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Running Head: GENDER DIFFERENCES IN SOURCE

Relationship between Multiple Sources of Perceived Social Support and Psychological and Academic Adjustment in Early Adolescence: Consistencies and Differences Across Gender

Abstract

The goal of the current study was to investigate gender differences in the relationship between multiple sources of perceived support (parents, teachers, classmates, close friends, and school) and indices of psychological and academic adjustment. As a preliminary analysis, the study provided further psychometric support for the Child and Adolescent Social Support Scale (CASSS: Malecki, Demaray, & Elliott, 2003). The results of the main analyses supported previous findings related to gender differences in mean levels of perceived support and extended findings demonstrating the importance of support from parents and the general peer group for both boys and girls. Overall, these results illustrate the importance of examining gender differences in the social experience of early adolescents as well as the differential impact of various sources of support in their lives, and highlight the importance of carefully considering measurement and analytic issues when investigating multiple sources of support.

KEY WORDS: Adolescence, Social Support, Gender Differences, Methodological Issues

Relationship between Multiple Sources of Perceived Social Support and
Psychological and Academic Adjustment in Early Adolescence:
Consistencies and Differences Across Gender

Years of research has shown significant, meaningful relationships between the support adolescents perceive and important developmental outcomes, more recently finding that the source of support is a contributing factor in those relationships (Bogard, 2005; Davidson & Demaray, 2007; Dunn, Putallaz, Sheppard, & Lindstrom, 1987; Jackson & Warren, 2000). In addition, there is strong support in the literature for gender differences in how boys and girls *perceive* and *utilize* support (Buhrmester & Furman, 1987; Cheng & Chan, 2004; Demaray & Malecki, 2002; Eschenbeck, Kohlmann, & Lohaus, 2007; Frey & Röthlisberger, 1996; Frydenberg & Lewis, 1991, 1993; Furman & Buhrmester, 1992; Malecki & Demaray, 2003). However, the literature is not clear to what extent there are gender differences in the *effects* of social support from various sources.

One reason for the lack of clarity is inconsistencies in findings across the studies available. In particular, there are mixed findings in relation to support from the peer group (e.g., Bogard, 2005; Dunn et al., 1987; Slavin & Rainer, 1990). There are also some mixed findings related to parent support (e.g., Hoffman, Ushpiz, & Levy-Shiff, 1988; Sheeber, Hops, Alpert, Davis, & Andrews, 1997; Slavin & Rainer, 1990). Some of the equivocal results could be related to measurement issues that have been highlighted as problematic in the general social support literature (Cohen & Wills, 1985; Heitzmann & Kaplan, 1988; Winemiller, Mitchell, Sutcliffe, & Cline, 1993). In addition, there is limited information about gender differences in support from other sources, such as teachers, and other non-parental adults. Thus, it would add to the literature to address some of the measurement issues that may be limiting progress in this area, and

replicate and extend findings related to gender differences in social support sources in a systematic manner.

Issues Related to the Measurement of Social Support

One issue that has been highlighted as problematic in the social support literature is the variability in the operational definition and/or measurement strategy of social support across studies which make interpretations of mixed results impossible (Winemiller et al., 1993). For example, two studies focused on family support with discrepant findings: One study demonstrated significant effects of family support on depressive symptoms, whereas another study failed to find significant effects of family support on depressive symptoms. However, the former study utilized multiple measures of the overall family environment, including elements of cohesion and conflict, and maternal support (Sheeber et al., 1997) and the latter study utilized a measure of perceived emotional support (Slavin & Rainer, 1990). Such differences in measurement strategy should be taken into account when comparing results from different studies and planning future research.

Variability in the operational definition and/or measurement strategy can be particularly problematic when this occurs within a single study. For example, one recent study used two different social support measures when investigating support from a significant other and “global” support, and found significant findings only for global support (Jackson & Warren, 2000). Similarly, another study used two different measures with different operational definitions of family support and global support, and found that family support served a protective function for boys but not girls, and that global support was positively related to negative outcomes for girls but not boys (Weist, Freedman, Paskewitz, Proescher, & Flaherty, 1995). Because of the use of different social support instruments within the same study, it is unclear whether the results

from both of these studies are due to differential associations of various sources of support for boys and girls, or a methodological artifact. A systematic comparison of the relations between support from various sources using a comparable assessment tool could better inform the question of how social support from various sources relates to various outcomes by minimizing methodological variance.

One assessment tool that could be useful for such systematic studies is the Child and Adolescent Social Support Scale-2000 (CASSS; Malecki, Demaray, & Elliott, 2000). The CASSS is based on a theoretical conceptualization of perceived social support as multidimensional in nature (House, 1981; Tardy, 1985). The original version of the CASSS (Malecki & Demaray, 2002) was revised by rewording and/or re-distributing new items to create an equal number of items pertaining to four types of support (emotional, appraisal, informational, and instrumental) within each subscale. There are twelve items pertaining to each source, with three items tapping each of the four types of support. In addition, a fifth subscale was added to the CASSS that taps overall school support. Thus, the CASSS offers a comprehensive measurement of five different sources (Parent, Teacher, Classmate, Friend, School) comprised of four different types of support (emotional, informational, appraisal, and instrumental) that are appropriate for each source. In addition, the CASSS allows for a global assessment of support from all five sources. The use of one single instrument in investigations of the effects of various sources of support relative to other sources, as well as global support, would control for an important source of measurement error.

Independent and Unique Effects of Support Sources

Another issue to consider in interpreting discrepant findings and planning future research is the analytic strategy used in answering questions about various sources of support (Cohen,

Cohen, West, & Aiken, 2003). For example, results from studies that focus on multiple sources of support (e.g., Hoffman et al., 1988; Slavin & Rainer, 1990), are comparable to results from studies that focus on single sources of support (e.g., Sheeber et al., 1997) only when multiple-source studies analyze the effects of each source independent of other sources (e.g., Hoffman et al., 1988). The question addressed by these types of studies is related to the *independent* predictive power of individual sources of support. However, some studies address the *unique* predictive power of individual sources of support, i.e., predictive power of one source of support, above and beyond other sources of support (e.g., Slavin & Rainer, 1990).

