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Happy Helpers: A Multidimensional and Mixed-Method Approach to Prosocial Behavior and Its Effects on Friendship Quality, Mental Health, and Well-Being During Adolescence

Daye Son¹ · Laura M. Padilla-Walker²

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Abstract

The current study used a multidimensional approach to prosocial behavior by (a) exploring various types of adolescent prosocial behavior toward friends (physical helping, sharing, defending, emotional support, including), and (b) examining longitudinal associations among prosocial behavior toward friends, friendship quality, and mental health and well-being outcomes during adolescence (anxiety, life satisfaction, depression). The data were taken from Waves 8, 9, and 10 of the [project name masked for review]. Participants at Wave 8 consisted of 470 adolescents (M age = 18.4 years, $SD = 1.04$, 49% male, 33% single-parent families) from the United States. Results revealed that overall prosocial behavior for boys and emotional support for girls were positively associated with friendship quality over time. Overall prosocial behavior was also associated with increased life satisfaction 2 years later. Discussion focuses on the multidimensionality of prosocial behavior and implications regarding friendships and mental health and well-being during adolescence.

Keywords Prosocial behavior · Friendship quality · Life satisfaction · Anxiety · Depression · Adolescence

1 Introduction

As adolescents begin to spend more time with friends than with parents, friendship becomes a dominant social context during adolescence (Steinberg and Morris 2001). Friendship plays a critical role in various aspects of adolescent social and emotional development (Hartup and Stevens 1999), including development of prosocial behavior (i.e., voluntary actions intended to benefit another; Eisenberg et al. 2015). This is in part because friendship experiences present opportunities for adolescents to cooperate, share, and show kindness to their friends (Newcomb and Bagwell 1998), and these prosocial actions

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function as a way through which adolescents maintain positive relationships (Barry and Wentzel 2006). Extant research has identified several friend predictors (e.g., Farrell et al. 2017; van Hoorn et al. 2016) and outcomes (e.g., friendship quality; Caputi et al. 2012; Markiewicz et al. 2001) of prosocial behavior, and found that adolescents report engaging in prosocial behavior more frequently toward friends than family or strangers (Padilla-Walker and Christensen 2011). These studies point to the prevalence and salience of prosocial behavior in friendship during adolescence.

Given the importance of friendship as the context for prosocial behavior in adolescence, prosocial behavior may influence the quality of friendship and subsequent outcomes that are closely tied to friendship. Mental health and well-being has been found to be closely associated with friendship, with better friendship quality leading to happiness (e.g., Demir and Özdemir 2010) and negative or a lack of friendship leading to psychological problems (e.g., Kingery et al. 2011). Prevalence of mental health problems (e.g., anxiety; Merikangas et al. 2010) and decline in subjective well-being (González-Carrasco et al. 2017) across adolescence may be due in part to stress associated with developing and maintaining friendships (Graber and Sontag 2009). The current study thus considered prosocial behavior as both a protective and promotive factor by examining the effects of prosocial behavior toward friends on adolescent mental health (i.e., depression, anxiety) and subjective well-being (i.e., life satisfaction) via friendship quality.

1.1 Prosocial Behavior Toward Friend and Subsequent Friendship Quality

Prosocial behavior toward friends may be understood as a way for adolescents to maintain positivity in friendships (Lewis 2014). Since friendships are mutually beneficial relationships (Bukowski et al. 1996), greater prosocial behavior toward a friend may elicit positive social provisions (e.g., intimacy, support) from the recipient, thus resulting in higher levels of friendship quality. Studies on prosociality and friendships have found general prosocial tendencies (Markiewicz et al. 2001), prosociality toward a virtual peer (Poorthuis et al. 2012), peer nominations of prosociality (McDonald et al. 2011), and self-report of general prosocial tendencies (Cillessen et al. 2005) to be associated with higher friendship quality. However, the cross-sectional design of these studies only indicates a concurrent association between prosocial behavior and friendship quality. To our knowledge, only a few studies have documented the longitudinal effects of prosocial behavior toward friends on later friendship outcomes (e.g., Padilla-Walker et al. 2015b). The present study employed a longitudinal analysis to provide stronger direction of effects for prosocial behavior toward friends on friendship quality.

1.2 Effects of Prosocial Behavior on Mental Health and Well-Being Through Friendship Quality

Prosocial behavior in general has been found to be protective against anxiety (Haroz et al. 2013) and depressive symptoms (Hutchinson et al. 2016), and to promote subjective well-being (Yang et al. 2017). Specifically, engaging in acts of kindness and prosociality were associated with increased subjective life satisfaction among preadolescents (Layout et al. 2012), adults (Buchanan and Bardi 2010), and clinical (Van Tongeren et al. 2016) samples. Prosocial behavior may promote positive mental health and well-being through facilitating successful friendship formation and maintenance. As friendships are salient in adolescents' lives and closely related to self-worth (Rubin et al. 2004), failures or successes

in maintaining friendships may have a significant impact on adolescent mental health and well-being. Adolescent prosocial behavior toward friends was thus hypothesized to be associated with reduced anxiety and depression and greater life satisfaction via increased friendship quality. In support of this hypothesis, studies have found prosociality to promote well-being through increased relatedness among college students (Weinstein and Ryan 2010) and adults (Martela and Ryan 2016). Friendship quality has also been associated with fulfillment of relatedness (Demir and Özdemir 2010), which later predicted increased happiness. These findings suggest that consistent mutual exchanges of intimacy in friendships facilitate satisfaction of psychological needs for relatedness, which may subsequently promote subjective well-being.

Regarding mental health outcomes, a recent study using the same data set found relationship quality to longitudinally mediate the relations between prosocial behavior to friends and family and adolescents' internalizing and externalizing outcomes (Padilla-Walker et al. 2015a). The results on prosocial behavior toward friends indicated positive bidirectional associations with anxiety via friendship connectedness, and no relations between prosocial behavior toward friends and depression. While this finding is inconsistent with previous literature on the protective effects of prosocial behavior, it could be that adolescents feel heightened anxiety because they are susceptible to the evaluation of friends (La Greca and Lopez 1998) as they continue to maintain friendship through prosocial actions. Padilla-Walker et al. (2015a) speculated that this surprising finding may have been unique to the period of early adolescence they were studying, especially given that this result has not been found at other ages. Other studies seemed to suggest clearer effects of friendship on adolescent mental health, with low friendship quality being consistently related to anxiety (La Greca and Harrison 2005), and depressive symptoms (Spithoven et al. 2017).

1.3 Gender as Another Nuance

Gender was also included in the current study as another meaningful aspect to consider since children were hypothesized to feel an increased pressure to conform to traditional gender ideals during adolescence (i.e., gender intensification; Hill and Lynch 1983). Specifically, research suggests gender differences in types of prosocial behavior and in friendship processes. In terms of prosocial behavior, females tend to engage more in emotionally supportive behavior and males in agentic helping behavior such as helping physically or helping in an emergency (Eagly 2009; Nielson et al. 2017). These differences in types of prosocial behavior among males and females may be due to pressure for boys to conform to masculine ideals of emotional stoicism (Hine and Leman 2013). Gender differences in the patterns of association between prosocial behavior and behavioral outcomes have been found as well. For example, while prosocial behavior, agreeableness, and conscientiousness independently and directly predicted delinquency for boys, the relations between prosocial behavior and delinquency were mediated by agreeableness and conscientiousness for girls (Pursell et al. 2008). Based on these findings, we expected gender differences in the associations between types of prosocial behavior and friendship quality. In terms of friendship, gender differences have been found in friendship processes (Rose and Rudolph 2006), with girls reporting greater emotional intimacy and placing higher value in friendships than boys (Aukett et al. 1988). As girls tend to report greater concerns and stress related to friendships and friend evaluation (Graber and Sontag 2009), we expected friendship quality to have more salient effects on girls' mental health and well-being outcomes.

