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Close Friendship Strength and Broader Peer Group Desirability as Differential Predictors of Adult Mental Health

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Abstract

Middle adolescents' close friendship strength and the degree to which their broader peer group expressed a preference to affiliate with them were examined as predictors of relative change in depressive symptoms, self-worth, and social anxiety symptoms from ages 15 to 25 using multi-method, longitudinal data from 169 adolescents. Close friendship strength in mid-adolescence predicted relative increases in self-worth and decreases in anxiety and depressive symptoms by early adulthood. Affiliation preference by the broader peer group, in contrast, predicted *higher* social anxiety by early adulthood. Results are interpreted as suggesting that adolescents who prioritize forming close friendships are better situated to manage key social developmental tasks going forward than adolescents who prioritize attaining preference with many others in their peer milieu.

The growth of peer relationships into primary sources of support and intimacy during adolescence is well documented (Buhrmester, 2008; Wilkinson, 2010). However, the term “peer relationships” is a large umbrella covering multiple types of affiliations, from broad social groups and casual acquaintanceships to close dyadic friendships. Although some form of social competence is necessary for all of these, there is little reason to assume that each type of relationship functions in the same way, or that teens who are successful in one domain will necessarily be successful in others (Bukowski, Pizzamiglio, Newcomb, & Hoza, 1996; Larson, Whitton, Hauser, & Allen, 2007). A fundamental distinction among different types of peer interactions lies in the degree to which interactions center around close friendships vs. establishing success with a larger peer group (e.g., popularity or affiliation preference within a broader group), which may be comprised of more casual acquaintances or friends. This study explored the possibility that establishing close adolescent friendships is a more fundamental developmental task and thus will be more predictive of long-term positive psychosocial outcomes than simply seeking to become a desirable companion within the peer group at large.

Although it is clear that simply having positive peer experiences is important during adolescence, it is also clear that not all experiences are equivalent. By and large, having high quality close friendships has been associated with positive outcomes within adolescence. Youth with higher levels of attachment to their best friends appear to have better

psychological health, psychosocial adjustment, and even a more adaptive stress response during adolescence (Bukowski, Newcomb, & Hartup, 1996; Wilkinson, 2010). In general, adolescents with high quality close friendships report higher rates of overall happiness than those without, in part because close friendships appear to enhance an individual's feeling of uniqueness (Demir, Simsek, & Procsal, 2012). Attention that leads a youth to feel unique and special may be harder to obtain in a larger group. Although competence in larger groups is also linked with some concurrent psychosocial benefits during adolescence, such as higher concurrent self-esteem (Larson, Whitton, Hauser, & Allen, 2007), higher assertive leadership, and lower aggression (Asher & McDonald, 2009), only dyadic closeness has been shown to relate to academic motivation and success (Crosnoe, 2000; Larson, et al., 2007). Additionally, close dyadic friendships, but not peer acceptance and competence at the group level, have been linked to more advanced ego development (self-awareness, ability to make sense of the world, etc.) for youth (Larson et al., 2007).

Close friendships develop based on a variety of interpersonal experiences and functionalities. Previous work has found that aspects of friendship that teens report as being *most* important to being close to someone are intimate exchange, loyalty, self-esteem support, and general feelings of closeness (Berndt, 2002). Assessments of friends on these traits tend to hang together, and higher levels predict higher self-worth and social adjustment. In the present study we use a composite measure of these dimensions. We describe this construct as close friendship "strength" rather than close friendship "quality" given prior work which has found that friendships can be high in both positive and negative traits, concurrently (Banny, Heilborn, Ames, & Prinstein, 2011). We feel that "strength" better captures the idea that we are describing close friendships with a high degree of attachment, intimate exchange, and support, while not necessarily speaking to any possible negative pieces. Indeed, the positive aspects of a close friendship tend to be those which make it feel strong and supportive, and predict positive concurrent and short-term outcomes independent of how much negativity occurs in the friendship (Banny, et al., 2011).

Close friendships that last over time have the potential to significantly contribute to these beneficial outcomes. A sense of coherence (i.e., feeling that life is predictable) leads to increased intimacy in friendships (Bauminger, Finzi-Dottan, Chason, & Har-Even, 2008). In other words, adolescents who feel secure in the knowledge that their friendship is likely to be ongoing become even closer to their friends, suggesting that adolescents who can successfully maintain long-term close friendships may have the most opportunities to reap the benefits. Beyond adolescence, youth who are socially rejected by their peer groups have lower life satisfaction at least into middle adulthood; however, this is *only* true if they also did not have close friends as an adolescent (Marion, Laursen, Zeteregren, & Bergman, 2013). These findings suggest that there is something uniquely powerful about intimate adolescent dyadic friendships relative to broader markers of acceptance.

A major factor that distinguishes close friendships and overall peer group acceptance and preference is that desirability as a companion in the broader peer group does not require intimacy, may partly rely on traits such as social dominance, and may not even necessarily involve reciprocity of liking in the way that friendship does (Bukowski et al., 1996; Prinstein, 2007; Dijkstra, Cillessen, Lindenberg, & Veenstra, 2009). Perhaps at least in part

for this reason, measures of social competence within a peer group have shown mixed positive and negative outcomes, which are somewhat dependent on which relationship qualities are assessed and how social competence is defined. There are several ways of quantifying overall peer social status during adolescence: “acceptance” refers to how frequently an adolescent is rated as being liked; “preference” (also often referred to as “sociometric popularity”) refers to teens who are liked by many peers while also not being disliked by many peers; “perceived popularity” in contrast reflects peers’ perceptions of a teen’s social status and reputation (Bruyn, Cillessen, & Wissink, 2010; LaFontana & Cillessen, 2002; Lansu & Cillessen, 2012). Of these measures of peer relationship quantity, preference is most clearly associated with positive behaviors and traits such as nonaggressive leadership, assertiveness, and prosocial behaviors such as cooperation (Asher & McDonald, 2009). Although there is some overlap between these constructs, by middle adolescence they are not highly correlated (Cillessen & Borch, 2006). A primary commonality among these disparate measures is that they all refer to adolescents who have achieved recognition with many peers, and thus have a level of “status,” though this may be differentially positive depending on for what they are well-recognized.

