Are Small Schools and Private Schools Better for Adolescents' Emotional Adjustment?

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School organization has been examined largely for its effects on academic achievement. Insufficient attention has been devoted to the school as a sociological context that influences adolescents' mental health. It is often asserted that small schools and private schools offer a unique sense of community that is conducive to adolescents' emotional adjustment, but empirical evidence of these mental health benefits is sparse. This study used the National Longitudinal Survey of Adolescent Health (Add Health) to determine whether adolescents are protected in small and/or private schools, examining depression, suicidality, and violent dispositions. The results refute claims that students who attend these types of schools have better emotional adjustment than do those who attend large and/or public schools. In addition, the results suggest that small schools and private schools may actually be detrimental to adolescents' mental health. That is, net of selection effects, small schools are associated with higher levels of depression and a greater likelihood of attempted suicide for male students. In addition, private schools are associated with increased odds of the use or threat of use of weapons by both male and female students.

Adolescents spend approximately half their waking hours in the school environment. During this time, they are exposed to teachers, peers, programs, and policies, all of which are potentially powerful socialization agents. Given that adolescence is a critical period of identity development (Erikson 1968), these daily influences should be examined for their impact on emotional well-being. However, research has focused on the effects of school organization on academic achievement. Considerably less is known about the influence of school characteristics on adolescents' mental health.

Unfortunately, the emotional stability of adolescents has come into question. Public concern over adolescents' mental health is high, in part, because of rising rates of suicide and the unprecedented lethality of violent incidents involving adolescents (Centers for Disease Control and Prevention, CDC, 1995; Koop and Lundberg 1992). The public seems to share the assumption that schools are influential to adolescents' emotional development (Rose and Gallup 1999). Tragedies of violence and suicide are often anecdotally linked to the characteristics of schools that foster alienation, exclusion, and anarchy. Consequently, schools are being evaluated, not only for their students' intellectual accomplishments, but for their ability to promote sound social and psychological dispositions. However, it is not clear exactly how the latter can be accomplished.

A common assumption is that adolescents receive a superior experience, intellectually and interpersonally, in private schools and in small schools. Private schools and small

schools approach school organization from different vantage points (funding source versus size) and thus are distinct organizational strategies. However, there are similarities in the social contexts they are perceived to offer. Through a shared value system (homogeneity) and/or small size, these schools are thought to produce a tight-knit community, which, in turn, offers high levels of social support and social control to its members. Social support and social control are believed to be important for individuals in all communities, particularly for adolescents' academic and social development (Amato 1989; Baumrind 1971, 1991; Weiss and Schwartz 1996).

The perceived superiority of private schools has received support from Coleman's (1990) finding of higher achievement in private schools. In addition, Coleman (1990) and Garbarino (1980) made compelling theoretical arguments for small schools. These arguments have been supported by a few studies that have empirically linked small schools to lower rates of crime and misconduct (McPartland and McDill 1976; Plath 1965). Political conservatives have often supported the prevailing view that private schools and small schools are ideal and thus have proposed voucher systems for school choice. Proponents of liberal ideals have not been as quick to favor broad types of schools, but instead have proposed to improve on existing schools. In many instances, these proposals have been to create schools within schools (Lee and Smith 2001) to simulate the characteristics of small and/or private schools. While liberals and conservatives debate exactly how to reform the school system, their proposals share a preference for the qualities of small schools and private schools. These views stem from sound research that has linked these types of schools to academic achievement. However, evidence that small and/or private schools are conducive to emotional adjustment has been sparse. Coleman's findings for private schools did not address mental health, only academic achievement. In addition, most studies of school size were conducted more than 25 years ago; had small samples; and did not examine pressing public health issues, such as suicide and violent dispositions.

These political and scholarly dialogues raise a number of unanswered questions, namely, Are private schools better not only for academic achievement but for mental health? Are small schools associated with broad indicators of emotional well-being? More specifically, are small and/or private schools better able to create a sense of social acceptance or uniquely to benefit marginalized students? The study presented here sought to address these issues, using data from Add Health[1] to examine three indicators of adolescents' emotional adjustment: depression, suicidality, and violent dispositions. Of primary interest was whether broad variations in types of schools (private versus public schools and small or medium versus large schools) are associated with these outcomes when background factors are controlled.

ADOLESCENTS' MENTAL HEALTH

Increases in suicide and lethal violence among adolescents have brought the psychological well-being of adolescents to the forefront. Suicide rates have risen considerably in recent decades (CDC 1995; Curran 1987; Guyer and McDorman 1998). This dramatic rise has not been seen for any other age group, suggesting that adolescents, in particular, are experiencing undue distress. Although rates of violence and homicide among adolescents have declined in the past few years (Butterfield 1996), the lethality of violent exchanges between adolescents is considerably higher than it was previously (CDC 1995). In addition, repeated and profound tragedies, such as the shootings at Columbine High School, have made it difficult to gloss over lethal violence among adolescents simply because it is a rare event.

An extensive body of research has detailed biological, psychological, and sociological correlates of adolescents' destructiveness (whether internally or externally directed). Of the sociological risks, family, peer, and neighborhood influences have been found to be strong predictors. Adolescents who experienced family disruption, poverty, physical and emotional neglect, and abuse are all at an

increased risk for poor mental health, as indicated by depression, eating disorders, substance use, suicide, and violence (Compas 1987; Katz and Marquette 1996; King et al. 1997; Paschall, Ennett, and Flewelling 1996; Reese and Roosa, 1991). Isolation and poor peer relations are also important strains that have been linked to distress and destructive behavior (Brage 1995; Garnefski and Okma 1996). Finally, neighborhood characteristics have been found to play an important and independent role in promoting adolescents' well-being. Community characteristics, such as residential stability and socioeconomic composition, have been linked to dropout rates, children's behavioral problems, and risk-taking attitudes and aggressive behavior among adolescents (Brooks-Gunn et al. 1993; Duncan, Brooks-Gunn, and Klebanov 1994; Kowaleski-Jones 2000).

SCHOOL CHARACTERISTICS AND ADOLESCENT OUTCOMES

In their landmark study of equality and achievement in education, Coleman et al. (1966) examined, among other things, the influence of family, peer, and school characteristics on adolescents' achievement. An extensive array of school characteristics were examined: school facilities and curriculum (e.g., school size, extracurricular activities, and books available) and teachers' characteristics (e.g., years of experience, level of education, and scores on vocabulary tests). Coleman et al.'s counterintuitive conclusion was that while the effects of family and peers are considerable, school characteristics account for a small amount of the variation in academic achievement among adolescents. The implication was that investments in family and peer-group relations are far more important than are investments in schools. Although these findings have been, and still are, controversial, Tienda and Grusky (quoted in Coleman 1990:ix) noted that "they have withstood the test of time and replication."

Coleman et al.'s (1966) work served to pummel claims of the significance of schools and likely dampened interest in the subject. However, the relevance of school characteristics remains debatable. In later work, Coleman (1990), presented evidence that achievement was higher in private (specifically Catholic) schools even after the selective processes that give public and private schools different student bodies were controlled. A considerable body of work has supported Coleman's findings of greater academic success for students who attend private Catholic schools (Bryk et al. 1984; Hoffer 1986; Lee 1985; Lesko 1988). The greater success of Catholic schools has been attributed to higher standards and greater control and discipline (Coleman 1990), a standardized curriculum, and religious ideology (Bryk, Lee, and Holland 1993). Others have more generally argued for the value of private schools (not just religious private schools), suggesting that private schools facilitate linkages among organizational participants (Bryk and Driscoll 1988) and foster a greater sense of community (Coleman and Hoffer 1987). It has also been asserted that private schools are superior because they are more responsive to parents and students (their funding source) than are public schools, which cater to political constituents (Chubb and Moe 1990). However, none of these studies directly examined the relationship between attending a private (either religious or nonreligious), rather than a public, school and adolescents' mental health.

