



## Research article

# Filial beliefs reduce aggression in different cultures: A conditional process model

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## ABSTRACT

The dual filial piety model divides filial piety beliefs into two types: reciprocal and authoritarian filial piety beliefs (RFP vs. AFP) in terms of attitude, emotion, and obligation towards parents. Previous studies have shown that these two types of filial piety beliefs related to different psychological outcomes. Literature also suggests that some aspects of the function of filial piety beliefs may be a cultural universal. This research aimed to test the effects of filial piety beliefs on aggression using participants from two cultures (Chinese vs. Islamic). We further explored the mediating role of moral disengagement, forgiveness, and self-control between filial piety beliefs and aggression, and the moderating role of culture. The results showed that moral disengagement, forgiveness, and self-control played mediating roles in the relationship between filial piety beliefs and aggression. The functions of filial piety beliefs showed both similarities and differences across cultures. (1) RFP was negatively associated with aggression in both cultures, while AFP was negatively associated with aggression only among Muslim participants. (2) RFP can reduce the aggression of Chinese participants through moral disengagement, forgiveness, and self-control; while the RFP of Muslim participants can reduce their aggressiveness only through forgiveness. (3) AFP enhanced aggression via moral disengagement and reduced self-control among Chinese participants, but reduced aggression via self-control among Muslim participants. Findings of this study confirmed that the functions of RFP show more similarities than differences across cultures, while functions of AFP do the opposite.

## 1. Introduction

Aggression has always been a serious social problem and a hot research topic for psychological research [1]. Aggression generally has been defined as any behavior that is performed with the intention to harm others physically or emotionally [2]. Numerous studies have shown that aggression has many adverse effects on the victims, society, and even the aggressors themselves. For example, those who are victims of aggression are more likely to have reduced physical and mental health conditions, decreased academic or work performance, and interpersonal problems [3–5]. Given these negative consequences, it is of great theoretical and practical implications to identify factors that can reduce aggression. Bandura's [6] reciprocal determinism posits that individual behavior (such as aggressive behavior) is the result of the interaction between personal factors and the environment. As the first and foremost environmental factor that interacts with the individual directly, family has been shown to have significant impacts on aggression [7]. For example, in a 10-year follow-up study on children aged 9 to 18, Ehrenreich et al. [8] found that inter-parental conflicts and parenting styles

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significantly predicted children's aggression. A meta-analysis of 27 studies showed that inter-parental relationships significantly predicted adult children's aggression in a dating relationship [9]. According to the Social Control Theory, when the bonding systems between individuals and social relations are weaker, bad behaviors such as aggressive behaviors and even criminal behaviors are more likely to occur [10]. Filial obligation reflects how strongly an individual is bonded with family and society [11], and therefore can serve as a protective factor against aggression. So far, only one study has examined the direct effect of different dimensions of filial piety beliefs on aggression [12]. There are still many issues that need to be addressed. This research aims to confirm the relationship between filial piety beliefs and aggression, and determine the mediating roles of moral disengagement, forgiveness, and self-control. We will further investigate whether filial piety beliefs' direct and indirect effects on aggression differ by culture (Confucian culture vs. Islamic).

### 1.1. Filial piety beliefs and aggression

Filial piety belief is a cultural value that emphasizes respect, obedience, and honor to parents specifying moral norms for parents and children in material and emotional aspects [13,14]. As the core value of Confucianism, filial piety belief has always been the ethical foundation of China and some East Asian societies [15,16]. However, studies on the functions of filial piety beliefs in modern society were not conclusive. There have been controversies about the effects of filial piety beliefs on psychosocial outcomes in earlier years [14]. Several studies found that filial piety beliefs can promote personal growth and parent-child relationships, reduce family conflicts, and maintain harmonious and close family relationships [17,18]. In contrast, other researchers claimed that filial piety beliefs inhibit children's creativity and self-expression, and reduce individual cognitive complexity [19,20].

In order to solve these controversies, Yeh and Bedford [14] put forward the Dual Filial Piety Model (DFPM), dividing filial piety beliefs into reciprocal filial piety belief (RFP) and authoritarian filial piety belief (AFP). DFPM effectively integrated previous findings and made a more comprehensive understanding of empirical results [14,21]. RFP includes emotionally and materially caring for one's parents, being grateful for their upbringing, and caring for and financially supporting them as they age or become ill [12,14]. It emphasizes the close relationship between children and their parents in long-term family interactions [21,22]. Children with RFP will voluntarily provide support (including material, financial, and emotional) to parents to appreciate their parenting and love [23]. Some studies have shown that RFP has many positive effects such as improving individual life satisfaction, reducing parent-child conflicts, and promoting family harmony [12,24]. In contrast, AFP entails suppressing one's own will, complying with their parents' demands, and emphasizing role obligation and family hierarchy [12,21]. Therefore AFP is suggested to have negative effects on psychosocial functioning [14]. Research has associated AFP with family constraints, personal stress, anxiety, depression, and other psychosocial outcomes [12,25,26]. The different functions of RFP and AFP can also be reflected in aggression [12,27]. In addition, the validity of DFPM has confirmed by many cross-cultural studies [28–30].

A series of studies proved that empathy could negatively predict aggression [31–33]. RFP is based on emotional connections established in long-term parent-child interactions, which involve recurrent love and empathic responses [12]. Yeh and Bedford reported that RFP positively predicted empathy, while AFP did the opposite [14]. AFP is featured by obedience and suppression of personal thoughts, hindering the development of empathic abilities. Therefore different effects of RFP and AFP on empathy may lead to their different impacts on aggression. Consistent with the above theorizing, Kang et al. found that RFP negatively predicted cyber aggression, while AFP positively predicted cyber aggression [27]. Similarly, Yeh found that RFP negatively predicted aggression among adolescents, while AFP did the opposite [12].