1.4 Multidimensional Approach to Prosocial Behavior

Recent research on prosocial development has called for a need to move beyond the simplistic, global view of prosocial behavior and toward the understanding of prosocial behavior as a complex construct (Padilla-Walker and Carlo 2014). This multidimensional approach to prosocial behavior provides greater nuances by identifying specific forms of prosocial behavior and their unique correlates (Carlo and Randall 2002). The current study thus adapted a multidimensional approach by specifying the target and types of prosocial behavior. Specifying the target of prosocial behavior as friends is important given that behavioral (Padilla-Walker and Carlo 2014) and neural (Schreuders et al. 2018) correlates are differentially associated with targets of prosocial behavior. While the current study only focuses on one target of prosocial behavior (friends), that is an important addition to existing research because the majority of research explores prosocial behavior toward unidentified targets (e.g., Cillessen et al. 2005) or toward classmates in general rather than friends specifically (e.g., McDonald et al. 2011).

In terms of types of prosocial behavior, studies on prosocial behavior in friendship settings have thus far primarily used a global measure of prosocial behavior that consists of sharing, cooperating, and helping (Meuwese et al. 2017; Wentzel 2014). Given the increased complexities and abilities in cognitive and physical development in adolescence (Blakemore and Choudhury 2006), as well as the unique contextual setting that friendship provides, additional types of prosocial behavior are expected to regularly occur. Distinguishing types of prosocial behavior may also explain some of the null findings in relation to prosocial behavior to friends (e.g., self-esteem; Fu et al. 2017), since the lack of significant associations between prosocial behavior toward friends and self-esteem may be due to the use of general helping as prosocial behavior rather than specific forms of helping (e.g., comforting) that may be more prevalent and more impactful on adolescent friend outcomes. Hence, the current study drew upon a recently developed multidimensional measure of prosocial behavior (Nielson et al. 2017) to distinguish five types of prosocial behavior that may be unique in friendships during adolescence. The five types of prosocial behavior consisted of *defending* (i.e., standing up for a friend who is getting victimized), *emotional support* (i.e., helping to appease negative emotions and/or to foster positive emotions), *including* (i.e., helping someone who is not a member of an in-group to feel accepted), *physical helping* (i.e., acts of service that primarily involve the physical body as resource for helping), and *sharing* (i.e., helping by providing material resource).

Given the varying degrees of cost that are associated with each type of prosocial behavior, different types of prosocial behavior were expected to differ in their impact on friendship quality and consequently on adolescent mental health and well-being. Emotional support was hypothesized to have a stronger positive impact on the outcomes than physical helping or sharing because emotional helping often involves relational commitment and hence is considered a high-cost prosocial behavior (Eisenberg and Shell 1986), while physical helping and sharing can be performed without the presence of intimacy. Defending and including are more nuanced and understudied, with higher levels of defending behavior being related to a decrease in both the defender's own victimization and peer-perceived liking (Meter and Card 2015). Defending behavior could be considered high-cost due to the intense emotions involved in victimizing situations. Standing up to an aggressor can be stressful and anxiety-provoking because the situation involves some type of aggression, and taking the side of a victim could be perceived as being opposed to aggressive peers who may desire social dominance in the peer group (Olthof et al. 2011). It was thus

hypothesized that defending and including would be directly and positively associated with anxiety in addition to their relations to friendship quality.

1.5 Current Study

The current study employed a multidimensional approach to (a) explore different types of prosocial behavior toward friends (physical helping, sharing, defending, emotional support, including) using an open-ended survey question, and (b) examine whether prosocial behavior toward friends is associated with later anxiety, depression, and life satisfaction via friendship quality. As the types of prosocial behavior used in this study stemmed from the newly developed measure, we first explored adolescents' responses about prosocial actions toward friends to confirm that these types of prosocial behavior are prevalent in vivo. Specifically, an example of frequently reported instances was provided for each type of prosocial behavior. We then examined which types of prosocial behavior toward friends were longitudinally associated with anxiety, depression, and life satisfaction via friendship quality across gender. Overall, we hypothesized that prosocial behavior would predict lower levels of anxiety and depression and higher levels of life satisfaction over time via greater friendship quality. Taking gender differences into account, emotional support was hypothesized to be more strongly associated with friendship quality than other types for females, while physical helping was expected to be more strongly related to friendship quality for males. Friendship quality in turn was hypothesized to be associated negatively with anxiety and depression and positively with life satisfaction over time, with stronger effects for females.

2 Methods

2.1 Participants

Data were taken from Waves 8, 9, and 10 of [project name masked for review], a longitudinal study of adolescent development. These waves were selected due to the availability of data and in order to analyze the influence of prosocial behavior during late adolescence. Participants at Wave 8 consisted of 470 adolescents (49% male, 33% single-parent families) from the United States. Children participated every year starting in 2014, and longitudinal retention was 90%. There were no differences among variables of interest between those who stayed in the study and those who did not. The average age at Wave 8 was 18.4 years (range = 16–21, $SD = 1.04$), with 21% attending high school, 31% just graduated from high school, 34% attending college, 10% graduated from high school but not attending college, and 4% discontinued high school without graduating. Regarding ethnicity, 68% of families were European American, 11% were African American, and 23% were multiethnic or other ethnicities. In terms of income, 12% of families reported an annual income below \$25,000, another 56% reported between \$25,000 and \$75,000, and the remaining 32% reported greater than \$75,000.

2.2 Procedures

Before the data collection, the institutional review board (IRB) from the sponsoring university that oversees research on human subjects approved the survey procedures. At Wave

1, families were randomly selected from targeted census tracts that mirrored the socioeconomic and racial stratification of reports of local school districts from a large northwestern city in the United States. Participants were identified using a multistage recruitment protocol (Polk Directories/InfoUSA), which contained detailed information (e.g., presence and age of children) of 82 million households across the United States. Families were considered eligible to participate if they had a child between the ages of 10 and 14 years in the home. Of the 692 eligible families contacted, 61% responded and agreed to participate in the project. In an attempt to capture the socio-economic and ethnic diversity of the local area, 77 (15%) additional families were recruited into the study through referrals and fliers. Data for Waves 1 through 5 were collected in the homes of the participants, while the latter five waves, including the questionnaires for this study, were administered online using Qualtrics. Data collection began the first week in May each year, and the participants were contacted over phone by undergraduate research assistants and were given instructions on taking the survey online. The survey took approximately 45 min to complete and the participants were given \$100 upon completion.

2.3 Measures

Waves 8, 9, and 10 are hereafter referred to as Time 1, 2, and 3 respectively, and the measures are described in the order of time at which they were assessed.

