

Determinants and long-term effects of attendance levels in a marital enrichment program for
African American couples

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Abstract

Although most efficacious marital enrichment programs are multi-session, few studies have explored whether outcomes differ according to session attendance, particularly among minority groups with lower than average participation in prevention programs. The present study therefore investigates attendance levels and long-term improvements in couple functioning among 164 couples participating in the Promoting Strong African American Families program. Structural equation models indicated session attendance predicted 2-year changes for men's reports of communication, commitment, and spousal support (marginally) but not for women's. Individual and couple characteristics that predicted attendance levels were also identified. Results highlight distinct gender differences in the effects of sustained attendance as well as characteristics that provide early identifiers for African American couples at increased risk of low program attendance.

Keywords: attendance, prevention, couples, marital enrichment, African American

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African American couples

Marital behavior and trends among African Americans continue to be an area of focus among both family researchers and public policymakers. This focus arises in part from lower levels of marital entry and stability among African Americans in comparison to other ethnicities (Bryant et al., 2010) and the subsequent impact of this instability on the well-being of African American children (Brown, 2010). Despite this growing concern, few empirically based programs have been designed to foster marital and parenting processes for African American couples; to date, research and programming among African American families has focused primarily on parent-child relations and youth living in single-mother-headed households (Brody et al., 2004; Jones, Zalot, Foster, Sterrett, & Chester, 2007). In response, we developed the Promoting Strong African American Families Program (ProSAAF) to address the needs of two-parent African American couples with a pre-adolescent or adolescent child. ProSAAF is delivered in participants' homes and targets both couple and parenting dynamics within the family; analyses of program efficacy have found couples participating in ProSAAF to show improved communication and decreased arguing in front of youth (Barton et al., 2015; Beach et al., 2014). In the present study, we further investigate this unique prevention trial by examining the effects of sustained attendance on long-term program outcomes for African American couples as well as factors that promote or hinder couples' levels of attendance.

Sustaining engagement and retention among participating family members has been identified by multiple researchers as a central, albeit challenging, component of effective couple- and parenting-oriented prevention and intervention efforts (Brown, Feinberg, & Kan, 2012; Spoth & Redmond, 2000). The task of maintaining participant attendance is particularly

challenging in prevention programming, as families in the targeted population may not perceive the immediate relevance or need for program services (Baker, Arnold, & Meagher, 2011; Ingoldsby, 2010). This challenge is further amplified for programs targeting African Americans, particularly men, who appear less likely to attend such programs compared to other ethnicities (Hurt et al., 2012; Stanley, Johnson, Amato, & Markman, 2006).

To date, most studies investigating the effects of program attendance within marital enrichment programs (also termed marital prevention, couple and relationship education) have focused on either enrollment (e.g., Doss, Rhoades, Stanley, Markman, & Johnson, 2009) or post-program changes among programs of differing duration (e.g., Hawkins, Blanchard, Baldwin, & Fawcett, 2008). Moreover, investigations have rarely, if ever, focused on attendance effects for programs targeting African Americans couples, particularly among African American men. The present study therefore offers a unique within-program investigation of the relationship between session attendance and men's and women's program outcomes two years after participating in the ProSAAF program¹. Additionally, we also investigate individual and relationship characteristics that predict attendance as a means to explore potential baseline indicators of couples at greater likelihood for program drop-out, even for a program with multiple procedures designed to foster attendance.

Literature Review

Predictors of Session Attendance

Previous research on factors that predict attendance in couple-focused prevention programs has principally focused on predictors of enrollment and not actual session attendance (e.g., Doss et al., 2009; Halford, O'Donnell, Lizzio, & Wilson, 2006). Studies of enrollment in premarital education, for instance, indicate couples who are cohabiting, African American, and

have partners with lower levels of religiosity, education, and income are less likely to attend these programs (Halford et al., 2006; Stanley et al., 2006; Sullivan & Bradbury, 1997). Though not as extensive, studies of enrollment in programs targeting already-married dyads found couples with lower relationship quality, including lower communication, commitment, and satisfaction, to be more likely to enroll (Morris et al., 2011).

Individual and couple factors that influence variability in actual attendance levels (and not merely enrollment) in marital enrichment programs have received minimal research attention, despite their potential insights into implementation refinements to enhance participant retention. As an exception, a study by Petch and colleagues (2012) found only low levels of education predicted withdraw from the Couple CARE for Parents (CCP) program; other markers of high-risk couple types (i.e., cohabiting [vs. married], physical aggression, psychological distress, and unplanned pregnancy) did not predict couple withdraw in their study. Given the lack of research on this topic among couple-focused programs, we additionally reviewed studies of attendance predictors from various family-centered prevention programs (e.g., parent/child; coparenting). In this literature, previously-identified factors associated with lower program attendance encompass sociodemographic (e.g., being non-married, male, socioeconomically disadvantaged, younger ages), individual (e.g., poorer mental health), and family (e.g., lower levels of family organization and cohesion) characteristics (Baker et al., 2011; Brown, Feinberg, et al., 2012; Coatsworth, Duncan, Pantin, & Szapocznik, 2006; Nix et al., 2009; Perrino, Coatsworth, Briones, Pantin, & Szapocznik, 2001). These sociodemographic risk factors, some of which are disproportionately represented in African Americans (e.g., socioeconomic disadvantage) and other systemic barriers (e.g., mental health disparities; discrimination), may also help explain African Americans' reduced likelihood of attending prevention programs. Collectively,

these findings highlight a prominent challenge facing practitioners, namely that the couples, parents, and families in greater need for services are less likely to sustain their attendance and remain engaged. However, even though couples at higher risk may be less likely to receive couple-focused preventive education, they may be as likely or more so to attend if such services are made accessible and available to them (see Engsheden, Fabian, & Sarkadi, 2013) and exhibit greater improvements compared to low-risk couples (Barton, Futris, & Bradley, 2014; Quirk, Strokoff, Owen, France, & Bergen, 2014).

As most previous studies of attendance have involved parent-focused programs (e.g., Nix et al., 2009; Perrino et al., 2001), less is known about characteristics of the dyad that predict attendance levels in couple-focused programs. An exception is one study of a coparenting-focused intervention that examined, but found no support for, couple love and couple conflict as predictors of attendance or engagement (Brown, Feinberg et al., 2012). Given the few dimensions of couple functioning previously examined as predictors of attendance in marital enrichment programs, the present study incorporates new factors that may have prognostic value for identifying which couples are less likely to their sustain participation.

