Differential effects of support providers on adolescents' mental health

Lisa G. Colarossi and Jacquelynne S. Eccles

This prospective study examined the differential effects of parent, teacher, and peer social support on depression and self-esteem of 217 adolescents, ages 15 to 18. Results indicate that female adolescents perceived significantly more support from friends than male adolescents did, whereas male adolescents perceived significantly more support from fathers than female adolescents did. No gender differences were found in perceptions of support from mothers or teachers. Boys and girls perceived the least amount of support from fathers compared with other providers. Multisample structural equation models were invariant across female and male groups for the effects of support providers on each outcome. The joint effects of the support providers explained a significant amount of variance in time 2 depression and self-esteem, after controlling for both at time 1, suggesting that social support has important effects on symptoms. The separate effects of mothers, teachers, and friends had similarly sized, significant negative effects on time 2 depression. Self-esteem was significantly, positively affected by friend and teacher support.

Key words: **adolescence; depression; mental health; self-esteem; social support**

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Current theory and research suggest that not all social support is the same. Two important influences on the effectiveness of support are the characteristics of the provider and of the recipient (Antonucci, 1983). For example, alternate support providers such as parents and peers differentially affect adolescent outcomes such as mental health and academic achievement (Barone, Iscoe, Trickett, & Schmid, 1998; Garnefski & Diekstra, 1996; Richman, Rosenfeld, & Bowen, 1998; Wentzel, 1998). In terms of recipient characteristics, research has consistently found gender differences in the amount and kind of support that adolescents receive and from whom they receive it (Berndt, 1982; Cauce, Reid, Landesman, & Gonzales, 1990; Colarossi, 2001; Furman & Buhrmester, 1992; Levitt, Guacci-Franco, & Levitt, 1993). For example, girls receive more support from peers than boys do, whereas boys receive more support from family sources than girls do. If these supporters have different impacts on developmental outcomes, then balance and appropriate use are the challenges for adolescents as they begin to diversify their support networks.

Unfortunately, there is a paucity of studies that simultaneously contrast the effects of multiple providers and recipients on specific adolescent outcomes. A descriptive study published recently in *Social Work Research* (Colarossi, 2001) related findings from a sample of adolescents that showed gender differences in the amount and satisfaction of support received by various providers. The prospective study presented here follows up the same sample to test the differential relation of support from three contexts (that is, family, school, and peers) on depression and self-esteem with adolescents over the course of one year. Multisample structural equation models were used to examine gender differences in the predictive models.

THEORETICAL FOUNDATION

This study builds on a foundation of theory and research describing developmental processes, gender

differences in social support, and the effects of support on mental health. Kahn and Antonucci's (1980) Convoy Model of social support posits that social support develops over time from person–environment interaction that involves attachment processes, social role requirements, and characteristics of the social network composition and its support provisions. These interactions have aspects of both stability and change over the life course, in which social context is an important moderating factor in addition to an individual's personality style, role demands, and emotional and behavioral responses. This life-course perspective is important for several reasons. An individual's need for social support varies with age-related changes such as dependence on others, social roles related to occupational and social status (for example, student, parent, employee or employer, or friend or spouse), and changes in residence (for example, living with family, living on college campus, or living in different neighborhoods). As life circumstances change, both individuals' social networks and their needs for different types and amounts of support also change. However, patterns of support also have some consistency over time because past experiences influence perceptions of current support, expectations of future support, and behaviors in relationships with others. This is a specified model of social support, which is based on ecological systems and life-course theories of development (see Colarossi, 2001, for further description).

Support Processes

Research has shown repeatedly that social support has both direct and indirect effects on mental health and academic outcomes, such that support can have multiple influences across multiple contexts. Support leads to mutual assistance, feelings of self-worth, and self-efficacy and helps in cognitive development by providing stimulus, promoting intellectual advances, and framing prosocial expectations (Newcomb, 1990; Vaux, 1990). These effects are multidirectional. For example, instrumental support or advice could facilitate decision-making and goal-directed behaviors that lead to feelings of accomplishment and self-worth. Alternately, emotional support could increase motivation and beliefs about success that lead to putting more effort toward achieving one's goals. Gender differences in these processes may occur if boys and girls receive varying amounts of support from providers for goals like autonomy and independence, academic achievement, and relationship subsistence (Antonucci, 1994). Researchers who have analyzed causal mecha-

nisms have provided evidence that social support can act in all of the above ways, serving multiple purposes through multiple paths (Coates, 1985; Dubow, Tisak, Causey, Hryshko, & Reid, 1991; Sandler, Miller, Short, & Wolchik, 1989; Slavin & Rainer, 1990). Consequently, research must now explore more specifically how various support providers can have differential impacts on outcomes.

