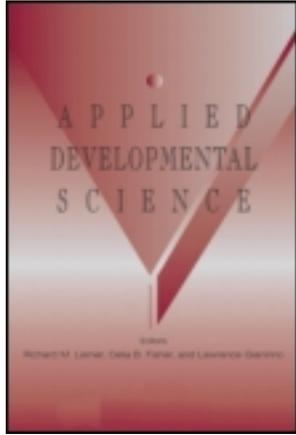


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An Investigation of Same- versus Cross-gender Matching for Boys in Formal School-based Mentoring Programs

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Although assigned mentoring relationships have typically involved same-gender matches, a growing number of programs, particularly those in schools, have begun pairing female mentors with male mentees. This practice stems, in large part, from the relative dearth of male mentors and programs' efforts to increase the availability of youth mentoring to young males on waiting lists. We drew on secondary data from the two largest random assignment evaluations of school-based mentoring programs, the Department of Education's Student Mentoring Program and Big Brothers Big Sisters of America's School-based Mentoring, to explore the characteristics and effects of same-versus cross-gender mentoring relationships for male mentees. Our sample included 1,513 male youth from the respective programs. With only a few exceptions, male youth in same- versus cross-gender mentoring relationships experienced similar relationship processes and outcomes. Implications for research and practice are discussed along with limitations including the nonexperimental design of the study and unmeasured effects of selection bias.

In recent years, there has been a dramatic expansion of school-based mentoring (SBM), encouraged, in part, by several years of generous federal funding as well as ambitious goals for program expansion (Rhodes & DuBois, 2006). SBM draws from a broader, untapped pool of volunteers and serves youth who may not have access to other types of mentoring (Herrera, 2004; Herrera, Sipe, McClanahan, Arbretton, & Pepper, 2000; Portwood & Ayers, 2005). To keep pace with the demand for SBM, many programs have relaxed same-gender requirements, matching a growing proportion of female volunteers with male mentees. The present study drew on data from two national evaluations of SBM, the Department of Education's (ED) Student Mentoring Program (Bernstein, Rappaport, Olsho, Hunt, & Levin, 2009), and Big Brothers Big Sisters of America's (BBBS) School-based Mentoring (Herrera, Grossman, Kauh, Feldman, & McMaken, 2007)

to examine the role of gender matching in relationship processes and outcomes among male mentees.

BACKGROUND

Youth mentoring generally involves a trusting relationship between a young person and an older, nonparent adult who provides support and guidance (DuBois & Karcher, 2005). Such relationships can lead to positive social-emotional, cognitive, and identity development in youth, which can influence a range of youth outcomes (Rhodes & Lowe, 2008). Meta-analyses suggest that formal mentoring programs have modest positive effects on youth outcomes, including academic, behavioral, and social-emotional outcomes (DuBois, Holloway, Valentine, & Cooper, 2002; DuBois, Portillo, Rhodes, Silverthorn, & Valentine, 2011).

Although a rarity a decade ago, SBM, in which mentors and mentees meet on school grounds, before, during, or after school hours, represents a rapidly expanding

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approach. In school or after-school settings, mentors and youth engage in a range of recreational and academic activities, and given its location on school grounds, SBM appears to influence school-related outcomes, including school engagement and teacher-student relationships (Chan, Rhodes, Howard, Lowe, Schwartz, & Herrera, 2013; Herrera, Grossman, Kauh, & McMaken, 2011; Portwood & Ayers, 2005). Although two large-scale randomized control impact evaluations of SBM revealed relatively few effects on youth outcomes (Bernstein et al., 2009; Herrera et al., 2007), a subsequent meta-analysis suggested modest effects on a range of academic outcomes including scholastic efficacy, school-related misconduct, truancy and absenteeism, as well as those outcomes related to interpersonal relationships, including perceived support from peers and non-familial adults (Wheeler, Keller, & DuBois, 2010). Effect sizes ranged from .17 (truancy) to .07 (absenteeism and peer support). Importantly, secondary analyses of the impact evaluation data have identified factors that help to account for variation in the effectiveness of SBM. Specifically, such factors as relationship duration and quality, youth demographic characteristics (including gender and age), youth relationship histories, mentor age and attitudes, and program structure (e.g., meeting during school versus meeting after school) have all been shown to influence the impacts youth derive from SBM (Bernstein et al., 2009; Grossman, Chan, Schwartz, & Rhodes, 2012; Herrera et al., 2007; Karcher, Davidson, Rhodes, & Herrera, 2010; Schwartz, Rhodes, Chan, & Herrera, 2010; Schwartz, Rhodes, & Herrera, 2012).

One factor that has been left unexplored in these evaluations, however, is the role of gender in matching practices and relationships. Most youth mentoring programs match along gender lines, particularly in community-based mentoring (CBM) and when parents or youth explicitly request such a match (DuBois, Holloway et al., 2002; Furano, Roaf, Styles, & Branch, 1993; Herrera et al., 2000; Liang & Grossman, 2007). Nonetheless, despite extensive recruitment efforts, a relative dearth of male volunteers has led some programs to enlist female volunteers to serve as mentors to boys. This cross-gender matching is particularly common in SBM, in part because matches meet on site, alleviating some of the safety concerns associated with less structured settings. Within the ED and BBBS SBM programs, approximately 20% of matches are cross-gender, with women serving as mentors to male mentees (Bernstein et al., 2009; Herrera et al., 2007; Herrera et al., 2000). Although matching exclusively along gender lines is preferred by programs in most instances, arguments can be made in support or opposition of this growing practice.

Same-gender Matching

Proponents cite safety concerns in support of the practice of same-gender matching. Mentoring programs and parents are wary of potentially inappropriate interactions

between unrelated youth and adults (Scales, 2003), particularly in the case of male mentors working with female mentees (Herrera, 2004; Herrera et al., 2000; Portwood & Ayers, 2005). Beyond those fears, however, there are also concerns of lost opportunities for gender-based role modeling, particularly for young male youth. For example, Hurd, Zimmerman, and Xue (2009) found differential academic benefits for adolescents with gender-matched role models relative to those with non-matched gender role models.

Theories of interpersonal interaction offer insight into these findings. For example, the similarity-attraction paradigm (Byrne, 1971) suggests that individuals are attracted to others with whom they perceive shared similarities. Research on workplace and academic mentoring has extended the conceptualization of similarities to include demographic components such as gender, race, and ethnicity (Lankau, Riordan, & Thomas, 2005; Turban, Dougherty, & Lee, 2002). Studies from these two contexts have found that mentees tend to pick same gender mentors (Blake-Beard, Bayne, Crosby, & Muller, 2011; Turban et al., 2002), and mentors report "liking" mentees more when there is demographic similarity (Lankau et al., 2005). Likewise, studies of natural mentoring indicate that adolescents frequently identify same gender mentors (Chen, Greenberger, Farruggia, Bush, & Dong, 2003; Klaw, Rhodes, & Fitzgerald, 2003; Sanchez & Reyes, 1999). These findings have implications for formal youth mentoring programs; namely, the trend of cross-gender matching might run counter to the inclinations of youth.