Attendance and Program Outcomes

In addition to predicting enrollment and participation levels, previous research on attendance in couple-focused enrichment programs has also investigated whether programs with particular dosages (i.e., contact hours allotted to the program) demonstrate better results than others. Meta-analyses suggest the total number of contact hours to be an important moderator of the effectiveness of marital and relationship education programs (Hawkins et al., 2008; Hawkins, Stanley, Blanchard, & Albright, 2012), with moderate dosage programs (9-20 contact hours) associated with stronger effects than low-dosage programs (1-8 hours). In a retrospective study

(Stanley et al., 2006), married couples reporting longer duration premarital education programs also showed higher levels of marital satisfaction and lower levels of marital conflict, though this effect plateaued once programs exceeded 10 hours (for effects on marital conflict) and 20 hours (for effects on marital satisfaction). Although these findings highlight the importance of dosage for program design, such analyses are limited by only assessing programs with different levels of contact. This leaves unanswered the question of whether differential effects appear based on individuals' (non)attendance in efficacious, adequately-dosed marital enrichment programs.

We identified only one family-centered prevention program targeting aspects of couple functioning with research examining the effect of variability in attendance. Results indicated that individuals in the Family Foundations program (a universal program designed to help couples manage the transition to parenthood by improving coparenting relationship quality) who attended more sessions and were more engaged reported greater relationship satisfaction three years post-birth. Additionally, couples attending 2 or more sessions (out of a possible 8) reported greater improvements in coparenting at six months post-birth than those with less attendance (Brown, Goslin, & Feinberg, 2012; Feinberg & Kan, 2008).

For programs targeting parenting practices, a slightly larger number of studies have considered the relation between attendance variability and program outcomes. Results generally indicate that higher attendance is associated with more favorable outcomes. For instance, controlling for a variety of confounds and selection bias, Crowley and colleagues (2014) found reductions in teenage underage drinking among high-attending, but not low attending, families relative to control families. Previous research findings also indicate greater attendance to be associated with African American mothers' improved regulated parenting (Brody, Murray, Chen, Kogan, & Brown, 2006). Lastly, higher levels of program engagement, but not attendance, have

also been associated with improved parenting among parents of at-risk children (Nix, Bierman, McMahon, & CPPRG, 2009).

Although higher levels of attendance appear beneficial for parenting prevention programs, whether a similar pattern appears within marital enrichment programs has rarely been considered. Further, little is known about whether attendance demonstrates effects across all, or only a particular subset, of outcomes or for one gender more than another. For instance, among parent-oriented prevention programs, attendance and engagement effects vary across different indicators of family functioning (Brown, Goslin et al., 2012) and between fathers and mothers (Spoth, Redmond, Haggerty, & Ward, 1995).

ProSAAF and the Current Study

The Promoting Strong African American Families (ProSAAF) program is a universal prevention program for couples with a pre-adolescent or adolescent child. The 6-session program, which targets multiple aspects of marital and co-parenting processes, was developed from efficacious programs within the African American community that targeted couple functioning (ProSAAM; Beach et al., 2011) and parenting processes (SAAF; Brody et al., 2006). Topics for each session were: (1) The Joy of Oneness; Communication, (2) Expectations and Hidden Issues; Listening, Support, and Conflict Resolution; Ground Rules for Fighting and Loving, (3) Problem-solving; Fun, Friendship, and Physical Oneness, (4) Supporting Our Children; No-Nonsense Parenting, (5) Everyday Parenting; Helping Children Exceed In School; Protecting Against Dangerous Behavior, (6) Encouraging Ethnic Pride; and Staying Connected with Children. Trained facilitators visited couples' homes for six consecutive weeks and guided couples through video-based content and structured couple activities. Previous analyses of ProSAAF program efficacy have shown that, compared to couples in the control condition, both

men and women in the treatment condition reported improved couple communication at post-test and less arguing in front of youth at two-year follow-up (Beach et al., 2014). Reductions in child exposure to interparental conflict were also found to be associated with lower levels of depressive symptoms in children (Barton et al., 2015).

The ProSAAF implementation model included multiple components designed to achieve high rates of attendance and retention among participants, particularly fathers and father figures. One design component that aimed to promote attendance was offering ProSAAF in participants' homes. Previous studies have noted the need for home-based couple and relationship education services (Halford et al., 2010), particularly for demographics less likely to attend group-based "classes" (Wilde & Doherty, 2013). Further, reports from other successful evidence-based programs (Dishion, Kavanagh, Schneiger, Nelson, & Kaufman, 2002; Spoth, Redmond, & Shin, 1998) indicated that African American men were reluctant to attend family-centered programs in community settings, particularly those offered at schools (Brandon, Higgins, Pierce, Tandy, & Sileo, 2009). Based on findings from focus groups with African American men (Hurt et al., 2012) and previous prevention studies with diverse populations (e.g., Nix, Pinderhughes, Bierman, Maples, & CPPRG, 2005), we refined our engagement protocols and developed a home-based model for implementing ProSAAF. Program attendance and retention was also fostered by permitting flexibility in the scheduling of program sessions. Given the conflicting demands of couples with children and various impediments to session attendance (e.g., illness, travel, personal/family crises, fatigue, apathy), project staff devoted significant amounts of attention to coordinating and rescheduling sessions with couples to facilitate their participation in the program. Recruitment and retention of males in particular was aided by community-based recruitment procedures that included having African American male community liaisons assist

with recruitment as well as creating and utilizing recruitment materials that were geared to a male audience. Program content (e.g., ethnic pride) and recruitment procedures (e.g., use of demographically-similar peers, local community organizations with high African American involvement) were also designed to be sensitive to African American cultural dynamics.

Two goals guided our efforts in the current study. First, we sought to identify baseline factors that would identify couples less likely to sustain participation in the program. Based on previous research, we hypothesized that particular demographic (i.e., non-married, lower income, education, age) and individual (i.e., depressive symptoms) characteristics would be negatively associated with session attendance. We also examined whether relationship factors (i.e., satisfaction, commitment) would predict attendance, but did not postulate a direction of effect given the mixed results of enrollment studies (Morris et al. 2011; Sullivan & Bradbury, 1997). Overall, we expected attendance levels to be high given our refined implementation procedures.

Secondly, we sought to determine whether greater attendance predicted more substantial treatment response for couples participating in ProSAAF. For family-based prevention programs, greater attendance is generally associated with improved program outcomes (Brody et al., 2006), though some studies have found no effect (Nix et al., 2009). As attendance has rarely been randomized, this range of findings may reflect how attendance effects can result from greater exposure to the program, characteristics of parents or couples who attend and want to overcome barriers, and/or parents or couples with greater needs and more (or less) motivation to continue. For the present study, we hypothesized that greater levels of attendance would be associated with greater improvements in four program-targeted domains: couple communication, relationship commitment, perceived spousal support, and arguments in front of target child.

