

Evaluation of a School-based Mentoring Program for At-Risk Middle School Youth

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This study investigated the impact of a school-based mentoring program on at-risk students' office referrals, unexcused absences, and school attitude. Students who participated in the mentoring program had statistically significant reductions in office referrals and statistically significant improvements in school attitude. Based on an analysis of mentor interview responses and log entries, mentors were divided into "viewed positively" mentors and "questioned-impact" mentors. Viewed positively mentors reported fewer office referrals, met more consistently with mentees, reported more relaxed mentoring sessions, and shared food and played games more often with their mentees than "questioned-impact" mentors. The results of the study are discussed in terms of the available research on school-based mentoring. In addition, suggestions for future research are provided.

Keywords: *school-based mentoring; youth mentoring; adolescents; students at risk*

The onset of antisocial behavior is found in children as early as preschool age (Patterson, Reid, & Dishion, 1992; Walker, Colvin, & Ramsey, 1995). Several researchers link this early onset of antisocial behavior to poverty, single-parent or surrogate-parent homes, violence, and drug and alcohol abuse in the home (Kazdin, 1987; Patterson et al., 1992). Patterson et al. (1992) discuss a causal model that begins with such factors and ends with well-rooted antisocial behavior patterns. First, the factors interfere with the development of healthy parenting routines. In turn, unhealthy parenting routines and the negative social patterns associated with them lead to the onset of antisocial behavior patterns in children, which the children then take with them to school.

In schools, antisocial behavior can manifest as chronic behavior problems, social withdrawal, peer and teacher rejection, academic struggle, and/or chronic absenteeism, all of which are predictors of school failure, delinquency, and dropout (Finn, 1993; Walker et al., 1995). The increasing number of students exhibiting these at-risk behaviors negatively impacts schools on several levels including school safety, school operation, and education quality (Walker et al., 1995). This negative impact drives school personnel to seek schoolwide interventions that reduce the occurrence of at-risk behavior and reconnect students with their school culture.

Mentoring is gaining credence as one schoolwide intervention that might be employed with students who

are at-risk for school failure (Herrera, 1999). In mentoring, an adult is paired with an at-risk student with the goal of fostering a trusting and supportive relationship, where the youth would otherwise have limited opportunities. The mentoring relationship affords students the chance to seek guidance, problem solve, and, most importantly, build self-esteem and resiliency (Flaxman & Ascher, 1992; Terry, 1999; Tobin & Sprague, 2000).

Mentoring at-risk youth first emerged as a community-based intervention for children identified as disadvantaged (Grossman & Garry, 1997; Keating, Tomishima, Foster, & Alessandri, 2002; Rhodes, Haight, & Briggs, 1999). More recently, mentoring has extended to school communities nationwide (Foster, 2001). In most school-based studies, community volunteers serve as mentors (Carmola, 1995; King, Vidourek, Davis, & McClellan, 2002; Lee, 1999; Ryan, Whittaker, & Pinckney, 2002; Terry, 1999). There are few studies in which school personnel mentor at-risk students (Blum & Jones, 1993; Slicker & Palmer, 1993; White-Hood, 1993). Using school personnel as mentors might be cost-effective, simplify program operations, and provide opportunities for students to view school personnel in a positive light (Evelo,

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Sinclair, Hurley, Christenson, & Thurlow, 1996; Foster, 2001; Grossman & Garry, 1997; Herrera, 1999; Tobin & Sprague, 2000).

Program objectives for school-based mentoring range from preventing dropout and improving student attitudes toward school and school behaviors to improving academic grades and standardized test scores (Blum & Jones, 1993; King et al., 2002; Slicker & Palmer, 1993; Tierney & Grossman, 1995; White-Hood, 1993). Findings from studies on school-based mentoring are mixed. Researchers that evaluated the impact of mentoring on grades, drop out rate, and self-esteem report no significant results to support the efficacy of school-based mentoring (Lee, 1999; Slicker & Palmer). However, researchers do report a positive impact from mentoring on student attitudes, school engagement, school-related behavior problems, and attendance (Blum & Jones, 1993; King et al., 2002; Sinclair, Christensen, Evelo, & Hurley, 1998). Several variables have been identified as moderators of program effectiveness of mentoring programs. These variables include (a) training mentors to use effective time management, trust building strategies, and communication strategies; (b) supporting mentors through ongoing program monitoring and supervision; and (c) using formative evaluation to facilitate progressive program improvement (Bein, 1999; Blechman, 1992; Blum & Jones, 1993; Dubois, Holloway, Valentine, & Cooper, 2002; King et al., 2002; Slicker & Palmer, 1993; Ryan et al. 2002; Sinclair et al., 1998; Terry, 1999; White-Hood, 1993).

Unfortunately the available evaluation research on mentoring at-risk youth is often faulty and ambiguous (Beier, Rosenfeld, Spitalny, Zansky, & Bontempo, 2000; Dubois et al., 2002; Grossman & Garry, 1997; Royse, 1998; Slicker & Palmer, 1993). Beier et al. (2000) note that past studies on mentoring lack quantitative "proof of efficacy" (p. 329). Although Dubois et al. (2002) indicate that even well-controlled evaluations are open to biased outcome measures, they recommend that future studies should include objective measures such as archival records of arrests and educational accomplishments to evaluate the effectiveness of mentoring programs.

The purpose of this study was to evaluate a middle-level school-based mentoring program that employed school personnel as mentors. The evaluation included a combination of objective measures such as number of office disciplinary referrals and subjective measures such as students' attitude toward school. The specific research questions addressed were the following:

1. To what extent do office disciplinary referrals decrease for at-risk students who participate in the school-based mentoring program?
2. To what extent do unexcused absences decrease for at-risk students who participate in the school-based mentoring program?
3. To what extent do scores on the School Connectedness Survey improve for at-risk students who participate in the school-based mentoring program?
4. Are there specific program components and processes perceived by mentors as essential to the school-based mentoring program?