Others have argued that males and females have differential relational needs and patterns, (Gilligan, 1982; Way, 2011) that cannot be satisfied in cross-gender mentoring relationships (Bogat & Liang, 2005). Findings from career mentoring suggest that female mentors provide relatively more interpersonal support, whereas male mentors provide more goal-orientated support (Allen & Eby, 2004; O'Brien, Biga, Kessler, & Allen, 2010). Similar distinctions between the relational and instrumental aspects of youth mentoring have also been delineated (Flaxman, Ascher, & Harrington, 1988; Hamilton & Hamilton, 2005).

Beyond differential relational approaches, Bogat and Liang (2005) suggest that boys and girls might require distinct forms of mentoring due to the different goals they derive from interpersonal interactions. While girls may prosper from relational interaction with high levels of intimacy and a focus on psychosocial goals, boys may benefit more from relational processes that are focused on developing autonomy and instrumental goals (Bogat & Liang, 2005; Darling, Bogat, Cavell, Murphy, & Sanchez, 2006; Liang & Grossman, 2007; Rhodes, 2002). For example, Rhodes, Lowe, Litchfield, and Walsh-Samp (2008) found that, in contrast to boys, girls had slightly longer

mentoring relationships, and reported larger increments in relationship satisfaction as the relationship endured. Likewise, Blake-Beard et al. (2011) found that college-aged mentees in same-gender matches endorsed receipt of both psychosocial and instrumental support more than mentees in cross-gender matches. These findings suggest relative differences in relational needs that have implications for same- versus cross-gender matching for youth.

Finally, same-gender matching may provide youth with opportunities to explore gender-specific experiences and challenges. Some mentoring initiatives are gender specific, and focus on strengthening girls' empowerment, self-esteem, healthy lifestyle behaviors and relational skills (Kuperminc, Thomason, DiMeo, & Broomfield-Massey, 2011; Liang & Grossman, 2007; Pryce, Silverthorn, Sanchez, & DuBois, 2010; Spencer & Liang, 2009), as well as encouraging more positive and flexible conceptions of masculinity among boys (Bogat & Liang, 2005; Garraway & Pistrang, 2009; Spencer, 2007). Likewise, findings from a recent meta-analysis indicate that program effectiveness is enhanced by matching on the basis of shared interests (DuBois et al., 2011).

A preliminary evaluation of the effectiveness of youth mentoring programs within the JUMP (Juvenile Mentoring Program) highlighted the potential benefits of male mentors for adolescent boys (JUMP, 1998; Novotney, Mertinko, Lange, & Baker, 2000). In this evaluation, approximately 15% of matches were cross-gender. The evaluation's preliminary findings indicated that, while boys in both same- and cross-gender dyads reported similar relationship quality, boys in same-gender matches reported greater decrements in delinquent behavior, such as gang and drug involvement. In addition, female mentors in cross-gender matches reported that their mentees showed less improvement in avoiding delinquent activities and peers.

Qualitative studies have also elucidated the potential importance of male mentors for boys. Themes that have emerged from these studies, particularly as they relate to boys, include the need for relationships with adult males during adolescence. Specifically, some men have discussed the importance of modeling emotional closeness, vulnerability, and regulation in relationships (Garraway & Pistrang, 2009; Spencer, 2007).

Cross-gender Matching

Proponents of cross-gender matching do not deny that girls and boys have distinct developmental needs during adolescence. Nonetheless, given the paucity of men in volunteer pools, cross-gender matching is an alternative that allows programs to accomplish their fundamental goal of providing positive relationships. Thus, getting youth off long waiting lists, overwhelmingly composed of boys, is a key argument for cross-gender

matches. Gender-matching practices essentially consign many youth to long waiting lists. Moreover, same-gender matching may unintentionally perpetuate gender stereotypes (Liang & Grossman, 2007). For example, the practice of gender matching assumes uniformity among same-gender individuals, and ignores other factors that may interact with gender (Martino & Kehler, 2006). Literature on identity development underscores the importance of considering the intersection of various aspects of identity, including gender, race, ethnicity, social class, and sexual orientation (Caldwell, Guthrie, & Jackson, 2006; Phinney, 2008). Thus, although it is important to consider gender-matched relationships, educating and supporting all mentors about the needs of subgroups of youth may give rise to relationships that are equally satisfying and effective (Liang & Grossman, 2007).

Such arguments are supported by studies of academic mentoring, which have found no support for the influence of gender matching on academic achievement (Blake-Beard et al., 2011). Similarly, meta-analyses exploring the effectiveness of youth mentoring suggest that neither mentor and mentee gender nor matching by gender is systematically related to program impacts (DuBois, Holloway et al., 2002; DuBois et al., 2011).

Likewise, although theoretical and empirical arguments for matching along demographic similarities have been made, other factors, such as match duration, may be more critical in maintaining the relationship. For example, Turban, Dougherty, and Lee (2002) found that, although cross-gender matches experienced initial strain, difficulties were resolved as relationships progressed. Indeed, youth mentoring research has established relationship duration (DuBois, Holloway et al., 2002; Grossman & Rhodes, 2002; Grossman, Chan, Schwartz, & Rhodes, 2012), the frequency of contact (DuBois, Holloway et al., 2002), and the development of a strong emotional connection between the mentor and mentee (DuBois, Neville, Parra, & Pugh-Lilly, 2002; Spencer, 2007) as key predictors of outcomes, and important factors in determining success. Due to program matching constraints (i.e., few cross-gender matches), studies focusing on relationship factors have been limited in their capacity to partial out the effects of gender match in predicting youth outcomes (Bogat & Liang, 2005).

Although boys may benefit from mentoring programs that focus on instrumental goals as described earlier (e.g., Bogat & Liang, 2005; Darling et al., 2006; Rhodes, 2002), they may also crave emotionally close connections with caring adults. Qualitative studies have highlighted boys' capacity for close relationships (Way & Chu, 2004; Way, 2011), and their desire for mentoring dyads that are emotionally and psychosocially supportive (Spencer, 2007). Likewise, while some studies suggest that male and female volunteers may provide different types of support (e.g., Allen & Eby, 2004; O'Brien et al., 2010), others have found that volunteers in same- and cross-gender dyads

report equally close, supportive relationships (Herrera et al., 2000; Jekielek, Moore, & Hair, 2002).

These findings parallel those relating to teacher-student relationships. Although some research has suggested that gender matching improves academic outcomes (Dee, 2006), the majority of studies indicate that the quality of the teacher-student relationship is more influential than matching on individual characteristics such as gender (Carrington, Tymms, & Merrell, 2008; Marsh, Martin, & Cheng, 2008). In addition, findings suggest that boys' academic motivation and engagement does not differ as a function of teacher gender (Martin & Marsh, 2005). Taken together, these findings suggest that there may be considerable overlap in same- versus cross-gender mentoring relationships, including their duration, level of support, and strain.

In sum, research and theory suggest the potential benefits of matching based on gender, while also providing evidence that gender per se might not be the most salient determinant of relationship processes and outcomes. This mixed evidence underscores the need for further research investigating the influence of gender matching in mentoring relationships. Although gender matching practices in youth mentoring have been examined at the program level (DuBois, Holloway et al., 2002; DuBois et al., 2011), little research has investigated differences in individual impacts and relationship processes (i.e., duration, intensity, quality) between youth in same- versus cross-gender matches. There is a particular need for gender matching practice to be studied in the context of SBM, where cross-gender matching is increasingly common.