### 1.2. The mediating role of moral disengagement

Moral disengagement refers to a series of cognitive operations which let individuals avoid emotional distress (e.g., shame, guilt) when acting unethically by decoupling internal moral standards from their actions [34,35]. Bandura et al. proposed eight moral disengagement tactics: moral justification, euphemistic labeling, advantageous comparison, displacement of responsibility, diffusion of responsibility, distortion of consequences, dehumanization, and attribution of blame [34]. These moral disengagement tactics could enable the moral transgressors and those who shirk moral responsibilities to get rid of self-condemnation. Parenting styles have been considered as important predictors of moral disengagement. Children under positive parenting styles tend to have a lower level of moral disengagement, while children under negative parenting styles may have a higher level of moral disengagement [36,37]. It was suggested that different filial piety beliefs correspond to different parenting styles (RFP corresponds to positive parenting style; AFP corresponds to negative parenting style) [38,39]. Therefore we speculate that different filial piety beliefs (RFP and AFP) have different effects on moral disengagement.

Moral disengagement is closely related to aggression [34,37,40]. People with a higher level of moral disengagement tend to show greater tolerance for moral transgression and rejection of moral responsibilities [41]. According to the socio-cognitive model, moral disengagement is a direct contributor to aggression [34]. A meta-analysis conducted by Gini et al. confirmed the positive relationship between moral disengagement and aggressive behavior, with effect sizes consistent across the type of aggressive behavior, gender, and publication status [42]. An experimental study also showed that individuals with a high level of moral disengagement showed a greater aggression tendency in competitive tasks [43]. However, there has been no research testing the mediating effect of moral disengagement in the relationship between filial piety beliefs and aggression. Therefore, this study will test whether the association between filial piety beliefs and aggression can be bridged by moral disengagement.

### 1.3. The mediating role of forgiveness

Forgiveness means a decision to abandon resentment and thoughts of revenge. In psychology, it involves responses to the transgressor that are transformed from negative to neutral, or even positive [44,45]. Forgiveness has been considered an adaptive trait or behavior. Chan et al. found in Hong Kong that filial piety beliefs are closely associated with appreciation and forgiveness in parent-child interactions [46]. RFP is developed during a long period of parent-child interactions [23]. In this process, the children are more likely to forgive their parents based on genuine understanding. Bregnbæk argues that filial piety beliefs may promote forgiveness towards the parents even when the child is involuntary [47]. AFP emphasizes family order and hierarchy [23], and individuals with such filial piety beliefs are more likely to forgive their parents due to conformity to norms. In summary, we believe that both types of filial piety belief contribute to the development of forgiveness.

Many studies suggested a negative relation between forgiveness and aggression [48–50]. Eaton and Struthers found that forgiveness can reduce psychological aggression regardless the transgressor is a coworker, a friend, or a romantic partner [51]. High forgiveness adolescents are less likely to harm others, and are less likely to become a bully after suffering victimization [52]. A systematic review of 1093 studies showed that forgiveness is negatively associated with bullying and victimization, while un-forgiveness is positively associated with traditional and online bullying [53]. Based on these findings, this research hypothesizes that forgiveness may be another mediator between filial piety beliefs and aggression.

### 1.4. The mediating role of self-control

Self-control has been widely considered as an ability to change and adapt oneself, which enables a person to produce a better and more appropriate fit between the self and the world [54,55]. Parents and family environment are important factors influencing self-control [56]. Studies found that self-control has a positive correlation with family cohesion and a negative correlation with family conflict [55]. Research further showed that attachment to parents is highly correlated with self-control [57]. Correspondingly, literature also suggested that RFP is negatively associated with attachment avoidance, and AFP is positively associated with attachment anxiety [58]. Based on these findings, we infer that two filial piety beliefs are associated with self-control in different ways. Specifically, RFP may contribute to the development of self-control, whereas AFP may play the opposite role.

Gottfredson and Hirschi's self-control theory posited that low self-control is responsible for a series of negative outcomes such as aggression, crime, and other forms of deviant behaviors [57]. When destructive impulses are activated by situational stimuli, greater self-control can prevent these impulses from turning into behavior [59]. A large number of studies suggested that self-control failure can lead to aggression toward a stranger and a romantic partner, and displaced aggression toward an innocent bystander [60,61]. Intervention studies further showed that self-control training could decrease anger and aggressive impulses among individuals who are high in trait aggression [62]. Based on these theorizing, we infer that self-control may mediate the association between filial piety beliefs and aggression.

### 1.5. The moderating role of culture

DFPM is a theoretical framework not only limited to studies on filial piety beliefs in Chinese culture [14]. It can also integrate Western researches on intergenerational relations [13]. As a contextualized personality [13], filial piety belief is a construct that focuses on parent-child relationships rather than cultural context; therefore it can be applied to any culture. For example, Zhou et al. found that the relationship between filial piety beliefs and academic achievement can be generalized from Chinese society to a global context [63]. Cross-cultural studies can pay attention to the endorsement of filial beliefs in different cultures. However, more importantly, they should focus on cultural similarities and differences in the psychological functions of filial piety beliefs [64,65]. Tsao and Yeh argued that the function of RFP is expected to show more similarity than differences across cultures because it is based on the emotional connection between parent and children, while the function of AFP is the opposite because it is determined by culture [64]. In this study, we are aiming to examine the function of RFP and AFP on aggression in a cross-cultural context (Confucian vs. Islamic). We chose to compare Confucian and Islamic cultures because they have strong but distinct traditions of filial piety, shaped by unique historical, religious, and social contexts, which provide a valuable perspective for studying cultural influences on filial piety practices [68,69,71]. This research addresses an existing research gap, as most studies have focused on Confucian society with limited intention in Islamic contexts.

