



# Parental Collectivism Goals and Chinese Adolescents' Prosocial Behaviors: The Mediating Role of Authoritative Parenting

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## Abstract

Prosocial behaviors are important indicators of positive social adjustment during adolescence in collectivistic cultures. Although parents play a central role in the process of cultural socialization, it remains unclear how culturally embedded parental goals for their children are related to adolescent prosocial development, especially in non-Western countries. Moreover, little is known about whether parenting practices serve as an underlying mechanism in linking parental goals and adolescents' prosocial behaviors. To address these issues, this two-wave longitudinal study investigated the associations between parental collectivism goals and Chinese adolescents' prosocial behaviors, with attention to the mediating role of authoritative parenting. Two hundred and eighty-five Chinese adolescents (51% girls; mean age = 12.29 years,  $SD = 0.64$ , range = 11–14) completed measures on parental collectivism goals, parenting practices, and their own prosocial behaviors. Results showed that adolescents' perceived parental collectivism goals positively predicted their prosocial behaviors one year later, which was partially mediated by authoritative parenting. Notably, the effects of perceived parental collectivism goals and authoritative parenting on adolescents' later prosocial behaviors were more salient when adolescents initially showed a lower level of prosocial behaviors. The findings highlight the positive effects of parental collectivism goals in promoting adolescent prosocial development via authoritative parenting in the Chinese context, and identify the subgroup of adolescents who may derive particular benefits from this process.

**Keywords** Adolescents · Authoritative parenting · Parental goals · Prosocial behaviors

## Introduction

As markers of positive social functioning, prosocial behaviors (i.e., actions that are taken with an intention to benefit others such as sharing, comforting, and helping) have drawn increasing attention due to their contributions to an integrated and harmonious society especially in cultures emphasizing collectivistic orientations (Carlo et al., 2020). Adolescence is a developmental stage when children are

acquiring greater cognitive and social capabilities along with maturation, representing a key transition period for their internalization of prosocial values (Knight et al., 2016). Parents are principal socializers who play a crucial role in promoting children's prosocial behaviors during adolescence (Eisenberg et al., 2015). Despite accumulating studies regarding parental socialization of adolescents' prosocial behaviors, research on non-Western countries is scarce, and few studies examine the role of parental goals in this process. Parental goals for their children's development of specific skills, behaviors, and qualities, which are often rooted in the broader cultural contexts (Bornstein, 2012), are critical antecedents of parenting practices that could ultimately contribute to children's socialization outcomes (Darling & Steinberg, 1993). Therefore, using a two-wave longitudinal design, this study aimed to examine *whether*, *how*, and *when* parental collectivism goals play a role in the development of children's prosocial behaviors through parenting among Chinese adolescents. Given the emphasis of Chinese collectivistic orientation on prosocial values, Chinese adolescents' prosocial behaviors may especially

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benefit their developmental adjustment (e.g., educational achievement and social competence; Chen et al., 2002, Lu et al., 2018), pointing to the importance of identifying positive factors that can promote such behaviors.

### Parental Collectivism Goals and Adolescents' Prosocial Behaviors

Parental goals for their children are greatly shaped by cultures (Qu et al., 2016). For example, Chinese collectivistic culture emphasizes the interdependence between individuals and the affiliated groups (Oyserman et al., 2002). Such values can be transmitted across generations and embodied in parental collectivism goals held by Chinese parents (Chen et al., 2015), which are characterized by parents' expectations of their children to have more interdependent and harmonious relationships with others (Li et al., 2010). Culturally guided parental goals may influence related adolescent developmental outcomes through the cultural socialization process (Chen & French, 2008), and foster characteristics that are important to becoming competent and successful in certain cultural contexts (Raval et al., 2018). Drawing on this theoretical framework, Chinese parents' collectivism goals may promote adolescents' adaptive development such as prosocial behaviors. Specifically, prosocial behaviors comply with the social norms in the Chinese collectivistic culture (Chen et al., 2002). Being benevolent, empathic, and prosocial (i.e., *Ren*) is one of the traditional Confucian virtues (Shek et al., 2013), which has been highly valued by Chinese society for thousands of years and persists today. Adolescents exhibiting higher levels of prosocial behaviors may be especially preferred in Chinese society, and subsequently, are more likely to show better social adaptation and interpersonal relationships (Chen et al., 2002). Therefore, Chinese children whose parents holding more collectivism socialization goals may exhibit higher levels of prosocial behaviors.

Only limited research has examined the links between parental collectivism goals and children's adjustment. For example, Chinese young adults' perceived maternal collectivism goals were found to be positively associated with their self-esteem (Li et al., 2010). Using a sample consisting of German and Indian mothers and their toddlers, another study found that mother-report relational socialization goals, which emphasize prosociality and obedience, were positively related to observed prosocial behaviors of toddlers in both countries (Kärtner et al., 2010). However, no prior work has directly investigated the associations between parental childrearing goals and children's prosocial behaviors during adolescence. Moreover, most existing studies on parental socialization goals and children's adjustment use a cross-sectional design and examine concurrent associations. Therefore, it is important to employ a

longitudinal approach to investigate the role of parental collectivism goals in children's development over time as they navigate the adolescent years.

### The Mediating Role of Authoritative Parenting

Cultural socialization theories posit that parental goals may guide parenting practices, which serve as a key mechanism to influence adolescent developmental outcomes (Ng et al., 2019). It is possible that authoritative parenting style, which entails high levels of parental autonomy support and warmth (Silke et al., 2018), may be adopted by Chinese parents who hold collectivism goals to facilitate the achievement of such goals. Authoritative parents not only support the autonomy and self-development of their children, but also are responsive and warm in their relationships with children, both of which could contribute to a foundation for their children to develop more positive connections with others (Li et al., 2010). Moreover, Chinese parents' collectivism goals may reflect their own adherence to Chinese collectivistic cultural values that emphasize interdependence and prosocial orientation (Chen & French, 2008), which may lead them to have more mutual communication as well as show more helping and caring behaviors within the family. Indeed, several studies suggest that Chinese maternal collectivism goals were positively associated with youth-report or mother-report authoritative parenting (Chan et al., 2009, Chen-Bouck et al., 2019, Li et al., 2010). It should be noted that, under the classic individualism-collectivism framework of cultural values, parental endorsement of autonomy and relatedness seem to stand as polar opposites (Keller, 2003). However, increasing literature suggests that individualistic and collectivistic values at the cultural level, as well as the developmental goals of autonomy and relatedness at the individual level, can coexist in diverse forms (Tamis-LeMonda et al., 2008). For example, they may be functionally dependent such that parents may view individual success (e.g., autonomy) as an important way to promote collective success or vice versa (Tamis-LeMonda et al., 2008).