Current Study

The present study drew on data from two large-scale national evaluations of SBM programs (Bernstein et al., 2009; Herrera et al., 2007) to explore the influence of same- versus cross-gender matching on mentoring relationship processes and outcomes. Boys represent the vast majority of youth in cross-gender matches (over 90%), thus, analyses focused exclusively on male youth subsamples. Specifically, we sought to: (1) compare the length, intensity, and quality of relationships among male mentees in same- versus cross-gender matches; and (2) compare the psychosocial, behavioral, and academic outcomes of male mentees in same- versus cross-gender matches.

METHODS

Participants

ED Sample

Data for the Department of Education (ED) evaluation were collected from cohorts of students during the 2005–2006 and 2006–2007 school year (Bernstein et al., 2009).

Thirty-two nationally representative ED grantees which a) had a functional mentoring program with a substantial number of youth in fourth through eighth grade and b) could accommodate the experimental design and requirements of the study were selected to participate. Youth from grantee sites were referred for mentoring by school personnel, including teachers and counselors. The youth were included in the national evaluation if they were in fourth through eighth grade at the beginning of the study, had parental consent, and were not referred through emergency services or legally mandated to receive services.

After obtaining consent, the sample consisted of 2,573 students. Youth participating in the ED evaluation completed baseline surveys at the beginning of the school year in large groups within the school context. Mentors also completed baseline surveys. Youth were then randomized into either a treatment (assigned a mentor; $N=1,272$) or waitlist control group (not assigned a mentor; $N=1,301$) through the use of randomly ordered lists. Students in each cohort completed follow-up surveys at the end of school year, in the spring semester. Mentors also completed surveys at these intervals. The follow-up response rate for students at the end of the school year was 92%.

A subgroup consisting of all the males from the larger ED sample ($N=1,219$) were the focus of the current study. Students in the treatment group who were never assigned a mentor, never met with a mentor, or whose mentor did not complete a student-specific follow-up survey were excluded from analysis. In addition, for students who met with more than one mentor and appeared twice in the sample, the second observation was dropped so that the students and mentors would have consistent baseline scores. These factors reduced the sample size so that the final sample consisted of 1,022 male participants, 399 of who were in the treatment group (assigned a mentor). Within the treatment group, 150 (37.5%) participants were in cross-gender matches while 249 were in same-gender matches. Participants were not randomly assigned to these two matching conditions. The final sample of participants in the current study were in fourth through eighth grade, with an age range of 8.5 to 16.5 years ($M=11.2$, $SD=1.4$). The majority of students (86.3%) were recipients of free or reduced lunch. Approximately 44.8% were from single-parent households, and 26.9% had been mentored before. Students in the sample self-identified as Black/African American (43.8%), Latino/a (31.2%), White (19.6%), Native American (2.2%), Asian (1.7%), Multiracial (1.3%), and Other (.1%).

BBBS Sample

BBBS data were collected as part of an evaluation that was conducted during the 2004–2005 school year (Herrera et al., 2007). Ten nationally representative

BBBS agencies operating in 71 schools were selected to participate in the program evaluation. Agencies were selected to participate if they had been in operation for at least four years, had strong connections to participating schools, and an existing school-based program matching at least 150 youth (both boys and girls) with a diverse pool of volunteers. Youth were referred for mentoring by school personnel, including teachers and staff, as well as parents. Youth who participated in the study were in fourth through ninth grade, had not been referred for mentoring through emergency services, and had parental consent. The study's sample included 1,139 youth. Youth participating in the BBBS evaluation completed surveys administered in small groups at school in the fall and spring of the 2004–2005 school year, as well as the following fall (follow-up two). The second follow-up was excluded from the current study so that both the ED and BBBS data would have comparable time points.

Youth with completed baseline surveys were randomly assigned into either treatment (assigned a mentor; $N=565$) or waitlist control (not assigned a mentor; $N=574$) group. A stratified randomization was used so that each participating school had approximately 50% of youth in each group. Follow-up surveys were administered either in person within the school setting or via telephone. The follow-up response rate for students at the end of the school year was 93%. Both mentors and student's teachers also completed surveys at the various time-points. Nearly half of the mentors in the impact evaluation sample were high school students as this group was oversampled in order to utilize this relatively new volunteer population.

From the larger evaluation sample, forty-six percent ($N=522$) were males; this was the sample considered in the current study. Participants who were missing information about gender matching were excluded from analysis. The final sample consisted of 491 participants, 229 of who were in the treatment group (assigned a mentor). Of these, 93 of the youth (40.6%) were placed in cross-gender matches, while 136 were in same-gender matches. Participants were not randomly assigned to these two matching conditions. Students in this sample were in fourth through ninth grade, and age 8 to 18 ($M=11.3$, $SD=1.7$). Approximately 66.9% received free or reduced lunch and 39.6% lived in single-parent households. Students self-identified as White (46.4%), Black/African American (22%), Latino/a (24.9%), Native American (13%), Asian (2.1%), and Other (4.6%).

Measures

This study included measures of the quality, intensity, and duration of mentoring relationships assessed

at follow-up. Measures of youth outcomes assessed at baseline and follow-up were also included. Outcome measures encompassed several domains including academic, social-emotional, and behavioral functioning. Cronbach's alphas at baseline and follow-up (α_1 , α_2) are reported for scales. Relationship processes, including quality, intensity and duration were measured at follow-up (T2), and outcome measures were assessed at baseline (T1) and follow-up (T2). Zero-order correlations for variables included in analyses are presented in Table 1 (ED) and Table 2 (BBBS).

ED Measures of Quality, Intensity, and Duration

Mentor-Youth Relationship Quality was measured with seven youth-reported items from subscales of the Relationship Quality Scale (Rhodes, Reddy, Roffman, & Grossman, 2005) and the Mentor-Youth Alliance Scale (Zand et al., 2009). Items included, "I feel that I can trust my mentor," and were scored on a 4-point scale from 1="not true at all" to 4="very true." Two items were reverse coded ($\alpha_2=.60$).

Match Meeting Frequency was determined with a single, mentor-reported item, indicating the average number of in-person contacts per month for assigned matches.

Match Duration was determined with a single, mentor-reported item indicating the total number of months youth had been in a match as measured at the time of the follow up survey.

ED Outcome Measures

Scholastic Efficacy and School Bonding was measured with a youth-reported eight-item composite scale comprised of items assessing youth's perceived academic competence (Self Perception Profile for Adolescents; Harter, 1985), and attachment to school (Hawkins, Guo, Hill, Battin-Pearson, & Abbot, 2001). Items included, "I do well at class work," and "I like school." Responses were on a 4-point scale ranging from 1="not true at all" to 4="very true" ($\alpha_1=.69$, $\alpha_2=.78$).

Future Orientation was measured with a three-item youth-reported scale (Bernstein et al., 2009). Items included, "how important is it to graduate from high school," with answers ranging from 1="not important at all" to 4="very important" on a 4-point scale ($\alpha_1=.76$, $\alpha_2=.82$).