People's psychology and behavior are inevitably affected by social culture [66]. According to the bioecological model, social and cultural environments shape people's thoughts and feelings [67]. As the core pillar of Confucian ethics, filial piety beliefs had a profound impact on Chinese society since ancient times [13,16]. To a greater or lesser extent, the Confucian filial norm has affected some other Asian countries [15,68]. The filial piety beliefs of children toward their parents are also emphasized by Islamic teachings, which hold that "obedience to parents is obedience to God" [69]. However, we can find many differences in filial piety beliefs between Chinese societies and Islamic countries. With the widespread of industrialization and civilization, Westernized individualism has profoundly influenced Chinese society, leading to a more remarkable change in Chinese people's filial beliefs [37]. Contemporary Chinese young people tend to endorse RFP rather than AFP; they respect but do not blindly obey their parents [70]. In Islamic societies, however, the family system is still patriarchal. Respect and obedience to parents' and elders' desires are severely required [71]. Indonesia and Yemen are two important Islamic societies. Indonesia has the largest Muslim population in the world, with 86.1 % of Indonesians identifying Islam as their religious faith [72]. Islam is the predominant religion in Yemen, with approximately 99 % of Yemenis self-identified as Muslim [73]. These two Islamic countries have seldom been involved in psychological studies, and therefore

culturally specific findings are expected to be revealed. Additionally, filial beliefs change with economic development. RFP is consistent with modern democratic values and therefore is more emphasized in cultures with higher economic levels, higher education levels, and greater modernization; while AFP is consistent with patriarchal values and therefore is more strongly emphasized in societies with low economic levels and low education levels [74].

The above findings and related theorizing suggested that the function of filial piety beliefs differs by culture. We speculate that RFP is preferred over AFP in Chinese society, and RFP (but not AFP) is associated with desirable psychological outcomes. In contrast, AFP is preferred over RFP in Islamic countries, and AFP can also lead to desirable psychological outcomes. We further speculate that culture affects the role of filial piety beliefs in inhibiting aggression.

### 1.6. This research

Yeh has explored the relationship between filial piety beliefs and aggression in a culturally Chinese sample [12]. Nevertheless, the mechanisms in this association remain untouched. This study is designed to fill this gap. Specifically, this study has two aims: first, to examine whether moral disengagement, forgiveness, and self-control mediate the link between dual filial piety beliefs (RFP and AFP) and aggression. Second, to examine whether culture moderates the link between filial piety beliefs (RFP and AFP) and aggression via the abovementioned mediators.

Based on the above theorizing, we proposed the following hypotheses:

**Hypothesis 1.** Moral disengagement (H1a), forgiveness (H1b), and self-control (H1c) mediate the link between filial piety beliefs (RFP and AFP) and aggression.

**Hypothesis 2.** Culture moderates the links between filial piety beliefs (RFP and AFP) and aggression via moral disengagement (H2a), forgiveness (H2b), or self-control (H2c).

## 2. Materials and methods

### 2.1. Participants and procedure

Totally 730 university students, including 429 Chinese students and 301 international students from Islamic countries (159 Indonesians and 142 Yemenis) participated in this study. Participants were required to respond to a series of questionnaires. The Chinese sample included 154 males and 275 females, with an average age of 20.41 years ( $SD = 2.48$ ), ranging from 18 to 30 years. The Islamic sample included 208 males and 93 females, with an average age of 23.86 years ( $SD = 5.63$ ), ranging from 16 to 46 years. All questionnaires in this study were administered in English due to the fact that all participants have no English reading and comprehension problems. Participants were paid 20 yuan after the investigation which lasted about 20 min. The Ethics Committee of Guangxi Normal University approved the investigation.

#### 2.1.1. Measures

**Dual Filial Piety.** The Dual Filial Piety Scale (DFPS) was used to measure two dimensions of filial piety beliefs [14]. The scale consists of 16 items that use Likert's six-point scoring (1 = strongly disagree, 6 = strongly agree). Eight items measure RFP (e.g., Be grateful to my parents for raising me), and eight items measure (e.g., Do whatever my parents ask right away). The total score of items in each dimension was taken, with a higher score indicating a higher level of RFP or AFP. In this study, the Cronbach's alpha of the RFP subscale was 0.71, the Cronbach's alpha of the AFP subscale was 0.70, and the Cronbach's alpha of the total scale was 0.80. Among Chinese participants, these coefficients were 0.67, 0.87, and 0.72, respectively; among Muslim participants these coefficients were 0.76, 0.85, and 0.89, respectively.

**Moral disengagement.** The Moral Disengagement Scale (MDS) was used [34]. This scale consists of 32 items (e.g., It is alright to fight to protect your friends). Responses to all items were summed to produce a composite score. Previous research showed that MDS is a unidimensional scale [34]. Participants respond to each item according to a five points scale ranging from 1 (completely disagree) to 5 (completely agree). The total score of all items was taken, with a higher score indicating a higher level of moral disengagement. In this study, Cronbach's alpha was 0.96 (among Chinese it was 0.95, among Muslims was 0.97).

**Forgiveness.** The Heartland Forgiveness Scale (HFS) developed by Thompson et al. was used [45]. It contains three six-item subscales: forgiveness of self (e.g., I hold grudges against myself for negative things I've done), forgiveness of others (e.g., I continue to be hard on others who have hurt me), and forgiveness of situations (e.g., When things go wrong for reasons that can't be controlled, I get stuck in negative thoughts about it). Each item was rated using a seven-point scale ranging from 1 (Strongly disagree) to 7 (Strongly agree). The total score of all items was taken. In this study, the Cronbach's alpha of the scale was 0.80 (among Chinese it was 0.84, among Muslims was 0.71).