Coleman (1990) found small effects for school size. However, he remained theoretically committed to the small school, criticizing large schools because of the inherent barriers to familiarity among students, teachers, and parents. Despite Coleman's lack of empirical support for his argument, others have found links between small schools and academic achievement and consequently have advocated for small schools or the creation of schools within schools (Lee and Smith 2001; Lee, Smith, and Croninger 1997). In addition, Garbarino (1980) provided a compelling case that small schools offer a broad array of benefits to students. In his review article, he noted that small schools have been empirically associated with lower levels of crime and school misconduct (see McParland and McDill 1976; Plath 1965). Garbarino argued

that small schools promote character development because they are more successful at drawing students into active participation in extracurricular activities. He offered empirical evidence that students in small schools, especially academically and socially marginalized students, are more likely to participate in school activities (Barker and Gump 1964; Grabe 1975; Willems 1967). Thus, students in small schools, even marginal students, are active participants, whereas students in large schools are "superfluous" spectators (Garbarino 1980). Garbarino's contribution was not just that he revisited school size, but that he examined an array of adolescent outcomes, viewing adolescents' well-being as more than academic achievement. However, more empirical evidence on the effects of school size is needed. Most research on school size is dated and has limited measures of mental health. Essentially, it is not known how school size currently relates to broad measures of adolescents' well-being, such as suicide, depression, and violence.

As I discussed earlier, small and/or private schools are thought to have specific advantages relative to their counterparts (e.g., greater control, standardized curriculum, good for marginalized students). However, these specific arguments for small schools and private schools can be connected to broader theoretical perspectives in sociology. Urban ecologists, such as Wirth (1939) and Park and Burgess (1925), offered theories of urbanization that have logical parallels with current perspectives on school organization. Likewise organizational theorists like Weber (1947) have lent credibility to arguments for small schools and private schools. All these theorists have discussed the negative impact of the growth of cities and organizations. Wirth argued that with urbanization, cities grow in size, density, and heterogeneity. These characteristics produce a "culture of urbanism" in which the social fabric of the community begins to unravel. In large, diverse cities, the development of personal relationships is inhibited. With more anonymity, social control is also reduced, leading to increased deviance. Finally, diversity robs people of a shared value system that is important for mental health and order. Consequently, with the growth of cities comes anomie and deviance. Likewise Weber argued that as organizations grow, interactions become more formal and less meaningful.

In that the school is a microcosm of the social world and a salient "community" for adolescents, these theories offer a useful organizing framework for studying the characteristics of schools. Perhaps as schools have become larger and more diversified, adolescents have suffered emotionally, as well as academically, in the same way that Wirth (1939) and others posited that adults would be harmed by living and working in large, diverse communities. With the study of schools, the unit of analysis is different, but the principal argument regarding the negative consequences of large and diverse cultures is the same. Essentially, the diverse culture of the public school and the size of the large school would reduce the sense of shared purpose and community among their students. Thus, students would likely suffer from a lack of meaningful personal relationships and social integration. Durkheim (1951) linked the lack of social integration to suicide, and other researchers have linked isolation to depression and suicide among adolescents (Brage, 1995; Negron et al. 1997). In addition, because large and/or public schools have less of a shared value system and offer more anonymity, they reduce important elements of social control. Thus, deviance may be more common (Hirschi 1969), and, consequently, violent dispositions may translate into action (the use or threat of use of weapons) at a higher rate in large schools and public schools than in small and private schools. Thus, in applying theories of urbanization and organizations, one could suggest that small schools and private schools would be psychologically beneficial to students because they produce social support and social control, which promote emotional adjustment among adolescents.

Although Wirth's (1939) theory of urbanization gained much popularity, empirical support for the theory has been mixed. Consequently, counterarguments have emerged. An alternative is the subcultural perspective (Fischer 1975). Fischer saw the

growth of cities in a more positive light. He noted that large populations are more accepting of diversity. Consequently, those who do not fit into the mainstream can form subcultures, rather than experience isolation. Although these subcultures (e.g., gangs) could be deviant, they provide social support and social control for the most marginal members of the community. In a large, heterogeneous environment, adolescents, who are concerned with social acceptance, may benefit from the ability to form subcultures and may have a wider variety of friendship options that may reduce their risk of isolation. Thus, it is possible that by reducing isolation, these organizational structures may actually reduce external (violence) and internal (depression and suicide) manifestations of distress among adolescents. The empirical and theoretical arguments in favor of small and/or private schools are strong and are the prevailing view. However, the subcultural perspective provides an important opposing viewpoint to consider, particularly since arguments against small and/or private schools have largely been economic, rather than sociological.

THE STUDY

The study presented here sought to determine whether private schools and small schools offer a mental health advantage for students, net of selectivity differences in their student populations. It also examined whether marginalized students uniquely benefit in these environments.

Data

The present study used the National Longitudinal Study of Adolescent Health, collected as part of the Add Health Project (a large school-based study of the health-related behaviors of adolescents in Grades 7–12). Add Health is a nationally representative probability-based survey that collected information from adolescents, their parents, and school administrators. It contains measures of a wide variety of attitudes and health behaviors, such as depression, substance use, diet, suicidality, and violence. It also seeks to identify correlates of such beliefs and behaviors and thus examines family, peer, school, and community characteristics as well. While some data were collected using paper-and-pencil self-administered questionnaires, computer-assisted interviewing was used to increase the respondents' comfort level in providing sensitive information, such as suicidal ideation and attempts. The Add Health study is a longitudinal panel study, conducted by the Carolina Population Center, University of North Carolina at Chapel Hill, between September 1994 and August 1996, that interviewed adolescents in 1994–95 and reinterviewed them approximately one year later (in 1996). The present study used Waves 1 and 2, which provide information on approximately 13,000 adolescents. Using both waves, this study examined the effects of school characteristics at Time 1 on adolescents' mental health outcomes at Time 2, controlling for background factors and mental health at Time 1.

Dependent Variables

Three dependent variables are analyzed in this study, all of which were drawn from Wave 2: depression, suicidality, and violence. Depression was measured using the "feelings scale" questions from the survey. Adolescents were asked 19 questions that addressed such issues as how often they felt sad, depressed, lonely, fearful, a lack of appetite, and distracted. A factor analysis (principal factors, varimax orthogonal rotation) of the 19 variables produced a single factor. The regression scoring method was used to create a measure of depression from these 19 items (alpha = .88).

Suicidality was measured as a dichotomous variable of attempted suicide. Adolescents who reported that they had seriously thought about suicide in the previous year were asked, "In the past year how many times have you attempted suicide?" These responses were dichotomized into those who did (coded 1) versus those who did not (coded 0) attempt suicide in the past year. Although suicidal behaviors are not equivalent to actual completed suicides, there is clear overlap. Bloch (1999) argued that the attempt is extremely

self-destructive and should be of concern. Moreover, previous attempts correlate strongly with later completed suicides (Garland and Zigler 1993); a history of suicidal attempts is the best predictor of future attempts, as well as completed suicides (Lewinsohn, Rohde, and Seeley 1996).