School Performance was derived from school records of students' grades. Grades included those for English language arts, math, social studies, and science, which were categorized into five responses (1=lowest, 5=highest performance level) representing both letter and numerical "systems" in order to create comparable measure across school districts.

TABLE 1
Zero-Order Correlations for Baseline Outcome Variables and Covariates (ED) (N=1,022)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Youth Age	–																		
Free-lunch	-.02	–																	
Household	-.02	-.14**	–																
Minority	-.03	.33**	-.08*	–															
Mentor Age	.06	.06	-.11*	.10*	–														
Mentor Child	.08	.06	-.06	.16**	.76**	–													
Mentor Cohab/ Mar	.04	.00	-.03	.07	.62**	.66**	–												
Scholastic Efficacy	-.21**	.06	.06	.13**	-.04	.04	.01	–											
Future Orientation	-.01	-.03	.01	.18**	.07	.10*	.07	.28**	–										
Social Studies	-.26**	.02	.05	.04	.11	.15*	.05	.16**	.14**	–									
English	-.22**	.01	.02	.03	.18**	.22**	.07	.18**	.13**	.61**	–								
Math	-.21**	-.04	.00	-.03	.13*	.17**	.01	.17**	.10**	.54**	.58**	–							
Science	-.23**	-.03	.04	-.01	.04	.09	-.01	.18**	.10**	.65**	.54**	.55**	–						
Pro-social	-.09**	.00	.01	.08*	.06	.11*	.10	.48**	.29**	.09*	.11**	.12**	.09*	–					
Misconduct	.16**	.03	-.01	-.03	.01	-.05	-.02	-.34**	-.20**	-.17**	-.21**	-.16**	-.23**	-.33**	–				
Truancy	.06	.02	.06	-.07	.07	-.01	.00	.01	-.04	-.03	-.02	.03	-.10	-.02	.06	–			
Quality (T2)	.00	-.04	.04	-.07	-.08	-.09	-.09	.20**	.09	-.14	-.17*	-.13	-.23**	.19**	-.04	.03	–		
Match Length (T2)	-.12*	-.04	-.05	-.07	.23**	.21**	.14**	.03	.08	-.02	.03	.02	.00	.02	-.03	.06	-.02	–	
Frequency (T2)	-.08	-.02	-.01	-.11*	-.10*	-.08	-.10	-.06	-.14**	-.05	-.07	.05	-.02	-.05	.03	.02	-.07	.11*	–

Note. Youth Age=youth age in years; Free-lunch=free-lunch status; Household=youth household status; Minority=youth minority status; Mentor Age=mentor age in years; Mentor Child=mentor has children; Mentor Cohab/Mar=mentor is cohabiting/married; Scholastic Efficacy=scholastic efficacy and school bonding; Future Orientation=academic future orientation; Social Studies=social studies grade; English=English language arts grade; Math=math grade; Science=science grade; Pro-social=pro-social behavior; Misconduct=misconduct; Truancy=truancy violations; Quality=mentor-youth relationship quality; Match Length=mentoring relationship duration; Frequency=mentoring match meeting frequency.

* $p < .05$; ** $p < .01$.

Pro-social Behaviors was measured with a youth-reported ten-item composite scale assessing youth’s relationships (National Longitudinal Study of Adolescent Health; Harris et al., 2009), and volunteerism and personal responsibility (Michigan State University Early Adolescent Survey II; Keith & Hoopfer, 1983). Items included “I talk with my parents about a problem,” “volunteer to help others in your neighborhood,” and “clean up after yourself without being reminded.” Responses were on a 4-point scale ranging from 1=“not true at all” to 4=“very true” ($\alpha_1 = .68$, $\alpha_2 = .73$).

Misconduct was measured with an eight-item youth-reported scale adapted from the 21st Century Community Learning Centers Program Survey (Dynarski et al., 2003) containing items assessing both school and out of school misconduct (e.g., “break something on purpose” and “give teacher a hard time”). Item responses were scored on a 4-point scale ranging from 1=“never” to 4=“a lot.” Higher scores indicate greater delinquency/misconduct ($\alpha_1 = .72$, $\alpha_2 = .78$).

Truancy was derived from school records indicating the number of documented truancy violations. Documented violations include “leaving class or school without permission.”

BBBS Measures of Quality, Intensity and Duration

Youth Reported Relationship Quality was assessed using an eight-item youth-reported Youth Emotional Engagement scale (Jucovy, 2002). Items included, “When I am with my mentor I feel happy,” and were scored on a 4-point scale from 1=“not true at all” to 4=“very true.” Four items including “when I’m with my mentor I feel sad” were reverse coded ($\alpha_2 = .84$).

Match Meeting Frequency was a single, mentor-reported item indicating the number of times the match met within the last four weeks.

Match Duration was a single, youth-reported item calculated from youth’s survey completion date, and referring to the total number of days youth had been in a match as measured at the time of the follow up survey.

BBBS Outcome Measures

Self-Perceptions of Academic Abilities was measured with a six-item youth-reported subscale of the Self Perception Profile for Children (Harter, 1985). Items assess youth’s perception of their academic competence. Scale items included, “I am slow in finishing school work”

TABLE 2
Zero-Order Correlations for Baseline Outcome Variables and Covariates (BBBS) ($N=522$)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Youth Age	–																
Minority	.12**	–															
Free-lunch	.11*	.17**	–														
Household	-.01	-.04	.11*	–													
Mentor Age	.27**	.25**	.18*	.03	–												
Mentor Child	.24**	.14*	.13	.00	.63**	–											
Mentor Cohab/Mar	.16*	.22**	.16*	.02	.70**	.64**	–										
Scholastic Efficacy	-.09*	.12**	-.06	-.05	.02	-.06	-.06	–									
School Feelings	-.20**	.16**	-.10*	-.04	-.04	-.11	-.11	.41**	–								
Attending College	-.11*	.05	-.10	.00	-.01	-.07	-.06	.27**	.28**	–							
Overall Academic	-.03	-.02	-.11*	-.04	-.11	-.08	-.13	.24**	.12*	.07	–						
Social Acceptance	.15**	.10*	.04	-.02	.08	.13	.05	.31**	.07	.03	.12*	–					
Parent Relationship	-.16**	.01	-.09	-.05	.04	-.02	-.03	.32**	.46**	.22**	.08	.18**	–				
Absences	.12*	-.02	.03	.14**	.10	.18*	.17*	.01	-.07	-.05	-.19**	.01	-.10*	–			
Self-Worth	.05	.06	-.01	.02	.06	.02	.02	.52**	.36**	.10*	.19**	.49**	.33**	.05	–		
Quality (T2)	-.13*	.02	-.03	-.09	-.16*	-.06	-.04	.15*	.11	.16*	-.02	-.09	.06	.01	.07	–	
Match Length (T2)	-.08	.06	.05	-.02	-.15*	-.26**	-.16*	.11*	.07	.05	.08	.07	.02	-.01	.05	.16*	–
Frequency (T2)	-.15*	-.07	.04	-.06	-.06	-.07	-.00	.12	-.02	.07	.10	-.12	.01	-.23**	.08	.10	.13

Note. Youth Age=youth age in years; Minority=youth minority status; Free-lunch=free-lunch status; Household=youth household status; Mentor Age=mentor age in years; Mentor Child=mentor has children; Mentor Cohab/Mar=mentor is cohabiting/married; Scholastic Efficacy=self-perceptions of academic abilities; School Feelings=feelings about school; Attending College=likelihood of attending and completing college; Overall Academic=overall academic performance; Social Acceptance=peer social acceptance; Parent Relationship=parent relationship; Absences=unexcused absences; Self-Worth=global self-worth; Quality=mentor-youth relationship quality; Match Length=mentoring relationship duration; Frequency=mentoring match meeting frequency.

