Published in final edited form as:

Youth Soc. 2016 November ; 48(6): 739–762. doi:10.1177/0044118X13512858.

Thriving in School: The Role of Sixth-Grade Adolescent-Parent-School Relationships in Predicting Eighth-Grade Academic Outcomes

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Abstract

The present study uses an ecological systems perspective to examine how parental involvement in school-related activities in sixth grade influences early adolescents' school bonding and academic achievement in eighth grade. Results of multilevel models of multiple data sources (i.e., adolescents, parents, and principals) suggested that parents' involvement in school, as reported by the adolescent in sixth grade, was a significant predictor of school bonding and academic grades in eighth grade. Furthermore, parent reports of guidance, support, and involvement in school and non-school activities were unrelated to their adolescents' grades and school bonding. Finally, schools' efforts to engage parents did not consistently predict an association between parental involvement and adolescent outcomes.

Keywords

academic achievement; school bonding; parental involvement; family school relationships

Over the past several decades, mounting evidence suggests that parental involvement in school affects adolescents' academic success (Hill & Tyson, 2009; Mattingly, Prislín, McKenzie, Rodriguez, & Kayzar, 2002; Spoth, Randall, & Shin, 2008). Such parental involvement can take many forms, but most typically includes parent-initiated activities like assisting with homework, meeting with teachers, and volunteering at school. These kinds of involvement have been linked to academic achievement, attendance, and positive attitudes towards school (Christensen, Rounds, & Gorney, 1992; Eccles & Harold, 1996; Henderson & Mapp, 2002; Hill et al., 2004; Hill & Tyson, 2009; Walker, Hoover-Dempsey, Whetsel, & Green, 2004). Henderson and Berla's (1997) comprehensive review of the parent involvement literature concluded that the strongest predictor of student's achievement is the extent to which parents create a home environment that supports learning, communicate high and realistic expectations for success in schools, and become engaged in their children's education.

Despite these encouraging outcomes, the positive association between parents' school involvement and adolescents' positive academic outcomes is not supported consistently (Fan & Chen, 2001). Indeed, several studies have found no measurable effect of parental involvement on academic success (e.g., Epstein, 1991; Ford 1989; Pallas, Natriello, & McDill, 1989). Albeit counterintuitive, there are studies that link parental school involvement with lower levels of academic achievement (Hill & Tyson, 2009; Horn & West, 1992; Milne, Myers, Rosenthal, & Ginsburg, 1986). Most commonly this is attributed, at least in part, to methodological inconsistencies and failure to account for the poor student performance that primes parents to get actively involved in their adolescents' schooling.

Parents' school involvement can be measured and operationalized in a variety of ways, and types of parental involvement oftentimes are divided into three categories: home-based (e.g., homework help and asking child about school day), school-based (e.g., interacting with teachers and participating in parent-teacher organizations), and academic socialization (e.g., communicating expectations and aspirations for academic outcomes). Each form of parental school involvement may be primed by a different motivation, such as personal aspirations, control, desire to be supportive, or addressing an academic deficit (Hill & Tyson, 2009).

Unfortunately, most research on parental involvement has been cross-sectional and limited to elementary-aged children with less attention on middle school students (Kreider, Caspe, Kennedy, & Weiss, 2007). Yet, early adolescents tend to experience greater difficulty with school as they transition from elementary to middle school (see Eccles et al., 1993). The extant literature suggests that middle schools are complex environments for adolescents and parents to navigate (e.g., larger class sizes, subject-specific teachers, and developmental changes among adolescents), thus underscoring the importance of studying parents' role in the middle school context (Hill & Tyson, 2009).

The present study uses an ecological systems perspective to examine how the bidirectional relationships among early adolescents, their families, and school contexts impact their development (Bronfenbrenner, 1979). Specifically, we examine how parental involvement with the school setting at the level of the mesosystem influences early adolescents' school bonding and academic achievement. Unlike previous studies, we focus on strategies that schools use to engage families, not just on how parents reach out to schools by becoming involved. Our emphasis is on relationships: the parent-adolescent relationship, adolescent-school relationship, as well as the relationships of those contexts to one another.

