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## The adolescent friendship structure inventory (AFSI): A review and empirical consolidation of existing measures

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### ABSTRACT

The aim of this study was to empirically consolidate previous friendship measures in order to identify a set of items to include in a tool for assessing positive and negative qualities of adolescents' friendships. Existing self-report measures were identified and 91 items were selected from the measures. Following a pilot study undertaken to reduce the number of items for use in a larger study, the primary study included 415 Australian adolescents (249 boys and 166 girls, aged 12–17 years) who completed a questionnaire at school. The questionnaire included a reduced set of 47 of the 91 items. Exploratory factor analysis was conducted with 50% of the sample ( $n = 208$ ). In the final factor analysis, 26 items loaded highly on one of four factors. The factors were labeled emotional support, positive interactions, coercive power, and conditional social regard. The factor structure was confirmed with the other 50% of the sample ( $n = 207$ ). This confirmatory factor model had a good fit to the data and the four subscales on the new Adolescent Friendship Structure Inventory (AFSI) had sound inter-item correlations. In addition, the AFSI subscales were validated against a measure of friendship satisfaction, with all four subscales associated with satisfaction in the expected direction.

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**KEYWORDS** Peer relations; friendship; scale development

Despite the frequent research attention given to adolescent friendships, it continues to be challenging to identify the important conceptual components of such friendships and then to operationalise them (Bagwell & Schmidt, 2011). Adolescent friendship has often been defined in the literature as a voluntary, predominantly same-sex, dyadic relationship (Rubin, Bukowski, & Parker, 2006). Hartup and Stevens (1997) further differentiate deep and surface friendship structures. Deep friendship structure is the essence or social meaning of a

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friendship, which can be an important source of self-worth (Sullivan, 1953) and well-being (Weiss, 1973). Surface friendship structure is then the actual exchanges that occur between friends (e.g., spending time together), which change depending on certain developmental tasks and contribute to the development of deep friendship structure. Authors such as Hall (2012) have assessed deep friendship structure in the form of symmetrical reciprocity. Others identify deep friendship structure as including loyalty, trust, support, and intimacy (Fehr, 2004; Furman & Buhrmester, 1985; Sapadin, 1988).

Like the definition of friendship, when considering how friendship is assessed, measures also tend to differ in the number of friendship features assessed, as well as in the assessment of positive as compared to negative friendship qualities, with the former typically being more comprehensively assessed than the latter (e.g., Bukowski, Hoza, & Boivin, 1993; Furman & Buhrmester, 1985; Mendelson & Aboud, 1999; Parker & Asher, 1993). The limited focus on negative features perhaps reflects the ongoing debate amongst researchers as to which qualities constitute friendship. Whilst some researchers (e.g., Newcombe & Bagwell, 1995) consider only positive features as core components of friendship, others (e.g., Berndt, 1996) include negative features such as competition. In the present study, negative friendship features were incorporated with the aim of enhancing the utility of the new scale, such that users may differentiate adolescent friendships (i.e., those characterized by predominantly positive features) from dyadic relationships that may not fit the definition of a friend (i.e., those with high levels of negative features).

### *Identification of existing measures of friendship quality*

In the present study, existing friendship scales were first located by searching (PsycINFO, ProQuest, Google Scholar) for published studies on friendship scale development, which appeared in the literature from January 1980 to December 2014. The reference lists of relevant research papers were also searched for additional articles. Of the articles identified from these data search methods, eight established and validated friendship scales were located that gave consideration to key characteristics of adolescent friendship, consistent with the definition provided above (Bagwell & Schmidt, 2011; Bukowski & Hoza, 1989; Rubin et al., 2006). For example, items were chosen to reflect the emerging need for interpersonal intimacy at this time (Sullivan, 1953). During adolescence, intimacy begins to characterize friendships (Jones & Dembo, 1989; Sharabany, Gershoni, & Hofman, 1981), with descriptions of an ideal friend increasingly including words such as dependable, a confidant and trustworthy (Hartup & Stevens, 1997). Items were also adapted to reflect the developmentally distinct ways in which adolescents may interact with friends (e.g., at school, texting). Each of the selected scales appear in prominent narrative summaries of the friendship

literature (e.g., Bagwell & Schmidt, 2011), as well as contemporary empirical friendship reviews (e.g., Hall, 2012).