RELATED RESEARCH

Gender Differences in Social Support

Gender differences in supportive relationships have been evidenced across the life span (Berndt, 1982; Cauce et al., 1990; Wright, 1982). These differences are influenced by a variety of factors, including gender role beliefs and behaviors related to help seeking and use; support providers' gender-biased perceptions about men's and women's needs for support, their desire to provide support to them, or both; and actual differences in men's and women's support needs. Researchers have only begun to study these causal factors, but preliminary evidence suggests that gender role beliefs and behaviors have an effect on supportive relationships. Beliefs about communality versus exchange in relationships vary by gender and influence perceptions of support (Jones & Costin, 1995; Murstein & Azar, 1986). For example, girls score higher on communality beliefs than boys, which relates positively to perceptions of support. In contrast, boys score higher on exchange beliefs than girls, which relates negatively to support perceptions.

Gender role–related behaviors also influence support. Women have higher rates of self-disclosure about feelings and problems and place greater emphasis on mutual support than men, whereas men are more likely than women to share activities and interests in their friendships (Berndt, 1982; Caldwell & Peplau, 1982; Wright, 1982). Cross-gender relationships seem to have some effect on these patterns. For example, women report deep intimate conversations with both male and female friends, but men report these types of conversations more with female friends than with male friends (Caldwell & Peplau; Kunkel & Burleson, 1999). Also, both men and women report that they would go to a female friend rather than a male friend with a personal problem for emotional and social support. Thus, men are able to engage in emotional support with women but are less likely to do so with other men.

Although researchers have begun to explore the effects of gender roles on relationships, descriptive

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research on gender differences in perceptions of sup-
port remains equivocal. Most researchers have found
that women receive more support, especially emo-
tional support, from peers than men do, but results
are more variable regarding family support. Some
studies of family support have not found any gender
differences in support from immediate family mem-
bers or other adults (Vaux, 1985), whereas other
studies have found that men receive more support
from family members and other nonfamily adults than
women do (Colarossi, 2001; Cumsille & Epstein,
1994; Frey & Rothlisberger, 1996; Scheier & Botvin,
1997). Findings such as these require the use of dis-
aggregated measures of support from individual family
members and nonfamily sources and suggest the need
for studies of group differences in support.

Self-Esteem and Depression

A large body of evidence suggests that adoles-
cence is a period of increased vulnerability to men-
tal health difficulties. Of these difficulties, depressed
mood and low self-esteem occur with disproportion-
ately high prevalence (Lewinson, Rhode, Seeley, &
Andrews, 1993; Peterson et al., 1993). These have
been found to have both immediate and long-term
effects on well-being in a variety of areas (Kandel &
Davies, 1986). Furthermore, research shows that
girls have a greater vulnerability than boys to these
problems during adolescence (see review by Nolen-
Hoeksema, 1990), which may create gender differ-
ences in long-term sequelae. Therefore, it is essen-
tial to learn more about what factors affect these
outcomes to design more effective treatment and
prevention programs. Social support has been fre-
quently identified as one such factor.

Researchers interested in adolescents have con-
sistently found that social support measures have
both correlational and predictive relations with self-
esteem and depression (Barrera & Garrison-Jones,
1992; Colarossi & Eccles, 2000; Holahan & Moos,
1987; Newcomb, 1990; Schraedley, Gotlib, & Hay-
ward, 1999). One of the most noteworthy predic-
tion studies of self-esteem, depression, and social
support is a longitudinal study conducted by
Newcomb that surveyed 227 male and 570 female
adolescents in grades 10 through 12. Measures of
support from parents, peers, family, and nonfamily
adults were analyzed for their relationship to depres-
sive symptoms and self-esteem over one year's time.
Results indicted that parent support for boys pre-
dicted high self-esteem, whereas parent support for
girls predicted low depression. Girls reported more
social support from other adults, which predicted

later self-esteem. Other adult support was not sig-
nificantly related to any outcomes for boys. Finally,
peer support was lower for boys than for girls, but
peer support for boys predicted high self-esteem and
low depression. Peer support for girls predicted only
self-esteem.

Several other studies also found gender differ-
ences in the relation between mental health and so-
cial support, such that distinct support providers,
functions, or both differentially affect female and
male adolescents (Cheng, 1998; Colarossi & Eccles,
2000; Schraedley et al., 1999; Slavin & Rainer, 1990;
Windle, 1992). However, other studies have not
found gender differences in the effects of support on
mental health outcomes (Cumsille & Epstein, 1994).
Furthermore, some studies have found that family
and peer support are unrelated to each other and are
more likely to have additive rather than compensa-
tory effects (Garnefski & Diekstra, 1996; Wentzel,
1998). For example, if adolescents are not receiving
adequate support at home, good peer support can-
not fully compensate or make up for this loss.

