of the country. Yet, the urban sample from Shanghai and the rural sample from rural Guangdong did capture well the contrast between the *Gesellschaft* (urban) ecology and the *Gemeinschaft* (rural) ecology in terms of economic and technological developments, education levels, diversity and contact with the outside world (Greenfield, 2016). Future research better teasing apart subcultural versus urban-rural variations is needed (e.g., comparing urban and rural samples from the same province). Lastly, although the current study was well guided by social change theories to examine urban-rural variations and revealed meaningful similarities and differences in the urban and rural samples, it did not directly investigate the psychological needs (e.g., youth's need for autonomy) and values (e.g., independence and an egalitarian parent-child relationship) that are assumed to underlie urban-rural variations. Future research is needed to unpack the features and mechanisms through which urban and rural ecologies shape the socialization and development of filial piety among Chinese adolescents.

## CONCLUSION

To our knowledge, this is the first study to examine the transactions between parenting styles and filial piety attitudes and compare these transactions between urban and rural ecologies.

In particular, the findings from this study support the dual filial piety model as a guiding framework for research on filial piety across cultures, and they contribute to an advanced understanding of dual filial piety by extending previous research to explore transactional socialization dynamics between parents and youth as well as urban–rural variations. More broadly, the findings bear implications for theories and practices concerning the socialization and development of psychological constructs that are generally crucial in the parent–child relationship across cultures, suggesting that researchers and practitioners in psychological counseling and therapy and other helping professions pay attention to children’s active role in the construction of the family environment as well as to the role of socioeconomic and sociocultural factors in the way a family functions.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

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## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Survey and Behavioral Research Ethics Committee of The Chinese University of Hong Kong. Written informed consent to participate in this study was provided by the participants’ legal guardian/next of kin.

## AUTHOR CONTRIBUTIONS

LL designed the study, analyzed and interpreted the data, and drafted the manuscript. QW co-designed the study, participated in the interpretation of results, and performed professional editing throughout the manuscript. Both authors contributed to the article and approved the submitted version.

## FUNDING

This study was supported by QW’s General Research Fund 451809 from Hong Kong Research Grants Council.

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# Applying the Dual Filial Piety Model in the United States: A Comparison of Filial Piety Between Asian Americans and Caucasian Americans

Amy J. Lim<sup>1\*</sup>, Clement Yong Hao Lau<sup>2</sup> and Chi-Ying Cheng<sup>2</sup>

<sup>1</sup> Discipline of Psychology, College of Science, Health, Engineering and Education, Murdoch University, Murdoch Singapore, Singapore, Singapore, <sup>2</sup> School of Social Sciences, Singapore Management University, Singapore, Singapore

## OPEN ACCESS

### Edited by:

Kuang-Hui Yeh,  
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Dan J. Miller,  
James Cook University, Australia

### \*Correspondence:

Amy J. Lim  
amy.lim@murdoch.edu.au

### Specialty section:

This article was submitted to  
Cultural Psychology,  
a section of the journal  
Frontiers in Psychology

**Received:** 30 September 2021

**Accepted:** 27 December 2021

**Published:** 03 February 2022

### Citation:

Lim AJ, Lau CYH and Cheng C-Y  
(2022) Applying the Dual Filial Piety  
Model in the United States: A  
Comparison of Filial Piety Between  
Asian Americans and Caucasian  
Americans.  
Front. Psychol. 12:786609.  
doi: 10.3389/fpsyg.2021.786609

The definition and measurement of filial piety in existing research primarily focuses on the narrow conceptualizations of Asian filial piety, which would inflate cultural differences and undermine cultural universals in how people approach caring for their elderly parents. Employing the Dual Filial Piety Model (DFPM), this study aimed to examine the relationship between filial piety and attitude toward caring for elderly parents beyond the Asian context. In our study ( $N = 276$ ), we found that reciprocal filial piety (RFP) does not differ across cultures while authoritarian filial piety (AFP) does. We also found that collectivism, rather than ethnicity, predicted RFP and AFP, which in turn predicted positive attitude toward caring for elderly parents. Our work demonstrates the cross-cultural applicability of the DFPM and highlights the universal and culture-specific aspects of filial piety.

**Keywords:** filial piety, Dual Filial Piety Model (DFPM), Asian American, Caucasian American, collectivism

## INTRODUCTION

Increased life expectancies and declined fertility rates have led to global population aging, and they are expected to continue at an accelerated rate (United Nations Department of Economic and Social Affairs Population Division, 2019). The number of persons aged 65 and above has outnumbered the population of children aged five and under since 2018 (United Nations Department of Economic and Social Affairs Population Division, 2019). By 2050, one in six people will be aged 65 and above, up from 1 in 11 people in 2019 (United Nations Department of Economic and Social Affairs Population Division, 2019). As this demographic trend holds significant implications for labor force participation, economic growth, and consumption patterns (Bloom and Luca, 2016), managing the needs for an aging population is a pertinent social concern in the twenty-first century. Amongst the strategies and action plans to manage population aging, the provision of elder care constitutes a major portion of the list (World Health Organization, 2019). More critically, provision of care from family systems is increasingly important to aid the financial sustainability of public elder care services in coping with the soaring demands and enhancing quality of care.

With the moral underpinnings filial piety provides for parent-child relations, extant research has examined the impact filial norms have on the support and care for elderly parents. However, despite evidence suggesting that filial responsibilities are also observed in Western cultures, most of the existing research on filial piety has primarily focused on Asian cultures. The indigenous conceptualizations of filial piety are likely to inflate cultural differences and undermine cultural universals in how people approach caring for their elderly parents. In this paper, we contend that filial piety is more universal than culturally exclusive—filial piety behavior is also manifested in

non-Asian societies. Using the DFPM framework, we intend to demonstrate that filial responsibilities can be observed across cultures, and that it influences filial attitudes and behaviors.

## Filial Piety and Care for Elderly Parents

Traditionally, elders in Asian societies are revered. This stems from the emphasis on Confucian values in Asian societies, particularly that of its central tenet—filial piety. Filial piety is typically regarded as the duty of adult children to care for their elderly parents (Cicirelli, 1993; Sung, 1995; Leichtentritt et al., 2004); beyond the act of providing care, it constitutes respecting, honoring, and obeying one's parents (Lee and Mjelde-Mossey, 2004). The fulfillment of filial duties includes preserving family harmony, being affectionate toward parents, having a sense of responsibility toward parents, minimizing the worries of parents, repaying the physical and financial sacrifice parents has made, and even staying close to parents or living together with them (Sung, 1995; Ho, 1996; Kao and Travis, 2005). It is a high virtue and dominant social norms in the majority of Asian societies including China, Taiwan, Japan, Korea, Thailand, Vietnam, Singapore, Malaysia, Indonesia, India and Bangladesh (e.g., Wangmo, 2010; Nichols, 2013). As a way of demonstrating filial piety, empirical evidence shows that the percentage of intergenerational co-residence in East Asian societies (i.e., China, Taiwan, Japan, and Korea) was well within 23 and 47% (Lin and Yi, 2013). Higher rates of adult children living together with their older parents was also found in Japan, compared to the U.S. (Levy et al., 2009; Nauck and Ren, 2021).

The virtue of filial piety facilitates intergenerational relationships (Yeh, 2003), and encourages care and support of elderly parents (Lai, 2007; Khalaila and Litwin, 2011). Support toward elderly parents involves the dependency of elderly parents on adult children (Chen, 2006). These intergenerational support behaviors include co-residence, as well as support provision from adult children (Yi and Lin, 2009). Multigenerational co-residence is characterized by the three-generational family structure, where adult children, with their (young) children, and the aging parents live together. It helps adult children to fulfill the expected filial duties to their elderly parents because it provides the opportunity for adult children to be the caregivers (Chen, 2006); this allows them to demonstrate their affection, obedience, and commitment toward their elderly parents (Lin and Yi, 2013). Indeed, endorsement of filial norms is positively associated with rate of co-residence—adult children who are in favor of filial responsibilities were more likely to live with their parents and have more face-to-face contact with them (Lin and Yi, 2013)—in East Asian societies including Japan and Korea. Adult children's filial attitudes were also found to have a positive impact on patrilocal co-residence. Particularly in Taiwan, couples with stronger filial attitudes were found to either live with their parents, or stay close to them (Chu et al., 2011). Similarly in China, filial piety is also significantly associated with the rates of adult children co-residing with their aging parents (Zhang et al., 2014). Additionally, adult children with higher filial responsibilities provide greater financial support to their aging parents (Lin and Yi, 2013). In short, greater endorsement

of filial piety is associated with higher intergenerational support in East Asian context.

Additionally, studies that have examined the role of filial piety in caregiving show that filial piety is negatively associated with caregiving burden (e.g., Lai, 2007); filial piety served as a buffer against negative effects of stressors of caregiving burden (Kim and Kang, 2015). Moreover, higher levels of filial piety from caregivers also predicted more positive appraisals of caregiving to their elderly parents (Lai, 2010). Endorsements of filial piety were also associated with lower levels of distress, greater self-efficacy, as well as more positive caregiving experiences (Holland et al., 2010). These studies collectively suggest that filial piety is not only associated with actual support toward one's elderly parents, but also the positive attitudes toward caring for their elderly parents.

Notwithstanding the empirical evidence that the endorsement of filial piety and care of elderly parents are more pronounced in Asian cultures (Löckenhoff et al., 2015), intergenerational care is also observed in Western societies. For instance, 80–90% of all care to elders in the United States is provided by family members (Westbrook, 1989; Moon et al., 2017; Varadaraj et al., 2021), and more than 50% are provided by their adult children (Ornstein et al., 2017). In addition, ~75% of British elderly people receive some form of care (Henz, 2006)—from their adult children or spouses (Akgun-Citak et al., 2020). In fact, studies have shown that (non-Asian) individuals also possess positive attitudes toward caregiving of one's elderly parents. In a national survey in the United States, 57% of family caregivers (of elderly parents) described their experiences positively—such as it being rewarding, and enjoyable (National Alliance for Caregiving and American Association of Retired Persons, 1997). This trend still holds true in a more recent study (Conway, 2019). They also identified additional benefits of pride in making their elderly parents happy, of earning their gratitude, and of repaying parents. Further, the rewards and benefits of caring for their elderly parents continues to extend as the caregivers age. For instance, other than attaining greater maturity and preparedness for their own aging (Ziemba, 2002), caregivers even accrued benefits such as improvement in their relationships with their elderly parents and other family members, personal satisfaction in spending time caring for them, as well as pride in familial cooperation to meet their parents' needs (Strawbridge and Wallhagen, 1991; National Alliance for Caregiving and American Association of Retired Persons, 1997). These findings not only suggest that filial behaviors are exhibited by individuals from Western societies, they also demonstrate that Western adult children hold positive attitudes toward caring for their elderly parents. More critically, these findings attest to the likelihood that filial piety could be culturally universal—in that the dominant constructs and measures of filial piety based on Asians' filial norms (Bedford and Yeh, 2019) could partially capture the motive of Western adult children's care and support for elderly parents.

Current conceptualizations of filial piety may lead to equivocal conclusions regarding cross-cultural differences in the attitudes toward care and support for elderly parents. Given the strong emphasis of filial piety in Asian societies, it is intuitive for Asian adult children to hold more positive attitudes in caring for their elderly parents than those brought up in Western societies, where

there are fewer cultural ideologies that encourage the sacrifice and care for elderly parents (Laidlaw et al., 2010). However, some studies offer contradictory evidence showing that Westerners support care of their own elderly parents more than Asians. For instance, as compared to a Japanese sample, U.S. respondents have more positive attitudes toward family obligations and were more likely to agree that children should make sacrifices to support their parents (Elmelech, 2005). Similarly, Anngela-Cole and Hilton (2009) found that Caucasian Americans felt greater obligation toward their parents and had more positive attitudes toward caregiving than Japanese Americans. Further, in a sample of family caregivers, non-Asian Americans were more likely to say that caregiving has positive (personal and familial) impact on them than the Asian Americans (Arnsberger et al., 2009). Furthermore, the history of Confucian principles in the East Asian cultures and conception of joint family system in South Asian cultures impel individuals to respect, obey, and care for *their elderly family members* (Sung, 1995; Koyano, 1996; Singh, 2005), North Americans who do not abide to Confucian principles may be compelled to love and care for their senior parents with different motives. Collectively, the current research seek to demonstrate that (1) filial piety is not necessarily unique to Asian cultures and can be observed in Western societies, and (2) existing indigenous Asian conceptualizations of filial piety may be applied beyond the Asian cultural context and can be used to detect some aspects of filial attitudes and behaviors across cultures. To this end, we employ the Dual Filial Piety Model (DFPM) in our investigation of filial piety across cultures in our paper (Yeh and Bedford, 2003; Bedford and Yeh, 2019).

## Dual Filial Piety Model

According to the Dual Filial Piety Model (DFPM; Yeh and Bedford, 2003), filial piety consists of two fundamental aspects: reciprocal filial piety and authoritarian filial piety. Reciprocal filial piety (RFP) encompasses the genuine gratitude one has for their parents' effort and sacrifice, and manifests as the voluntary support and care for one's parents (Bedford and Yeh, 2019)—where it develops from the accumulative positive interactions between parent and child. In contrast, authoritarian filial piety (AFP) manifests as the obedience and fulfillment of obligatory duties as a child to one's parents and develops through the fulfillment of the expectations one's parents hold of them (Bedford and Yeh, 2019).

Studies have demonstrated that care for one's elderly parents is ubiquitous across Asian and Western societies. Although the theory of filial piety is chiefly drawn upon Confucian teaching and research on filial piety is largely conducted in Asian context (e.g., China, Taiwan, Japan, Korea, Vietnam, India and Thailand; Nguyen, 2016; Serrano et al., 2017; Sringeriyuang et al., 2020), care for one's elderly parents is also observed in Western cultures. Recent research suggests that there is similarity between the conceptualization of Asian filial piety and values in other cultures (see Bedford and Yeh, 2019). For instance, both Hispanic familism and filial piety stress social relationships over individual needs (Schwartz et al., 2010). Providing care for one's parents, family, and community is not only ingrained in Asian Americans, Hispanic Americans, as well as African Americans also share

similar perspectives (Pharr et al., 2014). While Asian cultures subscribe to a cultural model that dictates a rigid taxonomy for caregiving based on one's gender and position within the family (e.g., caring for elderly parents is expected for them; Ngan and Wong, 1996), rejecting caregiving (of elderly parents) and to place the responsibility outside one's family can be seen as unacceptable even for African American, and Hispanic American caregivers (Pharr et al., 2014). Further, even in the Netherlands, it was found that the greater the perceived obligation, the greater the support one gives to their elderly people, the emotionally closer the familial relationships (Stuifbergen et al., 2008). These findings suggest that it would be erroneous to conclude that filial piety, and its implications on caring for elderly parents, is unique to Asian cultures.