Authoritative parenting may subsequently contribute to the development of adolescents' prosocial behaviors (Hastings et al., 2015). First, based on Self-Determination Theory (Ryan & Deci, 2000), scholars postulate that parental autonomy support could promote the satisfaction of children's own basic psychological needs, which orients them to take others' demands into consideration and become more likely to engage in prosocial behaviors (Gagné, 2003). Second, adolescents who experience higher levels of parental warmth may possess more resources to internalize prosociality through the identification and imitation of their parents' behaviors (Padilla-Walker et al., 2016). In addition, adolescents who perceived higher levels

of parental autonomy support and warmth were found to show more empathy-related responses and perspective taking (Miklikowska et al., 2011), which are primary motivational and functional antecedents of the intention to help and actual engagement in prosocial behaviors (Eisenberg et al., 2015). Indeed, a burgeoning literature has revealed a positive association between authoritative parenting and adolescents' prosocial behaviors over time (for a review, see Silke et al., 2018). Taken together, authoritative parenting may serve as a mechanism to mediate the association between parental collectivism goals and adolescents' prosocial behaviors. Although prior studies have demonstrated the links between parental collectivism goals and authoritative parenting, as well as authoritative parenting and prosocial behaviors, respectively, no research has investigated the comprehensive pathways among the constructs (i.e., parental collectivism goals to authoritative parenting to adolescents' prosocial behaviors).

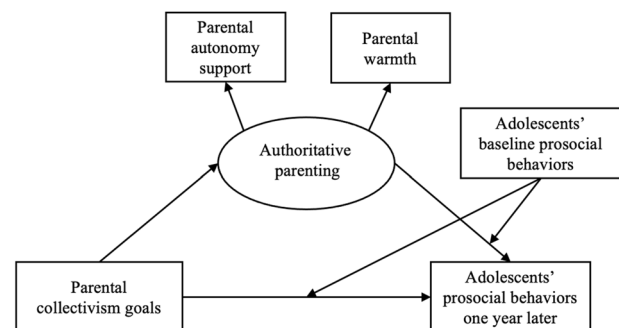
### The Moderating Role of Adolescents' Baseline Prosocial Behaviors

Parental collectivism goals and authoritative parenting may especially benefit adolescents who initially show a lower level of prosocial behaviors. Previous research suggests that parental socialization beliefs and practices can play a larger role in children's development among children who are in a less competent or adaptive status initially (Pomerantz et al., 2007). For example, studies focusing on the academic arena found that compared to children who reported a stronger sense of academic competence or had greater academic achievements, children with lower initial competence or achievement experienced greater increments over time in their subsequent competence or achievement when their mothers held positive beliefs about their potential or exhibited greater parental involvement (Ng et al., 2004, Pomerantz et al., 2005, 2006). Similarly, with regard to parental emotion socialization of adolescents, maternal positive beliefs of emotion were only associated with children's formation of adaptive emotional beliefs among depressed children but not healthy children (Hunter et al., 2011). Such effects may also apply to parental socialization of children's prosocial behaviors in the moral arena, which has not been investigated yet. Specifically, adolescents who show a lower baseline level of prosocial behaviors may have more needs for the supportive resources that are crucial to the skills and socioemotional development regarding prosocial behaviors, and thereby, be more sensitive to parental expectations and parenting practices that provide such resources (Pomerantz et al., 2007). In contrast, those with a higher baseline level of prosocial behaviors may already possess sufficient resources, and are more likely to have their collectivism-oriented social needs fulfilled through

diverse avenues derived from the beneficial effects of prosocial behaviors per se (e.g., better academic outcomes and peer relationships; Carlo et al., 2018, Wentzel, 2014). Therefore, the positive longitudinal effects of parental collectivism goals and authoritative parenting on adolescents' prosocial behaviors may be more salient among children who report a lower baseline level of prosocial behaviors.

### Current Study

No extant studies have directly examined whether parental goals, which are a pivotal element in the process of cultural socialization, play a role in adolescent prosocial development, especially in non-Western contexts. Moreover, little attention has been paid to the holistic process from parental goals to adolescent adjustment via parenting practices. Identifying the beneficial family factors that foster prosocial development, as well as exploring the underlying mechanisms, are of great significance in promoting adolescents to thrive. Therefore, using a two-wave longitudinal survey spanning one year, the current study aimed to answer three research questions with a sample of Chinese adolescents: (a) whether parental collectivism goals have a longitudinal association with adolescents' prosocial behaviors, (b) whether authoritative parenting, which is characterized by high levels of parental autonomy support and warmth, plays a mediating role in this association, and (c) whether adolescents' initial prosocial behaviors moderate the effects of parental collectivism goals and authoritative parenting on adolescents' later prosocial behaviors. To this end, adolescents reported on parental collectivism goals and authoritative parenting (i.e., parental autonomy support and warmth) at Wave 1, and reported on their prosocial behaviors at both Wave 1 and Wave 2 (i.e., one year later). As illustrated in the conceptual moderated mediation model in Fig. 1, it was hypothesized that adolescents' perceived parental collectivism goals would be positively associated with their prosocial behaviors one year later, and



**Fig. 1** The conceptual moderated mediation model for authoritative parenting in the link between parental collectivism goals and adolescents' prosocial behaviors

authoritative parenting would mediate this association. It was also hypothesized that adolescents' baseline prosocial behaviors would moderate the impact of perceived parental collectivism goals and authoritative parenting on adolescents' prosocial behaviors one year later, such that perceived parental collectivism goals and authoritative parenting would have stronger associations with adolescents' later prosocial behaviors when adolescents initially report a lower level of prosocial behaviors.

