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Linking Self-Compassion and Prosocial Behavior in Adolescents: The Mediating Roles of Relatedness and Trust

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Abstract

Self-compassion involves treating oneself with kindness rather than harsh judgement, viewing imperfection as an inherent part of shared human experience rather than seeing them as isolating, and being mindful of painful feelings rather than over-identifying with them. Abundant evidence has identified the adaptive role of self-compassion on multiple intrapersonal outcomes, such as mental health, emotional well-being and improvement motivation. However, relatively few is known about self-compassion's interpersonal/social benefits, especially in adolescents. The present study examined the relationships between self-compassion, satisfaction of relatedness, general trust, and prosocial behavior in a relatively large Chinese high school adolescent sample ($N = 3238$, 47.8% boys; $M_{age} = 15.66$ years, $SD = 0.80$). We observed that self-compassion was positively associated with adolescents' prosocial behavior, and that relatedness and trust mediated the positive association. Moreover, we found that boys maintained a slightly higher level of self-compassion than girls, and multi-group analysis showed that the relationship between self-compassion and trust was also slightly greater in boys than girls. The present study sheds light on how self-compassion is associated with positive social behavior in adolescents. We suggest that self-compassion intervention could be adapted and implemented during this critical developmental period. More research is encouraged to further discover the adaptive functions of self-compassion in social context.

Keywords Self-compassion · Relatedness · Trust · Prosocial behavior

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1 Introduction

Self-compassion refers to an adaptive and healthy attitude toward the self in times of distress and suffering. Accordingly, self-compassion is comprised of three main components: self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus overidentification (Neff 2003a, b). Self-kindness refers to being caring, gentle and understanding toward oneself when suffering rather than being harshly self-critical. Self-kindness facilities actively soothing and comforting oneself in face of failures, inadequacies, and hardships (Neff and Seppälä 2016). Common humanity involves seeing one's imperfections and shortcomings as part of shared human condition, rather than viewing them as isolating. Common humanity allows people to experience a sense of connection when they recognize that all people have made mistakes and faced difficulties in lives, rather than feeling isolated and alone in their own suffering (Neff 2003a, 2009). Mindfulness requires being aware of painful thoughts and emotions in a balanced way, rather than ignoring or overidentifying with the negative feelings. With mindfulness, people deeply experience the present feelings with clarity and emotionally calm, and thus prevents them from suppression or rumination (Barnard and Curry 2011).

Substantive research has demonstrated that self-compassion contributes to individual's adaptive functioning. Self-compassion is robustly associated with multiple aspects of psychological well-being, including higher levels of positive affect, hope, optimism, and happiness (Neff et al. 2007b; Yang et al. 2016a), and lower levels of depression, anxiety and perceived stress (Bluth et al. 2017). Also, the positive effect of self-compassion on well-being has been demonstrated across cultures and different age groups (Neff et al. 2008; Bluth et al. 2017). In addition, studies have demonstrated that self-compassion generates higher improvement motivation and growth-related outcomes (Barnard and Curry 2011). For instance, self-compassion is linked to mastery academic goals, adaptive coping strategies (Neff et al. 2005), and health-promoting behavior (Sirois et al. 2015). Moreover, self-compassion facilitates realistic self-appraisals, and thus protect individuals from extremes of ego-defensiveness and self-enhancement bias (Neff 2011). When faced with personal transgression, self-compassionate people were more likely to take responsibility for their actions (Allen and Leary 2010), and to make amend and commitment to avoid repeating a similar transgression in the future (Breines and Chen 2012).

