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ORIGINAL PAPER

The Test of Time in School-Based Mentoring: The Role of Relationship Duration and Re-Matching on Academic Outcomes

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Abstract The influence of match length and re-matching on the effectiveness of school-based mentoring was studied in the context of a national, randomized study of 1,139 youth in Big Brothers Big Sisters programs. The sample included youth in grades four through nine from diverse racial and ethnic backgrounds. At the end of the year, youth in intact relationships showed significant academic improvement, while youth in matches that terminated prematurely showed no impact. Those who were re-matched after terminations showed negative impacts. Youth, mentor, and program characteristics associated with having an intact match were examined. Youth with high levels of baseline stress and those matched with college student mentors were likely to be in matches that terminated prematurely, while rejection-sensitive youth and mentors who had previous mentoring experience were more likely to be in intact relationships. Implications for research and practice are discussed.

Keywords Mentoring · Adolescence · School-based intervention

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Introduction

School-based mentoring (SBM) is the fastest-growing form of mentoring in the US, serving hundreds of thousands of vulnerable students (MENTOR 2006). Although a rarity 15 years ago, more than half of mentoring programs partner with elementary, middle, and high schools to create mentoring programs that take place in schools (DuBois and Karcher 2005). Whereas traditional community-based mentoring (CBM) typically occurs in neighborhood settings over the course of a calendar year, SBM mentoring typically occurs in school settings over the course of an academic year. Moreover, mentors in SBM tend to be more demographically diverse than those in CBM and to spend relatively more time working on academic goals (Herrera et al. 2000). Although recent random-assignment impact evaluations showed few statistically significant effects for the samples as a whole (Bernstein et al. 2009; Herrera et al. 2007; Karcher 2008; Wheeler et al. 2010), secondary analyses of these data suggest variability in effects across different subgroups of youth (Herrera et al. 2011; Karcher et al. 2010; Schwartz et al., in press). These findings underscore the importance of identifying factors that account for variation in the effectiveness of SBM. The present study draws on data from a recent national evaluation of ten Big Brothers Big Sisters (BBBS) SBM agencies (Herrera et al. 2007) to examine whether, and under what conditions, match length and re-matching are associated with differential effects on youth academic outcomes.

Background

Previous research has suggested that match length is an important factor accounting for variability in CBM program effects. In fact, because duration tends to be

associated with close relationships and strong programs, match length is one of best benchmarks of program effectiveness (DuBois and Rhodes 2006; Grossman and Johnson 1999). In a re-analysis of data from a random-assignment study of the BBBS CBM programs, Grossman and Rhodes (2002) found that effects of youth outcomes became progressively stronger as relationships persisted for longer periods of time. The largest benefits were evident for youth in relationships that lasted 1 year or longer. By contrast, youth in relationships that terminated in fewer than 3 months showed declines in functioning relative to controls. Such trends remained, even after controlling for potential confounding influences such as baseline characteristics of youth that could contribute to increased risk for premature termination. Other investigations have also highlighted the importance of match length and consistency, as well as the negative consequences of early terminations (DuBois et al. 2002b; Karcher 2005; Slicker and Palmer 1993; Spencer 2006).

These patterns make sense when we consider the potential complexities of youth mentoring processes (Spencer 2006). In particular, mentoring is thought to rest on close interpersonal connections and, in some cases, to influence youth through changes in their approach to other relationships. For example, by providing care and support, mentors can challenge negative views that youth may hold of themselves and demonstrate that positive relationships with adults are possible. In this way, a mentoring relationship can become a "corrective experience" for youth who have experienced unsatisfactory relationships with parents or other caregivers (Hayes et al. 1996). Likewise, by serving as a sounding board and providing a model of effective behavior and communication, mentors may help youth to better understand, express, and regulate their emotions (McDowell et al. 2002). Positive social-emotional experiences with mentors may generalize, enabling youth to interact with others more effectively. In support of this prediction, enduring mentoring relationships have been linked to significant improvements in youths' perceptions of their relationships with parents, peers, and other adults (DuBois et al. 2002a, b; Karcher 2005; Rhodes et al. 2000, 2005).

Unfortunately, many SBM programs are characterized by relatively short matches. Recent evaluations have revealed that the average length of SBM matches is approximately 5 months (Bernstein et al. 2009; Herrera et al. 2007), compared with a 1-year average in CBM relationships (Grossman and Tierney 1998). Moreover, as many as half of SBM relationships terminate prematurely (Bernstein et al. 2009; Herrera et al. 2007). To address this problem, program staff are increasingly re-matching youth when their mentoring relationships are troubled or prematurely terminated (Keller 2005). In BBBS programs, for example, nearly 15% of youth are re-matched with new volunteers as a result of early, unexpected terminations. The practice of re-matching appears justified if one interprets prior research as indicating that a greater dosage of mentoring, even in the context of sequential relationships, facilitates improved outcomes and mitigates the negative effects of loss. Although plausible, there currently exists no empirical evidence to support such assumptions, as previous research on match length has not distinguished between matches with the same versus multiple, sequential mentors (e.g., Grossman and Rhodes 2002). It is also possible that engaging in multiple truncated matches may ignite youth's vulnerabilities to loss or short-circuit the necessary stages of understanding that the termination process can afford.