2.3.1 Prosocial Behavior Toward Friends

Prosocial behavior toward friend was reported by adolescents at Time 1 using a multidimensional measure of prosocial behavior (Nielson et al. 2017). Five types included *defending* (e.g., “If someone is being made fun of, I stick up for that person”; $\alpha = .84$), *emotional support* (e.g., “If someone is upset, I listen to that person”; $\alpha = .87$), *inclusion* (e.g., “If someone is new to a group, I make an effort to include that person”; $\alpha = .80$), *physical helping* (e.g., “I do physical acts of service for others such as lifting heavy things, yard work, cleaning”; $\alpha = .82$), and *sharing* (e.g., “I share my personal belongings with people”; $\alpha = .84$). Each type of prosocial behavior was measured by four items on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores indicate higher levels of prosocial behavior.

2.3.2 Open-Ended Question on Prosocial Behavior Toward Friends

In conjunction with the quantitative portion of the survey, the participants were asked an open-ended question in order to explore prosocial behavior in depth and to investigate how prosocial actions are manifested in real-life situations. The specific question included, “Tell us about a time in the last year when you did something kind or helpful for a friend.” A total of 434 responses were collected and coded for the type of prosocial behavior. A codebook comprised of definitions, operationalizations, inclusion, and exclusion criteria for each type of prosocial behavior was developed based on the quantitative measure of prosocial behavior used in this study (Nielson et al. 2017). *Defending* was defined as helping by protecting a friend who is being physically, relationally, or verbally attacked, and it included breaking up fights, standing up for someone who is being made fun of or given a hard time. *Emotional support* was described as helping to appease negative emotions and/or to foster positive emotions, and it included situations in which a friend’s emotions such

as anger or sadness were clearly stated. *Including* was defined as helping someone who is not a member of an in-group to feel accepted. This involved someone who is new to a group or who seems lonely. *Physical helping* was described as assisting with the physical body as a primary resource (e.g., lifting heavy things, giving rides, cleaning). *Sharing* was defined as providing material resource, such as giving gifts, picking up tabs, and sharing personal belongings. Using the codebook, two undergraduate research assistants performed focused coding by examining each response and applying the appropriate code for prosocial types by assigning the value of 1 to indicate the presence of a certain type of prosocial behavior and 0 to designate nonexistence. Responses could be coded for more than one type of prosocial behavior. Interrater reliability was achieved for all codes ($kappas > .70$), and any remaining discrepancies were resolved by the first author.

2.3.3 Friendship Quality

Children reported on their own relationships with their best friend at Time 1 and 2 using the connection subscale from the best friend relationship measure (three items; Barber and Olsen 1997). Responses were given on a Likert-type scale ranging from 0 (*never*) to 4 (*every day*). Sample items included, “How often do you tell your friend things about yourself that you wouldn’t tell most kids?” ($\alpha = .69-.71$).

2.3.4 Anxiety

Child’s anxiety was assessed at Time 2 and 3 using the six-item generalized anxiety disorder subscale from the Spence Child Anxiety Inventory (Spence 1998). Participants responded using a 4-point Likert scale ranging from 0 (*never*) to 3 (*always*) with higher scores reflecting greater levels of anxiety. Sample items included, “I worry a lot about things,” and “When I have a problem, my heart beats really fast” ($\alpha = .83-.89$).

2.3.5 Depression

Adolescents reported on their own depression at Time 2 and 3 using the 20-item self-report CES-DC (Center for Epidemiological Studies Depression Scale for Children; Weissman et al. 1980). Participants responded by rating the degree to which they have experienced each item in the past week, with a Likert-type response scale ranging from 1 (*not at all*) to 4 (*a lot*). Higher scores indicate greater depressive symptoms. Sample items included “I felt down and unhappy” and “I felt lonely, like I didn’t have any friends” ($\alpha = .91-.92$).

2.3.6 Life Satisfaction

Life satisfaction in a number of domains was assessed at Time 3 using five items (adapted from Diener et al. 1985). Responses were on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) regarding how adolescents felt about their life currently (e.g., “I am satisfied with my life” and “I am satisfied with my relationships”; $\alpha = .83$). Higher scores represent greater subjective life satisfaction.

2.4 Data Analysis Procedures

The coded open-ended responses on prosocial behavior were analyzed to provide frequency and an exemplar response for each type of prosocial behavior. A confirmatory factor analysis (CFA) was then performed prior to structural modeling by creating latent variables using Mplus (Version 7.4; Muthén and Muthén 2016) to ensure good factor loadings. Following the CFA, a structural equation modeling with indirect effects was conducted to examine the associations among prosocial behavior toward friends, friendship quality, and mental health and well-being outcomes. Appropriate model fit was based on Hu and Bentler (1999)'s criteria of CFI and TLI > .95, RMSEA < .05, and SRMR < .08. To examine the indirect effects, a bootstrapping analysis was conducted with 2000 bootstrap resamples and a 95% bias-corrected confidence interval (CI). Missing data were minimal (less than 5%; Schafer 1999) and were considered missing at random, thus maximum likelihood feature was applied.

3 Results

3.1 Focused Coding Analysis

Results from the open-ended coding analysis indicated that the frequency for each type of prosocial behavior was 28.5% for emotional support, 19.3% for physical helping, 44.8% for sharing, 2.5% for including, and 2.1% for defending. When asked about an experience with helping friends, a respondent described helping as providing emotional support: "I helped one of my friends get through a bad break up situation. I listened to how upset she was about everything and how terrible she felt. When she wanted to hurt herself, I told her to try to stay positive." Another respondent described how she helped by sharing: "My friend did not have money for a bubble tea, so I paid for her." In regards to physical helping, one participant stated: "Last week my friend needed help moving cut-up trees for his yard work business so he asked if I could help. I said 'of course,' and spent a few hours moving yard waste with him." An example of including as a type of prosocial behavior consisted of when a participant helped a friend who was new:

A friend of mine just moved from Chicago and didn't know anyone at my school. Several of my other friends invited him to sit with us at lunch while most people ignored him for the first couple days, but I kept talking to him to make him feel included and now he is one of my closest friends.

Another participant recounted helping two friends who were fighting:

Earlier this year two of my best friends at school got in a big fight. Instead of standing by and letting it ruin their friendship, I went to both of them separately, and talked them through their side of the argument. In the end I was able to help the two of them end their fight and continue their friendship.

This account provided an example of defending behavior that may be common in adolescence.

It is of note that some responses did not fit into any of the five types of prosocial behavior. These responses were examined again to form new categories of prosocial behavior that

would be meaningful for future research. One category called *intellectual helping* (3.7%) consisted of adolescents helping their friends academically, such as assisting with homework. Another category was named *harm prevention* (2.8%), and this category included actions out of concern for friend's health (e.g., helping a friend to quit doing drugs). For example, one participant recounted: "My friend struggles with self-harm and depression and I regularly help him overcome negative thoughts, specifically about lack of self-worth and self-potential. More than once I have talked him out of self-harming or comforted him after relapse."