The application of the DFPM in filial piety research has shown promise in uncovering the different aspects of filial piety, and its consequential effects on the care of one's parents—where previous research that relied on Indigenous Asian definitions of filial piety were not able to demonstrate. The majority of filial piety research draws upon Confucian teachings that are prevalent in Asian societies and conceptualizes the foundation of filial piety on role obligations driven by an authoritarian relationship between parents and children. With the DFPM, it is evident that RFP and AFP have distinct characteristics and assumptions of interpersonal relationship between parents and children. RFP is driven by a horizontal relationship, assuming equal relationship between two individuals, even when they are parents and children. In comparison, AFP is determined by a vertical relationship, assuming a hierarchical relationship between different family roles such as parents and children (Tsao and Yeh, 2019). Empirical findings demonstrate that RFP and AFP exhibit different effects on adult children's care for senior parents. An analysis of a nationally-representative sample of 1,463 adults in Taiwan (collected by the Taiwan Social Change Survey 2006) demonstrated that adult children's RFP has a significant positive effect on the frequency of financial support, household labor assistance, and emotional support for elderly parents, even after controlling for demographic and family structure variables (Yeh, 2009). In contrast, their AFP had a positive correspondence only with the frequency of providing household labor, and not with providing financial or emotional support for elderly parents. As such, this demonstrates that this distinction of filial piety can reveal a deeper understanding of filial attitudes and behaviors beyond the traditional conceptualizations of filial piety. More critically, this supports the employment of the DFPM as a framework to address filial piety in a Western cultural context (Bedford and Yeh, 2019; Tsao and Yeh, 2019).

## The Present Research

In this research, we propose that the concept of filial piety could be culturally universal and could be observed in Western societies such as the United States. Furthermore, we argue that cultural universality as well as cultural uniqueness in filial piety could be both observed between Asian and American cultural groups. We intend to apply the two factors of DFPM framework—RFP and AFP—to investigate the relationship between filial piety and adult children's care for elderly parents across cultures.

We argue that RFP, which develops from positive interactions between parent and child with an assumption of equal relationship between the two parties, is likely to be observed among both Asians and Americans, and as such, will not differ across cultures. The propensity to provide care for elderly parents is motivated by factors including love, affection, as well as a sense of obligation (Dean et al., 2020)—factors that are not unique to any one society. Similar to that of Asian adult children (Lin and Yi, 2013), individuals in Western cultures were found to care for their parents out of love and affection rather than indebtedness (Blustein, 1977; Dixon, 1995). As such, we propose that the reciprocal relationship between adult children and parents can be observed in both Asian and American societies and can be captured by the behavioral manifestation of RFP in DFPM framework.

In contrast, we proposed that AFP, which develops from the belief of an authoritarian relationship between parents and children, would differ across cultures, especially between Asians and Americans. The foundation of AFP is based on Confucian teachings that are guided by authoritarianism and familism, which contribute to family hierarchy and role obligations (Chien, 2016). Adult children are expected to prioritize elderly parents' needs and expectations. When facing conflicts between parents' and own desires, adult children are expected to downplay their own needs and expectations in order to fulfill their parents' needs and expectations (Tsao and Yeh, 2019). These filial norms and practices are specific to Asian societies and are not congruent with cultural values and norms in Western societies. Therefore, we predict that AFP is likely to be observed more among Asians than Caucasian Americans.

Most of the existing research that have examined cultural similarities and differences in the attitudes toward care for older adults classified cultural groups geographically by country (e.g., China vs. the United States). This practice has been questioned by scholars as it oversimplifies cultural nuances (North and Fiske, 2015). To address this shortcoming, we classify cultural groups by ethnicity in the same society in our study. Specifically, we examine the likely cultural similarities and differences between Caucasian Americans and Asian Americans who reside in the same geographical location (i.e., the United States).

Additionally, given that filial piety is largely associated with dominant behavioral norms of collectivism (Schwartz et al., 2010), a cultural value that significantly distinguishes Asian and Caucasian cultures (Hofstede, 1980; Bebeko et al., 2019; Pereira et al., 2019), we look into the influence of collectivism on the two types of filial piety as well as its downstream effect on individuals' attitudes toward caring for elderly parents and their caregiving behaviors. Drawing upon Matsumoto's (1999) recommendation for cultural comparison research, the significance of cultural difference needs to be demonstrated by identifying the potential contextual variables such as personal values and tendencies that underlie the link between cultural groups and individual outcomes. Given that collectivism affords the maintenance of interpersonal ties and emphasis on a collective identity, we further proposed that cultural value of collectivism (Hofstede, 1980) serves as the underlying cultural dimension for filial piety. Specifically, as collectivism facilitates an interdependent

self that often blurs one's self-boundary from significant others including parents (Markus and Kitayama, 2010), individuals with a high level of collectivism will exhibit more RFP. This is because the children's self is closely knitted with their parents both psychologically and socially and possibly see their parents as the extension of their self just like how their parents see them (Markus and Kitayama, 1991; Fu and Markus, 2014). As a result, individuals high on collectivism are compelled to exhibit RFP and reciprocate their parents' love and support for them. In addition, endorsement of collectivism will also facilitate adult children's AFP. Asian cultures largely informed by Confucian teachings breeds collectivism, familism, and social hierarchy (Yu and Yang, 1994). Individuals in a collectivistic culture pursue social harmony that involves sacrificing self for the group and family (Yu and Yang, 1994). Corresponding to the Confucian teachings, collectivistic parents with a predilection for hierarchy and authoritarian moralism have the legitimacy to discipline their children and these children are taught to submit to their subordinate position within the family (Bejanyan et al., 2015; Wu and Chen, 2021). Given that AFP stems from one's adherence to role obligations based on family hierarchy (Tsao and Yeh, 2019)—with children looking up to their parents as possessing absolute authority (Bedford and Yeh, 2019), children who endorse the collectivistic value may also feel duty-bound to care for their parents as a way of showing gratitude for raising them—beyond the affection for their parents. In sum, we predict that the endorsement of collectivism drives both RFP and AFP, which then predicts Asians' and American' attitudes toward caring for elderly parents and caregiving behaviors of their elderly parents.

## METHODS

### Participants

A total of 276 participants were recruited through Amazon Mechanical Turk (192 females,  $M_{\text{age}} = 40.26$ ,  $SD_{\text{age}} = 14.30$ )<sup>1</sup>. In this sample, all participants resided in the United States; 161 participants identified with White/Caucasian as their ethnicity, and 115 participants identified with Asian as their ethnicity<sup>2</sup>. The majority of participants ( $N = 140$ ) reported to be working full-time as their employment status ( $N_{\text{workingpart-time}} = 44$ ,  $N_{\text{student}} = 27$ ,  $N_{\text{unemployed/others}} = 65$ ).

### Procedure

Upon providing informed consent, participants completed a series of questionnaires that assessed individualistic and collectivistic values, filial piety, and their attitude toward caring for elderly parents<sup>3</sup>. They also responded to questions related

<sup>1</sup>Screening questions were included to ensure that participants identified with "Asian" or "Caucasian" as their ethnicity. We also included attentional checks to ensure the quality of data gathered from participants.

<sup>2</sup>Asian participants included individuals from Korea, China, Philippines, Vietnam, Japan, and India.

<sup>3</sup>Following Murray et al. (2005) recommendation to diminish the effects of common method bias, we have counterbalanced the order of the questions relating to different scales and constructs. Similarly, different scale endpoints and formats were also used to minimize method biases (Podsakoff et al., 2003).



to the behavioral interactions they have with their parents, including if they stayed with their parents, how often they spent time looking after their parents in the past year, proportion of the salary they gave to their parents, how often they visited their parents, and how often they make phone contact with them. Finally, participants provided demographic details before completing the study.

## Materials

### Filial Piety

Filial piety was assessed with the 16-item Dual Filial Piety Scale (DFPS; Yeh and Bedford, 2003); 8-items measured Reciprocal Filial Piety (RFP) and 8-items measured Authoritarian Filial Piety (AFP). Participants indicated the extent they agreed to statements such as “Be grateful for my parents for raising me” for RFP, and “Avoid getting married to someone my parents dislike” for AFP, on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). Items were averaged to form a single index for RFP ( $M = 5.66$ ,  $SD = 1.21$ ,  $\alpha = 0.95$ ) and a single index for AFP ( $M = 3.27$ ,  $SD = 1.23$ ,  $\alpha = 0.88$ ), where higher scores reflect higher filial piety beliefs.

### Individualism-Collectivism

Individualistic and collectivistic values were measured with the Culture Orientation Scale (Triandis and Gelfand, 1998). Participants responded to 16 items, such as “My personal identity, independent of others, is very important to me,” and “It is important to me that I respect the decisions made by my groups” on a 9-point Likert scale (1 = *never or definitely no*, 4 = *always or definitely yes*). Items were averaged to form a single index for individualism ( $M = 5.78$ ,  $SD = 1.11$ ,  $\alpha = 0.68$ ) and a single index for collectivism ( $M = 6.36$ ,  $SD = 1.34$ ,  $\alpha = 0.84$ ), where higher scores indicated higher levels of individualistic and collectivistic values, respectively.

### Attitude Toward Caring for Elderly Parents

To measure participants’ attitude toward caring for their elderly parents, we adapted 17 items employed by Dellmann-Jenkins and Brittain (2003) in their study of filial responsibility attitudes. These items included statements such as “We should look to the children to support their elderly parents,” and “Adult children should overlook the trouble that elderly parents might cause in their home lives.” Participants responded to the items on a 4-point Likert scale (1 = *strongly agree*, 4 = *always or strongly disagree*). Items were reverse coded and averaged to form a single index for one’s attitude toward caring for elderly parents ( $M = 2.74$ ,  $SD = 0.49$ ,  $\alpha = 0.91$ ), where higher scores indicated a more positive attitude toward caring for one’s elderly parents.

### Filial Behaviors Toward Elderly Parents

To measure participants’ care behavior toward elderly parents, participants were required to respond to three items: “How often did you spend time looking after your parents in the past year” (1 = *seldom or not at all*, 6 = *from morning to night every day*), “How often do you visit your parents,” and “How often do you make phone contact with them” (1 = *daily or almost daily*, 5 = *not once over the past 12 months*). Items were standardized,

and averaged to form a single index for filial behaviors ( $M = -0.16$ ,  $SD = 0.81$ ,  $\alpha = 0.81$ ), where higher scores indicated more frequent filial behaviors displayed toward elderly parents.

## ANALYTICAL STRATEGY

We first determined whether three scales used in the study (i.e., Dual Filial Piety Scale, Culture Orientation Scale, and Attitudes toward Caring for Elderly Parents) measured the same constructs in both cultures (i.e., that they demonstrated measurement invariance across the Asian American and Caucasian American samples). The measurement invariance analyses were conducted using the lavaan package (Rosseel, 2012), in the R environment (R Core Team, 2020)—using maximum likelihood estimation with robust standard errors, and a Satorra-Bentler scaled test statistic (MLM).

First, the factorial structure of each scale was assessed for the total sample. For the scales which various models had been proposed, fit indices of the models were compared. In case of model misspecifications, the cause of specific error was examined *via* modification indices. To evaluate the goodness of fit of the models, we used the following fit indices and cut-off values recommended by Hu and Bentler (1999), and Brown (2015). Root mean square of approximation (RMSEA) values smaller than 0.08 indicated a reasonable fit and values smaller than 0.05 a good fit (MacCallum et al., 1996). Comparative fit index (CFI) values  $>0.9$  indicated a good fit (Bentler, 1990). Standardized root-mean-square residual (SRMR) values smaller than 0.08 indicated a good fit (Kline, 2016).

Second, we determined the three scales’ cross-cultural equivalence through multi-group confirmatory analyses (MGCFAs)—by measurement invariance (MI) testing—that includes a series of model comparisons. Three consecutive models were estimated, with each serving as a basis for comparison to the preceding model. At each comparison step, equality constraints were added in addition to the previous models (Steenkamp and Baumgartner, 1998). In cross-cultural research, three levels of measurement invariances are usually estimated: configural, metric, and scalar (Byrne and Matsumoto, 2021). They are defined by the parameters that are constrained to be equal across both samples (Milfont and Fischer, 2010; Beaujean, 2014). In the baseline model (i.e., configural invariance), no equality constraints were made—this allowed us to determine if the factor structures were the same across both samples. Only when configural invariance was established, metric invariance was estimated—by constraining factor loadings to be equal across both groups. Similarly, only when metric invariance was established, scalar invariance was estimated—by constraining intercepts to be equal across both groups. Cut-off criteria as recommended by Chen (2007) was used to identify levels of measurement invariance:  $\Delta CFI \leq 0.01$ .

We next assessed the assumption of normality for all variables—RFP, AFP, individualism, collectivism, attitude toward caring for elderly parents. Values for skewness and kurtosis for all variables were within the acceptable standards for a normal distribution, that is, between  $-2$  and

+2 (George and Mallery, 2010). Univariate outliers were also identified for RFP ( $N = 10$ ), AFP ( $N = 2$ ), individualism ( $N = 6$ ), collectivism ( $N = 1$ ), and attitude toward caring for elderly parents ( $N = 6$ ). To deal with these issues, we excluded cases bearing the univariate outliers; this left us with a sample of 252 participants. Subsequent analyses were conducted with and without these univariate outliers.

Further, as we were interested to examine difference in RFP and AFP across cultures, we planned to conduct an independent  $t$ -test to compare the scores of RFP and AFP across Asian Americans and Caucasian Americans. We also intended to conduct multiple regression analyses to test the effects of RFP and AFP on predicting attitude toward caring for elderly parents and filial behaviors in both Asian Americans and Caucasian Americans. Gender, age, occupational status (coded as 1 = working full time, 0 = not working full-time), primary caregiver status (coded as 0 = no, 1 = yes), and number of parents who are still alive were included in the regression model as control variables (Yeh et al., 2013). Prior to conducting the multiple regression analyses, statistical assumptions relevant to multiple regression analysis—that is, normality, linearity and homoscedasticity of residuals, and multicollinearity between predictors—were examined, and no assumptions violations were noted. Mahalanobis distance exceeded for the critical  $\chi^2$  for df = 7 (at  $\alpha = 0.001$ ) of 24.32 for two cases in the data file for the dependent variable of filial attitude, and two cases for the dependent variable of filial behaviors, indicating the presence of multivariate outliers. Multiple regression analysis and parallel mediation analysis were conducted with and without the case bearing the multivariate outlier.

Finally, to examine if the cultural dimension of collectivism is responsible for driving RFP and AFP in predicting care attitude toward parents and filial behaviors, parallel mediation analyses using PROCESS version 3.1 (Hayes, 2018) were conducted. For mediation to be demonstrated, the bootstrap confidence interval of the indirect effect (path  $a*b$ ) must not include zero (bootstrap samples = 5,000) (Hayes, 2018). To rule out alternative explanations, we also conducted further tests to investigate if individualism and ethnicity would predict RFP and AFP to consequently influence filial attitude and behaviors.

## RESULTS

### Measurement Invariance of the Scales Used

First, a series of CFAs was conducted—testing the two-factor model of the DFPS, the one-factor model of the attitude toward caring for elderly parents, and the two-factor model of the Culture Orientation Scale. As seen in **Table 1**, the CFI, RMSEA, and SRMR values suggested a good fit.

Next, a three-level MI test was conducted for each scale. **Table 2** shows the global fit coefficients for the three levels of MI (configural, metric, scalar) for each scale. As seen, the three measures have reached scalar invariance across both samples—indicating that samples from both cultures understood the meaning of the latent construct of filial piety, caring toward

elderly parents, and individualism and collectivism—which would allow us to make cross-cultural comparisons.

### Hypothesis Testing

**Table 3** displays the means, standard deviations, skewness, kurtosis, and intercorrelations of all the variables involved in this study. Correlation analysis indicated that collectivism was positively associated with both RFP ( $r = 0.49, p < 0.01$ ) and AFP ( $r = 0.23, p < 0.01$ ). Individualism was positively correlated only with RFP ( $r = 0.14, p = 0.03$ ), but not AFP ( $r = 0.10, p = 0.10$ ). Both RFP ( $r = 0.40, p < 0.01$ ) and AFP ( $r = 0.33, p < 0.01$ ) were positively associated with attitude toward caring for one's elderly parents. RFP was positively associated with filial behaviors ( $r = 0.21, p < 0.01$ ), but not AFP ( $r = 0.08, p = 0.27$ ). RFP and AFP are not significantly correlated to each other ( $r = 0.05, p = 0.42$ ). These patterns of findings are reflected in both Asian Americans and Caucasian Americans samples (see **Table 4**).