Parental Involvement during the Middle School Years

In the United States, the transition to middle school or junior high (hereafter collectively referred to as middle schools, but fully acknowledging that distinct differences may exist between these two middle-level school structures) frequently coincides with the transition from late childhood to early adolescence; a period in which young people experience rapid biological, social, and cognitive changes (e.g., Hamburg, 1974; Lerner, 1995, 2004; Simmons & Blyth, 1987). Compared to elementary schools, the climate of middle schools is typically less warm, less student-centered, more impersonal, and involves new peers, schedules, the presence of older students, as well as more academic and social pressure (Lerner, 2004; Seidman, Allen, Aber, Mitchell, & Feinman, 1994). Moreover, middle school students typically change teachers for some or all of their classes making it more challenging for students to develop positive relationships with their teachers (Hill & Tyson, 2009; Scales, 1999).

Parent involvement in their child's school decreases markedly after elementary school (Eccles & Harold, 2003) which may be due to: (a) the dramatic increase in school size which can be daunting for parents; (b) the location of the school is oftentimes further away from the family's residential neighborhood; and, (c) there is no clear point of contact as students frequently have many different teachers (Simons-Morton & Crump, 2003). In addition, researchers have documented similar decreases in the general amount of non-school time parents and children spend in joint activities as the gets older (Dubas & Gerris, 2002; Larson, Richards, Moneta, Hombeck, & Duckett, 1996; Larson & Verma, 1999).

School and family represent two of the most important contextual influences on early adolescents' physical, social, and cognitive development. From an ecological perspective, children benefit when parents and schools align their messages. Parental involvement in children's educational and non-educational activities protects against a range of risk behaviors and promotes thriving behaviors, including positive academic outcomes such as school bonding (Duncan, Duncan, & Strycker, 2000; Eccles & Harold, 1993; Spoth et al., 2008).

Parental-Child Guidance

Parental guidance in the form of open communication and problem solving is an important part of facilitating healthy development for youth and has been associated with academic achievement (Smetana, Campione-Barr, & Daddis, 2004; Syvertsen, Roehlkepartain, &

Scales, 2012). Appropriate parental expectations regarding school performance have been found to be a significant predictor of academic success (Bernard, 2004; Mattingly et al., 2002; Schneider & Stevenson, 1999). Moreover, parenting strategies that foster autonomy have also been associated with higher standardized test scores, higher grades, and more completed homework (Cooper, Lindsay, & Nye, 2000).

Parental Support

Higher parental support for children's academic performance can be manifested in the monitoring of homework, activities, and events at school (Beaulieu & Israel, 1997; Schneider & Coleman, 1993; Schneider & Stevenson, 1999). However, Cooper and colleagues (2000) found that how parental monitoring and homework assistance affected academic performance was dependent on students' general success in school. Students not doing well in school improved when parents provided proactive monitoring and helped with assignments. Students doing well academically continued to do so if their parents shifted their focus to providing autonomous support (i.e., encouraging the child to work through the homework and not assist them to get it done sooner). Students' reaction to the same type of proactive monitoring and assistance may differ as they mature. For instance, Ginsburg and Bronstein (1993) realized that more parental monitoring over homework when linked with negative controlling reaction was associated with lower grades in children (i.e., when the child views parental monitoring as over-bearing). Meanwhile, Mullis and colleagues (2003) found no relation between monitoring of homework and school-based activities and middle school students' academic performance.

In contrast to this research, Gutman and Eccles' (1999) research indicated a positive influence between parental support (in the forms of homework monitoring and knowledge of their adolescents' day-to-day experiences at school) and academic performance. Furthermore, in a comprehensive meta-analysis, Hill and Tyson (2009) identified a variety of parental involvement behaviors that are moderately, but significantly, related to academic achievement among middle school students. Parental behaviors included providing educationally enriching activities, connecting with the school, and being involved in school-related activities.

Effects of School Outreach

There is some, albeit limited, evidence that schools can affect parent involvement through outreach activities. For example, in a study of 11,000 high school students, Simon (2004) found several positive outcomes associated with schools' efforts to: communicate with parents about student experiences and behaviors; encourage parents to become engaged in volunteer activities; and recommend how parents can help students with homework. One outcome was increased parental volunteering at school activities and helping with at-home learning activities. These findings indicate that schools may be able to indirectly impact student outcomes by encouraging parents to become involved in school and home-based academic activities.