## Methods

### Participants

Participants were 285 Chinese adolescents consisting of 141 (49%) boys and 144 (51%) girls, with a mean age of 12.29 years ( $SD = 0.64$ , range = 11–14) at baseline. All participants were recruited from the sixth and seventh grades of a middle school serving working and middle-class families in Shanghai, China. The vast majority of participants (99%) were of Han descent. Parents of the participants had a mean age of 41.57 years ( $SD = 3.23$ , range = 35–55). In regards to parents' educational attainment, 35% mothers and 30% fathers had a high school education or below, and 65% mothers and 70% fathers had a college degree or above. With regard to household monthly income, 5% parents of the participants reported less than 10,000 RMB, 37% reported between 10,000 and 20,000 RMB, 26% reported between 20,000 and 30,000 RMB, and 32% reported above 30,000 RMB. Participants were predominantly from single-child families (89%) and two-parent families (95%). The sample was representative of Chinese families residing in Shanghai regarding ethnic composition, number of children, and parents' marital status (National Bureau of Statistics of China, 2021). However, the participating families had relatively higher socioeconomic status (SES) than the general population in Shanghai where approximately 41% of adults between age 35–49 had a college degree or above, and the estimated average household monthly income was 14,000 RMB (National Bureau of Statistics of China, 2021).

### Procedure

First, all information that should be provided for informed consent (e.g., purposes of the research, benefits and risks, and ethical principles) were orally introduced to all targeted participants (all 6<sup>th</sup> and 7<sup>th</sup> graders) and their parents through either class meetings or parent-teacher conferences. For adolescents and parents who were willing to participate in this study, passive consent was then obtained during the data collection process. At two waves with a one-year interval, adolescents completed online questionnaires in

computer classrooms during school time under the instructions of well-trained research assistants. At Wave 1, they reported on parental collectivism goals, autonomy support, warmth, and their own prosocial behaviors. At Wave 2, they reported on their prosocial behaviors again. In addition, at Wave 1, their parents who identified themselves as the primary caregiver of the adolescents reported on several demographic questions (i.e., their age and gender, the educational attainment of their own and their spouse, family income, marital status, and the number of children) through an online questionnaire at home. The principles of voluntary participation and free withdrawal at any time were reiterated in each questionnaire. Among all 303 families that were invited to participate in the study, 18 families opted out of the study, and therefore, 94% of the targeted participants were included in the final sample. The research procedure was approved by the Institutional Review Board of the School of Social Development and Public Policy at Fudan University.

Sample attrition was 11% from Wave 1 to Wave 2, which was mainly due to students' absence from school during the second survey or, in some cases, failure to be matched with an identifiable participant at Wave 1. The proportion of missing values was 3% in total and ranged from 0% to 11% among all variables. Results of Little's (1988) test were significant,  $\chi^2(48) = 69.38$ ,  $p = 0.02$ , suggesting that the missingness mechanism was not missing completely at random (MCAR). A series of independent t-tests were used to locate the potential missingness correlates by comparing the mean values of all variables at the initial assessment for adolescents involved in both two waves and those who only participated in the first wave (Nicholson et al., 2017). No significant differences between the two groups were found in all variables,  $t_s < 1.82$ ,  $p_s > 0.07$ , except children's gender and prosocial behaviors. That is, adolescents who dropped out, compared with those retained, were more likely to be boys,  $t = 4.23$ ,  $p < 0.001$ ,  $d = 0.69$ , and reported lower levels of prosocial behaviors,  $t = 2.35$ ,  $p = 0.02$ ,  $d = 0.45$ . Given that children's gender and Wave 1 prosocial behaviors were included in all analytical models as covariates, full information maximum likelihood (FIML) estimation, which could provide approximately unbiased parameter estimates (Schlomer et al., 2010), was employed using Mplus 8.1 (Muthén & Muthén, 2019) to handle missing data in all the subsequent model analyses.

## Measures

### Parental collectivism goals

At Wave 1, the five items developed by Li et al. (2010) were used to assess parental collectivism goals. The Chinese version of this measure has been validated with factor

analysis and showed satisfactory internal consistency (Li et al., 2010). These items describe parental socialization goals emphasizing social harmony and cooperation orientation (e.g., “My parents want me to have harmonious relationships with people around me” and “My parents want me to know the role I should play in a social group”). Children rated how much their parents expected them to achieve such goals on a five-point Likert scale ranging from 1 (*not at all desire*) to 5 (*very much desire*). The average of the items was taken with higher values indicating perceived parents’ greater endorsement of collectivism goals ( $\alpha = 0.86$ ).

### Parental autonomy support

At Wave 1, the eight items developed by Wang et al. (2007) were used to measure parental autonomy support. This measure has been validated using factor analysis among samples of Chinese adolescents (Wang et al., 2007). Children indicated how true each item was for their parents (e.g., “Encourage me to give my ideas and opinions when it comes to decisions about me” and “Allow me to make choice whenever possible”) on a five-point Likert scale ranging from 1 (*not at all true*) to 5 (*very true*). The item scores were averaged with higher scores reflecting children’s more experience of autonomy support granted by their parents ( $\alpha = 0.96$ ).

### Parental warmth

At Wave 1, parental warmth was assessed using four items from the Warmth and Affection subscale in the child version of the Parental Acceptance-Rejection Questionnaire (Child PARQ; Rohner & Khaleque, 2005). This measure has been used across countries including China and showed good reliability and validity (Lansford et al., 2014). Children responded to each item (e.g., “My parents try to help me when I am scared or upset” and “My parents treat me gently and with kindness”) on a five-point Likert scale ranging from 1 (*not at all true*) to 5 (*very true*). The item scores were averaged so that higher mean scores indicated children’s more experience of warmth and affection in their relationships with parents ( $\alpha = 0.92$ ).

### Adolescents’ prosocial behaviors

At both Wave 1 and 2, children’s prosocial behaviors were measured using the five-item Prosocial Behavior subscale from the self-report version of the Strengths and Difficulties Questionnaire (SDQ; Goodman & Scott, 1999). The Chinese version of this measure has been examined and showed good validity and reliability (Du et al., 2008). Children rated how true each item (e.g., “Helpful if someone is hurt, upset

or feeling ill”, “Considerate of other people’s feelings”) was of them on a seven-point Likert scale ranging from 1 (*not at all true*) to 7 (*very true*). The mean score of the items was taken with higher values indicating children’s higher levels of self-reported prosocial behaviors ( $\alpha = 0.94$  at Wave 1 and  $\alpha = 0.91$  at Wave 2).