An embedded question within this second research goal concerned whether attendance effects differed between genders. Such differences are of particular interest given previous data indicating that men are socialized differently than women toward intimate relationships (see Burn & Ward, 2005) and less adept at providing timely spousal support (Neff & Karney, 2005). Taken together, such findings suggest the potential added value for men of sustained exposure to content and skills in marital enrichment programs. To date, few studies have explored gender variability in attendance effects, though the aforementioned study of Family Foundations (Brown, Goslin et al., 2012) did not find gender to moderate the influence of engagement on any dependent variables. However, given the different program foci, target population, as well as life stage of participants, gender effects may still be evident in the present study. *No a priori* hypotheses on gender differences are stated given the minimal previous studies on this topic.

Method

Participants and Procedures

Participants were 164 couples assigned to the treatment condition in a randomized trial of ProSAAF. To be eligible, individuals had to be an African American adult at least 21 years of age with a mate (of any age or any race) also willing to participate in a six-week in-home educational program. The couple must have been married or planning to marry with a definite date in mind, living together, and residing with a child between 9- to 17-years of age. Recruitment efforts included referrals through local contacts and advertisements distributed through a variety of outlets (e.g., churches, fairs, radio shows, newspapers, local businesses). Following eligibility screening, block randomization was performed to ensure comparability between couples in treatment and control groups. There were no differences between treatment and control groups across a range of sociodemographic and couple functioning variables (see

Beach et al., 2014 for more information on treatment and control group assignment and equivalence).

Of the treatment sample, 87% percent were married ($n = 143$) with an average marital duration of 12 years (range 0 – 31 years). Men's mean age was 41 (range 26 – 68) and women's mean age was 39 (range 22 – 55). Although only 1 partner in the couple was required to be African American, the vast majority of the men (98%) and women (98%) in the treatment sample reported being African American. Men's and women's mean level of education was some college or trade school, ranging from not graduating from high school to holding a Doctorate or professional degree. A large majority of men (88%) and women (80%) reported full- or part-time employment. Mean monthly income from primary jobs was \$1563 (range \$1 - \$15,000) for men and \$1679 (range \$0 - \$14,000) for women. These education and income levels were similar to state averages for African Americans (US Census Bureau, 2013). Total number of children residing in the home ranged from 1 to 10, with a mean of 3 children residing in the home. The mean age of the target child was 12 years of age at enrollment in the program.

A team of two interviewers visited couples at their homes to provide a detailed explanation of the study and obtain adult consent and minor assent. Interviewers then read all pre-test questions to participants to ensure appropriate pace of the interview and prevent any challenges with functional illiteracy. For couples randomly assigned to the treatment condition, trained facilitators visited couples' homes over a period of six consecutive weeks and facilitated each 90-120 minute session. All facilitators were married, African American, and had an expressed commitment and interest to helping marriages succeed. Two-year follow-up data were collected online or through surveys mailed to participants. Seventy-nine percent ($n = 129$) of

treatment couples provided information at 2-year follow-up (for additional programmatic and procedural details of the randomized trial, see Beach et al., 2014).

Measures

Effective communication. Participant reports of effective communication were assessed using a four item version of the Relationship Efficacy Measure (REM; Bradbury, 1989) and an eight item version of the Communication Skills Test (CST; Jenkins & Saiz, 1995). All items loaded on a single factor, with loadings ranging from .4 to .85 for both men and women. Accordingly, mean scores were computed for each measure, standardized, and then averaged to create a single score. The four REM items assessed the degree to which partners believe they have the ability to resolve conflicts with their partners (e.g., “I am able to do the things needed to settle our conflicts”). The eight CST items assessed effective communication patterns within the couple (e.g., “when discussing an issue, my mate and I both take responsibility to keep us on track”). Higher scores reflected greater effective communication (men: $\alpha = .86$ [pre-test], $= .92$ [2-year]; women: $\alpha = .88$ [pre-test] and $= .92$ [2-year]).

Relationship commitment. Relationship commitment was assessed using four items from the Commitment Inventory (Stanley & Markman, 1992). Individuals reported their degree of agreement (1 = *strongly disagree*; 5 = *strongly agree*) to items such as “I think a lot about what it would be like to be married to (or dating) someone other than my mate” (reverse coded) and “My relationship with my mate is clearly part of my future life plans” (men: $\alpha = .62$ [pre-test], $= .72$ [2-year]; women: $\alpha = .74$ [pre-test] and $= .78$ [2-year]).

Spousal support. Perceived spousal support was measured using the spouse-specific Social Support Scale. Five items were used to assess partners’ sense of being able to confide in and receive support from their partner (1 = *almost never*; 5 = *almost always*). Sample scale

items include: “My mate is someone I can confide in”, “I feel I can share my most private worries and fears with my mate”, and “I can tell my mate about both good things and bad things that happen to me” (men: $\alpha = .91$ [pre-test], = .94 [2-year]; women: $\alpha = .92$ [pre-test] and = .94 [2-year]).

Arguing in front of youth. Participants’ reports of arguing in front of their child were assessed using five items from the O’Leary Porter Scale (Porter & O’Leary, 1980). These items reflected partners’ tendency (0 = *never*; 4 = *very often*) to disagree about discipline, family roles, and each other’s personal characteristics in front of the child (e.g., “How often do the arguments between you and your mate happen in front of [target child’s name]?”; men: $\alpha = .80$ [pre-test], = .82 [two-year]; women: $\alpha = .85$ [pre-test], = .81 [two-year]). Higher scores reflected more arguing in front of the child.

Attendance. Individuals’ attendance was measured by program facilitators who documented whether individuals attended each particular session or not. Given the six session program, attendance levels could range from 0 to 6.

Individual and family characteristics. In addition to basic demographics (i.e., marital status, age, educational attainment [1 = *Grades 1 to 4*; 10 = *Doctorate or Professional Degree*]), the following measures from pre-test assessments were included for analyses testing predictors of attendance. *Depressive symptoms* were measured using 20 items from the Center for Epidemiological Studies Depression scale (Radloff, 1977), a commonly used measure in community samples for gauging individuals’ mental health (men: $\alpha = .83$; women: $\alpha = .83$). *Relationship satisfaction* was measured using the six item Quality of Marriage Index (Norton, 1983), a unidimensional index that assesses individuals’ global perceptions of relationship satisfaction (men: $\alpha = .94$; women: $\alpha = .95$). Lastly, *low income* classification was a

dichotomous variable based on reports of receiving government assistance (i.e., TANF, Food Stamps, WIC; 1 = *receives government assistance*).