Limitations to Extant Research

While the extant literature on parental involvement and academic achievement indicates a positive association that trends toward better academic outcomes (Hill & Tyson, 2009; Hoover-Dempsey, & Sandler, 1997), there are several limitations. First, the majority of studies have used correlational, cross-sectional research designs. Second, parent involvement has generally been measured from the perspective of the parent or the child, but rarely from both. Measures of parent involvement may be more accurately reported by both parents and children, as parental behaviors may be perceived differently by each (Schlee, 2007). Wild (2001) found that students with high intrinsic motivation were more likely to perceive their parents' involvement as being supportive, stimulating, and structuring than students with low intrinsic motivation.

Hypotheses

The current study advances previous research by using multilevel modeling of data from three sources (i.e., adolescents, parents, and principals) across the early adolescent ecology (i.e., individual, family, and school) over time. Using these data, this study tests four hypotheses to assess relations between parent involvement and academic outcomes. First, we expected increased levels of parental guidance and parental support in sixth grade to be associated with higher levels of adolescents' self-reported academic achievement and school bonding at the end of eighth grade. Second, we expected both parent-reports and adolescent-reports of parental involvement in school activities to predict adolescents' academic achievement and school bonding. Third, we expected both parent and adolescent reports of parental involvement in non-school activities to predict school grades and school bonding. Finally, we conducted an exploratory analysis in which we examined associations among parental support, involvement in school and non-school activities, and adolescent outcomes. Despite limited research to support firm directional hypotheses, we sought to determine if relations among these variables were moderated by the schools' efforts to engage parents. More specifically, we expected stronger associations between our independent and dependent variables when schools made efforts to actively engage parents in school activities.

Method

The data for this study were drawn from the PROSPER Project (PROmoting School/ community-university Partnerships to Enhance Resilience; Spoth, Greenberg, Bierman, & Redmond, 2004). PROSPER creates local community teams that have the central goal of implementing evidence-based programs intended to support positive youth development and reduce early substance use as well as building the community's broader capacity to provide prevention services. PROSPER uses a randomized control design, involving 28 communities in Iowa and Pennsylvania. The data analyzed in this study come from a subset of adolescents who participated in the school survey, who remained in the same school district from sixth to eighth grade, and whose parents participated in the in-home component of the study. For each of these adolescents we also have data from his or her school principal. The analyses

discussed in this paper were based on data from multiple informants and different time points (see Figure 1).

Sample

A total of 607 adolescents were included in these analyses, for an average of 22 adolescents in each of 28 communities (Range: 8 to 50 students). Forty-seven percent were female. Adolescents were 88% White, 2% Black-African-American, 5% Hispanic, and 2% Native American; an additional 4% of participants self-identified as other ethnicities. A total of 1,071 mothers and fathers also provided data. Sixty-nine percent of adolescents had two parents participate in the study. Parents' ethnic distribution mirrors that of the adolescents. The majority of mothers and fathers, respectively, had a high school diploma (34.6%, 43.4%), some college education (49.6%, 39.6%), or a terminal degree (6.3%, 7.6%).

Measures

Several items that assessed youth and parent characteristics across multiple domains were collected during the surveys and in-home interviews. Items and data collection methods were adapted from the Iowa Youth and Families Project (Conger, 1989; McMahon & Metzler, 1998; Spoth, Redmond, & Shin, 1998). Table 1 reports the descriptive statistics for the variables used in the analysis and the response scales for each measure. All measures based on parents' self-report were created by averaging mothers' and fathers' responses.

School bonding—Four items ($\alpha = .81$) were used to gauge whether adolescents had formed positive feelings towards school. Examples of items in this measure include: "I like school a lot" and "I get along well with my teachers." Higher scores indicate positive school bonding.

School grades—Adolescents' self-reported grades were used to measure academic success. Students indicated what grades they "generally" get in school. Response categories included: *Mostly As* (90–100, 41% of students), *Mostly Bs* (80–90, 39% of students), *Mostly Cs* (70–80, 14% of students), *Mostly Ds* (60–70, 4% of students), or *Mostly lower than Ds* (<1% of students). Because few students reported usually getting Cs or lower, the variable was recoded into three levels: *Mostly As*, *Mostly Bs*, and *Mostly Cs or below*.

Parental guidance—Mothers' and fathers' responses from five items ($\alpha = .77$) were used to assess the guidance they provide their child for controlling their emotions, through shared problem solving and direct advice, and by setting clear boundaries. Example items include: "I sit down with my child and discuss his or her problems," "I discuss with my child ahead of time what the consequences or penalties will be if he or she does something wrong."