The current study uses a unique scale capturing peer sociometric nominations of teens with whom they would like to spend time as a measure of peer affiliation preferences. Asking about preferred affiliation may be distinct from simply asking about acceptance or preference (it can be appealing to spend time with even less likeable high-status youth due to the social capital that affiliation offers), and thus may encompass some aspects of both standard preference and popularity. Both preferred and popular youth often appear, in the short-term, to be particularly socially successful. In fact, in the *short-term*, higher levels of popularity may even lead to an increase in number of reciprocal friendships, although this link appears strongest in earlier adolescence (Bukowski et al., 1996). Previous work assessing peer *affiliation* preference supports the idea that asking about preference in this way maps on to characteristics of both standard preference measures and standard popularity measures; this affiliative preference has been linked with both positive and negative concurrent traits similar to those found for preferred as well as popular youth (e.g., Allen, Porter, McFarland, Marsh, & McElhaney, 2005; Allen, Porter, & McFarland, 2006; McElhaney, Antonishak, & Allen, 2008; Allen et al., 2014). Youth may be preferred affiliative partners for multiple reasons: they may have high social status, they may be fun, they may be easy to approach, or a combination of these traits.

Many of the behaviors associated with popular youth in the literature as well as preferred affiliation partners in our sample (e.g., pseudo-mature behaviors such as drinking, drug use, minor theft, engagement in sex acts, etc.) are not always seen as positive by an adult audience, but these behaviors have high social capital for adolescents (Moffitt, 1993). During adolescence there are a variety of concurrent benefits to gaining high levels of peer interest and admiration through these behaviors, which suggests a degree of social competence for those youth who are successful in achieving this pursuit. Overall, peer preference is linked to more positive, less aggressive relationship characteristics and fewer risky behaviors than is popularity (Mayeux, Sandstrom, & Cillessen, 2008). However, some studies have found that achieving peer preference early in adolescence may be linked, in the short term, to increases in the incidence of behaviors (positive *and* negative) that receive

approval from the adolescent's peer group. On the negative side, this includes increases in problematic behaviors such as alcohol and drug use, and on the positive side, decreases in less socially desirable behaviors, such as hostility and aggression (Allen et al., 2005; Balsa, Homer, French, & Norton, 2010). Such adolescents are seen and experienced very positively by others, which suggests a high level of social competence. However, adolescents who are focused on succeeding with their peer group to a degree that they are willing to compromise their values and schoolwork in order to be admired consistently show increased problem behavior later in adolescence (Fuligni, Eccles, Barber, & Clements, 2001). Despite many concurrent positive outcomes, a handful of studies have even found peer preference to be linked to *short-term* increases in substance use as well as difficulties in later relationships, and elevated early adult criminal behavior (Moody, Brynildsen, Osgood, Feinberg, & Gest, 2011; Allen, Schad, Oudekerk, & Chango, 2014).

In addition to delinquent and externalizing behaviors, peer relations are linked to and may impact internalizing symptoms. Depression symptoms, self-worth, and social anxiety symptoms are all specific areas which have been found to correlate with peer experiences in children and adolescents. Interpersonal stress broadly is strongly correlated with depression both in adults (Joiner & Coyne, 1999) and children (Rudolph, Hammen, Burge, Lindberg, Herzberg, & Daley, 2000). Prior to adolescence, lack of friendship has been linked to levels of depression, mediated by feelings of loneliness (Nangle, Erdley, Newman, Mason, & Carpenter, 2003). Although for younger children popularity and acceptance may provide affordances for friendship, it has not been similarly linked to depressive symptoms. Distinguishing among different types of adolescent social success may therefore be of particular interest in predicting depressive symptoms given that some aspects of social success may protect youth from experiencing significant interpersonal stress, at least within the peer group. The relation between adolescent relationships and depression is also likely to extend into adulthood, given that adolescence heralds a time when rates of mood disorders, including depression, begin to steadily increase and approach adult levels (Birmaher et al., 1996). Even adolescents with sub-threshold MDD are at higher risk for later difficulties, including adult MDD, anxiety disorders, and poor social adjustment (Fergusson, Horwood, Ridder, & Beautrais, 2005).

Peer relation success also provides insight into how youth see themselves and how they feel about interacting with others. In youth transitioning to middle school, friendship quality (but not quantity) has been found to positively predict self-worth (a buffer against depression) (Kingery, Erdley, & Marshall, 2011). Given findings suggesting a relation between positive peer relations and self-worth, as well as the high correlation between self-worth and depression, examining self-worth on its own may help to clarify if changes in self-worth drive any changes in depression predicted by different social successes.

Furthermore, faced with a range of typical adolescent stressors, youth are less likely to develop symptoms of social anxiety if they are able to develop high quality close friendships (La Greca & Harrison, 2005). In particular, social anxiety is lower for teens whose close friendships are high in companionship and intimacy, as well as more likely to struggle with social anxiety if their friendships are low in intimacy in particular (Vernberg, Abwender, Ewell, & Beery, 1992). Although it is on one hand likely that less socially anxious teens find

it easier to form friendships, it may also be that a close, supportive friendship helps teens feel more confident about their ability to successfully interact with peers in rewarding ways, contributing to these lower levels of social anxiety. Similar relations with all measures of internalizing are found across the lifespan, with concurrent high-quality friendships predicting lower levels of internalizing symptoms (Patterson & Bettini, 1993). A teen's social network and positive friendships no doubt influence mood and internalizing symptoms when examined proximally, and higher levels of depression, anxiety, and other internalizing symptoms can negatively impact social functioning of children and adolescents (Joiner & Coyne, 1999; Rockhill, Fan, Katon, McCauley, Crick, & Pleck, 2007).