However, the existing research has predominately focused on the *intrapersonal* benefits of self-compassion, limited attention has been devoted to exploring the *interpersonal/social* benefits of self-compassion. Recently, researchers have begun to discuss the interpersonal and social implications of self-compassion, such as its relationships with social connectedness and altruism (Neff et al. 2007a; Welp and Brown 2014). While this evidence preliminary indicates that self-compassion might be beneficial to ones' interpersonal relationship and social behavior, more research is needed. Moreover, these studies were mainly conducted on college or adult populations, but research on adolescents is relatively few. Given that relatedness, trust and prosocial behavior play critical roles in adolescents' well-being and positive development (e.g., Deci and Ryan 2000; Yang et al. 2017), the present study intended to examine whether and how self-compassion is related to relatedness, trust and prosocial behavior in Chinese adolescents.

1.1 Self-Compassion and Prosocial Behavior

A small but growing body of research has shown that self-compassion is associated with enhanced interpersonal functioning. Self-compassion involves open-hearted awareness that others share your experiences, both positive and negative, therefore, all human beings are considered intimately connected and worthy of compassion (Neff and Seppälä 2016). Thus, self-compassion should foster interpersonal interaction and caring for others (Barnard and Curry 2011). For instance, using self-report method, researchers have revealed that self-compassion is positively associated with other-oriented traits, including perspective taking, empathic concern, and altruism among meditators and community adults (Neff and Pommier 2013). Experimentally, mindfulness and loving-kindness meditation has been consistently shown to increase individuals other-focused concern (see Boellinghaus et al. 2014 for a review). Such other-oriented concern and caring attitude might generate more prosocial behavior, which is defined as the act undertaken to benefit others (Eisenberg et al. 2006). In line with this reasoning, research has found that self-compassionate people reported higher prosocial intention toward others (Welp and Brown 2014). Lindsay and Creswell (2014) used self-affirmation manipulation to engender feelings of self-compassion, and this self-compassionate mindset in turn mobilizes more prosocial behavior toward a laboratory shelf-collapse incident. Research has also demonstrated that self-compassionate people were more likely to act supportively towards their friends and romantic partners (Crocker and Canevello 2008; Neff and Beretvas 2013).

Despite this growing body of evidence, more research is need to clarify the relationship between self-compassion and prosocial behavior. To our knowledge, no study has examined how self-compassion is related to prosocial behavior in adolescent sample. Given that consistent displays of prosocial behavior are likely beneficial to adolescents' positive growth (e.g., Yang et al. 2017), an empirical investigation of the relationship between self-compassion and prosocial behavior would further the understanding of self-compassion's adaptive social functioning, especially in adolescents. Based on the literature above, we hypothesized that self-compassion would be positively associated with adolescents' prosocial behavior.

1.2 The Underlying Mechanisms between Self-Compassion and Prosocial Behavior

What mediating processes can explain the positive relationship between self-compassion and prosocial behavior? There is strong evidence that relatedness and trust are beneficial to adolescents' interpersonal functioning and social development (e.g., Deci and Ryan 2000; Gummerum and Keller 2008). In this study, we intended to test whether these two significant interpersonal constructs would account for the link between self-compassion and prosocial behavior.

1.2.1 The Mediating Role of Relatedness

People have a fundamental need for belonging (Baumeister and Leary 1995). Self-determination theory suggests that human beings, including adolescents, have three universal and fundamental psychological needs—autonomy, competence, and relatedness—that serve as experiential nutriments for growth and optimal functioning

(Ryan and Deci 2017). Relatedness is characterized by feelings of meaningful connection and belongingness with significant others, rather than isolation or loneliness (Deci and Ryan 2000), and thus relatedness is particularly significant for interpersonal functioning and social well-being. Increasing evidence has suggested that self-compassion facilitates healthy relational behaviors, which in turn, might fulfill individuals' relatedness need. For instance, research has demonstrated that self-compassionate individuals were more likely to use compromising strategies instead of subordinating strategies when resolving interpersonal conflicts (Yarnell and Neff 2013), and they were described by their partners as being more emotionally connected, accepting and autonomy-supporting while being less detached, controlling, and aggressive (Neff and Beretvas 2013). Therefore, self-compassionate people actually feel more connected with others and less isolated. Empirically, self-compassion is positively associated with perceived social support, sense of belongingness (Alizadeh et al. 2018), sense of community (Akın and Akın 2015), social connectedness (Neff et al. 2007a), and relatedness (Neff 2003b), while was negatively associated with loneliness (Akın 2010). As such, we expected that self-compassion would be positively associated with adolescents' feelings of relatedness.

