

# The Relationship Between Social Support And Social Withdrawal Of Left-Behind Adolescents: A Chain Mediating Model

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## Research Article

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# Abstract

**Background:** Nowadays, as more and more Chinese farmers in rural area went to city for work, they left their kids at home. These kids were left-behind adolescents and they developed without their parental accompany. The family function of left-behind adolescents was deficient, which may result in their social withdrawal in social situations. Therefore, in this study, in order to improve left-behind adolescents' psychological and behavior problems, we aimed to investigate their level of social withdrawal and its impact factors.

**Method:** There were 339 left-behind adolescents and 289 non-left-behind adolescents recruited from a Chinese junior high school. Their social withdrawal, social support, relative deprivation, and resilience were measured through questionnaires.

**Results:** The results showed that compared with non-left-behind adolescents, left-behind adolescents had lower social support and resilience, but their social withdrawal and relative deprivation were higher; besides, left-behind adolescents' social support negatively predicted social withdrawal, while relative deprivation and resilience played a chain mediating role between them.

**Conclusion:** This study found that compared with none-left-behind adolescents, left-behind adolescents had difficulty in social adaptation. However, there was a "context-process-outcome" model in which social support negatively predicted social withdrawal, while relative deprivation and resilience played a chain mediating role between them. In sum, this study provided suggestions to promote the mental health and social behavioral development of left-behind adolescents.

## 1 Introduction

In recent years, as more and more farmers found jobs in city and left their kids at home, left-behind adolescents have remarkably increased in China. Meanwhile, their psychological and behavioral problems are serious and need much attention. Left-behind adolescents refer to adolescents under the age of 18 who are left at home because of their parents or single parents working outside for a long time (Zhao et al., 2008). Adolescence is the key period of their academic and physical and mental development (Lopez-Zafra et al., 2019). However, compared with non-left-behind adolescents, left-behind adolescents lack of parental accompany and positive responses, thus it's hard to cultivate good parent-child relationship and form secure attachment (Ainsworth et al. 1978). Then, this insecure attachment may hinder adolescents' learning of social ability, resulting in poor psychology and social adaptation. Besides, they are sensitive to others' words and behavior, and they may be also more likely to be rejected by peers, thus leading to external behavioral problems or internal psychological and emotional problems (Shamir-Essakow et al., 2005; van Brakel et al., 2006). Specially, social adaptation and communication problems of left-behind adolescents are particularly prominent, and it's vital to pay more attention to their mental health and alleviation of social anxiety and social avoidance (Li & Cai, 2012).

### 1.1 Social withdrawal

Social withdrawal is a comprehensive term, which refers to the individual who is willing to isolate himself/herself to familiar or unfamiliar others and consistently perform some solitary behavior (Rubin et al. 2009), such as shyness, long periods of solitude, avoidance of social contact. The model of developmental of social withdrawal believes that safe parent-child relationship is a crucial basis for development of children's social ability, which supports them to freely explore society and maintain good interpersonal relationships; besides, when parents response timely to children's needs, children will attain the feeling of control over the environment and self-efficacy in social skill learning (Ainsworth et al., 1978; Bowlby, 1969). However, for left-behind adolescents, insecure attachment may bring negative experience of interpersonal interaction (Ainsworth et al. 1978). Their limited social resources make it difficult to learn social ability efficiently, therefore resulting in social withdrawal (Hastings et al., 2019).

Social withdrawal may also have bad impact on adolescents' development. Socially withdrawn adolescents have difficulty taking the initiative to cultivate relationships with peers (Asendorpf & Meier, 1993; Coplan et al. 2008, Crozier & Perkins, 2002), and their poor social communication ability make it difficult to develop social emotions, thus leading to social maladjustment (Bohlin et al., 2005; Bowker et al., 2014; Bass et al., 2016; Barzava et al., 2019; Chen et al., 2006; Nelson et al., 2005; Nelson et al., 2020). Specifically, adolescents who behave social withdrawal in social occasions are easy to be regarded as the outlier by their peers, then they may be ignored and rejected by them (Chen et al., 2006; Olweus & Breivik, 2014), even bullied by aggressive peers (Rubin et al., 2006). Thus, they will grow feelings of loneliness or depression (Coplan et al., 2007; Prior et al., 2000). Due to the prominent social withdrawal of left-behind adolescents, which has a negative impact on the healthy development of them, it is of great importance to explore left-behind adolescents' influential mechanism of social withdrawal in depth, so as to provide some intervention measures to improve the current situation.