Both are important questions to address; however, results will be different when considering independent effects of support sources versus unique effects of support sources, and interpretations of results should be made accordingly. For example, two studies that investigated the independent effects of support on psychological well-being (Hoffman et al., 1988; Sheeber et al., 1997) found significant effects of family support with no gender differences, whereas Slavin & Rainer (1990) failed to find unique effects of family support, above and beyond the effects of all other sources of support. In this case, the studies may not necessarily be offering discrepant findings, as different questions are being addressed. Thus, in future efforts to understand the effects of multiple sources as well as potential gender differences, it will be important to consider both independent and unique effects to assess the important contribution that various support sources may have on well-being.

Differences and Continuities Across Gender

The question of whether there are gender differences in the effects of support on development is an especially compelling question to address, as gender differences have been consistently documented in mean levels of support, especially regarding the peer group. For

example, although boys and girls report similar levels of support from parents and teachers (Demaray & Malecki, 2002; Malecki & Demaray, 2003; Rueger, Malecki, & Demaray, in press), girls seem to have higher perceptions of support of support from their peers than do boys (Cheng & Chan, 2004; Furman & Buhrmester, 1992). In addition, girls reportedly perceive significantly more support from their peers than from their parents, and boys perceive significantly more support from their parents than from their peers (Frey & Röthlisberger, 1996). Further, when the general peer group, i.e., classmates, was distinguished from close friends, Rueger and colleagues (in press) found that girls perceived significantly more support from close friends than classmates, parents or teachers, whereas boys perceived significantly less support from classmates than close friends, parents or teachers.

The use of social support as a coping strategy seems gender-based as well. Research suggests that girls are more likely to seek support as a coping strategy, whereas boys are more likely to use avoidance or physical recreation as a coping strategy (Eschenbeck et al., 2007; Frydenberg & Lewis, 1991, 1993). This is consistent with previous research that has found that girls tend to turn to their peers for psychological support, and develop friendships that are more emotionally intimate and involve a sharing of confidence, whereas boys tend to turn to their peers for instrumental support, and develop friendships that involve mutual interests and physical activity (Buhrmester & Furman, 1987; Erwin, 1985; cited in Maccoby, 1990; Frey & Röthlisberger, 1996).

These results are consistent with Gilligan's theory of gender differences in moral development (1982), which suggests that girls might value relational intimacy in a different way or to a different degree than boys, and might invest more time and effort in social relationships than boys. This theory also suggests that identity development for girls may be interrelated with

relationship development, which suggests that social resources might play a more significant role in the well-being of girls than boys. However, results have been mixed regarding the *effects* of support, and the question still remains whether girls and boys are differentially impacted by perceived support from various sources.

Support from the peer group. Some research has shown that support from friends is associated with lower levels of depression in girls but not boys (Slavin & Rainer, 1990). However, another recent study documented that the relationship between peer support and adjustment was significant only for boys (Bogard, 2005). Related, Dunn and colleagues (1987) found that, although peer support was not a unique predictor of psychological adjustment for girls, global support was significantly related to girls' psychological adjustment. Similarly, a stronger association between emotional problems and global support was found for girls more compared to boys (Schraedley, Gotlib, & Hayward, 1999). Thus, it is possible that girls are more likely to seek out other sources of support when support from any one source is low, and only show adjustment problems when overall support is low (Dunn et al., 1987).

Interestingly, when close friends are distinguished from the general peer group, the literature suggests that support from the general peer group is more strongly associated with positive outcomes than support from close friends (Demaray et al., 2007; Rueger et al., in press). In addition, support from the general peer group, such as classmates, has been consistently associated with psychological adjustment and well-being, even after accounting for support from close friends, but the opposite has not been found (Demaray & Malecki, 2002; Harter, 1990; Rueger et al., in press). For example, classmate support predicted lower depression and lower hyperactivity, higher leadership, and better social skills for girls, and higher leadership for boys, above and beyond support from close friends, parents, and teachers. However, support from

close friends was not a unique predictor of any adjustment indices for boys, and was negatively associated with adjustment for girls (Rueger et al., in press). This is consistent with other studies that have found negative associations between support from friends and positive outcomes (Davidson & Demaray, 2007; Kerr, Preuss, & King, 2000; Licitra-Kleckler & Waas, 1993). Overall, there is consistent support in the literature for the influential role of the general peer group, but less consistent support for the importance of close friends. More research on peer support in adolescence will be important to try to tease apart the distinctive contributions that support from close friends and classmates can have, and any potential gender differences.

Support from parents. Research on parental support has been consistent in demonstrating the continued role that parents play in the healthy adjustment of adolescents. For example, higher levels of parental support (sometimes measured by support from families in general) have consistently been associated with better school adjustment (Dubow, Tisak, Causey, Hryshko, & Reid, 1991; Dunn et al., 1987), higher self-esteem (Colarossi & Eccles, 2003; Hoffman et al., 1988), and lower depression (Cheng, 1997; Licitra-Kleckler & Waas, 1993; Newman et al., 2007). Additionally, lower levels of parental support have been associated with general psychological distress and emotional problems (Demaray et al., 2007; Helsen, Vollebergh, & Meeus, 2000; Ystgaard, 1997); however, there are indications that social support may not be as strongly related to anxiety as depression (Landmann-Peters et al., 2005). There is also evidence that support from parents and peers are independent systems (Helsen et al., 2000), and that lack of parental support cannot be compensated for by peer support (Van Beest & Baerveldt, 1999).