## Results

### Overview of Analyses

Descriptive statistics and Pearson correlations were performed for all study variables using SPSS 25. Three sets of analyses were then conducted to examine the key hypotheses using Structural Equation Modeling (SEM) in Mplus 8.1. The first set of analyses tested the effect of parental collectivism goals on adolescents’ prosocial behaviors one year later, adjusting for adolescents’ baseline prosocial behaviors. The second set of analyses examined the mediating effect of authoritative parenting in the association between parental collectivism goals and adolescents’ later prosocial behaviors. Authoritative parenting was specified as a latent construct with two indicators including parental autonomy support and warmth. The third set of analyses investigated the moderating role of adolescents’ baseline prosocial behaviors in the link between parental collectivism goals (or authoritative parenting) and adolescents’ later prosocial behaviors. All models adjusted for demographic covariates including child age, child gender (coded as 0 = *boy*, 1 = *girl*), parental educational attainment (i.e., the mean of mother and father’s education; coded as 0 = *high school education or below*, 1 = *college degree or above*), and family monthly income (coded from 1 = *below 2000 RMB* to 9 = *above 30,000 RMB*). The predictors were not mean-centered before being entered into all models except for the moderation analyses when generating the interaction terms. The fit indices of all SEM models were evaluated with the widely used cutoff criteria that the comparative fit index (CFI) > 0.90, the root-mean-square error of approximation (RMSEA) < 0.08, and the standardized root-mean-square residual (SRMR) < 0.06 (Hu & Bentler, 1999).

### Descriptive Analyses

Results of descriptive statistics and correlation analyses are presented in Table 1. As expected, parental autonomy support and warmth, as the two indicators of authoritative parenting, showed a strong positive correlation,  $r = 0.75$ ,  $p < 0.001$ . There were pairwise small to moderate positive associations between parental collectivism goals, autonomy support/warmth, and adolescents’ prosocial behaviors at

**Table 1** Correlations, means, and standard deviations of all variables

	1	2	3	4	5	6	7	8	9
1. Parental collectivism goals (Wave 1)	–								
2. Parental autonomy support (Wave 1)	0.33***	–							
3. Parental warmth (Wave 1)	0.34***	0.75***	–						
4. Adolescents' prosocial behaviors (Wave 1)	0.38***	0.39***	0.37***	–					
5. Adolescents' prosocial behaviors (Wave 2)	0.29***	0.28***	0.27***	0.38***	–				
6. Child gender	0.06	–0.01	0.02	0.11	0.17**	–			
7. Child age	0.00	0.05	0.12*	0.08	–0.03	–0.02	–		
8. Parent education	–0.04	0.06	0.09	–0.05	–0.14*	–0.03	–0.12	–	
9. Family income	–0.06	0.05	0.10	0.05	–0.18**	–0.04	–0.11	0.29***	–
<i>M</i>	4.43	3.67	3.80	6.16	6.20	0.51	12.29	0.67	7.63
<i>SD</i>	0.73	1.16	1.17	1.15	0.96	0.50	0.64	0.38	1.27
<i>Range</i>	1–5	1–5	1–5	1–7	1–7	0, 1	11–14	0–1	3–9

Child gender was coded as 0 (*boy*) and 1 (*girl*). Parent education was coded as 0 (*high school education or below*) and 1 (*college degree or above*). Family income was coded from 1 (*below 2000 RMB monthly*) to 9 (*above 30,000 RMB monthly*)

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

both Wave 1 and 2,  $0.27 < r_s < 0.39$ ,  $p_s < 0.001$ . In addition, the levels of adolescents' prosocial behaviors did not show a significant change across waves,  $t(254) = 0.21$ ,  $p = 0.84$ . Girls ( $M = 6.32$ ,  $SD = 0.93$ ) reported to have higher levels of prosocial behaviors than boys ( $M = 6.08$ ,  $SD = 0.79$ ),  $F(1, 253) = 5.17$ ,  $p = 0.02$ ,  $d = 0.28$ , and such difference remained consistent across waves,  $F(1, 253) = 1.05$ ,  $p = 0.31$ . Adolescents with parents who had lower education attainment and from lower-income families reported higher levels of prosocial behaviors at Wave 2 (for education,  $r = -0.14$ ,  $p = 0.03$ ; for income,  $r = -0.18$ ,  $p = 0.004$ ) but not at Wave 1 (for education,  $r = -0.05$ ,  $p = 0.41$ ; for income,  $r = 0.05$ ,  $p = 0.43$ ).

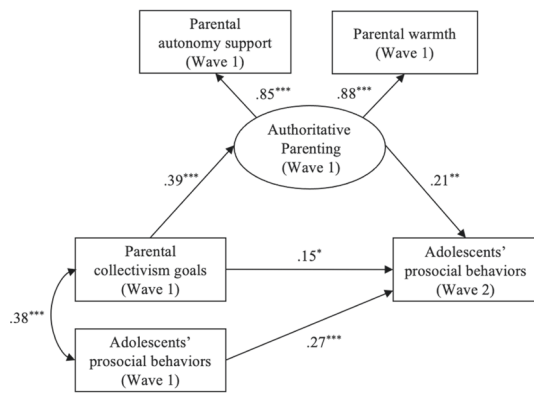
### Parental Collectivism Goals and Adolescents' Prosocial Behaviors

First, the longitudinal effect of parental collectivism goals on adolescents' prosocial behaviors over time was examined using a path analysis model, in which Wave 2 adolescents' prosocial behaviors were predicted by Wave 1 parental collectivism goals, adjusting for Wave 1 adolescents' prosocial behaviors. Given that a saturated model was estimated, the model fit was perfect,  $CFI = 1.00$ ,  $RMSEA = 0.00$ ,  $SRMR = 0.00$ . Results suggested that parental collectivism goals significantly predicted adolescents' higher levels of prosocial behaviors one year later over and above their initial prosocial behaviors and other demographic covariates,  $\beta = 0.21$ ,  $p < 0.001$ . In addition, girls (vs. boys)

and adolescents from families with a lower family income reported higher levels of Wave 2 prosocial behaviors (for gender,  $\beta = 0.13$ ,  $p = 0.02$ ; for income:  $\beta = -0.15$ ,  $p = 0.01$ ), adjusting for Wave 1 prosocial behaviors.