Parental support—Mothers' and fathers' responses from six items ($\alpha = .80$) were used to assess their support for their adolescents' healthy development by listening, giving compliments, spending time together, and showing love. Example items include: "I spend one-on-one time with my child to let him or her know I care," and "I show support when my child talks about what he or she wants to be when they grow up."

Parental involvement in child activities—Five parallel items were used to assess parental involvement in child activities, by youth report versus parental report. Two items specifically assessed parents' involvement in school activities in an average month: the frequency in which parents and children “work on homework or a school project together” and “talk about what’s going on at school.” The other three items assessed the frequency of involvement of parents in non-school activities and were also reported by parents and adolescents. The three activities included “doing something active together, like playing sports, bike riding, exercising, or going for a walk,” “working on something together around the house,” and “doing some other fun activity that you both enjoy.”

School outreach to parents—Middle school principals participated in a yearly interview to gather information about the school climate. As part of this interview, nine dichotomous Yes-No questions were used to assess school efforts to reach out to parents (e.g., teachers contacting parents prior to the start of the school year; social activities; home visits; and parent skills trainings). Principals' responses for the years in which the adolescent participants were in sixth (2003–2004), seventh (2004–2005), and eighth (2005–2006) grades were averaged to create a community-level measure of school outreach to parents during the middle school years. Five of the twenty-eight communities had more than one (but no more than three) middle schools in a given year, resulting in a total number of schools ranging from $n = 32$ to 33 in a given year. In these communities with multiple middle schools, principals' scores were aggregated to create a community-level average of school outreach to parents. Within the same community, middle school outreach to parents varied. Differences ranged from one to five outreach activities between principals in the same community ($M = 2.46$; Mode = 1).

Covariates—State of residence (Pennsylvania vs. Iowa), household income (parent report), and adolescents' gender were controlled in analyses. Yearly household income ranged from \$0 to \$457,444. Examination of the distribution revealed four extreme high-income outliers. These four responses were recoded to \$250,000 in order to control their leverage in regression analyses.

Preliminary Analyses

Three sets of preliminary analyses were run to confirm the representativeness of the sample, identify the best fitting measurement model, and confirm factorial invariance prior to testing the study hypotheses.

Representativeness of sample—Before testing our hypotheses we investigated for selection bias, as this paper only includes the youth whose parents' also participated in the in-home portion of the study, rather than the full sample. Youth in the in-home and in-school sample were compared to youth that participated only in the school survey on important demographic characteristics and other similar variables used in this study. Analyses were conducted with PROC MIXED or GLIMMIX in SAS version 9.2 at the community-level ($n = 28$). There were no differences on whether youth in each sample received a free lunch, parents' marital status, race, sex, or activities parents spent with their children. There was a significant difference between the samples on family cohesion (in-school only $M = 3.62$; in-

home $M = 3.68$, $p < .05$). Levels of school adjustment and bonding were significantly different between the two samples at Wave 4 (in-school only $M = 3.63$; in-home $M = 3.73$, $p < .05$).

Measurement model testing—Given that the current study had data on similar constructs from different reporters, we conducted a series of structural equation analyses using AMOS (v. 17; SPSS, 2009) to make sure we used the most psychometrically sound measurement model. Towards this end, we examined whether parental guidance and support (both measured by parents) were best measured as a single construct or as two different constructs. Results from structural equation models of these 11 items showed that it was best to consider the parental guidance and parental support as two separate, but correlated constructs.

Next, we conducted a parallel set of analyses to determine the best way to model parent-child activity involvement. We compared whether it was best to consider parental involvement with in-school and non-school activities separately, as reported by parents versus adolescents, or together. Results from structural equation models of the 10 items on parental involvement in child activities, as reported by parent or child, showed it was best to distinguish parent involvement with in-school activities from parent involvement with non-school activities. In addition, the model was further improved by separating the measures by reporter (see Table 1). The final measurement model used to test our hypotheses is illustrated in Figure 1.

Invariance—Lastly, prior to hypothesis tests, we tested the factorial invariance of our measurement model (predictors only) for state (PA vs IA) and experimental condition (control vs. intervention). One significant difference was found: the means for school bonding were different for adolescents in PA and IA, but the factor structure and beta loadings were invariant. As a result, state was included as a covariate in all analyses.