**Self-control.** The Self-Control Scale (SCS) was developed by Tangney et al. [55]. SCS contains 36 items and five dimensions: capacity for self-discipline, deliberate action, work ethics, healthy habits, and reliability. This study used a brief version of SCS (19 items) based on a study of Chinese samples [75]. A sample item is "I do many things on the spur of the moment." Participants were required to respond to each item according to their actual experiences on a scale ranging from 1 (completely disagree) to 5 (completely agree). The total score of all items was taken. Cronbach's alpha of this scale was 0.76 (among Chinese it was 0.79, among Muslims was 0.71).

**Aggression.** The Aggression Questionnaire (AQ) was developed by Buss and Warren [76] based on Buss and Perry [77]. This

questionnaire consists of 34 items (e.g., If somebody hits me, I hit back) that measure five dimensions: physical aggression, verbal aggression, anger, hostility, and indirect aggression. Each item is scored on a 5-point Likert-type scale ranging from 1 (Not at all like me) to 5 (Completely like me). The total score of all items was taken with a higher score indicating a higher level of aggression. Cronbach's alpha is 0.71 (among Chinese it was 0.68, among Muslims was 0.69).

## 2.2. Data analysis

SPSS (version 23) was used to analyze the data. We examined the differences in dual filial piety beliefs, moral disengagement, forgiveness, self-control, and aggression between participants from China and Islamic cultures. This study used Hayes PROCESS macro for SPSS for conditional mediation model analysis [78]. Six models were constructed based on different independent variables (RFP and AFP) and different mediating variables (moral disengagement, forgiveness, and self-control), and we used model 59 of PROCESS to estimate the effects in the moderated mediation models.

## 3. Results

### 3.1. Descriptive statistics and correlation analysis

Descriptive statistics of Chinese and Muslim students and correlation coefficients of study variables were shown in Table 1. Among Chinese students, the correlation between RFP and AFP was not significant, and RFP was negatively associated with moral disengagement and aggression. RFP had a significant and positive correlation with forgiveness and self-control. AFP was only negatively correlated with moral disengagement, and its correlations with other variables were not significant.

Among Muslim students, RFP and AFP were positively correlated. RFP was positively correlated with moral disengagement and forgiveness, and was negatively correlated with aggression. RFP was not significantly correlated with self-control. AFP was significantly positively correlated with moral disengagement and forgiveness, and was significantly negatively correlated with self-control and aggression. The mean scores of Chinese students were significantly different from that of Muslim students. Chinese students have relatively higher levels of RFP, forgiveness, and self-control; while Muslim students have relatively higher levels of AFP, moral disengagement, and aggression.

### 3.2. Testing of mediation effects

Culture did not play a moderating role in Models 1 to 3, so we examined only the mediation effects in the three models. As shown in Model 1 in Table 2, RFP positively predicted forgiveness, and the total variance of forgiveness explained by RFP was 23 % [ $R^2 = 0.23$ ,  $F(1,728) = 220.93$ ,  $p = 0.00$ ]. In addition, both RFP and forgiveness negatively predicted aggression. The predictors explained 35 % of aggression's total variance [ $R^2 = 0.35$ ,  $F(2,727) = 196.46$ ,  $p = 0.00$ ]. The indirect effect of RFP on aggression through forgiveness was significant. That is, higher levels of RFP reduced individuals' aggression by increasing forgiveness. Detailed descriptions of Model 1 were shown in Fig. 1.

In Tables 2 and it showed in Model 2, AFP also positively predicted forgiveness and only explained 1 % of the variance of forgiveness [ $R^2 = 0.01$ ,  $F(1,728) = 5.87$ ,  $p = 0.02$ ]. At the same time, AFP did not significantly predict aggression, and a higher level of forgiveness predicted a decline in aggression. The predictors accounted for 25 % of the aggression's total variance [ $R^2 = 0.25$ ,  $F(2,727) = 121.84$ ,  $p = 0.00$ ]. AFP has a significant indirect effect on aggression through forgiveness; that is, although AFP did not directly and significantly affect aggression, it could reduce aggression by increasing an individual's forgiveness. Detailed descriptions of Model 2 were shown in Fig. 2.

**Table 1**

Means, standard deviations, and correlations of study variables in different cultures (n = 730).

	1	2	3	4	5	6
1.RFP	1	0.51 <sup>c</sup>	0.26 <sup>c</sup>	0.54 <sup>c</sup>	-0.07	-0.55 <sup>c</sup>
2.AFP	0.05	1	0.33 <sup>c</sup>	0.25 <sup>c</sup>	-0.19 <sup>b</sup>	-0.18 <sup>b</sup>
3.Moral disengagement	-0.45 <sup>c</sup>	0.16 <sup>b</sup>	1	-0.15 <sup>b</sup>	-0.59 <sup>b</sup>	-0.21 <sup>b</sup>
4.Forgiveness	0.43 <sup>c</sup>	0.08	-0.44 <sup>c</sup>	1	0.37 <sup>c</sup>	-0.41 <sup>c</sup>
5.Self-control	0.47 <sup>c</sup>	-0.05	-0.51 <sup>c</sup>	0.78 <sup>c</sup>	1	-0.06
6.Agression	-0.46 <sup>c</sup>	-0.01	0.34 <sup>c</sup>	-0.48 <sup>c</sup>	-0.50 <sup>c</sup>	1
Chinese (n = 429)						
Mean	38.69	29.62	69.62	81.48	57.95	87.83
SD	6.91	5.23	21.70	13.75	9.11	11.88
Muslim (n = 301)						
Mean	35.84	31.20	77.63	73.91	54.94	95.12
SD	7.43	6.55	28.85	9.28	7.26	10.70

Note. <sup>a</sup> $p < 0.05$ .