* $p < .05$; ** $p < .01$.

and “I do well at class work.” Three items were reverse coded. Item responses were scored on a 4-point scale ranging from 1=“not at all true” to 4=“very true” ($\alpha_1 = .70$, $\alpha_2 = .72$).

Feelings About School was measured with a nine-item youth-reported scale adapted from the School Liking scale (Eccles et al., 1993) and the School Connectedness subscale of the Hemingway Measure of Adolescent Connectedness (Karcher, 2003). The scale assesses youth’s level of school liking and sense of connectedness. Items included, “I enjoy being at school” and “in general, I like school a lot.” One item was reverse coded. Responses were on a 4-point scale ranging from 1=“not at all true” to 4=“very true” ($\alpha_1 = .84$, $\alpha_2 = .84$).

Likelihood of Attending and Completing College was measured with a two-item youth-reported scale assessing educational goals, or intent to attend and complete college (Dynarski et al., 2001; adapted by Vandell, 2003). Responses were measured on a 4-point scale ranging from 1=“not at all sure” to 4=“very sure” ($\alpha_1 = .88$, $\alpha_2 = .87$).

Overall Academic Performance was a teacher-reported single-item rating youth’s academic performance on a 5-point scale from 1=“below grade level” to 5=“excellent” (Pierce, Hamm, & Vandell, 1999).

Social Acceptance was measured with a six-item youth-reported adapted version of a subscale of the

Self-Perception Profile for Children (Harter, 1985), assessing how much peer acceptance youth perceive. Items included, “I find it hard to make friends” (reverse coded along with two other items) and “I have a lot of friends.” The original version of the instrument was adapted by using a four-point Likert scale ranging from 1=“not at all true” to 4=“very true” ($\alpha_1 = .69$, $\alpha_2 = .75$).

Parent Relationship Quality was assessed using a seven-item youth-reported scale derived from the Parent Trust subscale of the Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987). Youth rated the level of support felt in the relationship with their parent/guardian. Items included, “my parents respect my feelings” and “I trust my parents” rated on a 4-point scale ranging from 1=“hardly ever” to 4=“pretty often.” One item was reverse coded ($\alpha_1 = .83$, $\alpha_2 = .87$).

Unexcused Absences were measured with a teacher-reported single-item indicating the number of youth unexcused absences from school within the past four weeks.

Global Self Worth was assessed with an eight-item youth-reported measure of self-worth derived from a subscale of the Self-Esteem Questionnaire (DuBois, Felner, Brand, Phillips, & Lease, 1996). Items included, “I am the kind of person I want to be” and “I often feel ashamed of myself.” Responses were indicated on four-point scale ranging from 1=“not at all true” to 4=“very true.” Three items were reverse coded ($\alpha_1 = .76$, $\alpha_2 = .80$).

Covariates

Demographic Characteristics. Youth in both samples provided the following demographic information, measured at baseline, which were included as covariates within all analyses: age, race and ethnicity (coded as a dichotomous variable, 1=minority), and household composition (coded as a dichotomous variable; 1=two parent household). In addition youth provided school lunch status (coded as a dichotomous variable; 1=receiving free/reduced lunch), which was used to denote socioeconomic status.

Mentors in both samples provided demographic information, measured at baseline, including age, children (coded as a dichotomous variable; 1=mentor has children), and marital status (coded as a dichotomous variable; 1=mentor is cohabitating/married), all of which were included as covariates within analyses focusing on mentoring relationship length, intensity, and quality.

In addition, the baseline value of each outcome variable was included as a covariate within each respective GLM analysis. Specific between group tests at baseline will be reported in preliminary analysis results prior to the results of GLM analyses.

Statistical Procedures

We estimated impacts of mentoring on male youth in same-gender and cross-gender matches using ordinary least squares (OLS) regression. Treatment effects were estimated in a pooled model, with the two key explanatory variables defined as interactions between the treatment indicator (mentoring) and indicators for same- or cross-gender matches, respectively. To test for differences between same- and cross-gender matches, we performed a t-test for equality between the same- and cross-gender treatment coefficients. All analyses were conducted using the GLM (General Linear Model) command in SPSS (SPSS Inc., 2010).

In addition, we applied a correction for multiple hypothesis testing using the Benjamini-Hochberg (B-H adjustment) approach to correct for false discovery rate. More specifically, multiple statistical analyses increase the risk of false positive results or Type 1 error. The B-H correction corrects for this risk by comparing rank-ordered, ascending observed p values for a family of outcomes, or findings grouped into specific outcome domains, with adjusted critical values that are sequentially stringent (Benjamini & Hochberg, 1995). We applied the B-H adjustment within each outcome domain to our hypothesis tests for equality of mentoring effects across same-versus cross-gender matches, as this was the present study's primary and confirmatory research question. Other analyses conducted were treated as secondary and exploratory and, accordingly, given no correction for multiple comparisons.

RESULTS

ED Findings

Baseline Differences

Demographic information for male youth in the ED study is presented in Table 3. Despite random assignment, there were some differences between the treatment youth who participated in mentoring and the waitlist control group at baseline. Specifically, youth in the control group were about two months older, $t(1020)=2.21$, $p<.05$ ($M=11.3$ versus 11.1), and reported a higher level of truancy, $t(378)=2.25$, $p<.05$.

In addition, there were baseline differences for youth in same- versus cross-gender matches. Youth in same-gender matches were slightly older than those in cross-gender matches, $t(397)=-3.37$, $p<.001$ ($M=11.3$ versus 10.8 , respectively). At baseline, youth in cross-gender matches reported slightly lower future orientation $t(239)=-2.02$ $p<.05$. Baseline values of these between group differences, including, youth's age, truancy and future orientation, along with minority status, household composition and free-lunch status were included as covariates in all GLM models.

Baseline descriptive characteristics of mentors in the same- versus cross-gender matches are presented in Table 4. Mentors in same-gender matches were relatively older than mentors in cross-gender matches, $t(356)=-3.20$, $p<.001$ ($M=36.6$ versus 31.3 , respectively), and more likely to be married or living with a partner ($\chi^2=4.20$, $p<.05$) and to have children ($\chi^2=4.98$, $p<.05$). Differences in mentor characteristics at baseline were entered as covariates only in GLM analyses testing differences in relationship processes (duration, intensity, and quality) for mentored youth in same- versus cross-gender matches.

Gender Matching and Treatment Effects

We first examined the main effects of mentoring for male participants in the ED study. Mentored male youth did not differ from the waitlist control group on tested academic, behavioral, and social outcomes.