Given the concern with the lethality of violent incidents, violence was measured by a question about weapon use/threat. Adolescents were asked, "How often in the past 12 months did you use or threaten to use a weapon to get something from someone?" This variable was recoded as a dichotomy to differentiate those who had used or threatened to use a weapon in the past year (coded 1) from those who had not (coded 0). This measure also helps to distinguish those adolescents who use or carry weapons entirely for self-defense from those who use weapons for personal gain or intimidation.

Although no one outcome measure offers a complete picture of adolescents' adjustment, the National Institute of Mental Health suggests that depression, suicidality, and violence are all important indicators of mental health. In addition, these three outcome measures provide a view of mental health from a variety of vantage points, which is necessary because research has consistently revealed that males and females often exhibit distress in different ways. Pearlin (1989) found that females tend to internalize their stress and become depressed, while males tended to externalize their stress and to become aggressive (see also Aneshensel, Rutter, and Lachenbruch 1991). Thus, it is important to examine both internal and external manifestations of distress. Finally an examination of multiple indicators of mental health offers a more complete assessment than can be obtained from any one outcome measure.

Independent Variables

School Characteristics In Wave 1, information on school organization was obtained from school administrators. Broad school types were derived from these administrative data and attached to the adolescents' individual records. School sector (public versus private) was operationalized by three dummy variables: public schools, private religious schools (predominately Catholic or Jewish), and nonreligious private schools. This study focused on the benefits of private versus public schools in general. However, much previous work on school type has emphasized the benefits of Catholic schools specifically and has drawn attention to the value of a religious/moral ideology in private schools (Bryk et al. 1993). Thus, religious private and nonreligious private schools were examined separately but in reference to outcomes for adolescents attending public schools.

School size was measured by three dummy variables: small schools (those with 400 or fewer students), medium schools (with 401–1,000 students), and large schools (with 1,001–4,000 students. This is the only information available from the administrators on school size. However, school size measured as a continuous variable does not appear to be needed. Garbarino (1980) argued for a threshold effect, stating that school size is not particularly relevant when measured as a continuous variable, but should be dichotomized as schools with more than or less than 500 students. He noted that the negative effects accrue at about 500 students, but additional increases are largely irrelevant. While Garbarino argued for a threshold of approximately 500 students, schools with fewer than 400 students will have to approximate Garbarino's definition of a small school. Whereas Garbarino argued that school size needs to be dichotomized only into small and large schools, Lee and Smith (2001) distinguished among small, medium, and large schools, finding that medium-sized schools were optimal in some instances. Thus, the present study examined student outcomes for small and medium schools relative to large schools.

Controls Given that the various types of schools are likely to have different student bodies in terms of socioeconomic status (SES) and family relations, several variables were included in the analyses as controls. Measures of family SES were parent's education (an ordinal 6-point scale measuring the highest level of education attained for the resident

parent or parents) and household income (in thousands of dollars). Household income was recoded into five dummy variables: $15,000 or less, $16,000–$30,000, $31,000–$50,000, $51,000–$80,000, $81,000 or more, and missing income; $31,000–$50,000 was the reference category.

Whether the respondents came from intact families with both biological parents or alternative family forms (e.g., divorced, never married, remarried) was measured. The quality of their relationships with their families was measured by a scale created from three items. Adolescents were asked their level of agreement (on a scale of 1–5) with the following statements: "My parents care about me," "my parents understand me," and "my family pays attention to me" (alpha = .68). An additional measure captured the time spent together, rather than the quality of family relationships; it asked the respondents how often during the week their mothers or fathers were at home with them at dinner time (0–7 nights a week). Finally, a measure of parental independence giving was included. On a scale of 0–7, the respondents were asked a series of questions about whether their parents let them make their own decisions on a variety of issues, ranging from curfew to clothing; higher scores indicate greater independence giving.

Community-neighborhood influences were also examined. Three dummy variables were used to identify whether the respondents resided in urban/central city, rural, or suburban areas (suburban was the reference category). Two other dummy variables measured the primary parent's perceptions of whether drugs or drug dealers and crime were a problem in their neighborhoods (1 = not a problem, 0 = a problem to some or a large extent).

Since private schools select for families with higher SES, but private religious schools likely select for adolescents or families with strong religious beliefs and religiosity has been linked to adolescents' behavior, the respondents' religiosity was included in the analysis as a control. This measure was derived from a question that asked the adolescents how important (on a scale of 1–4) religion was to them (higher scores denote greater religiosity). A dummy-coded measure of minority status (1 = black or Hispanic, other = 0) and the age of the adolescent, measured as a continuous variable, were also included. In addition, grade configuration of the school was measured by four dummy variables: elementary schools (pre-K/K–8), middle schools (various combinations of Grades 5–9), high schools (various combinations of Grades 6–12), and the reference category of schools with no grade divisions (pre-K/K–12).

With regard to peer relations, the respondents were asked, on a 5-point scale, how much their friends cared about them and how socially accepted they felt. In the analysis for weapon use/threat, one additional control was included: the availability of guns in the home. The respondents were asked, "Is a gun easily available to you in your home (1 = yes, 0 = no). This measure was included to determine the role of access, net of strain, in weapon use/threat. The controls help to account for known selectivity differences in broad types of schools. However, it is possible that there are selectivity differences in mental health alone. Perhaps the most well-adjusted families and children seek certain types of school environments. To account for selectivity differences in mental health, depression, suicidality, and weapon use/threat at Time 1 were included in the predictive models as controls.

Characteristics of the Sample

Table 1 presents the means and standard deviations of the variables for the total sample and separately for males and females. As expected from regression scoring, the average depression score at Time 2 was approximately 0 (-.042). At Time 2, approximately 4 percent of the respondents reported having attempted suicide in the past year and 4 percent reported having used or threatened to use a weapon in the past year. Consistent with previous research, the female respondents reported higher levels of depression and suicide attempts, and the male respondents reported higher levels of weapon use/threat (Time 2 only). In examining the data from Wave 1, one can see the distributions of *all* the respondents by school sec-

Table 1. Mean Estimates, Standard Deviations, and Sample Sizes (in parentheses) for Mental Health Measures and Background Characteristics: Add Health 1994–96

	Total Sample		Males		Females	
	Mean	*SD*	Mean	*SD*	Mean	*SD*
Outcome Measures						
Depression, Time 2	-.042 (13,500)	.963	-.190 (6,575)	.863	.108 (6,925)	1.060
Suicide attempt, Time 2	.037 (13,568)	.188	.021 (6,612)	.123	.052 (6,956)	.230
Weapon use/threat, Time 2	.035 (13,502)	.183	.046 (6,570)	.229	.023 (6,932)	.175
School Organization						
Sector						
Public school	.934 (13,388)	.248	.930 (6,527)	.250	.939 (6,861)	.245
Private religious school	.051 (13,388)	.220	.056 (6,527)	.219	.046 (6,861)	.204
Private nonreligious school	.015 (13,388)	.121	.014 (6,527)	.113	.016 (6,861)	.120
Size						
Small (1–400)	.192 (13,388)	.392	.189 (6,527)	.389	.195 (6,861)	.401
Medium (401–1,000)	.467 (13,388)	.500	.470 (6,527)	.498	.463 (6,861)	.401
Large (1,001–4,000)	.342 (13,388)	.474	.342 (6,527)	.471	.342 (6,861)	.473
Background Factors/Controls						
Depression, Time 1	-.040 (13,482)	.956	-.188 (6,563)	.836	.109 (6,919)	1.027
Suicide attempt, Time 1	.040 (13,568)	.195	.024 (6,612)	.157	.056 (6,956)	.232
Weapon use/threat, Time 1	.051 (13,568)	.220	.049 (6,612)	.238	.053 (6,956)	.219
Age	15.564 (13,567)	1.633	15.635 (6,612)	1.645	15.492 (6,955)	1.613
Gradec onfiguration						
Pre-K/K–8	.039 (13,568)	.193	.039 (6,612)	.192	.039 (6,956)	.191
Pre-K/K–12	.047 (13,568)	.211	.046 (6,612)	.207	.047 (6,956)	.218
Middle school	.297 (13,568)	.456.	294 (6,612)	.459	.295 (6,956)	.462
High school	.620 (13,568)	.485	.621 (6,612)	.485	.619 (6,956)	.486
Minority (black or Hispanic)	.302 (13,568)	.459	.309 (6,612)	.459	.297 (6,956)	.457
Parent's education (1–6)	3.308 (12,903)	1.170	3.331 (6,275)	.926	3.285 (6,628)	.935