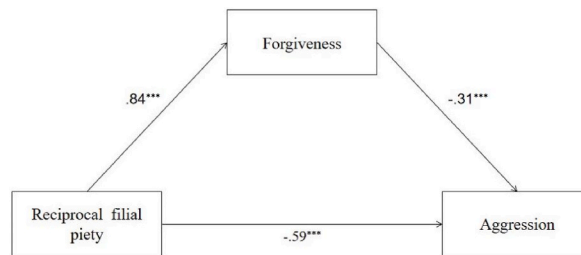
<sup>b</sup> $p < 0.01$ .

<sup>c</sup> $p < 0.001$ ; Correlations for Muslims were above the diagonal while correlations for Chinese were below the diagonal. The correlations between the dimensions of all variables are shown in Table S1 of the supplementary material.

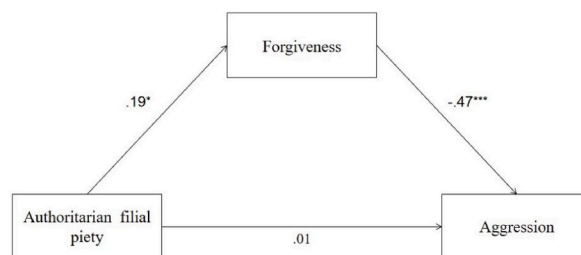
**Table 2**  
Testing for Mediation Effects (Standardized indirect effect).

Predictors	$\beta$	SE	t	p	95 % CI
Model 1:					
Outcome: forgiveness					
RFP	0.84	0.06	14.86	0.00	(0.73, 0.95)
Outcome: aggression					
RFP	-0.59	0.06	-10.57	0.00	(-0.70, -0.48)
Forgiveness	-0.31	0.03	-9.58	0.00	(-0.37, -0.25)
Direct effect of X on Y					
RFP	-0.59	0.06	-10.57	0.00	(-0.70, -0.48)
Indirect effect of X on Y					
Forgiveness	-0.16	0.02			(-0.20, -0.12)
Model 2:					
Outcome: forgiveness					
AFP	0.19	0.08	2.42	0.02	(0.04, 0.35)
Outcome: aggression					
AFP	0.01	0.07	0.20	0.84	(-0.12, 0.14)
Forgiveness	-0.47	0.03	-15.56	0.00	(-0.53, -0.41)
Direct effect of X on Y					
AFP	0.01	0.07	0.20	0.84	(-0.12, 0.14)
Indirect effect of X on Y					
Forgiveness	-0.04	0.02			(-0.08, -0.01)
Model 3:					
Outcome: self-control					
AFP	-0.18	0.05	-3.32	0.00	(-0.28, -0.07)
Outcome: aggression					
AFP	-0.18	0.07	-2.51	0.01	(-0.31, -0.04)
Self-control	-0.55	0.05	-11.46	0.00	(-0.65, -0.46)
Direct effect of X on Y					
AFP	-0.18	0.07	-2.51	0.01	(-0.31, -0.04)
Indirect effect of X on Y					
Self-control	0.05	0.02			(0.02, 0.08)

Note: RFP = Reciprocal Filial Piety; AFP=Authoritarian filial piety.



**Fig. 1.** | Mediation model showing unstandardized coefficients (Model 1); \*\*\* $p < 0.001$ .



**Fig. 2.** | Mediation model showing unstandardized coefficients (Model 2); \* $p < 0.05$ ; \*\*\* $p < 0.001$ .

In Model 3, AFP negatively predicted self-control, explaining 1 % of the variance of self-control [ $R^2 = 0.01$ ,  $F(1,728) = 11.00$ ,  $p = 0.00$ ]. In addition, both AFP and self-control negatively predicted aggression, and they explained 15 % of the variance of aggression [ $R^2 = 0.15$ ,  $F(2,727) = 66.31$ ,  $p = 0.00$ ]. Higher AFP could increase aggression by reducing an individual's level of self-control. Detailed descriptions of Model 3 were shown in Fig. 3.

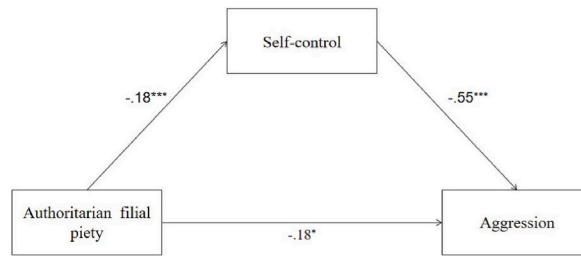


Fig. 3. | Mediation model showing unstandardized coefficients (Model 3); \* $p < 0.05$ ; \*\*\* $p < 0.001$ .

3.3. Testing for the moderated mediation effects

In Table 3, we use RFP/AFP as the independent variable, aggression as the dependent variable, and moral disengagement or self-control as the mediating variable to examine the Moderated Mediation effect. In Model 4, both RFP and culture negatively predicted moral disengagement, and the interaction between RFP and culture was significant. All predictors explained 15 % of moral disengagement’s total variance [ $R^2 = 0.15$ ,  $F(3,726) = 43.03$ ,  $p = 0.00$ ]. At the same time, a higher level of RFP predicted a reduction in aggression, while moral disengagement and culture positively predicted aggression. The interaction between moral disengagement and culture was significant, while the interaction between RFP and culture was not significant. These predictors explained 33 % of

Table 3  
Testing for moderated mediation.