Despite its growing frequency, we know little about the consequences of re-matching youth when their mentoring relationships end unexpectedly. Although not entirely analogous (Rhodes and Spencer 2005), research on how children and adults respond to being transferred from one psychotherapist to another might provide some insight into this process. Most of this literature focuses on the difficulties and reactions that are triggered by therapist transitions, including the feelings of rejection, anxiety, and abandonment (Bostic et al. 1996; Williams and Winter 2009). Such responses are thought to be moderated by factors such as preparation for the transition, the length of the prior helping relationship, the management of transfer process, and attributions regarding the transition (Williams and Winter 2009).

In mentoring, some causes of early endings and subsequent rematches are unavoidable, such as when youth transfer to another school. All too often, however, relationship terminations are abrupt and unexplained, leaving youth feeling hurt and confused (Spencer 2006). Indeed, because the central component of mentoring is the formation of close one-on-one relationships, terminations, disruptions, and re-matches can touch on vulnerabilities in ways that less-personal interventions do not (Ragins and Scandura 1997; Rhodes et al. 2009). Many adolescents in mentoring programs come from single-parent homes and may have already suffered the loss of regular contact with a non-residential parent. Such youth may feel particularly vulnerable to, and responsible for, problems in subsequent adult relationships.

Other youth may have experienced unsatisfactory or rejecting parental relationships in the past. Consequently, they may have developed internal representations of relationships that incorporate fears and doubts about whether others will accept and support them (Egeland et al. 1988). When such adolescents encounter cues that relationships will not proceed, however minimal or ambiguous, they may readily perceive intentional rejection from their mentors (Bernstein et al. 2009; Downey and Feldman 1996; London et al. 2007). Such adolescents may go to

some lengths to avoid loss and, when terminations do occur, may feel particularly disappointed and responsible for problems in relationships (Downey et al. 1994; Larose et al. 2005; Romero-Canyas et al. 2010). Drawing on both attachment and attributional frameworks, Downey et al. (1994) have proposed the construct of rejection sensitivity—a cognitive-affective processing disposition—as the tendency to "anxiously expect, readily perceive, and overreact to rejection in a wide variety of situations" (p. 497). Such tendencies are likely to influence youths' experience of mentoring relationships and, particularly, of impending relationship terminations. This theory can also provide a framework for understanding a child's reactions to re-matches in mentoring, particularly if he or she experienced the termination of the previous mentoring relationship as rejecting. Such experiences can sensitize children to the possibility of rejection in their subsequent relationships, rendering them more vigilant to any possible signs of rejection from their new mentors (London et al. 2007). These defensive expectations, when activated, can heighten perceptions of rejection, fuel negative behavior, and undermine the child's ability to develop and benefit from subsequent relationships (Downey et al. 2004).

Irrespective of relationship histories, all youth are apt to show some vulnerability to early terminations. Adolescence is a life stage during which issues of acceptance and rejection are especially salient (Lerner and Galambos 1998). To the extent that adolescents have identified with their mentors and have begun to value the relationship, they may feel profound disappointment when the relationship terminates prematurely. Feelings of rejection and disappointment, in turn, may lead to a host of negative emotional, behavioral, and academic outcomes (Downey et al. 1998).

Current Study

In this study, we explore the influence of match duration and re-matching on SBM mentoring effectiveness, focusing on the most commonly cited outcomes associated with SBM: school attendance and academic achievement (Herrera et al. 2011). We draw on the national evaluation of BBBS (Herrera et al. 2007, 2011), arguably the richest available source of information on SBM. In addition to detailed youth, volunteer, and match information (collected from both youth and teachers), the dataset contains extensive (and largely untapped) information on program characteristics that could influence match length. Next, we examine the effects of re-matching as a practice to address early terminations in youth mentoring, and whether transferring youth whose relationships have terminated prematurely to new mentors is beneficial. Based on previous studies, we hypothesize that increased match duration will be associated with better academic outcomes.

Finally, we investigate potential predictors of relationship integrity and termination. Baseline youth and mentor risk factors for early termination are examined. Given their with differential match length in previous studies (see Grossman and Rhodes 2002) and role as moderators of mentoring outcomes (DuBois et al. 2002a; Herrera et al. 2011), we include measures of youth and mentor demographic characteristics, psychological and behavioral problems, and stress exposure. Likewise, given its potential role in youth's reaction to both terminations and re-matching, we explore the role of rejection sensitivity (Downey et al. 1994).