3.2 Descriptive Statistics and Bivariate Correlations

Means, standard deviations, and correlations of all continuous study variables are presented in Table 1. Defending, emotional support, physical helping, sharing, and including were positively correlated with each other for both girls and boys. Defending, emotional support, physical helping, and sharing were positively correlated with friendship quality for boys, while only emotional support was positively correlated with friendship quality for girls. Defending, emotional support, physical helping, sharing, and including were positively correlated with life satisfaction for girls. Friendship quality was positively correlated with anxiety for girls. T-tests were performed to identify gender differences in variables of interest. Tests revealed that girls reported higher levels than boys of emotional support ($t=4.24, p<.001$), including ($t=2.70, p=.007$) friendship quality ($t=7.53, p<.001$), anxiety ($t=6.64, p<.001$), depression ($t=3.33, p<.001$), and life satisfaction ($t=2.87, p=.004$). A series of ANOVA tests also showed no significant mean differences among high school students, high school graduates, college students, and non-college students in regards to prosocial behavior, friendship quality, anxiety, and depression at Time 1, $F(3)=.66-2.01, p=.112-.577$.

3.3 Measurement Model

Measurement model was conducted using MPlus (Version 7.4, Muthén and Muthén 2016). Latent variables were created for prosocial behavior, friendship quality, and life satisfaction. Given the model's lack of sufficient power due to multiple grouping by child gender, and based on the strong measurement reliability, anxiety and depression were assessed as observed variables. The model fit the data adequately, $\chi^2(1163)=2055.10, p<.001$, CFI=.93, TLI=.92, RMSEA=.04 90% CI [.038-.043], SRMR=.049, with all factor loadings above .50. To test the multidimensionality of prosocial behavior and capture the unique impact that each specific prosocial behavior has on outcomes, a bifactor model (Reise 2012) was created using overall prosocial behavior as a general latent factor and each type of prosocial behavior as a specific sub-latent factor. A bifactor model is advantageous when testing whether the items of prosocial behavior are composed of unique sub-factors (e.g., physical helping, sharing) beyond their overall attributes as one construct (i.e., prosocial behavior). This type of modeling is useful for examining the possibility of heterogeneity of the items that make up one construct, as it was hypothesized that one type prosocial behavior (e.g., emotional support) would have different impact on the outcomes than another type (e.g., physical helping). By generating the bifactor model as opposed to the regular or second-order CFA, the associations between the subfactors (i.e., different types of prosocial behavior) and outcomes beyond the general factor can be statistically tested. The bifactor model converged well, $\chi^2(147)=357.49, p<.001$; CFI=.961; TLI=.949;

Table 1 Descriptive statistics and correlations of all continuous study variables

	1	2	3	4	5	6	7	8	9
1. Defending	—	.66**	.66**	.45**	.70**	.24**	.01	-.13	.19**
2. Emotional support	.64**	—	.72**	.53**	.66**	.23**	-.12	-.15*	.13
3. Physical helping	.75**	.60**	—	.56**	.68**	.22**	-.01	-.11	.08
4. Sharing	.53**	.51**	.58**	—	.46**	.20**	.06	.01	-.08
5. Including	.61**	.59**	.59**	.45**	—	.13	-.05	-.12	.12
6. Friendship quality	.08	.24**	.07	.10	.06	—	.01	-.02	.07
7. Anxiety	-.04	.01	-.01	-.02	.01	.14*	—	.53**	-.33**
8. Depression	-.04	-.05	.01	-.06	-.06	.01	.50**	—	-.49**
9. Life satisfaction	.21**	.27**	.22**	.23**	.28**	.11	-.28**	-.46**	—
<i>M</i>	4.06\3.99	4.50\4.24	4.15\4.23	3.99\3.82	4.24\4.06	3.92\3.19	1.43\1.01	1.90\1.72	5.36\5.06
<i>SD</i>	.71\1.78	.60\1.72	.70\1.71	.82\1.83	.67\1.69	1.02\1.02	.70\1.62	.61\1.52	1.03\1.72

All correlations below the diagonal are for females, and above the diagonal are for males. Means and standard deviations before the slash indicate reports of females and after the slash are for males

* $p < .05$; ** $p < .01$

RMSEA = .056, 90% CI [.049–.064], SRMR = .035, and all items loaded significantly on a general prosocial behavior factor with factor loadings above .40 (see Fig. 1). The model fit of the bifactor model was significantly better than the previous CFA, which meant that the model parameter estimates of the bifactor model were superior.

3.4 Structural Model

A structural equation model was conducted to examine the influence of five types of prosocial behavior at Time 1 on friendship quality at Time 2, while controlling for friendship quality at Time 1. Friendship quality at Time 2 in turn predicted anxiety, depression, and life satisfaction at Time 3, while controlling for anxiety and depression at Time 2. Both direct and indirect paths were explored. Gender was used as a moderator in the final model. Due to the unavailability of life satisfaction measure in the data set at Time 2, life satisfaction at Time 3 was controlled for by depression at Time 2 based on the significant correlations ($r > -.40$ for both genders) and past research showing the two measures to be closely correlated and can be combined into one measure (Demir and Urberg 2004).

We conducted a multiple group analysis across gender by first comparing a freely estimated model (structural paths estimated for boys and girls separately) and a fully constrained model with all structural paths equal for boys and girls. Based on the overall significant Chi square difference between the two models (χ^2 difference = 1197.12–694.72 = 502.4, df 652–300 = 352, $p < .05$), we proceeded to analyzing gender differences on individual coefficients by releasing one path constraint at a time.

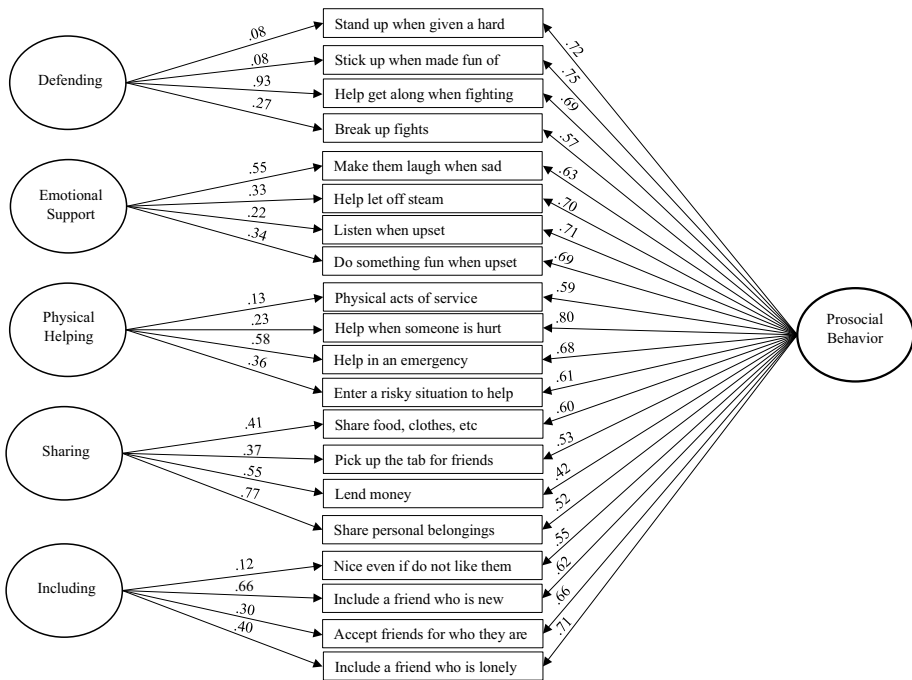


Fig. 1 Bifactor measurement model of prosocial behavior items. χ^2 (147) = 357.49, $p < .001$; CFI = .961; TLI = .949; RMSEA = .056, 90% CI [.049–.064], SRMR = .035. Standardized loadings are shown