### **Friendship structures and features**

The identified measures differed in their assessment of friendship structure (e.g., deep vs. surface), as well as in the number and range of friendship features assessed. That is, several measures focused more closely on deep (as opposed to surface) friendship structure, with the assessment of friendship standards and expectations (Arunkumar & Dharmangadan, 2001; Hall, 2012; Sharabany, 1994; Shulman, Laursen, Kalman, & Karpovsky, 1997). For example, the Friendship Intensity Measurement Scale (FIMS; Arunkumar & Dharmangadan, 2001) assesses viability, support, intimacy and harmony, whereas the Intimate Friendship Scale (Sharabany, 1994) includes eight features reflecting intimacy in friendship (e.g., trust and loyalty). Furthermore, the Intimacy and Self-disclosure Scale (Shulman et al., 1997) assesses five dimensions of intimacy (e.g., emotional closeness), and three dimensions of self-disclosure (family, friends, and physical development), whereas the Friendship Standards and Expectations Scale (Hall, 2012) includes a four-dimensional model of friendship expectations (e.g., symmetrical reciprocity).

In contrast to the scales focusing primarily on deep friendship structures, other scales assessed a combination of deep and surface structures. These include the McGill Friendship Questionnaire (Mendelson & Aboud, 1999), which assesses only positive friendship features (i.e., three surface friendship structures such as companionship and two deep elements of friendship structure such as intimacy) and the Network of Relationships Inventory (Furman & Buhrmester, 1985), which has a 3-factor structure of one positive feature (social support), one negative feature (negative interaction), and one neutral feature (power imbalance).

Significantly, established scales also differed in their focus on positive versus negative friendship features. Two of the most frequently cited friendship measures, the Friendship Qualities Scale (FQS; Bukowski et al., 1993) and the Friendship Quality Questionnaire (FQQ; Parker & Asher, 1993), assess five and six friendship features, respectively. The FQS has four positive subscales (security, closeness, receiving help/protection, and companionship) and the FQQ has five positive subscales (validation and caring, conflict resolution, help and guidance, companionship and recreation, and intimate exchange). However, both scales have only one negative subscale (conflict on the FQS; conflict and betrayal on the FQQ), illustrating that these measures tend to include a wider range of positive than negative friendship qualities (e.g., Bukowski et al., 1993; Parker & Asher, 1993). Although conflict is commonly included on measures, other negative friendship qualities appear less frequently (e.g., dominance; Bagwell & Schmidt, 2011; Furman, 1996).

In sum, within the extant literature, friendship measures differed in their focus on deep versus surface friendship structure, as well as on the number of friendship features assessed and their incorporation of positive versus negative friendship features. The aim of the current study was to develop a multidimensional measure – the Adolescent Friendship Structure Inventory (AFSI) – that could be used to assess adolescent friendship qualities. When considering the positive aspects of friendship, a focus on both deep and surface friendship structures was important, as well as adequate coverage of negative friendship qualities, to aid scale users in distinguishing adolescents' whose identified friendships do not meet the true definition of the term (i.e., adolescents whose 'friendships' were characterised by negative features).

## Method

### *Participants*

#### *Pilot*

For the pilot study, participants were 83 Australian adolescents, 42 boys (50.6%) and 41 girls (49.4%), in grades 8, 9 and 10 (aged 13.0 to 16.5 years,  $M = 14.19$  years,  $SD = 0.79$  years) attending a public school in an urban area.

#### *Primary study*

The participants in the primary study were 415 Australian adolescents from three schools, an urban public school in a low socioeconomic area and two private schools (249 boys and 166 girls, age range 12 to 17 years,  $M = 14.80$  years,  $SD = 0.77$  years). Consent was obtained from the parents of all participants. The participation rate was 86% at the public school and 76% at the private schools. Another 28 students did not complete any part of the questionnaire, so were omitted from the study. When asked about ethnicity, 47% identified as white/Caucasian, 35% identified as Maori, Indigenous Australian or Pacific Islander, 8% identified as Asian and the remaining 10% identified as 'other'. This breakdown is consistent with Australian census data from 2016. Also, by sampling from both public and private Australian high schools, the socioeconomic status (SES) of the sample, which ranged from middle to low, is representative of Australia as a whole (Australian Bureau of Statistics, 2016).