Method

Participants

Mentees. School counselors identified a pool of 45 at-risk students, aged 13 to 15 years old, based on high numbers of office disciplinary referrals and unexcused absences. All the students had at least three office referrals (range 3 to 7) and at least seven unexcused absences during the previous school quarter. Because the intervention was designed for students at-risk of referral for behavioral disabilities, students with an existing Individualized Education Program were eliminated from the initial pool. This reduced the pool to 34 students. Office referrals and absences were used to screen participants because they are predictors of general misbehavior and social maladjustment at school (Irvin et al., 2004). Tobin, Sugai, and Colvin (1996), in an analysis of discipline referral patterns from Grades 6 through 8 reported that three referrals in the first term of Grade 6 predicted 86% of the students for whom referrals would continue for the next five terms. In addition, all of those students had at least one term in which they received five or more disciplinary referrals. Although frequency of referrals is not a perfect approach for predicting future behavior problems, this criteria was used for simplicity and to include more students who might gain from a potentially beneficial prereferral intervention (Nichols & Nichols, 1990). The 34 students were briefed on the mentoring program and asked if they would like to participate. Parents of the students also were asked for written permission to allow their students to participate in the study. Thirty-two of the 34 potential participants expressed willingness to participate in the mentoring intervention, whereas two students declined and were dropped from the study. The remaining participants were randomly assigned to the mentored group or to a nonmentored control group. Students who were randomly assigned to the control group were placed on a waiting list for mentoring and notified of their status.

Ethnicity in the mentored group was represented by 56% White and 44% Hispanic, whereas the control

group was composed of 40% White and 60% Hispanic. Furthermore, 19% of the mentored group were female participants, whereas 81% were male, and 13% of the control group were female participants and 87% were male. Parents of the students assigned to the mentored group were contacted a second time and briefed on the mentoring intervention. Students in the mentored group also completed a questionnaire on demographics, interests, and hobbies to aid in the mentor pairing process.

Mentors. Initially, a pool of 62 faculty and staff members (43 female, 69%; 19 male, 31%) from the participating school attended a half-hour information session delivered by the mentor program facilitator. The facilitator (a) defined and described the at-risk target population and their needs for intervention, (b) detailed the school-based mentoring model and supporting research for it, and (c) defined and explained the role of the mentor including the time commitment, training, and evaluation procedures expected from them. Faculty and staff members who were interested in volunteering as a mentor were asked to attend a half-hour follow-up session during which the program facilitator reviewed mentor characteristics, effective mentoring practices, evaluation procedures, and monetary compensation. At the end of this session, faculty and staff members who were no longer interested in participating left, leaving 13 faculty and staff members to serve as mentors for 16 student mentees. The ethnicity of all mentors was White. There were 11 female mentors (85%) and 2 male mentors (15%). Three female mentors volunteered to be paired with two students, whereas eight female mentors and two male mentors were paired with one mentee. Mentors chose mentees from the list of mentee volunteers with the guidelines that a mentee could not be a student in the mentor's class. In addition, the male mentors selected from the list of male mentees. Monetary compensation of \$400 for one mentee and \$600 for two mentees was contingent on meeting with mentees regularly and consistently completing required reports.

Setting

The students were enrolled in an ethnically and socioeconomically diverse urban junior high school. The school included 1,148 students in Grades 7 to 9. Student ethnicity was represented by 66% White, 26% Hispanic, and 6% Pacific Islander; 43% of enrolled students received free or reduced lunch.

Dependent Measures

Three measures were used to evaluate the effects of the school-based mentoring program: (a) office disciplinary

referrals per student as reported in the school discipline records, (b) number of unexcused absences per student as reported in the school attendance records, and (c) a student survey on school attitude. Because mentoring at-risk youth is generally employed as a schoolwide intervention, the measures employed to evaluate the program should reflect the overall effect on behavioral climate in the school. Office disciplinary referrals (ODRs) are an objective measure collected by school personnel and are one indicator of a school's behavioral climate (Irvin et al., 2004). What is important is that several researchers have voiced concerns (Nelson, Benner, Reid, Epstein, & Currin, 2002; Nelson, Gonzalez, Epstein, & Benner, 2003) about using ODRs as a dependent measure. In a review of empirical research using ODR measures, Irvin et al., (2004) suggested that these concerns specifically apply to using disciplinary referrals as a decision tool with individual students and, based on their review of the available research, suggest that ODRs are a sensitive measure of schoolwide interventions. Irvin et al. (2004) recommend that researchers triangulate ODR measures with teacher and student survey data when using ODRs for formative and summative program evaluations. In the present study, ODRs were triangulated with a student survey on school attitude. In addition, mentors participated in interviews about their mentoring experience and completed weekly logs to provide understanding of program elements that they viewed as most important.

Office disciplinary referrals and absences. Office disciplinary referrals are an objective measure that schools use to reflect violations of the social norm and are one indicator of the effect of a schoolwide intervention program (Irvin et al., 2004). For this study, ODRs and absences were accessed from records maintained at the school office. Because standards and procedures for referring students to the office might vary among school faculty members, the procedures for ODRs were reviewed and standardized among the faculty using a model of schoolwide positive behavioral support (Horner, Sugai, & Horner, 2000). In this model, teachers and staff agreed on disciplinary infractions that individual teachers or staff members should address at the classroom level (e.g., non-compliance, inappropriate language, not working, etc.) and the disciplinary infractions that should be referred directly to the office (e.g., physical aggression, extreme verbal aggression, etc.). Infractions that teachers addressed at the classroom level were referred to the office after the third offense.

School connectedness survey. Adapted from a survey developed by King et al. (2002), this measure was used

to assess student attitudes about school. King et al.'s instrument included five subscales: self-esteem, school connectedness, peer connectedness, family connectedness, and health behaviors. For this study, the health and family subscales were not included; the remaining statements were adapted for middle school students, and King et al.'s rating scale was employed. Although the reliability and validity of the adapted instrument was not examined, King et al. report test-retest reliability with their instrument on a sample of 32 4th-grade students who were assessed 1 week apart. The Pearson's r correlation was .85 for self-esteem, .81 for school connectedness, and .73 for peer connectedness. Internal reliability of the King et al. instrument was assessed by calculating Cronbach's alpha for each subscale: .81 for self-esteem, .80 for school connectedness, and .72 for peer connectedness.