## 1.2 Social support and social withdrawal

The model of developmental of social withdrawal believes that insecure parent-child relationship and negative interpersonal interaction experience are the important factors to cause individual social withdrawal (Ainsworth et al., 1978; Bowlby, 1969). Therefore, it's particularly important to support left-behind adolescents and provide them interpersonal resources. As one of the interpersonal resources, social support means the support and concern given by others (Brugha, 1990). Social support can protect children's mental health and promote healthy behavior and active psychological responses (Cohen & Wills, 1985; House et al., 1988; Lakery & Orehek, 2011).

More specifically, the positive effect of social support can work in two aspects. On the one hand, social-cognitive process theory holds that positive social interaction can promote individual cognitive adaptation (Tedeschi & Calhoun, 2004; Kong et al., 2018). It also holds that social support is a kind of supportive social environment which provide individual potential social resources (Mo et al., 2014; Tedeschi & Calhoun, 2004; Xu & Yuan, 2014), and prevent negative environment attribution and emotion caused by the lacking of environment resources (Lazarus & Folkman, 1984). Thus, individual could deal with various problems effectively and enhance the skills of coping setback (Yuan et al., 2018). On the

other hand, social support is a feeling of being concerned, understood, accepted, respected and cherished (Kane et al., 2012; Reis & Shaver, 1988). While a positive interpersonal experience for individuals can improve their self-evaluation and control over environment (Feeney & Collins, 2015), develop social ability, promote social approach motivation, and actively construct new interpersonal relationships (Reis et al., 2010). Many studies showed that instrumental support can negatively predict social withdrawal (Nonaka & Sakai, 2021), and social support can relieve negative mental states or behavioral reactions, such as depression, sleep disorders and social withdrawal. (Ginter et al., 1994; Li et al., 2015; Seyyedmoharrami et al., 2018; Xiao et al., 2020; Zuo et al., 2021).

### **1.3 The Mediating role of relative deprivation between social support and social withdrawal**

Due to the lack of family support, left-behind adolescents have less psychological and material resources than their peers, and they are likely to think that they do not gain what they deserve, which results in a sense of relative deprivation. Relative deprivation means that compared to the referenced target, the individual or the ingroup is in a relatively disadvantaged position, and this kind of judgement invokes the feelings of anger, resentment and entitlement (Smith & Pettigrew, 2015). Relative deprivation theory believes the entitlement and feeling of deserving are the core of relative deprivation. In the process of social comparison, individuals realize that there is a gap between their expectation value and reality; when they experience that their basic rights are deprived, they will have a strong sense of injustice (Smith et al., 2012). This further leads to depression, loneliness, social anxiety or other psychological problems (Ladd & Troop-Gordon, 2003; Moreira & Telzer, 2015). Past studies indicated that relative deprivation had crucial influence on children's mental adaptation (Eibner et al., 2004; Smith & Huo, 2014; Callan et al., 2015). It might cause individual behaviorally react different to environment. When faced with the threatened situation, individual might become anger because of injustice feelings, they might be hostile to others, and then attack or hurt others (Greitemeyer & Sagioglou, 2019). When faced with the insecure situation, individual might become fearful and generate social avoidance motivation to escape from this threat (Devos et al., 2003; Osborne et al., 2012). However, regardless of situations individuals faced with, they would have a more negative interpersonal relationship experience and have difficulty constructing harmonious peer relationship actively.

Nevertheless, social-cognitive process theory suggests that social support can accelerate individual cognitive adaptation process (Tedeschi & Calhoun, 2004; Kong et al., 2018). When the support system from left-behind adolescents' families is lack, individual can receive enough social support from others, thus reducing the sense of injustice and relative deprivation. Relative research also verified that the higher social support the college students had, the weaker the relative deprivation they would feel (Zhang & Tao, 2013). Further, individual would feel less hostility and fear to environment or others with reduction of relative deprivation, and then the social avoidance motivation and social withdrawal behavior would also decrease (Devos et al., 2003; Greitemeyer & Sagioglou, 2019; Osborne et al., 2012). Therefore, this study hypothesized that relative deprivation played a mediating role between social support and social withdrawal.