Inconsistency of social support measures across
studies is problematic for comparing results. In ad-
dition, most studies have aggregated mother and
father support into a single parental or family sup-
port measure. This confounds the effects of family
support on mental health and conceals interactions
between gender of the support provider (for ex-
ample, mother versus father) and gender of the re-
cipient (female versus male adolescent). This may
account for the more frequent inconsistencies across
studies of gender differences in family support com-
pared with peer support. To address this issue, this
study measured the effects of support from mothers
and fathers on male and female students separately
rather than in the aggregate.

Although findings related to gender differences
are equivocal across studies, the data lend themselves
to some conjectures. Social support, especially from
family members and peers, has important effects on
both female and male adolescents' mental health,
but the effect sizes may be larger for girls than for
boys. In fact, examining both group similarities and
differences may be equally important, and attend-
ing to effect sizes in addition to statistical signifi-
cance can provide additional information. Under-
standing how female and male adolescents are similar
and different in the ways social support affects their
mental health has important implications for under-
standing different uses of social support, designing
prevention programs for youths, and understand-
ing gender roles.

RESEARCH QUESTIONS AND ANALYSES

The purpose of this study was to explain the differential relation of support from three contexts (that is, family, school, and peers) on adolescent depression and self-esteem and to describe any gender differences that exist in this model. We asked four questions:

1. Do male and female adolescents perceive different amounts of support from parents, peers, and teachers?
2. Do male and female adolescents differ on levels of depression and self-esteem?
3. What are the differential effects of support from mothers, fathers, teachers, and peers on adolescents' self-esteem and depression?
4. Do these effects differ for male and female adolescents?

The research reviewed above supports the four corresponding hypotheses:

1. Male adolescents will perceive more support from adults, whereas female adolescents will perceive more support from peers.
2. Female adolescents will have higher levels of depression and lower self-esteem than male adolescents.
3. Predictive models will indicate differential effects of support providers on depression and self-esteem such that mothers will have the largest effect on outcomes for both male and female adolescents.
4. Despite gender differences in perceptions of support and levels of mental health symptoms, effects will not differ significantly for male and female adolescents.

Analyses

We used t tests to analyze gender differences in the independent and dependent variables (that is, to test hypotheses 1 and 2). Preliminary statistics for skewness and kurtosis of all variables and correlations between the variables were used to confirm that the data meet normality multicolinearity standards for multigroup structural equation models (MSEMs).

MSEMs were used to test hypothesis 3 and 4. MSEMs are preferable to multiple regression analyses because they can test a model for its applicability to different groups simultaneously by estimating group differences in path coefficients and model fit (Hoyle, 1995). Measurement models were not tested using structural equation modeling because of inadequate sample size for the number of parameters to be estimated (see Colarossi, 2001, for a description of factor analyses on support measures). Sample size was sufficient for estimating the latent variable structural models (see Schumacker & Lomax, 1996, p. 20, for guidelines), and fit indices appropriate for smaller sample sizes were analyzed (Hoyle). Other researchers have analyzed structural models independent of the measurement model also (for example, Aneshenel & Huba, 1983; Boldizar, Wilson, & Deemer, 1989).

Structural models were tested using maximum likelihood estimation of the effects of mother support, father support, teacher support, and friend support on outcomes of depression and self-esteem. For each outcome, the dependent variable was controlled at time 1. Because of the homogeneity of the sample, demographic factors were controlled by the sampling frame and were not entered as statistical controls in further analyses. All parameters were initially freely estimated to obtain initial parameter estimates and variances for male and female adolescents separately. Next, all parameters were fully constrained to be equal in both groups, and chi-square and goodness-of-fit indices were used to test for invariance between the groups.

METHOD

This study used a subset of data from a larger, longitudinal study conducted by Eccles and her colleagues over 15 years (Eccles & Blumenfeld, 1984; Eccles, Blumenfeld, Harold, & Wigfield, 1990). This larger study was conducted in four midwestern cities. Nine waves of data have been collected, which began with three cohorts of participants in kindergarten and first and third grades. The present study analyzed data from waves 6 and 7 (1995–1996) when students were in middle to late adolescence, which excluded the youngest of the three original cohorts. This age group was selected because researchers have suggested that moderately stable support networks are established by this age and will not be in flux again until after high school (Degirmencioglu, Urber, Tolson, & Richard, 1998). These waves are referred to as times 1 and 2.