In addition to baseline youth and mentor factors, we examine program factors as potential predictors of early termination. For example, recent research suggests that adults tend to be most effective when their interactions with youth reflect sensitivity to the needs of youth for both autonomy and structure (Larson et al. 2005; Pryce 2006; Spencer 2006). However, programs vary in how they strike this balance, which may influence program outcomes (DuBois et al. 2011). Whereas some programs have highly structured curricula and academic activities, others allow the mentors and youth to determine the goals and activities. We explore how program stipulations regarding match meetings, locations, and rules affect match length.

Method

Participants

Participants were recruited from ten BBBS agencies across the country (serving a total of 71 participating schools), all of which: (1) had been operating SBM programs for at least 4 years; (2) served at least 150 youth; (3) recruited at least two different types of volunteers (e.g., high school students and professionals); and (4) had strong leadership in place (Herrera et al. 2007). All youth who met the following criteria were invited to participate in the study: (1) were in fourth though ninth grades at the start of the study; (2) had parental consent to participate; and (3) had not been referred because of a crisis (e.g., no child was referred by Child Protective Services). The characteristics of the youth sample and their mentors are presented in Table 1.

Procedure

Youth were referred to BBBS mentoring by school staff. All youth who met criteria to participate in the study were given parental consent forms and youth assent forms. Those who agreed to participate ($N = 1{,}139$) completed baseline (T1) surveys at their school, administered by

Table 1 Demographic characteristics of sample

Demographic characteristics	Youth		Protégés		Control		Mentor	
	(N = 1,139)		(n = 565)		(n = 574)		(N = 496)	
	N	%	*n*	%	*n*	%	*n*	%
Age (mean/SD)	11.23	1.67	11.24	1.67	11.22	1.66	24.59	12.06
Gender								
Male	522	45.8	260	46.0	262	45.6	92	24
Female	617	54.2	305	54.0	312	54.4	291	76
Race/ethnicity[a]								
White	527	46.3	260	46.0	267	46.5	294	77
Hispanic/Latino	306	26.9	159	28.1	147	25.6	22	6
Black/African American	252	22.1	132	23.4	120	20.9	26	7
Native American	139	12.2	66	11.7	73	12.7	6	2
Asian/Pacific Islander	19	1.7	9	1.6	10	1.7	16	4
Other	54	4.7	25	4.4	29	5.1	3	1
Multiracial	NA	NA	NA	NA	NA	NA	15	4
Economic status								
Free/reduced lunch	679	59.6	342	60.5	337	58.7	NA	NA

NA not available

[a] Percentages add up to more than 100% due to youth identifying with more than one race/ethnicity

on-site researchers in small group settings. Teachers were also given surveys to complete for each youth, following informed consent. For youth in middle and high school settings, the science, social studies, English as a Second Language (ESL) or homeroom teacher completed the survey. Teachers of 1,009 youth (of the 1,139) completed T1 surveys. Surveys were available in both Spanish and English. After youth completed the T1 survey, they were randomly assigned to the treatment group (n = 565) or the wait-list control group (n = 574). No differences were found between the treatment and control group at baseline on any demographic variables, including age, gender, minority status, SES, or on outcome variables, including overall academic performance and unexcused absences.

Follow-up surveys (T2) were administered in the spring of the first school year with 1,067 youth surveys (93.7% retention) and 959 teacher surveys completed. At T2, program staff also completed surveys regarding the structure and goals of each school's programs. Mentors committed to meeting with youth for one school year, and matches generally began after the start of the school year to allow for volunteer recruitment, screening, and training.

Measures

Match Duration (Measured at T2)

Match duration was a single item variable referring to the total number of weeks youth had been in a match as measured at T2, summing all the days of mentoring across all matches.

Outcome Variables (Measured at T1 and T2)

Overall academic performance was determined based on teachers' ratings of youth's academic performance on a single-item five-point scale ranging from 1 = "below grade level" to 5 = "excellent" (Pierce et al. 1999).

Unexcused absences were measured from teachers' reports of the number of times in the previous 4 weeks that youth had been absent from school without an excuse. The variable was dichotomized into 0 = "no unexcused absences" or 1 = "one unexcused absence or more."

Youth and Mentor Characteristics (Measured at T1 or T2)

General Characteristics Mentors and youth provided information on their age, gender, race, and ethnicity. The youth's school lunch status (1 = "free or reduced cost") was used to indicate his or her socioeconomic status.

Mentor's Student Status Dummy variables were created to indicate whether the mentor was a high school student or a college student.

Youth Baseline Risk (Measured at T1)

Stress exposure was based on a 12-item checklist adapted from the Social Readjustment Rating Scale (Holmes and Rahe 1967). Youth were asked whether, over the prior 6 months, they had experienced any one of 12 events such as "Have you moved or changed where you live?" and

"Was someone you know well hurt badly or very ill?" All responses were dichotomous (0 = "no" and 1 = "yes") and were summed to form the scale.