### *Measures*

#### *Adolescent friendship structure inventory*

Twenty-nine subscales (23 positive, 6 negative) from the selected established friendship measures were identified. Items from these scales were selected to assess a range of positive friendship qualities reflecting deep and surface friendship structure, as well as a range of negative friendship features. Specifically, 91 items were included in the pilot testing, with each item adopted (with some rare

adaptation of item wording) from existing measures identified in the literature review. Items assessed four positive surface friendship structures (companionship, help, validation, conflict resolution), five positive deep friendship structures (instrumental aid, intimacy, loyalty, self-disclosure, communion) and five negative friendship qualities (conflict, betrayal, dominance, exclusivity, conformity). All items had response options that ranged from 1 (*not at all true*) to 5 (*really true*). Before completing items, participants nominated up to three same-sex friends from a list of students in their grade at school and selected their 'number 1 friend' from this list. Participants were subsequently instructed to complete the friendship questions in relation to their 'number 1 friend'. Accordingly, the statement 'my number 1 friend ...' preceded each question.

### **Friendship satisfaction**

In the primary study, participants also completed the 7-item satisfaction subscale of the McGill Friendship Questionnaire-Respondent's Affection (Mendelson & Aboud, 1999). An example item from this scale reads 'I feel my friendship with \_\_\_ is good'. Response options range from 1 (*strongly disagree*) to 5 (*strongly agree*). Average scores were created, such that higher scores indicated greater friendship satisfaction.

### **Procedure**

Prior to commencement of the research, ethical clearance from the university Human Research Ethics Committee was obtained, as well as permission from the appropriate education authorities (i.e., school Principal). For a child to be eligible to participate, parents returned a signed affirmative parental consent form. Questionnaires were completed by students at school during school hours, under the supervision of researchers.

## **Results**

### **Pilot Study**

The purpose of the pilot study was to reduce the number of items, enhancing the AFSI's practicality for use in the school setting, whilst retaining a diversity of subscales. Therefore, items were reduced from 91 to <50 for the primary study. Given the modest sample size, we identified items to remove by examining correlations between items. Items that had low correlations (<.30 with all other items; 22 items) or had a very high correlation (>.80) with at least one other item (almost redundant; 13 items) or were most complicated for students to understand (based on student feedback; 9 items) were removed. This process resulted in a final pool of 47 items for use in the primary study.

## Primary study

### Preliminary analyses

The percentage of missing data for each item in the primary study ranged from 0.1% to 0.6%. Little's MCAR test (Little, 1988) was not significant  $\chi^2(1056, N = 415) = 1110.71, p = .118$ , indicating that the missing data pattern met the strict criterion of missing completely at random. This small amount of missing data (less than 1%) was imputed using an expectation-maximisation (EM) algorithm in SPSS. The 47 preliminary AFSI items were then examined using exploratory factor analysis (EFA,  $n = 208$ ) and confirmatory factor analysis (CFA,  $n = 207$ ) conducted using AMOS® (Version 21).

### Exploratory and confirmatory factor analyses

In an initial maximum likelihood analysis with promax oblique rotation, eigenvalues  $>1.0$  and the scree plot indicated that nine factors should be extracted. These accounted for 65.33% of the total variance. Two items loading on a single factor were removed, given that factors with a small number of items have been shown to be unstable (Tabachnick & Fidell, 2007). Three items with factor loadings less than 0.4 and 16 items with complex loadings (i.e., loading  $>.40$  on more than one factor) were also removed. Overall, 21 items were removed, leaving 26 items. After removing these items, eigenvalues  $>1.0$  and the scree plot in a subsequent analysis indicated four factors should be extracted, accounting for 58.29% of the variance. As can be seen in Table 1, item loadings were all over .40 and no cross loadings  $>.20$  were identified. Sixteen items loaded highly on one of the first two factors, which were labelled emotional support and positive interactions. The remaining 10 items loaded on the final two factors, labelled coercive power and conditional social regard. Cronbach's  $\alpha$  ranged from .71 to .91.