Next, we examined the estimated effect of mentoring for male youth in the two types of gender matches (cross-gender and same-gender) relative to a non-mentored waitlist control group. Results showed some statistically significant treatment effects of mentoring on measured outcomes (see Table 5). Relative to the control group, youth in cross-gender mentoring matches demonstrated steeper declines in English and social studies grades ($p<.05$). In contrast, youth in same-gender matches had lower truancy rates than youth in the control group ($p<.05$).

We used a t-test to test the null hypothesis that the difference between the estimated coefficients of the effect of mentoring for male youth in same- and cross-gender matches was zero, namely that treatment effects in the

TABLE 3
Baseline Demographic Characteristics of Youth

Demographic	ED					BBBS				
	CG Match n=150 n (%)	SG Match n=249 n (%)		No Match n=623 n (%)	t/x^{2^b}	CG Match n=93 n (%)	SG Match N=136 n (%)		No Match n=262 n (%)	t/x^{2^b}
Age	10.8 (1.31)	11.3 (1.39)	-3.37**	11.3 (1.48)	2.21*	10.9 (1.24)	11.4 (1.81)	-2.29*	11.3 (1.63)	-.12
Free/Reduced lunch status	115 (85.2)	187 (83.5)	.18	484 (87.7)	2.33	48 (60.8)	83 (70.3)	1.95	139 (65.0)	.72
Household Status	63 (42.6)	115 (46.2)	.49	276 (44.7)	.00	34 (39.1)	48 (39.3)	.00	91 (31.9)	.06
Grade Level										
4	63 (42.3)	73 (29.6)		191 (32.4)		36 (38.7)	51 (37.5)		87 (33.2)	
5	40 (26.8)	53 (21.5)		114 (19.4)		31 (33.3)	35 (25.7)		70 (26.7)	
6	21 (14.1)	59 (23.9)		122 (20.7)		15 (16.1)	23 (16.9)		59 (22.5)	
7	19 (12.8)	51 (20.6)		122 (20.7)		11 (11.8)	15 (11.0)		30 (11.5)	
8	6 (4.0)	11 (4.5)		40 (6.8)		NA	2 (1.5)		3 (1.1)	
9	NA	NA		NA		NA	10 (7.4)		13 (5.0)	
Race/Ethnicity										
Black/African American	60 (41.7)	112 (46.9)		260 (43.1)		21 (22.6)	35 (25.7)		54 (20.6)	
Hispanic/Latino	40 (27.8)	65 (27.2)		203 (33.7)		18 (19.4)	37 (27.2)		65 (24.8)	
White	35 (24.3)	47 (19.7)		111 (18.4)		46 (49.5)	56 (41.2)		125 (47.7)	
Native American	4 (2.8)	7 (2.9)		11 (1.8)		19 (20.4)	11 (8.1)		34 (13.0)	
Asian American	4 (2.8)	6 (2.5)		7 (1.2)		2 (2.2)	2 (1.5)		6 (2.3)	
Multiracial	1 (.7)	2 (.8)		10 (1.7)		NA	NA		NA	
Other	NA	NA		1 (.2)		3 (3.2)	8 (5.9)		11 (4.2)	

Note. CG Match=matches with male mentee and female mentor; SG Match=matches with male mentee and mentor; No Match=control group without a mentor; NA=not available; Some percentages not reflective of total N due to missing data.

^aComparison between same- and cross-gender matches.

^bComparison between mentored youth (treatment) and non-mentored youth (waitlist control group).

* $p < .05$; ** $p < .01$.

TABLE 4
Baseline Demographic Characteristics of Mentors

Demographic	ED			BBBS		
	CG Match n=150 n (%)	SG Match n=249 n (%)	t/x^{2^a}	CG Match n=93 n (%)	SG Match n=136 n (%)	t/x^{2^a}
Age	31.3 (14.5)	36.6 (17.8)	-3.20**	20.7 (8.3)	28.2 (13.7)	-5.15**
Have children at home	47 (32.0)	107 (43.3)	4.98*	10 (10.9)	29 (21.3)	4.23*
Married/Partner	47 (31.8)	104 (42.1)	4.20*	16 (17.8)	43 (31.6)	5.38*
Mentor is a high student	8 (32.0)	17 (68.0)	.36	60 (67.4)	45 (35.2)	21.88***
Race/Ethnicity						
Black/African American	46 (32.4)	75 (31.9)		5 (5.6)	10 (7.4)	
Hispanic/Latino	9 (6.1)	23 (9.3)		5 (5.6)	12 (8.9)	
White	92 (64.8)	136 (57.9)		71 (78.9)	101 (74.8)	
Native American	8 (5.6)	5 (2.1)		1 (1.1)	3 (2.2)	
Asian American	4 (2.8)	16 (6.8)		3 (3.3)	3 (2.2)	
Native Hawaiian/Pacific Islander	NA	5 (2.1)		NA	NA	
Multiracial	NA	NA		5 (5.6)	6 (4.4)	
Other	NA	NA		NA	NA	

Note. CG Match=matches with male mentee and female mentor; SG Match=matches with male mentee and mentor; NA=not available; Some percentages not reflective of total N due to missing data.

^aComparison between same- and cross-gender matches.

* $p < .05$; ** $p < .01$; *** $p < .001$.

TABLE 5
Standardized Coefficients for Estimated Impact of Mentoring by Type of Gender Match (ED)

Outcome Variable	CG Match ^a			SG Match ^a			Contrast Coefficient Estimate ^b	BH-Corrected Critical Value ^c
	β	SE	95% CI (lower; upper)	β	SE	95% CI (lower; upper)		
Scholastic Efficacy	-.01 (-.24)	.09	-.20; .16	.06 (1.20)	.07	-.05; .22	-.11	.02
Future Orientation	.07 (1.30)	.07	-.05; .23	.05 (.91)	.05	-.05; .16	.04	.02
Social Studies	-.15 (-2.26)*	.21	-.90; -.06	-.01 (-.19)	.15	-.33; .28	-.45 [†]	.00
English	-.15 (-2.38)*	.17	-.75; -.07	-.04 (-.70)	.13	-.35; .17	-.32 [†]	.01
Math	-.11 (-1.78) [†]	.19	-.71; .04	-.03 (-.42)	.14	-.34; .22	-.28	.01
Science	-.05 (-.84)	.19	-.54; .22	-.03 (-.48)	.15	-.36; .22	-.09	.03
Pro-social	.00 (.03)	.08	-.16; .16	.01 (.27)	.06	-.11; .14	-.02	.03
Misconduct	.01 (.13)	.10	-.18; .21	-.01 (-.20)	.08	-.17; .14	.03	.02
Truancy	-.04 (-.72)	.17	-.45; .21	-.11 (-2.15)*	.13	-.52; -.02	.15	.01

Note. CG Match=matches with male mentee and female mentor; SG Match=matches with male mentee and mentor; Scholastic Efficacy=scholastic efficacy and school bonding; Future Orientation = academic future orientation; Social Studies=social studies grade; English=English language arts grade; Math=math grade; Science = science grade; Pro-social=pro-social behavior; Misconduct=misconduct; Truancy=truancy violations; *t* values are presented in parentheses.