Rejection sensitivity was assessed using a five-item teacher report scale adapted from Coie and Dodge (1988) for use in a study of rejection sensitivity and interpersonal difficulties in children (Downey et al. 1998). The scale asks teachers to assess behavioral evidence of children's sensitivity to rejection, such as their tendency to cry or get angry in response to accidental hurts. Teachers indicated how true each statement was for a given child on a 4-point scale from 1 = "strongly disagree" and 4 = "strongly agree." The scale yielded good internal consistency, with a Cronbach's alpha of .84.

Program-Level Variables (Measured at T1)

At T1, mentoring program staff were asked three questions regarding each school's program, including (1) whether all matches are expected to meet at the same time and location, (2) whether any time is spent on structured activities, and (3) whether the activities are academically focused. For all variables, positive responses were coded as "1."

Analytical Procedure

First, we examined the relationship between match duration and teacher-assessed academic achievement and unexcused absences, using linear and logistic regression analysis, respectively. Because no significant differences were found between the treatment and control group at baseline in terms of age, gender, minority status, SES, overall academic performance, and unexcused absences, only the baseline measure of the dependent variable was included as a covariate. Match duration was characterized in two alternative manners. First, we considered the total number of weeks of mentoring received. Matches were also characterized as intact, broken and re-matched, or broken and not re-matched. Matches were considered to be intact if youth were still meeting with their first mentor at the time of the first follow-up.

It is important to note that if duration was affected by unobserved variables that influence both match length and school outcomes (i.e., youth who can maintain relationships are better students), then ordinary least squares estimates would be biased. To adjust for this potential bias, we also estimated the relationship between match length and outcomes using instrumental variable techniques that are designed to generate unbiased estimates (Angrist et al. 1996; Gennetian et al. 2005). Finally, we examined the variables that predicted the integrity of the first match (i.e., having an intact match) using logistic regression.

Results

Missing Data

Overall, 6.7% of data were missing completely at random (treatment group: χ^2 [8,819] = 8,746.78, $p = .706$; control group: χ^2 [3,439] = 3,085.03, $p = 1.000$). Single, bootstrapping-based imputation, using *Amelia II* in *R*, was conducted, resulting in one complete dataset that was used in the remaining analysis.

Match Length

At the time of the T2 survey, 64.4% of youth in the treatment group were still meeting with the mentors to whom they were originally assigned. Among youth in the treatment group, the average length of match was 4.8 months (SD = 2.1) and the average number of meetings per month was 3.0 (SD = 1.1) at the time of the first follow-up (T2). About one-fifth of matches (20.5%) lasted less than 3 months (including 39 youth who were not matched by T2), 35.4% lasted between 3 and 6 months (12–24 weeks), and 44.1% lasted more than 24 weeks. Most (64.4%) of the matches remained intact during the school year. Of those that did not, 9.9% ($n = 56$) were re-matched after their first match ended, and 18.8% experienced match terminations but were not re-matched with a new mentor.

Ordinary Least Square Analysis

Grossman and Rhodes (2002) found a non-linear relation between match length and effects for CBM, with no positive impacts occurring before 3 months and most effects appearing after at least 6 months. Thus, we first examined the associations between youth's overall academic performance and student absenteeism and these same three match lengths—namely meeting 1–11 weeks, 12–23 weeks, or 24 or more weeks. Table 2 (columns "OLS") shows that the impact of mentoring on academic performance is significantly different from the control group only among those youth in matches that endured at least 12 weeks. For absenteeism, the effect was fairly constant across the three match-length categories. Youth in the mentoring group were less likely to have unexcused absences than control group youth, irrespective of match length. Negative effects of short-lived matches were not detected for either outcome.

Re-Matching

Next, we examined the effects of re-matching. On average, youth in intact matches ($n = 364$) received 23 weeks of

Table 2 Linear, logistic, and probit regression models predicting academic outcomes

Groups	*n*	Total match length weeks (SD)	OLS							Instrumental variables							
			Academic achievement[a]				Any unexcused absences in past 4 weeks[b]			Academic achievement[c]				Any unexcused absences in past 4 weeks[d]			
			B	SE	95% CI	*p*	*OR*	95% CI	*p*	*B*	SE	95% CI	*p*	*B*	SE	95% CI	*p*
Model 1																	
Match length <12 weeks	77	–	.07	.09	−.11, .26	.427	.47	.23, .97	**.037**	−.05	.66	−1.36, 1.26	.941	−.22	.73	−1.67, 1.23	.763
Match length = 12–24 weeks	200	–	.13	.06	.01, .26	**.033**	.54	.33, .90	**.015**	.56	.45	−.33, 1.46	.215	−.13	.49	−1.09, .84	.795
Match length >24 weeks	249	–	.13	.06	.02, .25	**.022**	.63	.41, .96	**.030**	−.12	.16	−.44, .20	.475	−.44	.20	−.84, −.05	**.026**
Model 2																	
Intact relationship	364	22.9 (6.5)	.14	.06	.04, .24	**.008**	.59	.40, .87	**.007**	.47	.19	.09, .85	**.015**	−.06	.25	−.55, .43	.819
Re-matched	56	24.8 (4.9)	.03	.11	−.18, .25	.746	.58	.25, 1.36	.197	−1.63	.70	−3.03, −.23	**.019**	−.36	.92	−2.20, 1.48	.691
Not re-matched	106	16.8 (8.8)	.13	.08	−.03, .29	.106	.50	.27, .92	**.024**	.04	.35	−.66, .75	.907	−.94	.41	−1.76, −.13	**.022**