## **1.4 The mediating role of resilience between social support and social withdrawal**

Resilience refers to the factor that promotes individual's effective coping and adaptation under the pressure, frustration or adversity (Masten et al., 2011). It is an important ability to recover from adversity and maintain good mental functioning under pressure (Laird et al., 2019; Theron & Theron, 2010). Besides, it can effectively predict the social behavior of disadvantaged children (Rahat & Ilhan, 2016), and is also a protective factor for their behavior problems (Breda, 2017; Theron & Theron, 2010). More importantly, it can decrease individual social withdrawal (Yang et al., 2021). As an important psychological protective factor, the development of resilience is closely related to the growing environment of children, in which a good family circumstance helps its development (Lopez & Snyder, 2009). In the process of interaction between children and their parents, they will form an overall understanding of themselves and make judgments about their own abilities and values, which will also affect the development of individual self-efficacy (Li et al., 2021). However, for left-behind adolescents, the unsound family functions affect their sense of self-worth, making them difficult to adopt a positive attitude when facing pressure, and hindering the healthy development of their resilience (Deb et al., 2015; Li et al., 2021).

Individuals with high resilience can recover their positive state of mind after negative emotional experiences, thus alleviate the negative effects of negative experiences and find positive meanings in these dilemmas (Seaton & Beaumont, 2015; Tugade & Fredrickson, 2004). From this perspective, social support can also provide individuals with positive emotional experience and promote the positive psychological adaptation of individual when facing adversity (Oh et al., 2014; Seidmahmoodi et al., 2011), which in turn contributes to the improvement of resilience. Previous studies have indeed found positive effects of social support on resilience (Li et al., 2012; Mo et al., 2014). According to "context-process-outcome" model proposed by Roeser (1996), individual characteristics can play a mediate role between school environment factors and their behavior outcomes. Therefore, some researchers have found that resilience, an individual characteristic, can mediate the relationship between teacher-student relationship and related behavioral outcomes of social withdrawal, while teacher-student relationship is regarded as a factor of school environment (Yang et al., 2021). Therefore, this study also assumed that resilience could mediate the relationship between social support and social withdrawal.

In addition, based on the triadic theory of learning and the "context-process-outcome" model, individual cognition, behavior and environmental factors interact with each other (Bandura, 1978; Roeser et al., 1996). As an important factor of individual environment, social support can have a direct effect on individual's social withdrawal, and can also affect individual's social withdrawal behavior by influencing their cognitive process and psychological characteristics (Ginter et al., 1994; Yang et al., 2021; Zhang & Tao, 2013). Specifically, the individual's cognitive evaluation of environmental conditions, namely the individual's cognitive process, results in relative deprivation, and the judgment of disadvantaged position and the negative emotions will affect the individual's psychological adaptation function (Eibner et al., 2004; Smith & Huo, 2014; Callan et al., 2015). Although there has no study directly investigating the relationship between relative deprivation and resilience, some researchers believed that people with high

relative deprivation would experience the unfair environment, be disappointed with the current environment, and believe future is hard to improve (de la Sablonnie`re et al., 2015). This may also affect the resilience of individuals facing pressure and difficulties which as a function of psychological adaptation, and then change the behavior, namely social withdrawal. Therefore, this study also hypothesized that relative deprivation and resilience played a chain mediating role between social support and social withdrawal.

The present research aimed to explore left-behind adolescents' and non-left-behind adolescents' states of social support, social withdrawal, relative deprivation and resilience, and explore the left-behind adolescents' influential mechanism of social withdrawal. Based on the triadic theory of learning and the "context-process-outcome" model, we proposed a chain mediation model (see in Fig. 1). The social support system of left-behind adolescents which was regarded as environmental background would influence their interpretation of the environment. We assumed that there was a significant negative correlation between social support and social withdrawal. In addition, relative deprivation and resilience mediated the relationship between social support and social withdrawal.

## 2 Methods

### 2.1 Subjects

A total of 675 students from the first and second grade of a junior high school in Jiangsu province were recruited to conduct a questionnaire, and 628 valid questionnaires were collected with a questionnaire recovery rate of 95.41%. Among them, 276 were male students (41.90%) and 368 were female students. There were 339 left-behind adolescents (54%), 289 non-left-behind adolescents. There were 312 (49.70%) in their first year and 316 in their second year of junior high school.

### 2.2 Materials

#### 2.2.1 Social support

The adapted social support rating Scale by Xiong and Ye (2013) was adopted to measure social support of left-behind adolescents. The scale is based on the Social support rating scale developed by Xiao (1999). There are 11 items in this scale, including objective support (3 items), subjective support (5 items) and utilization degree of social support (3 items). The Cronbach's  $\alpha$  of the scale was 0.69, which was within the acceptable range.

