

# The Mechanism of Family Functioning Influencing Adolescents' Prosocial Behavior: The Mediating Roles of Belief in a Just Word and Interpersonal Trust

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## Abstract:

This study examines the mediating mechanisms linking family functioning to prosocial behavior, focusing specifically on the roles of belief in a just world (BJW) and interpersonal trust (IT). Given the importance of prosocial behavior for social integration and mental health, and the established influence of family systems, understanding the underlying pathways is crucial. The study employed a cross-sectional design with 625 Chinese university students. Participants completed standardized questionnaires measuring family functioning, BJW, IT, and prosocial tendencies. Data analysis utilized correlation analysis and Hayes' PROCESS macro for mediation testing (Model 6, 5000 bootstraps). Results confirmed a significant positive relationship between family functioning and prosocial behavior. Crucially, both BJW and IT served as significant individual mediators. Furthermore, a significant chain mediation pathway was identified: family functioning enhanced BJW, which subsequently increased IT, ultimately leading to higher levels of prosocial behavior. These findings illuminate the complex cognitive processes through which family environments foster prosocial development, highlighting the sequential roles of world-justice beliefs and interpersonal trust. This research provides valuable insights for designing family-focused interventions and educational programs aimed at promoting adolescent social adaptation.

**Keywords:** family functioning, prosocial behavior, belief in a just word, interpersonal trust

## 1 Introduction

In the context of modern society, whether individuals can successfully integrate into groups, establish positive social connections, and maintain mental health is a core issue of ongoing concern in the fields of developmental psychology and social psychology. Prosocial behavior (PB) refers to consciously performed actions intended to benefit others within social interaction contexts [1]. It serves as a crucial indicator of individual social development and holds core value for social integration, mental health, and character formation [2]. Children exhibiting higher levels of PB often demonstrate better performance in social adaptation, peer relationships, and academic achievement [3]. The concept of Family Functioning (FF) reflects a family's specific mode of operation, the quality of relationships among its members, and the family's collective ability to cope with problems during unexpected situations [4]. According to family systems theory, the family is an interdependent system where members maintain its functioning through cooperation, support, and ongoing interaction. The quality of its functions – including providing emotional support, role allocation, and problem-solving capabilities – plays a pivotal role in shaping adolescents' behavioral patterns. Existing research has confirmed that Family Functioning (e.g., cohesion, adaptability) is a key predictor of adolescents' PB. Positive family interactions directly foster altruistic behavior by providing emotional support and behavioral modeling [5], whereas dysfunctional family environments may lead to a decline in PB and an increase in adolescent problem behaviors [6–8]. Therefore, revealing the mechanisms and pathways through which FF influences PB holds significant theoretical and practical importance.

The shaping effect of FF on individual prosocial behavior has been widely demonstrated, with empathy identified as a key mediating mechanism. Studies indicate that positive family environments (e.g., parental warmth) can significantly enhance adolescents' empathy (e.g., perspective-taking and empathic concern), thereby promoting the development of their PB [9]. For instance, among left-behind children, good FF indirectly strengthens prosocial tendencies like sharing and cooperation by enhancing empathy [9]. However, the pathways through which FF exerts influence may involve deeper cognitive factors. Empirical research has found that family socioeconomic status and emotional support can indirectly enhance empathy by strengthening adolescents' Belief in a Just World (BJW), thereby improving emotion regulation strategies (e.g., cognitive reappraisal) [10]. BJW, as an individual's core belief about the fairness of the world, is emerging as a new perspective for understanding this mechanism.

Interpersonal Trust (IT) is closely related to BJW [11], and both are significant influencing factors of PB [12,13]. Moreover, the formation and development of both are inextricably linked to the family environment. Therefore, this study incorporates BJW and IT into the analysis of mediating pathways to elucidate their roles in the relationship between family functioning and prosocial behavior.

### 1.1 The Mediating Role of Belief in a Just World

BJW is a basic cognitive tendency that most people believe the world is fair, people generally get what they deserve and get what they deserve. And such faith is a vital psychological resource. research shows that people who have a stronger belief BJW tend to have more resources, which help them deal with life events and make their social mindset more positive [14]. Based on social cognitive theory, BJW may play a mediating role between FF and PB. Specifically, FF (e.g., cohesion) influences individuals' cognitive judgments about the world's fairness [15], which in turn affects their PB. For example, higher levels of FF may strengthen individuals' internal belief that "good deeds will be rewarded" (i.e., "virtue brings rewards") [16] and encourage individuals to perform prosocial acts to maintain the perceived social justice [17]. This theoretical model suggests that good FF may indirectly promote the emergence of PB by enhancing BJW.