Bold typeset indicates $p < .05$. In all models, level of the outcome variable at Time 1 and a dummy code indicating those who were in the treatment group but did not get matched with a mentor by the time of follow-up ($n = 39$) were included as a covariate. Shea's partial R^2 were .04 for matches lasting less than 12 weeks, .04 for matches lasting 12–24 weeks, and .20 for longer matches. Shea's partial R^2 were .12 for intact matches and .06 for broken matches. Shea's partial R^2 were .10 for intact relationships, .07 for not re-matched matches and .03 for re-matched matches

OLS ordinary least square

[a] Linear regression

[b] Logistic regression

[c] Linear regression estimated with limited information maximum likelihood

[d] Probit regression estimated with rescaled and recentered generalized method of moments (Iwata 2001), using a gretl script provided by Adkins (2010)

mentoring. One hundred seventy-one youth experienced a break in their first match, with breaks occurring, on average, 19 weeks into their relationship. Within the group of youth that experienced broken matches, some were re-matched with new mentors and some were not. Ultimately, the 56 youth who were re-matched received an average of 25 weeks of mentoring—more than the youth in intact matches. If the dosage of mentoring (i.e., total match length) was the crucial factor accounting for improvements in academic achievement effect, we would expect that impacts for the re-matched youth would be similar to (or even slightly stronger) than that of the youth in intact matches. Notably, however, our results indicate that improved academic achievement was significantly related to mentoring *only* for the youth in intact matches (see Table 2). With respect to unexcused absences, youth in intact matches as well as youth whose matches terminated but were not re-matched were both less likely than controls to have unexcused absences. By contrast, youth whose match terminated and were re-matched were just as likely to have unexcused absences as the control group.

Instrumental Variable Analysis

The patterns described above—the differences in academic performance or absences between the youth in intact versus short-lived relationships—could, however, be due to self-selection bias, that is, if youth who did well in school were also better able to maintain a mentoring relationship. If this were true, then the positive associations between having an intact match and better outcomes would not be due to the mentoring per se, but rather to a third, unmeasured characteristic of youth in intact matches. We thus used instrumental variables (IV) to account for such potential biases. This technique constructs an "instrument" for length of match that is similar to the observed length of match, but which is purged of the unwanted correlation with the error term in the outcome equations (Gennetian et al. 2005). To employ an IV strategy, one needs at least one exogenous variable for each endogenous variable in the equation. In our case, we needed at least three variables that were correlated with the three endogenous variables—having an intact match, having a broken but not re-matched relationship, and being re-matched (or the 3 match length dummies)—but were uncorrelated with the error term on the outcome variables in the regression models. Since not all the agencies were equally successful at matching and re-matching, we employed this site variation to construct instruments. In particular, we used the treatment-status × agency dummy variables as instruments for our three match length variables. Because treatment status was assigned randomly, it was independent of the error term, and because these match status variables varied by agency, dummy variables indicating treatment status by agency (i.e., treatment status interacting with the agency dummy variables) provided us with a set of instruments for match status variables.

Table 2 (columns "instrumental variables") shows the IV estimates. When the bias was purged from the coefficients, we still found that it was only those youth who were in an intact match that benefited academically. Youth who were re-matched not only showed no academic gains, but showed significantly poorer academic performance relative to the control group. In fact, the IV estimates were larger than the biased OLS estimates. Interestingly, however, the benefit of match length on academic achievement was no longer significant after controlling for the self-selection biases.

With regards to attendance, when the bias was purged from the coefficients, we found that it was those who had a match longer than 6 months that showed benefits from mentoring. However, these benefits did not occur because matches lasting 6 months or more were more likely to be intact. In fact, there was no attendance impact on youth in intact matches. The attendance impact appeared to be concentrated among youth who experienced premature terminations, in particular those who were in broken matches who were not re-matched.