Predictors	$\beta$	SE	t	p	95 % CI
Model 4:					
Outcome:moral disengagement					
RFP	-3.86	0.37	-10.37	0.00	(-4.59, -3.13)
Culture	-83.61	9.20	-9.09	0.00	(-101.67, -65.54)
RFP*Culture	2.44	0.24	10.05	0.00	(1.97, 2.92)
Outcome:aggression					
RFP	-0.55	0.17	-3.18	0.00	(-0.89, -0.21)
Moral disengagement	0.21	0.05	4.01	0.00	(0.11, 0.32)
Culture	17.68	5.02	3.52	0.00	(7.81, 27.54)
RFP*Culture	-0.10	0.11	-0.94	0.35	(-0.32, 0.11)
Moral disengagement*Culture	-0.12	0.03	-3.74	0.00	(-0.18, -0.06)
Conditional indirect effects					
Chinese	-0.13	0.04			(-0.21, -0.07)
Muslim	-0.03	0.02			(-0.07, 0.01)
Model 5:					
Outcome:moral disengagement					
AFP	-0.13	0.49	-0.26	0.80	(-1.09, 0.84)
Culture	-17.58	9.50	-1.85	0.06	(-36.22, 1.07)
AFP*Culture	0.79	0.31	2.56	0.01	(-0.18, 1.39)
Outcome:aggression					
AFP	-0.09	0.23	-0.42	0.68	(-0.54, 0.35)
Moral disengagement	0.45	0.05	8.31	0.00	(0.34, 0.56)
Culture	26.14	2.52	10.37	0.00	(18.66, 36.43)
AFP*Culture	-0.05	0.14	-0.37	0.71	(-0.34, 0.23)
Moral disengagement*Culture	-0.26	0.03	-7.95	0.00	(-0.32, -0.19)
Conditional indirect effects					
Chinese	0.13	0.05			(0.03, 0.23)
Muslim	-0.09	0.03			(-0.16, -0.03)
Model 6:					
Outcome:self-control					
RFP	1.30	0.12	10.54	0.00	(1.26, 1.55)
Culture	23.31	3.06	7.62	0.00	(17.30, 29.32)
RFP*Culture	-0.69	0.08	-8.47	0.00	(-0.84, -0.53)
Outcome:aggression					
RFP	-0.19	0.17	-1.12	0.26	(-0.52, 0.14)
Self-control	-0.82	0.14	-6.01	0.00	(-1.09, -0.55)
Culture	-3.46	6.05	-0.57	0.57	(-15.33, 8.41)
RFP*Culture	-0.30	0.11	-2.88	0.00	(-0.51, -0.10)
Self-control*Culture	0.34	0.09	3.61	0.00	(0.16, 0.53)
Conditional indirect effects					
Chinese	-0.30	0.05			(-0.40, -0.21)
Muslim	0.01	0.01			(-0.01, 0.03)

Note: RFP = Reciprocal Filial Piety; AFP=Authoritarian filial piety; Culture = 1 (Chinese) or 2 (Muslim).

aggression’s total variance [ $R^2 = 0.33, F(5,724) = 69.93, p = 0.00$ ]. Our hypothesis of a moderated mediation effect was supported, as evidenced by a significant indirect effect of RFP on aggression through moral disengagement among Chinese [ $B = -0.13, 95\% \text{ CI} = (-0.21, -0.07)$ ], but not Muslim [ $B = -0.03, 95\% \text{ CI} = (-0.07, 0.01)$ ]. Detailed descriptions of Model 4 were shown in Fig. 4.

In Model 5, both AFP and culture did not predict moral disengagement, but the interaction between AFP and culture was significant. All predictors explained 9 % of moral disengagement’s total variance [ $R^2 = 0.09, F(3,726) = 25.02, p = 0.00$ ]. In addition, AFP did not significantly predict aggression, while moral disengagement and culture positively and significantly predicted aggression. The interaction between moral disengagement and culture was significant, while the interaction between AFP and culture was not significant. The predictors explained 18 % of aggression’s total variance [ $R^2 = 0.18, F(5,724) = 31.82, p = 0.00$ ]. In the two cultures, the indirect effects were significant, and we will further test the model. Detailed descriptions of Model 5 were shown in Fig. 5.

In Model 6, both RFP and culture positively predicted self-control, and the interaction between RFP and culture was also significant. These predictors explained 18 % of self-control’s total variance [ $R^2 = 0.18, F(3,726) = 53.04, p = 0.00$ ]. In addition, RFP and culture did not predict aggression, and self-control negatively predicted aggression. The interaction between RFP and culture and the interaction between self-control and culture were both significant. All predictors explained 37 % of aggression’s total variance [ $R^2 = 0.37, F(5,724) = 86.75, p = 0.00$ ]. Since RFP of Chinese students had a significant indirect effect on aggression via self-control, but RFP of the Muslim students did not, so the moderated mediation model was supported. Detailed descriptions of Model 6 were shown in Fig. 6.

Given that the indirect effects of Model 5 were significant in both two cultures, it is impossible to directly judge whether the moderated mediation model holds. Therefore, we use the index of moderated mediation to further determine whether the moderated mediation model is supported [75]. The indexes of moderated mediation for all models are listed in Table 4. All confidence intervals did not contain zero, indicating that these conditional mediation models were all supported.

#### 4. Discussion

The purpose of this study is to explore the influential mechanisms of dual filial piety beliefs on aggression. Specifically, we want to know whether moral disengagement, forgiveness, and self-control mediate the connection between filial piety beliefs (RFP and AFP) and aggression, and whether culture plays a moderating role.