Final model fit was acceptable, $\chi^2(652) = 1197.11$, $p < .001$, CFI = .916, RMSEA = .060, 90% CI [.054–.065], SRMR = .058 (see Fig. 2). Analyses of direct effects suggested that overall prosocial behavior was positively associated with life satisfaction regardless of gender ($\beta = .22$, $p = .018$), and with best friendship quality for boys ($\beta = .34$, $p < .001$). This means adolescents who initially reported engaging in overall prosocial behavior also reported having greater life satisfaction 2 years later. Boys who initially engaged in greater overall prosocial behavior also had better friendship quality a year later. Unique variance of emotional support significantly predicted higher best friendship quality for girls ($\beta = .39$, $p < .001$), meaning girls who provided greater emotional support to friends at initial time point reported having improved friendship quality over time. Defending, sharing, physical helping, and including behaviors were not significantly associated with friendship quality. Direct effects from overall and different types of prosocial behavior to anxiety and depression were also not significant. Friendship quality was marginally and positively associated with anxiety over time for girls ($\beta = .16$, $p = .071$) but not with depression or life satisfaction. Friendship quality was not significantly related with anxiety, depression, and life satisfaction for boys. Results indicated all indirect effects via friendship quality to be nonsignificant.

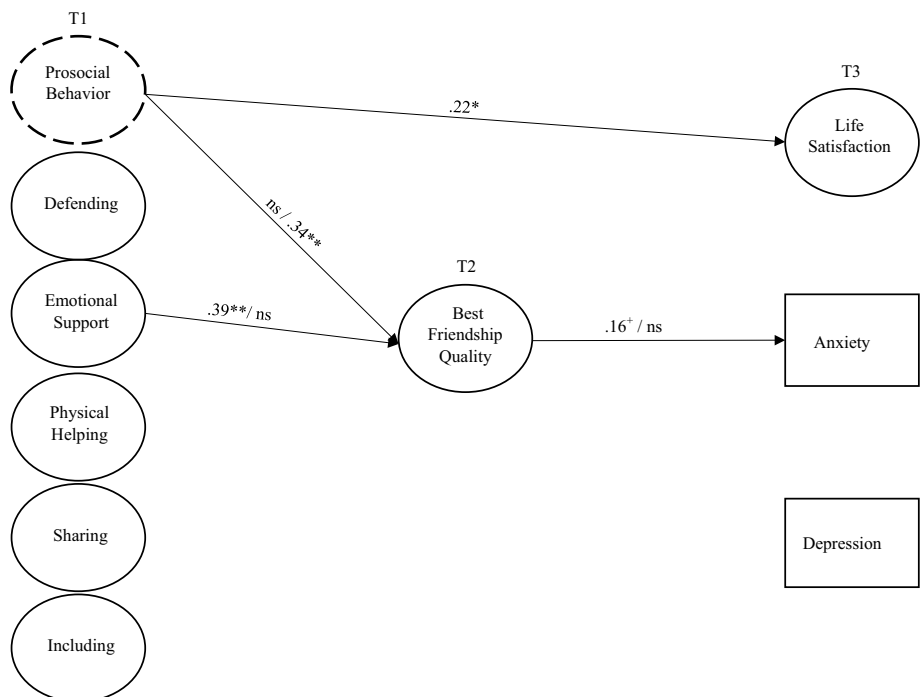


Fig. 2 Longitudinal associations among types of prosocial behavior, best friendship quality, and mental health outcomes. $\chi^2(652) = 1197.11$, $p < .001$, CFI = .916, RMSEA = .060, 90% CI [.054–.065], SRMR = .058. Standardized betas are reported. Nonsignificant paths, covariances, and error correlations are not shown in the figure for parsimony. All endogenous variables except for life satisfaction were controlled at previous time points, but stability paths are also not shown in the figure. Dashed circle represents the general factor. Beta weight before the slash reports associations for females, after the slash for males. All reported gender differences are statistically significant. $^+p < .08$; $*p < .05$; $^{**}p < .001$

4 Discussion

As previous studies on prosocial behavior and mental health and well-being have typically used a measure of general prosocial behavior to an unspecified target (e.g., Weinstein and Ryan 2010) without considering the multidimensionality, this study attempted to capture the meaningful nuances of prosocial behavior by specifying the target (i.e., friends) and types (i.e., physical helping, emotional support, including, defending, sharing) of prosocial behavior. The present study also sought to enrich the current research on prosocial behavior by providing real-life accounts of adolescents' prosocial behaviors in friendships vis-à-vis the quantitative measure. Further, as research has begun to establish the links between prosociality and mental health and well-being through relatedness among adult (Martela and Ryan 2016) and college (Weinstein and Ryan 2010) samples, this study examined the process through which prosocial behavior toward friends may have a positive impact on anxiety, depression, and life satisfaction via friendship quality among adolescents, given the salient role that friendships play in late adolescence.

The quantitative results revealed unique effects of both overall prosocial behavior and specific type of prosocial behavior on friendship quality and life satisfaction. Greater prosocial behavior in general was associated with higher life satisfaction for both boys and girls. Greater emotional support for girls and general prosocial behavior for boys were positively associated with friendship quality, while physical helping, sharing, defending, and including were not significantly associated with friendship quality, depression, anxiety, and life satisfaction over time. Contrary to our hypothesis, friendship quality was not associated with later anxiety, depression, and life satisfaction.

4.1 Multidimensionality of Prosocial Behavior

Our findings suggest that not only do friendship settings during late adolescence provide frequent opportunities to be prosocial (Padilla-Walker and Christensen 2011), but that adolescents engage in diverse forms of voluntary helping. Adolescents' responses about their prosocial behavior to friends varied greatly in terms of time commitment, material resources, emotional intimacy, frequency, and cost. Results also indicated that the unique variance of emotional support predicted higher levels of friendship quality, suggesting differing impact that some types of prosocial behavior have on child outcomes. This supports continuing research on the multidimensional approach to prosocial behavior, which posits that different types of prosocial behavior have varying degrees of costs, correlates, and implications (Padilla-Walker and Carlo 2014). The complexity and diversity in prosocial behaviors may emerge during late adolescence due to an increase in children's abilities (e.g., cognitive; Blakemore and Choudhury 2006) and resources (e.g., financial; Steinberg and Cauffman 1995) to help others.

In addition to the pre-defined five types of prosocial behavior, new notable types of prosocial behavior that were previously unidentified emerged in the focused coding analysis, including intellectual helping and harm prevention. This open-ended approach is important as research continues to stress the importance of different types of prosocial behavior, as current measures may not have captured all types of prosocial behavior that adolescents find to be salient. The current findings suggest that future research should explore how intellectual and harm prevention helping might benefit both the helper and the helpee in similar or different ways than more traditional types of helping. We encourage

future research to incorporate these novel types of prosocial behavior to explore whether these kinds of helping behavior exist among different samples and across targets of prosocial behavior. By continuing to examine various types of prosocial behavior, research can accurately capture different ways that adolescents help and their varying degrees of impact on adolescent development. Taking the multidimensional approach, however, need not undermine the research on global prosocial behavior. The current study utilized a bifactor model to provide a comprehensive understanding of prosocial behavior as an overall construct with unique subfactors. The results found significant effects of both overall prosocial behavior and specific types of prosocial behavior on adolescent friendship quality and life satisfaction. Considering both the multidimensionality and singularity of prosocial behavior is beneficial for taking into account the nuances and contexts while preventing a narrow scope of research. Future research would benefit from incorporating both global and multidimensional measures of prosocial behaviors in a bifactor model.