continued

Table 1. Continued

	Total Sample		Males		Females	
	Mean	*SD*	Mean	*SD*	Mean	*SD*
Household income						
$15,000 or less	.128 (13,568)	.334	.126 (6,612)	.345	.129 (6,956)	.345
$16,000–$30,000	.164 (13,568)	.370	.164 (6,612)	.362	.163 (6,956)	.366
$31,000–$50,000	.213 (13,568)	.409	.217 (6,612)	.412	.209 (6,956)	.432
$51,000–$80,000	.200 (13,568)	.394	.203 (6,612)	.411	.197 (6,956)	.395
$81,000 or more	.090 (13,568)	.287	.089 (6,612)	.282	.091 (6,956)	.281
Missing income	.206 (13,568)	.404	.201 (6,612)	.406	.211 (6,956)	.405
Neighborhood drug free	.532 (13,568)	.500	.534 (6,612)	.500	.531 (6,956)	.500
Neighborhood crime free	.547 (13,568)	.500	.556 (6,612)	.497	.548 (6,956)	.515
Urban residence	.328 (13,416)	.470	.327 (6,530)	.463	.320 (6,886)	.470
Rural residence	.279 (13,568)	.448	.275 (6,612)	.447	.282 (6,956)	.447
Intact family	.538 (13,568)	.499	.542 (6,612)	.504	.533 (6,956)	.501
Family support (3–15)	12.344 (13,452)	1.988	12.444 (6,556)	1.945	12.243 (6,896)	2.021
Parental time (0–7)	4.869 (13,347)	2.430	4.901 (6,517)	2.404	4.837 (6,830)	2.460
Parental independence giving (0–7)	4.993 (13,324)	1.580	5.002 (6,509)	1.602	4.983 (6,815)	1.547
Social acceptance (1–5)	4.077 (13,519)	.772	4.150 (6,593)	.757	4.004 (6,926)	.780
Friends care (1–5)	4.242 (13,477)	.794	4.105 (6,568)	.839	4.380 (6,909)	.736
Importance of religion (1–4)	2.978 (13,568)	1.089	2.902 (6,612)	1.104	3.055 (6,956)	1.054
Gun available in home	.219 (13,439)	.413	.224 (6,562)	.421	.213 (6,877)	.395

tor/size (which were approximately the same for the male and female respondents): 7 percent attended private schools (5 percent attended private religious schools, and 2 percent attended nonreligious private schools), and 19 percent attended small schools. Additional analyses revealed that attending a private school is not synonymous with attending a small school. The correlation between private school attendance and school size is significant, but far from perfect (r = - 32). Of the respondents in private schools, approximately 57 percent attended small schools, 33 percent attended medium-

sized schools, and 10 percent attended large schools.

Analyses

The Add Health data collection was designed as a cluster sample in which clusters were sampled with unequal probability. Because of this complicated sampling design, the data were analyzed using STATA, a special survey software package that is specifically designed to handle observations that are not independent and identically distributed. Using more common software packages, such as SAS and SPSS, would produce biased estimates and standard errors (see Chantala and Tabor 1999). It has been suggested that it is preferable to analyze the effects of school type and size using hierarchical linear modeling (HLM; Bryk and Raudenbush 1992), but unfortunately, HLM is not possible with STATA's survey estimation techniques (techniques necessary for cluster samples with unequal probability). However, Chantala and Tabor (1999) suggested that the design-based adjustments available in STATA are preferred to the model-based designs available in packages like SAS. Thus, the survey estimator commands were used in STATA to apply weights for region, schools, and individual students. These survey estimators effectively adjust for clustering, stratification, and weighting to ensure a nationally representative sample.

The analysis begins with an examination of the variables, social acceptance and friendship supports as potential mediating factors in the relationship between school size and sector and mental health outcomes. Next, it focuses on multivariate models (linear and logistic regressions) that predict adolescents' mental health at Time 2 (depression, suicidality, weapon use/threat). A sequential modeling procedure was used in which the dependent variables were first regressed on background factors. Next, the dependent variables were regressed on school size and sector with background factors as controls. Finally, models of mental health outcomes were run with background factors, school sector and size, and the measures of social acceptance and friendship supports included. Since research has consistently revealed gender differences in the outcome measures of interest, all multivariate models were run separately for males and females.

RESULTS

Social Acceptance and Friendship Supports

Several scholars have argued that small schools and private schools produce the perception of social acceptance and community (Coleman 1990; Coleman and Hoffer 1987; Garbarino 1980). However, it is also possible that social support is not a product of the school environment, but an artifact of family background characteristics, which are known to be associated with the type of school students attend. Higher SES families (who are more likely to have children in private schools) are likely to have children with more positive perceptions of their acceptance among peers. Currently, little to no empirical evidence is available regarding the assertion that small and/or private schools foster social relationships. Thus, a preliminary analysis was conducted to identify the relationship between school size and sector and measures of social support when background factors were controlled.

As expected, family background factors—family support, parents' education, and parents' independence giving—are all consistently positive influences on adolescents' perceived social acceptance and friendship supports (see Table 2). However, school characteristics also play a role in social acceptance and friendships, although in a more complicated pattern than expected. Females who attend private schools (religious and nonreligious) report more supportive friendships than do those who attend public schools. However, nonreligious private schools are associated with reduced social acceptance for males and females. In addition, small schools are associated with lower levels of perceived friendship support among females. Thus, school size and sector do appear to influence male and female social relationships but not in the overwhelmingly positive way that has been widely depicted (Coleman and Hoffer 1987; Garbarino 1980).