### 1.2 The Mediating Role of Interpersonal Trust

Interpersonal Trust (IT) refers to the psychological readiness state formed by individuals in social interactions, directed towards specific targets, manifested as generalized expectations about the reliability of others' promises or behaviors. According to Social Exchange Theory, IT entails positive expectations of interaction partners, which help individuals achieve goals through strategies like helping and cooperation, thereby enhancing their sense of self-worth [18]. Family systems theory emphasizes that good FF is reflected in stable emotional bonds and effective adaptive communication among members, characteristics that constitute the key context for individuals to develop basic trust. Empirical studies confirm that FF can significantly and positively predict levels of IT, which in turn is significantly positively correlated with prosocial behavior [19]. This mediating pathway aligns with Bandura's social cognitive theory framework: the family environment indirectly regulates individuals' social behavioral patterns by shaping their cognitive structures (e.g., trust beliefs). In summary, FF can promote the expression of more altruistic behavior by strengthening individuals' positive expectations of others' reliability.

### 1.3 The Chain Mediating Role of BJW and IT

Empirical research indicates a significant positive correlation between BJW and IT [20], and BJW can directly and positively predict IT. Individuals holding a high BJW, due to their firm conviction in the justice of the social order, perceive interpersonal interactions as safe and predictable [20]. This perception fosters positive expectations of others' intentions and behaviors [11], thereby enhancing levels of IT.

In summary, to explore the mechanism by which FF influences prosocial behavior, in this study, I propose a chain-mediation model to test the just-world belief, IT. In this study we have put forward the following hypotheses:

H1: FF largely and positively projects to PB;

H2: BJW is related to FF and PB;

H3: IT mediates the relationship between FF and PB;

H4: BJW and IT have a chain-mediated effect on relation between FF and PB.

## 2 Research Methods

### 2.1 Participants

An online questionnaire was distributed via the Wenjuanxing platform among university student groups. There are 743 completed questionnaire. After excluding those who did not pass the lie detection questions, had excessive response times, and had inconsistent responses, 625 valid questionnaires were retained with an effective response rate of 84.12%. Remuneration was provided to valid respondents upon completion of the questionnaire. The participants' average age was ( $M = 21.75 \pm 1.91$  years), with 222 males.

### 2.2 Research Instruments

#### 2.2.1 Family Functioning

Using the Chinese version of Family Adaptability and Cohesion Evaluation Scale - Second Edition (FACESII-CV) [21]. It has 30 items, it includes two dimensions, Family Cohesion: 16, Family Adaptability: 14. A five point Likert scale, 1 = Not at all, 5 = Always. Scorers the higher more cohesive they will be for the family and how much it is adaptive. In Cronbach's Alpha of this scaling study is 0.95.

#### 2.2.2 Belief in a Just World

Measured using the Belief in a Just World Scale (BJWS) [22]. It consists of 13 items divided into two dimensions: Personal Belief in a Just World (PBJW) and General Belief in a Just World (GBJW). A 6-point Likert scale was used, ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). All items were positively scored. Higher total scores indicate a stronger BJW. In this study, the Cronbach's  $\alpha$  was 0.93.

#### 2.2.3 Interpersonal Trust

Measured using the Interpersonal Trust Scale (ITS) [23]. To measure: A2 It consists of 25 items, there were given 5 points on the likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). some item reverse scoring was used. Greatest scores correspond to more IT. The Cronbach's  $\alpha$  of this study equals  $\alpha$  was 0.83.

#### 2.2.4 Prosocial Behavior

Utilizing the Prosocial Tendency measure for teens [24]. it is made up of 26 things, six things. Public, Anonymous, Altruistic, Compliant, Emotional, Dreadful 5-point Likert type scale, "1" stand for "Not at all like me", and "5" means "Very much like me". All items are scored positive. The total score is more, the closer it is to  $\alpha$  was 0.92.

### 2.3 Data Analysis

Descriptive analysis and the correlation between the variables use SPSS 27.0 The mediation effect is tested with the Process 4.2 add-on.