Participants and Procedures

A total of 217 adolescents (125 girls and 92 boys), ages 15 to 18 ($M = 17$ years), from three school districts in suburban, midwestern communities were selected for analysis. Ninety-two percent of the students identified themselves as white; 3 percent as Asian American; and 5 percent as either African American, Arabic, or American Indian. The majority of students identified with a Christian religion

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(82 percent); 12 percent said that they did not know or did not have a preference for any religion; and the remaining 6 percent identified themselves as Jewish, Hindu, Eastern Orthodox, or Mormon. The adolescents primarily resided with married, biologi-cal parents (73 percent). Students' parents reported their income and education levels five years prior to the study. The mean annual household income was $50,000 to $59,000 (47 percent of students' par-ents reported an annual household income between $40,000 and $70,000; 10 percent reported less than $40,000; 22 percent reported more than $70,000; and 21 percent did not report their income). In terms of parents' educational level, 38 percent of students' parents reported having a bachelor's de-gree or higher, 30 percent reported having some college education, 12 percent had a high school di-ploma, and 20 percent did not report their educa-tional level.

Notification letters were sent to students' homes and their schools before survey administration. In-formed consent was obtained from students and their parents. Research staff administered surveys to groups of students at their high schools and moni-tored the room to ensure that students answered survey questions individually rather than collectively with friends in the room. Students were paid $10 on completion of the survey.

Attrition. Only students who answered all items were selected for analysis (listwise case selection, n = 217). Adolescents who were dropped from analy-sis included students who answered both waves of surveys but skipped some of the items for analysis (n = 87) and students who did not participate at all in one of the waves of survey collection (n = 60). Chi-square and t test analyses were performed to test for significant differences between students who were used in the analyses and those who were not. These tests did not show any significant differences in demographic characteristics (that is, race, gen-der, parents' marital status, religion, or household income) or in descriptive levels of social support, depression, or self-esteem. Comparisons were made with participants who skipped items, and many of those who did not participate at all in a wave of data collection remained in the study for future waves of surveys and could therefore be compared on the variables with those included in the analyses. Al-though attrition always poses some threat to exter-nal validity that cannot be completely accounted for by such statistical comparisons, this information would indicate that participants not included in this study were not characteristically different from those

who were. Their attrition was likely a result of being absent from school on the day the surveys were ad-ministered or providing incomplete survey responses rather than a result of major differences in the study variables.

Measures

Social Support. Perceived frequency of functional social support from mothers, fathers, friends, and teachers was measured at time 1. Scales were cre-ated for mother, father, and friend support using six items from the Iowa Youth and Families Inven-tory (Conger, Brainerd, Birch, & Friedberg, 1986). Each item was measured on a five-point Likert scale ranging from 1 = low support to 5 = high support. Examples of scale items include "In the last month, how often did your mother/father/ friends ... help you with something that was important to you? ... give you advice? ... let you know she/he really cares about you?" A teacher support scale was created using six items with seven-point Likert scales. These items were developed by Eccles and her colleagues (Eccles et al., 1990) to closely match the family and friend measures, but with a focus on the school con-text. Items include "How many of your teachers ... value and listen to your ideas? ... treat students with respect? ... think all students can learn?" Each scale was found to have good internal reliability: mother support, Cronbach's alpha = .86; father support, Cronbach's alpha = .91; friend support, Cronbach's alpha = .83; teacher support, Cronbach's alpha = .85. More information about these scales and sup-port conceptualization is provided in the related descriptive study (Colarossi, 2001).

Depression. Depressive symptomology was mea-sured at times 1 and 2 using nine items from the Symptoms Checklist–Revised (SLC-90-R; Derogatis, 1983). This scale is intended to measure depressive affect rather than diagnostic levels of depression. Items began with the stem "During the last month, how often have you felt ..." and included "like you don't care anymore?" and "hopeless?" Responses were made on seven-point scales, ranging from 1 = low depression to 7 = high depression (Cronbach's alpha = .86).

Self-Esteem. Self-esteem was measured at times 1 and 2 using seven items derived from Harter (1982) that included "How often do you feel happy with the way you are?" "How often are you pretty sure that you are a good person?" and "How often do you feel good about the way you act?" The origi-nal forced-choice scale format was converted to four-point Likert-type items for scale creation; items

ranged from 1 = low self-esteem to 4 = high self-esteem (Cronbach's alpha = .76).

RESULTS

Descriptive Information

Hypothesis 1 was partially confirmed. Female adolescents had significantly higher mean scores than male adolescents for friend support (t = 5.14, $p <$ .001), whereas male adolescents had significantly higher mean scores on father support (t = 2.21, $p <$ .05) (Table 1). However, male and female adolescents did not differ significantly on mean scores for mother support and teacher support. Hypothesis 2 was confirmed; female adolescents had higher depression and lower self-esteem scores than male adolescents at times 1 and 2. In addition, Levene's test of equality of variance showed that female adolescents had significantly greater variance on depression at time 1 (F = 4.47, p = .04) and at time 2 (F = 9.58, p = .002) and on self-esteem at time 2 (F = 6.28, p = .01). Skewness and kurtosis statistics adequately met normality standards for conducting structural equation model analyses.