Table 2. Coefficients and Standard Errors (in parentheses) for Linear Regressions of Social Acceptance and Friendship Support on Types of Schools, Controlling for Background Factors: Add Health 1994–96

	Males		Females	
	Feel Socially Accepted	Friendship Supports	Feel Socially Accepted	Friendship Supports
Type of School				
Sector				
Private religious	.008	.020	-.007	.112*
	(.038)	(.057)	(.052)	(.050)
Private nonreligious	-.163**	.020	-.127***	.112**
	(.059)	(.053)	(.032)	(.043)
Public	—	—	—	—
Size				
Small school	-.008	.001	.005	-.126**
	(.054)	(.047)	(.088)	(.050)
Medium school	-.002	.034	-.016	-.045
	(.031)	(.035)	(.033)	(.028)
Large school	—	—	—	—
Background Controls				
Age of respondent	-.016	.004	-.013	-.023*
	(.009)	(.012)	(.013)	(.009)
Grade configuration				
Pre-K/K–8th grade	-.034	-.181	.048	-.110
	(.061)	(.094)	(.076)	(.078)
Middle school	-.017	-.056	-.010	-.043
	(.060)	(.065)	(.081)	(.063)
High school	-.036	.010	-.095	-.016
	(.064)	(.064)	(.091)	(.059)
Pre-K/K-12	—	—	—	—
Minority (black, Hispanic = 1)	.077**	-.073*	.088**	-.120***
	(.028)	(.030)	(.030)	(.028)
Intact household	.010	.006	-.025	.023
	(.023)	(.025)	(.024)	(.024)
Parents' education (1–6)	.036*	.066***	.029	.054***
	(.016)	(.016)	(.017)	(.014)
Household income				
$15,000 or less	.049	.069	.049	.034
	(.042)	(.048)	(.039)	(.052)
$16,000–$30,000	.005	-.050	.036	.024
	(.044)	(.048)	(.040)	(.041)
$31,000–$50,000	—	—	—	—
$51,000–$80,000	-.013	.027	.068	.056
	(.039)	(.047)	(.038)	(.039)

Continued

Table 2. Continued

	Males		Females	
	Feel Socially Accepted	Friendship Supports	Feel Socially Accepted	Friendship Supports
$81,000 or more	.031	.083	.035	.057
	(.047)	(.047)	(.055)	(.040)
Missing income	.017	-.016	.007	-.014
	(.035)	(.041)	(.040)	(.036)
Neighborhood drug free	.002	.001	-.048	.027
	(.028)	(.027)	(.028)	(.025)
Neighborhood crime free	.012	.002	-.027	.035
	(.027)	(.030)	(.025)	(.196)
Urban residence	-.007	.006	.068*	-.058
	(.031)	(.032)	(.030)	(.030)
Rural residence	-.018	.056*	-.004	.030
	(.033)	(.029)	(.028)	(.030)
Family support (3–15)	.100***	.141***	.125***	.100***
	(.009)	(.012)	(.007)	(.007)
Parent(s) at home (0–7)	.012*	.001	-.004	.004
	(.006)	(.006)	(.006)	(.005)
Parental independence giving (0-7)	.025**	.031***	.025**	.027**
	(.008)	(.009)	(.009)	(.009)
Importance of religion (1–4)	.004	.020	.025*	-.010
	(.016)	(.013)	(.013)	(.013)
N	6,002	5,994	6,302	6,296
R^2	.083	.128	.123	.104***

*** $p <= .001$, ** $p <= .01$, * $p <= .05$.

Mental Health Outcomes

Depression Table 3 reveals the sequential modeling procedure used for the dependent variable, depression at Time 2. The results reveal that attending a private school has no effect on the depression levels of males, but the full model reveals that males who attend small schools have higher levels of depression than do those who attend large schools. School size and sector have no effect on the depression levels of females.

In addition to school organization, the background control variables reveal some interesting associations with depression. As expected, family background variables are important predictors in the models for males and females. For males, supportive family relationships, parents' education, and parental independence giving reduce levels of depression. For females, family support, parents' education, and intact families reduce levels of depression. Feeling socially accepted is significantly associated with a reduction in depression for both males and females, which is consistent with numerous reports of the salience of the peer group for adolescents (Blyth, Hill, and Thiel 1982; Dornbusch, Herman, and Morley 1996). Minority males exhibit higher levels of depression than do white males. Although some measures of SES are associated with a reduction in depression, neighborhood and community characteristics are unrelated to levels of depression among adolescents. Finally, males who attend high schools and females who attend middle schools and high schools have higher levels of depression than do those who attend schools that are not grade segregated.

Table 3. Coefficients and Standard Errors for Linear Regressions of Depression on School Characteristics and Background Factors for Males and Females: Add Health 1994–96

	Males				Females			
	Model 1		Model 2		Model 3		Model 4	
Parameter	Coeff.	*SE*	Coeff.	*SE*	Coeff.	*SE*	Coeff.	*SE*
School Characteristics								
Sector								
Private religious	-.011	(.040)	-.010	(.040)	.003	(.064)	.003	(.067)
Private nonreligious	.074	(.058)	.065	(.057)	.140	(.094)	.137	(.090)
Public	—		—		—		—	
Size								
Small school	.106	(.055)	.114*	(.055)	.093	(.057)	.092	(.056)
Medium school	025	(.032)	.028	(.032)	.010	(.044)	.009	(.042)
Large	—		—		—		—	
Background Controls								
Depression, Time 1	.548***	(.019)	.527***	(.019)	.501***	(.015)	.490*	(.015)
Age	.032**	(.011)	.033**	(.011)	.019	(.014)	.018	(.014)
Minority	.059*	(.025)	.066**	(.025)	-.007	(.034)	-.006	(.034)
Intact household	-.038	(.026)	-.038	(.025)	-.067*	(.031)	-.068*	(.032)
Parents' education (1–6)	-.055***	(.014)	-.054***	(.014)	-.052***	(.016)	-.049**	(.016)
Grade configuration								
Pre-K/K–8	-.050	(.071)	-.052	(.072)	.068	(.090)	.075	(.094)
Middle school	.089	(.053)	.096	(.054)	.166**	(.056)	.174**	(.057)
High school	.128*	(.061)	.135*	(.061)	.143*	(.058)	.147*	(.060)
Pre-K/K–12	—		—		—		—	
Household income								
$15,000 or less	.013	(.050)	.018	(.050)	.115	(.060)	.114	(.061)
$16,000–$30,000	-,051	(.042)	-.050	(.043)	.029	(.047)	.031	(.047)
$31,000–$50,000	—		—		—		—	
$51,000–$80,000	-.007	(.038)	-.008	(.039)	-.027	(.036)	-.023	(.036)
$81,000 or more	-.010	(.038)	-.008	(.039)	-.096	(.036)	-.093	(.036)
Missing income	-.020	(.038)	-.018	(.038)	.093*	(.043)	.093*	(.044)
Urban	,033	(.031)	.033	(.031)	.044	(.040)	.042	(.040)
Rural	-.049	(.029)	-.049	(.028)	.000	(.037)	.002	(.038)
Neighborhood drug free	-.036	(.029)	-.039	(.029)	.088	(040)	.010	(.040)
Neighborhood crime free	.002	(.025)	.003	(.025)	.039	(.028)	.041	(.028)
Family support (3–15)	-.028***	(.007)	-.020***	(.007)	-.041***	(.010)	-.033*	(.011)
Parent(s) at home (0–7)	-.009	(.007)	-.009	(.007)	-.009	(.007)	-.009	(.007)
Parental independence giving (0–7)	-.022**	(.009)	-.021*	(.009)	-.012	(.009)	.010	(.009)
Importance of religion (1–4)	-.021	(.011)	-.021	(.011)	-.002	(.015)	.000	(.016)
Friends care (1–5)	-.013	(.020)	-.037	(.023)				
Socially accepted (1–5)	-.082***	(.019)	-.056*	(.021)				
N	5,963		5,948		6,278		6,261	
R^2	.359		.364		.333		.337	

*** $p <= .001$, ** $p <= .01$, * $p <= .05$.

Suicide Attempts The results of the regression analyses for males reveal that attending a private school has no effect on the odds of attempting suicide. However, school size is a significant predictor of attempted suicide. Males who attend small schools are almost four times more likely to have attempted suicide in the past year than are males who attend large schools, net of selection effects. This large increase in the odds of suicide attempts for males is present, regardless of the inclusion or exclusion of social acceptance and supportive friendships as mediating factors. School size and sector do not affect suicide attempts for females (see Table 4).