### The Mediating Effect of Authoritative Parenting

Drawing on the significant main effect of parental collectivism goals on adolescents' prosocial behaviors, the mediating role of authoritative parenting was examined. The latent construct of Wave 1 authoritative parenting with two indicators of parental autonomy support and warmth was added to the above main effect model as a mediator. Bootstrap confidence interval with 5000 resamples was used to test the significance of indirect effect (Preacher & Hayes, 2008). The model fit the data adequately,  $CFI = 1.00$ ,  $RMSEA = 0.03$ ,  $SRMR = 0.01$ . As shown in Fig. 2, parental autonomy support and warmth loaded significantly on the latent construct of authoritative parenting,  $\beta_s > 0.85$ ,  $p_s < 0.001$ . Parental collectivism goals were positively associated with authoritative parenting,  $\beta = 0.39$ ,  $p < 0.001$ , which in turn positively predicted adolescents' prosocial behaviors at Wave 2,  $\beta = 0.21$ ,  $p = 0.002$ . This indirect path was significant,  $\beta = 0.08$ , 95%  $CI = [0.02, 0.14]$ , with a 35% reduction in the total effect. The direct effect remained significant,  $\beta = 0.15$ ,  $p = 0.02$ , indicating that authoritative parenting partially mediated the association between parental collectivism goals and adolescents' prosocial behaviors one year later.



**Fig. 2** Significant indirect effect of parental collectivism goals on adolescents' prosocial behaviors through authoritative parenting over time. *Note.* Child gender and age, parent education, and family income were included as covariates. Wave 1 authoritative parenting and Wave 1 adolescents' prosocial behaviors were correlated though not shown in the figure. Standardized coefficients are presented. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

To ensure that the significant mediation effect was not driven by specific dimensions of authoritative parenting, parental autonomy support and warmth were also analyzed as individual mediators, rather than the indicators of authoritative parenting latent construct, in separate models. The model fits were perfect because the saturated models were adopted, CFIs = 1.00, RMSEAs = 0.00, SRMRs = 0.00. The results supported the significant partially mediating effects of both two variables. Specifically, parental collectivism goals were positively associated with parental autonomy support,  $\beta = 0.33$ ,  $p < 0.001$ , which in turn positively predicted adolescents' prosocial behaviors over time,  $\beta = 0.16$ ,  $p = 0.006$ . This indirect path was significant,  $\beta = 0.05$ , 95% CI = [0.01, 0.09], with a 23% reduction in the total effect. Similarly, results found a positive association between parental collectivism goals and parental warmth,  $\beta = 0.35$ ,  $p < 0.001$ , as well as parental warmth and prosocial behaviors at Wave 2,  $\beta = 0.17$ ,  $p = 0.004$ . This indirect effect was significant,  $\beta = 0.06$ , 95% CI = [0.01, 0.11], with a 26% reduction in the total effect.

### The Moderating Effect of Adolescents' Baseline Prosocial Behaviors

The third set of analyses first examined the moderating role of adolescents' baseline prosocial behaviors on the link between parental collectivism goals and adolescents' prosocial behaviors one year later. Wave 2 adolescents' prosocial behaviors were predicted by Wave 1 parental collectivism goals, adolescents' prosocial behaviors, and the interaction term of these two variables. Wave 1 parental collectivism goals and adolescents' prosocial behaviors were mean centered before computing the interaction term. The saturated model led to a perfect model fit, CFI = 1.00,

RMSEA = 0.00, SRMR = 0.00. As shown in the Model 1 of Table 2, adolescents' baseline prosocial behaviors moderated the longitudinal effect of parental collectivism goals on adolescents' later prosocial behaviors ( $\beta = -0.22$ ,  $p = 0.03$ ). Then, the simple slopes of the association between Wave 1 parental collectivism goals and Wave 2 adolescents' prosocial behaviors for adolescents with low (i.e., 1 SD below the mean) and high (i.e., 1 SD above the mean) levels of baseline prosocial behaviors were plotted (Fig. 3). For adolescents who reported low levels of baseline prosocial behaviors, parental collectivism goals positively predicted adolescents' prosocial behaviors one year later (unstandardized simple slope = 0.42, standardized simple slope = 0.36,  $p < 0.001$ ). However, for adolescents who reported high levels of baseline prosocial behaviors, parental collectivism goals were not related to their later prosocial behaviors (unstandardized simple slope = 0.06, standardized simple slope = 0.05,  $p = 0.68$ ).

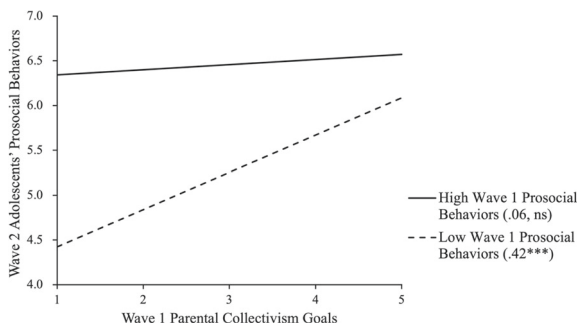
Finally, the moderating effect of adolescents' baseline prosocial behaviors on the link between authoritative parenting and adolescents' prosocial behaviors one year later was tested. Based on the mediation model of authoritative parenting, the interactions term of Wave 1 authoritative parenting and adolescents' prosocial behaviors was added to the model. The latent moderated structural equations (LMS) approach was adopted to address the interaction involving latent variables (i.e., authoritative parenting) using the XWITH command in Mplus (Maslowsky et al., 2015). This approach does not provide the conventional model fit indices (e.g., CFI, RMSEA). Therefore, following the method used in previous research (Poteat et al., 2021), the mediation model before adding the interaction term was used to demonstrate adequate fit of the moderation model. The two indicators of authoritative parenting, parental autonomy support and warmth, and Wave 1 adolescents' prosocial behaviors were mean centered before being entered into the model to form the interaction term. The interaction effect between adolescents' baseline prosocial behaviors and authoritative parenting on adolescents' prosocial behaviors one year later was significant ( $\beta = -0.19$ ,  $p = 0.01$ ; Model 2 of Table 2). Simple slope analyses were then conducted to examine the association between Wave 1 authoritative parenting and Wave 2 adolescents' prosocial behaviors for adolescents with low (i.e., 1 SD below the mean) and high (i.e., 1 SD above the mean) levels of baseline prosocial behaviors. For adolescents who reported low levels of baseline prosocial behaviors, authoritative parenting positively predicted adolescents' prosocial behaviors one year later (unstandardized simple slope = 0.43, standardized simple slope = 0.47,  $p < 0.001$ ). For adolescents who reported high levels of baseline prosocial behaviors, authoritative parenting was not related to adolescents' later prosocial behaviors (unstandardized simple slope =