#### 2.2.2 Social withdrawal

The social withdrawal scale developed by Tian (2014) was adopted. There were 16 items in the scale, including three dimensions of avoiding unfamiliar environment, outlier and avoiding speaking in public. This scale used likert-5-point scoring. In this study, the Cronbach's  $\alpha$  was 0.85.

#### 2.2.3 Relative deprivation

The relative deprivation scale compiled by Ma (2012) contained four questions, and the likert-6 point scoring method was adopted. The higher the score, the higher the individual's relative deprivation had. Cronbach's  $\alpha$  in this study was 0.63, which was acceptable.

#### **2.2.4 Resilience**

The adolescent resilience scale was developed by Hu and Gan (2008). There are 27 items in the scale. Among these, there were 12 reverse items, including two dimensions of personal power and support power. Personal power includes three factors: goal focus (5 items), positive cognition (4 items) and emotional control (6 items). And support power dimension includes family support (6 items) and interpersonal assistance (6 items). Likert-5 point scoring was used in the scale, and Cronbach's  $\alpha$  of the scale in this study was 0.86.

### **3 Results**

#### **3.1 Common-method variance**

we assessed results for common-method variance because of all variables measured via questionnaire. According to the Harman single factor test (Zhou & Long, 2004), fourteen factors were extracted, and variance contribution rates were 58.23%. The variance contribution rate of the first factor was 16.57%, <40%, so common variance caused by this questionnaire could be eliminated.

#### **3.2 Differences in social support, social withdrawal, relative deprivation and resilience between left-behind adolescents and non-left-behind adolescents**

An independent sample t-test was conducted on the social support, social withdrawal, relative deprivation and resilience of left-behind adolescents and non-left-behind adolescents, as shown in Table 1. The results showed that there were significant differences in those five variables between left behind left-behind adolescents and non-left-behind adolescents. In short, compared with non-left-behind adolescents, left-behind adolescents had a lower level of social support and resilience, while they had a higher level of social withdrawal and relative deprivation.

**Table 1.** T-test on four variables of left-behind adolescents and non-left-behind adolescents.

			<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Social support	left-behind	42.64	6.71	-3.14	.002	
	non-left-behind	44.37	7.05			
Social withdrawal	left-behind	2.94	0.74	5.65	<.001	
	non-left-behind	2.61	0.72			
Relative deprivation	left-behind	2.85	1.00	4.63	<.001	
	non-left-behind	2.48	0.97			
Resilience	left-behind	2.87	0.64	-3.70	<.001	
	non-left-behind	3.05	0.60			

### 3.3 correlation analysis among variables

The correlation of social support, relative deprivation, resilience and social withdrawal of left-behind adolescents are calculated. The results showed that there were significant correlations between all variables (See in Table 2). Among them, there was a significant positive correlation relationship between social support and resilience, a significant negative correlation relationship between social support and relative deprivation, social withdrawal. There was a positive correlation relationship between relative deprivation and social withdrawal, and a significant negative correlation relationship between resilience and relative deprivation, social withdrawal.

**Table 2.** Correlation analysis of variables of left-behind adolescents.

Variables	1	2	3	4
1. Social support	1			
2. Social withdrawal	-0.32***	1		
3. Relative deprivation	-0.14***	0.34***	1	
4. Resilience	0.50***	-0.43***	-0.33***	1

**Note:** \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , the same below.

### 3.4 The chain mediated effect test of relative deprivation and psychological elasticity between social support and social withdrawal

The PROCESS 3.3 provided by Hayes (2013) was used for analysis. Model 6 was selected, with grade and gender of adolescents as covariant variables, social support as the independent variable, social withdrawal as the dependent variable, and relative deprivation and resilience as the chain intermediary variables. The chain mediating effect of the region was tested using the bootstrap method, repeating

sampling 5000 times, and setting a 95% confidence interval was set. The results of regression were shown in Table 3, the path coefficients were shown in Fig. 2, and Table 4 showed all direct and indirect effects within the model.