Regarding controls, family relationships emerge as important predictors. The influence of the family has been well documented in research on adolescent suicidality (American Academy of Child and Adolescent Psychiatry 1994; Wodarski and Harris 1987). More specifically, in my analyses, supportive family relationships significantly reduce the odds of suicidal behavior for both males and females. Parental independence giving, however, is a risk factor for females, serving to increase the odds of attempting suicide. This finding suggests, at least for females, that both support and control are important family functions in relation to suicidal behavior. Social acceptance reduces the odds of suicide for females but has no effect for males. For males, attending schools with grade divisions (defined earlier) increases the risk of suicide considerably, relative to schools with no grade divisions. Grade configuration has no effect on suicide attempts for females. When family relationships, peers, and school characteristics are controlled, no significant effects are found for socioeconomic background or community characteristics.

Weapon Use/Threat For males and females, school size has no effect on the odds of weapon use/threat. However, males who attend private religious schools are almost twice as likely and females who attend private religious schools are over three times as likely as their counterparts in public schools to have used/threatened to use a weapon in the past year. The variables associated with reduced odds of weapon use/threat for males are supportive family relationships and parents being regularly at home. Oddly, males who report supportive friendships are more likely to have used or threatened to use a weapon. Perhaps this finding represents the cohesion among males who are involved in deviant activities (e.g., gangs). For males, attending a middle school and high school, rather than a school with no grade configuration, is associated with an increase in the odds of weapon use/threat. For females, supportive and intact families are protective factors. Residing in an urban environment (relative to a suburban area) and attending a middle school grade configuration (relative to a school with no grade configuration) are associated with an increased risk of weapon use/threat (see Table 5).

Effects of School Organization for Marginalized Students

Coleman (1990) and Garbarino (1980) asserted that school type, if not critical for all adolescents, is particularly important for marginalized students, but no empirical evidence exists to substantiate this claim. Thus, separate analyses were conducted to examine interaction effects, which measure whether broad types of schools operate differently for vulnerable adolescents (analyses not shown). The effects of attending a private school and a small school are examined for interactions with family problems, the lack of social acceptance, coming from a low-income family, and minority status. Minority status was already a dichotomous measure (black or Hispanic). The variables, parents care, feeling socially unaccepted, and household income were dichotomized to simplify the analyses and aid in the interpretation of the interaction terms. The respondents' perceptions of caring parents and social acceptance were initially measured on a scale of 1–5. These measures were dichotomized into those who scored between 1 and 3 (coded 1) and those who scored 4 or 5 (coded 0). Thus, the respondents who were coded 1 in these dichotomies had more social and family problems than did their counterparts. Household income was dichotomized to capture the respondents in the two lowest income brackets (coded 1) versus those with

Table 4. Odds Ratios, Coefficients, and Standard Errors (in parentheses) for Logistic Regressions of Suicide Attempts on School Characteristics and Background Factors; Add Health 1994–96

	Males				Females			
	Model 1		Model 2		Model 1		Model 2	
	b	Odds Ratio	*b*	Odds Ratio	*b*	Odds Ratio	*b*	Odds Ratio
School Characteristics								
Sector								
Private religious	042	1.043	.045	1.046	-.451	.637	-.443	.642
	(.452)		(.448)		(.235)		(.243)	
Private nonreligious	-.246	.782	-.274	.760	-.713	.490	-.749	.473
	(.718)		(.715)		(.461)		(.489)	
Public	—		—		—		—	
Size								
Small school	1.369	3.930***	1.377	3.962***	-.002	.998	-.002	.978
	(.343)		(.350)		(.344)		(.357)	
Medium school	.592	1.808	.589	1.802	.088	1.092	.074	1.077
	(.338)		(.337)		(.256)		(.260)	
Large	—		—		—		—	
Background Controls								
Suicide, Time 1	2.815	16.687***	2.750	15.648***	2.128	8.400***	2.102	8.185***
	(.368)		(.391)		(.190)		(.189)	
Age	.042	1.043	.043	1.043	-.319	.727***	-.323	.724***
	(.115)		(.115)		(.076)		(.076)	
Grade configuration								
Pre-K/K–8	1.488	4.429*	1.487	4.425*	.319	1.375	.340	1.405
	(.617)		(.619)		(.375)		(.382)	
Middle school	1.354	3.874*	1.358	3.887*	.077	1.080	.079	1.082
	(.638)		(.637)		(.414)		(.429)	
High school	1.806	6.058**	1.802	6.061**	.093	1.098	.073	1.076
	(.581)		(.583)		(.411)		(.429)	
Pre-K/K–12	--		--	--	--			
Minority	.083	1.086	.097	1.102	-.009	.991	.033	1.034
	(.284)		(.283)		(.159)		(.163)	
Intact household (1)	-.205	.814	-.189	.828	-.166	.847	-.175	.840
	(.294)		(.298)		(.185)		(.186)	
Parents' education (1–6)	-.035	.966	-.043	.958	.000	1.000	.009	1.009
	(.168)		(.169)		(.096)		(.096)	
Household income								
$15,000 or less	-.426	.653	-.423	.655	-.300	.745	-.294	.745
	(.460)		(.475)		(.280)		(.281)	
$16,000–$30,000	-.080	.923	-.043	.958	.048	1.049	.067	1.069
	(.394)		(.389)		(.275)		(.277)	
$31,000–$50,000	--	--	--	--				
$51,000–$80,000	-.323	.724	-.329	.719	.217	1.242	.222	1.248
	(.415)		(.413)		(.234)		(.244)	
$81,000 or more	.204	1.226	.191	1.211	-.330	.719	-.327	.721
	(.456)		(.461)		(.380)		(.379)	
Missing income	.100	1.105	.103	1.108	.098	1.102	.094	1.099
	(.346)		(.347)		(.231)		(.231)	

Continued

Table 4. Continued

	Males				Females			
	Model 1		Model 2		Model 1		Model 2	
	b	Odds Ratio	*b*	Odds Ratio	*b*	Odds Ratio	*b*	Odds Ratio
Urban	.287	1.332	.287	1.332	-.057	.945	-.037	.963
	(.285)		(.286)		(.206)		(.208)	
Rural	-.413	.662	-.416	.660	-.011	.989	.011	1.011
	(.332)		(.333)		(.186)		(.188)	
Neighborhood drug free	.036	1.037	.034	1.035	-.091	.913	-.078	.925
	(.261)		(.260)		(.166)		(.165)	
Neighborhood crime free	-.116	.891	-.113	.893	.093	1.098	.071	1.073
	(.274)		(.277)		(.169)		(.167)	
Family support (3–15)	-.207	.813***	-.212	.809***	-.237	.789***	-.218	.804***
	(.058)		(.064)		(.042)		(.045)	
Parents at home (0–7)	-.007	.993	-.006	.994	-.013	.989	-.011	.989
	(.049)		(.049)		(.034)		(.034)	
Parental independence giving (0–7)	-.107	.899	-.110	.896	.117	1.124*	.120	1.128*
	(.063)		(.064)		(.055)		(.055)	
Importance of religion (1–4)	-.127	.881	-.134	.875	-.032	.968	-.033	.968
	(.129)		(.127)		(.087)		(.087)	
Friends care (1–5)		.102		1.107			.034	1.035
		(.148)					(.098)	
Socially accepted (1-5)		-.086	.918				-.210	.811*
	(.156)						(691)	
N	6,006		5,990		6,308		6,290	
	4.55		5.60		9.54		9.58	
F	*** $p <= .001$, ** $p <= .01$, * $p <= .05$							

Note: *F* represents an adjusted Wald test statistic, rather than a likelihood-ratio test. Wald is the preferred statistic for data sets with cluster samples selected with unequal probability, as is the Add Health (Korn and Graubard 1990).

higher levels of household income (coded 0). These dichotomies were used to form interaction terms with small schools and private schools (religious and nonreligious schools examined separately) (12 interaction terms). These interaction terms were entered into regression models predicting depression, suicide attempts, and weapon use/threat at Time 2. Background control variables and mental health at Time 1 were also included in these models, and as before, analyses were conducted separately for males and females.