Understanding links of social behaviors to concurrent and short-term functioning during adolescence is certainly important. However, a key developmental question is: How are different types of peer relationships linked to *long-term* outcomes into adulthood? Given the interactional nature of depression and social functioning, it is possible that different aspects of adolescent social successes or failures may have particular import, given when they occur and their potential to set the individual up for future successes or struggles. Although there are positive short term correlates of peer affiliation preference, cultivating an abundance of relationships, though they may be positive, at the expense of prioritizing the support and intimacy that help to build and maintain close friendships may be ultimately problematic. Once the mildly deviant behaviors that are lauded by the peer group during adolescence stop being seen as positive, adolescents who rely on the weak foundation of those behaviors to achieve success with peers without developing close friendships may find themselves lost socially in adulthood. Although in some cases peer acceptance and preference may lead to an increase in number of close friendships, it appears to be close friendships which drive positive outcomes during adolescence (Nangle, et al., 2003). Preference and acceptance *instead of* close friendship may set youth up for later difficulties. Given that social difficulties in adulthood are closely linked to a variety of internalizing symptoms (e.g., low self-worth, depression, and anxiety) (Joiner & Coyne, 1999; Mufson, Weissman, Moreau, & Garfinkel, 1999), it appears quite possible that early peer affiliation preference, might even predict increases in such symptoms over time. Conversely, if youth adopt behaviors that predict social success over time, it seems likely that such behaviors would predict lower levels of internalizing symptoms. Whether and how either close friendship strength or peer preference are linked to internalizing symptoms into adulthood has not, however, been previously examined.

Similarly, differences in the skills developed by engaging in different types of adolescent peer relationships are likely to become particularly important as teenagers enter young adulthood and the necessary social skills for social and relational success shift. As adolescents move toward adulthood, the key arenas of social competence shift from broad acceptance by peers to close dyadic friendship competence, and ultimately to romantic relationships (e.g., Bukowski et al., 1996; Smetana, Campione-Barr, & Metzger, 2006). The skills required in establishing and maintaining intimacy and depth in close friendships, which take on particular importance by middle adolescence, would seem to provide more natural scaffolding for success in later romantic relationships than the skills required in gaining acceptance by a broader peer group. In romantic relationships, as in close friendships, there are similar expectations for support, individual attention, warmth, and

conflict resolution abilities. In particular, close friendships which are able to weather difficult times and offered *sustained* support may be an especially important predictor. In contrast, the largely friendly and competent, though at times mildly rule-breaking behaviors that are associated with peer preference earlier in adolescence seem less likely to be useful as a template for romantic relationships going forward. However, this notion that close friendship skills are more helpful than the experience of group-wide peer preference for later relationships has never been empirically tested.

This study used a community sample of adolescents followed from ages 15 to 25 to extend our understanding of the short- and long-term sequelae of different aspects of age 15 peer interactions for mid-adolescent (age 16) and young adult (age 25) psychosocial functioning. First, this study hypothesized that peer affiliation preference and the strength of the teen's friendship with their closest friend would each uniquely predict relative decreases in depression, increases in self-worth, and increases in perceptions of social acceptance within mid-adolescence, with close friendship strength as the stronger predictor. Second, it was hypothesized that close friendship strength during middle adolescence would predict a process of increasing mental health into adulthood. It was hypothesized that peer affiliation preference would not lead to similar long-term gains due to the changing nature of necessary skills for interpersonal success over time.

Methods

Participants

The current study is drawn from a larger longitudinal investigation of adolescent social development in familial and peer contexts. Participants included 169 ninth and tenth graders followed over a 10-year period (May, 2001–November, 2011) from ages 15–25. Adolescents were part of a larger sample of 184 participants (98 female) initially recruited from the seventh and eighth grades of a public middle school drawing from suburban and urban populations in the Southeastern United States. The sample was racially/ethnically and socioeconomically diverse: 107 adolescents (58%) identified themselves as Caucasian, 53 (29%) as African American, 15 (8%) as of mixed race/ethnicity, and 9 (5%) as being from other minority groups. Adolescents' parents reported a median family income in the \$40,000–\$59,999 range.

Procedure

Students were recruited via an initial mailing to all parents of students in the school along with follow-up contact efforts at school lunches. Families of adolescents who indicated they were interested in the study were contacted by telephone. Of all students eligible for participation, 63% agreed to participate either as target participants or as peers providing collateral information.

Adolescents were first assessed annually in early adolescence (age 13) and subsequent data were collected on a yearly basis. On average, participants were 15.21 [SD = 0.81] at the initial wave of the current study, 16.35 [SD = 0.87] at the second time point, and 25.67 [SD = 0.96] at the third time point. At the age 15 and age 16 waves of data collection,

adolescents nominated their closest, same-gendered friend to be included in the study as well. Close friends were defined as “people you know well, spend time with, and whom you talk to about things that happen in your life.” These close friends were chosen by the teen, and may not have reciprocally considered the target teen to be *their* closest friend. Close friends reported that they had known the adolescents for an average of 5.08 years [SD = 3.34] at age 15 and 5.72 years [SD = 3.82] at age 16. At both ages 15 and 16, over 80% of close friends were within one year of being the same age as the target teen who nominated them, and 85% of close friends attended the same school as the target teen. Close friends chosen at age 16 could be the same or different than those at age 15.

All participants and close friends provided informed assent before each interview session, and parents provided informed consent. Data sources included self-report measures from the target teens and other-report measures from close friends. Interviews with teens and their close friends took place in private offices within a university academic building.