The items for the School Connectedness survey used in this study were organized in four categories (self, peers, teachers, and other adults at school) that included four statements in each category. Statements in the self category targeted how student's perceived themselves in relation to school performance, school involvement, and school attitude (e.g., "I am usually involved in school activities," "I am usually proud of myself at school"). Statements in the peers category targeted student's perceptions of peers' attitudes toward them at school. (e.g., "Kids at school sit with me at lunch," "Kids at school usually understand me"). The teachers statements targeted student's perceptions about teachers' attitudes toward them (e.g., "My teachers understand me"). Last, the others category targeted student attitudes about how adults in the school other than their teachers perceived them (e.g., "Adults at school other than my teachers care about me"). Overall, category pretest survey scores were collected for students in the mentored and nonmentored groups 1 week prior to beginning the mentoring period. Posttest survey scores were collected during the last week of the mentoring intervention.

Mentor interviews. Semistructured interviews with mentors were conducted following the mentoring period. For the three mentors who met with two mentees, two separate interviews were conducted. The interview questions targeted the mentors' overall impression of the mentoring program including what student activities were most beneficial, what mentors gained from participating in the program, what training elements were particularly beneficial, what might be added to improve training, and if mentees had commented to mentors about the mentoring program. The mentors also were asked whether mentees had improved, stayed the same, or regressed in terms of school attitude, school behavior, attendance, and academic

performance. Initial responses to questions such as "What did you gain from the experience?" were followed by clarifying questions to provide more detailed reports on the mentoring relationships. Interview transcripts were coded to identify common themes. First, the transcripts were analyzed and coded as "positive" or "negative questioning" comments. An interview was labeled "viewed positively" if the majority of responses to interview questions were positive. An interview was labeled "questioned impact" if the majority of responses in the interview were negative or questioning.

Mentor logs. Mentors completed a session log after each meeting with their mentee. The mentors reported the length of the session, described what they did during the session, and indicated if they might repeat activities again or do something different in the next session. Mentors also noted when sessions were missed and why. Logs were reviewed using a process similar to the one used to code interviews. First, logs were analyzed for common themes in the comments made by mentors about mentoring sessions. Next, logs were coded in terms of the activities that occurred during mentoring sessions.

Independent Measures

Mentoring served as the treatment variable in this study. The mentoring intervention included four components; time commitment, prosocial behavior, effective communicating, and trust building. First, the mentors committed to at least one mentoring session per week over 18 weeks and to providing the program coordinator with a mentor log following each session. Second, the mentors were asked to model only appropriate, prosocial behavior during all mentoring interactions. That is, their behavior adhered to the educator standards of the school district: modeling and encouraging positive behavior and demonstrating and promoting honesty and ethical behavior. Third, mentors were taught to use verbal and nonverbal communication skills such as active listening and open body language (National Mentoring Center, 2003). For example, mentors were taught how to ask clarifying questions and paraphrase or provide positive comments in response to mentee comments. In addition, they were taught how open, relaxed arms and comfortable eye contact might be used to improve communication. Finally, mentors were taught to use trust-building techniques such as involving the mentee in determining session activities, communicating respect for mentee opinions (e.g., "that's an interesting idea"), using humor during interactions (National Mentoring Center, 2003) and using icebreaker exercises (King et al., 2002). Icebreaker exercises included

activities like “Getting to Know You” worksheets and “Finish this Statement” dialogs. Mentors described what activities they used in their mentor logs.

Mentor training. Mentors participated in two half-day training sessions prior to beginning the mentoring phase of the study. During the training, the facilitator reviewed highlights from literature on school-based mentoring, communication techniques, trust-building activities, and program procedures. The facilitator provided specific examples and nonexamples of mentor qualities and effective mentoring practices including examples and nonexamples of: positive character, effective communicating, and trust building (National Mentoring Center, 2003), as well as how to report their interactions in their mentor logs. Mentors also were briefed on cultural competence, legal issues, and reporting suspected abuse (Bein, 1999). Before completing the training, mentors were required to role play at least five active listening skills (i.e., eye contact, open body language, resistance to distractions, paraphrasing, clarifying or mirroring questions and positive comments) and name at least four trust-building strategies (e.g., icebreaker activities, encourage humor, punctuality and consistency, include mentee in decisions and demonstrate respect for mentee opinions). In addition, mentors described how they would use the trust-building strategies with their mentees.

Procedure

The mentoring intervention was implemented during the third and fourth school quarter. Prior to beginning mentoring, the program coordinator collected information on referrals and absences for the previous two quarters. Mentors were selected and trained within 4 weeks prior to the third quarter, and students completed the School Connectedness Survey 1 week prior to the third school quarter.

During the 1st week of the third school quarter, mentors were given their mentees’ class schedules and were asked to contact them and develop a weekly schedule of meeting times immediately before or after school, during lunch, or during some other nonacademic time during the school day. The mentors provided a copy of the schedule to parents and the school principal for approval.

At the beginning of each session, the mentor and mentee discussed all possible mentoring activities available. The mentoring pair did not leave the school campus during mentoring sessions. If the mentors could not meet for a scheduled session, they notified the mentee and the program coordinator before their scheduled mentoring session. Only one mentor canceled a session during the

18-week program. That mentor scheduled an extra session with the student the following week. The program facilitator provided biweekly training refreshers and idea sharing via e-mail correspondence. Training refreshers included shortened definitions of effective mentor strategies and examples and nonexamples of techniques learned in training. Idea sharing consisted of forwarding to all mentors examples of successful techniques or activities used by one or more mentors. At the end of the school year, the program coordinator collected information on referrals and absences for the third and fourth school quarters. Students completed the School Connectedness Survey again during the last week of school.

Experimental Design

A pre- and postcontrol group design was used to evaluate the effects of mentoring on experimental group participants.