In addition, many studies that have addressed gender differences in parental support have shown consistency across gender in the effects of parental support (Dunn et al., 1987; Hoffman et al., 1988; Sheeber et al., 1997; Wall, Covell, & MacIntyre, 1999; Way & Robinson, 2003;

Ystgaard, 1997). However, some studies have demonstrated a stronger association between parental support and adjustment for girls than for boys (e.g., Colarossi & Eccles, 2003; Helsen et al., 2000; Rueger et al., in press; Slavin & Rainer, 1990). Further, some studies demonstrate significant independent effects of parental support, but fewer unique effects above and beyond other sources of support (Demaray et al., 2007; Rueger et al., in press). This pattern suggests that parents continue to play an important role in adolescence, but may play a relatively smaller role relative to other sources due to the shift to a reliance on peer support sources in adolescence. However, these results should be replicated, as Demaray and colleagues did not address gender differences, and Rueger and colleagues used a parent-report measure of outcomes, which could have attenuated relationships between support and internalizing distress. Thus, future studies addressing gender differences in the independent and unique effects of parental support could add clarity to this question.

Support from other sources. There is also evidence that support from teachers is associated with more adaptive emotional functioning (Colarossi & Eccles, 2003; Reddy, Rhodes, & Mulhall, 2003), as well as higher levels of school achievement (Malecki & Demaray, 2003; Rosenfeld, Richman, & Bowen, 2000). In addition, there is some evidence that overall school climate is also important, as it has been found to be a significant predictor of lower depression (Newman, Newman, Griffen, O'Connor, & Spas, 2007), higher school adjustment (Demaray, Malecki, Davidson, Hodgson, & Rebus, 2007) and higher self-esteem (Way & Robinson, 2003). However, less is known about gender differences in the effects of these support sources. Future research should continue to focus on gender differences in the effects of support from non-parental adults, such as school personnel, as so much of an adolescent's day is spent in the school environment.

Current Investigation

The primary goal of the current study is to investigate gender differences in the relationship between multiple sources of support on adolescent adjustment. This was done in a systematic manner by testing the effects of several individual sources of support using a single instrument that assesses comparable aspects of social support across sources. The question of the relative importance of each source of support was further investigated by testing the unique variance explained by each source of support. Because there is evidence that composite measures can lead to misleading interpretations (e.g., Jackson & Warren, 2000; Rueger et al., in press), the current study focused on several specific outcomes related to psychological and academic adjustment in adolescence, i.e., depression, anxiety, self-esteem, attitude to school and grades. Finally, there is some evidence that gender differences in the effects of support may fade over time (Colarossi & Eccles, 2003; Sheeber et al., 1997; Way & Robinson, 2003). Thus, all analyses were investigated with concurrent and longitudinal data to test the robustness of effects over time.

A secondary goal for this study was to provide additional psychometric support for the CASSS before using this measure to address the main research questions. The CASSS has previously been used in the literature, and there is already strong evidence for its psychometric soundness (Malecki & Demaray, 2003). However, an analysis of the psychometric properties of this measure across gender would add to the literature, as interest in gender differences in social support continues to grow. Thus, all psychometric analyses will be conducted separately for girls and boys to test for consistencies across gender. In addition, the current study will further add to this psychometric support of the CASSS by conducting a confirmatory factor analysis.

Following are the three main research questions guiding the current study, and predictions based on the literature review:

1. *Are there differences in perceptions of support between boys and girls?* It is predicted that there will be significant between-gender differences such that: (H1a) Girls will perceive significantly higher levels of support than boys from peer sources (i.e., classmates, close friends), and ; (H1b) Girls and boys will perceive similar levels of support from adult sources (i.e., parents, teachers, school personnel). Further, it is predicted that there will be significant within-gender differences such that: (H1c) Girls will perceive significantly higher levels of support from close friends than parents, teachers, classmates, and school; and (H1d) Boys will perceive significantly lower levels of support from classmates than parents, teachers, close friends, or school.
2. *What are the independent associations between various social support sources and specific indices of psychological and academic adjustment?* It is predicted that: (H2a) Parent, teacher, and classmate support, as well as global support, will be independently associated with lower depression, higher self-esteem, and better attitude to school, but not to anxiety, for both girls and boys, both concurrently and longitudinally, and that (H2b) Close friend and school support will be significantly related to these outcomes when investigated concurrently. No predictions will be made about gender differences or longitudinal relationships due to the equivocal or limited support in the literature.
3. *What are the unique associations between the various support sources and outcomes?* It is predicted that (H3) Parent and classmate support will be uniquely predictive of

depression and self-esteem, i.e., above and beyond the influence of other sources, for both boys and girls longitudinally. No other predictions were made about other sources or outcomes, or concurrent relationships because of the equivocal or limited findings in the literature.

Methods

Participants

The current study included 636 participants from either seventh (52.8%, $n = 336$) or eighth (47.2%, $n = 300$) grade in a large suburban middle school. These participants were part of a longitudinal data collection. There were 801 participants in the fall data collection and 760 participants in the spring data collection; however the current sample included only participants with complete data at both time points ($N = 636$). The total school attendance for the year was 859; thus, the current sample comprised 74% of the entire student body. The participants were approximately half male (49% $n = 311$) and half female (51%, $n = 325$). The sample was racially and ethnically diverse with 52% ($n = 334$) White, 18% ($n = 117$) Hispanic, 2% ($n = 13$) African American, 10% ($n = 65$) Asian American, 15% ($n = 93$) Biracial, and 1% ($n = 9$) reporting their ethnicity as “Other” or missing. Almost one-fourth of the students reported receiving reduced meals at school ($n = 130$, 20%).

Procedures

These data were taken from a school-wide assessment of bullying, and academic and social-emotional outcomes in this school at two time points: Time 1 was taken in the fall after one month of school, and Time 2 was taken in the spring, within one month of the end of the school year. Survey data were collected by research assistants in large groups in the student cafeteria (approximately 150 students per administration). Students were assured of

confidentiality before administration began, and all items were read aloud to maintain a reasonable pace and focus, and to control for possible reading level differences. Records data, including the year-end grade point average were collected at the end of the school year. At the conclusion of the school-wide assessment and the delivery of the assessment report, the de-identified data were made available as extant data for research as approved by the Institutional Review Board.