The results revealed that most interaction terms are nonsignificant (60 of the 72 terms tested were nonsignificant). For example, females and males who feel socially unaccepted and who attend small schools are no different from their counterparts in large schools on depression, suicide, and weapon use/threat. A few interaction terms are significant. For private schools, there are 11 significant interaction effects, 6 of which reveal that marginalized students in private schools do realize an advantage relative to marginalized students who attend public schools. Males who feel socially unaccepted and who attend private religious schools are less likely to attempt suicide than are those with these problems in public schools. In addition, males who attend private nonreligious schools who have family problems

Table 5. Odds Ratios, Coefficients, and Standard Errors (in parentheses) for Logistic Regressions of Weapon Use/Threat on School Characteristics and Background Factors; Add Health 1994–96

	Males				Females			
	Model 1		Model 2		Model 1		Model 2	
	b	Odds Ratio	*b*	Odds Ratio	*b*	Odds Ratio	*b*	Odds Ratio
School Characteristics								
Sector								
Private religious	.639	1.894	.654	1.924*	1.217	3.378**	1.127	3.377**
	(.346)		(.336)		(.468)		(.466)	
Private nonreligious	-.256	.774	-.312	.732	-.105	.900	-.107	.899
	(.245)		(.247)		(.486)		(.484)	
Public	—		—		—		—	
Size								
Small school	.236	1.266	.254	1.290	.623	1.865	.637	1.890
	(.311)		(.321)		(.355)		(.352)	
Medium school	-146	.864	-.146	.865	.183	1.201	.183	1.201
	(.210)		(.208)		(.307)		(.306)	
Large	—		—		—		—	
Background Controls								
Weapon, Time 1	.293	1.340	.284	1.329	-.356	.700	-.356	.701
	(.335)		(.336)		(.620)		(.619)	
Age	.043	1.044	.035	1.036	-.128	.880	-.125	.882
	(.063)		(.064)		(.127)		(.127)	
Grade configuration								
Pre-K/K–8	.743	2.102	.762	2.142	.722	2.058	.750	2.117
	(.440)		(.437)		(.702)		(.695)	
Middle school	1.160	3.191**	1.664	3.202**	1.419	4.134*	1.443	4.237*
	(.413)		(.418)		(.632)		(.631)	
High school	.815	2.260*	.831	2.300*	1.137	3.119	1.157	3.180
	(.414)		(.423)		(.634)		(.633)	
Pre-K/K–12	—		—		—		—	
Minority (black/Hispanic)	.105	1.111	.136	1.145	.326	1.386	.339	1.404
	(.157)		(.150)		(.262)		(.258)	
Intact household (1)	-.117	.889	-.104	.901	-.609	.544*	-.611	.543*
	(.160)		(.162)		(.258)		(.258)	
Parents' education (1–6)	.005	1.001	-.007	.994	-.228	.796	-.245	.791
	(.100)		(.101)		(.124)		(.125)	
Household income								
$15,000 or less	.141	1.152	.131	1.140	.000	1.000	-.001	.999
	(.281)		(.279)		(.380)		(.376)	
$16,000–$30,000	.500	1.643	.502	1.652	-.049	.952	-.046	.955
	(.276)		(.274)		(.362)		(.362)	
$31,000–$50,000	—		—		—		—	
$51,000–$80,000	.045	1.046	.033	1.033	-.686	.503	-.691	.501
	(.275)		(.275)		(.462)		(.464)	
$81,000 or more	-.460	.631	-.488	.614	.625	1.868	.621	1.861
	(.422)		(.423)		(.459)		(.455)	
Missing income	.101	1.106	.106	1.112	.185	1.204	.191	1.210
	(.254)		(.254)		(.345)		(.375)	

Continued

Table 5. Continued

	Males				Females			
	Model 1		Model 2		Model 1		Model 2	
	b	Odds Ratio	*b*	Odds Ratio	*b*	Odds Ratio	*b*	Odds Ratio
Urban	.143	1.154	.139	1.149	.864	2.373***	.870	2.388***
	(.253)		(.250)		(.181)		(.180)	
Rural	-.120	.887	-.136	.873	.267	1.306	.268	1.308
	(.219)		(.219)		(.336)		(.335)	
Neighborhood drug free	-.372	.690	-.375	.687	-.024	.976	-.024	.977
	(.210)		(.209)		(.225)		(.230)	
Neighborhood crime free	-.102	.903	-.097	.907	.185	1.203	.172	1.189
	(.171)		(.171)		(.234)		(.236)	
Family support (3–15)	-.105	.900**	-.113	.893**	-.278	.757***	-.286	.751***
	(.041)		(.043)		(.050)		(.052)	
Parents at home (0–7)	-.074	.929**	-.073	.930**	-.041	.960	-.042	.959
	(.029)		(.029)		(.051)		(.051)	
Parental independence giving (0–7)	.007	1.007	.004	1.004	-.031	.970	-.033	.968
	(.055)		(.056)		(.075)		(.075)	
Importance of religion (1–4)	-.143	.867	-.145	.865	-.176	.839	-.174	.840
	(.080)		(.081)		(.106)		(.105)	
Gun in home	-.121	.886	-.127	.881	-.356	.933	-.075	.928
	(.203)		(.200)		(.620)		(.302)	
Friends care (1–5)			.205	1.227*			.105	1.111
			(.105)				(.141)	
Socially accepted (1–5)		-.170	.827				.002	1.002
		(.134)					(.129)	
N	5927		5991		6223		6206	
F	3.47		3.80		7.28		6.61	

*** $p <= .001$, ** $p <= .01$, * $p <= .05$

Note: *F* represents an adjusted Wald test statistic, rather than a likelihood-ratio test. Wald is the preferred statistic for data sets with cluster samples selected with unequal probability, as is the Add Health (Korn and Graubard 1990).

and those from low-SES homes are less depressed than are those with these problems in public schools. For females, attending a private nonreligious school appears to benefit those with peer problems and those from low-SES families (reducing weapon use/threat and depression), relative to those with these limitations in public schools. Also, minority females who attend private religious schools are less likely to use/threaten to use a weapon than are minority females who attend public schools.

However, five interaction terms revealed that marginalized students are at an increased disadvantage in private schools. Males with family problems who attend private religious schools are more depressed and more likely to use or threaten to use a weapon than are males with these problems in public schools. Males with family problems who attend nonreligious private schools are at an increased risk of attempting suicide relative to males with family problems in public schools.

Females with problems with peers who attend nonreligious private schools are more likely to attempt suicide, and minority females in these schools are more likely to use/threaten to use weapons than are their counterparts in public schools. Finally, with regard to small schools, only one interaction effect emerged as significant: Minority females who attend small schools are more likely to attempt suicide than are minority females who attend large schools. There were no unique advantages for marginalized students who attend small schools. These results suggest that in most cases, marginalized students are not uniquely affected by small schools and private schools and that when they are, they are as likely to be harmed by them as to be helped.