An independent  $t$ -test was conducted to examine levels of RFP and AFP between Asian Americans and Caucasian Americans. Results revealed that there was no significant difference in RFP between both groups,  $t_{(250)} = 0.41, p = 0.68, d = 0.05$ . There was, however, a significant difference in AFP between Asian Americans and Caucasian Americans,  $t_{(250)} = -2.96, p < 0.01, d = 0.38$ , where AFP was higher for Asian Americans ( $M = 3.54, SD = 1.18$ ) than Caucasian Americans ( $M = 3.10, SD = 1.13$ ). A sensitivity analysis conducted using G-Power indicated that given sample size of group 1 (Asian) is 115 and the sample size of group 2 (Caucasians) is 138, the minimum effect size to detect a power of 0.80 at  $\alpha = 0.05$  (two-tailed) is  $d = 0.36$  for this study.

A multiple regression analysis was conducted to examine the effect of RFP and AFP on attitude toward caring for one's elderly parents. On step 1 of the hierarchical multiple regression analysis, age, gender, occupation/job status, primary caregiver status, and number of parents who are alive accounted for a significant 6.6% of the variance in attitude toward caring for elderly parents,  $R^2 = 0.07, F_{(5,244)} = 3.45, p < 0.01$ . On step 2, RFP and AFP were added to the regression equation and accounted for an additional 22.2% of the variance in the attitude toward caring for one's elderly parents,  $\Delta R^2 = 0.22, \Delta F_{(2,242)} = 37.71, p < 0.01$ . In combination, the six predictor variables explained 28.8% of the variance in attitude toward caring for elderly parents,  $R^2 = 0.29$ , adjusted  $R^2 = 0.27, F_{(7,242)} = 13.98, p < 0.01, f^2 = 0.40$ . The analysis revealed that both RFP,  $B = 0.16, t_{(244)} = 6.21, p < 0.01, 95\% \text{ CI } (0.11, 0.21)$ , and AFP,  $B = 0.12, t_{(244)} = 5.44, p < 0.01, 95\% \text{ CI } (0.07, 0.16)$ , predicted attitude toward caring for elderly parents<sup>4</sup>. This regression model was also examined using Asian Americans and Caucasian Americans samples separately. The results showed that the model explained 36.0% of the variance in attitude toward caring for elderly parents in the Asian Americans sample ( $R^2 =$

<sup>4</sup> A similar regression analysis was conducted with the inclusion of univariate and multivariate outliers. The analysis including the outliers revealed similar findings. The model accounted for a significant 30.6% of the variability in filial attitude,  $R^2 = 0.31$ , adjusted  $R^2 = 0.29, F_{(7,268)} = 16.92, p < 0.01$ . The analysis revealed that RFP,  $B = 0.14, t_{(268)} = 6.41, p < 0.01, 95\% \text{ CI } (0.10, 0.18)$ , and AFP,  $B = 0.11, t_{(268)} = 5.23, p < 0.01, 95\% \text{ CI } (0.07, 0.16)$ , predicted attitude toward caring for elderly parents.

**TABLE 1 |** CFA fit statistics for structural models of scales used in study.

Measure	$\chi^2$	df	CFI	RMSEA	SRMR
Dual filial piety scale	262.977	97	0.949	0.079	0.077
Attitude toward caring for elderly parents	209.03	100	0.955	0.063	0.052
Culture orientation scale	157.084	85	0.949	0.055	0.063

$\chi^2$ , chi square; df, degrees of freedom; CFI, comparative fit index; RMSEA root mean square error of approximation; SRMR, standardized root mean square residual.

**TABLE 2 |** Global fit measures in measurement invariance tests for scales used in study.

Measure	Level of invariance	$\chi^2$	df	CFI	$\Delta$ CFI
Dual filial piety scale	Configural (equal form)	405.27	194	0.935	-
	Metric (equal factor loadings)	415.41	208	0.936	0.001
	Scalar (equal intercepts)	442.46	222	0.933	0.004
Attitude toward caring for elderly parents	Configural (equal form)	350.23	200	0.940	-
	Metric (equal factor loadings)	365.22	216	0.940	0.000
	Scalar (equal intercepts)	378.97	232	0.941	0.001
Culture orientation scale	Configural (equal form)	250.32	170	0.945	-
	Metric (equal factor loadings)	266.75	184	0.943	0.002
	Scalar (equal intercepts)	289.91	198	0.937	0.006

$\chi^2$ , chi square; df, degrees of freedom; CFI, comparative fit index;  $\Delta$ CFI, change in CFI.

**TABLE 3 |** Descriptive statistics and intercorrelations of all variables ( $N = 252$ ).

Variables	1.	2.	3.	4.	5.	6.
1. RFP	-					
2. AFP	0.05	-				
3. Individualism	0.14*	0.10	-			
4. Collectivism	0.49**	0.23**	0.19*	-		
5. Filial attitude	0.40**	0.33*	-0.02	0.36**	-	
6. Filial behavior	0.21**	0.08	-0.14	0.17*	0.18*	-
Mean	5.78	3.29	5.78	6.41	2.75	-0.14
SD	0.96	1.17	0.97	1.28	0.44	0.79
Skew	-0.80	0.28	0.01	-0.20	0.06	0.24
Kurtosis	-0.18	-0.66	-0.22	-0.44	0.21	-0.50

\*\*Correlation significant at  $p < 0.01$ .

\*Correlation significant at  $p < 0.05$ .

0.36, adjusted  $R^2 = 0.32$ ,  $F_{(7,102)} = 8.21$ ,  $p < 0.01$ ,  $f^2 = 0.56$ ) and 29.6% of the variance in the Caucasian Americans sample [ $R^2 = 0.30$ , adjusted  $R^2 = 0.26$ ,  $F_{(7,132)} = 7.92$ ,  $p < 0.01$ ,  $f^2 = 0.42$ ]. RFP and AFP predicted attitudes toward caring for elderly parents in both Asian Americans and Caucasian Americans samples. Unstandardized ( $B$ ) regression coefficients for each predictor are reported in **Table 5**.

A similar multiple regression analysis was conducted to examine the effect of RFP and AFP on filial behaviors. Results revealed that the seven predictor variables explained 43.8% of the variance in filial behaviors,  $R^2 = 0.44$ , adjusted  $R^2 = 0.42$ ,  $F_{(7,171)} = 19.04$ ,  $p < 0.01$ ,  $f^2 = 0.78$ . The results also revealed that RFP,  $B = 0.18$ ,  $t_{(171)} = 3.60$ ,  $p < 0.01$ , 95% CI (0.08, 0.28), predicted filial behaviors, but not AFP,  $B =$

$-0.02$ ,  $t_{(171)} = -0.43$ ,  $p = 0.67$ , 95% CI ( $-0.10$ , 0.06). This regression model was also examined using Asian Americans and Caucasian Americans samples separately. The results showed that the model explained 38.0% of the variance in filial behaviors in the Asian Americans sample [ $R^2 = 0.38$ , adjusted  $R^2 = 0.31$ ,  $F_{(7,59)} = 2.92$ ,  $p < 0.01$ ,  $f^2 = 0.61$ ] and 52.4% of the variance in the Caucasian Americans sample [ $R^2 = 0.54$ , adjusted  $R^2 = 0.49$ ,  $F_{(7,104)} = 16.35$ ,  $p < 0.01$ ,  $f^2 = 1.17$ ]. RFP, but not AFP, predicted filial behaviors in both samples. Unstandardized ( $B$ ) regression coefficients for each predictor are reported in **Table 6**. A sensitivity analysis conducted using G-Power indicated that given a total sample size of 250, the minimum effect size to detect a power of 0.80 at  $\alpha = 0.05$  is  $f^2 = 0.06$  for this study.

**TABLE 4 |** Descriptive statistics and intercorrelations of all variables across Caucasian and Asian samples ( $N = 252$ ).

Variables	Caucasian American ( $N = 141$ )						Asian American ( $N = 111$ )					
	1.	2.	3.	4.	5.	6.	1.	2.	3.	4.	5.	6.
1. RFP	-						-					
2. AFP	-0.04	-					0.16	-				
3. Individualism	0.10	0.07	-				0.18	0.13	-			
4. Collectivism	0.46**	0.17*	0.16	-			0.53**	0.30**	0.23*	-		
5. Filial attitude	0.35**	0.34**	0.06	0.34**	-		0.46**	0.32**	-0.12	0.38**	-	
6. Filial behavior	0.20*	0.09	-0.21*	0.16	0.17	-	0.27**	0.15	0.08	0.22	0.24	-
Mean	5.81	3.10	5.73	6.38	2.75	-0.10	5.76	3.54	5.83	6.44	2.75	-0.21
SD	0.90	1.13	0.96	1.32	0.45	0.88	1.04	1.18	0.98	1.22	0.43	0.60
Skew	-0.77	0.39	0.20	-0.24	-0.08	0.10	-0.80	-0.08	-0.21	-0.14	0.26	0.54
Kurtosis	0.17	-0.37	-0.15	-0.38	0.14	-0.82	-0.28	-0.70	-0.18	-0.55	0.36	0.12

\*\*Correlation significant at  $p < 0.01$ .\*Correlation significant at  $p < 0.05$ .**TABLE 5 |** Unstandardized ( $B$ ) regression coefficients for multiple regression model predicting filial attitude.

Variables	Overall ( $N = 250$ )				Caucasian Americans ( $N = 140$ )				Asian Americans ( $N = 110$ )			
	$B$	LLCI	ULCI	se	$B$	LLCI	ULCI	se	$B$	LLCI	ULCI	se
<b>Step 1</b>												
Gender	0.02	-0.09	0.13	0.06	0.07	-0.10	0.23	0.08	-0.04	-0.19	0.11	0.08
Age	0.01	> 0.001	0.01	0.002	0.01	-0.001	0.01	0.003	0.01*	0.001	0.01	0.003
Occupation status	-0.03	-0.14	0.08	0.06	0.11	-0.05	0.26	0.08	-0.21*	-0.38	-0.05	0.08
Primary caregiver	0.19**	0.06	0.32	0.06	0.09	-0.09	0.27	0.09	0.25**	0.07	0.43	0.09
Parents	-0.02	-0.12	0.08	0.05	-0.002	-0.13	0.12	0.06	-0.03	-0.19	0.13	0.08
<b>Step 2</b>												
Gender	0.04	-0.06	0.14	0.05	0.10	-0.06	0.25	0.08	-0.02	-0.15	0.12	0.07
Age	0.004	-0.001	0.01	0.002	0.01	-0.001	0.01	0.003	0.004	-0.002	0.01	0.003
Occupation status	0.02	-0.08	0.12	0.05	0.13	-0.01	0.26	0.07	-0.13	-0.28	0.02	0.08
Primary caregiver	0.12*	0.004	0.23	0.06	0.01	-0.15	0.16	0.08	0.22**	0.06	0.38	0.08
Parents	-0.01	-0.09	0.08	0.04	0.02	-0.10	0.13	0.06	0.01	-0.14	0.15	0.07
RFP	0.16**	0.11	0.21	0.03	0.16**	0.09	0.24	0.04	0.16**	0.09	0.23	0.04
AFP	0.12**	0.07	0.16	0.02	0.15**	0.09	0.21	0.03	0.07*	0.01	0.13	0.03

\* $p < 0.05$ .\*\* $p < 0.01$ .

A parallel mediation analysis using PROCESS (Hayes, 2018) was conducted to examine if collectivism predict RFP and AFP, which consequently predict attitude toward caring for elderly parents. **Figure 1** displays the mediation model. Both RFP and AFP were included as mediators in the analysis. Results revealed that there was a direct effect of collectivism on filial attitudes,  $B = 0.05$ ,  $p = 0.03$ , 95% CI (0.005, 0.10). Results also showed that collectivism predicted RFP,  $B = 0.34$ ,  $p < 0.01$ , 95% CI (0.25, 0.42), and AFP,  $B = 0.20$ ,  $p < 0.01$ , 95% CI (0.09, 0.32). Next, results also revealed that both RFP,  $B = 0.14$ ,  $p < 0.01$ , 95% CI (0.08, 0.20), and AFP,  $B = 0.11$ ,  $p < 0.01$ , 95% CI (0.07, 0.15), predicted attitude toward caring for elderly parents. Finally, results indicated that collectivism predicted positive attitude toward caring for elderly parents *via* both RFP,  $B = 0.05$ , 95% CI = (0.03, 0.07), and AFP,  $B = 0.02$ , 95% CI =

(0.01, 0.04)<sup>5</sup>. Unstandardized ( $B$ ) regression coefficients, 95% confidence intervals, and  $R^2$ -values for the parallel mediation model are presented in **Table 7**.

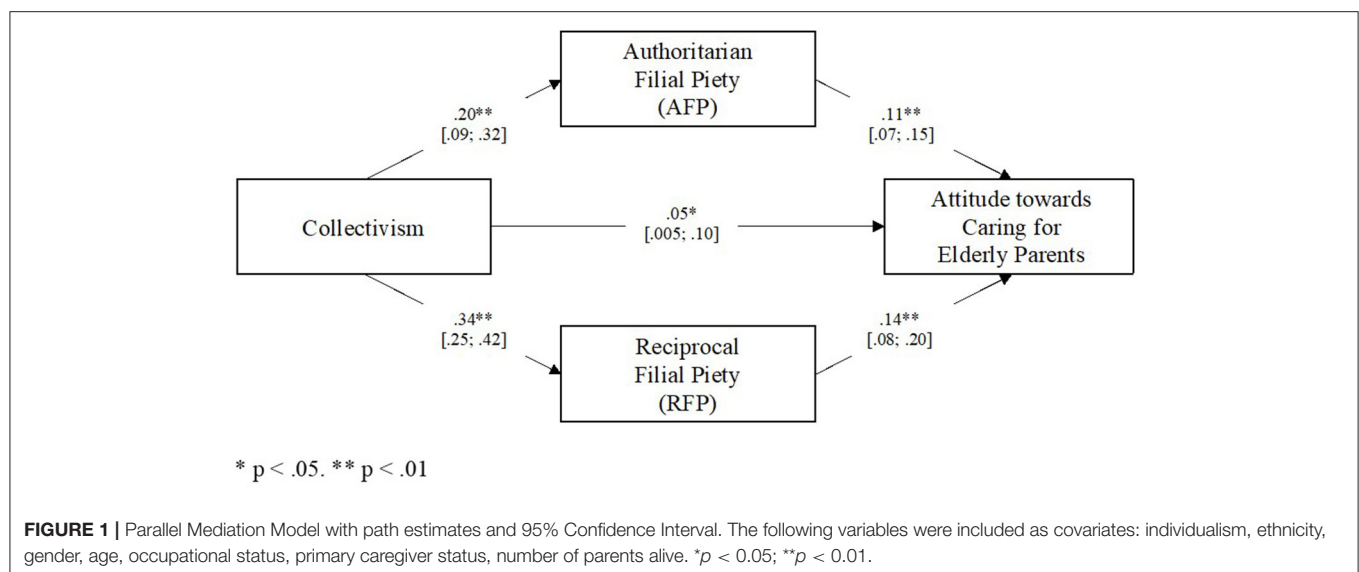
A similar parallel mediation analysis was conducted with individualism as the independent variable. Individualism had a direct effect on attitude toward caring for elderly parents,  $B = -0.06$ ,  $p = 0.02$ , 95% CI (-0.11, 0.01). Individualism did not predict RFP,  $B = 0.07$ ,  $p = 0.18$ , 95% CI (-0.04, 0.18), and AFP,  $B = 0.07$ ,  $p = 0.33$ , 95% CI (-0.07, 0.22). Individualism did not predict attitude toward caring for elderly parents *via* both RFP,  $B$

<sup>5</sup> A similar parallel mediation analysis was conducted without excluding univariate and multivariate outliers. Similar findings were found even with the inclusion of the outliers. Collectivism predicted attitude toward caring for elderly parents *via* RFP,  $B = 0.05$ , 95% CI = (0.02, 0.08), and AFP,  $B = 0.03$ , 95% CI = (0.01, 0.05).