Plan of Analysis

We conducted analyses in two stages, with all analytic techniques performed to account for the interdependence of dyadic data. First, men's and women's predictors of session attendance were calculated among treatment couples using multilevel modeling (MLM). MLM techniques were utilized given the exploratory nature of analyses and collection of speculative variables included in the model. Based on recommendations by Raudenbush, Brennan, and Barnett (1995), men's and women's effects were estimated simultaneously, and dummy variables were used to nest male and female partner's data within each couple. Multilevel models (MLM) were run using HLM 6.0 (Raudenbush, Bryk, & Congdon, 2004).

Second, an actor-partner interdependence model (APIM) was used to assess the effect of session attendance on treatment response using structural equation modeling (SEM). Figure 1 presents a general depiction of the APIM analyses conducted. An SEM approach was utilized given an emphasis on model confirmatory analyses, ability to constrain paths for testing equivalency of gender effects, and missing data estimation techniques. APIMs were constructed for each targeted outcome and estimated using Mplus 6.0 (Muthen & Muthen, 2010). Local effect size was calculated using Cohen's f^2 , with values of 0.02, 0.15, and 0.35 representing small, medium, and large effect sizes, respectively (Cohen, 1988).

[INSERT FIGURE 1 HERE]

For longitudinal APIM models, instances of missing data due to participant attrition (21% of individuals) and non-response (3-5% of individuals across targeted variables) at two-year follow-up were handled via full information maximum likelihood (FIML).² FIML is widely

utilized in SEM and provides unbiased and more efficient estimates than other methods such as listwise deletion, pairwise deletion, and similar response pattern imputation (Acock, 2005; Enders & Bandalos, 2001). For MLM analyses of predictors of attendance, no data were missing from participants at pre-test, precluding missing data considerations.

Results

Descriptive Statistics and Attendance Rates

Men and women participating in ProSAAF attended, on average, slightly more than 5 of the 6 sessions (Men: $M[SD] = 5.07 [1.82]$; Women: $Mean[SD] = 5.10 [1.76]$). Over three quarters of men (76%) and women (77%) attended all six sessions, and 80% of men and women attended four or more sessions. For descriptive statistics of other study measures, see Table 1.

[INSERT TABLE 1 HERE]

Predictors of Attendance

The first set of analyses investigated predictors of session attendance among ProSAAF participants. Attendance levels reflected the average of male and female session attendance due to the high correlation between partners' attendance ($r = .99$) and in order to maintain consistency with measurement in subsequent APIM analyses. Results from multilevel regression models are presented in Table 2. Controlling for the effects of all other variables in the model, higher attendance levels for men were associated with being married and having lower depressive symptoms. For women, greater attendance was predicted by being married, having higher education, and higher relationship commitment. Age, baseline relationship satisfaction, and couples' low-income status were not associated with couples' attendance levels.

[INSERT TABLE 2 HERE]

Effect of Intervention Attendance on Outcomes

In the second stage of data analysis, we computed four APIMs to examine the effects of attendance on program-targeted outcomes of communication, commitment, spousal support, and parental arguing in front of child (see Table 3). Pre-test scores of the outcome variable were controlled for in all analyses (i.e., actor stability effects), such that attendance effects represent effects on changes in two-year outcomes relative to baseline levels. Male and female partner effects are also contained with the APIMs, reflecting the crossover effect of one partner's earlier reported level of couple functioning onto the corresponding partner's reported level of functioning two years later.

Table 3 summarizes the results of these analyses. A significant attendance effect appeared for men but not women pertaining to changes in outcomes of communication ($\beta = .33$; $p < .05$; $f^2 = .11$), commitment ($\beta = .31$; $p < .05$; $f^2 = .13$), and, marginally, spousal support ($\beta = .28$; $p = .05$; $f^2 = .09$). Signs of coefficients indicated that higher attendance levels predicted greater improvements in men's reports of effective communication, relationship commitment, and spousal support two years following the program. As some outcomes contained lower mean levels at two-year follow-up, significant effects suggest more stability in these constructs for higher attending couples.

[INSERT TABLE 3 HERE]

To examine whether significant attendance effects were different between genders, models were tested wherein male and female attendance effects were constrained to be equivalent. Across all three outcomes, the constrained models demonstrated significantly worse fit ($\Delta\chi^2(1) = 4.390$, $p = .04$ [communication], $\Delta\chi^2(1) = 7.079$, $p < .01$ [commitment], and $\Delta\chi^2(1) = 8.085$, $p < .01$ [perceived spousal support]), indicating that the effect of attendance on improvements in these areas was greater for men than for women. Significant actor stability

effects were observed for men and women across all outcomes, suggesting that, as expected, higher pre-test levels were associated with higher levels at two-year follow-up. A significant partner effect appeared from women to men across all three outcomes, such that women's pre-test levels were associated with improvements in men's outcome levels two years later.

For arguing in front of children, no significant attendance effect appeared for men or women. Actor stability effects were significant, as well as a partner effect from women's pre-test levels to changes in men's post-test levels, as with other outcomes. In this, women's pre-test levels of arguing in front of children predicted lower levels of men's arguing in front of children two years later, accounting for men's initial levels.

Thus, across all four outcomes, the hypothesized positive association between attendance and program outcomes was partially supported, being confirmed for selected male outcomes and disconfirmed for all female outcomes.

Lastly, given the significant findings highlighted in Tables 2 and 3, a final set of exploratory analyses examined whether males' depressive symptoms affected changes in program outcomes directly and/or indirectly through influencing session attendance. For direct effects, controlling for number of sessions attended, males' depressive symptoms were negatively associated with changes in relationship commitment ($\beta = -.23, p < .01$) and, at a marginal level, changes in effective communication ($\beta = -.16, p = .06$). Indirect effect significance levels were tested via bias-corrected bootstrapped confidence intervals (CI) given the non-normal distribution of the product term comprising the indirect effect (Hayes, 2009). A significant indirect effect (IE) was evident for changes in relationship commitment (IE = $-.15$; 95% CI = $[-.36, -.02]$) and spousal support (IE = $-.18$; 95% CI = $[-.48, -.02]$). Thus, in males, higher baseline depressive symptoms were directly associated with changes in relationship commitment as well as indirectly linked to

changes in relationship commitment and spousal support through its effect on reducing attendance in the program³.