In the CFA, the model provided an acceptable fit to the data,  $\chi^2(430) = 698.95$ , CFI = .92, RMSEA = 0.06,  $p < .001$ . All items loaded highly on the appropriate factor (see Table 1).

### Descriptive analysis and validity assessment of the AFSI

Subscales scores were produced by averaging items loading highly on each factor and the four subscales of the AFSI were evaluated for reliability and validity. Correlations between subscales were not higher than .70 (and cross-loadings in the EFA were not greater than .20), supporting discriminant validity and indicating that the factors are distinct and that items relate more strongly to their own factor than to another factor. Furthermore, as expected, friendship satisfaction was moderately positively associated with positive interactions and emotional support, and negatively associated with coercive power and conditional social regard, supporting concurrent validity (see Table 2).

Criterion-related validity was also examined. To do this, friendship nominations were cross-referenced to ensure that participants received a mutual

**Table 1.** Results of factor analyses, with Cronbach's  $\alpha$ s.

	EFA				CFA			
	F1	F2	F3	F4	F1	F2	F3	F4
<i>Factor 1: Emotional support</i>								
Is the person I tell things I don't want others to know	.88				.85			
Is someone I can talk to about things I am ashamed of	.80				.73			
Is the person I depend on to cheer me up when I am sad	.71				.68			
Is someone I miss if they are not around	.65				.63			
Is someone I can talk to about my personal problems	.65				.74			
Is the person I can't wait to tell when good things happen	.57				.71			
And I tell each other things we wouldn't tell other people	.56				.77			
Helps me to see that things are not so bad when I'm down	.50				.79			
<i>Factor 2: Positive interactions</i>								
Lends me things that I need		.71				.62		
Is exciting to be with		.67				.76		
Can make me laugh		.63				.66		
Likes or approves of the things I do		.63				.68		
We are happy when we spend time together		.58				.77		
We help each other with school work		.55				.57		
Listens to me		.53				.60		
Would help me if another kid was causing me trouble		.51				.78		
<i>Factor 3: Coercive power</i>								
And I make up easily when we have a fight (RS)			.78				.60	
Pressures me to do things they want			.77				.74	
Tries to stop me being with others			.75				.72	
Says mean or harsh things to me			.74				.88	
Would stay my friend even if we argued (RS)			.70				.53	
Hits kicks punches me when they are mad at me			.56				.74	
<i>Factor 4: Conditional social regard</i>								
Ignores me when they are mad at me				.70				.60
Excludes me when they are mad at me				.58				.71
Gets jealous when they see me with another friend				.55				.68
Wants me to agree with everything they say				.47				.66
Cronbach's $\alpha$	.90	.86	.86	.71	.91	.87	.87	.75
Composite reliability (CR)					.90	.85	.86	.76

friendship nomination from at least one of the three peers they nominated as friends. This allowed for the differentiation of actual and desired friendship nominations, as advocated in previous research (e.g., Bagwell & Schmidt, 2011). Two friendship categories were then created. Participants were considered to be a member of the 'mutual friendship' category if they received a mutual friendship nomination from at least one of the three peers they nominated as friends. In contrast, participants were allocated to the 'non-mutual friendship' category if they received no shared friendship nominations. Next, two one-way between



**Table 2.** Descriptive statistics and correlations among subscales of the AFSI and between AFSI subscales and friendship satisfaction ( $N = 207$ ).

	Mean	SD	1	2	3	4
Model 1						
1. Positive interactions	3.72	0.75	–			
2. Emotional support	4.07	0.97	.68**	–		
3. Coercive power	2.57	1.19	.02	–.02	–	
4. Conditional social regard	1.70	0.74	–.28**	–.05	.16*	–
5. Friendship satisfaction	4.18	0.68	.53**	.48**	–.23**	–.23**

Notes: All measures had a possible range from 1 to 5.