Reliability

Interobserver agreement was calculated on scoring participant’s School Connectedness Surveys and coding participants mentor logs. A random sample of eight prementoring surveys and eight postmentoring surveys from control and mentored participants were scored by a second observer. Items were scored as an agreement if both scorers recorded the same rating and a disagreement if the scorers recorded different ratings. The total interobserver agreement was then calculated for each survey. Mean interobserver agreement across surveys was 96% (range 70% to 100%). A random sample of 46 of 241 mentor logs (19%) were coded by a second observer. Agreements were counted when both coders recorded the same activity on a log entry. Disagreements were counted when one observer recorded a different code or when one observer omitted a code. Mean interobserver agreement across activity codes was 84% (range 50% to 100%). The lowest agreement was scored for low frequency activities such as mentor listening (agreement on one of two occurrences) and using an icebreaker activity and student talking about school (agreement on two out of three occurrences for each activity).

Results

The research questions addressed in this study were the following:

1. To what extent do office disciplinary referrals decrease for at-risk students who participate in the school-based mentoring program?

Table 1
Analysis of Covariance for Office Referrals

Source	Type III Sum of Squares	<i>df</i>	<i>M</i> ²	<i>F</i>	Significance	Partial eta Squared
Corrected Model	263.480 ^a	2	131.470	20.719	.000	.588
Intercept	2.920	1	2.920	.459	.503	.016
PREREF	158.355	1	158.355	24.905	.000*	.462
GROUP	120.784	1	120.784	18.996	.000*	.396
Error	184.395	29	6.358			
Total	1228.000	32				
Corrected total	447.875	31				

a. $R^2 = .588$ (Adjusted $R^2 = .560$).

* $p < .01$.

2. To what extent do unexcused absences decrease for at-risk students who participate in the school-based mentoring program?
3. To what extent do scores on the School Connectedness Survey improve for at-risk students who participate in the school-based mentoring program?
4. Are there specific program components and processes perceived by mentors as essential to the school-based mentoring program?

Post-mentoring office disciplinary referrals, absences, and School Connectedness Survey ratings were analyzed with an Analysis of Covariance using prementoring data as the covariate. In addition, standardized mean difference effect sizes were calculated to describe the magnitude of the effect relative to the control group for each dependent variable (Glass & Hopkins, 1996). The observed means and pooled standard deviation were used to calculate standardized mean difference effect sizes. There are few guidelines available for determining when an effect size is educationally significant. Cohen (1988) suggested that less than 0.20 is a small effect, 0.50 is a medium effect, and greater than 0.80 is a large effect. The mentor interviews and logs were analyzed descriptively to identify program components and processes that successful mentors suggested were important.

Office Disciplinary Referrals

During 18 weeks prior to mentoring, students in the nonmentored group ($n = 16$) had a mean of 5.67 ($SD = 3.64$) office referrals per student, and students in the mentored group ($n = 16$) had a mean of 6.19 ($SD = 2.83$) office referrals per student. During the 18-week mentoring period, students in the nonmentored group had a mean of 6.75 ($SD = 4.34$) office referrals per student. In contrast, during

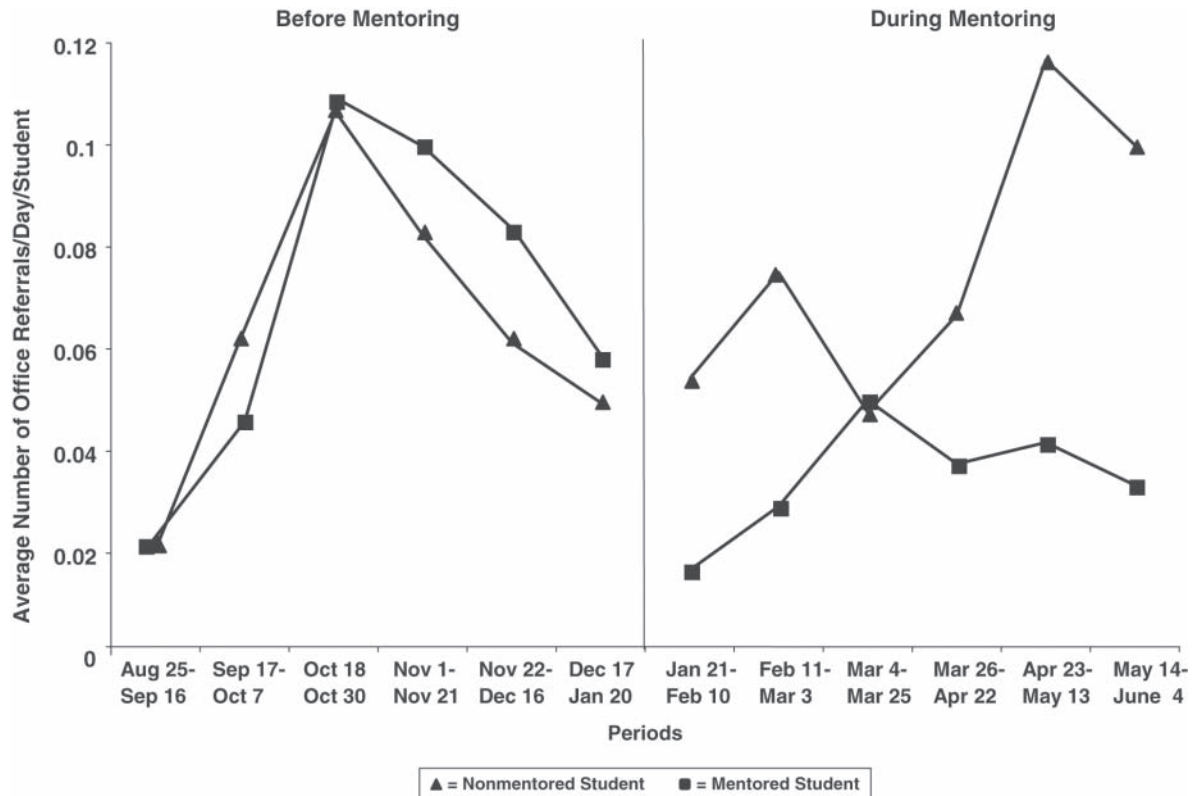
mentoring, students in the mentored group had a mean of 3.13 ($SD = 2.00$) office referrals per student.