Measures

Child and Adolescent Social Support Scale (CASSS; Malecki, Demaray, & Elliott, 2000).

The CASSS is a 60-item, self-report measure of perceived social support. Students rate the frequency with which they perceive supportive behaviors from parents, teachers, classmates, close friends, and the school (from 1-never to 6-very often). Although the School Support subscale is typically used to assess support from the school as a whole, the current study focused specifically on perceived support from all school personnel other than teachers for purposes of the school assessment. There are twelve supportive behaviors for each source of support. Furthermore, among those twelve behaviors for each source, three assess emotional support (i.e., feeling loved or cared for), three assess informational support (i.e., receiving advice or information), three assess instrumental support (i.e., time, resources, financial support), and three assess appraisal support (i.e., feedback). In addition to rating the frequency with which they perceive these support behaviors, students also rate the importance of those behaviors to them (from 1-not important to 3- very important); however, only frequency ratings were used in the current study.

Behavioral Assessment Scale for Children – Edition 2, Adolescent Version (BASC-2 SPR-A; Reynolds & Kamphaus, 2004). The BASC Self Report of Personality (SRP) is a 176-item

rating scale that measures the personality and self-perceptions of children and adolescents ages 12-21 (Reynolds & Kamphaus, 2004). Students respond to statements regarding their adjustment and behavior in either a “true” or “false” format or in a four-point Likert rating. The normative sample for the BASC-2 SRP-A consisted of 1,900 students aged 12 to 18 years. The sample was stratified in terms of gender, ethnicity, geographic location, and parent education level. Internal consistency for the 16 subscales ranged from .67 to .89, and test-retest reliability ranged from .63 to .84. Validity information for the BASC-2 was supported via intercorrelations, factor analyses, and correlations with other measures. For more detailed information on the psychometric support for the BASC-2 see the manual (Reynolds & Kamphaus, 2004). The following subscales were utilized as outcome measures: depression (measures depressed, negative affect, sadness, and loneliness), anxiety (measures fear, nervousness and worrisome behavior), self-esteem (measures global self-satisfaction) and attitude to school (measures opinions about school usefulness, comfort with school and school-related matters).

Social Support Scale for Children (SSSC; Harter, 1985). The SSSC is a 24-item rating scale commonly used to measure perceived social support and positive regard to children and adolescents. The measure assesses four distinct sources of support: Parent, Teacher, Classmate, and Friend. Children and adolescents are asked to read two statements and decide which one is more like them. For example, “Some kids have parents who don’t really understand them BUT Other kids have parents who really do understand them.” Then, they are to decide if the statement is *sort of true* or *really true* of them. The SSSC has evidence of both validity and reliability (See Harter 1985 for further details). The SSSC was used in the current study to provide validity evidence for the CASSS.

Grade Point Average. The end of the year grade point average (GPA) was calculated by averaging the four quarter grades in the following five subjects: English, Math, Social Studies, Science, and Reading.

Results

Preliminary Analyses

Underlying Factor Structure of the CASSS. Four competing models were tested separately by gender using confirmatory factor analysis procedures with Mplus software (Muthén & Muthén, 1998): The 60 items of the CASSS 2000 were parceled into manifest variables based on source and type of support: Item parcels were created using the three items tapping each of the four types of support (i.e., emotional, informational, appraisal, and instrumental support), for each of the five sources (i.e., parent, teacher, classmate, friend, school). The following competing models were tested: (1) One-factor model representing global support had all manifest variables loading onto one latent construct; (2) Five-factor model representing the five distinct sources; (3) Four-factor model based on type; (4) Two-level hierarchical model with global support at the higher level, and five sources at the lower level.

Neither the one-factor or four-factor models provided an adequate fit to the data. However, the five-factor model based on source, and the two-level model representing the five sources, with an overarching global support construct, provided very similar fit indices (see Table 1). The χ^2 was significant for both models, which is not uncommon given the large sample size; however, the comparative fit index (CFI) and root mean square error of approximation (RMSEA) suggested a good fit to the data for both models for both boys and girls. These results provide support for the use of the source subscale scores as well as the use of the total support score.

Reliability and Convergent Validity Evidence for the CASSS. Internal consistency reliability of the total support score and the five subscales of the CASSS were tested with Cronbach's alphas, and were found to be in the very strong to excellent range for both boys and girls (Nunnally & Bernstein, 1994; see Table 2 for alphas, as well as means and standard deviations of CASSS subscale scores, by gender). Finally, the intercorrelations among CASSS source subscale scores were investigated and were found to be moderate in magnitude for both boys ($r = .38$ to $.63$) and girls ($r = .44$ to $.62$), with correlations between School and Classmate support scales, being moderate to large in magnitude ($r = .74$ and $.67$ for girls and boys, respectively). These results suggest that the subscales are measuring related but distinct constructs.

Test-retest reliability was assessed on a subsample of students who responded to a follow-up mail survey ($n = 47$) within two months of the initial data collection; the correlations were moderate to large in magnitude (Cohen, 1992): For boys, $r = .58, .66, .64, .52, .65, .38$ for the Total, Parent, Teacher, Classmate, Close Friend, and School scale scores, respectively, and for girls, $r = .81, .77, .74, .65, .38, .72$. In addition, the corresponding scores of the CASSS and SSSC (Harter, 1985) were strongly related: For boys, $r = .51, .55, .48, .39, .44$ for the Total, Parent, Teacher, Classmate, and Friend scale scores, and for girls, $r = .57, .63, .64, .52, .33$. These correlations are also considered moderate to large in magnitude (Cohen, 1992).