AFSI = Adolescent Friendship Structure Inventory.

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

subjects multivariate analyses of variance (MANOVA) were conducted to compare adolescents with a mutual versus no mutual friendship nomination (i.e., *mutual group*) on positive interactions, emotional support, coercive power and conditional social regard and to examine the effect of gender. A significant multivariate effect was found for gender,  $F(4, 205) = 3.26, p = .0012, \eta_p^2 = .06$ , and mutual group,  $F(4, 205) = 2.59, p = .038, \eta_p^2 = .05$ . At a univariate level, for both gender and mutual group there was a significant effect for positive interactions (gender,  $F[1, 208] = 11.26, p < .001, \eta_p^2 = .05$ ; mutual group,  $F[1, 208] = 7.684, p = .006, \eta_p^2 = .04$ ) and emotional support (gender  $F[1, 208] = 6.71, p = .010, \eta_p^2 = .03$ ; mutual group  $F[1, 208] = 10.38, p = .001, \eta_p^2 = .05$ ). Girls reported more positive interactions ( $M = 4.40, SD = 0.54$ ) and emotional support ( $M = 4.15, SD = 0.83$ ) than boys (positive interactions:  $M = 3.98, SD = 0.74$ ; emotional support:  $M = 3.48, SD = 0.85$ ). Furthermore, those who had a mutual friendship nomination reported more frequent positive interactions ( $M = 4.57, SD = 0.70$ ) and greater emotional support ( $M = 3.83, SD = 0.91$ ) than those without (positive interactions:  $M = 3.85, SD = 0.71$ ; emotional support:  $M = 3.36, SD = 0.76$ ).

## Discussion

Existing measures of friendship were identified and reviewed with the purpose of developing an adolescent friendship scale that comprehensively assessed positive friendship qualities reflecting both intimacy and positive social exchanges, as well as a range of negative friendship features, such as coercion and power imbalance. The resulting 26-item Adolescent Friendship Structure Inventory (AFSI) provides a set of four reliable subscales to assess adolescent friendship features of emotional support (i.e., positive deep friendship structure) reflective of closeness and intimate self-disclosure; positive interactions (i.e., positive surface friendship structure) reflective of support, validation and companionship; and two negative friendship qualities of coercive power and conditional social regard. The four subscales of the AFSI reflect transitioning perceptions of friendship. We see a key strength of the AFSI is its ability to comprehensively

assess characteristics to describe the development of friendship during adolescence. For example, items from the emotional support subscale capture intimate self-disclosure, which often emerges and increases during adolescence (Parker & Asher, 1993).

### *Friendship, its characteristics and measurement*

We first reviewed the literature to identify the defining characteristics of adolescent friendship within existing measures (Bagwell & Schmidt, 2011; Bukowski & Hoza, 1989; Rubin et al., 2006). Care was taken to ensure that each essential aspect of adolescent friendship was reflected in the items identified for inclusion on the AFSI. Aligned to the definition of friendship in most literature on adolescents, only same sex friendships were included in the present study, with participants voluntarily nominating peers from within their grade at school. The AFSI also included items addressing companionship, support, and validation, as well as intimacy and closeness, which are each aligned to the definition of a friend and therefore essential to include on any measure of friendship quality.

With equality at the very core of all conceptual considerations of friendship (Bagwell & Schmidt, 2011; Rubin et al., 2006), we also aimed to differentiate those relationships which would not meet the objective definition of a friend. This was undertaken via the comprehensive assessment of negative qualities that may be inherent in some adolescent friendships. That is, in the pursuit of friendship, some adolescents may instead experience a friendship, and subsequently nominate a 'number 1 friend', that is represented by a dyadic relationship within which inequality, in the form of conditional social regard and coercive power, features prominently. As such, the AFSI adds to the literature in this field by providing a more comprehensive coverage of negative friendship features, thus allowing relationships that have these features to be differentiated from those that meet the objective definition of a friend.