An analysis of covariance was conducted using the prementoring number of office referrals as the covariate to determine if the postmentoring mean number of office referrals for the mentored group differed significantly from the postmentoring number of office referrals for the nonmentored group. There was a significant difference between the group means, $F(2, 32) = 18.996$, $p < .01$; see Table 1). The average number of office referrals for students in the mentoring program was less than the average number of office referrals for 69% of the students in the control condition ($ES = 1.03$, large effect). Importantly, 40% of the variance in the number of office referrals was attributed to whether a student was mentored or not and 46% of the variance was attributed to the prementoring office referral rates (see Table 1).

To detect patterns of office referrals during prementoring and postmentoring, the data were divided into 15-day periods starting at the beginning of school in the fall (see Figure 1). During prementoring, a pattern was observed indicating higher numbers of referrals reported from mid-October through mid-December for both the nonmentored students and the mentored students. During the mentoring phase, a rapid increase in referrals occurred in late March and continued through the end of the school year for the nonmentored group. In contrast, the number of referrals slowly decreased throughout the mentoring phase for the mentored group.

To illustrate the distribution of referrals for the mentored and nonmentored students during the study, a dot plot was constructed showing student referrals during each 15-day time block (see Figure 2). During prementoring, the number of nonmentored students with no referrals exceeded the number of mentored students with no referrals in two of six time blocks. In contrast, during the mentoring

Figure 1
Average Number of Disciplinary Office Referrals for Mentored and Nonmentored Participants per Day
During 15-Week Periods Prior to Mentoring and During Mentoring



condition, the number of mentored students with no referrals exceeded the number of nonmentored students during every time block. This pattern shift also occurred for the number of students with one referral in each group.

In contrast, the opposite pattern was observed for the number of students with two or more office referrals. During prementoring, the number of mentored students with two referrals exceeded the number of nonmentored students during two of six time blocks. However, during mentoring, the number of nonmentored students with two office referrals exceeded the number of mentored students during five of six time blocks. The pattern also was observed with the number of students with three or more office referrals.

Absences

During the course of the study, one control student left school for approximately 2 weeks and then returned for the last month of school. This student was not included in the school absence analysis. During the 18 weeks prior to mentoring, nonmentored students ($n = 15$) were absent a mean of 8.07 ($SD = 3.90$) days per student.

Students in the mentored group ($n = 16$) had a mean of 8.06 ($SD = 4.29$) absences per student. During the 18-week mentoring condition, students in the nonmentored group had a mean of 9.06 ($SD = 4.28$) absences per student, whereas students in the mentored group had a mean of 6.69 ($SD = 4.01$) absences per student. There was no significant difference between the group means, $F(2,31) = 2.62$, $p = .177$.

School Connectedness Survey Ratings

The School Connectedness Survey included items in four categories: how the students viewed themselves, how students viewed their peers, how students viewed their current teachers; and how students viewed other adults in the school (i.e., past teachers and other teachers, support staff, administrators). In this analysis, two control students and one experimental student did not complete one of the surveys because they were not available during the two survey sessions. The overall and category prementoring and postmentoring means for students in the mentored ($n = 15$) and nonmentored groups ($n = 14$) are provided in Table 2.

Figure 2
Number of Disciplinary Office Referrals for Mentored and Nonmentored
Participants During 15-Day Periods

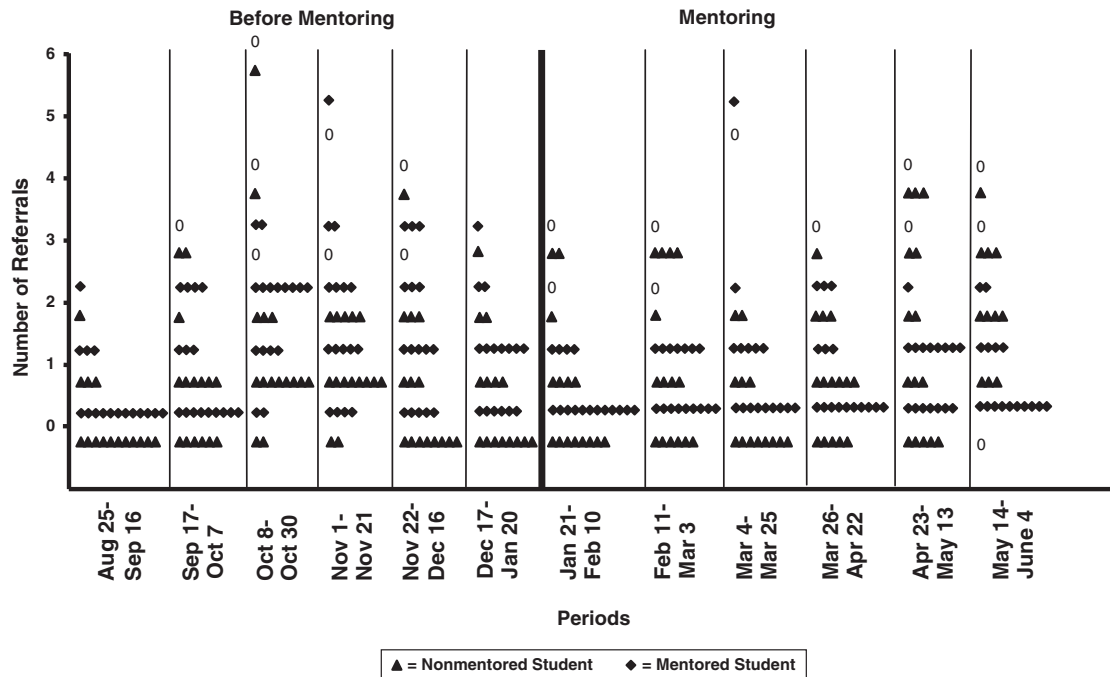


Table 2
School Connectedness Survey Overall and Category Pretest and Posttest Mean Ratings and Effect Sizes