## 3 Results

### 3.1 Common Method Bias Test

Single factor test of Harman to test for common method bias. The result is shown as the most important factor of any single 25.40% of the variance less than the critical value 40%. So there is no serious common method bias in the study.

### 3.2 Descriptive Statistics and Correlation Analysis

Describe the statistic and correlation of all the data in 1 table. The correlation results showed that there were positive correlations ( $p < .01$ ) among FF, BJW, IT, and PB.

**Table 1 Mean, SD, and Correlation analysis**

Variables	M	SD	1	2	3	4
1. Family Functioning	104.76	20.39	—			
2. Belief in a Just World	58.40	10.72	0.616**	—		

3.Interpersonal Trust	75.43	11.77	0.477**	0.569**	—	
4.Prosocial Behavior	100.10	14.00	0.525**	0.544**	0.402**	—
N=625; **p < 0. 01						

### 3.3 Chain Mediation Effect Analysis of BJW and IT

After standardizing the research variables, with age and gender as control variables, FF as the independent variable, BJW and IT as mediating variables, and PB as the dependent variable, the SPSS macro PROCESS developed by Hayes was used to test the mediation effects based on the Bootstrap method. Specifically, Model 6 was applied with 5,000 bootstrap samples. Regression analysis

results showed that after controlling for age and gender, FF significantly and positively predicted BJW ( $\beta = 0.61$ ,  $p < .01$ ), IT ( $\beta = 0.20$ ,  $p < .01$ ), and PB ( $\beta = 0.28$ ,  $p < .01$ ). BJW positively predicted IT ( $\beta = 0.44$ ,  $p < .01$ ) and PB ( $\beta = 0.32$ ,  $p < .01$ ). IT positively predicted PB ( $\beta = 0.08$ ,  $p = .04 < .05$ ). Therefore, the separate mediating effects of FF on PB via BJW or IT were significant. The chain mediating effect of FF on PB via BJW and then IT was also significant (Table 2).

**Table 2 Regression results**

Precative variable	Outcome variable	R	R2	F	$\beta$	t
Family Functioning	Belief in a Just World	0.61	0.38	126.62	0.61	19.17***
Family Functioning	Interpersonal Trust	0.59	0.35	83.60	0.20	4.93***
Belief in a Just World					0.44	10.77***
Family Functioning	Prosocial Behavior	0.60	0.36	70.29	0.28	6.75***
Belief in a Just World					0.32	7.16***
Interpersonal Trust					0.08	2.04*
*p < 0. 05;***p < 0. 001						

Bootstrap was used to test for mediation effect. from the results, it can be concluded that there is a significant mediating effect of BJW and IT on FF and PB. There is a sig-

nificant chain mediating effect of BJW and IT on FF and PB.

**Table 3 Bootstrapping test for mediating method**

Pathway	Effect	Proportion	95%CI	
			LL	UL
FF→PB	0.282	54.65%	0.200	0.364
FF→BJW→PB	0.195	37.79%	0.133	0.259
FF→IT→PB	0.017	3.29%	0.001	0.037
FF→BJW→IT→PB	0.022	4.26%	0.002	0.041
Total mediating effect	0.234	45.35%	0.176	0.293

## 4 Discussion

The study used mediated model to explore the relationships among FF-PB and roles of BJW and IT as mediators. According to the survey,FF andPB ;andBJW has a positive relationship;IT serves as a chain mediator. These results illuminate the multiple cognitive pathways through which the family system shapes adolescent PB.

### 4.1 The Influence of FF on PB

Based on family systems theory, this study reaffirms that FF is a key predictor of adolescent PB ( $\beta = 0.28$ ,  $p < .01$ ). This is highly consistent with the core tenets of family systems theory, which posits that good FF patterns (e.g., high cohesion among members, clear role allocation, strong problem-solving capabilities) provide individuals with a secure and supportive environment for growth [4].

Within such an environment, positive emotional bonds, effective communication and collaboration among family members, and shared experiences in overcoming challenges not only directly model PB for adolescents [5] but also, by fostering a warm and stable atmosphere that satisfies their needs for belonging and security, directly encourage them to engage in more actions beneficial to others, such as helping and cooperation [1]. This result aligns with numerous previous studies [7–9], collectively emphasizing the foundational role of optimizing FF in promoting positive social development in adolescents.