Interestingly, across both outcome variables (achievement and attendance), re-matching was associated with worse outcomes or no benefits. As shown in Table 3, the re-matched group tended to be younger and more likely from minority racial and ethnic backgrounds. Although these baseline differences affect the OLS and logit estimates, they should not affect the IV estimates because by construction they are uncorrelated with the unmeasured characteristics in the outcome equations. The IV coefficients are estimating the causal impacts of experiencing a certain type of mentoring.

Predictors of an Intact Match

Given that having an intact match appears to confer positive achievement benefits, we examined youth, mentor, match, and program factors that may influence the likelihood of a match remaining intact. Results from a logistical regression analysis indicated that youth who entered the match having experienced higher levels of exposure to stressors in the preceding 3 months were less likely to remain in intact matches (OR = .90, $p < .05$). In addition, youth who entered the match being more sensitive to rejection were more likely to remain in intact relationships (OR = 1.09, $p < .01$). No other youth characteristics were statistically significant. In particular, girls were just as likely as boys to experience intact matches, and racial and ethnic minority youth were just as likely as White youth to

Table 3 Comparison of the re-matched and not re-matched youth

	Rematched ($n = 56$)	Not rematched ($n = 106$)	t/χ^2
Mean length of first match (months)	2.9	3.9	
Age (mean)	10.6	11.3	−3.20**
Gender			
Female	68%	52%	3.82
Race/ethnic minority	46%	69%	7.76**
Economic status			
Free/reduced lunch	57%	70%	2.60
Stress (range = 1–12)	4.96	5.19	−.52
Baseline achievement rating (range = 1–5)	2.46	2.45	.01

** $p < .01$

Table 4 Logistic regression predicting integrity of first match

	Model 3			Model 4		
	Odds ratio	95% CI	p	Odds ratio	95% CI	p
Youth characteristic						
Female	.86	.60, 1.24	.424	.86	.60, 1.24	.416
Minority	1.23	.78, 1.96	.370	1.24	.78, 1.99	.359
Same-race match	.81	.52, 1.25	.337	.85	.55, 1.32	.470
Age of youth	.93	.83, 1.04	.201	.91	.81, 1.02	.114
Youth stress	.90	.84, .97	**.005**	.90	.84, .96	**.003**
Rejection sensitivity	1.09	1.02, 1.16	**.010**	1.09	1.02, 1.16	**.008**
Mentor characteristic						
HS mentor	.97	.59, 1.60	.914	1.08	.65, 1.80	.758
College student mentor	.54	.32, .93	**.026**	.50	.29, .86	**.012**
Mentor has previously mentored	1.55	1.24, 1.93	**>.001**	1.57	1.25, 1.97	**>.001**
Mentor married or cohabit	.71	.43, 1.16	.169	.72	.44, 1.19	.201
Program characteristic						
Program is academically focused	.57	.39, .84	**.004**	.67	.43, 1.05	.079
All matches meet in the same place				.64	.40, 1.03	.066
Having at least some structured time				1.31	.83, 2.06	.241

$n = 526$

Bold typeset indicates $p < .05$

be in matches that remained intact over the school year. In addition, the likelihood of remaining in intact relationships did not differ by youth age.

Two mentor characteristics were also predictive of sustaining intact matches. First, mentors who were college students were 46% less likely to have an intact match (OR = .54, $p < .05$). Being a high school student mentor, however, did not have a similar negative effect on the likelihood of remaining in intact relationships. Second, mentors who had prior experience being a youth mentor either in a formal program or informally were 55% more likely to sustain their matches than other mentors (OR = 1.55, $p < .01$). Mentors who were the same race as their protégés were no more likely to remain matched over the school year.

At the program level, matches in mentoring programs that placed a greater emphasis on academics were 43% less likely to sustain their relationships (OR = .57, $p < .01$) (see Table 4, Model 3). However, this association became only marginally significant ($p = .08$) once two additional program characteristics were included in the model: (1) all matches meeting in the same place, such as a cafeteria; and (2) spending time on structured activities. Having all the matches meet in the same place appears to have a near-significant negative effect on maintaining the relationship (OR = .64, $p = .07$), while spending time on structured

activities appears to have no impact on the likelihood of sustaining the relationship over the school year (see Table 4, Model 4).

Discussion

The goal of this study was to examine the match duration, with particular attention to the role of re-matching. We also examined the individual, match, and program characteristics that were related to having an intact match. In line with findings from CBM studies, our results suggest that school-based mentor relationships, especially those that are enduring, can benefit youth in terms of school-related outcomes.

Determining the causal effects of match length or integrity is complicated by the possibility that the characteristics of youth who have longer matches are different from those with matches that terminate early. Consistent with previous research, however, we first examined these associations with simple regression analyses. These correlative results suggest that youth in matches lasting 24 weeks or more benefit academically, while all mentored youth skipped less school regardless of match length. The pattern in academic findings is consistent with previous research, and the current findings underscore the importance of considering relationship duration in determining the effects of mentoring programs.