4.2 Gender Differences in the Patterns of Associations

Interesting findings emerged by gender, with emotional support being uniquely associated with increased friendship quality for girls and global prosocial behavior being positively associated with friendship quality over time for boys. This finding seems to be in line with previous research that females tend to place greater importance on emotional intimacy (Rose and Rudolph 2006) and closeness (Henrich et al. 2001) as a means of promoting positive friendships than do males. On the other hand, friendships for boys may benefit from the combination of various prosocial actions such as physical assistance and sharing. Rather than having friendships that are intimate and exclusive (Berndt 1982), adolescent males' friendships tend to be promoted by general support for each other that consists of many forms of helping behaviors such as taking turns and helping physically. These combinations of prosocial behaviors then seem to have a positive impact on friendship quality as an overall support for boys, commonly expressed as "having each other's back." Future research should continue to consider the development of gender beliefs when studying child prosocial behavior.

4.3 Prosocial Behavior and Adolescent Mental Health and Subjective Well-Being

Beyond the benefit of improved friendship quality, overall prosocial behavior toward friends was associated with increased life satisfaction for both boys and girls. This finding is meaningful in that helping friends has a positive impact on adolescent subjective well-being independent of its impact on friendship quality. As previous research on prosocial behavior has found positive child outcomes related to prosocial behavior (e.g., self-esteem; Fu et al. 2017), being kind and helping friends can promote subjective well-being in adolescents. Prosocial behavior may facilitate life satisfaction because increasing another's welfare may bring a sense of worth (Grant and Gino 2010) and joy to the giver (Eisenberg et al. 2016). It is also of note that global prosocial behavior as opposed to specific types influenced greater life satisfaction. Overall prosocial behavior may be a better reflection of one's consistent tendencies for helping because it measures helping in a wide range of situations. Prosocial behavior may be most beneficial to the helpers when they engage in prosocial behavior under various circumstances. Related implications for interventions include coaching youth to engage in prosocial actions toward friends to facilitate greater subjective well-being in adolescents' lives.

The nonsignificant association between prosocial behavior and depression is worth noting. While this finding is somewhat puzzling and warrants further investigation, we speculate that prosocial behavior towards friends may be more effective at promoting positive moods than protecting against negative moods. Studies that have found prosocial behavior to be protective against depressive symptoms primarily measured prosocial behavior to an unidentified target or toward strangers (Hutchinson et al. 2016). A study using the same data with different time points also found nonsignificant effects of prosocial behavior towards friends on depression over time (Padilla-Walker et al. 2015a). Since little research has been conducted exploring the impact of prosocial behavior toward various targets and internalizing problems, more studies should distinguish targets of helping and examine other mechanisms through which prosocial behavior might influence depression. The lack of associations between friendship quality and depression, anxiety, and life satisfaction might have been due to the fact that friendship quality may have a different impact on child development as a function of the type of friendship (Berndt 2002; Hartup 1996). Future research should thus incorporate measures of friendship types (e.g., delinquent, prosocial).

4.4 Limitations and Conclusion

While the present study utilized a multidimensional and mixed-method approach to contribute to extant research on adolescent prosocial behavior, friendship quality, and life satisfaction, it was not without limitations. As all study measures were self-reported, responses regarding friendship quality might have been biased. To accurately capture friendship dynamics, future studies should include friend-reports or employ social network analysis. Additionally, life satisfaction was only measured at the final time point. The unavailability of the life satisfaction measure at previous time points was due to the fact that this study utilized a secondary data set. A direction of effects for the results on this variable is hence difficult to determine. More studies replicating the associations between prosocial behavior and life satisfaction among adolescents are needed to establish a causal link. More diversity in terms of race, ethnicity, and socioeconomic status is also needed in the future to examine whether these patterns of associations among prosocial behavior, friendship quality, and mental health and well-being are similar across varying samples. Just as this study found gender differences, analyzing the patterns of associations across varying samples may facilitate producing effective intervention efforts that are tailored for a specific group of youths.

Despite these limitations, this study utilized a multidimensional approach to prosocial behavior and a mixed-method design to identify the unique longitudinal impact that overall prosocial behavior as well as each type of prosocial behavior toward friends has on friendship quality and adolescent life satisfaction. The qualitative responses added richness and novelty to the research by presenting real-life examples of different prosocial behaviors that adolescents engage in friendships. The results were further distinguished by gender to provide meaningful insights into ways that prosocial behavior may impact friendship quality and well-being differentially or similarly for boys and girls during late adolescence. Taken together, the study contributes to the current research by incorporating multiple layers of contexts to highlight the complexity of adolescent prosocial behavior toward friends and its associations to friendship and well-being. Considering emotional support as well as global prosocial behavior seem particularly important and fruitful avenues for future research on prosocial behavior in adolescence. Our findings also illustrate the positive influence that

prosocial behavior has on adolescent well-being and encourage researchers and the stakeholders to promote prosocial behavior in adolescents to increase life satisfaction.