The results showed that the total indirect effect was -0.014 (95% CI = [- 0.022, - 0.006]), the mediating effect of relative deprivation was -0.004 (95% CI = [- 0.007, - 0.001]), the indirect effect with resilience as the mediating variable was -0.010 (95% CI = [- 0.017, - 0.003]), and the chain mediating effect of relative deprivation and resilience was -0.001 (95% CI = [- 0.002, - 0.000]). Therefore, the chain mediating effect of relative deprivation and resilience in the negative effect of social support on social withdrawal was significant.

**Table 3.** Regression analysis results of four variables of left-behind adolescents.

Outcome variables	Predict variables	R	F	$\beta$	t
Social withdrawal		0.36	0.13	17.00***	
	Gender			0.21	2.76**
	Grade			-0.08	-1.00
	Social support			-0.33	-6.46***
Relative deprivation		0.20	0.04	4.50**	
	Gender			-0.14	-1.27
	Grade			-0.17	-1.53
	Social support			-0.17	-3.23**
Resilience		0.59	0.35	44.65***	
	Gender			-0.07	-1.17
	Grade			-0.08	-1.48
	Social support			0.49	10.88***
	Relative deprivation			-0.24	-5.37***
Social withdrawal		0.45	0.21	17.21***	
	Gender			0.22	3.00**
	Grade			-0.07	-0.89
	Social support			-0.20	-3.46**
	Relative deprivation			0.19	3.62***
	Social withdrawal			-0.18	-3.00**

**Table 4.** Bootstrap test results.

Effect	Effect value	Boot SE	Effect ratio	Bootstrap 95%CI	
				LC	UC
Total effect	-0.037	0.006		-0.048	-0.026
Direct effect	-0.022	0.006	59.50%	-0.035	-0.010
Total mediating effect	-0.014	0.040	37.84%	-0.022	-0.006
Social support→ Relative deprivation→ Social withdrawal	-0.004	0.002	10.81%	-0.007	-0.001
Social support→ Resilience→ Social withdrawal	-0.010	0.004	27.03%	-0.017	-0.003
Social support→ Relative deprivation→ Resilience→ Social withdrawal	-0.001	0.001	2.70%	-0.002	-0.000

## 4 Discussion

This study explored the left-behind adolescents and non-left-behind adolescents' social support, relative deprivation, resilience and social withdrawal, and clarified the left-behind adolescents' influential mechanism of social withdrawal of, thus giving theoretical and practical support for reducing the psychological and behavioral problems of left-behind adolescents.

### 4.1 Psychological state of left-behind adolescents and non-left-behind adolescents

This study showed that compared to non-left-behind adolescents, left-behind adolescents had lower levels of social support and resilience, and higher levels of social withdrawal and relative deprivation. Specifically, the family support of left-behind adolescents was relatively weak compared to non-left-behind adolescents, and the lack of psychological and social resources given by parents in the family, as part of the social support system, leaded to less social support, which was similar to the result of past study (Liu et al., 2007), and the lack of parent-child relationship affected the establishment of their social support system. At the same time, compared to their peers, left-behind adolescents would realize that they were in a relatively disadvantaged position and that they did not receive social resources comparable to their peers, thus they would develop a stronger sense of relative deprivation (Smith & Pettigrew, 2015). Past researches on relative deprivation also found that children from poor single-parent families had significantly higher levels of relative deprivation than children from non-poor single-parent families (Callan et al., 2017), suggesting that sound family functioning was important for children's social cognitive development. Furthermore, since the development of resilience was inextricably linked to the child's upbringing (Lopez & Snyder, 2009), deficit in family functioning of left-behind adolescents also leads to a hindrance in their development of resilience, and thus (they)/ left-behind adolescents had a lower degree of resilience compared to non-left-behind adolescents. Finally, for adolescents who lacked

secure attachment, their parents' inability to respond sensitively to their thoughts and behaviors leaded to deviations in their beliefs, attitudes, and values (Rubin, 1993), and they become fearful of new environments, resulting in inhibitory behaviors. In addition, due to the lack of secure parent-child attachment, it was difficult for them to develop good social ability and actively construct relationships with others, and negative interpersonal experiences in the family also leaded them to develop lower self-efficacy, which in turn resulted in social withdrawal (Ainsworth et al., 1978; Bowlby, 1969). This demonstrated the important role of good parent-child relationships in the development of children's social ability and social adjustment.

#### **4.2 Effect of social support on social withdrawal**

This study found that social support of left-behind adolescents negatively predicted social withdrawal, indicating that the higher the level of social support, the lower the level of social withdrawal.