**TABLE 6 |** Unstandardized (B) regression coefficients for multiple regression model predicting filial behaviors.

Variables	Overall (N = 179)				Caucasian Americans (N = 112)				Asian Americans (N = 67)			
	B	LLCI	ULCI	se	B	LLCI	ULCI	se	B	LLCI	ULCI	se
<b>Step 1</b>												
Gender	0.04	−0.16	0.24	0.10	0.04	−0.23	0.31	0.14	0.02	−0.26	0.30	0.14
Age	0.003	−0.01	0.01	0.004	0.002	−0.01	0.01	0.01	0.002	−0.01	0.01	0.01
Occupation status	−0.03	−0.22	0.16	0.10	−0.02	−0.27	0.23	0.13	−0.12	−0.40	0.16	0.14
Primary caregiver	1.01**	0.75	1.27	0.13	1.23**	0.86	1.61	0.19	0.79**	0.45	1.12	0.17
Parents	0.46**	0.30	0.61	0.08	0.53**	0.34	0.73	0.10	0.27*	0.004	0.53	0.13
<b>Step 2</b>												
Gender	−0.003	−0.20	0.19	0.10	−0.002	−0.28	0.28	0.14	0.06	−0.21	0.34	0.14
Age	0.001	−0.01	0.01	0.004	0.001	−0.01	0.01	0.01	−0.001	−0.01	0.01	0.01
Occupation status	0.01	−0.18	0.20	0.09	−0.03	−0.27	0.22	0.12	0.03	−0.27	0.32	0.15
Primary caregiver	0.96**	0.71	1.22	0.13	1.17**	0.80	1.55	0.19	0.80**	0.47	1.13	0.17
Parents	0.47**	0.32	0.62	0.08	0.54**	0.35	0.73	0.10	0.29*	0.03	0.54	0.13
RFP	0.18**	0.08	0.28	0.05	0.18*	0.03	0.33	0.07	0.16*	0.03	0.29	0.07
AFP	−0.02	−0.10	0.06	0.04	0.05	−0.07	0.17	0.06	−0.003	−0.12	0.11	0.06

\* $p < 0.05$ .\*\* $p < 0.01$ .

$= 0.01$ , 95%  $CI = (-0.01, 0.03)$ , and AFP,  $B = 0.01$ , 95%  $CI = (-0.01, 0.03)$ .

When ethnicity (i.e., Asian Americans and Caucasian Americans) was included as the independent variable, the results showed that only AFP mediated the relationship between ethnicity and attitude toward caring for elderly parents. Specifically, ethnicity predicted AFP,  $B = 0.31$ ,  $p = 0.04$ , 95%  $CI = (0.02, 0.60)$ , but not RFP,  $B = -0.02$ ,  $p = 0.88$ , 95%  $CI = (-0.24, 0.20)$ . Identifying with an Asian identity predicted attitude toward caring for elderly parents *via* AFP,  $B = 0.03$ , 95%  $CI = (0.001, 0.07)$ , and not RFP,  $B = -0.003$ , 95%  $CI = (-0.03, 0.03)$ . There was also no direct effect of ethnic group on attitude toward caring for elderly parents,  $B = -0.003$ ,  $p = 0.96$ , 95%  $CI = (-0.10, 0.10)$ .

Similar parallel mediation analysis was conducted to examine if collectivism predict RFP and AFP, which consequently predict filial behaviors. Results revealed that RFP predicted filial behaviors,  $B = 0.17$ ,  $p < 0.01$ , 95%  $CI = (0.06, 0.28)$ , but not AFP,  $B = 0.02$ ,  $p = 0.66$ , 95%  $CI = (-0.06, 0.10)$ . Furthermore, collectivism predicted filial behaviors *via* RFP,  $B = 0.06$ , 95%  $CI = (0.02, 0.10)$ , but not AFP,  $B = 0.002$ , 95%  $CI = (-0.01, 0.02)$ <sup>6</sup>. Unstandardized ( $B$ ) regression coefficients, 95% confidence intervals, and  $R^2$ -values for the parallel mediation model are presented in **Table 8**. Further parallel mediation analysis also

<sup>6</sup>For filial behaviors, similar findings were found with the inclusion of the outliers. Collectivism predicted filial behaviors *via* RFP,  $B = 0.07$ , 95%  $CI = (0.03, 0.11)$ , and not AFP,  $B = 0.01$ , 95%  $CI = (-0.01, 0.03)$ .

**TABLE 7 |** Parallel mediation model coefficients for predicting filial attitude.

Variables	Overall ( <i>N</i> = 250)				Caucasians ( <i>N</i> = 140)				Asians ( <i>N</i> = 110)			
	<i>B</i>	LLCI	ULCI	se	<i>B</i>	LLCI	ULCI	se	<i>B</i>	LLCI	ULCI	se
	<i>(R</i> <sup>2</sup> = 0.30, <i>p</i> < 0.01)				<i>(R</i> <sup>2</sup> = 0.28, <i>p</i> < 0.01)				<i>(R</i> <sup>2</sup> = 0.34, <i>p</i> < 0.01)			
Outcome Variable = RFP												
Constant	2.80	1.83	3.78	0.50	2.90	1.65	4.15	0.63	2.71	1.09	4.34	0.82
Collectivism	0.34**	0.25	0.42	0.04	0.28**	0.18	0.39	0.05	0.40**	0.25	0.54	0.07
Individualism	0.07	−0.04	0.18	0.06	0.05	−0.09	0.19	0.07	0.09	−0.08	0.27	0.09
Ethnicity	−0.02	−0.24	0.20	0.11	-	-	-	-	-	-	-	-
Gender	0.18	−0.03	0.40	0.11	0.28	−0.01	0.57	0.15	0.11	−0.23	0.45	0.11
Age	0.01	−0.001	0.02	0.005	0.01	−0.002	0.02	0.006	0.01	−0.01	0.02	0.01
Occupational status	−0.28*	−0.50	−0.07	0.11	−0.22	−0.50	0.06	0.14	−0.34	−0.71	0.03	−0.34
Primary caregiver	0.04	−0.20	0.28	0.12	0.05	−0.27	0.37	0.16	−0.03	−0.42	0.36	−0.03
No of parents alive	−0.05	−0.24	0.13	0.09	0.01	−0.21	0.23	0.11	−0.19	−0.55	0.16	−0.19
Outcome variable = AFP												
	<i>(R</i> <sup>2</sup> = 0.16, <i>p</i> < 0.01)				<i>(R</i> <sup>2</sup> = 0.14, <i>p</i> < 0.01)				<i>(R</i> <sup>2</sup> = 0.15, <i>p</i> < 0.01)			
Constant	2.40	1.09	3.71	0.67	3.46	1.73	5.19	0.87	1.37	−0.73	3.47	1.06
Collectivism	0.20**	0.09	0.31	0.06	0.17*	0.03	0.32	0.07	0.27**	0.08	0.45	0.10
Individualism	0.07	−0.07	0.22	0.07	0.05	−0.14	0.25	0.10	0.09	−0.14	0.31	0.11
Ethnicity	0.31*	0.02	0.60	0.15	-	-	-	-	-	-	-	-
Gender	−0.38**	−0.67	−0.10	−0.38	−0.61**	−1.02	−0.21	0.20	−0.13	−0.57	0.30	0.22
Age	−0.01*	−0.02	−0.0003	−0.01	−0.01	−0.03	0.002	0.01	−0.003	−0.02	0.02	0.01
Occupational status	−0.06	−0.35	0.23	−0.06	−0.04	−0.42	0.34	0.19	−0.07	−0.55	0.41	0.24
Primary caregiver	0.44**	0.12	0.77	0.16	0.41	−0.03	0.85	0.22	0.57	0.06	1.07	0.25
No of parents alive	−0.003	−0.25	0.24	0.13	−0.09	−0.40	0.22	0.16	0.10	−0.36	0.56	0.23
Outcome variable = filial attitudes												
	<i>(R</i> <sup>2</sup> = 0.31, <i>p</i> < 0.01)				<i>(R</i> <sup>2</sup> = 0.31, <i>p</i> < 0.01)				<i>(R</i> <sup>2</sup> = 0.43, <i>p</i> < 0.01)			
Constant	1.38	0.89	1.86	0.25	0.89	0.18	1.60	0.36	1.79	1.13	2.46	0.34
Collectivism	0.05*	0.005	0.09	0.02	0.04	−0.02	0.10	0.03	0.06	−0.001	0.12	0.03
RFP	0.14**	0.08	0.20	0.03	0.14**	0.06	0.23	0.04	0.14**	0.07	0.22	0.04
AFP	0.11**	0.07	0.15	0.02	0.15**	0.08	0.21	0.03	0.07*	0.01	0.13	0.03
Individualism	−0.06*	−0.11	−0.01	0.03	−0.02	−0.09	0.05	0.04	−0.11	−0.17	−0.04	0.03
Ethnicity	0.003	−0.10	0.10	0.05	-	-	-	-	-	-	-	-
Gender	0.04	−0.06	0.13	0.04	0.09	−0.06	0.24	0.08	−0.005	−0.14	0.13	0.07
Age	0.003	−0.001	0.01	0.003	0.01	−0.001	0.01	0.003	0.004	−0.002	0.01	0.003
Occupational status	0.03	−0.07	0.13	0.03	0.12	−0.01	0.26	0.07	−0.09	−0.24	0.06	0.07
Primary caregiver	0.10*	−0.01	0.22	0.06	−0.003	−0.16	0.16	0.08	0.21**	0.06	0.37	0.08
No of parents alive	−0.01	−0.09	0.07	0.04	0.02	−0.09	0.13	0.06	0.001	−0.14	0.14	0.07

\**p* < 0.05.\*\**p* < 0.01.

showed that individualism had a direct effect on filial behaviors,  $B = -0.10$ ,  $p = 0.03$ , 95% CI (−0.19, −0.01), but this effect was not mediated by RFP [ $B = 0.02$ , 95% CI (−0.01, 0.05)] nor AFP [ $B = 0.001$ , 95% CI (−0.01, 0.01)]. Finally, the results of a similar parallel mediation analysis revealed that ethnicity had a significant effect on filial behaviors directly [ $B = -0.31$ ,  $p < 0.01$ , 95% CI (−0.51, 0.12)], but this was not mediated through RFP [ $B = -0.02$ , 95% CI (−0.07, 0.03)] and AFP [ $B = 0.01$ , 95% CI (−0.03, 0.07)].

## DISCUSSION

We began our research with the aim of understanding the relationship between filial piety and attitude toward caring for elderly parents across cultures. Using the DFPM framework, we hypothesized that RFP, which develops from positive interactions between parent and child, is likely to be universal across cultures while AFP, which is guided by traditional Confucius notions of filial piety, is likely to be different across Asian and Western

**TABLE 8** | Parallel mediation model coefficients for predicting filial behaviors.

Variables	Overall ( <i>N</i> = 179)				Caucasians ( <i>N</i> = 112)				Asian ( <i>N</i> = 67)			
	<i>B</i>	LLCI	ULCI	<i>se</i>	<i>B</i>	LLCI	ULCI	<i>se</i>	<i>B</i>	LLCI	ULCI	<i>se</i>
	$(R^2 = 0.32, p < 0.01)$				$(R^2 = 0.31, p < 0.01)$				$(R^2 = 0.39, p < 0.01)$			
Outcome variable = RFP												
Constant	2.46	1.22	3.69	0.63	2.78	1.38	4.17	0.71	2.20	−0.38	4.77	1.29
Collectivism	0.35**	0.25	0.44	0.05	0.31**	0.20	0.42	0.06	0.34**	−0.14	0.54	0.10
Individualism	0.10	−0.02	0.23	0.10	0.05	−0.09	0.20	0.07	0.19	−0.06	0.44	0.19
Ethnicity	−0.09	−0.35	0.17	−0.09	-	-	-	-	-	-	-	-
Gender	0.23	−0.02	0.49	0.13	0.32*	0.01	0.63	−0.16	0.07	−0.43	0.57	0.25
Age	0.01*	−0.004	0.02	0.01	0.01	−0.01	−0.02	0.01	0.02	−0.003	0.04	0.01
Occupational status	−0.26	−0.51	−0.02	0.17	−0.11	−0.41	0.18	0.15	−0.55*	−1.07	−0.03	0.26
Primary caregiver	0.13	−0.21	0.47	0.10	0.20	−0.25	0.64	0.22	−0.10	−0.67	0.47	0.29
No. of parents alive	−0.03	−0.23	0.17	0.06	−0.004	−0.23	0.22	0.12	−0.18	−0.63	0.27	0.22
Outcome variable = AFP												
Constant	2.75	1.09	4.42	0.84	3.87	1.89	5.85	1.00	0.56	−2.68	3.79	1.62
Collectivism	0.15*	0.02	0.27	0.06	0.11	−0.05	0.27	0.08	0.24	−0.01	0.50	0.13
Individualism	0.03	−0.14	0.21	0.09	−0.06	−0.25	0.15	0.11	0.16	−0.15	0.48	0.16
Ethnicity	0.56**	0.21	0.90	0.18	-	-	-	-	-	-	-	-
Gender	−0.31	−0.66	0.04	0.18	−0.52*	−0.96	−0.08	0.22	0.18	−0.45	0.81	0.32
Age	−0.01	−0.02	0.01	0.01	−0.01	−0.03	0.01	0.01	−0.01	−0.03	0.02	0.01
Occupational status	−0.17	−0.50	0.16	0.17	−0.05	−0.47	0.36	0.21	−0.05	−0.71	0.60	0.33
Primary caregiver	0.13	−0.32	0.59	0.23	0.13	−0.75	0.50	0.32	0.50	−0.22	1.22	0.36
No. of parents alive	0.07	−0.20	0.34	0.14	0.03	−0.30	0.35	0.16	0.23	−0.34	0.79	0.28
Outcome variable = filial behaviors												
Constant	−1.57	−2.53	−0.62	0.48	−1.59	−2.90	−0.28	0.66	−1.94	−3.46	−0.41	0.76
Collectivism	0.03	−0.05	0.11	0.04	0.03	−0.07	0.14	0.05	0.03	−0.10	0.16	0.06
RFP	0.17**	0.06	0.28	0.06	0.17*	0.004	0.33	0.08	0.15	−0.01	0.30	0.07
AFP	0.02	−0.06	0.10	0.04	0.04	−0.08	0.16	0.06	−0.01	−0.13	0.11	0.06
Individualism	−0.10*	−0.19	−0.01	0.05	−0.14*	−0.26	−0.01	0.06	−0.01	−0.16	0.14	0.07
Ethnicity	−0.31**	−0.51	−0.12	0.10	-	-	-	-	-	-	-	-
Gender	0.02	−0.17	0.21	0.10	−0.01	−0.28	0.27	0.14	0.09	−0.20	0.38	0.14
Age	−0.001	−0.01	0.01	0.004	0.002	−0.01	0.01	0.01	−0.002	−0.01	0.01	0.01
Occupational status	0.03	−0.16	0.21	0.09	0.03	−0.22	0.27	0.12	0.05	−0.27	0.36	0.16
Primary caregiver	0.98**	0.74	1.23	0.13	1.10**	0.73	1.48	0.19	0.80**	−0.47	1.14	0.17
No. of parents alive	0.48**	0.34	0.63	0.07	0.55**	0.36	0.74	0.10	0.28	0.02	0.54	0.13

\**p* < 0.05.\*\**p* < 0.01.

cultures. Consistent with what we have predicted, we found that AFP was higher in Asian Americans than Caucasian Americans in the United States, suggesting a cultural difference in AFP. This finding lent support for AFP as an indigenous Asian conceptualization of filial piety based on Confucius teachings. In contrast, there was no difference in RFP between both Asian Americans and Caucasian Americans, which suggests cultural universality. This finding provided empirical evidence for the notion of DFPM as a theoretical model that captures filial piety in global context (Bedford and Yeh, 2019). Additionally, our findings demonstrated that both RFP and AFP predicted filial attitudes whereas only RFP predicted filial piety behaviors. Finally, we ascertained that collectivism, rather than one's

ethnicity, is the underlying dimension behind RFP and AFP, which consequently predicted filial attitudes.