Discussion

In this study, we examined attendance at a couple-focused prevention program for African American couples parenting a pre-adolescent or adolescent child. Given the lower average marital entry and stability rates among African Americans (Bryant et al., 2010), lower likelihood of participating in marital enrichment programs (Dion & Hershey, 2010; Stanley et al., 2006), and primary focus on single-parent households among African American families (Jones et al., 2007), ProSAAF provided a warranted couple-focused program for two-parent African American families that was uniquely tailored and implemented to achieve high rates of attendance. By investigating determinants of attendance variability as well as its subsequent effects on long-term program outcomes, results from the present study provide pertinent insights and implications for research and practice in marital enrichment programming among this understudied and vulnerable population.

In the first stage of analyses, multilevel regression models identified a subset of individual and couple characteristics that predicted couple attendance. In the second stage of analyses, results from actor-partner interdependence models found increased attendance was significantly associated with long-term improvements in multiple aspects of couple functioning, controlling for baseline levels. However, this attendance effect emerged only for men. Outcomes that showed gender differences in attendance tended to reflect broader or more complex outcomes (i.e., satisfaction, spousal support, commitment) versus a highly focused outcome (i.e., arguing in front of youth) that did not exhibit such an effect.

For predictors of attendance, married couples attended more sessions than cohabiting couples. This difference appeared even with the inclusion criteria that cohabiting couples have a

definite marriage date planned. This corroborates findings by Brown, Goslin et al. (2012) who found that non-married couples, compared to those married, possessed lower levels of attendance in a co-parenting program. Further, in recent large-scale government trials of relationship education and support services, the attendance levels among low-income unmarried couples having a baby (in the Building Strong Families study; R. Wood, Moore, Clarkwest, & Killewald, 2014) were dramatically lower than the attendance levels among low-income married couples (in the Supporting Healthy Marriage study; Hsueh et al., 2012).⁴ Given the marked rise in cohabitation and this replication of findings across multiple studies, identifying the underlying factors that account for this attendance discrepancy between cohabiting and married couples in family-centered prevention programs---as well as potential remedies---is ripe for exploration in future research. As with programs targeting unmarried individuals (see Antle et al., 2013), programs targeting unmarried couples coparenting a child together, an increasingly large portion of the American demographic, may necessitate particular attention to program design and implementation to ensure participant attendance.

Men's depressive symptoms were also associated with lower levels of couple attendance. As African American males report a general reluctance to attend counseling services (Williams & Justice, 2010) and marital enrichment programs in particular (Hurt et al., 2012), this reluctance may be compounded for men with little sense of hopefulness and personal efficacy in overcoming problems, thereby hindering continued participation in these programs. Women's relationship commitment also significantly predicted couple attendance, with women who began the program with lower levels of commitment attending fewer sessions. That this effect appeared for women, but not men, suggests that women's investment in and future orientation to the relationship may be particularly indicative of the willingness of a couple to attend

programming designed to strengthen couple and family relationships. Thus, in addition to considering participants' marital status, baseline screening by program implementers for male's depressive symptoms and female's relationship commitment may be helpful prognostic tests for identifying couples less like to sustain program participation. Such couples could then be provided with extra attention or incentives that may improve attendance.

Across the majority of program outcomes examined, greater levels of attendance demonstrated long-term benefits men but not women. In light of previous writing that has suggested male deficits in effectively communicating and providing support in close relationships (see Neff & Karney, 2005; J. Wood, 2011), this finding may highlight men's need for, and additional benefit from, exposure to program content, skills training, and facilitator encouragement to work together and overcome challenges. Alternatively, this gender difference in attendance effects may originate from men's mere effort and time invested participating in the program, particularly in light of African American males stated reluctance to attend marital enrichment programs (Hurt et al., 2012). Relationship researchers have previously postulated differences in commitment dynamics between men and women (Stanley, 2010), and the process of investing and maintaining participation in a program designed to improve their marital relationship may favorably invoke in men a greater commitment to the relationship and perception of its overall quality owing to an internal press to behave consistently, in the future, with their investment in the program. That is, males who attend more sessions may make stronger attributions about the quality of, and their commitment to, their relationship. Irrespective of the underlying reason, the general pattern of results suggests that affecting program outcomes of males may require ensuring their attendance throughout the program.

Arguing in front of youth was the only program outcome without an attendance effect for either gender, despite ProSAAF treatment couples having demonstrated significant improvements in this area relative to the control group (Beach et al., 2014). Hence, irrespective of attendance levels, men and women reduced conflict in front of children following participation. These results may suggest that for efforts strictly targeting reductions in child exposure to parental conflict, brief, low dosage educational sessions can produce an effect. However, for targeted change in aspects such as couple communication and broader aspects of general relationship quality and functioning, a relatively more substantial dosage is beneficial, particularly for men. Accordingly, future studies that experimentally manipulate participants' dosage offer potentially prominent implications for public health and prevention programming by identifying optimal dosage for particular constructs among particular populations.

The high attendance levels among participants provide a descriptive, yet still salient, result of the current study. The percentages of couples attending all program sessions (76%) as well as a majority of sessions (80%) are higher than rates observed among other couple-focused prevention programs (Brown, Feinberg, et al., 2012) and programs targeting African American families (Brody et al., 2006). The importance of designing couples and parenting programs to achieve high rates of attendance and retention for minority and/or high-risk couples is further underscored by the variability in completion rates at such intervention programs, which range from less than 10% (multiple Building Strong Families sites; see R. Wood et al., 2010) to more than 90% (Couple CARE for Parents; see Petch et al., 2012). The high attendance rate of men is also notable and addresses a previously-identified recommendation for relationship education efforts (Markman & Rhoades, 2012). Consequently, the various procedures designed to foster attendance—including home visits, the ability to reschedule sessions, and refined recruitment

procedures—appeared to have their intended effect. Furthermore, as previous studies have found African Americans to have lower levels of attendance in such programs compared to other ethnicities (Dion & Hershey, 2010), the present study demonstrated that well-designed and well-implemented interventions can foster high levels of attendance from African American couples. Nevertheless, as 20% of couples still did not attend a majority of the sessions, simply offering a program to couples—even if in their own home—does not preclude hurdles to ensuring participants' sustained attendance.