**Table 2** Moderating effects of adolescents' baseline prosocial behaviors on the links between parental collectivism goals/authoritative parenting and adolescents' prosocial behaviors one year later

	Model 1			Model 2			Model 3			Model 4		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
Intercept	9.22	1.15		8.10	1.19		7.69	1.19		8.28	1.22	
Child gender	0.25	0.11	0.12*	0.28	0.10	0.14**	0.27	0.10	0.14**	0.26	0.10	0.13**
Child age	-0.18	0.09	-0.11*	-0.16	0.08	-0.11	-0.15	0.08	-0.09	-0.17	0.09	-0.11*
Parent education	-0.21	0.14	-0.08	-0.24	0.14	-0.10	-0.23	0.14	-0.09	-0.22	0.14	-0.09
Family income	-0.11	0.05	-0.13*	-0.11	0.04	-0.15**	-0.11	0.04	-0.14*	-0.13	0.04	-0.17**
Baseline prosocial behaviors	0.30	0.05	0.33***	0.21	0.06	0.26***	0.19	0.06	0.22***	0.24	0.06	0.28***
Parental collectivism goals	0.24	0.09	0.17**	0.21	0.09	0.16*	0.26	0.09	0.19**	0.23	0.09	0.17**
Collectivism goals $\times$ Baseline prosocial behaviors	-0.16	0.07	-0.22*									
Authoritative parenting				0.24	0.07	0.25***						
Authoritative parenting $\times$ Baseline prosocial behaviors				-0.16	0.06	-0.19*						
Parental autonomy support							0.15	0.05	0.17**			
Autonomy support $\times$ Baseline prosocial behaviors							-0.10	0.04	-0.16*			
Parental warmth										0.15	0.05	0.17**
Warmth $\times$ Baseline prosocial behaviors										-0.01	0.04	-0.02

Model 1–4 examined the moderating effect of Wave 1 adolescents' prosocial behaviors on the link between Wave 1 parental collectivism goals (Model 1)/authoritative parenting (Model 2)/autonomy support (Model 3)/warmth (Model 4) and Wave 2 adolescents' prosocial behaviors. Child gender was coded as 0 (*boy*) and 1 (*girl*). Parent education was coded as 0 (*high school education or below*) and 1 (*college degree or above*). Family income was coded from 1 (*below 2000 RMB monthly*) to 9 (*above 30,000 RMB monthly*)

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



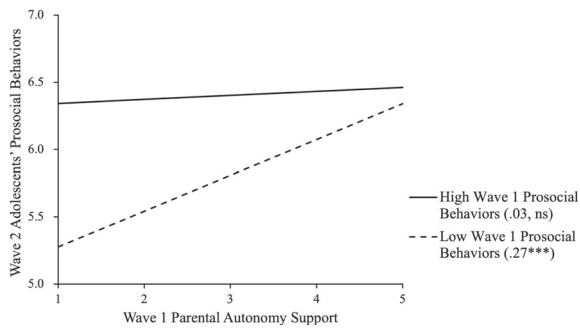
**Fig. 3** The association between Wave 1 parental collectivism goals and Wave 2 adolescents' prosocial behaviors was moderated by Wave 1 adolescents' prosocial behaviors. *Note.* The high (or low) level of baseline prosocial behaviors is 1 SD above (or below) the mean of adolescents' prosocial behaviors at Wave 1. Unstandardized simple slopes are shown in parentheses. \*\*\*  $p < 0.001$ , ns = not significant

0.06, standardized simple slope = 0.07,  $p = 0.46$ ). The indirect effect from parental collectivism goals to adolescents' later prosocial behaviors through authoritative parenting was significant for adolescents with low levels,  $\beta = 0.16$ , 95% CI = [0.01, 0.34], but not high levels,  $\beta = 0.02$ , 95% CI = [-0.06, 0.13], of baseline prosocial behaviors.

Again, to explore the possible differential roles of parental autonomy support and warmth, each of them was also analyzed individually for the moderation analysis following a similar procedure in separate models. The models fit the data

well, CFIs > 1.00, RMSEAs < 0.05, SRMRs < 0.01. As shown in the Model 3 of Table 2, adolescents' baseline prosocial behaviors moderated the association between parental autonomy support and adolescents' prosocial behaviors one year later ( $\beta = -0.16$ ,  $p = 0.02$ ). The simple slopes of the associations between Wave 1 parental autonomy support and Wave 2 adolescents' prosocial behaviors for adolescents reported low (i.e., 1 SD below the mean) and high (i.e., 1 SD above the mean) levels of baseline prosocial behaviors were plotted (Fig. 4). For adolescents who reported low levels of baseline prosocial behaviors, parental autonomy support positively predicted adolescents' prosocial behaviors one year later (unstandardized simple slope = 0.27, standardized simple slope = 0.35,  $p < 0.001$ ). However, for adolescents who reported high levels of baseline prosocial behaviors, parental autonomy support was not associated with adolescents' later prosocial behaviors (unstandardized simple slope = 0.03, standardized simple slope = 0.04,  $p = 0.65$ ). The indirect effect from parental collectivism goals to adolescents' later prosocial behaviors through parental autonomy support was significant for adolescents with low levels,  $\beta = 0.12$ , 95% CI = [0.03, 0.20], but not high levels,  $\beta = 0.01$ , 95% CI = [-0.05, 0.07], of baseline prosocial behaviors. Similar analyses showed that adolescent baseline prosocial behavior did not moderate the association between Wave 1 parental warmth and Wave 2 adolescent prosocial behaviors ( $\beta = -0.02$ ,  $p = 0.79$ ; Model 4 in Table 2).