In addition, to adequately capture construct complexity, the AFSI aligned the essential elements of early adolescent friendship with theory (Hartup & Stevens, 1997), incorporating both surface and deep friendship structures. In this way, we anticipated that positive surface exchanges reported about a same-sex friendship, such as companionship, would provide the building blocks for deepness and intensity, manifesting as a reciprocated and close friendship marked by intimate exchanges. Initial evidence of the concurrent validity of the AFSI provides support for this proposition, with a moderate to high positive correlation between emotional support and positive interactions, and adolescents reporting friendships that are higher in emotional support and positive interactions also reporting more friendship satisfaction.

In addition, supporting criterion-related validity, participants with a mutual friendship nomination reported significantly more emotional support and positive interactions within their 'number 1 friendship' than did those without a

mutual friendship nomination. Taken together, these findings are not surprising, as they support the notion that adolescents who have at least one mutual friendship nomination with another adolescent report having a friend that provides more emotional supportive and more positive interactions.

### *The adolescent friendship structure inventory*

The use of the AFSI allows researchers access to a brief but comprehensive 4-factor scale that could help to differentiate adolescent friendships that have primarily positive features from dyadic relationships with a mix of positive and negative features (or perhaps even predominantly coercive and conditional features). That is, the AFSI distinguishes emotional support (reflective of deep surface structure) and positive interaction (reflective of surface friendship structure; Hartup & Stevens, 1997), whilst simultaneously providing a measure that could be used to differentiate the essential elements of adolescent friendship. This allows for the subtle, yet important, distinctions inherent in adolescent friendship to emerge, with the ability to identify the aspects of a relationship that may enable a friendship to flourish, as well as those that may hinder friendship progression and perhaps even foster maladaptive patterns within the dyad. This is a significant contribution to the field as, previously, more than one well-validated friendship measure would have been required to undertake the above-mentioned task, which may now be performed using a single multidimensional scale that strategically incorporates the most salient and relevant items from the extant friendship literature. For example, the unique role that poor conflict resolution may play in hindering the establishment and maintenance of a friendship may be further explored, as relevant items are included within the subscale assessing coercive power. The AFSI also has several practical advantages over previous friendship measures, allowing for the identification of, screening for and distinction between, conditional social regard and coercive power within a nominated 'friendship', such that their uniquely detrimental effects on adolescent peer relations may be further elucidated.

### *Limitations, future research directions and conclusion*

There are some limitations of this study. First, we acknowledge the need to replicate these findings with other samples, in order to strengthen the reliability and validity of this new scale. For example, data were collected at three schools. Yet, the sociocultural background of participants was quite diverse, with only 47% of the study sample identified as white Australian. Second, the sample size utilised for the EFA was small, relative to the number of items under investigation. Last, the current study did not assess test-retest reliability. As such, findings require longitudinal replication with larger sample sizes in future research.

In conclusion, the AFSI was founded on a consolidation of existing items from widely used adolescent friendship quality measures. Consistent with theory (Hartup & Stevens, 1997, 1999), analyses revealed subscales of positive features of emotional support and positive interactions, as well as negative features of coercive power and conditional social regard. The AFSI could have a myriad of future uses. For example, the four AFSI subscales may be used to examine the potential moderating role of negative friendship features in a longitudinal assessment of the association between positive friendship features and adolescent well-being. Moreover, the AFSI may allow for person-centred approaches to adolescent friendship research, highlighting important distinctions and interactions among the various friendship qualities. The AFSI may also be particularly useful as an outcome measure for school-based interventions designed to improve adolescent friendships and well-being.

### Disclosure statement

No potential conflict of interest was reported by the authors.