Category	Pretest <i>M (SD)</i>		ES	Posttest <i>M (SD)</i>		ES
	Mentored	Nonmentored		Mentored	Nonmentored	
Overall score	3.05 (0.28)	2.98 (0.29)	0.26	3.40 (0.22)	2.82 (0.26)	2.43
Self	3.05 (0.38)	2.91 (0.42)	0.35	3.35 (0.44)	2.84 (0.43)	1.18
Peers	3.17 (0.29)	3.04 (0.37)	0.40	3.37 (0.32)	2.96 (0.34)	1.24
Teachers	2.92 (0.46)	2.80 (0.48)	0.24	3.32 (0.32)	2.75 (0.46)	1.45
Others in the school	3.08 (0.52)	3.16 (0.57)	-0.14	3.58 (0.26)	2.73 (0.38)	2.62

An analysis of covariance using the prementoring ratings as a covariate was conducted to determine if overall postmentoring ratings between mentored and nonmentored groups differed significantly. The postmentoring mean survey rating of the mentored group was significantly higher than the mean rating of nonmentored students, $F(3,29) = 63.110, p < .000$). The average rating for students in the mentoring program was greater than the average rating for 14 of 15 students in the control condition ($ES = 2.82$, large effect). Moreover, 79% of the variance in ratings could be attributed to whether a student was mentored or not.

An analysis of covariance was also conducted to analyze the difference in variance between mentored and nonmentored student ratings in each survey category (see Table 3). Mentored student ratings were significantly different than nonmentored student ratings in each survey category. All effect sizes were large and ranged across categories from 1.18 to 2.62. In the self category, whether a student was mentored or not accounted for 24% of the variance. In the peers category, whether a student was mentored or not accounted for 29% of the variance in student ratings. In the teacher category, whether a student was mentored or not accounted for 43% of the variance in student ratings.

Table 3
Analysis of Covariance for Survey Item Categories

Dependent variable	Source	Type III sum of squares	df	F	Significance	Partial eta squared
Postself	Group	.872	1	7.205	.013*	0.239
Postpeers	Group	1.212	1	9.464	.005*	0.292
Postteachers	Group	1.634	1	17.660	.000*	0.434
Postothers	Group	4.558	1.64	.655	.000*	0.738
Postself	Preself	1.189	1	9.825	.005*	0.299
Postpeers	Prepeers	1.182	1	22.424	.000*	0.494
Postteachers	Preteachers	1.185	1	12.810	.002*	0.358
Postothers	Pre-others	0.073	1	1.031	.321	0.043

* $p < .05$.

Finally, in the others category, group affiliation accounted for 74% of the variance in student ratings.

Specific Program Components and Processes Perceived by Mentors as Essential

Mentor interviews were coded as either “viewed positively” or “questioned impact.” Mentors were labeled “viewed positively” if the majority of mentor interview responses were positive statements. Positive statements included the following: “It was inspiring to help kids look outside themselves,” “I really enjoyed this,” “I became an advocate,” “He shows a lot of interest in our time together,” “I got to know him personally,” and “I will keep meeting with him next year whether we have a program or not.” Mentors were labeled “questioned impact” if the majority of the interview responses were negative or questioning statements such as “He was guarded,” “He viewed me as an authority,” “I did not feel like I was getting anywhere,” “He was not honest,” “His attitude got worse,” “I liked it but I couldn’t tell if I was having any impact,” “I could not get him to open up,” or “He kept avoiding me.” In all, 10 mentoring dyads were labeled “positive experience” and 6 mentoring dyads were labeled “questioned impact” based on interview responses. An interesting finding is that of the three mentors interviewed twice, one was labeled “positive experience” for both mentees, and two were labeled “positive experience” for one tutee and “questioned impact” for the second mentee.

In the following section, the mentees of mentors who were labeled “viewed positively” and the mentees of mentors who were labeled “questioned impact” are compared in terms of the number of office referrals, how often they met with their mentors during the mentoring phase and in terms of mentor log comments and activities during mentoring sessions.

Number of office referrals. Mentees in the viewed positively group had an average of 2.5 office referrals with a range from 0 to 7, whereas mentees in the questioned impact group had an average of 4.2 office referrals with a range from 2 to 7 referrals. A total of 7 mentees had 2 or fewer referrals. Six of those students belonged to a viewed positively mentor whereas one student belonged to a questioned-impact mentor. In contrast, a total of 9 mentees had 3 or more referrals; 4 of those students belonged to a viewed positively mentor and 5 students belonged to a questioned impact mentor.

Number and frequency of mentoring sessions. Mentoring dyads from the viewed positively group met an average of 15.3 times over 18 weeks, with a range from 12 to 22 times. Similarly, dyads from the questioned impact group met an average of 14.3 times over the 18-week period, with a range from 8 to 20 times.

The average number of times mentoring dyads met consecutively during 3-week blocks also was tallied. Mentoring dyads in the viewed positively group met 3 consecutive weeks during the 18-week mentoring period an average of 3.8 times with a range from 2 to 6 times. In contrast, dyads in the questioned impact group met 3 consecutive weeks an average of 2.3 times with a range from 0 to 4 times. Of the 10 dyads in the viewed positively group, 3 dyads met every week during the 18-week period, whereas no dyads in the questioned impact group met every week during the 18-week period.

Mentor log comments. The common themes in mentor logs included the following: “Statements made to change something,” “Saw a positive change,” “Saw a negative change,” “Laughed,” “Student was open,” and “Student was not open.” Sample statements from mentor logs within each theme are provided in Table 4.

Table 4
Mentor Comment Themes From Mentor Logs

Theme	Sample Statements From Mentor Logs
Statements made to change something	1. I need to find a different time to meet. 2. I need to change the conversation. 3. I will not talk about grades again. 4. We need to meet in a different place. 5. Next week we will only talk about fun stuff.
Saw a positive change	1. She seems to be enjoying this now. 2. He talks a lot more than he used to. 3. Our visit was very pleasant this week. 4. Nothing to change now, it's going great.
Saw a negative change	1. I tried a different time but he is avoiding me now. 2. I am starting to get the feeling that he is not interested. 3. He is showing up less and less.
Laughed	1. We laughed. 2. He makes me laugh.
Student was open	1. He really opened up this week. 2. Conversation flows easily with him-he's open. 3. She is really opening up.
Student was not open	1. He is not very open. 2. I can't get him to open up. 3. He completely shut down.