True causal effects, however, may be clouded by the potential bias that could exist between outcomes and whether a match terminates prematurely. This is one of few studies that has controlled for the selection bias inherent in tests of the effects of different types of matches. By purging our results of this bias, estimates of the causal effects were estimated. Academic impacts were still only seen among youth with intact matches—teachers rated the achievement of youth in intact matches almost half a point higher than they rated those without the mentoring intervention (on a 1–5 scale). Youth who experienced premature match terminations and who were not re-matched showed no significant differences from the controls. The re-matched youth fared worse, however, performing 1.6 points lower than those without mentoring.

It is encouraging to find that teachers reported positive improvements in youth who were in intact SBM relationships, even though the dyads had been meeting only for an average of 5 months. Of course, it is possible that teachers who knew that a youth was working with a mentor might have inflated their assessment of the student's performance. In the initial evaluation of these data, however, Herrera et al. (2011) found no evidence for teacher bias in follow-up analyses. Teachers did not systematically inflate their assessments of youth depending on their group status, nor did the quality of their relationships with students change as a result of the students' group status.

Interestingly, however, youth who experienced premature match terminations and were re-matched fared worse than their control group peers. This is an intriguing finding, which, if replicated, has important implications for mentoring programs. A number of processes may be at play. First, there is the possibility that the rapid re-matching provided insufficient time for the youth to resolve and make sense of the difficulties or disappointments inherent in the first match. As with other relationship losses, a period of taking stock may be beneficial, rather than quickly launching into a new relationship in which previous problematic behavioral patterns may be repeated. Moreover, the presence of a new mentor may draw attention to the first loss when youth may prefer to quietly withdraw from the program.

A different pattern emerged with regard to unexcused absences. After accounting for selection bias, we found that youth in matches that lasted longer than 6 months were less likely to skip school. Unexpectedly, when we examined intactness, it was the youth whose matches terminated early and were not re-matched who were less likely to have unexcused absences than controls. Additional research is needed to explore this unanticipated outcome. It is possible, however, that these results were influenced by the limited time frame during which teachers were asked to report unexcused absences (1 month) and, accordingly, the low base rate for this variable.

Contrary to previous research based on CBM programs, premature terminations were not associated with decrements in functioning. Since students may enter SBM with different expectations, they may be less negatively affected by terminations. Likewise, relationships that unfold in school settings tend to be more focused on school work, a difference that may protect youth from personalizing the loss as much as they might in CBM. In addition, whereas this study was focused on academic variables, studies that have found negative effects have explored the psychological and behavioral consequences of termination, which may be more strongly associated with distress.

Taken together, these findings call into question the efficacy of re-matching youth in prematurely terminated relationships. If the active ingredient of mentoring were simply the number of hours with a mentor, it would be expected that the impact on outcome variables for the re-matched youth would be similar to that of the youth in intact matches because the two groups received similar doses of mentoring. The results reject this simple "dosage" hypothesis for both academic achievement and unexcused absences. Only in the context of intact matches did youth demonstrate gains in academic achievement. Moreover, those treatment youth who were re-matched were

significantly more likely than controls to perform poorly in school. In addition, the only group of youth who showed significant impacts with respect to unexcused absences was those whose matches terminated early and who were *not* re-matched.

Although more research is needed to further explore this pattern of findings, it appears that it is not simply the dosage of mentoring that matters, but the integrity of the match, that matters. Interventions that put their resources into carefully screening mentors who can make an enduring commitment as well as maintaining initial matches through training and support, instead of recruiting and training replacements, may be more likely to yield promising effects.

Our final goal was to examine the youth, volunteer, and program characteristics associated with having an intact match. Results from our analysis revealed a range of factors associated with relationship integrity. In particular, youth who had endured a greater number of life stressors prior to being matched were at greater risk for early match termination. This general pattern of findings is consistent with previous research (Grossman and Rhodes 2002; Schwartz et al., in press) and suggests that the challenges associated with mentoring youth who have been exposed to relatively high levels of stress are likely to be substantial, potentially overwhelming mentors' capacity or willingness to help. Case managers should work closely with such dyads to move them beyond the initial, challenging stages of the relationship.

We also found that youth who, according to teachers' report, tended to overreact to rejection or criticism were slightly more likely to maintain their matches for the entire school year. Perhaps these youth, who tend to be hypersensitive to rejection cues, made a greater investment in the relationship in order to avoid rejection. Likewise, their mentors may have sensed their vulnerability and been more hesitant to terminate the relationship. Indeed, research suggests that in the context of men's romantic relationships, rejection sensitivity was associated with more positive relationship behaviors (including greater fidelity) and that, more generally, individuals high in rejection sensitivity tended to be more willing to do unselfish things for the good of the relationship (Romero-Canyas et al. 2010). Taken together, these findings suggest that rejection sensitivity may, in fact, be protective against early termination.