On the other hand, considerable research has shown the important role of relatedness in promoting prosocial behavior. For instance, self-reported relatedness satisfaction, along with autonomy and competence satisfaction, was positively associated with adolescents' willingness to engage in prosocial behaviors, including donating money to charity, recycling and volunteering (Gagné 2003; Yang and Kou 2017). A recent longitudinal study on Chinese adolescents has demonstrated that satisfaction of relatedness and competence needs at school displayed direct effects on prosocial behavior (Tian et al. 2018). In particular, researchers have shown that experimentally manipulating feelings of relatedness enhanced both intentions to engage in and actual prosocial behavior, such as charity donation (Pavey et al. 2011). Also, researchers found that the satisfaction of relatedness mediated the positive effect of gratitude on donation behavior, that is, grateful people became more prosocial toward strangers because their needs for relatedness were satisfied (Shiraki and Igarashi 2018). Thus, it is logical to expect a positive link between relatedness and prosocial behavior. Taken together, relatedness would be a potential mediator between self-compassion and prosocial behavior. Specifically, self-compassionate adolescents would report higher relatedness, which, in turn, would lead to more prosocial behavior.

1.2.2 The Mediating Role of Trust

Another likely candidate to mediate the relationship between self-compassion and prosocial behavior is trust, which refers to the general belief and expectation that most others have benign intentions and can be relied upon (Rotter 1967; Yamagishi and Yamagishi 1994). Trust has been largely demonstrated to foster divergent forms of prosocial behavior (Irwin 2009), including collaboration (Solomon 1960), civic engagement (Jennings and Stoker 2004), charitable giving and volunteering (Taniguchi and Marshall 2014). In addition, trust is regarded as a critical facet of adolescents' prosocial development (Rotenberg 1991; Rotter 1980). For instance, researchers found that 10-year-old children's helpfulness to classmates was correlated with their

generalized trust belief in peers, mother, and teacher (Rotenberg et al. 2005). Wentzel (1991) also reported that sixth and seventh grade (12 and 13-year-old) adolescents' trust positively predicted their social responsibility, including sharing, helping and collaborating. Previous study found that compassionate individual place greater importance on cooperative goals in negotiation, and this effect was mediated by trust (Liu and Wang 2010). Another study has identified that trust mediated a positive link between social support and prosocial behavior among Chinese college students (Guo 2017). However, no studies have examined whether trust would mediate the association between self-compassion and prosocial behavior.

Research is relatively limited in the link between self-compassion and individual's trust. Crocker and Canevello (2008) found that compared to those with lower self-compassion, individuals with higher self-compassion tended to maintain more compassionate goals in their friendships, suggesting that they provided more social support and encouraged interpersonal trust with friends in the process (Crocker and Canevello 2008). Also, self-compassion has been found to be positively associated with agreeableness, which was measured by six subcomponents including trust, compliance, straightforwardness, altruism, modesty, and tender-mindedness (Neff et al. 2007b). In contrast, research has shown that individuals with high self-criticism were less likely to trust their partners (Blatt and Zuroff 1992). Based on this evidence, we proposed that self-compassion would be positively associated with trust. Given the essential role of trust in prosocial behavior, it is reasonable to assume that self-compassion enhances adolescents' trust, which, in turn, promotes their prosocial behavior. In another word, trust is expected to mediate the positive relationship between self-compassion and prosocial behavior.