Several limitations of this study warrant consideration when interpreting its findings. A large number of participants attended all or almost all sessions. Although a strength of the program, it does limit the capacity to examine attendance effects due to the limited range of variability in attendance and may account of some of the null results for attendance for men and women (i.e., attendance effects may be more evident for programs with greater variability in attendance). No information was available on individuals' quality of participation (e.g., attentiveness, degree of participation), which has demonstrated more consistent effects on treatment response than attendance in previous research (Nix et al., 2009). As this study included only families in the intervention condition, we cannot comment on long-term changes relative to the control condition.⁵ The current study analyzed variations in attendance as they naturally occur, and hence the conclusions that can be drawn have some limitations about dose. Ideal studies of dose in this field would involve randomly assigning treatment couples to predetermined amounts of service delivery. We also lacked information regarding characteristics of participants that required substantial attention to coordinating and rescheduling sessions and whether these aligned with characteristics that predicted attendance. Lastly, although the nature of the sample afforded certain strengths, precaution is needed against overgeneralizing findings

from the current study to other program foci, other program implementation approaches (e.g., group-based in community settings versus conjoint in-home sessions), and other populations (e.g., non-African American; community settings rather than couples who were recruited to participate in an incentivized randomized controlled trial). Although advantageous for attendance, in-home delivery modalities do impose greater staffing costs per participant and coordination of participating couples, with further research needed comparing the efficacy and cost-effectiveness of home-based couple enrichment programs to programs in other settings.

In sum, the present study offers one of the first empirical studies of a couple-focused prevention program that examines within-program attendance effects. Furthermore, by focusing on two-parent African American couples, the program targeted a population that continues to receive significant attention among researchers and policymakers, yet for whom couple-focused prevention programming and subsequent evaluations are noticeably scant. Results highlight important individual and family characteristics that influence African American couples' likelihood to sustain program attendance as well as the beneficial effects of greater attendance for African American men. Thus, when targeting populations with decreased likelihood of attending marital enrichment programs, implementing efficacious programs in a manner to facilitate high levels of participation among couples appears to be an important consideration for program developers and implementers.

References

(Two author citations omitted for blind peer review process)

Acock, A. C. (2005). Working With Missing Values. *Journal of Marriage and Family*, 67(4), 1012-1028. doi: 10.1111/j.1741-3737.2005.00191.x

Antle, B., Sar, B., Christensen, D., Karam, E., Ellers, F., Barbee, A., & van Zyl, M. (2013). The Impact of the Within My Reach Relationship Training on Relationship Skills and Outcomes for Low-Income Individuals. *Journal of Marital and Family Therapy*, 39(3), 346-357.

Baker, C. N., Arnold, D. H., & Meagher, S. (2011). Enrollment and attendance in a parent training prevention program for conduct problems. *Prevention Science*, 12(2), 126-138. doi: 10.1007/s11121-010-0187-0

Barton, A.W., Futris, T.G. & Bradley, R.C. (2014). Changes following premarital education for couples with differing degrees of future marital risk. *Journal of Marital and Family Therapy*, 40(2), 165–177. doi: 10.1111/jmft.12006

Barton, A.W., Beach, S. R. H., Kogan, S. M., Stanley, S. M., Fincham, F. D., Hurt, T.R., & Brody, G. H. (2015). Prevention effects on trajectories of African American adolescents' exposure to interparental conflict and depressive symptoms. *Journal of Family Psychology*, 29(2), 171-179. doi: 10.1037/fam0000073

Beach, S. R. H., Hurt, T. R., Fincham, F. D., Franklin, K. J., McNair, L. M., & Stanley, S. M. (2011). Enhancing marital enrichment through spirituality: Efficacy data for prayer focused relationship enhancement. *Psychology of Religion and Spirituality*, 3(3), 201-216. doi: 10.1037/a0022207

- Beach, S. R. H., Barton, A. W., Lei, M. K., Brody, G. H., Kogan, S. M., Hurt, T. R., . . . Stanley, S. M. (2014). The Effect of Communication Change on Long-term Reductions in Child Exposure to Conflict: Impact of the Promoting Strong African American Families (ProSAAF) Program. *Family Process, 53*(4), 580-595. doi: 10.1111/famp.12085
- Bradbury, T. N. (1989). Cognition, emotion, and interaction in distressed and nondistressed marriages. Unpublished doctoral dissertation. University of Illinois, Urbana-Champaign.
- Brandon, R. R., Higgins, K., Pierce, T., Tandy, R., & Sileo, N. (2009). An Exploration of the Alienation Experienced by African American Parents From Their Children's Educational Environment. *Remedial and Special Education, 31*(3), 208-222. doi: 10.1177/0741932509338350
- Brody, G. H., Murry, V. M., Chen, Y. F., Kogan, S. M., & Brown, A. C. (2006). Effects of family risk factors on dosage and efficacy of a family-centered preventive intervention for rural African Americans. *Prevention Science, 7*(3), 281-291.
- Brody, G. H., Murry, V. M., Kogan, S. M., Gerrard, M., Gibbons, F. X., Molgaard, V., . . . Wills, T. A. (2006). The Strong African American Families Program: A cluster-randomized prevention trial of long-term effects and a mediational model. *Journal of Consulting and Clinical Psychology, 74*(2), 356-366. doi: 10.1037/0022-006X.74.2.356
- Brody, G. H., Murry, V. M., Gerrard, M., Gibbons, F. X., Molgaard, V., McNair, L., ... & Neubaum-Carlan, E. (2004). The strong African American families program: Translating research into prevention programming. *Child Development, 75*(3), 900-917.
- Brown, S. L. (2010). Marriage and Child Well-Being: Research and Policy Perspectives. *Journal of Marriage and Family, 72*(5), 1059-1077. doi: 10.1111/j.1741-3737.2010.00750.x