Intercorrelations among Variables

Correlation matrices were later converted to covariance matrices for structural equation model analyses. Most notably, the correlations between the support providers were almost all higher for male than for female adolescents, especially between mother and father support (Table 2). Therefore,

there is a greater amount of multicolinearity between the predictor variables in the predictive models for male adolescents. Another notable discrepancy is that the relations between depression and each support provider were greater for female than for male adolescents. For both female and male adolescents, the time 1 control variables of depression and self-esteem were highly correlated with the time 2 outcome variables, indicating a high level of stability in these constructs over time.

Gender Differences in the Models

Hypothesis 4 was confirmed. Chi-square and goodness-of-fit indices indicated that the fully constrained models fit well across groups for the effects of support providers on self-esteem [χ^2(6, N = 217) = 8.44, p = .49; root mean square error of approximation (RMSEA) = .06; root mean residual (RMR) =.01; goodness-of-fit index (GFI) = .99; nonnormed fit index (NNFI) = .95] (Table 3). Modification indices did not indicate that chi-square statistics would be significantly improved by freeing any of the parameters in these three models. This indicates that the models were not statistically different between groups.

The fully constrained model for depression did not fit as well across groups [χ^2(6, N = 217) = 12.44, p = .05; RMSEA = .10; RMR = .05; NNFI = .85]. Modification indices indicated that removing the equality constraint on the psi parameter would improve the fit of the model. Therefore, a model with parameter estimates for gamma constrained to be

TABLE 1—Descriptive Statistics and *t* Tests for Differences between Female (*n* = 125) and Male (*n* = 92) Adolescents

Variable	M		SD		Skewness		Kurtosis		*t*
	Female	Male	Female	Male	Female	Male	Female	Male	
Mother SS	3.09	3.10	.96	.85	−.07	−.05	−.68	−.21	ns
Father SS	2.62	2.93	1.01	.99	.17	−.09	−1.04	−.75	2.21*
Teacher SS	5.10	5.27	1.01	.90	−.61	−.49	−.00	.10	ns
Friend SS	3.90	3.39	.71	.75	−.75	−.05	.24	−.45	5.14***
Depression	2.61	2.10	1.16	.86	.73	.98	−.04	.44	3.70***
Self-esteem	2.92	3.12	.54	.43	.47	.32	−.42	−.29	2.97**
Depression (time 1)[a]	2.85	2.34	1.18	.98	.46	1.02	−.39	.62	3.52***
Self-esteem (time 1)[a]	3.06	3.34	.52	.52	.15	.46	−.46	.03	4.06***

NOTE: SS = social support, ns = nonsignificant.
[a]Control.
*p < .05. **p < .01. ***p < .001.

TABLE 2—Intercorrelations among Variables: Separate for Female and Male Adolescents

Variable	1	2	3	4	5	6	7	8
1. Mother SS	—	.27**	.23**	–.01	–.36***	.30***	–.37***	.34***
2. Father SS	.65***	—	.27**	.08	–.30***	.16	–.41***	.21**
3. Teacher SS	.25**	.20*	—	.10	–.28**	.18*	–.14	.09
4. Friend SS	.19	.24*	–.12	—	–.07	.19*	–.11	.05
5. Depression	–.10*	.06	–.07	–.06	—	–.50***	.57***	–.45***
6. Self-esteem	.18	.25**	.20*	.19	–.45***	—	–.23***	.71***
7. Depression (time 1)ᵃ	–.19	–.09	–.13	.10	.54***	–.31**	—	–.52***
8. Self-esteem (time 1)ᵃ	.14	.22*	.07	.13	–.42***	.60***	–.52***	—

NOTES: Correlations are listwise and were converted to covariance matrices for structural equation modeling tests. Correlations for female adolescents are on the upper half of the diagonal, $n = 125$. Correlations for male adolescents are on the lower half of the diagonal, $n = 92$. SS = social support.
ᵃControl.
*$p < .05$. **$p < .01$. ***$p < .001$.

equal across groups and with unconstrained psi parameters to allow for unique variance across the groups was tested. This model significantly improved the fit over the fully constrained model [$\Delta\chi^2(1, N = 217) = 5.70, p = .05$]. The new model had excellent fit [$\Delta\chi^2(5, N = 217) = 6.74, p = .24$; RMSEA = .05; RMR = .05; GFI = .99; Comparative GFI = .99; NNFI = .95]. This indicates that significantly more variance is explained by the predictors for depression in female than in male adolescents (R^2 for female adolescents