The findings of our paper provide empirical support for cultural universality and difference between Asian Americans' and Caucasian Americans' filial piety in the United States. While filial piety is considered a salient Asian virtue and is predominantly observed in Asian societies, our findings demonstrated that caring for one's elderly parents is also practiced in Western societies, which consistent with the universal affect one would have toward their parents. In support for Bedford and Yeh (2019) proposal, the over-emphasis on AFP aspects of filial piety—that largely relies on Asian conceptualizations of filial piety—has limited the understanding

of filial piety in cross-cultural context. Different from AFP, which is chiefly based on a hierarchical relationship between family roles, RFP is grounded on an equal and reciprocating relationship between parents and children, and as such, RFP can afford the study of filial piety in a globalized context (Bedford and Yeh, 2019). Our findings provide initial empirical evidence for the validation of the two-factor DFPM as a framework to study filial piety in cross-cultural context and to tease apart cultural similarities and differences in filial piety constructs, attitudes, and behaviors. Future research can apply DFPM to various cultural context to test the boundary of RFP and AFP in different cultural societies.

Furthermore, our work provides support for DFPM in predicting filial attitudes and behaviors. RFP and AFP were both associated with more positive attitude toward providing care for elderly parents, which were consistent with the notion that both RFP and AFP lead to positive filial outcomes (Bedford and Yeh, 2019). Similarly, our study revealed that RFP had a stronger influence than AFP in predicting filial attitudes and behaviors, which is consistent with existing findings and supports the idea that RFP has broader and greater effects on various support and care behaviors (Yeh, 2009; Yeh et al., 2013). Additionally, we also found that RFP predicted filial behaviors, but not AFP. This is consistent with Yeh (2009) findings where AFP was correlated with emotional support of parents weakly.

Beyond supporting DFPM in the prediction of filial attitudes and behaviors, our work extends empirical work by demonstrating that the DFPM can be applied to non-Asian populations to study filial attitudes and behaviors. Our findings showed that RFP and AFP predicted adult children's attitude toward caring for their elderly parents, and RFP predicted filial behaviors, in both Asian Americans and Caucasian Americans samples, supporting the notion that filial piety is not unique to Asian cultures. Given different cultural practices in caregiving of elderly parents, it is intuitive to expect that RFP and AFP impact filial attitudes and behaviors differently across cultures. For instance, providing financial support is characteristic among the Chinese due to teachings such as "raising children for support in the old age (養兒防老)," which is incongruent with the ideology and norms in Western societies. Existing studies have also shown that elderly parents in Korea continue to receive financial support from their adult children as they age; in contrast, parents in Europe (e.g., Italy) were found to be financially independent (Deindl and Brandt, 2011; Floridi, 2019). As such, while we expected AFP to influence filial attitudes in Asians and not in Caucasians, our findings paint a different picture, in that AFP impacted filial attitudes in both Asian Americans and Caucasian Americans. Even though filial piety is not emphasized in Western societies, some evidence shows that individuals from more individualistic cultural backgrounds, such as Caucasian Americans, feel obligated to fulfill familial duties, including providing assistance to their family members (Freeberg and Stein, 1996). This suggests that AFP's influence on filial attitudes among Caucasians may be more pronounced than what has been assumed in existing literature. However, much contextual variation has been noted in Americans when it comes to obligatory feelings to elderly parents, such as the available

care policies provided by the state they reside in and if care and support is dire (Cooney and Dykstra, 2011). Thus, future research is required to further understand the role of AFP in a Western cultural context.

Most importantly, rather than ethnic group difference, the findings showed that the endorsement of collectivism was associated with different levels of RFP and AFP, which in turn influenced filial piety attitudes and behaviors. Recent research has revealed a positive relationship between collectivism and willingness of taking care of elderly parents by "keeping them with us at home" (Talharm, 2019). Going beyond the current findings, our research unveiled the differing impact of collectivism on RFP and AFP, as well as their downstream effect on filial piety attitudes and behaviors. Our method of untangling cultural influence corresponds to Masumoto's (1999) proposal that more important than observed cultural or national differences, researchers shall strive to pin down the underlying cultural dimensions such as values, norms, mindsets, and self-concepts that can explain the observable cultural and national difference. Future research can further investigate related psychological constructs of collectivism such as vertical and horizontal collectivism (Singelis et al., 1995) to explore potential impact of different types of collectivism on RFP and AFP as well as filial piety outcomes in different cultural context.

In sum, our study extends current literature by demonstrating the application of the DFPM framework to a non-Asian sample, and Asians living within a non-Asian context, which is distinct from existing studies that has applied the DFPM to across different Asian societies (Yeh et al., 2013). Such application, combined with the measurement of collectivism and individualism, further extends prior work by demonstrating that collectivistic values, rather than a person's ethnic group, underlies filial piety—both RFP and AFP aspects. Moreover, our results showed that being an Asian does not predict RFP, but being an Asian predicts AFP, which provides further support that AFP reflects the traditional indigenous Asian conceptualizations of filial piety.

## Limitations and Future Directions

The work we have presented here is far from conclusive and poses questions for future research. Firstly, in our work, we found that RFP was not correlated to AFP, which is inconsistent with existing findings that found a positive correlation between the two aspects of filial piety (Yeh et al., 2013). This is likely due to the sample we have employed in our study—that is, predominantly Caucasians—while previous research had been conducted using Asian samples. As such, this finding may imply that unlike Asians, where both aspects of filial piety are present, Caucasians, due to the absence of Confucian teaching in their culture, do not necessarily develop the AFP aspect of filial piety. Further, given that within the DFPM framework, there are four possible modes of personal interaction with parents (Yeh and Bedford, 2004)—that is the balanced mode (high RFP and high AFP), the reciprocal mode (high RFP and low AFP), the authoritarian mode (low RFP and high AFP), and the non-filial mode (low RFP and low AFP)—this lack of AFP development among Caucasians would have significant implications for the



development of the different modes across cultures. Hence, further research is required to understand the development of AFP in non-Asian cultures to test the applicability of these four modes across cultures.

Secondly, one major limitation of this study is the sample we have employed in this study. In this study's sample, Asian Americans reported higher levels of individualism than Caucasian Americans, which contradicts the representations of Eastern (i.e., highly collectivistic) and Western (i.e., highly individualistic) cultures. Participants in this sample resided in the United States, which meant that for individuals who identified with being Asian, they were likely to either be first generation immigrants or second-generation Asian Americans. Studies have shown that first generation immigrants are likely to identify more with their home culture, and place greater emphasis of values originating from their home culture, more than their children (second generation) (e.g., Kunst and Sam, 2014; Stichnoth and Yeter, 2016). As such, the higher levels of individualism reported by Asians in this study could be an artifact of Asians in this study placing more emphasis of values from the host country (i.e., the United States). However, the data collected in this study limits us in ascertaining this as we did not measure the extent to which they acculturated to the host culture. In a similar vein, our findings also revealed that Asian participants reported lower frequencies of filial behaviors compared to the Caucasian participants. This could be confounded with the ease and convenience of engaging in filial behaviors. For Asian Americans participants, it is likely that their parents do not reside in the same country as them. Coupled with the fact that the data collection for this study was collected in the midst of the pandemic where travel across international borders is restricted, performing filial duties would be a challenge. As such, it is important to note that the findings presented in this study is preliminary and should be interpreted with caution. Additionally, we have only compared the differences within United states, including more points of comparisons (e.g., Caucasian Americans, Asian Americans, and Asians) would add further support to the results of this study. Future studies should include such changes to derive at more accurate conclusions about cross cultural differences in filial piety.

Lastly, as a single self-report questionnaire was used, common method variance (CMV) may be a concern. Future studies could avoid any potential CMV by using other sources of information for some of the key measures, including the perceived (vs. felt) level of filial piety of the adult children by their parents.

## CONCLUSION

This study aimed to examine the relationship between filial piety and attitude toward caring for elderly parents across cultures. Using the DFPM framework, we found that RFP does not differ across cultures while AFP does. We also found that collectivism, rather than ethnicity, predicted RFP and AFP, which consequently predicted positive attitude toward caring for elderly parents. Our work demonstrated the cross-cultural applicability of the DFPM model and have highlighted the universal and culture-specific aspects of filial piety.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Singapore Management University IRB. The patients/participants provided their written informed consent to participate in this study.

## AUTHOR CONTRIBUTIONS

AL conceptualized the research idea, collected and analyzed the data, and drafted the manuscript. CL conducted initial data analyses and contributed to the literature review. C-YC reviewed the manuscript and provided important feedback for the final draft. All authors have read, edited, approved the final manuscript, and agree to be accountable for the content of this article.

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# The Relationship Between Filial Piety and the Academic Achievement and Subjective Wellbeing of Chinese Early Adolescents: The Moderated Mediation Effect of Educational Expectations

Xiaolin Guo, Junjie Li, Yingnan Niu and Liang Luo\*

Collaborative Innovation Center of Assessment Toward Basic Education Quality, Beijing Normal University, Beijing, China

## OPEN ACCESS

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### \*Correspondence:

Liang Luo  
luoliang@bnu.edu.cn

### Specialty section:

This article was submitted to  
Cultural Psychology,  
a section of the journal  
Frontiers in Psychology

**Received:** 26 July 2021

**Accepted:** 21 February 2022

**Published:** 17 March 2022

### Citation:

Guo X, Li J, Niu Y and Luo L (2022)  
The Relationship Between Filial Piety  
and the Academic Achievement and  
Subjective Wellbeing of Chinese Early  
Adolescents: The Moderated  
Mediation Effect of Educational  
Expectations.  
Front. Psychol. 13:747296.  
doi: 10.3389/fpsyg.2022.747296

A successful student has been defined as one who not only performs well in academics but is also happy. Hence, how to promote adolescents' academic success and wellbeing is an important issue with which researchers have been concerned. A few studies have explored the relationship of filial piety to the academic achievement or life satisfaction of Chinese adolescents. However, in view of the close relationship between the two outcomes, the unique effects of filial piety on academic achievement and subjective wellbeing and their underlying mechanisms need to be further clarified. Based on a sample of 677 students in Grade 6 ( $M_{age} = 12.24$ ,  $SD = 0.36$ ) and their parents in Beijing, China, this study examines how adolescents' reciprocal filial piety (RFP) and authoritarian filial piety (AFP) are related to their academic achievement and subjective wellbeing. It also examines the mediating role of adolescents' educational expectations in these relationships, and the moderating role of parents' educational expectations in the relationships of adolescents' filial piety to educational expectations and of adolescents' educational expectations to academic achievement and subjective wellbeing. The results indicate that, when the two outcome factors are considered simultaneously, RFP is positively related to academic achievement and subjective wellbeing. In contrast, AFP is negatively related to academic achievement but not significantly related to subjective wellbeing. Moreover, adolescents' educational expectations play a mediating role in the relationships of both RFP and AFP to academic achievement and subjective wellbeing. In addition, the positive effect of adolescents' educational expectations on subjective wellbeing is stronger when mothers' educational expectations are higher, supporting the moderating role of parents' educational expectations. Our findings provide new insights into and implications for the moderated mediation mechanism underlying the links between filial piety and early adolescent development.

**Keywords:** filial piety, educational expectations, academic achievement, subjective wellbeing, moderated mediation effect, Chinese adolescents



## INTRODUCTION

Filial piety is a central concept in Confucianism that prescribes how children ought to behave and treat their parents and ancestors (Yeh and Bedford, 2003). It has long provided the moral basis for parent–child relationships and socialization patterns in China (Ho, 1987, 1994). Given that filial piety at the individual level reflects one's psychological needs and interaction patterns with parents, it has been considered to have critical implications for individual development (Yeh and Bedford, 2003; Bedford and Yeh, 2019). During adolescence, academic success and happiness are regarded as two key indicators for defining a successful adolescent student (OECD, 2017). Hence, it is important to examine the relationship and mechanism between adolescents' filial piety and their academic achievement and subjective wellbeing. This study aims to investigate the relationships of adolescents' filial piety to academic achievement and subjective wellbeing and to test the mediating role of parents' educational expectations in these relationships among a sample of Chinese early adolescents.

### Filial Piety, Academic Achievement, and Subjective Wellbeing

Filial piety is currently defined as a contextualized personality construct that is represented by a pair of culturally sensitive psychological schemas for interaction with parents (Bedford and Yeh, 2019, 2021). Reciprocal filial piety (RFP) is based on genuine affection arising from long-term equal and intimate parent–child interactions. Children with RFP tend to respect and support their parents spiritually and to take care of their parents as they age. Such filial belief is due to children's gratitude for their parents' investment and sacrifice. In contrast, authoritarian filial piety (AFP) advocates obedience to authority and role obligations. Children with AFP tend to comply with their parents' wishes despite disagreeing with them, and they aim to honor the family name. Such filial belief is motivated by the desire for collective identification (Yeh, 2003, 2006; Bedford and Yeh, 2019, 2021). The two aspects of filial piety coexist within a person and function simultaneously on the person. Previous research has shown that RFP and AFP can sometimes promote the same outcome, while at other times, they might result in different outcomes (Yeh, 2003; Yeh and Bedford, 2003; Bedford and Yeh, 2019).

The implications of filial piety for Chinese adolescents' academic success have been a concern of some researchers (Chow and Chu, 2007; Hui et al., 2011; Chen and Wong, 2014; Chen, 2016; Zhou et al., 2020). Chinese culture advocates that individual development and performance are intended to achieve not only personal but also familial success (Huang and Gove, 2015). Family obligation is highly related to Chinese adolescents' academic motivation (Hui et al., 2011). Academic achievement is seen by Chinese students as a primary way of honoring their families and repaying their parents for their efforts and sacrifices (Ho, 1986; Chow and Chu, 2007; Tao and Hong, 2014; Fwu et al., 2016). From this perspective, the

gratitude for parents' sacrifice embedded in RFP and the sense of duty to maintain the family reputation embedded in AFP should both motivate students to strive for academic excellence and achieve better academic performance. However, because AFP emphasizes self-suppression and obedience to parental demands (Bedford and Yeh, 2019), students with AFP tend to have performance-based goal orientations rather than a focus on acquiring new knowledge and skills, and their academic achievement is not motivated by their own learning beliefs (Chen and Ho, 2012; Chen, 2016). Thus, AFP may lead students to suffer from a lack of intrinsic motivation to engage in learning activities and thereby to fall behind in their academic achievements. Based on data from junior high school students in Eastern China and university students in Hong Kong (China), researchers have found that RFP was positively related to academic achievement; while AFP was negatively related to academic achievement (Chen and Wong, 2014; Chen, 2016; Zhou et al., 2020), although the strength of the relationships varied among the studies.