- Brown, L. D., Feinberg, M. E., & Kan, M. L. (2012). Predicting engagement in a transition to parenthood program for couples. *Evaluation and Program Planning, 35*(1), 1-8. doi: <http://dx.doi.org/10.1016/j.evalprogplan.2011.05.001>
- Brown, L. D., Goslin, M. C., & Feinberg, M. E. (2012). Relating Engagement to Outcomes in Prevention: The Case of a Parenting Program for Couples. *American Journal of Community Psychology, 50*(1-2), 17-25. doi: 10.1007/s10464-011-9467-5
- Bryant, C. M., Wickrama, K. A. S., Bolland, J., Bryant, B. M., Cutrona, C. E., & Stanik, C. E. (2010). Race Matters, Even in Marriage: Identifying Factors Linked to Marital Outcomes for African Americans. *Journal of Family Theory & Review, 2*(3), 157-174. doi: 10.1111/j.1756-2589.2010.00051.x
- Burn, S. M., & Ward, A. Z. (2005). Men's Conformity to Traditional Masculinity and Relationship Satisfaction. *Psychology of Men & Masculinity, 6*(4), 254.
- Coatsworth, J. D., Duncan, L. G., Pantin, H., & Szapocznik, J. (2006). Differential Predictors of African American and Hispanic Parent Retention in a Family-Focused Preventive Intervention. *Family Relations, 55*(2), 240-251. doi: 10.1111/j.1741-3729.2006.00373.x
- Cohen, J. E. (1988). *Statistical Power Analysis for the Behavioral Sciences*. Hillsdale, NJ: Lawrence Erlbaum Associations, Inc.
- Crowley, D. M., Coffman, D., Feinberg, M., Greenberg, M., & Spoth, R. (2014). Evaluating the Impact of Implementation Factors on Family-Based Prevention Programming: Methods for Strengthening Causal Inference. *Prevention Science, 15*(2), 246-255. doi: 10.1007/s11121-012-0352-8

- Dion, M. R., & Hershey, A. M. (2010). Relationship Education for Unmarried Couples with Children: Parental Responses to the Building Strong Families Project. *Journal of Couple & Relationship Therapy, 9*(2), 161-180. doi: 10.1080/15332691003694919
- Dishion, T., Kavanagh, K., Schneiger, A., Nelson, S., & Kaufman, N. (2002). Preventing Early Adolescent Substance Use: A Family-Centered Strategy for the Public Middle School. *Prevention Science, 3*(3), 191-201. doi: 10.1023/A:1019994500301
- Doss, B. D., Rhoades, G. K., Stanley, S. M., Markman, H. J., & Johnson, C. A. (2009). Differential use of premarital education in first and second marriages. *Journal of Family Psychology, 23*(2), 268-273. doi: 10.1037/a0014356
- Enders, C. K., & Bandalos, D. L. (2001). The Relative Performance of Full Information Maximum Likelihood Estimation for Missing Data in Structural Equation Models. *Structural Equation Modeling, 8*(3), 430-457.
- Engsheden, N., Fabian, H. and Sarkadi, A. (2013), Offering Relationship Education (PREP) for Couples During Pregnancy: Self-Selection Patterns. *Family Relations, 62*, 676–685. doi: 10.1111/fare.12032
- Feinberg, M. E., & Kan, M. L. (2008). Establishing family foundations: Intervention effects on coparenting, parent/infant well-being, and parent-child relations. *Journal of Family Psychology, 22*(2), 253-263. doi: 10.1037/0893-3200.22.2.253
- Halford, W. K., O'Donnell, C., Lizzio, A., & Wilson, K. L. (2006). Do couples at high risk of relationship problems attend premarriage education? *Journal of Family Psychology, 20*(1), 160-163. doi: 10.1037/0893-3200.20.1.160
- Halford, W. K., Wilson, K., Watson, B., Verner, T., Larson, J., Busby, D., & Holman, T. (2010). Couple relationship education at home: Does skill training enhance relationship

assessment and feedback?. *Journal of Family Psychology*, 24(2), 188-196.

doi:10.1037/a0018786

Hawkins, A. J., Blanchard, V. L., Baldwin, S. A., & Fawcett, E. B. (2008). Does marriage and relationship education work? A meta-analytic study. *Journal of Consulting and Clinical Psychology*, 76(5), 723-734. doi: 10.1037/a0012584

Hawkins, A. J., Stanley, S. M., Blanchard, V. L., & Albright, M. (2012). Exploring Programmatic Moderators of the Effectiveness of Marriage and Relationship Education Programs: A Meta-Analytic Study. *Behavior Therapy*, 43(1), 77-87. doi: <http://dx.doi.org/10.1016/j.beth.2010.12.006>

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76(4), 408-420. doi: 10.1080/03637750903310360

Hsueh, J., Alderson, D. P., Lundquist, E., Michalopoulos, C., Gubits, D., Fein, D., & Knox, V. (2012). *The Supporting Healthy Marriage Evaluation: Early Impacts on Low-Income Families*. Administration for Children and Families, Office of Planning, Research, and Evaluation. Washington D. C. Retrieved April 7, 2014 from http://www.acf.hhs.gov/sites/default/files/opre/early_impacts_low.pdf

Hurt, T. R., Beach, S. R. H., Stokes, L. A., Bush, P. L., Sheats, K. J., & Robinson, S. G. (2012). Engaging African American men in empirically based marriage enrichment programs: Lessons from two focus groups on the ProSAAM project. *Cultural Diversity and Ethnic Minority Psychology*, 18(3), 312-315. doi: 10.1037/a0028697

- Ingoldsby, E. (2010). Review of Interventions to Improve Family Engagement and Retention in Parent and Child Mental Health Programs. *Journal of Child and Family Studies, 19*(5), 629-645. doi: 10.1007/s10826-009-9350-2
- Jenkins, N. H., & Saiz, C. C. (1995). The communication skills test. Unpublished manuscript. University of Denver, Denver, CO.
- Jones, D. J., Zalot, A. A., Foster, S. E., Sterrett, E., & Chester, C. (2007). A review of childrearing in African American single mother families: The relevance of a coparenting framework. *Journal of Child and Family Studies, 16*(5), 671-683.
- Markman, H. J., & Rhoades, G. K. (2012). Relationship education research: Current status and future directions. *Journal of Marital and Family Therapy, 38*(1), 169-200.
- Morris, M. L., McMillan, H. S., Duncan, S. F., & Larson, J. H. (2011). Who Will Attend? Characteristics of Couples and Individuals in Marriage Education. *Marriage & Family Review, 47*(1), 1-22. doi: 10.1080/01494929.2011.558463
- Muthen, L. K., & Muthen, B. O. (2010). Mplus version 6: Base program and combination add-on. Los Angeles, CA: Muthen & Muthen.
- Neff, L. A., & Karney, B. R. (2005). Gender differences in social support: a question of skill or responsiveness?. *Journal of Personality and Social Psychology, 88*(1), 79-90.
- Nix, R. L., Bierman, K. L., McMahon, R. J., & the Conduct Problems Prevention Research Group. (2009). How attendance and quality of participation affect treatment response to parent management training. *Journal of Consulting and Clinical Psychology, 77*(3), 429-438. doi: 10.1037/a0015028
- Nix, R. L., Pinderhughes, E. E., Bierman, K. L., Maples, J. J., & the Conduct Problems Prevention Research Group. (2005). Decoupling the Relation Between Risk Factors for