Measures

Depressive symptoms—At ages 15 and 16, adolescents reported the degree of their depressive symptoms using the Childhood Depression Inventory (CDI; Kovacs and Beck, 1977). Based on the Beck Depression Inventory, this measure contains 27 items each rated on a 0 to 2 scale. Item scores are summed to yield a total score for depressive symptoms. The CDI has been well-validated as a measure of depressive symptomatology and higher scores have previously been linked with poor self-worth, hopelessness, and negative cognitive attributions (Kazdin, 1990). The measure has excellent internal consistency in this sample (Cronbach’s α ’s range from .86 to .87). The CDI uses a continuum/severity vs. a threshold approach, recognizing that higher levels of depressive symptoms that do not necessarily meet diagnostic thresholds may still be important in predicting concurrent and subsequent dysfunction (Lewinsohn et al., 2000). At age 25, participants reported the degree of their depressive symptoms using the Beck Depression Inventory (BDI), which is analogous to the CDI, but age-appropriate for adults rather than youths (Cronbach’s $\alpha = .90$). We chose to include an item addressing suicidal ideation, and for any participants who endorsed this item, we had a protocol in place. The Principal Investigator (PI) of our study is a licensed clinical psychologist who specializes in work with adolescents, and the majority of doctoral students contributing to the project are also clinicians in training. If a participant indicated suicidal ideation, a trained project member would follow up with them in order to assess level of risk, and then follow up with the PI in determining next steps. We also regularly provide participants with community referrals and services. This procedure was used for every participant indicating suicidal ideation.

Self-worth—Self-worth was measured at all three time points using a slightly shortened (four-item) version of the Self-Worth subscale from the Adolescent Self-Perception Profile (Harter, 1988) at ages 15 and 16, and the analogous Adult Self-Perception Profile at age 25. This measure was shortened due to time constraints, and correlated .97 with the full version. For each item, two sentence stems were presented; for example, “Some teens (people) are very happy being the way they are,” whereas “Other teens (people) wish they were different.” Participants were asked to decide which stem best described them and how true

(from “Not at all true” to “Very true”) the statement was for them. This format was designed to reduce the effects of a pull for social desirability. The self-worth scale sums four items, each assessing teens’ satisfaction with themselves and the way they are leading their lives. Internal consistency (Cronbach’s α) for this sample ranged from .83 to .89.

Close friendship strength—Close friendship strength at age 15 was assessed by the target teen’s closest friend as the average of standardized scores from two questionnaires. We used the teen’s closest friend’s report in order to utilize multiple-reporter data. The Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987) was used to assess close peers’ perceptions of the overall strength of their relationship with and attachment to the target teen in terms of the degree of trust, communication, and alienation in the relationship. A composite score of the friend’s perception of the overall depth of the relationship was obtained from twenty-five 5-point Likert scale items (Cronbach’s $\alpha = .90$ for the composite score). Second, the close peer was asked to simply rate, on a scale of 1 to 5, how close of a friend they were to the target teen. Results from each measurement approach were standardized and summed to obtain the final indicator of close friendship strength.

Peer affiliation preference—Peer affiliation preference was assessed using a limited nomination sociometric procedure adapted from Coie, Dodge, and Coppotelli (1982) and modified for adolescents (Franzoi, Davis, & Vasquez-Suson, 1994). Each participant nominated up to 10 peers in their grade with whom they would most like to spend free time outside of school and 10 peers with whom they would least like to spend such free time. Because the entire sample attended the same school, each adolescent’s nominations came from 72 to 146 peers, depending on the adolescent’s grade cohort. Total peer affiliation preference was calculated for each participant by taking the number of “most liked” nominations received, divided by the number of peers making nominations. This procedure has been shown to yield good stability across time (Coie & Dodge, 1983; McElhaney, Antonishak, & Allen, 2008) and situation (Coie & Kupersmidt, 1983). Studies using this procedure have also shown that based on the large number of raters, fairly accurate estimates of peer acceptance are captured for each teen (Prinstein, 2007). In addition, this measure has been validated previously with our sample (Allen et al., 2005; Allen, Porter, McFarland, McElhaney, & Marsh, 2007; McElhaney, Antonishak, & Allen, 2008).

Self-perceived social acceptance—At ages 15 and 16, self-reported social acceptance was assessed using a slightly modified version of a subscale from the Adolescent Self-Perception Profile (Harter, 1988). Participants choose between two contrasting descriptors and then rate the extent to which their choice is “really true” or “sort of true” of them. Responses to each item are scored on a 4-point scale and then summed, with higher scores reflecting higher levels of perceived social acceptance. The subscale assessing social acceptance was shortened from five items to four items relating to social adjustment within the larger peer group (e.g. “Some people are well liked by other people/Some people are not well liked by other people”). The shortened version of this scale showed good internal consistency (Cronbach’s $\alpha = .75$ to $.77$) and was highly correlated with the full scale in other data collected on a similar population ($r = .97$).

Social anxiety—At age 25, target participant social anxiety was measured using the Social Anxiety Scale (LaGreca, 1998). This is a 22-item scale examining overall levels of social anxiety, and contains subscales measuring general social avoidance and distress, social avoidance and distress in novel situations, and fear of negative evaluation. The overall scale has excellent internal consistency (Cronbach's $\alpha = .94$).

Close friendship consistency—At age 16, we assessed whether or not participants had brought in the same close friend as at age 15.

Attrition Analyses—Of the 169 adolescents who provided data at age 15, data were obtained for 158 (93.5%) at age 16, and for 146 (86.4%) at age 25. Attrition analyses between adolescents in the study at age 15 who were vs. were not included in the study at age 16 revealed no differences on demographic or primary outcome measures. Further attrition analyses between adolescents in the study at age 15 who were vs. were not included in the study at age 25 revealed no differences on demographic or primary outcome measures with the exception of gender, with males who participated at age 15 less likely to provide data at age 25. In order to address potential bias due to attrition in longitudinal analyses or missing data from a single time point, full imputation maximum likelihood (FIML) methods were used with all analyses that included variables linked to future missing data (i.e., data which were not missing completely at random). These procedures have been found to yield the least biased estimates for longitudinal analyses when all available data are used (Arbuckle, 1996). Therefore, the full original sample of 169 was used in our analyses to provide the best estimates of variances in measures of interest and to minimize bias from missing data.