1.3 The Present Study

Previous research has largely demonstrated the intrapersonal benefits of self-compassion, yet, relatively few is known about its interpersonal and social benefits. The present study intended to address this gap by examining the relationships between self-compassion and three significant interpersonal and social indicators—relatedness, trust and prosocial behavior—in a large Chinese adolescent sample. Specifically, we intended to test the association between self-compassion and prosocial behavior, and to examine whether relatedness and trust mediate that association. Besides, we intended to use multi-group analyses to test whether the relationships among self-compassion, relatedness, trust, and prosocial behavior differ between boys and girls. A recent meta-analysis suggested that males had slightly higher levels of self-compassion than females, with a small effect size ($d = .18$) (Yarnell et al. 2015), however, little else is known about how gender affects self-compassion' relationships with relatedness, trust, and prosocial behavior. Based on the aforementioned studies, we proposed the following hypotheses: (1) self-compassion would be positively associated with relatedness, trust and prosocial behavior; (2) relatedness would mediate the positive association between self-compassion and prosocial behavior; (3) trust would mediate the positive association between self-compassion and prosocial behavior. Specifically, adolescents with higher self-compassion would report higher relatedness and trust, which, in turn, result in higher levels of prosocial behavior.

2 Method

2.1 Participants

Participants were recruited from 4 senior high schools (grades 10th and 11th) in three provinces (Fujian, Shaanxi, and Shandong) of China using convenient sampling. A total of 3283 adolescents participated in this study after providing their parental informed consent. Participants with complete responses to the key measures were used for analyses ($N = 3238$, 47.8% boys; $M_{age} = 15.66$ years, $SD = 0.80$). All the research procedures met the ethical guidelines of the American Psychological Association and were approved by the Institutional Review Board.

2.2 Measures

2.2.1 Self-Compassion

We measured adolescents' self-compassion through the short version of Self-Compassion Scale (SCS-Short From; Raes et al. 2011). This measure comprises 12 items measuring three components and their negative counterparts (two items each). Participants rated each item (e.g., I'm tolerant of my own flaws and inadequacies) on a 5-point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*). Previous studies have demonstrated that shortened SCS had good reliability and high correlations with the longer version of SCS in both adult and adolescent populations (Raes et al. 2011; Sutton et al. 2018). The 12-item short self-compassion scale demonstrated good internal consistency in the present study (Cronbach's $\alpha = .70$).

2.2.2 Relatedness

We measured adolescents' relatedness through the relatedness subscale of Basic Psychological Need Satisfaction and Need Frustration Scale (Chen et al. 2015). The relatedness subscale includes 8 items, 4 of which tap into need satisfaction ("I feel connected with people who care for me and whom I care for") and 4 of which tap into need frustration (e.g., "I feel excluded from the group I want to belong to"). Participants rated each item on a 7-point Likert scale ranging from 1 (*not at all true*) to 7 (*very true*). We reverse-coded the need frustration items, and the average score of 8 items were calculated, with a higher score indicating a higher level of relatedness. The Cronbach's alpha coefficient of the 15 items was .79.

2.2.3 Trust

We used General Trust Scale (Yamagishi and Yamagishi 1994) to measure adolescents' trust. This scale comprises six items (e.g., "Most people are trustworthy"), which asking participants to indicate how much they think that other people can be trusted (1 = s*trongly disagree*, 7 = *strongly agree*). The Cronbach's alpha coefficient of the 6 items was .90.

2.2.4 Prosocial Behavior

We used the 15-item Prosocial Behavior Scale for Adolescents (Yang et al. 2016b) to access adolescents' prosocial behavior. PBSA consists of four dimensions: altruism (e.g., "I help my classmates play basketball"), commonweal-rule (e.g., "I like participating in social activities for public good"), interpersonal relationship (e.g., "I would like to invite other bystanders to join in our games"), and personality trait (e.g., "I keep a promise to friends"). Participants were asked to rate each item from 1 (*Definitely does not apply to me*) to 7 (*Definitely applies to me*). PBSA has been shown to be a reliable and valid measure for Chinese adolescents (Yang et al. 2018). The Cronbach's alpha coefficient of the 15 items in the present study was .90.