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### References

- Arunkumar, T. S., & Dharmangadan, B. (2001). Friendship intensity measurement scale (FIMS). *Psychological Studies*, 46, 59–62.
- Australian Bureau of Statistics. (2016). *Consensus Multicultural*. Canberra: Author.
- Bagwell, C. L., & Schmidt, M. E. (2011). The friendship quality of overtly and relationally victimized children. *Merrill-Palmer Quarterly*, 57, 158–185. doi:10.1353/mpq.2011.0009
- Berndt, T. J. (1996). Transitions in friendship and friends' influence. In J. A. Graber, J. Brooks-Gunn, & A. C. Petersen (Eds.), *Transitions through adolescence: Interpersonal domains and context* (pp. 57–84). Hillsdale, NJ, US: Lawrence Erlbaum Associates Inc.
- Bukowski, W. M., & Hoza, B. (1989). Popularity and friendship: Issues in theory, measurement, and outcome. In T. J. Berndt & G. W. Ladd (Eds.), *Peer relations in child development* (pp. 15–45). New York, NY: Wiley.
- Bukowski, W. M., Hoza, B., & Boivin, M. (1993). Popularity, friendship, and emotional adjustment during early adolescence. *New Directions for Child and Adolescent Development*, 1993, 23–37. doi:10.1002/cd.23219936004
- Fehr, E. (2004). Human behaviour: Don't lose your reputation. *Nature*, 432, 449–450. doi:10.1038/432449a
- Furman, W. (1996). The measurement of friendship perceptions: Conceptual and methodological issues. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 41–65). Cambridge: Cambridge University Press.

- Furman, W., & Buhrmester, D. (1985). Children's perceptions of the personal relationships in their social networks. *Developmental Psychology, 21*, 1016–1024. doi:10.1037/0012-1649.21.6.1016
- Hall, J. A. (2012). Friendship standards: The dimensions of ideal expectations. *Journal of Social and Personal Relationships, 29*, 884–907. doi:10.1177/0265407512448274
- Hartup, W. W., & Stevens, N. (1997). Friendships and adaptation in the life course. *Psychological Bulletin, 121*, 355–370. doi:10.1037/0033-2909.121.3.355
- Hartup, W. W., & Stevens, N. (1999). Friendships and adaptation across the life span. *Current Directions in Psychological Science, 8*, 76–79. doi:10.1037/0033-2909.121.3.355
- Jones, G. P., & Dembo, M. H. (1989). Age and sex role differences in intimate friendships during childhood and adolescence. *Merrill-Palmer Quarterly, 35*, 445–462.
- Little, R. J. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*, 1198–1202. doi:10.1080/01621459.1988.10478722
- Mendelson, M. J., & Aboud, F. E. (1999). Measuring friendship quality in late adolescents and young adults: McGill friendship questionnaires. *Canadian Journal of Behavioural Science, 31*, 130–132. doi:10.1037/h0087080
- Newcombe, A. F., & Bagwell, C. L. (1995). Children's friendship relations: A meta-analytic review. *Psychological Bulletin, 117*, 306–347. doi:10.1037/0033-2909.117.2.306
- Parker, J. G., & Asher, S. R. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology, 29*, 611–621. doi:10.1037//0012-1649.29.4.611
- Rubin, K. H., Bukowski, W. M., & Parker, J. G. (2006). Peer interactions, relationships, and groups. In W. Damon, R. M. Lerner, & N. Eisenberg (Eds.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (6th ed., pp. 571–645). New York, NY: Wiley.
- Sapadin, L. A. (1988). Friendship and gender: Perspectives of professional men and women. *Journal of Social and Personal Relationships, 5*, 387–403. doi:10.1177/0265407588054001
- Sharabany, R. (1994). Intimate friendship scale: Conceptual underpinnings, psychometric properties and construct validity. *Journal of Social and Personal Relationships, 11*, 449–469. doi:10.1177/0265407594113010
- Sharabany, R., Gershoni, R., & Hofman, J. E. (1981). Girlfriend, boyfriend: Age and sex differences in intimate friendship. *Developmental Psychology, 17*, 800–808. doi:10.1037//0012-1649.17.6.800
- Shulman, S., Laursen, B., Kalman, Z., & Karpovsky, S. (1997). Adolescent intimacy revisited. *Journal of Youth and Adolescence, 26*, 597–617. doi:10.1023/a:1024586006966
- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York, NY: Norton.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). New York, NY: Allyn and Bacon.
- Weiss, R. S. (1973). *Loneliness: The experience of emotional and social isolation*. Cambridge, MA: MIT Press.