Hypothesis #1: Gender Differences in Perceptions of Support

Between-gender differences. A MANOVA was used to test for gender differences in mean levels of support from the various sources. The five CASSS support subscale scores were entered as dependent variables, and gender was entered as the independent variable. There was a main effect of gender Wilks' lambda = .865, $F(5, 632) = 19.65, p < .001$. Between-group

comparisons of the five subscales used a Bonferroni correction procedure (the adjusted p level to determine significance was set to .01), and results indicated significant differences on all subscales but the Parent subscale. Thus there were no significant differences between boys and girls on mean levels of support from parents, but girls reported significantly higher levels of support than boys from teachers, classmates, close friends, and school personnel (see Table 2). These results support Hypothesis #1a which predicted that girls would have higher levels of perceived support from their peers than would boys, and partially supported Hypothesis #1b, that both boys and girls would perceive similar levels of support from adult sources. Gender differences in the mean levels of overall support (i.e., Total support score) was testing using ANOVA, and results indicated a significant difference between boys and girls, with girls perceiving significantly more support from all five sources.

Within-gender differences. A separate within-subjects ANOVA using a multivariate approach was used to test within-group differences in mean levels of support from the various sources for girls and boys. For girls, the comparison between the five subscale scores (Parent, Teacher, Classmate, Close Friend, and School) was significant, Wilks' lambda = .388, $F(4, 321) = 126.35$, $p < .001$, indicating significant differences among girls' perceptions of the frequency of support they obtain from different sources. Follow-up comparisons, which used a Bonferroni correction procedure to compare each of the source scores to each other (the adjusted p level to determine significance was set to .005) found that girls reported significantly more social support from close friends than from all other sources of support ($p < .001$; see Table 2).

For boys, the comparison between the five subscale social support scores was also significant, Wilks' lambda = .399, $F(4, 309) = 116.27$, $p < .001$, indicating significant differences among boys' perceptions of the frequency of support they obtain from different

sources. Follow-up comparisons found that boys reported significantly less support from classmates than parents, teachers, or close friends ($p < .001$; see Table 2). In addition, boys also perceived significantly less support from school personnel than parents, teachers, and close friends. This pattern of findings supports Hypotheses #1c and #1d, which predicted that girls will perceive significantly higher levels of support from close friends and boys will perceive significantly lower levels of support from classmates.

Hypothesis #2: Independent Associations between Support Sources and Adjustment

Zero-order correlations were computed to investigate both concurrent and longitudinal relations between perceived support from the five sources and indices of psychological and academic adjustment (Table 3). Perceived support from all sources at Time 1 was significantly related to three of four outcomes at Time 1 for both girls and boys. More specifically, support from parents, teachers, classmates, close friends, and other adults in the school had small to moderate associations (Cohen, 1992) with depressive symptoms, self-esteem, and attitude to school in the predicted direction. Associations with anxiety were smaller for both girls and boys, with some gender differences in the pattern of associations: All individual sources of support except for close friend support was associated with anxiety for girls, whereas parent and classmate support were associated with anxiety for boys. Overall, these results demonstrated consistency across gender when investigating concurrent associations between support sources and adjustment, and supported Hypothesis #2a and #2b that predicted that all sources would be concurrently related to depression, self-esteem, and attitude to school.

More gender differences became evident when investigating longitudinal associations. In addition to the four outcomes investigated concurrently, end of the year grade point average (GPA) was included in the longitudinal analyses as another measure of academic adjustment.

Although the associations between support and outcomes were attenuated over time, all sources of support continued to be significantly related to all outcomes for girls in the predicted direction. However, for boys, fewer longitudinal associations between support and outcomes remained significant (see Table 3). Most notably, for boys, parent and classmate support no longer predicted anxiety, parent support no longer predicted self-esteem, teacher support no longer predicted depression or self-esteem, close friend and school support no longer predicted depression and attitude to school. These results supported Hypothesis #2a for girls, which predicted that parent support would continue to predict all outcomes longitudinally, and partially supported this hypothesis for boys.

In order to test whether these gender differences in longitudinal associations are statistically significant, a series of moderated multiple regressions was used separately for each source of support predicting each outcome measure, with gender as the moderator. There were statistically significant differences in the effects of parent support in predicting self-esteem ($p = .010$) and attitude to school ($p = .039$); teacher support in predicting anxiety ($p = .018$), depression ($p = .005$), and self-esteem ($p = .004$); close friend in predicting attitude to school ($p = .020$); and school support predicting anxiety ($p = .030$) and attitude to school ($p = .006$). All of these longitudinal associations were stronger for girls than for boys.

Hypothesis #3: Unique Associations between Support Sources and Adjustment

The relationships between perceived support from multiple sources and adjustment were further investigated for the unique associations of each source of support, above and beyond the other sources. For each regression, the five CASSS source subscales from Time 1 were entered together to predict one of the four BASC-2 subscales from Time 1. These analyses were performed separately on the male and female subsamples in order to test for differences and

continuities in these relationships across gender (Table 4). Most notable was the difference in the pattern of associations with classmates: Classmate support was a unique predictor of all four outcomes for boys but not girls. In addition, school support predicted higher self-esteem in girls but not boys. However, parent support was a unique predictor of all four outcomes for both boys and girls, and teacher support was a unique predictor of a better attitude to school for both boys and girls. The effect size for the unique variance of individual sources was small for all analyses (Cohen, 1992).

Five more regression analyses were conducted with longitudinal data in order to test the robustness of gender differences over time. In addition to anxiety, depression, self-esteem, and attitude to school, the year-end GPA was also tested as an outcome in this final set of analyses. Multiple regression analyses were used, simultaneously entering the five support subscale scores from Time 1, to predict each of the five outcomes scores from Time 2. As with the concurrent analyses, these analyses were conducted separately by gender (Table 5). Results supported Hypothesis #3, and found that parent and classmate support were significant unique longitudinal predictors of depression and self-esteem. However, classmate support was a unique predictor only for boys. Parent support was also a unique predictor of higher GPA for both girls and boys. There was also continuity across gender in predicting anxiety: none of the individual sources of support were unique longitudinal predictors of anxiety for either boys or girls. For attitude to school, support from parents and teachers uniquely predicted a better school attitude for boys, whereas only support from parents did the same for girls. Interestingly, support from teachers became a unique longitudinal predictor of higher depression and lower self-esteem for boys. All longitudinal associations were small in magnitude.