The number of mentor comments within each theme and reported mentor activities was counted from a total of 153 mentor logs in the viewed positively group and 92 mentor logs in the questioned impact group. The percentage of comments within each theme and the number of viewed positively and questioned impact mentors who made those statements are presented in Table 5.

Viewed positively mentors and questioned impact mentors described a need to change something about the way the mentoring session was conducted at about the same frequency. Moreover, all mentors included at least one comment that was coded as “Statements made to change something.”

In sum, viewed positively mentors described more positive changes and fewer negative changes than questioned impact mentors. Moreover, the mentors in the viewed positively dyads more frequently and reported relaxed (laughing) sessions in which the conversation seemed to flow, whereas the mentors in the questioned impact dyads more frequently reported that mentees shut down, did not talk, or were not open.

Mentoring activities. The common activities during mentoring sessions included “talking,” “mentor talking about school,” “student talking about school,” “talking about

Table 5
Comments Made by “Viewed Positively” and “Questioned Impact” Mentors

Theme	“Viewed Positively” N = 10) % of mentor (comments (number of mentors)	“Questioned Impact” (N = 6) % of mentor comments (number of mentors)
Statements made to change something	22.9% (10 of 10)	20.7% (6 of 6)
Saw a positive change	17.0% (10 of 10)	3.3% (3 of 6)
Saw a negative change	0.7% (1 of 10)	13.0% (5 of 6)
Laughed	4.6% (4 of 10)	0% (0 of 6)
Student was open	3.3% (4 of 10)	0% (0 of 6)
Student was not open	0% (0 of 10)	7.6% (4 of 6)

nonschool topics,” “mentor listening,” “sharing food,” “playing a game,” “helping with schoolwork,” and “using an icebreaker” (see Table 6). The percentage of activities within each category and the number of viewed positively and questioned impact mentors who reported those activities are presented in Table 7.

Mentors in both the viewed positively dyads and the questioned impact dyads described talking as the most frequently occurring activity during mentoring sessions. A sharp contrast between viewed positively dyads and questioned impact dyads can be seen in the mentor listening, sharing food, and playing game categories.

In sum, both viewed positively mentors and questioned impact mentors reported talking as the most frequently occurring activity during mentoring sessions. However, viewed positively mentors reported more incidents of listening to the mentee talk, sharing food, and playing games during mentoring sessions, whereas questioned impact mentors more frequently reported talking, in general, and using icebreaker activities during mentoring.

Discussion

In this study, school-based mentoring was implemented for a group of at-risk junior high students for 18 weeks. The effects of mentoring were analyzed in terms of rate of office disciplinary referrals, attendance, and student survey responses. Mentor interview responses and log entries also were analyzed for common mentoring themes. Viewed positively mentors were those whose interviews and logs included primarily positive comments, and questioned impact mentors were those whose interviews and logs included primarily negative or questioning comments. Mentees of the viewed positively and questioned impact mentors were then compared in terms of rate of office

Table 6
Mentor Activity Themes From Mentor Logs

Activity	Sample Statement From Logs Describing Activity During Mentoring Sessions
Talking	1. We talked. 2. We talked about everything.
Mentor talking about school	1. I brought up school and how he's doing. 2. I asked how things were going with school. 3. I asked him about his grades and attendance.
Student talking about school	1. He wanted to talk about school. 2. She brought up a problem with a teacher. 3. He showed me his report card.
Talking about nonschool topics	1. We talked about his weekend. 2. We talked about plans for Summer. 3. We talk about sports a lot.
Mentor listening	1. I decided to just listen this week. 2. I listened to him talk about what he likes. 3. I just listened.
Sharing food	1. We had lunch. 2. I brought him breakfast. 3. We got a snack from the machines.
Playing a game	1. This week we played Jenga. 2. I decided we could play a game. 3. He just wanted to play a game.
Helping with schoolwork	1. We worked on his project. 2. I helped her with her homework. 3. He wanted help with his work.
Using an icebreaker	1. I decided to do one of the icebreaker activities. 2. I used an icebreaker. 3. We filled out the "introductions" worksheet.

referrals and attendance, whereas mentors were compared in terms of consistency of conducting mentoring sessions.

This study extends previous research by employing an experimental design combined with a qualitative analysis to evaluate a school-based mentoring program that uses school personnel as mentors. The postmentoring mean number of office referrals for mentored students was significantly lower than the postmentoring number of office referrals for nonmentored students. This outcome supports one previous investigation (Rollin, Kaiser-Ulrey, Potts, & Creason, 2003) and differs from two previous investigations (Carmola, 1995; Royse, 1998) that reported no significant reduction in the number of disciplinary problems for mentored students. It is important to note, however, that in both of these studies the researchers described a high degree of variability in the content and quality of mentoring sessions, and in both studies, community members were used as mentors rather than school personnel.

The lack of significance between mentored and nonmentored students' school attendance is similar to the findings reported in three investigations (Blum & Jones,

Table 7
Activity Reports for "Viewed Positively" and "Questioned Impact" Mentors

Mentoring Activity	Viewed Positively Mentors (<i>N</i> = 10) % of logs in which activity was reported (number of mentors)	Questioned Impact Mentors (<i>N</i> = 6) % of logs in which activity was reported (number of mentors)
Talking	24.2% (9 of 10)	35.9% (6 of 6)
Mentor talking about school	7.2% (6 of 10)	9.8% (2 of 6)
Student talking about school	3.9% (4 of 10)	0% (0 of 6)
Talking about nonschool topics	8.5% (6 of 10)	8.7% (3 of 6)
Mentor listening	11.8% (5 of 10)	1.1% (1 of 6)
Sharing food	11.8% (8 of 10)	8.7% (4 of 6)
Playing a game	12.4% (6 of 10)	4.3% (2 of 6)
Helping with schoolwork	2.6% (3 of 10)	1.1% (1 of 6)
Using an icebreaker	2.0% (2 of 10)	3.3% (3 of 6)

1993; Rollin et al., 2003; Royse, 1998). However, the findings differ from those of Tierney and Grossman (1995) in which a reduction in the number of times a student self-reported skipping school was noted and Sinclair et al. (1998) in which a higher enrollment rate for mentored students was reported. Further study is necessary to assess using unexcused absences as a valid measure for testing the efficacy of school-based mentoring. It is possible that although the total number of absences a student accrues may be a strong indicator that the student needs an intervention, changes in rates of attendance may not be an outcome of school-based mentoring.