2.3 Data Analysis

Descriptive statistics and correlations of key variables were analyzed using SPSS 20.0. Structural equation modeling (SEM) procedures using Mplus 7.0 were employed for hypotheses test. In the SEM, a parceling approach procedure was used, since the parceling approach reduces the number of observed variables in the model, which leads to a more parsimonious model while providing greater power to test the relations among latent variables (Little et al. 2013). Specifically, the combination scores of three self-compassion components (self-kindness and the reverse scored self-judgment, common humanity and the reverse scored isolation, and mindfulness and the reverse scored over-identification) were parceled and used as indicators for a latent variable of self-compassion (Joeng and Turner 2015). For latent variables of relatedness and trust, we created three parcels as indicators for each of them using item-to-construct balance technique (Little et al. 2002). Also, the four subscale-scores of the PBSA were used as four observed indicators for a latent variable of prosocial behavior (Yang et al. 2018). Statisticians have recommended that the fit of the models be considered acceptable when the CFI and TLI values are above .90, and the RMSEA and SRMR values are below .08 (Hu and Bentler 1999). The accelerated-bias-corrected bootstrap estimation procedure in Mplus 7.0 was used to test the significance of the indirect effects of relatedness and trust. In the procedure, the given sample size was randomly resampled 1000 times with replacement, and then 1000 estimations of the indirect effect were calculated. When the 95% confidence interval (CI) for an indirect effect did not include 0, the indirect effect was significant (MacKinnon et al. 2004).

3 Results

3.1 Preliminary Analyses

Table 1 presents the descriptive statistics and the bivariate correlations for the key variables. As expected, self-compassion was positively correlated with relatedness, trust, and prosocial behavior among adolescents, and prosocial behavior was positively associated with relatedness and trust (all $ps < .001$).

Table 1 Descriptive statistics and bivariate correlations for key variables

Variable	M	SD	1	2	3
1 Self-compassion	3.10	0.51	—		
2 Relatedness	4.75	0.63	.35***	—	
3 Trust	4.56	1.14	.32***	.38***	—
4 Prosocial behavior	5.01	0.87	.31***	.36***	.42***

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$. The same below

3.2 Measurement Model

The measurement model for the four latent variables (self-compassion, relatedness, trust and prosocial behavior) was tested, and the results revealed an excellent fit to the data: (χ^2 (59) = 360.879, $p < .001$, CFI = .986, TLI = .982, RMSEA = .040, SRMR = .030). All the standardized factor loadings for the indicators on the latent variables were statistically significant ($|\lambda|$ ranging from .588 to .900, all $ps < .001$), signifying that the four latent variables were well represented by their respective indicators. Given the adequacy of the measurement model, the structural model was examined next.

3.3 Structural Model

The structural model was estimated modeling self-compassion as a predictor, relatedness and trust as mediators, and prosocial behavior as the outcome variable. The final structural model evidenced an acceptable model fit: (χ^2 (60) = 584.345, $p < .001$, CFI = .976, TLI = .969, RMSEA = .052, SRMR = .060). A presented in Fig. 1, the total effect of self-compassion on prosocial behavior in the absence of mediators was significant ($\beta = .41$, $p < .001$). Self-compassion was positively associated with relatedness ($\beta = .45$, $p < .001$) and trust ($\beta = .44$, $p < .001$). Relatedness was positively associated with prosocial behavior ($\beta = .20$, $p < .001$), and trust was also positively associated with prosocial behavior ($\beta = .32$, $p < .001$). In addition, the indirect effect of relatedness between self-compassion and prosocial behavior was significant (indirect effect = .09, $p < .001$, 95% CI = [.07, .11]), and the indirect effect of trust between self-compassion and prosocial behavior was also significant (indirect effect = .14, $p < .001$, 95% CI = [.12, .16]). After accounting for the mediating effects of relatedness and trust, the direct effect of self-compassion on prosocial behavior was decreased to $\beta = .18$, ($p < .001$). In addition, the Wald test showed that the indirect effect of trust was relatively stronger than the indirect effect of relatedness (Wald's statistic: χ^2 (1) = 10.19, $p < .01$).