Discussion

The current study provided evidence for the reliable and valid use of the CASSS as a measure of perceived social support from parents, teachers, classmates, friends, and school for both girls and boys in early adolescence. More specifically, the confirmatory factor analysis supported the use of the source-based subscales, as well as the Total score representing global support from various sources. This underlying structure was invariant across gender, and was supported further with the strong to excellent internal consistency reliability of the CASSS scores for both girls and boys. In addition, test-retest reliability of the scores was moderate to strong across gender. Construct validity was further supported by the moderate to strong relationships that were found between the CASSS total and subscale scores and corresponding scores on another children's measure of perceived social support.

The current study also utilized the five source subscale scores to replicate gender differences in perceptions of support previously reported in the literature. More specifically, perceptions of parent support are consistent across gender, but girls perceive more support from all other sources. In addition, girls perceive the most support from close friends relative to other sources of support, and boys perceive the least amount of support from classmates.

Further, the current study systematically addressed the question of the independent and unique associations of support sources and several important outcomes in adolescence. There were no gender differences in the concurrent, independent relationships between the five social support sources and depression, self-esteem, or attitude to school. However, gender differences emerged when looking at longitudinal relationships: All significant concurrent associations remained significant over time for girls, but fewer associations remained significant over time for boys. These results support the theoretical relationships predicted by Gilligan (1982), i.e., that

social support may be especially influential in the well-being of girls, as well as the suggestion by Dunn and colleagues (1987), that girls may rely on support from a range of sources.

Interestingly, support from classmates continued to be statistically significant over time for more outcomes than any other source for boys, with parent support having a comparable level of influence, highlighting the potential importance of the general peer group to psychological and academic adjustment relative to other non-familial sources.

Gender differences also emerged when looking at the *unique* variance accounted for by each source of support. Most notably, a cross-sectional pattern emerged in which classmate support was statistically significant for boys, but not for girls, in all domains. Another gender difference involved school support, which was a unique predictor of higher self-esteem for girls only. However, parent support was a significant unique predictor of all outcomes and teacher support was a significant unique predictor of a better attitude to school for both girls and boys. Thus, there were more differences across gender related to the unique associations with classmate support than any other source of support.

Longitudinally, parent support continued to uniquely predict three of four adjustment indices from the concurrent analyses (i.e., depression, self-esteem, and attitude to school, but not anxiety), and also predicted higher GPA at the end of the school year for girls. No other source of support served as a unique predictor for girls. For boys, parent support continued to be a unique predictor of lower depression, and higher self-esteem and GPA, but not attitude to school. Thus, although parent support was statistically significant in uniquely predicting more outcomes for girls than boys, the results of the current study highlight the importance of parental support, above and beyond other sources of support, across gender, and replicate other research

demonstrating the importance of parent support to both girls and boys in internalizing distress (Colarossi & Eccles, 2003; Demaray et al., 2007; Sheeber et al., 1999; Way & Robinson, 2003).

In addition, for boys, classmate support continued to uniquely predict lower depression, as well as marginally predicting a better school attitude. These results are consistent with the literature on the importance of classmate support above and beyond other sources of support (Demaray et al., 2007; Rueger et al., 2008), but suggest that this general peer group may be more important to boys than to girls. Interestingly, there seems to be a notable discrepancy between boys' lower perception of classmate support and the significant effects of classmate support on boys over time, which suggests that boys might be at a greater risk of poorer outcomes, unless they learn to recognize and utilize the social resources that are available to them.

The results of the current investigation replicated some seemingly divergent findings related to gender differences in the extant literature by considering some important methodological and analytic issues. First, testing multiple sources of support using a single measure for all sources allowed for the control of error due to method variance. Second, the study systematically addressed both independent and unique effects of multiple sources of support on several important outcomes during adolescence. To better understand the construct of social support in the lives of adolescents, it is important to parcel out different sources and seek to understand how support from various sources are related to different outcomes. In this endeavor, testing the independent effects of multiple sources of support, i.e., by analyzing the effects of each source separately, can help to gain a richer and deeper understanding of how each particular source of support contributes to adolescents' well-being. However, youth often receive support from multiple sources, and it is important to also look at the combined effect of those

sources and which ones are uniquely related to specific outcomes above and beyond other sources, i.e., by analyzing the effects of multiple sources simultaneously.

Questions related to independent and unique effects of various sources of support are both important, and the current study help to illustrate the need to be mindful of the different findings that can result, depending on the question being addressed and related analytic strategy. It should be mentioned that the unique effects demonstrated in the current study represent the unique variance of each source, when the other four sources are in the model. Results could be drastically different if fewer or more sources are included in the model. In addition, unique effects can change in magnitude, and even direction of effect, depending on the magnitude of the zero-order correlations of the predictors (Cohen et al., 2003). This may explain the unexpected results related to the unique effects of teacher support, which longitudinally predicted higher depression and lower self-esteem in boys. One interpretation is that boys with internalizing distress may be more likely to seek out support from teachers, but such support might not be sufficient to help in the long term. However, these unexpected associations may be related to statistical issues related to the moderate correlations among support sources, and should be interpreted with caution. Future studies should investigate the viability of this interpretation in other ways.

In sum, the current study adds to the literature is by highlighting the need for future researchers to be mindful of the use of varied measurement strategies and the distinction between independent and unique effects. Interpretation of future findings, as well as comparisons across studies, should be guided by these methodological and analytical distinctions. Similarly, it will be important for consumers of research, such as practitioners and policy-makers to be aware of these distinctions. For example, the current study failed to find significant unique effects of

teacher support. However, this is not to say that support from teachers is not important, but only that in the current sample, support from teachers did not provide any additional predictive power above and beyond the effects of support from other school personnel, parents, classmates, and close friends. In fact, analyses of independent effects, i.e., analyses focused only on teacher support, found that teacher support was significantly related to many important outcomes for boys and girls. Thus, the results of the study support the importance of teachers, and more work can be done to understand the unique relationship between teacher support and outcomes. One way this could be done is by investigating fewer sources of support simultaneously, such as focusing only parent and teacher support, or classmate and teacher support. Such comparisons address different but important questions about the unique effects of teacher support.