TABLE 3—MSEM Unique and Equal Parameter Estimates, Chi-Square Tests of Invariance, and Fit Indices

Predictor	Depression			Self-Esteem		
	Female	Male	Equal	Female	Male	Equal
Mother SS	–.17*	–.08	–.14*	.08	–.00	.08
Father SS	.06	.18	.11	–.07	.05	–.04
Teacher SS	–.18*	–.03	–.13*	.10	.15	.12*
Friend SS	–.14	–.13	–.13*	.18*	.10	.14*
Control variable	.54*	.51*	.55*	.73*	.49*	.63*
R^2	.40*	.34*	.39*	.40*	.40*	.52*
ΔR^2 (after control)	.08*	.05*	.05*	.02	.05*	.03*
Models (invariant)						
$\chi^2(df = 6)$		12.44, $p = .05$			8.44, $p = .49$	
RMSEA		.10			.06	
RMR		.05			.01	
GFI		.99			.99	
CFI		.97			.99	
NNFI		.85			.95	

NOTES: Estimates are based on maximum likelihood analyses. Common metric standardized solutions are presented. Separate covariance matrices for male ($n = 92$) and female ($n = 125$) adolescents were used for analyses. MSEM = multigroup structural equation model, SS = social support, RMSEA = root mean square error of approximation, RMR = root mean residual, GFI = goodness-of-fit index, CFI = comparative goodness-of-fit index, and NNFI = nonnormed fit index.
*$p < .05$.

= .78, R^2 for male adolescents = .48). However, this difference just reaches significance at $p = .05$ and may be a result of significantly greater variance in depression for female than for male adolescents (female covariance = 1.34, male covariance = .74). Therefore, if more variance is explained for female adolescents because there is more variance to be explained, then it is questionable whether the model for depression is really substantially different for both genders.

Differential Effects of Social Support Providers on Outcomes

Effect sizes and their significance were obtained from the structural equation modeling analyses discussed earlier and are based on maximum likelihood estimates. Because gender differences were not fully supported by the MSEM results, Figure 1 presents the combined models (invariant) for male and female adolescents and standardized beta coefficients to compare differential effects of support providers.

Additional regression analyses were conducted to test for interactive effects of gender by social support provider and for significant changes in R^2 amounts after controlling for each outcome at time 1. No significant interactions were found.

Depression. As predicted in hypothesis 3, mother support had the largest significant negative effect on depression ($\Gamma = -.14$), followed by friend and teacher support ($\Gamma = -.13$ for each). Each of these effects is statistically significant. Whereas support from mothers, teachers, and friends was related to decreases in depression over time, father support was positively, though nonsignificantly, related to change in depression over time ($\Gamma = .11$). The predictor variables explained a significant amount of the variance in time 2 depression compared with time 1 depression ($R^2 = .05$). As stated earlier, time 1 social support explained significantly more variance in depression for female than male adolescents, although this may be an artifact of greater variance in depression for female adolescents. Although model

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FIGURE 1—Structural Equation Modeling Results of Provider Effects on Depression and Self-Esteem: Male and Female Adolescents Combined
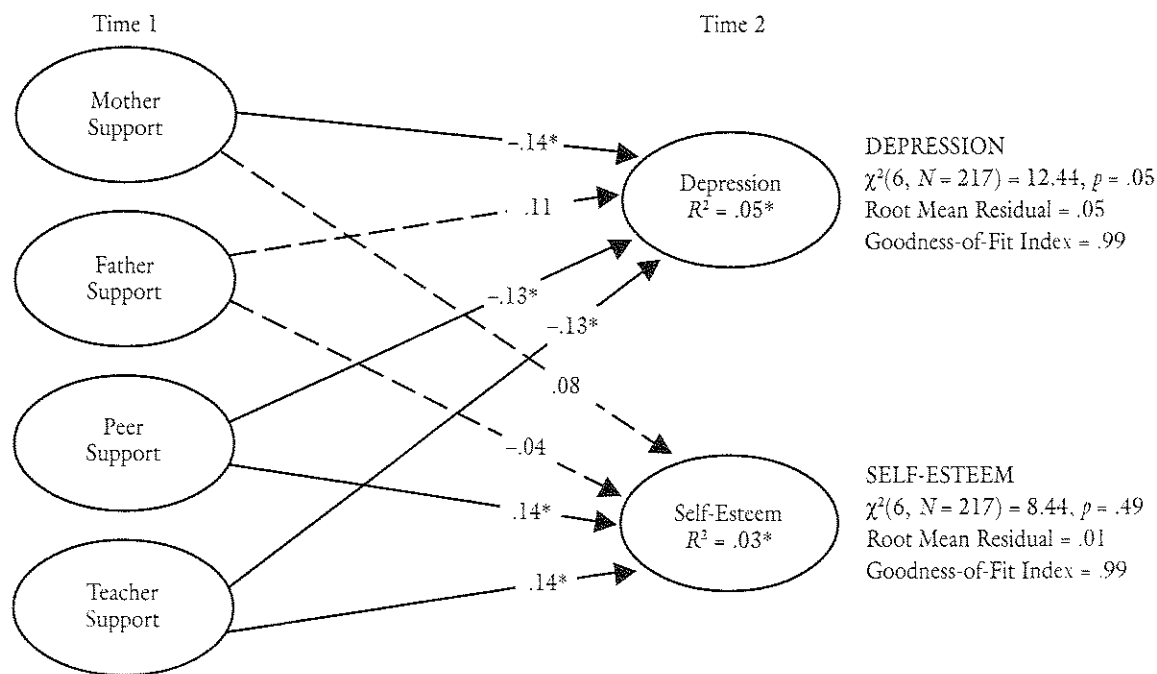
NOTES: Dashed lines indicate nonsignificance. Depression and self-esteem were controlled for at time 1. Parameter estimates are obtained from correlation matrices to standardize results for comparison across support measures.
*$p < .05$.