Results

Preliminary Analyses

Means, standard deviations, and simple correlations among constructs of interest are presented in Table 1. Gender and family income displayed relations to several constructs used, with female participants more likely to show higher levels of depression and social anxiety symptoms at age 25, and lower income participants marginally more likely to show lower self-worth scores at age 16. Gender and income were thus considered as covariates in subsequent analyses. There were strong year-to-year correlations between the same variables as reported by the same reporter, suggesting a good level of reporting consistency. Low to moderate correlations were found between different indexes of close friendship strength and our sociometric measure of peer affiliation preference, suggesting that the constructs of interest are related but distinct. From age 15 to 16, teens did not significantly change in their reported levels of depressive symptoms, self-worth, social acceptance, or their best friend's report of closeness to the teen. From age 15 to 25, teens significantly increased in reported level of self-worth, $t(130) = 20.22, p < .001$. Across this time period participants displayed a non-significant decrease in absolute level of depressive symptoms, consistent with previous work examining non-clinical depressive symptom trajectories similar to ours (Wickrama, Conger, Lorenz, & Jung, 2008).

Primary Analyses

Hypothesis 1: Peer affiliation preference and the strength of the teen's friendship with their closest friend will each uniquely predict relative decreases in depression, increases in self-worth, and increases in feeling socially accepted across middle adolescence, with close friendship strength as the stronger predictor.

To address the first hypothesis, we looked at how peer-reported close friendship strength and peer affiliation preference at age 15 predicted changes in the teens' subsequent year self-reported depression, self-worth, and social acceptance. Predictions were examined via hierarchical regressions in which gender and income were entered in the first step, followed by baseline levels of the outcome of interest (i.e., depression, self-worth or social acceptance), followed by the predictors of interest. This allows examination of the relative change in the outcomes of interest after accounting for the baseline levels of those outcomes. Results describing predictors of relative change in levels of depression, self-worth, and social acceptance from age 15 to 16 are presented in Tables 2, 3, and 4. Variance in outcomes accounted for by individual predictors as well as change in outcome variance by full steps are included.

Consistent with our first hypothesis, results examining prediction of relative change in self-worth scores show a strong positive relation between age 15 close friendship strength and relative increases in teen self-worth from age 15 to age 16. Having a best friend who reported strong close friendship with the teen at age 15 strongly predicted increases in the teen's self-worth at age 16 ($\beta = .31, p < .001$). Peer affiliation preference, however, was not a significant predictor of relative changes in self-worth during this period. Close friendship strength was also found to predict relative changes in teen feelings of social acceptance from age 15 to age 16 ($\beta = .22, p = .004$). Here, as well, peer affiliation preference was not a significant predictor of relative changes in the teen's feelings of social acceptance. Neither close friendship strength nor peer affiliation preference were predictive of relative changes in depressive symptoms from age 15 to 16.

Hypothesis 2: Close friendship strength during middle adolescence will predict relative increases in mental health into adulthood, but peer affiliation preference will not predict similar long-term relative gains.

To assess the longer-term mental health sequelae of close friendship strength and peer affiliation preference at age 15, models were next examined predicting relative changes in depressive symptoms, self-worth, and social anxiety from age 15 to age 25. Consistent with our second hypothesis, regressions predicting age 25 depressive symptoms indicate a strong relation between age 15 close friendship strength and relative decreases in depressive from age 15 to age 25 symptoms ($\beta = -.43, p < .001$). Similarly, results from regressions predicting relative changes in self-worth at age 25 showed a strong relation between close friendship strength at age 15 and relative increases in self-worth scores from age 15 to age 25 ($\beta = .34, p = .02$). Teens whose age 15 best friend reported a closer and higher quality relationship with the teen had lower self-reported levels of depressive symptoms and higher self-worth ten years later. Peer affiliation preference did not predict any long-term relative changes in depressive symptoms or self-worth scores.

The results for the regressions examining social anxiety at age 25 also show a strong relation between close friendship strength at age 15 and relatively lower social anxiety symptoms at age 25 ($\beta = -.37, p < .001$). Additionally, however, peer affiliation preference at age 15 was found to be a significant predictor of relatively *more* social anxiety symptoms at age 25, with teens who were more preferred by more members of their overall peer group at age 15 actually likely to have relatively *higher* rates of social anxiety symptoms at age 25 than teens who were less preferred ($\beta = .33, p < .001$).

Post hoc tests

Friendship stability as a moderator—We considered the possibility that friendship stability (maintaining the same closest friendship over time) might interact with close friendship strength such that the potential benefits of having a strong, high-quality best friendship would be greatest for teens with stable close friendships. Close friendship strength and friendship stability interacted in predicting short term increases in self-worth ($\beta = .17, p = .035$) and feelings of social acceptance ($\beta = .18, p = .009$). Close friendship strength was thus found to be a stronger predictor of positive changes for teens who maintained the same close friendship from age 15 to age 16.

Additionally, close friendship strength and friendship stability from age 15 to 16 significantly interacted in predicting long-term decreases in depressive symptoms ($\beta = -.39, p = .002$), and trended toward significance in interacting to predict long-term increases in self-worth ($\beta = .22, p = .07$). Strength of close friendship was particularly predictive of outcomes for teens who had stable mid-adolescent friendships, while strength of close friendship in adolescence mattered little in terms of predictions for teens whose friendships were not stable. Graphs of these results are found in Figures 1–4. These analyses support the idea that the positive benefits of close friendship are not attributable simply to short-term intensity of a friendship, but rather, to a friendship being both high quality and enduring from one year to the next.

Demographic moderators—We also considered gender and adolescent family income as possible moderators of predictions of friendship measures to proximal and distal mental health. No such moderating effects were found.

Discussion

As hypothesized, close friendship strength and peer affiliation preference during the teenage years were found to uniquely predict changes in mental health from mid-adolescence through early adulthood. Close friendship strength during adolescence was associated with relative increases in several aspects of mental health in both the short- and long-term. In contrast, peer preference was not associated with any significant short-term relative changes in functioning, but did predict relative increases in levels of social anxiety into adulthood. These findings are each discussed in detail below.