In the present study, there were significant changes in pre- or poststudent attitudes toward self, peers, teachers, and other school personnel based on the School Connectedness Survey. More pronounced changes in student attitudes toward school were detected in the other school personnel category. Importantly, all the mentors in this study fell under the other category because of the requirement that faculty mentors not mentor students enrolled in their classes. These findings are similar to one experimental study in which the authors reported significant student attitude changes on pre- to postschool and family connectedness scores (King et al., 2002). King et al. (2002), however, did not report significant differences between mentored and nonmentored groups on self-esteem and peer connectedness scores. An interesting finds is that Carmola (1995), Royse (1998), and Lee (1999) assessed student self-esteem or self-concept and reported no significant changes. The findings from these studies imply that perhaps mentoring initially impacts student attitudes

about school and school personnel rather than attitudes about self-esteem and self-concept. In the present study, mentored students' attitudes about themselves improved significantly whereas nonmentored students' attitudes about themselves did not improve. This information could be a valuable tool as future goals and foci of school-based mentoring programs are developed. Establishing connectedness with school and relationships with school personnel could serve as a strong, initial indicator in evaluating the impact of the mentoring program on at-risk students' school success.

Analysis of mentor activity logs and interview data suggests that some mentors had a more positive experience than others. Mentors who viewed their experiences positively met with their mentees more consistently than those who questioned their impact. This was identified by several researchers as one of the most essential aspects of successful mentoring (Flaxman & Ascher, 1992; Ryan et al., 2002; Slicker & Palmer, 1993). Moreover, mentees of viewed positively mentors had fewer referrals than mentees of mentors who did not report a positive experience.

Another difference between the viewed positively mentors and the questioned impact mentors was the kind of comments mentors made about their mentoring sessions. In this study, viewed positively mentors frequently reported relaxed sessions in which the conversation seemed to flow. These mentors were more likely to describe listening to the mentee talk about school or in general, playing a game, and sharing food, whereas the questioned impact mentors more frequently used icebreaker activities and initiated conversations. In essence, mentors who frequently used active listening skills during mentoring and played games or shared food with mentees had more successful interactions with mentees than mentors who frequently initiated conversation and used the guided icebreaker activities. The findings of this study support the opinions of several researchers and scholars who cite active listening and mentee-initiated activities as indicators of successful mentoring relationships rather than mentor or program-directed activities (Flaxmann & Ascher, 1992; Grossman & Garry, 1997; Jekielek, Moore, Hair, & Scarupa, 2002). This information suggests that a more flexible, mentee-driven session in which the mentor plays the role of facilitator and active listener may be more likely to lead to a successful mentoring relationship, than a regimented mentor-directed session. Additional research is needed to determine if these general characteristics of successful mentor-mentee relationships are consistent. If so, these categories of mentor comments and activities might be used in future school-based mentoring programs as the basis for formatively evaluating potentially successful or problematic mentoring relationships.

Limitations

Several limitations to the conclusions drawn in this study should be noted. First, this mentoring program included a small number of mentors and mentees from one urban junior high school in one state. Replication of this study is needed to generalize the findings from this study to other school settings, demographic areas, and age groups. Also, this study did not address changes in school-related issues such as academic performance and dropout rates. Several previous studies on school-based mentoring reported a positive impact in these areas (Blum & Jones, 1993; King et al., 2002; Sinclair, et al., 1998; White-Hood, 1993), whereas others reported no significant impact (Carmola, 1995; Royse, 1998; Slicker & Palmer, 1993).

Implications for Future Research

The time frame for the intervention period of this study was 18 weeks. In previous studies researchers suggested that successful program outcomes are dependent on a meaningful mentoring relationship and that to develop such a relationship between mentees and mentors requires at least 1 year (King et al., 2002; Royse, 1998; Tierney & Grossman, 1995). A longitudinal replication of the present study is needed to examine if the short-term impact documented in this study would be sustained and to determine if other variables such as academic performance and dropout rates are impacted by the school-based mentoring programs.

Likewise, replication in both elementary settings and high school settings is necessary to evaluate the generalized effect of mentoring on referrals, attendance, and school connectedness. It also would be beneficial to conduct a longitudinal study to examine the impact of this school-based mentoring program on the dropout rates of mentored students (Sinclair et al., 1998; Slicker & Palmer, 1993).

In previous studies, researchers suggested that school-based mentoring is a cost-effective intervention (Grossman & Garry, 1997). Grossman and Garry (1997) suggest that a comprehensive school-based program using community volunteers as mentors might be implemented for approximately \$1,000 per student. Fountain and Arbretton (1999) conducted a cost evaluation of 52 mentoring programs and calculated an average of \$1,114 spent per mentee; however, this is the only cost evaluation to date. It is possible that using the school as the training site and school personnel as mentors could lower these estimates. A cost benefit analysis should be conducted to examine the cost-effectiveness of the school-based mentoring program employed in this study. It is possible that the \$1,114 per student estimate (Fountain & Arbretton, 1999) could be lowered.

Finally, further research should explore which students might benefit most from school-based mentoring interventions. Specific studies might address whether students with emotional disturbance would benefit from the school-based mentoring program described in this study or whether a more intensive intervention would be needed given the severe nature of their behavior. Additional research on who might benefit most from school-based mentoring at various levels of intensity would help refine the mentee selection process and help to target the students most in need of the intervention.

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