Furthermore, as filial piety implies underlying mechanisms in parent–child relationships (Bedford and Yeh, 2019, 2021), it may relate to adolescent wellbeing. Since RFP and AFP reflect a horizontal and vertical relationship, respectively, between parents and children, RFP was initially thought to have an overall beneficial effect and AFP have an overall harmful effect on individual wellbeing (Yeh, 2003). However, several studies found that AFP could also have positive implications for psychological adjustment, such as reducing parent–child conflict and enhancing intergenerational support (Yeh and Bedford, 2004; Yeh et al., 2013). AFP could fulfill individual psychological needs for social belonging and collective identity, although it cannot fulfill the need for relatedness (Bedford and Yeh, 2019). A few studies have consistently demonstrated a positive relationship between RFP and life satisfaction among Chinese adolescents (Leung et al., 2010; Chen et al., 2016; Yan and Chen, 2018; Jen et al., 2019; Sun et al., 2019; Leung and Shek, 2020; Wu and Chen, 2020). However, inconsistent results have been reported on the relationship between Chinese adolescents' AFP and life satisfaction, with some studies demonstrating a positive effect (Leung et al., 2010; Yan and Chen, 2018; Leung and Shek, 2020; Wu and Chen, 2020) and others demonstrating a negative or no effect (Jen et al., 2019; Sun et al., 2019).

### Mediating Effect of Adolescents' Educational Expectations

The consistent results on the relatively stable relationship between RFP and adolescent development and the mixed results on the relationship between AFP and adolescent development both call for research on the underlying mechanism. Although a few studies have explored the mediating mechanism from adolescents' filial piety to their academic achievement or subjective wellbeing, most of them have focused on the role of adolescents' goals and self-schemata about capacities, such as mindset, goal orientations, autonomy, and emotional intelligence (Chen et al., 2018; Jen et al., 2019; Sun et al., 2019; Wu and Chen, 2020; Zhou et al., 2020). To the best of

our knowledge, little research has focused on adolescents' expectancies for success, which could be a more proximal determinant than goals and self-schemata for adolescent academic and psychological outcomes.

According to situated expectancy-value theory (Eccles and Wigfield, 2020), achievement-related outcomes are most directly influenced by individuals' expectancies of success (e.g., educational expectations), that is, individuals' beliefs about how well they will do on upcoming tasks. Moreover, this theory focuses on the socialization processes that lead to individual differences in expectancies, and it underscores the role of the cultural milieu. That is, the cultural milieu influences individuals' expectancies by shaping their self-schemata, thereby contributing to achievement-related outcomes. Accordingly, adolescents' filial piety may relate to academic achievement and subjective wellbeing through their own educational expectations.

Educational expectations are realistic beliefs regarding future academic outcomes, such as the highest level of educational attainment (Yamamoto and Holloway, 2010; Wang and Benner, 2014; Ren et al., 2021). Adolescents' educational expectations are usually measured by asking them which educational level they expect to complete (OECD, 2019; Ren et al., 2021). The high educational expectations of adolescents have been demonstrated to be important factors for their academic and psychological adjustment (Abu-Hilal, 2000; Jacob and Wilder, 2011; Phillips, 2012; Chai et al., 2020). For example, the results of the Programme for International Students Assessment (PISA) 2015 showed that 15-year-old students' expectation to complete a university education was strongly related to their life satisfaction; moreover, top-performing students were found to be 3.5 times more likely to hold the expectation that they would earn a university degree than were low performers (OECD, 2017). A similar trend was found in Beijing, Shanghai, Jiangsu, and Guangdong, China, which participated in the PISA 2015 (OECD, 2017). Several studies involving Chinese adolescents have also reported the positive effects of adolescents' educational expectations on their academic achievement and subjective wellbeing (Long and Pang, 2016; OECD, 2017; Guo et al., 2018; Lv et al., 2018; Chai et al., 2020; Wu et al., 2020; Ren et al., 2021).

Cross-cultural studies have shown that Asian students, including Chinese students, tend to hold higher expectations for future education than do their North American and European counterparts (Hao and Bonstead-Bruns, 1998; Goyette and Xie, 1999; OECD, 2019). Moreover, the relatively higher educational expectations of Asian students are believed to be related to Confucian values in Asian societies (Hong and Salili, 2000; Li and Xie, 2020). In addition to the emphasis on educational effort and attainment, the emphasis on intergenerational interdependence in Confucian values has been regarded as having an important function in promoting children's educational expectations (Goyette and Xie, 1999; Hsin and Xie, 2014; Tao, 2016; Li and Xie, 2020). That is, just as parents should raise and educate their children, children have the obligation to repay their parents and care for them as they age. Academic success is regarded as an essential way of honoring family (Kim and Park, 2006; Pomerantz

et al., 2011), and the financial benefits from a tertiary education can provide better material support for the family. Accordingly, adolescents with higher filial piety may have stronger motivations to attain higher educational levels. Previous studies have shown positive relationships of filial piety with academic motivation and achievement goal orientations among Chinese adolescents (Chow and Chu, 2007; Hui et al., 2011; Chen, 2016). However, since students with AFP are academically motivated by external incentives or pressure (avoiding punishment and obeying parents' demands; Bedford and Yeh, 2019; Ryan and Deci, 2020), they may hold negative academic self-attitudes, although they appear to make an effort in school learning (Goodman et al., 2011; Li, 2014). Accordingly, AFP may also have a negative effect on adolescents' educational expectations.

## Moderating Effect of Parents' Educational Expectations

From the perspective of situated expectancy-value theory, parents play a crucial role in the processes of children's socialization of expectancies (Eccles and Wigfield, 2020). Children usually take their parents' educational expectations for them as an important reference for their own expectations for future education (Wu et al., 2018; Guo et al., 2021b). Moreover, parents' high educational expectations are highly associated with parents' emphasis on the importance of education and deep involvement in children's academic activities (Yamamoto and Holloway, 2010), which function as an "environmental cue" and indirectly boost children's emphasis on academic achievement (Wu et al., 2018). Thus, when parents hold high educational expectations for their children, children are more likely to take academic success as a way of honoring and returning respect to their parents, and, under this circumstance, children with high filial piety may hold higher levels of educational expectations. Some indirect evidence shows that parents' educational expectations and positive parent-adolescent relationships interact to affect adolescents' educational expectations (Wu et al., 2018); that is, adolescents who perceive warm relationships with parents have higher educational expectations, especially when their parents hold high educational expectations. Therefore, a high level of parents' educational expectations could enhance the effect of children's filial piety on their educational expectations.

Parents' educational expectations may also buffer the relationship between adolescents' educational expectations and developmental outcomes. According to person-environment fit theory (Edwards et al., 1998; Sagiv and Schwartz, 2000; Etzel and Nagy, 2016), an individual's motivation, behavior, and wellbeing are influenced by the fit between the characteristics of the individual and the environment, with the optimal adjustment occurring when there is a match. Parents' high educational expectations reflect the fact that parents value learning and achievement, have positive attitudes toward their children's ability, and provide more academic support for their children (Yamamoto and Holloway, 2010; Long and Pang, 2016; Li et al., 2019). In such family environments, the academic

and psychological demands of adolescents with high self-expectations can be satisfied; therefore, the positive effects of adolescents' educational expectations on academic and psychological outcomes can be enhanced. For example, Hao and Bonstead-Bruns (1998) found that shared expectations between parents and adolescents had a positive impact on adolescents' academic achievement, indicating that adolescents were more likely to earn high grades when both the adolescents and their parents held high expectations for the adolescents' future education. Similarly, Almroth et al. (2018) found that the odds of adolescents showing externalizing behaviors decreased dramatically when both the adolescents and their parents expected a university education compared with either the adolescents or the parents having expectations that were lower than a university education. Although these two studies were not conducted with Chinese adolescents, the positive role of parents' educational expectations in adolescents' academic and psychological outcomes that existed in these studies has also been found in Chinese society (Long and Pang, 2016; Guo et al., 2018; Lv et al., 2018; Leung and Shek, 2019; Lu et al., 2020; Ren et al., 2021). Moreover, the suitability has been demonstrated of person-environment fit theory for Chinese society (Jiang and Jiang, 2015; Wang and Wang, 2018; Liu et al., 2019).

## Current Study

In summary, although a few studies have explored the relationship of filial piety to the academic achievement or life satisfaction of Chinese adolescents, given the positive relationship between academic achievement and subjective wellbeing (Bücker et al., 2018; Wu et al., 2020), it is necessary to examine whether filial piety still has an effect on academic achievement and on subjective wellbeing while controlling for its effect on the other outcome factor. Moreover, the possible moderated mediation effect of educational expectations on these relationships needs to be examined. The purpose of this study is to clarify the effects of adolescents' filial piety on their academic achievement and subjective wellbeing by considering the two outcomes simultaneously, to examine the mediating role of adolescents' educational expectations in the above relationships, and to then explore the moderating role of parents' educational expectations in the relationships between adolescents' filial piety and educational expectations, and between adolescents' educational expectations and their academic achievement and subjective wellbeing. By addressing these issues, this study may further verify the significance of filial piety for adolescent development and contribute to a better understanding of how and when filial piety influences adolescent development. The hypothesized model is presented in **Figure 1**. Specifically, this study hypothesizes the following:

RFP is positively related to academic achievement (H1a) and subjective wellbeing (H2a) when the two outcomes are considered simultaneously.

AFP is negatively related to academic achievement (H1b) but positively related to subjective wellbeing (H2b) when the two outcomes are considered simultaneously.

Adolescents' educational expectations mediate the relationship between RFP and both academic achievement (H3a) and subjective wellbeing (H4a), and they mediate the relationship between AFP and both academic achievement (H3b) and subjective wellbeing (H4b).

Parents' educational expectations positively moderate the effect of RFP on adolescents' educational expectations (H5a) and of AFP on adolescents' educational expectations (H5b).

Parents' educational expectations positively moderate the effect of adolescents' educational expectations on their academic achievement (H6a) and subjective wellbeing (H6b).

## MATERIALS AND METHODS

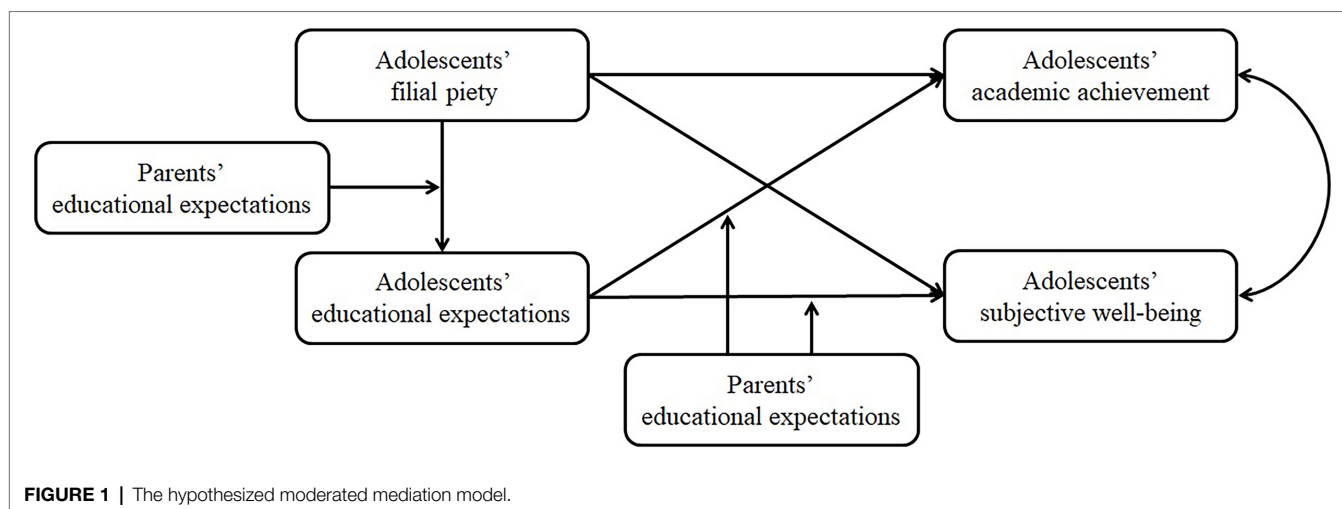
### Participants and Procedure

The participants were 677 sixth graders and their parents, who were recruited from five primary schools in Beijing, China. School approval and informed consent from the parents were obtained prior to the survey. The students completed standardized academic achievement tests in reading and mathematics and a questionnaire administered in their regular classrooms by two trained research assistants. The academic achievement tests and the questionnaire were administered in three separate 45-min sessions. The mothers and fathers completed questionnaires individually at home. A total of 26 students had missing responses on academic achievement or educational expectations, and of the remaining students, 49 mothers and 75 fathers did not return the questionnaires. Thus, the final sample included 651 students and their parents (603 mothers and 577 fathers). Of the 651 students, 348 (53.5%) were boys, and 303 (46.5%) were girls; the mean age was 12.24 years ( $SD=0.36$ ). The mean ages of the mothers and fathers were 39.66 years ( $SD=3.99$ ) and 41.98 years ( $SD=4.66$ ), respectively. Of the 603 mothers, 19.9% had not finished high school, 53.8% had a high school diploma, 22.4% had a 4-year college degree, and 3.9% had an education beyond the 4-year college level. Of the 577 fathers, 18.2% had not finished high school, 47.6% had a high school diploma, 23.7% had a 4-year college degree, and 10.5% had an education beyond the 4-year college level. This study was approved by the Institutional Review Board of the Collaborative Innovation Center of Assessment toward Basic Education Quality, Beijing Normal University. Given that the measures used in this study have been shown to have acceptable reliability and validity in Chinese adolescent samples, no pilot study was undertaken.

### Measures

#### Filial Piety

Students' filial piety was measured by the Dual Filial Piety Scale-Chinese version (DFPS; Yeh and Bedford, 2003). The original scale includes 16 items, and each item is answered on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). For this study, the scale was modified for use with Chinese mainland students by removing two items ("Hurry home upon the death of a parent, regardless of how far away



you live” and “To continue the family line, one must have at least a son”). Of the remaining 14 items, 7 measured RFP, and 7 measured AFP. In this study, Cronbach’s  $\alpha$  was 0.85 and 0.84 for RFP and AFP, respectively.

### Academic Achievement

Academic achievement was measured using standardized reading and math achievement tests, which were developed by the National Children’s Study of China (NCSC) project (Dong and Lin, 2011). For reading achievement, there were 33 multiple-choice items, and for math achievement, there were 26 multiple-choice items and 6 constructed-response items. Higher scores represented higher academic achievement.