Although previous research has examined concurrent links between social success and mental health *within* adolescence (Gavin & Furman, 1989; Bagwell et al., 2001; La Greca & Harrison, 2005), as well as the mental health outcomes of social relationships of younger

children (e.g. Bukowski et al., 1996), little research has compared different arenas of peer relationships as predictors of relative change *over time* in internalizing symptoms and functioning. In this study, we found that teens whose best friends reported having closer relationships with the teens during middle adolescence showed increased self-reported self-worth and social acceptance the following year. Peer affiliation preference, however, did not predict short term changes in internalizing symptoms. Results suggested that close friendship strength is more closely correlated with positive mental health changes during and beyond adolescence, whereas peer preference was not predictive of proximal mental health, and was predictive of *higher* levels of later social anxiety.

The connection between close friendship strength and relative increases in self-worth, in particular, extends to adolescence prior findings by Adams and colleagues (2011), in which younger children undergoing negative events experienced less of a decrease in self-worth when their best friend was present. The current findings suggest the possibility that a strong close friendship provides not only a protective function, as shown by the earlier study, but potentially a promotional one as well for how one sees oneself as an individual. This is evidenced by the relative increases in self-worth observed over time for adolescents with strong, high quality close friendships. Strong close friendship during adolescence was also linked to higher young adult perceptions of their own social acceptance. It may be that close friendships during middle adolescence provide important positive experiences that reinforce adolescents' self-concept over time. Although precise mechanisms have been debated, the social support and intimacy within adolescent close friendships have long been speculated to lead to positive development by helping with identity formation, positive ego development, and avoidance of social isolation as well as morality, school adjustment, and self-esteem (see e.g., Erikson, 1950; Sullivan, 1953; Piaget, 1965; Youniss, 1980; Berndt, 1998).

Since the mechanisms by which close friendship strength enhances future mental health are currently uncertain, this is an area ripe for exploration. Given that adolescence marks a time when young people are beginning to rely on extra-familial sources of support and to develop a unique, more adult identity, having strong, positive close friendships may help to bolster teens' positive feelings about themselves. Close friendships may also offer some of the first opportunities for adolescents to develop a secure attachment to a trusted peer, in addition to family members or other adults. Alternatively, close friendships may set adolescents on a trajectory to expect (and therefore induce) future positive peer and romantic experiences. It could also be that close friendship brings adolescents the opportunity to be helpful or important to another person. Opportunities that allow people to take on helping roles have been shown to positively impact well-being and overall life satisfaction (Weinstein & Ryan, 2010) and the combination of being able to give and receive peer support at a critical time may capitalize on this process. Each of these ideas requires further exploration.

The relation between close friendship strength during middle adolescence and relative increases in mental health was not found from age 15 to 16, but had become clear by age 25, with youth who had closer best friendships during the teenage years showing relatively lower levels of depression symptoms and social anxiety, as well as relative increases in self-worth, ten years later. One possibility is that close friendship has an inherent long-term reassuring or affirming function (Marion et al., 2013), thus explaining its relatively direct

prediction of long-term outcomes. The interactions between friendship stability and close friendship strength further support this idea, showing that strong close friendships are more likely to predict positive outcomes for youth whose friendships are stable, and are less important for teens whose friendships are less stable. Having an inconsistent series of friendships, even if each friendship is intense and has positive qualities, may lead to high levels of negative emotional experiences as well as positive, supportive ones. Close friendship in a given instance, though clearly important, may not be as essential as strong friendships that exist in the context of more enduring connections.

The lack of relation between peer affiliation preference and proximal changes in internalizing symptoms initially appears surprising, given previous work finding an association between peer preference and *lower* levels of symptoms (e.g. Asher & McDonald, 2009; Rose & Swenson, 2009). However, this finding may in part reflect the age being examined. Gavin & Furman (1989) found that peer acceptance and conformity to peer groups is most important to adolescents in early adolescence, after which point the importance of these qualities declines. Given that our participants were fifteen at the first time point explored, it may be simply that by that age, affiliation preference of the broader peer group has become less critical in predicting changes in self-concept. This is also consistent with recent findings that youth who appear to seek acceptance via pseudomature behavior in early adolescence fare gradually less well socially and functionally over time in other domains as well (Allen, Schad, Oudekerk, & Chango, 2014). Another possibility is that since preferred adolescents may also have deep dyadic friendships, as evidenced by the modest correlation these constructs show in our data, previous work looking at preferred or accepted youth may have found some positive outcomes that would actually have been better accounted for by close friendship strength, rather than peer acceptance.

We also found that in the long-term, peer affiliation preference heralds higher levels of social anxiety, even after controlling for adolescent self-reported social acceptance. This is particularly striking in light of the fact that during adolescence, well-liked youth tend to be concurrently rated as more socially skilled by both peers and themselves (Allen, Porter, McFarland, Marsh, & McElhaney, 2005). One possibility is that it is not peer affiliation preference *per se* that is problematic over time. Widely preferred youth obviously have a specific set of adolescent-valued social skills that leads to their widely preferred status. Rather, it may be that a focus on gaining or maintaining peer affiliation preference *rather than* focusing on forming stronger close friendships suggests or creates a deficit for certain youth (Nangle, et al., 2003). These teens may be focused more on status and short-term rewards or relationships, that either do not reflect or do not lead to positive long-term emotional health in the way that being involved in a reciprocal positive dyadic friendship does. The relation between peer preference and higher social anxiety over time supports the idea that it is interpersonal interactions in particular that are more difficult as these youth enter adulthood.

As previous research has suggested, social relationships have important links to various aspects of mental health during and beyond adolescence. This study suggests that it is the formation of strong close friendships in particular that is the most critical piece of the adolescent social experience in terms of forecasting *long-term* outcomes. Adolescence is a

time where independence from one's family is naturally increasing, difficult developmental changes are occurring, and youth may be spending a majority of time with their peers and turning to them for their emotional needs. Although being well-liked by numerous peers may have some concurrent positive correlates, the stronger predictor of relative decreases in internalizing symptoms from adolescence to adulthood is having experienced strong, supportive friendships during middle adolescence.