Analysis Plan

Our hypotheses were tested using multilevel regression analyses with two levels: individual students (Level 1), nested within communities (Level 2). Examinations of dependence due to community using a series of intraclass correlations (ICCs) for each dependent variable consistently revealed an insignificant amount of between-variance (Level 2, community-level variance) in our dependent variables. That is, students in the same schools were *not* more similar to each other than to students in other schools in terms of school grades ($ICC = .014$, $p = .18$) or school bonding ($ICC = .012$, $p = .22$). That said, we decided to conduct our hypothesis tests using a multi-level model for two reasons: the multi-level model best reflects the structure of our data, and we desired to test the significance of multiple cross-level interaction terms. Therefore, models that predicted school bonding and school grades included a random intercept. All multilevel models were analyzed using SAS PROC MIXED Version 9.2.

Our fourth hypothesis investigates the possibility that stronger associations between our independent and dependent variables (both at Level 1) occur when schools made efforts to actively engage parents (Level 2). Statistical testing for interactions followed those for main

effects. There were no changes to the significance of the other variables in the model once interactions were added, so the following results only present coefficients for final models.

Results

Descriptive Statistics

Table 2 reports descriptive statistics and Pearson correlations among all study variables. Almost 80% of youth reported receiving *Mostly As or Bs* in school, and students reported relatively high levels of school bonding ($M = 3.90$ on a 5-point scale). On average, principals reported using 3–4 parental outreach strategies in order to try to involve parents in school activities. Means on all other predictors, parental guidance, parental support, and parent involvement in child activities were all relatively high, indicating a fairly strong parent-child relationship during fall of the youth's sixth grade year. Bivariate correlations listed in Table 2 indicate that most independent variables were related to each other as expected, although parental guidance and parental support were not related to either academic outcome. In contrast, both parent and adolescent reports of parental involvement in school and non-school activities were significantly related to both academic outcomes with one exception: adolescent reports of parental involvement in non-school activities was unrelated to school grades.

Hypothesis Testing

Hypotheses 1–3—Multilevel models tested the relation of parental guidance, parental support, and parental involvement in school and non-school activities at sixth grade, as reported by parents and adolescents, to adolescents' grades and school bonding at the end of eighth grade. State of residence, household income, and adolescents' gender were controlled in analyses. In these analyses, adolescent and parent data are nested (Level 1) within community (Level 2). Results are reported in Table 3. Our first hypothesis, which was specific to the role of parental guidance and parental support in predicting school bonding and grades was not confirmed; neither parental guidance nor support in sixth grade significantly predicted unique variance in school bonding or students' academic performance at the end of eighth grade. Our second hypothesis, which tested the role of parental involvement in school-related activities was only partially confirmed: only adolescent reported parental involvement in school-related activities in sixth grade had a significant positive association with both school bonding and grades at the end of eighth grade. Our third hypothesis test found no significant relations between parent or adolescent report of parental involvement in non-school activities in sixth grade and academic outcomes at the end of eighth grade.

Hypothesis 4: Cross-level interactions—A multilevel model testing cross-level interactions between community-level school outreach to parents (Level 2 moderator) with school and non-school activity involvement (Level 1) in predicting adolescent academic outcomes (Level 1) revealed that principals' report of school outreach to parents significantly interacted only with adolescent-report of parental involvement in non-school activities to predict school bonding (see Table 3). The association between adolescent-reported parent involvement in non-school activities and school bonding was strongest in

communities that had high levels of outreach to parents; this association was weaker in communities that had moderate levels of outreach to parents, and almost non-existent in communities with low levels of parent outreach.

Discussion

Effects of Parental Involvement on Adolescent Outcomes

Results of the initial bivariate correlation analyses indicated somewhat mixed support for the first three hypotheses. Although there were significant correlations among the independent variables, only parental involvement in school and non-school activities were significantly associated with the dependent variables. Indeed, neither parental guidance nor parental support were correlated with school grades or school bonding. The results of the multilevel analyses mirrored those of the bivariate correlations. Beyond the effects of our covariates (i.e., household income and adolescent gender were significantly related to both outcomes), parental guidance and parental support were unrelated to grades and school bonding.

Differential Effects for Parent- versus Adolescent-report

The multilevel analyses offered partial support for our second hypothesis and no support for the third hypothesis. Specifically, the results indicated that none of the indicators as reported by the parent (i.e., parental guidance, parental support, and parent involvement in school and non-school activities) predicted their child's bonding to school or school grades from sixth to eighth grade. In contrast, adolescent reports of parental involvement in school settings at sixth grade were significantly related to higher grades and increased school bonding at eighth grade. Adolescent reports of parental involvement in non-school settings were unrelated to either academic outcome.