**Fig. 4** The association between Wave 1 parental autonomy support and Wave 2 adolescents' prosocial behaviors was moderated by Wave 1 adolescents' prosocial behaviors. *Note.* The high (or low) level of baseline prosocial behaviors is 1 SD above (or below) the mean of adolescents' prosocial behaviors at Wave 1. Unstandardized simple slopes are shown in parentheses. \*\*\* $p < 0.001$ , ns not significant

### Sensitivity Analyses

A set of sensitivity analyses examined the robustness of the results when using alternative approaches to handle missing data. Specifically, all the hypothesized models were rerun with listwise deletion of cases with missing data ( $N = 237$ ). The results suggested no meaningful change regarding the direction or significance of the findings derived from the original analyses using FIML.

### Discussion

Among cultures with collectivistic orientation (e.g., Chinese culture), prosocial behaviors may be particularly adaptive in facilitating adolescent positive development (Davis et al., 2018). Identifying the beneficial within-family factors that foster children's prosocial development, as well as exploring the underlying mechanism, are of great significance in promoting adolescents to thrive. Guided by the theoretical models of cultural socialization (Ng et al., 2019), this study found a longitudinal positive association between parental collectivism goals and adolescents' prosocial behaviors with a Chinese sample, and further revealed the mediating role of authoritative parenting, as well as the moderating role of adolescents' baseline prosocial behaviors in the above links. Specifically, adolescents who perceived more parental collectivism socialization goals reported a higher level of authoritative parenting of their parents, which in turn, predicted a higher level of their prosocial behaviors one year later. The positive effects of adolescents' perceived parental collectivism goals and authoritative parenting on adolescents' later prosocial behaviors were more salient among those who had a lower baseline level of prosocial behaviors.

### The Effect of Parental Collectivism Goals on Adolescents' Prosocial Behaviors

Adolescents in the current study perceived a high level of parental collectivism goals (i.e., with a mean score of 4.43 on a five-point scale), which is consistent with prior research that used the same measure to compare Chinese and European American maternal collectivism goals with child-report (Li et al., 2010). Indeed, parents' socialization goals are often in line with the cultural background that they are embedded in (Chen et al., 2015). Chinese adolescents' perceived parental collectivism goals, as expected, positively predicted their prosocial behaviors one year later. Prosocial behaviors are essential for the functioning of cultures with collectivist orientations that encourage prioritizing the larger group's needs over individual interests and keeping amicable relationships with others (Chen et al., 2002). Children cultivated with such values may tend to show higher levels of prosocial behaviors because they have not only internalized the social norms but also adopted prosocial behaviors as adaptive strategies helping them pursue interdependent achievements (Davis et al., 2018, Feygina & Henry, 2015). The results also reiterate the crucial role of parents in this cultural socialization process. As children navigate the adolescent years, although the agents outside the family (e.g., peer, teacher, media) start to have growing influences on children (Eisenberg et al., 2015), parents may still be considered as major within-family promoters of children's prosocial behaviors.

The results also reveal significant predictive effects of gender and family income on adolescents' prosocial behaviors one year later. Specifically, girls reported higher levels of prosocial behaviors over time than boys, which was consistent with previous studies (e.g., Ngai et al., 2018, Van der Graaff et al., 2018). Family income was negatively predictive of prosocial behaviors, such that adolescents from families with lower income showed higher levels of prosocial behaviors one year later, which was contrary to several previous studies suggesting that low family SES (e.g., economic strain, impoverishment) may hinder adolescents' prosocial development by adding stress and limiting promoting resources such as role models (for a review, see Hastings et al., 2015). However, these findings are in line with prior research on young adults, which suggests that individuals with lower SES show higher levels of prosocial behaviors because they may be more committed to egalitarian values and have more compassion (e.g., Guinote et al., 2015, Piff et al., 2010). These results point to the needs for more investigations regarding the complex associations between SES and prosocial behaviors.

## The Mediating Role of Authoritative Parenting

Importantly, authoritative parenting was identified as a mediator that links the pathway from parental collectivism goals to adolescents' prosocial behaviors. That is, adolescents' perceived parental collectivism goals were related to higher levels of authoritative parenting, which were predictive of their higher levels of prosocial behaviors one year later. This mediating effect remained significant even when considering the two dimensions of authoritative parenting (i.e., parental autonomy support and warmth) independently. Indeed, parents adjust their parenting strategies to socialize their children toward specific outcomes (Darling & Steinberg, 1993). It is possible that parents who endorse collectivism goals are more likely to support self-development and foster social competence of their children by granting autonomy and being responsive, which are important to adolescents' positive adjustment in broader social contexts (Chen-Bouck et al., 2019). Such authoritative parenting, in turn, may benefit children's adaptive development including prosocial behaviors (Pastorelli et al., 2016). Specifically, parental autonomy support could satisfy children's basic needs directing to the self and subsequently enable them to be aware of and react to others' needs (Gagné, 2003). The opinion exchanges characterizing autonomy support may also help children transit from simply obeying parents' restrictions to fully internalizing the prosocial values transmitted by parents during adolescence (Knight et al., 2016). Meanwhile, parental warmth could provide not only a secure emotional base but also a role model for children to develop greater prosociality (Eisenberg et al., 2015). Notably, authoritative parenting only partially mediated the link between parental collectivism goals and adolescent prosocial behaviors, suggesting the existence of other factors that may also account for this relation.

## The Moderating Role of Adolescents' Baseline Prosocial Behaviors

Finally, adolescents' baseline prosocial behaviors moderated the positive effects of perceived parental collectivism goals and authoritative parenting on their prosocial behaviors one year later. Adolescents with a lower baseline level of prosocial behaviors experienced greater increments, whereas those with a higher baseline level of prosocial behaviors exhibited no significant changes in prosocial behaviors over time in response to parental collectivism goals and authoritative parenting. The findings are in line with previous literature indicating that children in a less adaptive status are more sensitive to parental socialization beliefs and practices because they may have a heightened need for the parental supportive resources essential to their

adaptive development (Pomerantz et al., 2007). Nonetheless, it could be arbitrary to conclude that parental positive beliefs and practices are valueless to children who already show many desirable developmental outcomes (e.g., prosocial behaviors). Evidence indicates that they may still benefit from positive parenting regarding other aspects of adjustment (e.g., emotional functioning; Pomerantz et al., 2006, Yazdani & Daryei, 2016). In addition, the average score over six on a seven-point scale on the measure of prosocial behaviors suggests that adolescents in the current sample show an overall high level of prosocial behaviors. Therefore, adolescents who had higher initial levels of prosocial behaviors may not be able to show significant improvement due to the ceiling effect, though they may also internalize their parents' collectivism goals.