Several limitations to this study are important to note. First, although these data are longitudinal and relative change was assessed as the key outcome in order to rule out simple correlations between stable constructs as the basis for the findings, this was not an experimental procedure, and thus causal relationships cannot be determined. Second, many of the effect sizes ranged from small to moderate, making clear that the factors examined in this study were not able to fully explain the phenomena of interest. Other factors, likely both unique and interrelated, may account for as much or more of the variance in the outcomes observed. Third, this study used a community sample and results regarding anxiety and depressive symptoms cannot be generalized to a sample of adolescents and adults meeting diagnostic criteria for depression or anxiety. Fourth, the measure of affiliative preference used is unique to our sample, and is not the most commonly used measure of peer preference or popularity currently. Direct comparisons to some current and previous work looking at accepted, preferred, or popular youth may not be possible, given the difference in measures.

Given these limitations, replication and expansion of this work would be valuable in order to increase and refine our understanding of how different types of peer relationships predict both the mental health outcomes presented here, as well as other markers of wellness. Future work might focus on specifically when, and through which mechanisms, different types of peer affiliation during adolescence lead to positive and negative outcomes. It is possible, and indeed likely, that over the course of adolescence different types of social success experienced at different times may predict different types of later outcomes. If our findings are replicated, they could have implications for guiding parents and teachers in understanding and encouraging adolescent relationships, as well as for a variety of interpersonally-focused interventions seeking to improve teen mental health and/or close relationships. This could include a stronger focus on helping teens connect with one another on a deeper dyadic level and teaching more adaptive methods of interacting within close friendships.

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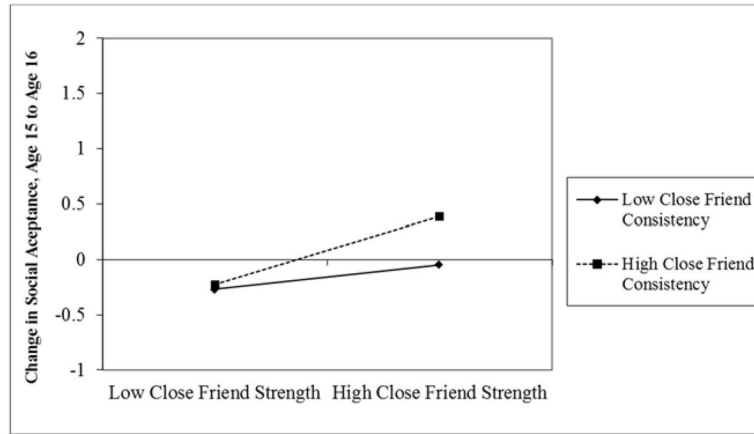


Figure 1. Effect of Close Friendship Strength and Consistency on Short-Term Changes in Feeling Socially Accepted

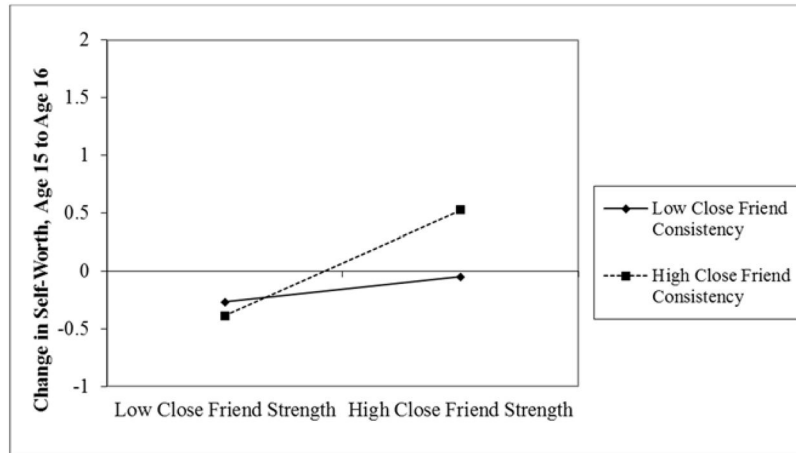


Figure 2.
Effect of Close Friendship Strength and Consistency on Short-Term Changes in Self-Worth

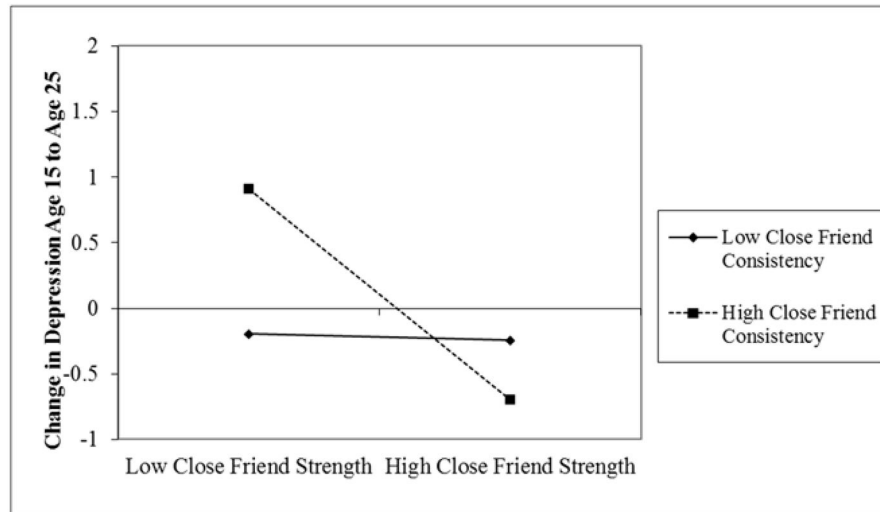


Figure 3. Effect of Close Friendship Strength and Consistency on Long-Term Changes in Depression