### Subjective Wellbeing

Subjective wellbeing was conceptualized as life satisfaction, positive affect, and negative affect. Life satisfaction was measured by a single item (Overall, how satisfied are you with your present life?) answered on a 7-point scale ranging from 1 (*strongly dissatisfied*) to 7 (*strongly satisfied*; Huebner et al., 2006). Positive affect and negative affect were measured by the Chinese Revision of the Positive and Negative Affect Scale (Qiu et al., 2008) originally developed by Watson et al. (1988). The revised scale included 18 descriptive terms for positive affect and negative affect experience (such as excited and afraid). The participants were asked to report the affect they experienced over the last 2 weeks on a 5-point scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). In this study, Cronbach’s  $\alpha$  was 0.89 and 0.90 for positive affect and negative affect, respectively.

### Educational Expectations

The students reported their educational expectations (“As things stand now, how far in school do you think you will get?”) on a 6-point scale from 1 (*primary school or below*) to 6 (*master’s degree or above*). The mothers and fathers reported their educational expectations for their children (“As things stand now, how far in school do you think your child will get?”) using the same response categories.

### Demographics

Demographic information was obtained from the mothers or fathers and included the student’s gender, family income, and the mother’s and father’s educational levels.

### Analysis Plan

First, a descriptive statistical analysis and a Pearson bivariate correlation analysis among all variables were conducted by IBM SPSS Statistics 19.0. Second, structural equation modeling (SEM) was performed by Mplus 7.11, which was used to examine the relationships between adolescents’ filial piety and their academic achievement and subjective wellbeing, the mediating effect of adolescents’ educational expectations on these relationships, and the hypothesized moderated mediation model. All continuous variables were standardized before being entered into the models for statistical comparability and the interpretability of scores. Academic achievement was treated as a latent variable, with the reading and math test scores serving as indicators. Subjective wellbeing was also treated as a latent variable, with life satisfaction, positive affect, and negative affect serving as indicators. All other variables were treated as manifest variables. RFP and AFP, and academic achievement and subjective wellbeing were allowed to be correlated in the model. When the mediating role was tested of adolescents’ educational expectations, bias-corrected bootstrapping with 5,000 samples and 95% confidence intervals (Cis) was applied to examine the significance of the mediating effect. Moreover, the effect size for the indirect effect was calculated by the ratio of the indirect effect to the total effect (Wen and Fan, 2015). When testing the moderating effect of parents’ educational expectations, adolescents’ filial piety and parents’ (fathers or mothers’) educational expectations were multiplied to create an interaction term for predicting adolescents’ educational expectations, and adolescents’ and parents’ (fathers or mothers’) educational expectations were multiplied to create an interaction term for predicting academic achievement and subjective wellbeing. The simple slope test was used to interpret the interaction effect. Adolescents’ gender and family income



and parents' educational levels were controlled in all models. Missing data were handled by using full information maximum likelihood (FIML) estimation. According to Hu and Bentler (1999), the model is acceptable when the confirmatory fit index (CFI) > 0.90, Tucker–Lewis index (TLI) > 0.90, and root mean square error of approximation (RMSEA) < 0.08.

## RESULTS

### Preliminary Analysis

The descriptive statistics and zero-order correlations among all study variables are presented in **Table 1**. Adolescents' RFP was positively associated with their and their parents' reports of educational expectations, academic achievement, life satisfaction, and positive affect, and it was negatively associated with negative affect. Furthermore, adolescents' AFP was negatively associated with parents' educational expectations and academic achievement and positively associated with negative affect.

### Direct Effects

A direct effect model was tested with only direct paths from RFP and AFP to academic achievement and subjective wellbeing. The model showed an excellent fit to the data [ $\chi^2$  (29) = 97.39, CFI = 0.95, TLI = 0.93, RMSEA = 0.04]. Adolescents' RFP and AFP were positively correlated with each other ( $r = 0.41$ ,  $p < 0.001$ ), while their academic achievement and subjective wellbeing were not significantly correlated with each other ( $r = -0.04$ ,  $p < 0.05$ ). Adolescents' RFP positively predicted academic achievement ( $\beta = 0.29$ ,  $p < 0.001$ ) and subjective wellbeing ( $\beta = 0.54$ ,  $p < 0.001$ ). In addition, adolescents' AFP negatively predicted academic achievement ( $\beta = -0.37$ ,  $p < 0.001$ ), but did not significantly predict subjective wellbeing ( $\beta = 0.02$ ,  $p > 0.05$ ).

### Mediating Effects

A mediation model was tested with adolescents' educational expectations as a mediator in the relationships between filial piety and academic achievement and subjective wellbeing (see **Figure 2**). The model showed an excellent fit to the data [ $\chi^2$  (32) = 117.41, CFI = 0.94, TLI = 0.91, RMSEA = 0.04]. As shown in **Figure 2**, adolescents' RFP positively predicted their educational expectations, while their AFP negatively predicted their educational expectations. In turn, adolescents' educational expectations positively predicted their academic achievement and subjective wellbeing.

The results of the bootstrapping analyses and the effect size for the indirect and direct effects are presented in **Table 2**. A 95% CI that did not include zero indicated significant mediation. Accordingly, all four indirect effects *via* adolescents' educational expectations were significant, although the effect size was not very large.

### Moderated Mediation Effects

The moderating role of parents' educational expectations in the relationship between adolescents' filial piety and their educational expectations was examined first. Moreover, fathers'

and mothers' educational expectations were tested separately. For the moderating role of fathers' educational expectations, the model showed a good fit to the data [ $\chi^2$  (39) = 146.90, CFI = 0.91, TLI = 0.90, RMSEA = 0.07]. Fathers' educational expectations positively predicted adolescents' educational expectations ( $\beta = 0.27$ ,  $p < 0.001$ ), but neither the interaction of fathers' educational expectations and adolescents' RFP ( $\beta = 0.01$ ,  $p > 0.05$ ) nor the interaction of fathers' educational expectations and adolescents' AFP ( $\beta = 0.04$ ,  $p > 0.05$ ) were significant.

For the moderating role of mothers' educational expectations, the model showed a good fit to the data [ $\chi^2$  (39) = 158.32, CFI = 0.90, TLI = 0.89, RMSEA = 0.07]. Mothers' educational expectations positively predicted adolescents' educational expectations ( $\beta = 0.34$ ,  $p < 0.001$ ), but neither the interaction of mothers' educational expectations and adolescents' RFP ( $\beta = 0.07$ ,  $p > 0.05$ ) nor the interaction of mothers' educational expectations and adolescents' AFP ( $\beta = -0.04$ ,  $p > 0.05$ ) were significant.

Then, the moderating role of parents' educational expectations in the relationship between adolescents' educational expectations and their academic achievement and subjective wellbeing was examined. For the moderating role of fathers' educational expectations, the model showed a good fit to the data [ $\chi^2$  (44) = 180.64, CFI = 0.91, TLI = 0.90, RMSEA = 0.06]. Fathers' educational expectations positively predicted adolescents' academic achievement ( $\beta = 0.30$ ,  $p < 0.001$ ) but did not significantly predict subjective wellbeing ( $\beta = 0.04$ ,  $p > 0.05$ ). In addition, the interaction of fathers' and adolescents' educational expectations did not significantly predict academic achievement ( $\beta = -0.04$ ,  $p > 0.05$ ) or subjective wellbeing ( $\beta = 0.08$ ,  $p = 0.09$ ).

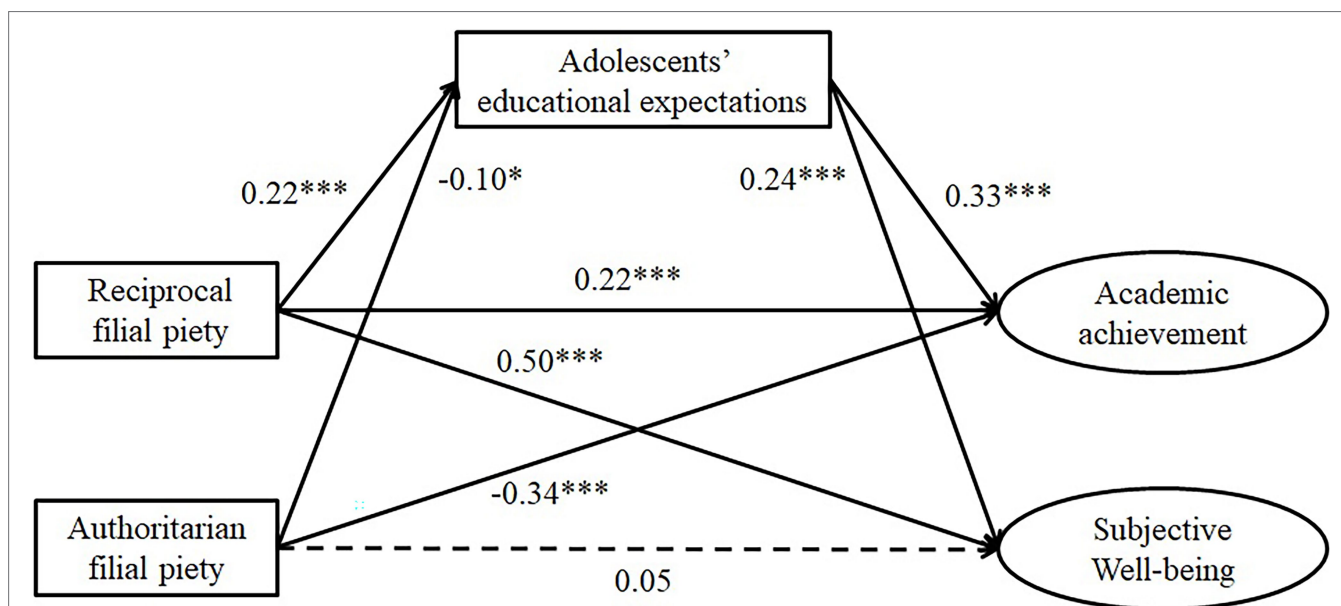
For the moderating role of mothers' educational expectations, the model showed a good fit to the data [ $\chi^2$  (44) = 204.78, CFI = 0.91, TLI = 0.90, RMSEA = 0.06]. Mothers' educational expectations positively predicted adolescents' academic achievement ( $\beta = 0.32$ ,  $p < 0.001$ ) but did not significantly predict subjective wellbeing ( $\beta = -0.01$ ,  $p > 0.05$ ). In addition, the interaction of mothers' and adolescents' educational expectations did not significantly predict academic achievement ( $\beta = -0.07$ ,  $p > 0.05$ ) but positively predicted subjective wellbeing ( $\beta = 0.09$ ,  $p < 0.05$ ). The results of a simple slope test (see **Figure 3**) showed that when mothers' educational expectations were high (+1 SD), adolescents' educational expectations positively predicted their subjective wellbeing and were stronger (*simple slope* = 0.252,  $SE = 0.046$ ,  $p < 0.001$ ), and when mothers' educational expectations were low (−1 SD), adolescents' educational expectations positively predicted their subjective wellbeing but were weaker (*simple slope* = 0.151,  $SE = 0.040$ ,  $p < 0.001$ ).

Furthermore, the moderating role of mothers' educational expectations on the indirect effect between filial piety and subjective wellbeing *via* adolescents' educational expectations was examined. The results of the bootstrapping analyses are presented in **Table 3**. The indirect effect of RFP on subjective wellbeing was significant both at high (+1 SD) and low (−1 SD) levels of mothers' educational expectations, but the effect was weaker at the low than at high levels. Similarly, the indirect effect of AFP on subjective wellbeing was significant at both the high and low levels of mothers' educational expectations, but the effect was weaker at the low than it was at the high levels.

**TABLE 1** | Descriptive statistics and intercorrelations for all study variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Reciprocity filial piety	–												
2. Authoritarian filial piety	0.42**	–											
3. Adolescent's educational expectations	0.17**	–0.02	–										
4. Mother's educational expectations	0.14**	–0.09*	0.44**	–									
5. Father's educational expectations	0.14**	–0.10*	0.38**	0.74**	–								
6. Reading achievement	0.09*	–0.28***	0.36***	0.40***	0.38***	–							
7. Math achievement	0.10**	–0.16***	0.38***	0.40***	0.40***	0.60***	–						
8. Life satisfaction	0.41**	0.20**	0.16**	0.06	0.09*	–0.03	0.03	–					
9. Positive affect	0.38**	0.20**	0.27**	0.12**	0.13**	0.04	0.12**	0.48**	–				
10. Negative affect	–0.17**	0.00	–0.19**	–0.10*	–0.10*	–0.19***	–0.22***	–0.38**	–0.32**	–			
11. Gender	–0.02	–0.15**	0.03	0.04	0.04	0.13**	–0.03	–0.12**	–0.09*	0.02	–		
12. Income	0.03	–0.06	0.21**	0.31**	0.29**	0.18***	0.20***	0.04	0.04	–0.03	–0.01	–	
13. Mother's education	0.01	–0.08	0.29**	0.34**	0.30**	0.20***	0.18***	0.05	0.09*	–0.01	0.02	0.40**	–
14. Father's education	0.02	–0.10*	0.32**	0.39**	0.36**	0.26***	0.23***	–0.01	0.03	–0.03	0.03	0.45**	0.72**

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



**FIGURE 2 |** Standardized coefficients for the mediating role of adolescents' educational expectations in the relationships between filial piety and academic achievement and subjective wellbeing.

**TABLE 2 |** Testing mediation using bootstrapping analyses.

Indirect paths	Indirect effect	95%CIs	Effect size
Reciprocal filial piety → Adolescents' educational expectations → Academic achievement	0.057***	0.034 ~ 0.089	0.249
Reciprocal filial piety → Adolescents' educational expectations → Subjective wellbeing	0.039**	0.021 ~ 0.069	0.096
Authoritarian filial piety → Adolescents' educational expectations → Academic achievement	-0.027*	-0.051 ~ -0.007	0.089
Authoritarian filial piety → Adolescents' educational expectations → Subjective wellbeing	-0.018*	-0.037 ~ -0.006	— <sup>a</sup>

Results presented the unstandardized coefficient. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

<sup>a</sup>The effect size for the indirect effect from authoritarian filial piety to subjective wellbeing was inapplicable since the indirect effect (-) and the direct effect (+) have opposite signs (Wen and Fan, 2015).