DISCUSSION

According to public polls, educational reform is a particularly important issue to voters. However, expectations for reform are not limited to improving academic achievement. Schools are being called on not only to impart knowledge, but to promote character development and emotional stability among their students. There is a fair amount of empirical information on how schools can improve academic achievement. However, there is a paucity of research on how attending various types of schools is related to the emotional well-being of students.

Private schools have received praise over public schools, and the value of small schools has been widely proclaimed. It is commonly argued that the high standards, standardized curriculum, and more intimate environment of the small and/or private school create a sense of community and responsibility that fosters emotional adjustment among adolescents (Bryk et al. 1993; Coleman 1990; Coleman and Hoffer 1987; Garbarino 1980). However, up-to-date empirical research on the links between these types of schools and broad measures of adolescent mental health is not available. The present study used the National Longitudinal Study of Adolescent Health to determine whether private schools and small schools do, on average, have more emotionally well-adjusted students, net of selection effects.

One finding of this study supported private schools: Private schools (religious and nonreligious) are associated with more supportive friendships among females. However, all the other analyses, which examined perceived social acceptance, friendship supports, depression, suicide, and weapon use/threat, suggested that adolescents do not benefit from attending private and/or small schools. In addition, several findings suggested that attending a private and/or a small school may have negative effects on the mental health of adolescents. Males and females who attend nonreligious private schools report lower levels of social acceptance than do their counterparts in public schools. Males and females who attend private religious schools display considerably higher odds of weapon use/threat than do those who attend public schools. Males are almost twice as likely and females are more than three times as likely to use/threaten to use a weapon when they attend private religious schools. For small schools, no positive effects were found for males or females on any of the social support and/or mental health outcomes. In addition, females who attend small schools report less-supportive friendships than do those who attend large schools. Finally, males who attend small schools have higher levels of depression and are almost four times more likely to attempt suicide than are males who attend large schools.

Several scholars have argued that small and/or private schools may not benefit all students, but that they are particularly protective for marginalized students. Thus, small schools and private schools were analyzed for interaction effects. Students from low-SES families, those with family problems, those who felt socially unaccepted, and minority students were examined to see if they were less at risk in a private and/or a small school than in a public school or a large school. The vast majority of the interactions examined were nonsignificant, suggesting that school sector and size do not uniquely affect marginal students. A few interactions were significant. In some instances, marginalized adolescents did fare better in private schools. However, in an

equal number of instances, marginalized students who attended private schools and/or small schools were less well adjusted than were their counterparts in public and/or large schools. Thus, the results do not support the claim that small schools and/or private schools are particularly beneficial for marginalized students.

Overall, this study did not find support for the assertion that private schools and small schools are clearly beneficial to adolescents' emotional adjustment. Furthermore, the results suggest that private schools and small schools may actually be detrimental to adolescents' mental health. These findings are at odds with the received wisdom that private and/or small schools are conducive to mental health (Coleman 1990; Garbarino 1980). They also contradict broader theoretical arguments that small homogeneous communities are psychologically beneficial to individuals (Weber 1947; Wirth 1939). However, these results are plausible when they are viewed from alternative theoretical perspectives on communities and adolescents. Adolescents are in a unique period of identity development, which makes their psychological and sociological needs distinct from those of adults (Erikson 1968). Thus, it is possible that small homogeneous communities are beneficial for adults, but are not compatible with the unique needs of adolescents. Perhaps adolescents' struggle to construct an identity is more easily accomplished in large heterogeneous environments, specifically, large and/or public schools.

As adolescents work to reduce feelings of isolation and forge identities (Erikson 1968), they become preoccupied with acceptance (Elkind 1998). Subcultural theory suggests that the possibilities for acceptance are more numerous in large heterogeneous environments. In large, more diverse populations, individuals who do not fit in with one group, perhaps the dominant group, can find others like themselves who also do not fit in and who can offer them a source of support and identity validation (Fischer 1975). Consistent with subcultural theory, large schools and public schools may offer adolescents more numerous and more varied options for informal social support. It has also been suggested that in large schools, vulnerable adolescents are sufficient in number to justify their own special programs (Lee and Smith 2001). If social support is more widely available to youths in large schools and in public schools, severe isolation may also be reduced in these environments. As I discussed earlier, a reduction in isolation is likely to translate into a reduction in external and internal manifestations of distress among adolescents (Brage 1995, Durkheim 1951; Negron et al. 1997). The finding that students in narrower grade configurations fare worse than do students in schools with a wider variety of ages or grades further supports the idea that adolescents benefit when they have more options for support networks and identity development.

In addition, the complex relationship between social control and mental health helps to provide another explanation for why private and/or small schools may be harmful. Support for these schools stems, in part, from arguments that formal and informal social control is higher in these environments. Private schools tout their strict policies and standardized curriculum to promote homogeneity and order. In smalls schools, teachers are more likely to know the students and thus may find it easier to enforce existing rules. In addition, in schools where students are relatively homogeneous and/or there are fewer students, peer expectations for conformity to established norms may be high. A large body of literature has suggested that this social control reduces deviance in a community and that adolescents, in particular, benefit from structure and control (Baumrind 1991; Jaffe 1998). However, these positions have always been stated with the caution that excessive control can have the opposite effect. For example, although Durkheim (1951) suggested that the lack of social integration contributes to suicide (anomic suicide), he also pointed out that excessive control could contribute to suicide (fatalistic suicides). It is possible that the control that exists in small and/or private schools is excessive to certain adolescents. Attending a small school or a private school may be stressful because individuals' personal and familial deficiencies are more visible. Consequently, adolescents who do not fit in or measure up may be subject to more harassment by school per-

sonnel and more bullying and teasing by peers. Feelings of anonymity, which are thought to be harmful for adults, may be a welcome relief for adolescents who do not want to draw attention to themselves and their limitations. These environments may exacerbate humiliation and force confrontations in a way that large and/or public schools do not. Perhaps adolescents in these environments are distressed and more likely to try to escape or defy the close scrutiny they are under (through suicide or violence).

School administrators and governmental officials are considering a number of strategies to create safe schools and to promote adolescents' adjustment (e.g., vouchers for private schools and splitting schools into smaller schools within schools). The latter approach is perhaps the most widely supported change. For example, a major recommendation of an influential report for reforming middle schools was to "create small communities for learning" (Carnegie Council on Adolescent Development 1989:9). Similarly, a report from the National Association of Secondary School Principals (1996:5) recommended that "schools must break into units of no more than 600 students so that students and teachers can get to know each other." Finally, a key conclusion offered by Lee and Smith (2001:143) was that "high schools should be smaller than they are." These conclusions stem from sound evidence of a relationship between school size and academic achievement. However, this study suggests that these choices are not necessarily conducive to emotional adjustment and, in some cases, may actually be harmful to adolescents' mental health. Additional research is needed to replicate and extend these findings. If supported, we researchers need to explore the mechanisms by which small schools and private schools produce emotional strain for students. Finally, we need to know whether choices that are conducive to emotional stability are at odds with those that promote academic achievement. Durkheim (1956) noted that schools offer two types of education: an intellectual and a moral education. As researchers, we have focused on the former. Perhaps it is time to draw attention to the latter and to gain a better understanding of the interconnections between the two.

NOTE

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