References

- Aukett, R., Ritchie, J., & Mill, K. (1988). Gender differences in friendship patterns. *Sex Roles, 19*(1–2), 57–66. <https://doi.org/10.1007/bf00292464>.
- Barber, B. K., & Olsen, J. A. (1997). Socialization in context: Connection, regulation, and autonomy in the family, school, and neighborhood, and with peers. *Journal of Adolescent Research, 12*(2), 287–315. <https://doi.org/10.1177/0743554897122008>.
- Barry, C. M., & Wentzel, K. R. (2006). Friend influence on prosocial behavior: The role of motivational factors and friendship characteristics. *Developmental Psychology, 42*(1), 153–163. <https://doi.org/10.1037/0012-1649.42.1.15>.
- Berndt, T. J. (1982). The features and effects of friendship in early adolescence. *Child Development, 53*(6), 1447–1460. <https://doi.org/10.2307/1130071>.
- Berndt, T. J. (2002). Friendship quality and social development. *Current Directions in Psychological Science, 11*(1), 7–10. <https://doi.org/10.1046/j.1365-2664.2002.00743.x>.
- Blakemore, S. J., & Choudhury, S. (2006). Development of the adolescent brain: Implications for executive function and social cognition. *Journal of Child Psychology and Psychiatry, 47*(3–4), 296–312. <https://doi.org/10.1111/j.1469-7610.2006.01611.x>.
- Buchanan, K. E., & Bardi, A. (2010). Acts of kindness and acts of novelty affect life satisfaction. *The Journal of Social Psychology, 150*(3), 235–237. <https://doi.org/10.1080/00224540903365554>.
- Bukowski, W. M., Newcomb, A. F., & Hartup, W. W. (1996). Friendship and its significance in childhood and adolescence. Introduction and comment. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 1–15). Cambridge: Cambridge University Press.
- Caputi, M., Lecce, S., Pagnin, A., & Banerjee, R. (2012). Longitudinal effects of theory of mind on later peer relations: The role of prosocial behavior. *Developmental Psychology, 48*(1), 257–270. <https://doi.org/10.1037/a0025402>.
- Carlo, G., & Randall, B. A. (2002). The development of a measure of prosocial behaviors for late adolescents. *Journal of Youth and Adolescence, 31*(1), 31–44. <https://doi.org/10.1023/a:1014033032440>.
- Cillessen, A. H. N., Jiang, X. L., West, T. V., & Laszkowski, D. K. (2005). Predictors of dyadic friendship quality in adolescence. *International Journal of Behavioral Development, 29*(2), 165–172. <https://doi.org/10.1080/0165025044000360>.
- Demir, M., & Özdemir, M. (2010). Friendship, need satisfaction and happiness. *Journal of Happiness Studies, 11*(2), 243–259. <https://doi.org/10.1007/s10902-009-9138-5>.
- Demir, M., & Urberg, K. A. (2004). Friendship and adjustment among adolescents. *Journal of Experimental Child Psychology, 88*(1), 68–82. <https://doi.org/10.1016/j.jecp.2004.02.006>.
- Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13.
- Eagly, A. H. (2009). The his and hers of prosocial behavior: An examination of the social psychology of gender. *American Psychologist, 64*(8), 644–658. <https://doi.org/10.1037/0003-066x.64.8.644>.
- Eisenberg, N., & Shell, R. (1986). Prosocial moral judgment and behavior in children: The mediating role of cost. *Personality and Social Psychology Bulletin, 12*(4), 426–433. <https://doi.org/10.1177/0146167286124005>.
- Eisenberg, N., Spinrad, T. L., & Knafo-Noam, A. (2015). Prosocial development. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science* (7th ed., pp. 184–207). New York, NY: Wiley. <https://doi.org/10.1002/9781118963418.childpsy315>.
- Eisenberg, N., VanSchyndel, S. K., & Spinrad, T. L. (2016). Prosocial motivation: Inferences from an opaque body of work. *Child Development, 87*(6), 1668–1678. <https://doi.org/10.1111/cdev.12638>.
- Farrell, A. D., Thompson, E. L., & Mehari, K. R. (2017). Dimensions of peer influences and their relationship to adolescents' aggression, other problem behaviors and prosocial behavior. *Journal of Youth and Adolescence, 46*(6), 1351–1369. <https://doi.org/10.1007/s10964-016-0601-4>.
- Fu, X., Padilla-Walker, L. M., & Brown, M. N. (2017). Longitudinal relations between adolescents' self-esteem and prosocial behavior toward strangers, friends and family. *Journal of Adolescence, 57*, 90–98. <https://doi.org/10.1016/j.adolescence.2017.04.002>.

- González-Carrasco, M., Casas, F., Malo, S., Viñas, F., & Dinisman, T. (2017). Changes with age in subjective well-being through the adolescent years: Differences by gender. *Journal of Happiness Studies*, 18(1), 63–88. <https://doi.org/10.1007/s10902-016-9717-1>.
- Graber, J. A., & Sontag, L. M. (2009). Internalizing problems in adolescence. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology: Vol. 1, Individual bases of adolescent development* (3rd ed., pp. 642–682). Hoboken, NJ: Wiley.
- Grant, A. M., & Gino, F. (2010). A little thanks goes a long way: Explaining why gratitude expressions motivate prosocial behavior. *Journal of Personality and Social Psychology*, 98(6), 946–955. <https://doi.org/10.1037/a0017935>.
- Haroz, E. E., Murray, L. K., Bolton, P., Betancourt, T., & Bass, J. K. (2013). Adolescent resilience in Northern Uganda: The role of social support and prosocial behavior in reducing mental health problems. *Journal of Research on Adolescence*, 23(1), 138–148. <https://doi.org/10.1111/j.1532-7795.2012.00802.x>.
- Hartup, W. W. (1996). The company they keep: Friendships and their developmental significance. *Child Development*, 67(1), 1–13. <https://doi.org/10.1111/j.1467-8624.1996.tb01714.x>.
- Hartup, W. W., & Stevens, N. (1999). Friendships and adaptation across the life span. *Current Directions in Psychological Science*, 8(3), 76–79. <https://doi.org/10.1111/1467-8721.00018>.
- Henrich, C. C., Blatt, S. J., Kuperminc, G. P., Zohar, A., & Leadbeater, B. J. (2001). Levels of interpersonal concerns and social functioning in early adolescent boys and girls. *Journal of Personality Assessment*, 76(1), 48–67. https://doi.org/10.1207/s15327752jpa7601_3.
- Hill, J. P., & Lynch, M. E. (1983). The intensification of gender-related role expectations during early adolescence. In J. Brooks-Gunn & A. C. Petersen (Eds.), *Girls at puberty* (pp. 201–228). Boston, MA: Springer.
- Hine, B., & Leman, P. J. (2013). The developing relationship between gender and pro-social behaviour. In P. J. Leman & H. R. Tenenbaum (Eds.), *Gender and development* (pp. 78–108). New York, NY: Psychology Press.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>.
- Hutchinson, D. M., Macdonald, J. A., Hallam, W. T., Leung, R. K., Toumbourou, J. W., McGee, R., et al. (2016). Care orientation in the teens as a predictor of young adult psychosocial adjustment. *Journal of Happiness Studies*, 17(5), 2051–2076. <https://doi.org/10.1007/s10902-015-9685-x>.
- Kingery, J. N., Erdley, C. A., & Marshall, K. C. (2011). Peer acceptance and friendship as predictors of early adolescents' adjustment across the middle school transition. *Merrill-Palmer Quarterly*, 57(3), 215–243. <https://doi.org/10.1353/mpq.2011.0012>.
- La Greca, A. M., & Harrison, H. M. (2005). Adolescent peer relations, friendships, and romantic relationships: Do they predict social anxiety and depression? *Journal of Clinical Child and Adolescent Psychology*, 34(1), 49–61. https://doi.org/10.1207/s15374424jccp3401_5.
- La Greca, A. M., & Lopez, N. (1998). Social anxiety among adolescents: Linkages with peer relations and friendships. *Journal of Abnormal Child Psychology*, 26(2), 83–94. <https://doi.org/10.1023/a:1022684520514>.
- Layous, K., Nelson, S. K., Oberle, E., Schonert-Reichl, K. A., & Lyubomirsky, S. (2012). Kindness counts: Prompting prosocial behavior in preadolescents boosts peer acceptance and well-being. *PLoS ONE*, 7(12), e51380.
- Lewis, M. E. (2014). Parents as recipients of adolescent prosocial behavior. In L. M. Padilla-Walker & G. Carlo (Eds.), *Prosocial development: A multidimensional approach* (pp. 305–326). New York, NY: Oxford University Press.
- Markiewicz, D., Doyle, A. B., & Brendgen, M. (2001). The quality of adolescents' friendships: Associations with mothers' interpersonal relationships, attachments to parents and friends, and prosocial behaviors. *Journal of Adolescence*, 24(4), 429–445. <https://doi.org/10.1006/jado.2001.0374>.
- Martela, F., & Ryan, R. M. (2016). The benefits of benevolence: Basic psychological needs, beneficence, and the enhancement of well-being. *Journal of Personality*, 84(6), 750–764. <https://doi.org/10.1111/jopy.12215>.
- McDonald, K. L., Wang, J., Menzer, M. M., Rubin, K. H., & Booth-LaForce, C. (2011). Prosocial behavior moderates the effects of aggression on young adolescents' friendships. *International Journal of Developmental Science*, 5, 127–137. <https://doi.org/10.3233/dev-2011-10066>.
- Merikangas, K. R., He, J. P., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, L., et al. (2010). Lifetime prevalence of mental disorders in US adolescents: Results from the National Comorbidity Survey Replication-Adolescent Supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry*, 49(10), 980–989. <https://doi.org/10.1016/j.jaac.2010.05.017>.