Strengths and Limitations

There are several strengths of the current investigation, along with limitations that offer directions for future research. One strength of the current study was the use of the same social support measure for all sources of support, and the same behavioral measure for all outcomes (except for GPA). This minimized method variance that would limit interpretations of significant differences across support sources or across outcomes. However, the study utilized self-report assessments of both predictor and outcome variables, which is a limitation in that shared method variance could be inflating the strength of the associations between support and adjustment. While self-report of *perceived* support is essential by nature, it would add to the literature to use a multi-informant design by using a combination of self-report and other-report versions of the same behavioral outcome measure, as well as observational measures.

Another strength of the study was the inclusion of cross-sectional and longitudinal analyses on the same sample. This allowed for an investigation of the longevity of effects on

important psychological and academic indicators. However, the current investigation followed students over the course of one year, and utilized data from only two timepoints. Future research should seek to replicate these results with another sample, and investigate growth curves and growth rates over multiple timepoints to get a clearer picture of the causal relationships between support from various sources and outcomes of interest.

Further, the diverse sample, both ethnically and socio-economically along with the high participation rate, increase generalizability of findings. However, an intentional focus on differences based on race/ethnicity or socioeconomic status (SES) would add to the literature. For example, prior research that conceptualized poverty as a stressor found a stress-buffering effect of social support for those at high-risk based on SES, but not those at low-risk (Malecki & Demaray, 2006). In addition, it is possible that social support operates differently in cultures that value relationships over independence, especially Hispanic and Asian cultures. Related, it would add to the literature to address these questions about gender differences in the effects of various sources with children who are younger, and adolescents who are older than those in the current sample. Developmental theory suggests that there would be predictable changes in effects of various sources of support across development.

Summary

The results of the current investigation provide evidence for the reliable and valid use of the Child and Adolescent Social Support Scale (CASSS; Malecki et al., 2000) for boys and girls in early adolescence. In addition, the results replicated and extended findings demonstrating the importance of support from parents and the general peer group as being related to positive outcomes for both boys and girls. These results illustrate the importance of examining gender differences in the social experience of early adolescents as well as the differential impact of

various sources of support in their lives. Finally, the study demonstrated differences in results when investigating independent versus unique effects of support sources, highlighting the importance of carefully considering measurement and analytic issues when investigating multiple sources of support.

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Gender Differences

Table 1

Fit Indices for Four Models from a Confirmatory Factor Analysis of the CASSS 2000

			$\chi^2 (df) / p$	CFI	RMSEA
Model 1	I: Global Social Support	Boys	1185.43 (170) / .00	.82	.12
		Girls	1163.90 (170) / .00	.78	.12
Model 2	I: Parent II: Teacher III: Classmate IV: Friend V: School	Boys	318.48 (160) / .00	.97	.05
		Girls	441.84 (160) / .00	.94	.07
Model 3	I: Emotional II: Informational III: Appraisal IV: Instrumental	Boys	1161.80 (164) / .00	.82	.12
		Girls	1139.52 (164) / .00	.79	.13
Model 4	Level 1: Global Support Level 2: Five Sources	Boys	395.57 (165) / .00	.96	.06
		Girls	495.84 (165) / .00	.93	.07

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation.

Gender Differences

Table 2

Means and Standard Deviations for the CASSS and BASC-PRS Composite and Subscale Scores by Gender, and Tests of Significance for Gender Differences in CASSS Scores

	Boys ^a			Girls ^b			Significance Test	
	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α	<i>F</i> ^c	<i>p</i>
CASSS (T1)								
Parent	55.76	10.39	.90	55.66	11.15	.92	.01	.906
Teacher	56.93	9.99	.89	59.37	8.95	.89	10.51	.001
Classmate	45.94	11.95	.91	51.02	11.70	.92	29.36	.000
Close Friend	53.80	12.74	.93	61.90	9.93	.93	80.23	.000
School	46.33	12.64	.93	50.95	12.36	.93	21.71	.000
BASC-2 (T1)								
Anxiety	47.06	9.64	---	50.84	11.29	---	---	---
Depression	48.04	9.18	---	49.38	10.52	---	---	---
Self-Esteem	52.18	9.04	---	46.55	12.17	---	---	---
Att: School	52.59	10.38	---	48.88	9.91	---	---	---
BASC-2 (T2)								
Anxiety	46.07	9.33	---	50.55	10.69	---	---	---
Depression	48.05	8.81	---	50.26	10.37	---	---	---
Self-Esteem	52.19	8.77	---	45.70	11.66	---	---	---
Att: School	51.95	9.85	---	49.80	9.95	---	---	---
GPA	2.44	1.07	---	2.79	1.02	---	---	---

Note. Scores on the CASSS subscales range from 10 to 60, and scores on the BASC are T-

scores; ^a $n = 311$; ^b $n = 325$; ^c $df = (1, 634)$.

Gender Differences

Table 3

Correlations between the CASSS and BASC-PRS Composite and Subscale Scores by Gender

Subscales	Boys ^a						Girls ^b					
	Tot	P	T	C	F	S	Tot	P	T	C	F	S
Time 1												
Anxiety	-.14*	-.15**	-.03	-.22**	-.07	-.07	-.19**	-.20**	-.12*	-.13*	-.10	-.18**
Depression	-.37**	-.42**	-.16**	-.38**	-.25**	-.25**	-.40**	-.46**	-.24**	-.28**	-.30**	-.31**
Self-Esteem	.33**	.37**	.16**	.28**	.29**	.20**	.40**	.40**	.28**	.31**	.24**	.36**
Att_School	-.34**	-.29**	-.31**	-.28**	-.19**	-.26**	-.43**	-.38**	-.38**	-.32**	-.27**	-.39**
Time 2												
Anxiety	-.03	-.05	.01	-.07	-.03	.01	-.19**	-.19**	-.16**	-.13*	-.14*	-.15**
Depression	-.15**	-.18**	-.01	-.18**	-.11	-.10	-.28**	-.30**	-.20**	-.22**	-.18**	-.21**
Self-Esteem	.18**	.16**	.02	.18**	.17**	.14*	.25**	.28**	.20**	.18**	.13*	.22**
Att_School	-.14*	-.10	-.16	-.15**	-.08	-.08	-.33**	-.31**	-.26**	-.23**	-.23**	-.29**
GPA	.09	.15*	.05	.05	.09	.02	.23**	.29**	.12*	.20**	.17**	.15**

Note. Tot = Total Support; P, T, C, F, S = Support from Parent, Teacher, Classmate, Close Friend, and School, respectively; ^a $n = 313$; ^b $n = 325$; * $p < .01$, ** $p < .001$.