According to the model of developmental of social withdrawal (Ainsworth et al., 1978; Bowlby, 1969), insecure parent-child attachment plays an important role in social withdrawal. Left-behind adolescents are unable to experience positive interpersonal interactions from their parent-child relationships, because their parents provide less companionship and have difficulty providing the security and social resources they need to develop freely. Therefore, left-behind adolescents have incompletely developed social ability and social adaptation (Barzeva et al., 2019; Bowker et al., 2014; Nelson et al., 2020), and it's hard for them to initiate friendships with peers. However, this study found that social support negatively predicted social withdrawal, similar to past research (Nonaka & Sakai, 2021). Social support could both provide individuals with potential social resources, thus reducing their negative environmental attributions and increasing their resilience to frustration, and provide them with a safe environment of acceptance, respect, and understanding (Kane et al., 2012; Reis & Shaver, 1988). Then, it allowed individuals to experience positive interpersonal interactions, develop good social ability, and increase their motivation to actively construct interpersonal relationships (Reis et al., 2010). This suggested that by providing social support to left-behind adolescents, their social anxiety and withdrawal behaviors could be effectively alleviated. Although left-behind adolescents lacked companionship and support from their parents, an individual's social support system could provide those from other family members, friends, classmates, teachers, or other social relationships for compensation, which brought psychological comfort or social resources to left-behind adolescents (Barzeva et al., 2019; Runions & Shaw, 2013; Waldrip et al., 2008; Zhang & Nurmi, 2012).

Therefore, we should pay more attention to compensate for the absence of their parents by making full use of other social relationships in their social support system, thus providing them with a safe environment for social ability development.

#### **4.3 The chain mediating effect of relative deprivation and resilience between social support and social withdrawal**

Results of this study showed that social support directly predicted social withdrawal, and in addition, relative deprivation and resilience could play a serial mediating role between social support and social withdrawal. Among them, social support had a negative correlation with relative deprivation, relative deprivation had a negative correlation with resilience, and resilience also had a negative correlation with social withdrawal.

Based on the triadic theory of learning and the "context-process-outcome" model (Bandura, 1978; Roeser, 1996), social support is the environment/context for left-behind adolescents and affects their cognitive evaluation of their environment and themselves, which in turn affects their psychological adaptive functioning and reduces social withdrawal behavior. Specifically, social support can, to some extent, compensate for their missing family support system, bring positive interpersonal experiences to individuals, and enhance their self-evaluation and control over their environment (Feeney & Collins, 2015). According to social-cognitive process theory, positive social interactions promote individuals' cognitive adaptation, and a supportive social environment also provides social resources to left-behind adolescents to prevent them from developing unfair environmental perceptions due to a shortage of family resources (Lazarus & Folkman, 1984; Tedeschi & Calhoun, 2004; Kong et al., 2018). On the one hand, it can help reduce individuals' feelings of deprivation of basic rights assignable to the lack of parental support, and on the other hand can make individuals more resistant to frustration owing to positive interpersonal experiences and the learning of social ability (Yuan et al., 2018), reducing feelings of relative deprivation and enhancing resilience. In addition, this study also found that relative deprivation also negatively predicted resilience, suggesting that individuals' social adaptation was also enhanced after the negative environment with reduced self-perceptions and negative emotions. Past research has shown that individuals with high relative deprivation produce greater psychological stress as well as lower self-evaluations (Buunk & Janssen, 1992; Hafer & Olson, 1993) and pessimistic attitudes about future situations due to perceptions of environmental unfairness (de la Sablonnie're et al. ,2015), thus affecting the level of resilience of left-behind adolescents. As the level of relative deprivation decreases and resilience increases, the social adjustment ability of left-behind adolescents increases, they have a higher sense of self-worth, they are not hostile or afraid of others, and their motivation for social avoidance decreases (Greitemeyer & Sagioglou, 2019; Osborne et al., 2012; Li et al. 2021), which in turn can reduce the social withdrawal behavior of left-behind adolescents.