#### 4.2 The Separate Mediating Roles of BJW and IT

This study delves deeper into two significant cognitive mediating pathways through which FF influences PB. Firstly, BJW was confirmed to play a significant and robust separate mediating role (effect value = 0.195, accounting for 37.79% of the total effect). This finding supports the expectations derived from social cognitive theory and just world theory [16]. Specifically, good FF provides adolescents with direct experiential foundations for perceiving the world as just [15]. When adolescents experience clear rules, recognition for their contributions, and fair conflict resolution within the family, they are more likely to internalize the beliefs that “the world is just” and “virtue is rewarded.” Individuals holding a strong BJW not only possess greater psychological resources to cope with stress [14] but are also more inclined to perform prosocial acts to uphold and affirm the perceived fairness of the social order [17]. Therefore, good FF indirectly promotes PB. Furthermore, although its effect size was relatively smaller (effect value = 0.017, accounting for 3.29% of the total effect), IT was also found to have a significant separate mediating effect. This finding aligns with social exchange theory [18]. Functionally healthy families provide the key context for developing basic trust through reliable emotional support, consistent fulfillment of commitments, and adaptive communication among members. This positive expectation of others’ intentions and behaviors (i.e., IT), formed within the family, generalizes to broader social interactions. Consequently, individuals expect others to be trustworthy and cooperation to be beneficial, thereby reducing perceived social risk and increasing their willingness to engage in PBs such as helping and sharing [19].

#### 4.3 The Chain Mediation of BJW and IT

The most theoretically meaningful discovery from this study shows that BJW and IT have a chain mediation role in the relationship between FF and PB (effect value =

0.022, accounting for 4.26% of the total effect). The chain pathway (FF → BJW → IT → PB) shows that the family environment not only has a direct effect on PB by influencing an individual’s beliefs in world fairness or expectations of others’ reliability, but also has an indirect influence, through a systematic and step-by-step way. speaking specifically, the core belief in the justice of the operation of the worlds (i.e., high BJW), formed within well-functioning families, provides adolescents with a cognitive framework and sense of security for understanding interpersonal interactions in the external social world [11,20]. When individuals firmly believe that the social order is fundamentally just, they expect others’ behavior to also be predictable and reliable. This conviction directly enhances their level of trust in others (high IT). This result aligns with the findings of Yi et al. [20]: BJW positively predicts IT. This IT, grounded in BJW, further promotes the occurrence of PB. This chain pathway clearly delineates the internal mechanism from the family environment shaping an individual’s basic cognitive belief in social justice (BJW), to this cognition influencing trust expectations in specific interpersonal interactions (IT), and ultimately driving the expression of PB.

#### 4.4 Research Implications and Limitations

Lastly, in terms of the mediating variables, we combine the concepts of family system theory and social cognitive theory. This study is the first to research the mediational effects of BJW, IT between FF and PB in a unified study, deepening the understanding of the internal mechanisms linking FF to PB. The findings can provide targets for family education interventions, offer a theoretical basis for constructing school moral education systems, and provide empirical support for designing community adolescent service programs. They also hold practical significance for promoting adolescent social adaptation and preventing behavioral deviations. Furthermore, this study used localized measurement tools for the variables under investigation, to get along better with the local culture and to some extent to counteract/offset the influences of cultural factors on the results.

Despite the fact that this study has gained some good achievements, there are still quite a few restrictions. First one was we did a cross-sectional study like it has like some relationship but it’s not exact that this is cause this is effect, we can use longitudinal follow-up study as future study, so as to make it clearer how FFB, BJ, IT and PB change with time and have each other influence. Second, the study sample mainly involved university students. Generalization of the conclusion to adolescents in other age groups (e.g., middle school, high school) or from



different socio-cultural backgrounds is limited. Future research should expand the age range and diversity of the sample. Finally, this study only examined the overall level of FF (encompassing two core dimensions: cohesion and adaptability). Future research could further explore how more specific interaction patterns within FF (e.g., conflict resolution styles, emotional expression patterns) influence BJW, IT, and PB.

## 5 Conclusion

- (1) University students with higher levels of family functioning exhibit a stronger tendency towards prosocial behavior.
- (2) When family systems are doing well university student's personal business improves because they think in an unbiased world or they trust someone.
- (3) Good family functioning gives an individual the fundamental belief about a just world so that good expectations of other people behavior (IT), ultimately leading to the generation of more prosocial behavior.

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