Finding that none of the parental reports reached statistical significance is noteworthy, especially since parent and adolescent reports were significantly and positively correlated at the bivariate level. Such an effect may reflect differences in the relative importance of adolescent versus parent perceptions in predicting adolescent outcomes. According to our findings, the adolescent's perception of his or her parents' involvement may be more important in predicting academic outcomes than the parents' perceptions of the same behaviors.

The finding that adolescents' reports of parent involvement in home-based school activities in sixth grade were found to be a significant predictor of school bonding and school grades in eighth grade is consistent with previous research on parental involvement. For example, Jeynes (2005) found that parents' frequency of attendance and volunteering at school functions had a consistent positive impact on academic success for adolescents. In addition, results of Hill and Tyson's (2009) meta-analysis suggested that parental involvement in middle school activities was associated with increased academic performance among young people. Interestingly, their analysis suggested relatively inconsistent effects for home-based as compared to other forms of involvement; whereas, our study suggested positive outcomes associated with homework help and school-related conversations between parent and student.

Somewhat surprising was the finding that reports of parent involvement in non-school activities were unrelated to school grades or school bonding, especially given that parental involvement in school activities was positively associated with those outcomes. Perhaps, in our sample, positive effects associated with parental involvement were domain specific. For example, parental involvement in school activities had positive effects on academic outcomes. In contrast, parental involvement in non-school activities may have had positive effects within those settings but on outcomes that we did not assess in this study. This possibility aligns with findings presented in Hill and Tyson's (2009) meta-analysis, in which they found differential effects on academic achievement depending on the domain and types of parental involvement in their children's activities.

School Outreach Efforts

The effects of school outreach were limited in this study, although there was evidence of one moderating effect. Adolescent reports of parental involvement in non-school activities more strongly predicted school bonding in schools with higher, as compared to lower levels of outreach efforts. Such findings suggest that the expected relation between parental involvement in non-school activities and academic outcomes may only present itself within the context of schools that actively reach out to parents.

Effects of Covariates

Although not a primary focus of this study, our findings related to gender and household income are noteworthy. Based on our analyses, there were strong positive relations between household income and both school bonding and school grades, such that academic outcomes improved as income increased. In addition, females in our sample were much more likely to report school bonding and better grades than males. Together, these findings suggest that males and adolescents from lower income families may be at increased risk for negative academic outcomes. As noted below, this has implications for policy, practice, and future research.

Limitations

The results of this study should be considered in light of a few limitations. First, several limitations were related to our measures. Indeed, all variables were drawn from self-report. Third-party independent assessments of some of these variables, such as students' academic grades or teachers' ratings of parental involvement, may have provided a more accurate assessment. In addition, some of our measures had reliabilities that were at the lower limits of acceptability. Having additional items to measure these constructs might have more accurately captured the variables. Finally, our school involvement construct primarily assessed home-based parental involvement. We may have obtained different findings had we assessed other forms of parent-school connections such as volunteering at the school or participation in school-based organizations (Hill & Tyson, 2009).

A second limitation was that our sample was restricted to adolescents from two states, and was drawn from families who were participating in the in-home component of the PROSPER project. Although there were few differences between these participants and those in the general PROSPER program, it is important to consider that families living in

communities that agreed to participate in PROSPER may experience unique opportunities and have access to unique resources not found in non-PROSPER communities.

Finally, the relatively small effect sizes and low number of significant findings might also be considered a limitation of this study. While the relations among independent and dependent variables were relatively consistent at the bivariate level, the sizes of the coefficients were rather small. In addition, few of our independent variables were significantly related to academic outcomes within the multi-level models. While this leaves open the possibility that the current findings are simple artifacts of sampling error, the fact that our findings related to parental involvement are consistent with previous research helps mitigate such concerns. Furthermore, some of the inconsistencies in our findings stem from differences across adolescent and parent reports. We believe that our ability to examine differences across adolescent and parent reports was one of the major strengths of this study, and its importance was underscored by the fact that the findings varied across reporters.