##### 4.1. Relationship between filial piety beliefs and aggression

First of all, correlations between filial piety beliefs (RFP and AFP) and aggression were different among participants from different cultures. Regardless of they grew up in the Confucian culture or not, the participants’ RFP was negatively correlated with aggression. The AFP of Chinese students has no relationship with aggression, while the AFP of Muslim students was still negatively correlated with aggression. Further analysis found that, except in the model with self-control as the mediating variable, RFP could significantly predict aggression in other models. AFP only predicted aggression when self-control was the mediator. Contradictory results in this part may be caused by the inconsistent function of AFP in different cultures. Specifically, the RFP represents a psychological archetype of filial relationships because it belongs to a universal psychological process associated with the parent-child context. As such, the RFP is likely to remain stable over time and be cross-culturally consistent [13]. AFP is a socio-cultural archetype of the parent-child relationship originating from the parent’s role as authority and reflecting the internalized role obligations contained in cultural filial norms. Thus, AFP is more likely to reflect cultural differences in filial relationships across cultures [13]. Yeh believed that the influence of AFP on externalizing behaviors is complex [12]. AFP can reduce deviant and unruly behaviors by imposing disciplines and rules. But it is also associated with cognitive and affective dysfunctions, such as narrow-mindedness and cognitive rigidity, which lead to self-control failure and poor emotion regulation. AFP in China loses the function of preventing aggression because it represents old-fashioned beliefs that have limited functions in modern society. In Islamic societies, however, AFP can reduce aggression by requiring obedience and imposing discipline on children.

##### 4.2. Mediation effect of moral disengagement

Consistent with Hypothesis 1a, we found that moral disengagement mediated the relationship between filial piety beliefs (both RFP

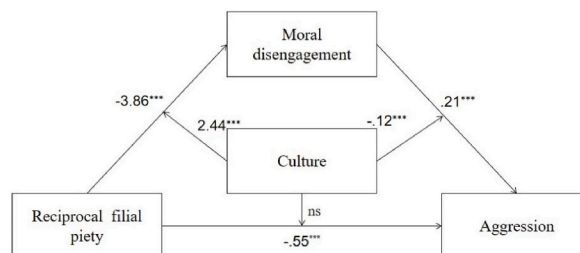


Fig. 4. | Moderated mediation model showing unstandardized coefficients (Model 4); \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .



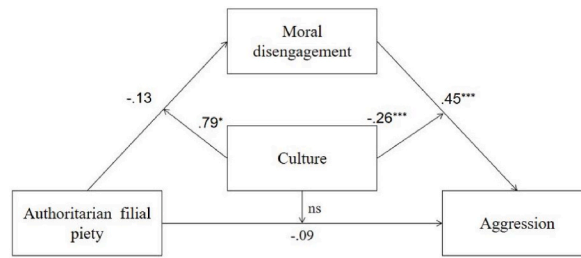


Fig. 5. | Moderated mediation model showing unstandardized coefficients (Model 5); \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

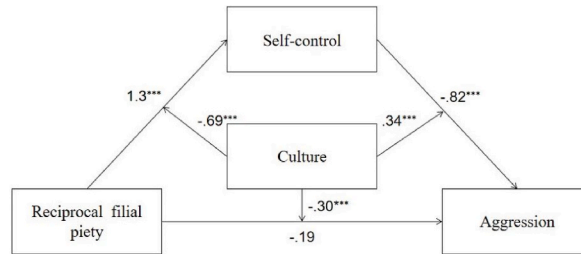


Fig. 6. | Moderated mediation model showing unstandardized coefficients (Model 6); \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

**Table 4**  
Index of moderated mediation.

Models	Index	SE	95 % CI
Model 4	0.11	0.04	(0.03, 0.19)
Model 5	-0.22	0.06	(-0.34, -0.10)
Model 6	0.31	0.05	(0.21, 0.42)

and AFP) and aggression. But the indirect effect of moral disengagement in the RFP-aggression association was only significant among Chinese participants. This is consistent with previous findings that positive parenting styles and close parent-child relationships can reduce moral disengagement, thereby reducing aggression [35,37]. This is not the case among Islamic participants. One explanation may be that RFP has a smaller effect on moral development in Islamic countries.

Furthermore, we found contradictory results regarding the indirect effect of moral disengagement in the AFP-aggression association. Chinese students' AFP increased aggression via moral disengagement, while Muslim students' AFP did the opposite. The dual functionality of AFP may be responsible for this contradictory result [12]. Specifically, for individuals, AFP has a functional side (positive effects) and a dysfunctional side (negative effects). In contemporary China, AFP tends to show adverse effects on moral and psychosocial development due to its emphasis on hierarchy and obedience [67]. But among Muslim students, AFP can inhibit negative behaviors by imposing rules and disciplines, reducing the level of moral disengagement and aggression.

#### 4.3. Mediation effect of forgiveness

Consistent with Hypothesis 1b, forgiveness mediated the relationship between filial piety beliefs (both RFP and AFP) and aggression. Previous research has found that filial piety beliefs prompt a person to forgive their parents [44]. And forgiveness can alleviate an individual's anger and other negative emotions, thereby reducing aggression [48]. This study found that both RFP and AFP can reduce aggression by increasing an individual's forgiveness. The difference is that higher AFP did not directly predict a decrease in aggression, while RFP could directly and negatively predict aggression. It is easy to understand that RFP can increase forgiveness and reduce aggression, given that RFP represents positive parent-child emotional connections. As for AFP, we speculate that disciplines and moral norms associated with AFP facilitate the development of forgiveness, regardless of whether it is voluntary or not.