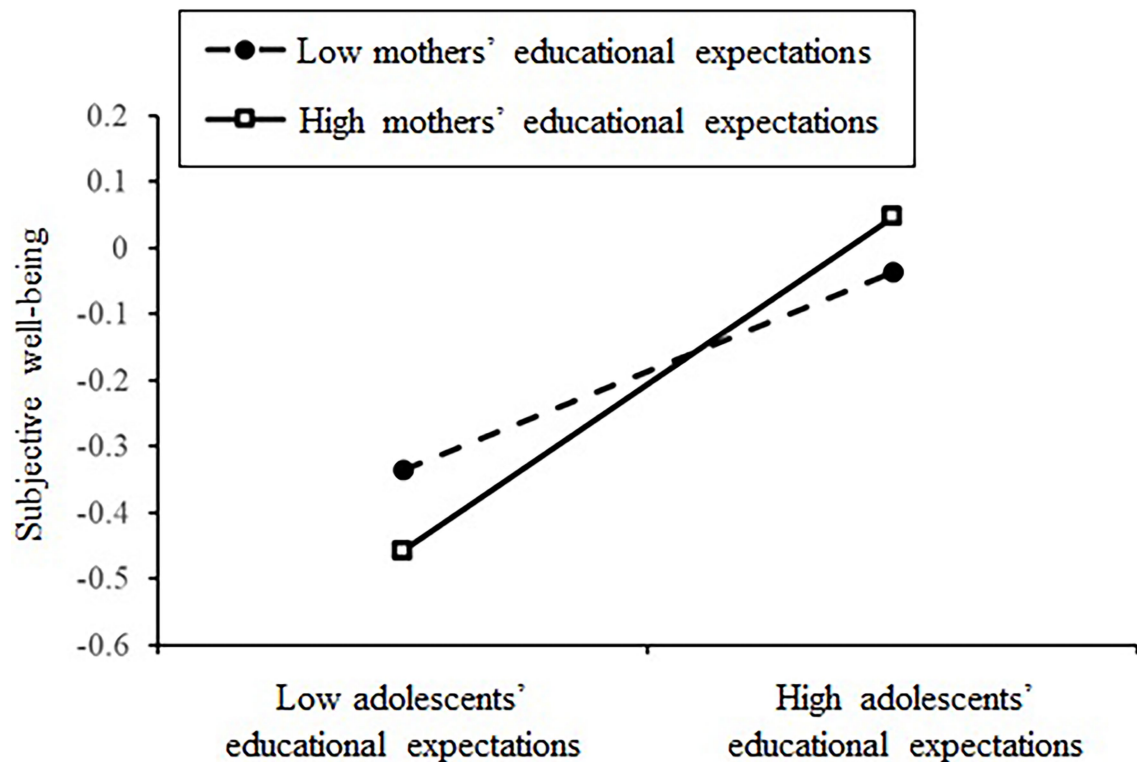
## DISCUSSION

This study investigated how Chinese early adolescents' filial piety is related to their academic achievement and subjective wellbeing, and it examined the mediating role of adolescents' educational expectations in these relationships and the

moderating role of parents' educational expectations in the relationship of adolescents' educational expectations to academic achievement and subjective wellbeing. The findings support the associations of filial piety with academic achievement and subjective wellbeing. In addition, adolescents' educational expectations play a mediating role in the relationship between filial piety and adolescents' development. Furthermore, the study found that parental educational expectations moderate the relationship between adolescents' educational expectations and their subjective wellbeing.

The first main finding is the effects of filial piety on adolescents' academic achievement and subjective wellbeing. As expected, when the two outcomes were considered simultaneously, RFP was positively related to adolescents' academic achievement and subjective wellbeing, supporting H1a and H2a and consistent with previous findings (Chen and Wong, 2014; Chen, 2016; Sun et al., 2019; Leung and Shek, 2020; Zhou et al., 2020). The spontaneous love and gratitude for parents implied in RFP promote students' initiative and autonomous learning, which contribute to better academic achievement (Chen and Wong, 2014; Chen, 2016). Meanwhile, adolescents with RFP usually have a positive relationship with their parents that can satisfy their needs for interpersonal relatedness (Tay and Diener, 2011; Bedford and Yeh, 2019, 2021), which leads to a higher level of happiness in adolescents. The results on the positive effect of RFP on academic and psychological outcomes in Chinese culture are also in line with research on parent-child interactions in other cultural settings (Steinberg and Silk, 2002; Rutten et al., 2016), which demonstrates the importance of affection and emotional support for adolescent development.

Moreover, when the two outcomes were both considered, AFP was found to be negatively related to academic achievement, supporting H1b and in line with previous findings (Chen and



**FIGURE 3 |** Moderating role of mothers' educational expectations in the relationship between adolescents' educational expectations and subjective wellbeing.

**TABLE 3 |** Testing moderated mediation using bootstrapping analyses.

Indirect paths	Indirect effect	95%CIs
High mothers' educational expectations (+1 SD)		
Reciprocal filial piety → Adolescents' educational expectations → Subjective wellbeing	0.056**	0.027 ~ 0.099
Authoritarian filial piety → Adolescents' educational expectations → Subjective wellbeing	-0.023*	-0.049 ~ -0.006
Low mothers' educational expectations (-1 SD)		
Reciprocal filial piety → Adolescents' educational expectations → Subjective wellbeing	0.034*	0.016 ~ 0.060
Authoritarian filial piety → Adolescents' educational expectations → Subjective wellbeing	-0.014*	-0.030 ~ -0.003

Results presented the unstandardized coefficient. \* $p < 0.05$ , \*\* $p < 0.01$ .

Wong, 2014; Chen, 2016). The findings indicated that the negative effect of AFP on academic success was more prominent than the positive effect in the context of modern Chinese society. Bringing honor to the family is still recognized as an important attribute of filial piety in contemporary society (Yeh et al., 2013), while adolescents' motivation aroused by it is

passive and extrinsic, which does not have a long-lasting positive effect on academic achievement (Legault et al., 2006; Chen and Ho, 2012). Moreover, due to the social and economic changes in China, the importance is decreasing of passive submission and obedience to parents, and the emphasis is strengthening on adolescent autonomous development (Bush et al., 2002; Yeh, 2007). Thus, the self-suppression and self-sacrifice embedded in AFP are not adapted to current conditions; thereby, its harmful effects are particularly significant. Our findings indicate that the authoritarian elements of filial piety have certain negative implications for adolescent academic development from a contemporary cultural perspective.

However, AFP was found to be not significantly related to adolescents' subjective wellbeing; thus, H2b is not supported. The different dimensions of AFP may very likely have different effects on adolescent psychological development (Guo et al., 2021a). On the one hand, AFP is associated with responsibility and could satisfy the need for a collective identity toward society (Bedford and Yeh, 2021). Especially for adolescents who are in an important stage of identity formation, the endorsement of obedience norms could enable them to gain positive feedback from others, such as other family members, neighbors, and teachers. Therefore, AFP has a positive effect on adolescent psychological development. For example, the correlation results in the present study showed positive associations of AFP with life satisfaction and positive affect. However, given that the status is unequal between parents and children who obey without question, AFP hinders the development of individuating autonomy



(Pan et al., 2013; Yeh, 2014) and thus has a negative effect on adolescent psychological development, such as low self-esteem and depressed mood (Yeh, 2006; Bynum and Kotchick, 2006; Rutten et al., 2016). Accordingly, the expected positive effect of AFP on subjective wellbeing may be offset by its negative effect. This factor might also explain the mixed findings on AFP and life satisfaction. That is, in some cases, the beneficial aspect of AFP for life satisfaction is dominant, while in other cases, the harmful aspect becomes more apparent. Future research should aim to detect individual or environmental variables that can buffer the relationship between AFP and life satisfaction or other forms of subjective wellbeing. Our findings indicate that although horizontal filial relations are gradually unaccepted, AFP may still have positive implications for adolescent wellbeing to a certain degree.

The second main finding is that the relationships of AFP and RFP to academic achievement and subjective wellbeing were all mediated by adolescents' educational expectations, supporting H3a, H4a, H3b, and H4b. The results demonstrate that educational expectations play an important role in the process in which individuals' self-schemata influence their achievement-related outcomes, supporting situated expectancy-value theory (Eccles and Wigfield, 2020). The results show that RFP is positively associated with adolescents' educational expectations. RFP emphasizes psychological fulfillment in many ways, such as autonomy and relatedness. All of these factors promote adolescents' competence and self-worth, which are critical for the development of adolescents' self-esteem (Yan and Chen, 2018). For example, a previous study found that RFP is positively related to adolescents' self-esteem (Jen et al., 2019). Higher self-esteem predicts positive expectations about adolescents' future (Kim and Kim, 2013). In addition, adolescents with strong RFP have emotional safety and affective bonding with their parents (Bedford and Yeh, 2021); hence, they tend to repay their parents with genuine affection and thus have higher expectations about their future academic achievements, which are regarded as a primary way of repaying parents (Ho, 1986; Fwu et al., 2016). All these factors shape the strong relationship between RFP and educational expectations, which in turn contributes to better academic achievement and subjective wellbeing.

However, the situation is different for AFP. AFP is negatively related to adolescents' educational expectations. One possible reason is that honoring the family is an external motivator for adolescents to pursue academic success, and students with external regulation motivation are more likely to have external loci of control and to lack autonomy (Guay et al., 2000; Ryan and Deci, 2020). Both of these factors have been found to be related to low expectations of success (Coleman and DeLeire, 2003; Kenny et al., 2010). Moreover, AFP emphasizes prioritizing others' wishes over personal wishes. Continuous self-suppression and self-sacrifice result in negative self-cognition, such as low self-esteem and self-efficacy (Yeh, 2006; Wong et al., 2010), and negative self-cognition leads to negative expectations about the future (Patton et al., 2004; Ma et al., 2018). This result further provides a mechanistic explanation for the negative relationship between AFP and academic performance. Although previous studies provide some evidence that AFP may contribute

to student academic motivation and performance-based goals (Chow and Chu, 2007; Chen, 2016), the present study found that students with AFP do not set high educational goals for themselves, nor do they have strong expectations for success. Accordingly, AFP showed a negative relationship with adolescent academic achievement.

Parental educational expectations did not enhance the relationship between filial piety and adolescents' educational expectations, not supporting H5a and H5b. To the best of our knowledge, this is the first study to explore the moderating effect of parental expectations on the above relationships. One possible reason is that education is highly valued in China because it is considered to contribute to upward mobility, better jobs and incomes, and even better marriage prospects (Wu and Treiman, 2007; Huang and Gove, 2015). Accordingly, Chinese parents attach importance to education and generally have high educational expectations (Li, 2001; Zou et al., 2013; Guo, 2014). Therefore, the variation in parents' educational expectations may be too small to trigger the moderating effect. Similarly, another possible reason is that, due to the emphasis on education, Chinese adolescents also have high expectations for their own future education (Archer and Francis, 2006). Although parental educational expectations could enhance the association between filial piety and adolescents' educational expectations to some degree, there may be a ceiling effect on adolescents' educational expectations, masking the moderating effect that would otherwise have existed. In addition, it is likely that parents' educational expectations affect children's expectations more directly other than *via* a moderating mechanism. Previous research has revealed a strong intergenerational transmission of educational expectations, even after controlling for several potential indirect mechanisms (Wu et al., 2018; Guo et al., 2021b). This unexpected finding indicated that the moderating effect of parental educational expectations on the relationship between filial piety and adolescents' educational expectations seems more complicated than expected and requires further investigation.

However, mothers' educational expectations could moderate the relationship between adolescents' educational expectations and their subjective wellbeing, although mothers' educational expectations were not directly related to adolescents' subjective wellbeing. Specifically, the positive relationship between adolescents' educational expectations and subjective wellbeing was stronger under a higher level of mothers' educational expectations, supporting H6b, and this result is consistent with person-environment fit theory (Sagiv and Schwartz, 2000). Fathers' educational expectations also showed a marginally significant moderating effect on the relationship between adolescents' educational expectations and their subjective wellbeing. The weaker effect is probably due to the lower involvement of fathers in the care of children (Bianchi and Milkie, 2010). High parental expectations indicate that parents value their children's academic achievement and have positive evaluations of their children's capacity (Yamamoto and Holloway, 2010). Thus, adolescents receiving higher parental educational expectations may obtain more approval and support and even have higher self-efficacy, which may contribute to better mental

health. This suggestion is consistent with previous findings (Almroth et al., 2018). Research on person–organization value fit also found that parent–child value congruence was associated with children's better wellbeing (Flurry et al., 2021).

In addition, although this study found a significant relationship between parental educational expectations and academic achievement, which is consistent with previous findings (Pinquart and Ebeling, 2020), there was no significant moderating effect of parental educational expectations on the relationship between adolescents' educational expectations and academic achievement; thus, H6a was not supported. One possible explanation may be that when puberty is reached, adolescents become more independent and distance themselves from their parents (Daniels, 1990). Family influences begin to decline, and school factors, such as peer groups, become more important. Therefore, adolescents are less likely to depend on parental involvement to enhance their learning motivation or academic achievement, and sometimes, they may even hope that their parents will become less involved or resist their support (Coleman and McNeese, 2009). Accordingly, adolescents' expectations or goals increasingly rely on their own perceptions of their current status (Aceves et al., 2020), and the relationship between their educational expectations and academic achievement is less likely to be affected by their parents' educational expectations. This result is similar to the findings of Liu et al. (2013), who found that the relationship between autonomous motivation and creative thinking cannot be strengthened by high paternal involvement in education.

The major contributions of the current study are as follows. First, it adds to the existing literature on the effects of filial piety on adolescents' development. In particular, the current study simultaneously considers academic achievement and subjective wellbeing, which could clarify the unique effect of filial piety on adolescents' academic achievement and subjective wellbeing. Second, this study provides insights into how filial piety is related to adolescents' development. To the best of our knowledge, this study is the first to focus on the mediating role of adolescents' expectancies for success and to consider the moderating role of fathers' and mothers' educational expectations. In doing so, it advances research on the mechanism of filial piety. Third, previous research regarding the role of filial piety in adolescents' development has mainly focused on late adolescents. The current study, which focuses on early adolescents, broadens the applicability of the filial piety theory and research.

These contributions suggest some practical implications for parents, schools, and education policymakers. Our findings suggest that RFP can help foster successful students by enhancing their expectancies for success, while AFP may hinder adolescent development by frustrating their expectations. Thus, parents and schools should attach importance to cultivating adolescents' positive beliefs in filial piety and to creating an equal and close parent–child relationship. Parents and schools should also weaken adolescents' negative beliefs, such as obedience to authority, which may have a disruptive effect on their academic achievement. Moreover, in a broader context, education policymakers should realize that, in addition to promoting policies that are directly related to disciplinary

education, it is very important to pay attention to and strengthen moral education. Providing education on filial piety that emphasizes equal status and intimate relationships with parents is conducive to improving adolescents' positive self-cognition and to forming positive development goals to promote the comprehensive development of adolescents. In addition, our findings suggest that both parents and children should establish realistic but positive beliefs about future education. Adolescents' high educational expectations are a kind of positive self-cognition and a learning motivation, and high parental expectations are regarded as a kind of approval and support for children.

The present study is not free of limitations. First, the causal relationships among filial piety, adolescents' educational expectations, academic achievement, and subjective wellbeing could not be determined in this cross-sectional correlational study. Longitudinal studies with more extensive follow-up are required. Second, when the mediating effect of adolescents' educational expectations was considered, the relationships between filial piety and academic achievement and subjective wellbeing still existed. This result implies that other factors may explain how filial piety affects students' academic achievement and subjective wellbeing, such as students' academic self-concept and motivations and parent–adolescent relationships. Finally, the participants in this study were recruited only from Mainland China. Future studies might be needed to replicate our findings in samples from other Asian and even Western countries and regions.

In conclusion, the present study systematically investigated the relationships among filial piety, adolescents' educational expectations, parental educational expectations, academic achievement, and subjective wellbeing among Chinese early adolescents. The results suggest that two types of filial piety, RFP and AFP, have different relationships with academic achievement and subjective wellbeing and that these effects could be partially mediated by adolescents' educational expectations. Moreover, parental educational expectations could moderate the relationship between adolescents' educational expectations and subjective wellbeing. Our findings highlight the importance of RFP and adolescents' and parents' educational expectations for academic success and wellbeing. Taken together, the findings of this study broaden our understanding of filial piety and its implications for Chinese adolescents' academic achievement and wellbeing, and they provide the basis for valuable recommendations for practice.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Institutional Review Board of the Collaborative

Innovation Center of Assessment toward Basic Education Quality, Beijing Normal University. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

## AUTHOR CONTRIBUTIONS

Conception and design of the work was done by XG and LL. Data collection and analysis of data done by all authors. XG and JL wrote the original draft of the manuscript. XG,

JL, and YN participated in the work of revision and finalization of the manuscript in the process of reviewing. LL edited and co-wrote the manuscript. All authors contributed to the article and approved the submitted version.

## FUNDING

This work was supported by the Major Project of National Social Science Fund of China (16ZDA229) and the Youth Project of National Social Science Fund of China (17CSH024).

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