Table 4

Regression Analyses of CASSS Social Support Subscale Scores Predicting BASC-2 Subscale Scores at Time 1

BASC-2 Subscales/ CASSS Subscales	Boys ^b					Girls ^g				
	<i>B</i>	(<i>SE</i>)	β	<i>sr</i> ²	<i>R</i> ² / <i>f</i> ²	<i>B</i>	(<i>SE</i>)	β	<i>sr</i> ²	<i>R</i> ² / <i>f</i> ²
Anxiety					.09**/ .10					.05**/ .05
Parent	-.14	.06	-.16*	.02		-.16	.07	-.15*	.01	
Teacher	.07	.07	.07	.00		.03	.09	.02	.00	
Classmate	-.30	.07	-.37**	.06		.01	.08	.01	.00	
Friend	.10	.06	.13	.01		.02	.08	.02	.00	
School	.12	.06	.15	.01		-.12	.09	-.13	.01	
Depression					.25**/ .33					.22**/ .28
Parent	-.34	.05	-.39**	.10		-.38	.06	-.41**	.10	
Teacher	.09	.06	.10	.01		.07	.08	.06	.00	
Classmate	-.28	.06	-.36**	.06		-.03	.06	-.03	.00	
Friend	.03	.05	.04	.00		-.11	.07	-.11	.01	
School	.07	.05	.09	.00		-.03	.07	-.03	.00	

Self-Esteem					.18**/ .22					.19**/ .23
Parent	.29	.05	.33**	.08		.30	.07	.28**	.05	
Teacher	-.05	.06	-.05	.00		.01	.09	.01	.00	
Classmate	.13	.06	.17*	.01		.05	.08	.05	.00	
Friend	.09	.05	.13	.01		-.01	.08	-.01	.00	
School	.08	.06	-.11	.01		.17	.09	.17*	.01	
Attitude to School					.14**/ .16					.21**/ .26
Parent	-.16	.06	-.16*	.02		-.16	.06	-.18**	.02	
Teacher	-.19	.07	-.18**	.02		-.19	.07	-.17*	.02	
Classmate	-.15	.07	-.18*	.01		-.02	.07	-.03	.00	
Friend	.05	.06	.06	.00		-.01	.06	-.01	.00	
School	.01	.07	.01	.00		-.13	.07	-.16	.01	

Note. f^2 / sr^2 = effect sizes for multiple/multiple partial correlations, respectively.

Table 5

Regression Analyses of CASSS Social Support Subscale Scores Predicting Psychological and Academic Adjustment at Time 2

BASC / CASSS	Boys ^b					Girls ^c				
	<i>B</i>	(<i>SE</i>)	β	<i>sr</i> ²	<i>R</i> ² / <i>f</i> ²	<i>B</i>	(<i>SE</i>)	β	<i>sr</i> ²	<i>R</i> ² / <i>f</i> ²
Anxiety					.02 / .02					.04** / .04
Parent	-.07	.06	-.07	.00		-.13	.07	-.14	.01	
Teacher	.04	.07	.04	.00		-.07	.09	-.06	.00	
Classmate	-.12	.07	-.15	.01		-.01	.08	-.01	.00	
Friend	.02	.06	.02	.00		-.05	.08	-.04	.00	
School	.08	.06	.11	.01		.00	.08	.00	.00	
Depression					.06** / .06					.10** / .11
Parent	-.16	.06	-.19**	.03		-.22	.06	-.24**	.04	
Teacher	.12	.06	.14*	.01		-.04	.08	-.04	.00	
Classmate	-.14	.06	-.20*	.02		-.10	.07	-.11	.00	
Friend	.01	.05	.02	.00		-.03	.07	-.03	.00	
School	.02	.06	.03	.00		.04	.08	.04	.00	

Self-Esteem					.06** / .06					.09** / .10
Parent	.11	.06	.13*	.01		.23	.07	.22**	.03	
Teacher	.13	.06	-.15*	.01		.05	.09	.04	.00	
Classmate	.09	.06	.13	.01		.02	.08	.02	.00	
Friend	.05	.05	.08	.00		-.06	.08	-.05	.00	
School	.02	.06	.03	.00		.09	.09	.09	.00	
Attitude to School					.04* / .04					.12** / .13
Parent	-.02	.06	-.03	.00		-.16	.06	-.18**	.02	
Teacher	-.14	.07	-.14*	.01		-.08	.08	-.07	.00	
Classmate	-.14	.07	-.16	.01		.02	.07	.03	.00	
Friend	.02	.06	.03	.00		-.05	.07	-.05	.00	
School	.08	.07	.10	.00		-.11	.07	-.14	.01	
GPA					.03 / .03					.10** / .11
Parent	.02	.01	.16*	.02		.03	.01	.30**	.05	
Teacher	.00	.01	.01	.00		-.01	.01	-.06	.00	
Classmate	.00	.01	.01	.00		.01	.01	.13	.01	
Friend	.01	.01	.07	.00		.01	.01	.06	.00	
School	-.01	.01	-.10	.00		-.01	.01	-.11	.00	

Note. f^2 / sr^2 = effect sizes for multiple/multiple partial correlations, respectively.