fit would not be improved by allowing for unique parameter estimates for female and male adolescents, it is interesting to note that the unique effects of mother and teacher support had the largest effects on female adolescents' depression, whereas father support had the largest effect on male adolescents' depression.

Self-Esteem. Contrary to hypothesis 3, support from friends (Γ = .14) and teachers (Γ = .12) had the largest significant positive effects on adolescents' self-esteem over time. The effect of mother support was not statistically significant (Γ = .08). Father support had a negative effect on self-esteem, which was not statistically significant (Γ = −.04). The predictor variables explained a significant amount of the variance in time 2 self-esteem compared with time 1 self-esteem (R^2 = .03).

DISCUSSION

Perceptions of Social Support

This prospective study examined adolescent gender differences in the effects of support from mothers, fathers, teachers, and friends over one year's time on changes in depression and self-esteem. It is a continuation of a study that found gender differences in perceptions of social support from different providers. These two studies in combination show that male and female adolescents report differing levels of support from providers, but the effects of providers on outcomes are equally important across gender. The research presented here does not illuminate the causal mechanism between support and mental health, but it is compatible with other research findings that gender differences exist in interpersonal skills and cognitions related to support but not in the effects of support on a variety of outcomes (Cumsille & Epstein, 1994; Ma & Kishor, 1997).

This study's findings indicate that female adolescents perceive significantly more support from friends than male adolescents do, whereas male adolescents perceive significantly more support from fathers than female adolescents do. No gender differences were found in perceptions of support from mothers or teachers. Male and female adolescents both perceived the least amount of support from fathers compared with other providers. These findings are consistent with other research showing that girls receive more peer support than boys do. They also shed some light on inconsistent findings in the literature regarding gender differences in parental support such that mother and father support appear

to have quite different perceptions and effects. Therefore, studies that combine these two types of support into a single parental measure may be confounding the effects and thus contributing to inconsistent findings across studies.

Effects on Mental Health

Although there are differences in the amount of support that male and female adolescents perceive from others, MSEM analyses showed equivalence between both groups in the importance of support providers on self-esteem and depression. The joint effects of the support providers explained a significant amount of variance in time 2 depression and self-esteem, after controlling for both at time 1, suggesting that social support has important effects on symptoms. The separate effects of mothers, teachers, and friends had similarly sized significant negative effects on time 2 depression. Self-esteem was significantly, positively affected by friend and teacher support. Although effect sizes were small, they remain compelling because of their significance after controlling for time 1 depression and self-esteem.

Although significant gender differences did not exist in the models, some interesting trends in same-sex provider–recipient support did emerge when examining the depression model separately for boys and girls. For example, whereas friend support had similar effects on depression for both genders, support from mothers and teachers had larger effects on female adolescents' than on male adolescents' depression, and father support had larger effects on male adolescents' than on female adolescents' depression. This finding may reflect an interaction between gender of the provider and recipient such that a same-sex provider–recipient pair, especially between adolescents and adult role models, may increase the effects of support.

These findings are consistent with the Convoy Model's proposition that the effects of social support involve a match between the needs and characteristics of recipients and the ability of the providers. Perceived support may affect mental health outcomes by increasing beliefs that are negatively associated with depression and low self-esteem, such as acceptance, self-worth, the belief that others can and will help, and connectedness to others (or lack of loneliness). This study's finding—that mother support has the largest effect of all supporters on depression—may be due to the longer-term nature of the parental relationship on depressive symptoms. Other studies have found that parental support (or lack thereof) can have a cumulative effect over time

because of the long-standing and relatively stable parent–child relationship, which has notable effects on depression (Garnefski & Diekstra, 1996).