3.4 Gender Differences

We observed no significant gender difference in trust ($M_{boys} = 4.52$; $M_{girls} = 4.60$; $t = -1.88$, $p = .06$, $d = .07$). Boys scored slightly higher on self-compassion ($M_{boys} = 3.13$; $M_{girls} = 3.06$; $t = 3.95$, $p < .001$, $d = .15$), but lower on relatedness ($M_{boys} = 4.70$; $M_{girls} = 4.81$; $t = -4.78$, $p < .001$, $d = .17$) and on prosocial behavior ($M_{boys} = 4.92$;
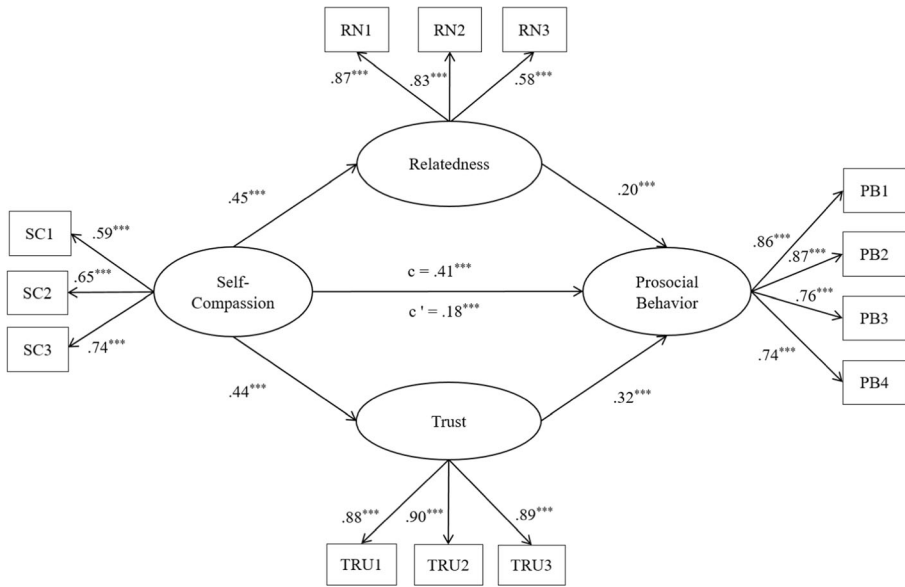
Fig. 1 Note: Standardized coefficients are reported. SC1 = self-kindness and self-judgment, SC2 = common humanity and isolation, SC3 = mindfulness and over-identification; PB1-PB4 = four dimensions of prosocial behavior; RN1-RN3 = three parcels of relatedness; TRU1-TRU3 = three parcels of trust; c′ = direct effect, c = total effect

M_{girls} = 5.09; t = -5.18, $p < .001$, d = .19) than girls, with small effect sizes. We used multi-group models to test whether the path coefficients differ across genders. We compared the first model, freeing the paths to vary across genders, with a second model, constraining the structural paths across genders to be equal. The result showed significant chi-square differences between the two models, $\Delta\chi^2 (5) = 11.78, p < .05$. Then we used the Wald test to examine whether each path coefficient differed across gender. The results showed that the positive relationship between self-compassion and trust was stronger in boys (β = .46, $p < .001$) than in girls (β = .44, $p < .001$; Wald's statistic: $\chi^2 (1) = 4.80, p < .05$). There was no significant gender difference in other paths (all $ps > .05$).

4 Discussion

Numerous studies have consistently demonstrated the adaptive effect of self-compassion on various intrapersonal outcomes, yet, fewer studies have examined the interpersonal/social benefits of self-compassion, especially within adolescents. The present study extended previous literature by linking self-compassion with positive indicators of social relationship (i.e., relatedness), social attitude (i.e., trust) and social behavior (i.e., prosocial behavior) among a relatively large Chinese adolescent sample. Specifically, we found that self-compassion was positively associated with adolescents' prosocial behavior. In addition, we posited and found that relatedness and trust emerged as mediators underlying the positive association between self-compassion and prosocial behavior.