Despite these limitations, this study has numerous strengths including a strong theoretical foundation, generally sound measures, a longitudinal data collection design, and, as noted above, data from both parents and adolescents. As such, we believe that the study findings provide new insights into the influence of parents in the school domain of their early adolescent children.

Conclusions and Implications for Practice

These findings suggest several general conclusions and implications for practice. First, the findings underscore the importance of adolescent perceptions of parental involvement in school-related activities. A logical implication is that professionals who work with families should encourage parental involvement within their adolescents' middle and junior high schools. However, the type of parent involve should be negotiated by the parent and the adolescent to ensure that the adolescent perceives support. Our school involvement measure specifically focused on parents helping with homework and engaging their children in conversations about school. Schools could help facilitate such behaviors by creating effective means of communication between teachers and parents. As noted above, parent-teacher communication becomes more difficult as school-aged children enter larger, more impersonal middle schools. Students may benefit if their schools employ creative means to support parents in their efforts to be engaged in homework and other home-based academic activities.

Second, adolescents' academic outcomes may also benefit from better integration of academic and non-academic activities. Our findings suggest that involvement in non-school activities was associated with increased school bonding among schools that provided higher levels of outreach to parents. Perhaps increasing the availability of non-academic extracurricular activities and encouraging parental participation in such activities can help engage students in unique ways, and might encourage them to see school as providing more than just academic opportunities.

Third, another set of implications is related to demographic variables. While not a central focus of our paper, both income and gender were significantly related to our outcomes such

that male gender and lower income were associated with lower grades and decreased school bonding. Such findings suggest that school outreach efforts may be particularly beneficial to families with middle school boys. Furthermore, since these findings support the commonly held belief that poverty is associated with negative outcomes for children (Bradley & Corwyn, 2002; Brooks-Gunn & Duncan, 1997), it may also be important for schools to provide encouragement for parents with limited financial resources to become involved in school-related activities. Given tight budgets in recent years, many schools have been forced to find innovative ways to maintain programs and services for their students. Oftentimes, solutions involve fees for services that might discourage low-income families from participating in school-related activities. Given our findings, it seems important for communities to help schools provide free or low-cost, high-quality in-school and afterschool programs designed to involve parents and, thus, bolster academic success and school bonding. The growing “community school” movement appears to be one particularly effective way of rallying community resources to support all students and their families (see Blank, Melaville, & Shah, 2003)

Regardless of the socioeconomic background of the adolescent, the findings of this study underscore the importance of engaging middle school families in school-related activities. Of course, many questions still remain. For example, since adolescent perceptions were more influential than parent perceptions in the current study, future studies could examine how parental involvement is interpreted by adolescents, and how this might differ across gender, income, and other demographic variables. Researchers can also examine why parental and adolescent perceptions appear to have different effects on adolescent outcomes. In addition, it would be helpful to gain a better picture of the types of outreach activities that are most likely to connect parents to their children’s learning environments. Answers to such questions will complement the current findings and help encourage middle school students become better connected to their schools and, ultimately, thrive not only academically but also socially, emotionally, and physically.

Acknowledgments

The authors wish to acknowledge the National Institute on Drug Abuse (1 R01 DA013709-01A1) for their support of the PROSPER project. Support for the work on this article has also come from The Penn State Agricultural Experimentation Project Number 3826. The second author’s time was supported by a NIDA-funded NIH training grant (F31 DA024916-02).

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Figure 1.
Conceptual model of the moderated relationship between parental guidance, parental support, and parent and adolescent report of school and non-school activity participation.

Table 1

Results of structural equation models testing for the best fitting measurement model.

Structural Equation Models	<i>df</i>	χ^2	<i>p</i>	TLI	CFI	RNI	RMSEA
<i>Parental Guidance and Parental Support</i>							
Single construct	44	256	< .001	.912	.930	.930	.076
Separate constructs	44	894	< .001	.649	.719	.719	.152
Separate, correlated constructs	43	240	< .001	.917	.935	.935	.074
<i>Parent and Adolescent In-School and Non-School Activity Involvement</i>							
Single construct	35	715.03	< .001	.616	.701	.701	.153
Two constructs: In-school activities vs. Non-school activities	35	1066.84	< .001	.417	.546	.546	.188
Two constructs: Parent report vs. Child report	35	359.01	< .001	.817	.858	.858	.153
Four constructs, allow correlations within reporter: In-school parent-report; Non-school parent-report; In-school child-report; Non-school child-report	32	136.62	< .001	.938	.954	.954	.061
Four constructs allowing all correlations	29	85	< .001	.962	.975	.975	.048

Notes: Bold typeface text indicates the best fitting, selected model.