#### **4.4 Suggestions to improve the social withdrawal of left-behind adolescents**

First, this study found that social support was a significant predictor of social withdrawal among left-behind adolescents. Although left-behind adolescents lacked support from their parents, they could compensate for their social support from other social relationships. For middle school students, relatives, friends, classmates, and teachers are very important (Barzева et al., 2019; Runions & Shaw, 2013; Waldrip et al., 2008; Zhang & Nurmi, 2012), and school is their main learning and activity place, so providing them with a safe and comfortable atmosphere, building a harmonious classroom environment, teaching students mutual help, friendship, and respect, and establishing good teacher-student relationships can help left-behind adolescents to obtain social support from the school environment, experience positive

interpersonal interactions, and learn social ability to construct various interpersonal relationships on their own (Guo et al., 2015; Yang et al., 2021). In addition, support from family plays an important role in adolescents' development, and even for left-behind adolescents, who have less direct parental presence, they still need the care and support of their families. Therefore, the families of left-behind adolescents also need to give more understanding and care, pay attention to the psychological changes of children, and provide timely responses.

Second, this study found that relative deprivation had a negative effect on social support. Relative deprivation is a cognitive evaluation that accompanies the shortage of social and psychological resources for left-behind adolescents and needs to be given more attention and more resources and care from the social level. In addition, since the core of relative deprivation is social comparison and the perception of unfair environment (Smith & Pettigrew, 2015), interventions on adolescents' value system and self-perception are also needed. As the standard of living in current society increases, the gap between the rich and the poor becomes more pronounced, and the vulnerability of adolescents left behind in this situation becomes more highlighted. In addition to giving more care to them in terms of policies, it is also necessary to intervene in the value system of children, guiding them to reduce the pursuit of material things and focus more on the enrichment of the spiritual world, so that they can learn in an equal and harmonious classroom atmosphere. After that, we can also cultivate self-confidence of left-behind adolescents and help them develop their specialties, at the same time make efforts to reduce the discrimination and devaluation of left-behind adolescents by non-left-behind adolescents.

Finally, this study found that resilience was also an important protective factor for social withdrawal. Resilience is an individual's ability to recover from setbacks and is an important psychological factor that allows individuals to face and effectively solve problems with a positive mindset despite stress and distress (Laird et al., 2019; Theron & Theron, 2010). To address this, life skills training can be provided to enable them to solve various problems independently, so that these problems do not lead to their psychological stress and affect their normal study and life. In addition, to help the left-behind adolescents strengthen their resilience, they can be given lectures on relevant topics and group counseling on self-pleasure, positive coping with setbacks and stress, and positive mindset guidance. In addition, counseling on interpersonal communication can also be provided directly to middle school students to improve their shyness and avoidance when interacting with others, and to train their social ability so that they can interact with their peers in a harmonious manner.

#### **4.5 Limitations and Future Research Directions**

This study found differences in interpersonal, cognitive, and psychological characteristics and behaviors between left-behind and non-left-behind adolescents, discovered a chain mediating model affecting social withdrawal of left-behind adolescents, and found that relative deprivation and resilience played a chain mediating role between social support and social withdrawal from an interpersonal perspective. However, there are certain limits in this study. First, this study regarded social withdrawal as a holistic concept and did not distinguish between active withdrawal and quiet withdrawal, but actually the

psychological nature of these two is different, and whether different withdrawal behaviors have similar psychological mechanisms needs to be further tested in the future; Second, although the present study found a negative correlation between relative deprivation and resilience, and although it showed that relative deprivation as a cognitive and emotional integrative psychological state affects individuals' psychological adaptive functioning, the core reasons for this pathway of influence still deserve more detailed analysis. In addition, in this study, due to the convenience of sampling, the subjects were selected from the same school, which may affect the external validity of the study results, and future studies may consider the influence of the subjects' geography on the study to test this model extensively. Finally, as a disadvantaged group, there are still few studies on left-behind adolescents, but due to the lack of family functions, left-behind adolescents may have a lack of social adaptation ability in many aspects, which seriously affects their healthy development, so more attention should be paid to this group in the future, and timely intervention and care should be provided to help them grow up healthily.

## 5 Conclusion

- (1) Compared to non-left-behind adolescents, left-behind adolescents have a lower degree of social support, a higher degree of social withdrawal, a higher degree of relative deprivation, and a lower degree of resilience.
- (2) There is a negative correlation between social support and social withdrawal among left-behind adolescents, while relative deprivation and resilience play a chain mediating role between social support and social withdrawal.

## Declarations

### Ethical Approval and Consent to participate

All experiments were carried out in accordance with the Ethics Committee of the Center for Studies of Social Psychology at Central China Normal University (CSSP-2019026), and all participants enrolled in the study voluntarily, with informed consent prior to its initiation.