4.1 Self-Compassion and Prosocial Behavior

Previous research has indicated that self-compassion facilitates individuals' interpersonal behavior, such as providing support towards friends (Neff and Beretvas 2013). Also, self-compassionate people have been found to maintain more compassionate goals in their friendships (Crocker and Canevello 2008). Besides, individuals with higher levels of self-compassion demonstrated higher levels of empathic concerns and compassion for others (Boellinghaus et al. 2014; Neff and Pommier 2013), which increase their prosocial intention (Welp and Brown 2014) and the likelihood of preforming actual prosocial behavior (Lindsay and Creswell 2014). Consistent with these previous findings among adult populations, we observed a significant positive association between self-compassion and adolescents' prosocial behavior. That is, adolescents who treated themselves kindly were more likely to act kindly toward other people as well.

4.2 The Mediating Roles of Relatedness and Trust

More importantly, we discovered the mediating roles of relatedness and trust in explaining why self-compassion generates more prosocial behavior in adolescents. For self-compassionate people, all human beings, including self and other people, are imperfect and experiencing suffering (Neff 2003a, b). Thus, self-compassion engenders the feelings of connection with others (Barnard and Curry 2011). In the present study, we found that self-compassionate Chinese adolescents experienced a higher level of relatedness satisfaction, which was parallel with previous studies in adults (Bloch 2018; Neff et al. 2007a) and Turkish adolescents (Akın and Akın 2015). On the other hand, the need for relatedness was the most significant basic need in humans' social functioning (Ryan and Deci 2017), and thus has been largely demonstrated to enhance individual's prosocial behavior (e.g., Pavey et al. 2011). A previous longitudinal study has identified that satisfaction of relatedness need might be particularly critical in promoting adolescents' prosocial behavior while dissatisfaction of relatedness was important in increasing adolescents' antisocial behavior (Tian et al. 2018). Taken together, relatedness mediated the positive relationship between self-compassion and prosocial behavior in the present study. That is, adolescents with higher levels of self-compassion might experience higher levels of relatedness in social environment, which, in turn, were more likely to engage in prosocial behavior.

Another novel observation, as predicted, was that trust also mediated positive association between self-compassion and adolescents' prosocial behavior. Previous literature suggesting that self-compassion was associated with agreeableness, which was measured by six indictors including trust (Neff et al. 2007b). Moreover, mindfulness, a core component of self-compassion, has also been shown to increase trauma-exposed college students' general trust (Kuhl and Boyraz 2017). Consistent with this evidence, we found that self-compassion was associated with adolescents' reported general trust. That is, the degree to which adolescents are kind and caring to themselves is associated with the extent to which they trust others. In turn, the higher level of general trust contributed to adolescents' prosocial behavior, which was similar to early studies (Rotenberg 1991; Rotter 1980; Wentzel 1991). Therefore, trust was also a significant mediator underling the positive relationship between self-compassion and prosocial behavior in Chinese adolescents.

Additionally, we found that the magnitude of the indirect effect of trust was slightly larger than that of relatedness, which suggested that trust displayed a relatively greater role in driving self-compassionate adolescents' prosocial behavior (e.g., Rotenberg et al. 2005). Moreover, the multiple mediation analyses indicated that trust and relatedness did not fully mediate the relationship between self-compassion and prosocial behavior since a direct contribution of self-compassion on prosocial behavior continued to exist. Other potential mediators, such as, empathy and compassion for others (e.g., Welp and Brown 2014), remain to be further explored.