Table 2

Descriptive statistics and Pearson correlations for final scales.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Independent Variables										
1. Parental Guidance (Parent) ^a	--									
2. Parental Support (Parent) ^a	.734 ***	--								
3. School Activities (Parent) ^b	.293 ***	.319 ***	--							
4. Non-School Activities (Parent) ^b	.379 ***	.361 ***	.267 ***	--						
5. School Activities (Adolescent) ^c	.107 **	.098 **	.165 ***	.125 ***	--					
6. Non-School Activities (Adolescent) ^c	.125 ***	.118 ***	.100 **	.214 ***	.699 ***	--				
Moderator										
7. School Outreach to Parents (Principals)	.019	.027	.070 *	.002	-.032	-.070	--			
Dependent Variables										
8. School Bonding (Adolescent) ^a	.030	.020	.097 ***	.080 *	.195 ***	.123 ***		--		
9. School Grades (Adolescent) ^d	.026	.041	.091 *	.084 *	.115 **	.033	.038	.497 ***	--	
Covariate										
10. Household Income (Parent)	.010	.017	.022	-.022	.083 *	.064	-.011	.101 **	.208 ***	--
Mean	4.00	4.11	3.40	3.26	4.60	4.30	3.78	3.90	2.24	52,526
SD	0.46	0.42	0.59	0.45	1.27	1.37	1.53	0.87	0.74	33,617
Minimum	2.3	2.5	1	1	1	1	1	1	1	0
Maximum	5	5	4	4	6	6	1.33	5	3	250,000

Notes. The data reporter is identified in parentheses after each scale. Parents were directed to respond to questions specifically with the child in the study in mind. All parent variables were created by averaging across mothers' and fathers' responses.

^aNever True (1), Seldom True (2), Sometimes True (3), Usually True (4), Always True (5).

^bNever (1), Rarely (2), Sometimes (3), Often (4).

^cNot during the past month (1), Once during the past month (2), Two to three times during the past month (3), About once a week (4), A few times a week (5), Every day (6);

^dMostly As = 3; Mostly Bs = 2; Mostly Cs = 1.

* $p < .05$.

100' *d*

'10' *d*
**

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Table 3
Multilevel regression analyses of sixth grade predictors on eighth grade school bonding and grades.

	School Bonding				School Grades			
	B	SE	95% Confidence Intervals		B	SE	95% Confidence Intervals	
			Lower	Upper			Lower	Upper
Independent Variables: Fall 2003-6th grade								
Parent-Report								
Parental Guidance	.02	.12	-.20	.25	-.14	.26	-.66	.38
Parental Support	-.12	.13	-.37	.13	-.04	.29	-.60	.52
School Activities	.07	.06	-.05	.20	.01	.15	-.27	.30
Non-School Activities	.02	.09	-.14	.19	.33	.19	-.05	.71
Adolescent-Report								
School Activities	.11**	.04	.04	.19	.22**	.09	.05	.40
Non-School Activities	-.01	.04	-.08	.06	-.15	.08	-.30	.01
Moderator								
School Outreach to Parents (Principals)	.41	.25	-.10	.91	.73	.56	-.37	1.83
Parent-Report Interactions								
Parental Guidance x School Outreach	.05	.08	-.10	.20	-.18	.17	-.52	.16
Parental Support x School Outreach	-.09	.08	-.26	.07	-.10	.19	-.27	.47
School Activities x School Outreach	-.07	.04	-.15	.01	.002	.09	-.18	.19
Non-School Activities x School Outreach	-.05	.06	-.16	.06	-.13	.13	-.38	.12
Adolescent-Report Interactions								
School Activities x School Outreach	-.004	.02	-.05	.04	-.05	.06	-.16	.06
Non-School Activities x School Outreach	.04	.02	-.001	.09	.04	.06	-.06	.14
Covariates								
State: Iowa	-.03	.08	-.20	.15	.03	.18	-.32	.38
Household Income	.003**	.001	.001	.005	.01***	.003	.01	.02
Female	.26***	.07	.12	.40	.35*	.16	.04	.66

Notes.

* p .05.

State was coded: Pennsylvania (0), Iowa (1). Betas are unstandardized.

.001

d
.01

d

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