- Meter, D. J., & Card, N. A. (2015). Effects of defending: The longitudinal relations among peer-perceived defending of victimized peers, victimization, and liking. *Social Development, 24*(4), 734–747. <https://doi.org/10.1111/sode.12129>.
- Meuwese, R., Cillessen, A. H., & Güroğlu, B. (2017). Friends in high places: A dyadic perspective on peer status as predictor of friendship quality and the mediating role of empathy and prosocial behavior. *Social Development, 26*(3), 503–519. <https://doi.org/10.1111/sode.12213>.
- Muthén, L., & Muthén, B. (2016). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.
- Newcomb, A. F., & Bagwell, C. L. (1998). The developmental significance of children's friendship relations. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 289–321). New York, NY: Cambridge University Press.
- Nielson, M. G., Padilla-Walker, L., & Holmes, E. K. (2017). How do men and women help? Validation of a multidimensional measure of prosocial behavior. *Journal of Adolescence, 56*, 91–106. <https://doi.org/10.1016/j.adolescence.2017.02.006>.
- Olthof, T., Goossens, F. A., Vermande, M. M., Aleva, E. A., & van der Meulen, M. (2011). Bullying as strategic behavior: Relations with desired and acquired dominance in the peer group. *Journal of School Psychology, 49*(3), 339–359. <https://doi.org/10.1016/j.jsp.2011.03.003>.
- Padilla-Walker, L., & Carlo, G. (2014). *Prosocial development: A multidimensional approach*. New York: Oxford University Press.
- Padilla-Walker, L. M., Carlo, G., & Nielson, M. G. (2015a). Does helping keep teens protected? Longitudinal bidirectional relations between prosocial behavior and problem behavior. *Child Development, 86*(6), 1759–1772. <https://doi.org/10.1111/cdev.12411>.
- Padilla-Walker, L. M., & Christensen, K. J. (2011). Empathy and self-regulation as mediators between parenting and adolescents' prosocial behavior toward strangers, friends, and family. *Journal of Research on Adolescence, 21*(3), 545–551. <https://doi.org/10.1111/j.1532-7795.2010.00695.x>.
- Padilla-Walker, L. M., Fraser, A. M., Black, B. B., & Bean, R. A. (2015b). Associations between friendship, sympathy, and prosocial behavior toward friends. *Journal of Research on Adolescence, 25*(1), 28–35. <https://doi.org/10.1111/jora.12108>.
- Poorthuis, A. M., Thomaes, S., Denissen, J. J., van Aken, M. A., & de Castro, B. O. (2012). Prosocial tendencies predict friendship quality, but not for popular children. *Journal of Experimental Child Psychology, 112*(4), 378–388. <https://doi.org/10.1016/j.jecp.2012.04.002>.
- Pursell, G. R., Laursen, B., Rubin, K. H., Booth-LaForce, C., & Rose-Krasnor, L. (2008). Gender differences in patterns of association between prosocial behavior, personality, and externalizing problems. *Journal of Research in Personality, 42*(2), 472–481. <https://doi.org/10.1016/j.jrp.2007.06.003>.
- Reise, S. P. (2012). The rediscovery of bifactor measurement models. *Multivariate Behavioral Research, 47*(5), 667–696.
- Rose, A. J., & Rudolph, K. D. (2006). A review of sex differences in peer relationship processes: Potential trade-offs for the emotional and behavioral development of girls and boys. *Psychological Bulletin, 132*(1), 98–131. <https://doi.org/10.1037/0033-2909.132.1.98>.
- Rubin, K. H., Dwyer, K. M., Booth-LaForce, C., Kim, A. H., Burgess, K. B., & Rose-Krasnor, L. (2004). Attachment, friendship, and psychosocial functioning in early adolescence. *Journal of Early Adolescence, 24*, 326–356. <https://doi.org/10.1177/0272431604268530>.
- Schafer, J. L. (1999). Multiple imputation: A primer. *Statistical Methods in Medical Research, 8*(1), 3–15.
- Schreuders, E., Klapwijk, E. T., Will, G. J., & Güroğlu, B. (2018). Friend versus foe: Neural correlates of prosocial decisions for liked and disliked peers. *Cognitive, Affective, & Behavioral Neuroscience, 18*, 1–16. <https://doi.org/10.3758/s13415-017-0557-1>.
- Spence, S. H. (1998). A measure of anxiety symptoms among children. *Behaviour Research and Therapy, 36*(5), 545–566. [https://doi.org/10.1016/S0005-7967\(98\)00034-5](https://doi.org/10.1016/S0005-7967(98)00034-5).
- Spithoven, A. W., Lodder, G. M., Goossens, L., Bijttebier, P., Bastin, M., Verhagen, M., et al. (2017). Adolescents' loneliness and depression associated with friendship experiences and well-being: A person-centered approach. *Journal of Youth and Adolescence, 46*(2), 429–441. <https://doi.org/10.1007/s10964-016-0478-2>.
- Steinberg, L., & Cauffman, E. (1995). The impact of employment on adolescent development. *Annals of Child Development, 11*(1), 131–166.
- Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Annual Review of Psychology, 52*(1), 83–110. <https://doi.org/10.1146/annurev.psych.52.1.83>.
- van Hoorn, J., Dijk, E., Meuwese, R., Rieffe, C., & Crone, E. A. (2016). Peer influence on prosocial behavior in adolescence. *Journal of Research on Adolescence, 26*(1), 90–100. <https://doi.org/10.1111/jora.12173>.
- Van Tongeren, D. R., Green, J. D., Davis, D. E., Hook, J. N., & Hulseley, T. L. (2016). Prosociality enhances meaning in life. *The Journal of Positive Psychology, 11*(3), 225–236.

- Weinstein, N., & Ryan, R. M. (2010). When helping helps: autonomous motivation for prosocial behavior and its influence on well-being for the helper and recipient. *Journal of Personality and Social Psychology*, 98(2), 222–244. <https://doi.org/10.1037/a0016984>.
- Weissman, M. M., Orvaschel, H., & Padian, N. (1980). Children's symptom and social functioning: Self-report scales. *Journal of Nervous and Mental Disorders*, 168, 736–740.
- Wentzel, K. R. (2014). Prosocial behavior and peer relations in adolescence. In L. M. Padilla-Walker & G. Carlo (Eds.), *Prosocial development: A multidimensional approach* (pp. 178–200). New York, NY: Oxford University Press.
- Yang, Y., Li, P., Fu, X., & Kou, Y. (2017). Orientations to happiness and subjective well-being in Chinese adolescents: The roles of prosocial behavior and internet addictive behavior. *Journal of Happiness Studies*, 18(6), 1747–1762. <https://doi.org/10.1007/s10902-016-9794-1>.

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