4.3 Gender Differences

Regarding gender differences, we observed that boys scored relatively higher on self-compassion than girls, albeit with a small effect size ($d = .15$). A previous meta-analysis of gender differences in self-compassion also revealed that males had slightly higher levels of self-compassion than females, also with a small effect size ($d = .18$). Moreover, a recent cross-sectional survey on adolescents from junior to senior high school (grades 7th to 12th) demonstrated that elder girls had the lowest self-compassion levels compared to younger girls or all-age boys (Bluth et al. 2017). Our finding was consistent with this study as we recruited only elder adolescents (grade 10th to 11th). In addition, the present finding was in line with previous study demonstrating that females were more likely to be critical to themselves (DeVore 2013). Similarly, an increase in depression in females during high school that is not shown in boys (Nolen-Hoeksema et al. 2009). Moreover, the multi-group analysis demonstrated that the mediation model was generally similar between boys and girls, except that the positive relationship between self-compassion and trust relatively stronger in boys than girls. Previous study also revealed that the effect of self-compassion on decreasing anxiety was also greater in elder boys than elder girls (Bluth et al. 2017). One possible explanation is that high school girls were more reluctant to being self-compassionate (Bluth et al. 2017). Also, girls are more socialized towards friends and others than boys (Crockett et al. 1984). The impact of others (e.g., parents and peers) might demonstrate stronger effect on trust in girls, whereas the role of self-compassion might be slightly weaker. Future research may further elucidate the relationship between self-compassion and trust, for example, on adults and younger adolescents.

4.4 Limitations and Implications

Several limitations of the present study should be noted. First, although we had a relatively large sample size, all the participants were adolescents recruited from China. Despite previous research has discovered that self-compassion increases Turkish adolescents' sense of community (Akın and Akın 2015), future studies based on other samples from different cultures and different age groups are necessary to extend the generalizability of our findings. Second, the cross-sectional nature of present study could not actually establish causality, and could not fully verify the mediating mechanisms (Maxwell and Cole 2007). Longitudinal studies are needed to further examine the directionality of the relations among self-compassion, relatedness, trust, and prosocial behavior. Relatedly, we identified the mediating roles of relatedness and trust in the link between self-compassion and prosocial behavior, but future research would

benefit from longitudinal data by discovering the relationship between relatedness and trust. For instance, previous study has demonstrated a virtuous circle between social connectedness and trust, such that social connectedness promotes people's general trust, while people with higher trust maintained more connected associational memberships (Sturgis et al. 2012). Limited in the cross-sectional design of current study, we could not further explore the direction of the relationship between trust and relatedness. The casual relationship should be clarified in the future. Third, we measured prosocial behavior by self-report method, which might be affected by subjective response bias (e.g., social desirability). Future study could further examine the effect of self-compassion on actual behavior using objective measure. Fourth, as we mentioned before, the relationship between self-compassion and prosocial behavior may have been explained by other mediators which were not included in this study, such as empathy and compassion for others, and which were needed to be discussed.

Despite these limitations, the present study provided preliminarily evidence suggesting that self-compassion displays an important role in social behavior in a Chinese adolescent sample. From a theoretical perspective, the key messages of this research are that self-compassion is positively associated with adolescents' prosocial behavior, and that trust and relatedness explain this association. Our findings contribute to limited but growing body of research that examines the adaptive interpersonal/social functions of self-compassion. Future study should further explore how self-compassion is associated with other social behaviors, such as immoral behavior and civic engagement. From a practical perspective, the findings benefit the intervention aiming at promoting adolescents' social development. It is advisable for parents and teachers to help adolescents cultivate their self-compassion through training interventions (e.g., Neff and Germer 2013), which might enhance adolescents' interposal relationship, trust, and prosocial behavior. Furthermore, as a lower level of self-compassion but higher depressive tendency in female was found (Nolen-Hoeksema et al. 2009), and as adolescence is a critical developmental period, it would be vital to intervene with adolescent girls using self-compassion training, which is essential to prevent development of ill-being and promote development of prosocial behavior.

Compliance with Ethical Standards

Conflict of Interest   The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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 consent was obtained from all individual participants included in the study.

Publisher's Note   Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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