Notably, the impact of parental warmth on adolescents' prosocial behaviors was not moderated by adolescents' baseline prosocial behaviors. That is, adolescents' perceived parental warmth predicted their increased levels of prosocial behaviors regardless of their initial status. The results are consistent with prior studies that demonstrated the strong positive effects of parental warmth on adolescents' prosocial behaviors across age groups, gender, and countries (e.g., Carlo et al., 2011, Lansford et al., 2018, Putnick et al., 2018), indicating the robust promoting role that parental warmth plays in adolescent prosocial development.

## Theoretical and Practical Implications

Culturally guided parental goals are a critical, yet long overlooked, construct in the empirical literature of parental socialization (Ho et al., 2021). This study was the first to examine the longitudinal impact of parental goals on adolescents' prosocial behaviors with a focus on Chinese collectivistic culture. The findings make important contribution to the existing empirical research by highlighting the culturally informed socialization models of adolescent prosocial development in non-Western contexts. The current study also provides new evidence regarding the underlying mechanisms through which parental goals may affect adolescent developmental outcomes via parenting practices. With regard to practical implications, the current study focuses on early adolescence, which is a critical stage for prosocial development because of the increasing exposures to new social contexts and the rapid developmental changes along with maturation (Do et al., 2019, Lenzi et al., 2012). The findings highlight the potential promoting effects of parents' transmission of specific expectations (e.g., collectivism goals) and the use of authoritative parenting on adolescents' prosocial behaviors in such a sensitive period, especially for those who initially show less prosociality. Interventions seeking to strengthen parents' awareness and practices of such positive within-family socialization

processes may benefit adolescent prosocial development. School and community efforts can be considered to provide additional support for adolescents who lack parental resources (Caprara et al., 2014).

### Limitations and Future Directions

The current study has several limitations and points to the directions for future research. First, all variables were measured based on adolescent self-report, which may lead to concerns about common method biases and self-presentation biases. There was also evidence that different informants (e.g., children, parents, observers) had discrepancies in their reports of the same variable of parenting or children's adjustment (Korelitz & Garber, 2016). Future research may utilize multiple informants or measuring methods (e.g., survey, behavioral tasks) to reduce such potential biases. Experimental designs in lab-based settings can further validate the causal links between the study variables. Moreover, some measures (e.g., parental collectivism goals, adolescents' prosocial behaviors) included only limited items, which might not be able to comprehensively capture the constructs and fully examine the associations between them. For example, previous work proposed the typologies of prosocial behaviors based on their motives and situations (e.g., altruistic, emotional, dire, compliant, public, and anonymous prosocial behaviors; Carlo & Randall, 2001), as well as targets (e.g., prosocial behaviors toward friends, family, and strangers; Padilla-Walker & Christensen, 2011). Future research can examine whether the effects of parental goals and practices on adolescents' prosocial behaviors vary across different types of prosocial behaviors.

Second, although the current study adopted a longitudinal design with two time points, the mediation model is optimally examined using data involving three or more waves (Cole & Maxwell, 2003), which could be considered for the designs of future studies. Moreover, the current study only focused on early adolescence. Several prior studies reported declines in prosocial behaviors across adolescence (Carlo et al., 2007; Luengo Kanacri et al., 2013), indicating the importance of understanding later developmental stages. In addition, all participants were recruited from one middle school located in a large urban city in China, which increased the homogeneity of the current sample and overrepresented the middle-class families with relatively higher SES. More diverse populations with a wide range of SES (e.g., families from different regions and cities) are worth further examination. Future comparative studies between and within cultures or countries can provide more direct and nuanced investigations into how cultural contexts influence adolescent prosocial development. In addition, although using FIML to handle

missing data could provide unbiased estimates when including the missingness correlates in the analysis models (Schlomer et al., 2010), the higher attrition rate of adolescents with lower levels of prosocial behaviors may limit the generalizability of the findings.

Finally, children's behaviors were claimed to both be shaped by and, in turn, shape the contexts (Hastings et al., 2015). Such bidirectionality may be especially salient regarding the parent-child interactions during adolescence as they become increasingly egalitarian (Grusec & Davidov, 2010). Therefore, the reciprocal associations between parental goals and children's outcomes can be another interesting direction to be tested. Future research may also consider exploring other types of parental goals (e.g., achievement goals emphasizing competition and success; Zhou et al., 2021) that may have an impact on adolescent prosocial development, as well as other possible mediators linking the associations between parental goals and adolescents' prosocial behaviors (e.g., adolescents' self-construal, perspective taking).

### Conclusion

Culturally embedded parental socialization goals may guide parenting practices and subsequently contribute to adolescent development. Yet, no previous research has investigated how parental goals play a role in the socialization process of adolescents' prosocial behaviors, especially in non-Western countries. Using a two-wave longitudinal design in a Chinese sample, the current research found that adolescents' perceived parental collectivism goals were predictive of their prosocial behaviors one year later. This link was partially mediated by authoritative parenting, which is characterized by high levels of parental autonomy support and warmth. Moreover, the positive effects of perceived parental collectivism goals and authoritative parenting on prosocial behaviors were more salient when adolescents initially showed a lower level of prosocial behaviors. Taken together, the findings provide initial empirical evidence pointing to the longitudinal effects of parental collectivism goals on adolescents' prosocial behaviors through parenting practices, and highlight the subgroup of adolescents who may derive particular benefits from this process. Interventions aiming at promoting adolescent prosocial development could consider the positive role of specific parental socialization processes, with attention to children who are initially in a less adaptive status.

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developed the hypotheses, oversaw the data analysis, interpreted the results, and revised the manuscript; X.L. participated in the study design, and performed data collection. All authors read and approved the final manuscript.

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**Data Sharing and Declaration** The datasets generated and/or analyzed during the current study are not publicly available but are available from the corresponding author on reasonable request.

## Compliance with Ethical Standards

**Conflict of Interest** The authors declare no competing interests.

**Ethical Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed Consent** Informed consents were obtained from all participants included in the study.

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