Two mentor characteristics were related with the likelihood that a match terminated—being a college student and having prior experience being a mentor. Matches with college student mentors were more likely to terminate early. This finding is perhaps best explained by the unpredictable schedules and transitory nature of college students, which can undermine continuity. In addition, although some students are well-suited for mentoring, some students may enter with egoistic motivations to volunteer, negative biases about youth, or be less prepared for the role (Karcher et al. 2010). Volunteers who had prior experience being a mentor were more likely to be in long-lasting relationships. This is understandable, as they are likely to have well-defined and realistic expectations about what the experience will entail. The finding is consistent with results of a meta-analysis of mentoring (DuBois et al. 2002a, b), which demonstrated stronger effects among volunteers who had previous experience in helping roles or professions. These findings point to the potential benefits of recruiting volunteers from among programs' alumni, as well as seeking out volunteers whose backgrounds include prior experience and success in helping roles.

At the program level, we found evidence that matches were less likely to endure if they were situated in programs that focused more heavily on school work. Most academically focused programs tended to structure meeting times, and matches primarily met in the same place; however, some non-academically focused programs also had structured time and/or matches that met all together. When we tried to disentangle why academically focused programs had more early terminations, we found that having structure was not associated with greater risk of early termination, but that having matches that met at the same time and location was associated with early termination. Such matches may lack the flexibility and responsiveness that is vital to mentoring relationships. Similarly, programs that place a heavy focus on academics may lead mentors to interact with their protégés in a manner that is less responsive to the whole child. Indeed, several lines of research have converged in calling attention to the benefits of a more flexible, youth-centered approach to mentoring, which focuses on the developmental needs of the youth (Rhodes and DuBois 2008). Relationships that are youth-centered in their orientation, as opposed to being driven primarily by the schedules and expectations of the program or mentor, have been found to predict greater relationship quality and duration (Morrow and Styles 1995; Pryce 2006; Spencer 2006; Styles and Morrow 1992). Schools and mentors may want to reconsider the wisdom of deploying mentors to target specific academic subjects, particularly since youth in intact matches showed academic benefits regardless of whether or not the program was academically focused. These findings should serve as a caution against the growing tendency among SBM programs to deploy volunteers in constrained, quasi-tutorial roles (Rhodes and DuBois 2008).

Taken together, our findings are consistent with previous studies, which have shown that mentoring relationships can vary considerably in their effectiveness, depending on the match length (Grossman and Rhodes 2002; Rhodes and

DuBois 2008). However, at least for school-based mentoring, it is not just the number of weeks that is important, but also the integrity of the match.

The patterns of impacts for intact matches, when compared to broken matches, might also help to explain the relatively disappointing small effects from large-scale, random assignment evaluations of youth mentoring (Bernstein et al. 2009; Herrera et al. 2007). When impacts from all of the matches are combined, positive outcomes can be masked by the neutral, and even negative, outcomes associated with early terminating and reconfigured matches.

Limitations

Although this study has several strengths, including a large, national sample and longitudinal data from multiple informants, it also has several limitations. First, when protégés were separated by match length characteristics (i.e., weeks, match integrity), the resulting smaller subsample sizes resulted in reduced statistical power to detect small positive or negative effects. Particularly given the potentially far-reaching practical implications of the re-matching findings, future research with larger, more diverse samples should be conducted to confirm our findings with regards to intact, terminated, and re-matched groups. Along these lines, since all data were drawn from youth in BBBS school-based mentoring programs, our ability to generalize to other mentoring programs is limited. Finally, studies using more sensitive measures and including qualitative research components will be needed to further explore the factors mediating the associations between duration, re-matching, and youth outcomes.

Conclusion

School-based mentoring has great potential to help youth in need. Our study indicates that it is not simply the presence or absence of a mentor that makes a difference, but the longevity of matches. It is only in the context of enduring, intact school-based mentoring that youth make gains in their academic performance. Irrespective of whether they were re-matched, youth who were in relationships that terminated prematurely showed no improvements in their academic performance relative to the controls. Indeed, patching together multiple matches during a school year led youth to perform worse than if they had never had a mentor. Yet, in a climate of heightened pressure to serve large numbers of youth, mentoring organizations are increasingly deploying volunteers who may not understand or be prepared to honor their commitment to their protégés. Likewise, in the context of general pressure to meet intensifying academic standards, many mentoring programs are narrowing their focus to overly structured, academic activities. In doing so, some programs seem to have fallen prey to trivializing what is at the very heart of their intervention: caring relationships. A "placeholder mentality" has emerged in some programs—a set of beliefs that the most important program goal is simply to get youth off waitlists and into relationships, and that the mentor-youth bond is somewhat interchangeable. Our findings serve as a reminder of the potential benefits of enduring mentoring relationships and as a mandate for sufficient program resources to ensure reasonable levels of screening, training, and post-match mentor support.

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