^aComparisons between treatment group (mentored youth in same-gender and cross-gender match respectively) and non-mentored control group.

^bTest of difference between same-gender and cross-gender match standardized coefficient estimates.

^cBased on Benjamini-Hochberg test; figure listed represents the critical value that the *p* value in the preceding column (“Contrast Coefficient Estimate”) must be less than in order for difference between the standardized coefficient estimates for same- versus cross-gender matches to be statistically significant.

[†]*p* < .10; **p* < .05.

two groups were not statistically different from each other (Table 5, column “Contrast Coefficient Estimate”). After applying the B-H correction for multiple hypothesis testing, there were no statistically significant differences between same- and cross-gender matches.

Gender Matching and Relationship Duration, Intensity, and Quality

In the ED sample, the duration of matches ranged from less than one month to nine months (*M*=5.9, *SD*=2.3). In addition, the frequency with which matches met ranged from once per month to 20 times per month (*M*=4.2, *SD*=2).

GLM results for relationship process variables (see Table 6) examining the difference between the impact of mentoring for mentored males in same- and cross-gender matches indicated no statistically significant differences

in relationship quality, duration, and intensity between the two groups.

BBBS Findings

Baseline Differences

No significant differences were observed between treatment (mentoring) and control group for youth demographic characteristics or baseline outcome variables. As in the ED sample, youth in same-gender matches were slightly older than those in cross-gender matches, *t*(227)=-2.29, *p*<.05 (*M*=10.9 versus 11.4, respectively). No other youth baseline demographic differences or differences on outcome variables between the same- versus cross-gender matches were detected (see Table 3).

As in the ED sample, mentors in same-gender matches were slightly older *t*(224)=-5.15, *p*<.001. Also consistent

TABLE 6
Standardized Coefficients for the Estimated Impact of Mentoring on Relationship Processes by Type of Gender Match

Outcome Variable	ED			BBBS		
	β^a	SE	95% CI (lower, upper)	β^a	SE	95% CI (lower, upper)
Mentor-Youth Relationship Quality	-.12 (-1.78) [†]	.07	-.26; .00	-.02 (-.33)	.08	-.19; .13
Match Length	.08 (1.53)	.25	-.11; .86	-.15 (-2.00)*	7.89	-31.35; -.20
Match Meeting Frequency	-.05 (-.95)	.23	-.68; .23	-.22 (-2.70)*	.20	-.93; -.14

Note. *t* values are presented in parentheses.

^aComparisons between same-gender and cross-gender match (dichotomous variable, 1=same-gender match).

[†]*p* < .10; **p* < .05.

with the ED study, mentors in same-gender matches were more likely to be married or cohabitating ($\chi^2=5.38, p<.05$) and to have children ($\chi^2=4.23, p<.05$) (see Table 4). Differences in mentor characteristics were entered as covariates only in GLM analyses testing differences in relationship processes (duration, intensity, and quality) for mentored youth in same- versus cross-gender matches.

Gender Matching and Treatment Effects

We first examined the main effects of mentoring for male youth participants in the BBBS study. Mentored male youth did not differ from the non-mentored waitlist control group on tested academic, behavioral, and social outcomes.

In addition, there were no statistically significant treatment effects of mentoring for same-gender and cross-gender matches when each type of gender match was compared to the non-mentored control group on youth outcomes (see Table 7).

Lastly, the test of the difference between the estimated coefficients of the effect of mentoring for male youth in same- and cross-gender matches did not show any statistically significant differences between the two groups on all outcomes (see Table 7; column “Contrast Coefficient Estimate”).

Gender Matching and Relationship Duration, Intensity, and Quality

The duration of matches in the BBBS sample ranged from less than one month to approximately 8.1 months

($M=4.4, SD=2.1$). Moreover, the frequency with which matches met ranged from once per month to five times per month ($M=2.9, SD=1.3$).

GLM analyses of relationship process outcomes for the BBBS sample produced two statistically significant findings on measures of the quality, intensity, and duration of the mentoring relationships for mentored male youth in cross-gender compared to same-gender matches (see Table 6). Cross-gender matches met more frequently than same-gender matches ($p<.05$), with a mean of approximately 3.1 and 2.6 meetings per month, respectively. In addition, cross-gender matches were approximately two weeks longer in duration ($p<.05$), with a mean of 5.2 months compared to a mean of 4.7 months for youth in same-gender matches.

Additional analyses using OLS regression in which interaction effects, defined as gender match type (same- versus cross-gender) by mentor high school student status, were conducted to test whether the fact that in the BBBS sample, mentors in cross-gender matches were more likely to be high school students ($\chi^2=21.88, p<.001$), would influence relationship process outcomes. No significant interaction effects were found for relationship quality ($\beta=.13, t=1.71$), duration ($\beta=.08, t=1.00$), and meeting frequency ($\beta=.002, t=.03$).

Summary of Results From ED and BBBS Studies

Overall, within both samples, youth in same-gender matches were slightly older. Similarly, in both samples mentors in same-gender matches tended to be older, married or living with a partner, and have children. Relationship process outcomes differed somewhat across the two samples. Within both samples, there were no

TABLE 7
Standardized Coefficients for Estimated Impact of Mentoring by Type of Gender Match (BBBS)

Outcome Variable	CG Match ^a			SG Match ^a			Contrast Coefficient Estimate ^b
	β	SE	95% CI (lower; upper)	β	SE	95% CI (lower; upper)	
Scholastic Efficacy	.03 (.59)	.07	-.10; .18	.08 (1.63)	.06	-.02; .22	.57
School Feelings	-.02 (-.62)	.07	-.17; .09	.00 (.05)	.06	-.11; .12	.35
Attending College	.00 (-.10)	.11	-.23; .21	-.03 (-.74)	.10	-.26; .12	.24
Overall Academic	.04 (.94)	.11	-.11; .32	.03 (.68)	.10	-.13; .26	.09
Social Acceptance	.05 (1.10)	.08	-.07; .26	.02 (.35)	.07	-.12; .17	.52
Parent Relationship	.00 (-.11)	.06	-.13; .12	.03 (.75)	.05	-.07; .15	.48
Absences	-.08 (-1.46)	.16	-.54; .08	-.01 (-.20)	.14	-.30; .25	1.36
Self-Worth	.00 (.00)	.07	-.14; .14	.06 (1.27)	.06	-.04; .21	1.01

Note. CG Match=matches with male mentee and female mentor; SG Match=matches with male mentee and mentor; Scholastic Efficacy=self-perceptions of academic abilities; School Feelings=feelings about school; Attending College=likelihood of attending and completing college; Overall Academic=overall academic performance; Social Acceptance=peer social acceptance; Parent Relationship=parent relationship; Absences=unexcused absences; Self-Worth=global self-worth; *t* values are presented in parentheses.

^aComparisons between treatment group (mentored youth in same-gender and cross-gender match respectively) and non-mentored control group.