Written informed consent was obtained from all participants.

### Consent for publication

Written informed consent for publication was obtained from all participants.

### Availability of data and materials

The datasets analyzed during the current study are available in the supplementary. The materials during the current study are available from corresponding author at: Bin Zuo (zuobinccnu123@163.com)

### Competing Interests

The authors declare that they have no competing interests.

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## Authors' Contributions

The study conception and design were performed by Fangfang Wen and Bin Zuo. Material preparation was performed by Fangfang Wen and Chu Chen. Data collection was performed by Chu Chen. Analysis was performed by Chu Chen, Ke Yang, Zengqi Luo and Huiyi Xie. The first draft of the manuscript was written by Fangfang Wen, Chu Chen and Ke Yang, the manuscript was revised by Ke Yang, Zengqi Luo, Huiyi Xie and Jiahui Long according to the comments of Fangfang Wen and Bin Zuo. All authors read and approved the final manuscript.

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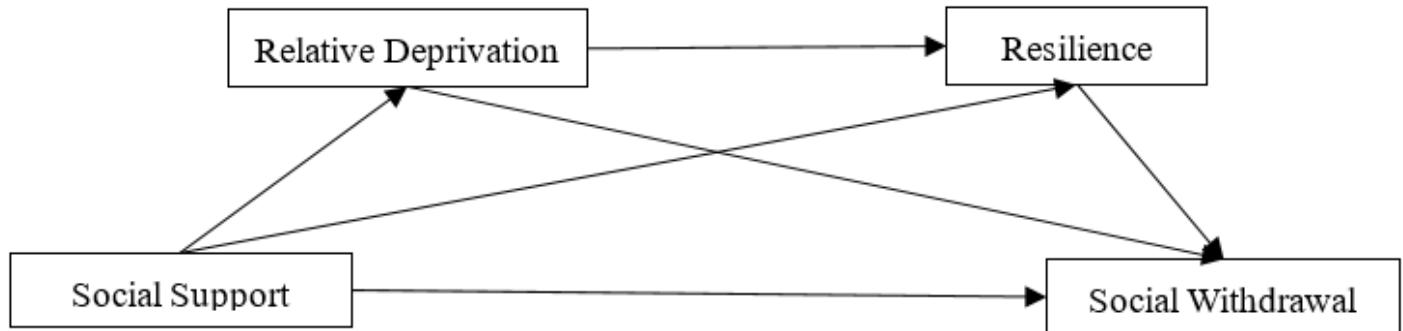
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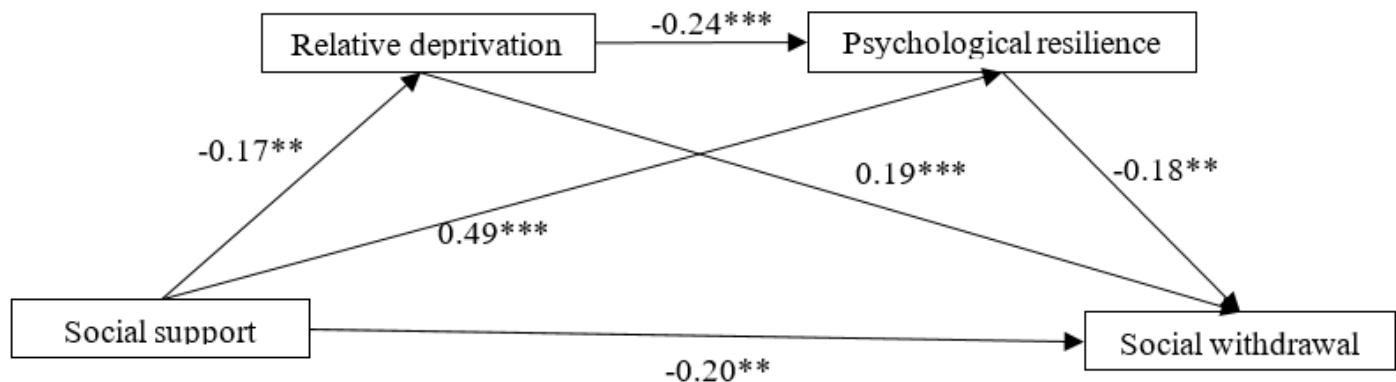
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## Figures



**Figure 1**

A chain mediating model of social withdrawal



**Figure 2**

Path diagram of the chain mediating model of left-behind adolescents.

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