Alternately, nonparental supporters (that is, friends and teachers) were found to have stronger influences than parents on self-esteem, which reflects a fit between that outcome and the providers. For example, one task of adolescence is identity formation in ways that individuate teenagers from the family. This may make the influence of nonfamily sources particularly important for the self-concept by way of looking to others for a sense of worthiness outside of the perceived obligation of parental support. In this way, nonfamily sources may be viewed as more valid. For example, if parent support and feedback about the self are seen as obligatory, or even negative over time, then teenagers will seek outsiders to confirm a current sense of self in the task of identity formation. Other research has also found a relatively greater effect of nonfamily sources on self-esteem than parents (Franco & Levitt, 1998).

Finally, it is noteworthy that the current study's findings indicate that fathers are not very influential sources of support for adolescents. They are perceived as providing the least amount of support when compared with other providers and have small, sometimes opposite, effects on the outcomes. Future research should examine this effect more closely. Perhaps something in adult male gender roles decreases their ability to be supportive, such as an exchange-oriented approach to relationships or the tendency to use dismissive or critical behaviors rather than empathetic ones in an attempt to help (Kunkel & Burleson, 1999). Research has found that both women and men report that they perceive men as lacking in supportive skills and that they would prefer to turn to a woman rather than a man (Kunkel & Burleson). An alternate explanation for these findings might be that fathers are providing more support to adolescents who are in the greatest need (or having the most problems) to compensate for inadequate support from mothers or others. Thus, there could be an interaction causing the effect to be in the reverse direction than expected.

Limitations and Future Needs

Researchers should continue to clarify causal mechanisms between support and different outcomes in addition to relationship processes such as interpersonal interactions and cognitions. This study underscores the need to use disaggregated measures of support from different providers. Collapsing mother and father support into one measure of pa-

rental support may be particularly problematic, as fathers and mothers in this study have very different effects. Similarly, using generalized measures of teacher and friend support, which combines perceptions of a variety of providers into a single support variable, may prove problematic for the results of this study. It is possible that one very supportive teacher could have larger effects on the outcomes than when perceptions of teachers in general are combined. Another limitation of this study's support measures was the use of generalized scores of support, which combine emotional and instrumental types of support rather than measure them separately. Because of constraints in available measures (that is, secondary data analysis of a larger longitudinal study), analyzing these effects was not possible. However, we took the opportunity to focus on provider effects, and combining different support types into one generalized support score has been used elsewhere, as different support types frequently are highly intercorrelated (Barrera, Sandler, & Ramsay, 1981; Procidano & Heller, 1983).

Researchers also should consider more diverse social and cultural characteristics. Because the participants in this study were homogeneous in race and socioeconomic status, sociocultural differences were not tested. However, similar to the results reported here, other research has shown that ethnic differences exist in behavioral skills and cognitive perceptions of support rather than in the effectiveness of support on outcomes (Cheng, 1998; Franco & Levitt, 1998; Morrison, Laughlin, Miguel, Douglas, & Widaman, 1997; Vaux, 1985). Rather than comparing racial or ethnic groups, it may be more important to study them for within-group differences to understand variation within and across cultures. For example, people from the same racial group have been found to have different patterns of support related to migration history, situational or network variation, and levels of acculturation (Morrison et al., 1997).

One other concern with the current sample is the large proportion of adolescents living in two-parent homes. It may be that parental support is heavily provided by mothers because fathers perform other parenting tasks in the home, in a division-of-labor manner. Fathers not living in the same home may provide more support to their children because they have a separate and distinct relationship with their children from their mother. However, this may only be true for children in single-parent households in which the fathers remain very involved in their lives. In other cases, the reports of low father support

and the lack of effect of father support on outcomes may be similar between single- and two-parent households.

Practice Implications

Social work clinicians have long been encouraged to help clients increase levels of social support. Interventions range from eco-mapping techniques to network-level enhancement of support (for example, support groups, community groups, and mentoring) and individual social skills development. However, this and other research suggest the need for clinicians to more selectively promote support from various providers. For example, the results indicate a need to focus on nonfamilial sources of support to improve self-esteem and to focus on improving support from all types of providers to alleviate depression. Therefore, interventions such as peer support groups, social skills training for isolated and shy teenagers, positive peer culture interventions, and teacher mentorship should be most effective for self-esteem rather than a broad or unfocused social network approach. Alternately, family systems treatment that improves communication, activities, empathy, and advice between parents and teenagers should be added to the interventions for depressed teenagers. Evaluation of interventions will be most informative if interventions are specifically delineated. This research helps to provide evidence for causal links that can help in the development of distinct interventions. ∎

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