Interestingly, national culture did not moderate the influence of filial piety beliefs (both RFP and AFP) on aggression via forgiveness. In other words, the indirect effect of filial piety beliefs on aggression via forgiveness was consistent across Confucian and Islamic cultures. This provides new evidence the function of filial piety beliefs applies to different cultures.

#### 4.4. Mediation effect of self-control

Consistent with Hypothesis 1c, we found that self-control mediated the link between filial piety beliefs (both RFP and AFP) and

aggression. RFP represents emotional connections established in long-term interactions between parents and children [21]. These kinds of reciprocal relationships facilitate the development of high-quality attachment to parents and self-control [54,61]. However, the deterring effect of RFP on aggression via enhanced self-control was only significant among Chinese students. Islamic culture emphasizes obedience and order [66], which may be the reason that RFP has no effect on self-control. We further found that AFP could increase aggression by reducing an individual's self-control, with culture failing to play a moderating role. This can be another adverse effect of AFP [12].

#### 4.5. Moderated mediation effects of culture

Consistent with Hypothesis 2a and partly consistent with Hypothesis 2c, we found that the national culture moderates the influence of filial piety beliefs (both RFP and AFP) on aggression via moral disengagement, and the influence of RFP on aggression via self-control. Generally, for Chinese students who are influenced by Confucian cultural values, RFP is able to reduce aggression via reduced moral disengagement and/or increased self-control, but AFP may increase individual aggression via enhanced moral disengagement. Different effects of RFP and AFP on aggression reflect the change in filial piety beliefs in Chinese society. People's filial piety beliefs are becoming more reciprocal than authoritarian [70]. In other words, people tend to endorse RFP and refuse AFP. Correspondingly, RFP can serve as a protective factor against aggression, while AFP may increase aggression due to its adverse effects on psychosocial development.

In contrast, among Muslim students, RFP could not reduce aggression through the mediating role of moral disengagement or self-control, but AFP could reduce aggression through the mediating role of moral disengagement. Islamic culture advocates order, discipline, and obedience to authorities [69,71]. This can be partly responsible for the different effects of RFP and AFP on aggression. These results demonstrated the difference in the function of filial piety in the two social contexts.

Inconsistent with Hypothesis 2b and Hypothesis 2c, this study found that culture did not moderate the influence of filial piety beliefs (both RFP and AFP) on aggression through forgiveness, and the influence of AFP on aggression through self-control. These results illustrate similarities in the functions of filial piety beliefs and the applicability of the filial piety beliefs framework in different cultures. This is consistent with previous literature showing that some functions of filial piety beliefs can be generalized to other cultures and some cannot [13,63,74]. Findings of this study lend more support to DFPM [14] and new theorizing on filial piety beliefs as a contextualized personality [13].

## 5. Limitations and future directions

This study has some limitations expected to be overcome by future research. First, only involving cross-sectional data limited this study's power to infer causality. Future research can adopt experimental or longitudinal methods for in-depth investigation. Second, participants in this study were college students that did not constitute samples representative of the general populations of the corresponding cultures. Future scholars are encouraged to conduct researches involving heterogeneous participants from various cultural contexts. Third, this study found that the effect of RFP on aggression was similar while the effect of AFP on aggression was opposite in the two cultures. However, what factors can account for this difference have not been systematically analyzed and empirically tested in this study. Undertaking this job will shed light on how culture (e.g., Islamic, Confucian) shapes psychosocial functioning. Fourth, our Islamic sample included both Indonesia and Yemen, which hindered our ability to establish measurement invariance, and therefore the results should be generalized with caution for cross-cultural comparisons. Fifth, the current study only compared two cultures in East Asian societies, limiting the generalizability of the results. Future research could further compare the differences in the function of filial piety, especially AFP, in East Asian and Western societies. Finally, this study identified moral disengagement, forgiveness, and self-control as mediators in the association of filial piety beliefs and aggression. Are there other mediators? Which mediator plays a key role [14,33]? These issues need to be further addressed by future researchers.

Despite these limitations, this study is valuable in identifying filial piety belief as a protective factor against aggression in different cultures. We encourage parents to cultivate filial piety beliefs that function well in their cultural context to reduce their children's aggression. Furthermore, our findings have advanced the understanding of Confucian culture and Islamic culture.

## 6. Conclusion

This study found that the cultivation of RFP can reduce aggression in both Confucian and Islamic cultures, while the cultivation of AFP can reduce aggression only in specific cultures (e.g., Islamic). Forgiveness, moral disengagement, and self-control can partly account for the negative effects of filial piety beliefs on aggression, but some indirect effects of these mediators may be moderated by culture. Specifically, the mediating mechanisms in the filial piety beliefs-aggression association may vary across cultures. Findings of this study support the proposition that some functions of filial piety beliefs can be generalized to other cultures and some cannot.

## Declarations

### Consent for publication

Not applicable.

### Availability of data and materials

The data that support the findings of this study are available from the corresponding author at a reasonable request.

### Ethics statement

The studies involving human participants were reviewed and approved by the Academic Committee at Guangxi Normal University (GXNU-FE-2024-1). All methods were carried out in accordance with relevant guidelines and regulations. The participants provided their written informed consent to participate in this study.

### Data availability statement

The current data are not deposited into a publicly available repository. Data will be made available on request.

### CRediT authorship contribution statement

**Wang Zheng:** Writing – review & editing, Writing – original draft, Validation, Supervision, Software, Resources, Methodology, Formal analysis, Conceptualization. **Taian Huang:** Writing – review & editing, Software, Formal analysis, Conceptualization. **Yingshu Zhang:** Writing – review & editing, Validation, Supervision. **Qingke Guo:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.heliyon.2024.e30995>.

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