^bTest of difference between same-gender and cross-gender match standardized coefficient estimates.

differences in relationship quality between the two types of gender match. In contrast, in the BBBS sample, cross-gender matches were longer in duration and met more frequently relative to same-gender matches, whereas no differences were found in the ED sample. Across both samples, there were few statistically significant effects of mentoring for both same and cross-gender matches when each type of gender match was compared to a non-mentored control group. There were even fewer differences between the estimated impact of mentoring for male youth in same- versus cross-gender matches when the effects of the two match types were compared to each other.

DISCUSSION

The aim of this study was to examine associations between same- versus cross-gender matches, and mentoring youth outcomes and relationship processes. Although some significant findings emerged, comparisons across both nationally representative datasets demonstrate few systematic differences between same- versus cross-gender matches.

In the ED sample, youth in cross-gender matches demonstrated steeper declines in English and social studies grades when compared to the control group. Relative to the non-mentored comparison group, youth in same-gender matches showed lower rates of truancy. In the BBBS sample, no statistically significant differences in youth outcomes were found between same and cross-gender matches. It is difficult to interpret the relatively sharper decline in social studies and English among boys in the ED sample. It may be the case that they were pulled from class for their meetings with their mentors, a practice that has been associated with drops in academic functioning (Schwartz et al., 2012). But, within the current study's primary questions regarding gender matching, these findings are secondary and should therefore be interpreted as such. Furthermore, given the broader context of null findings for male mentees in both the ED and BBBS samples, further investigation is needed before conclusions can be drawn regarding this effect. It is important to note, however, that within the original ED impact evaluation study, gender was found to significantly moderate the impacts of the intervention, with girls showing more positive impacts and boys showing more negative impacts (Bernstein et al., 2009). This likely contributed to the null and negative findings in the current study. Nevertheless, gender did not emerge as a moderator in the BBBS impact evaluation study, suggesting that the possibility that lack of power may also have contributed to the null findings in the current study. In addition, it is possible that other unmeasured factors (e.g., individual and environmental risk factors) may be more salient moderators of mentoring for boys (DuBois et al., 2011).

Whereas no differences in relationship processes (i.e., quality, duration, and intensity) emerged between the two match conditions within the ED sample, there were statistically significant differences within the BBBS sample. Specifically, cross-gender matches were longer in duration and met more frequently in the BBBS sample. These findings may be explained, in part, by the demographic characteristics of the mentors in the two studies. Although in both samples, mentors in same-gender matches were older, BBBS oversampled for high school student mentors (50% versus 6% in the ED sample), the majority of whom (67%) were in cross-gender matches. As participation might have been linked to school course credit (Herrera, Kauh, Cooney, Grossman, & McMaken, 2008), these mentors may have been compelled to remain in the program, resulting in more enduring and intense relationships. Particularly since relationship processes did not differ as a function of gender matching, the longer duration in cross-gender high school matches may be accounted for by the course stipulations.

Overall, our results indicate few associations between gender match and youth outcomes. Additionally, although there were some associations between gender match and relationship processes, the results were inconsistent and seemed to be more the result of program constraints and stipulations than of processes inherent to the match. The findings provide limited evidence for a systematic advantage or disadvantage to cross-gender matching.

At the same time, these results should be considered with caution, as this study is subject to selection biases and other limitations. Most notably, youth in the study were not randomly assigned to same- or cross-gender matches, thus any potential differences could also be indicative of other underlying influences. For instance, those youth and parents who may have explicitly requested a same-gender match might be qualitatively different from those who did not. Similarly, while the current study adjusted for mentor's demographic characteristics including age and parent-status, mentors across the two match types may be different in other unmeasured characteristics. For instance, across both samples, mentors in same-gender matches were older, married or living with a partner, and had children. These life experiences may contribute to mentor's approaches for engagement with their mentees which, in turn, influence the mentoring relationship processes and outcomes. Future studies should employ a random assignment design so that the effects of gender on match process and outcome can be more confidently determined. Additionally, non-significant findings do not conclusively indicate an absence of effects, as there may have been outcomes that were unmeasured in the current study (e.g., gender role identity, future career orientation). Likewise, gender matching may be more salient to certain subsets of youth, such as older

youth or those who desire and lack a strong male model. Finally, the current study was constrained to SBM programs only. SBM differs in structure, scope, and intensity from other types of mentoring, including community- and work-based mentoring (Hamilton & Hamilton, 2005; Herrera et al., 2000).

Other limitations relate to the characteristics of the data employed. First, a few of the measures in the ED sample, though constructed from previously tested and validated scales, were composite measures that may be different from the validated scales used to construct them. Similar to the ED impact evaluation (Bernstein et al., 2009), the composite measures in the current study were constructed to address potential threats to internal reliability as the scales from the student surveys in the impact evaluation were considerably below the minimal standard for internal reliability. Despite these efforts, the internal reliability of several measures within the ED sample were below the minimal criteria of $\alpha = .70$ (Cronbach, 1951), which compromises interpretation of the current study's findings.

Additionally, although the inclusion of two longitudinal, nationally representative datasets is an important strength of this study, exploring long-term outcomes could further elucidate the role of gender matching in mentoring (Wheeler et al., 2010). It is possible, for example that the effects of having a male mentor versus a female mentor emerge with time. Likewise, although both samples had a broader age range than is typical of school-based mentoring programs (Herrera et al., 2007), over 60% of mentees in both samples were under 12 years old. It is possible that the significance of gender matching may vary across developmental age groups (Karcher, 2008). Finally, although the original impact evaluations included relatively large sample sizes, relatively smaller subsamples were used in our analyses due to sampling constraints and missing data. This may have decreased our capacity to detect statistically significant effects. Retrospective power calculations from Bernstein et al. (2009) suggest MDEs (minimum detectable effect sizes) ranging from roughly 0.4 to 0.7 within our ED study subsample, implying that treatment effects would need to be quite large in order for us to reliably detect them. Although Herrera et al. (2007) did not publish retrospective power calculations for the BBBS impact evaluation, the anticipated loss in power due to halving the sample size within our study's BBBS subsample would be similar to that for the ED subsample. Thus, the current study lacked the power to detect small effects comparable to those found across studies of youth mentoring (DuBois et al., 2011).

Despite the limitations outlined, this study presents the largest quantitative examination to date of a widespread and growing practice in youth mentoring programs. The results of these preliminary analyses, if

replicated in future studies, could have potentially far-reaching implications for practice. Many programs place prospective male mentees on long waitlists rather than match them with female mentors. Across two large studies, we failed to find substantial differences in mentoring process or effects for male mentees in same- versus cross-gender matches, suggesting the potential utility of deploying female volunteers to work with male mentees. Although it is vital to honor explicit preferences from either youth or parents in order to individualize mentoring experiences, it is also important to consider the fundamental goal of providing mentoring matches to youth within a suitable time frame in order to foster relationships within which youth may maximize their potential for positive development.

Mentoring programs invest as much as half of their budgets into volunteer recruitment efforts (MENTOR, 2011). Our findings suggest that, in addition to continuing to reach out to underrepresented groups of volunteers, programs should not consider it a disadvantage to pair young men with female mentors, many of whom volunteer without as much recruitment effort. Training opportunities focusing on factors of gender and diversity can support female mentors in their efforts to engage more fully with their mentees' experience, and ideally produce stronger improvements across all types of match configurations.

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