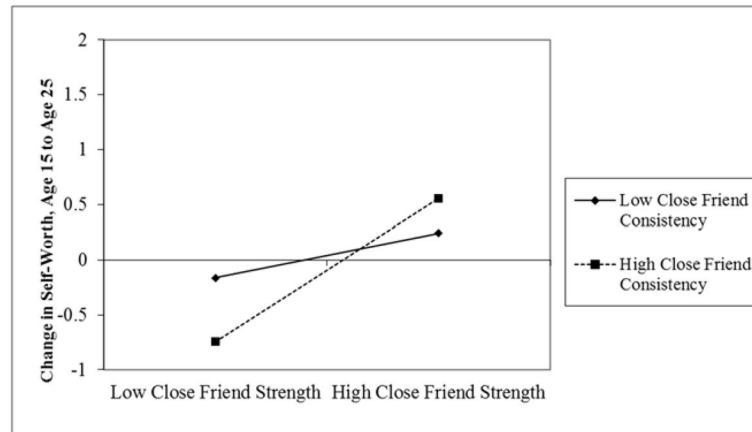


Figure 4.
Effect of Close Friendship Strength and Consistency on Long-Term Changes in Self-Worth

Table 1

Means, Standard Deviations, and Intercorrelations of Substantive Variables

Substantive Variables	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. CDI score (15)	6.75	6.42		.60***	.17*	-.48***	-.39***	-.25**	-.32***	-.21*	.23**	-.13	-.20*	.02
2. CDI score (16)	7.17	6.10	--		.26**	-.36***	-.54***	-.37***	-.29***	-.35***	.41***	-.17*	-.06	.03
3. BDI score (25)	5.53	6.37	--	--		-.15 ⁺	-.23*	-.61***	-.16 ⁺	-.20*	.38***	-.22*	-.11	.14
4. Self-worth score (15)	13.18	2.68				--	.56***	.34***	.58***	.36***	-.23**	.17*	.12	.03
5. Self-worth score (16)	13.20	2.79				--	.43***	.42***	.52***	-.28**	-.28**	.38***	.03	.11
6. Self-worth score (25)	19.74	3.70					--	.34***	.31***	-.45***	-.45***	.34***	.13	-.06
7. Social acceptance (15)	13.33	2.47						--	.67***	-.32***	-.32***	.33***	.23**	.07
8. Social acceptance (16)	13.30	2.45							--	-.34***	-.34***	.41***	.06	.16 ⁺
9. SAS score (25)	33.71	12.32								--	--	-.25**	.17*	-.01
10. Close Friendship Strength (15) ^d	.00	0.89										--	.21*	.04
11. Peer Affiliation Preference (15)	.82	1.31											--	.02
12. Close Friendship Consistency (15–16)	.43	0.50												--

Note:

*** p < .001.

** p < .01.

* p < .05.

⁺ p < .10.

Correlations are all multiplied by 100.

^d Standardized composite scores

Table 2

Predicting Depressive Symptoms at Ages 16 and 25

Predictors by Step	Depressive Symptoms (Age 16)				Depressive Symptoms (Age 25)			
	Final β	Final Semi-Partial r^2	R^2	Total R^2	Final β	Final Semi-Partial r^2	R^2	Total R^2
Step I.								
Gender (1=M; 2=F)	-.02	.000			.34**	.138**		
Total Family Income (Age 13)	.02	.000	.000	.000	-.05	.009	.038	.038
Step II.								
Prior Depressive Symptoms (Age 15)	.60***	.261***	.384***	.384***	.07	.000	.046 ⁺	.084 ⁺
Self Worth (Age 15)	-.01	.000			-.05	.004		
Social Acceptance (Age 15)	-.08	.004			-.02	.001		
Step III.								
Close Friendship Strength (Age 15)	-.03	.000	.389***	.389***	-.43***	.139***	.137***	.221***
Peer Affiliation Preference (Age 15)	.07	.005			.07	.016		

Note.

*** p < .001.

** p < .01.

⁺ p < .10.

Table 3

Predicting Self Worth at Ages 16 and 25

Predictors by Step	Self Worth (Age 16)			Self Worth (Age 25)		
	Final β	Final Semi-Partial r^2	Total R^2	Final β	Final Semi-Partial r^2	Total R^2
Step I.						
Gender (1=M; 2=F)	-.02	.000		-.12	.027	
Total Family Income (Age 13)	-.11	.009	.030	.09	.020	.007
Step II.						
Prior Self Worth (Age 15)	.44 ^{***}	.090 ^{***}	.481 ^{***}	.16	.018	.202 ^{***}
Depressive Symptoms (Age 15)	-.15	.020		-.09	.000	
Social Acceptance (Age 15)	.06	.003		.15	.016	
Step III.						
Close Friendship Strength (Age 15)	.31 ^{***}	.034 ^{***}	.517 ^{***}	.34 [*]	.091 [*]	.299 ^{***}
Peer Affiliation Preference (Age 15)	-.07	.002	.036 ^{***}	-.05	.011	.090 ^{**}

Note.

*** p < .001.

** p < .01.

* p < .05.

Table 4

Predicting Social Acceptance at Age 16 and Social Anxiety Symptoms at Age 25

Predictors by Step	Social Acceptance (Age 16)				Social Anxiety Symptoms (Age 25)			
	Final β	Final Semi-Partial r^2	R^2	Total R^2	Final β	Final Semi-Partial r^2	R^2	Total R^2
Step I.								
Gender (1=M; 2=F)	-.07	.003			.28*	.080*		
Total Family Income (Age 13)	-.02	.000			.13 ⁺	.000		
			.012	.012			.057**	.057**
Step II.								
Prior Social Acceptance (Age 15)	.65***	.197***			-.22*	.030*		
Depressive Symptoms (Age 15)	-.05	.005			.10	.000		
Self Worth (Age 15)	.02	.000			-.07	.004		
			.572***	.589***			.122***	.179***
Step III.								
Close Friendship Strength (Age 15)	.22**	.012**			-.37***	.100***		
Peer Affiliation Preference (Age 15)	-.13	.014			.33***	.124***		
			.024**	.613***			.173***	.352***

Note.

*** p < .001.

** p < .01.

* p < .05.

⁺ p < .10.