- Conduct Problems and the Receipt of Intervention Services: Participation Across Multiple Components of a Prevention Program. *American Journal of Community Psychology*, 36(3/4), 307-325. doi: 10.1007/s10464-005-8628-9
- Norton, R. (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage and Family*, 45(1), 141-151.
- Perrino, T., Coatsworth, J. D., Briones, E., Pantin, H., & Szapocznik, J. (2001). Initial Engagement in Parent-Centered Preventive Interventions: A Family Systems Perspective. *Journal of Primary Prevention*, 22(1), 21-44. doi: 10.1023/A:1011036130341
- Petch, J. Halford, W. K., Creedy, D. K., & Gamble, J. (2012) Couple relationship education at the transition to parenthood: a window of opportunity to reach high-risk couples. *Family Process*, 51 (4), 498- 511. doi: 10.1111/j.1545-5300.2012.01420.x
- Porter, B., & O'Leary, K. D. (1980). Marital discord and childhood behavior problems. *Journal of Abnormal Child Psychology*, 8(3), 287-295. doi: 10.1007/BF00916376
- Quirk K., Strokoff J., Owen J., France T. and Bergen C. (2014). Relationship education in community settings: Effectiveness with distressed and non-distressed low-income racial minority couples. *Journal of Marital and Family Therapy*, 38, 442–453. doi: 10.1111/jmft.12080
- Radloff, L. S. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied psychological measurement*, 1(3), 385-401.
- Raudenbush, S. W., Brennan, R. T., & Barnett, R. C. (1995). A multivariate hierarchical model for studying psychological change within married couples. *Journal of Family Psychology*, 9(2), 161-174. doi: 10.1037/0893-3200.9.2.161

- Raudenbush, S. W., Bryk, A. S., & Congdon, R. (2004). HLM 6 for Windows [Computer software]. Skokie, IL: Scientific Software International, Inc.
- Spoth, R., Redmond, C., Haggerty, K., & Ward, T. (1995). A controlled parenting skills outcome study examining individual difference and attendance effects. *Journal of Marriage and the Family*, *57*(2), 449-464.
- Spoth, R., Redmond, C., & Shin, C. (1998). Direct and indirect latent-variable parenting outcomes of two universal family-focused preventive interventions: Extending a public health-oriented research base. *Journal of Consulting and Clinical Psychology*, *66*(2), 385-399.
- Spoth, R., & Redmond, C. (2000). Research on family engagement in preventive interventions: Toward improved use of scientific findings in primary prevention practice. *Journal of Primary Prevention*, *21*(2), 267-284.
- Stanley, S. M. (2010). *What is it with Men and Commitment, Anyway?* Paper presented at the 6th Annual Smart Marriages Conference (Keynote address), Washington D.C.
- Stanley, S. M., Johnson, C. A., Amato, P. R., & Markman, H. J. (2006). Premarital education, marital quality, and marital stability: Findings from a large, random household survey. *Journal of Family Psychology*, *20*(1), 117-126. doi: 10.1037/0893-3200.20.1.117
- Stanley, S. M., & Markman, H. J. (1992). Assessing Commitment in Personal Relationships. *Journal of Marriage & Family*, *54*(3), 595-608.
- Sullivan, K. T., & Bradbury, T. N. (1997). Are premarital prevention programs reaching couples at risk for marital dysfunction? *Journal of Consulting and Clinical Psychology*, *65*(1), 24-30. doi: 10.1037/0022-006x.65.1.24

- US Census Bureau (2013). American Community Survey: 1-year estimates – Selected population profile in the United States. Retrieved March 12, 2015. Accessed from:
http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_1YR_S0201&prodType=table
- Wilde, J. L., & Doherty, W. J. (2013). Outcomes of an intensive couple relationship education program with fragile families. *Family Process, 52*(3), 455-464.
- Williams, A., & Justice, M. (2010). Attitudes of African American Males regarding Counseling in Four Texas Universities. *Education, 131*(1), 158-168.
- Wood, J. T. (2011). *Gendered Lives: Communication, Gender, and Culture*. Boston, MA: Cengage Learning.
- Wood, R. G., McConnell, S., Moore, Q., Clarkwest, A., & Hsueh, J. (2010). *Strengthening unmarried parents' relationships: The early impacts of building strong families*. Princeton, NJ: Mathematic Policy Research, Inc.
- Wood, R. G., Moore, Q., Clarkwest, A., & Killewald, A. (2014). The Long-Term Effects of Building Strong Families: A Program for Unmarried Parents. *Journal of Marriage and Family, 76*(2), 446-463. doi: 10.1111/jomf.12094

Notes

1. As 13% of the sample was not married, we avoided using language of “husbands” and “wives” when describing participants. See Method section for more information on study inclusion criteria.
2. To ensure compliance with FIML missingness assumptions, logistic regressions examining patterns of missingness were run for each outcome variable (1 = *two year data available*). Differential response levels were observed based on couple attendance for both male and female outcomes as well as female education for female outcomes. Accordingly, all APIM analyses included these variables to avoid violating FIML assumptions.
3. For analyses testing males’ depressive symptoms, session attendance, and change in program outcomes, model fit statistics: $\chi^2(16) = 25.839$, $p = 0.06$; CFI = 0.97; TLI = 0.93; RMSEA = 0.061. Tabulated results available from first author.
4. These programs did contain important differences in incentive structures which may qualify direct comparisons of their attendance levels.
5. Group-based analyses comparing high (4+ sessions) and low (<4 sessions) attendance groups to the control group were unable to be performed due to two-year attrition rates among couple within the low attending group.

Table 1
Descriptive Statistics of Study Measures (N = 164 couples)

Variable	Men				Women			
	N	M	SD	Range	N	M	SD	Range
Marital Status ^a	164	0.87	na	0 – 1				
Low Income ^b	164	0.20	na	0 – 1				
Attendance	164	5.07	1.82	0 – 6	164	5.10	1.76	1 – 6
Age	164	41.34	7.78	26 – 68	164	39.49	6.44	22 – 55
Education	164	5.85	1.75	2 – 10	164	5.85	1.75	2 – 10
Depressive Symp.	164	0.62	0.40	.05 – 2.55	164	0.70	0.45	0.00 – 2.25
Relationship Satis.	164	3.90	0.87	1.00 – 5.00	164	3.75	1.07	1.00 – 5.00
<u>Pre-test</u>								
Communication	164	-0.06	0.90	-2.37 – 1.61	164	-0.05	0.92	-2.48 – 1.67
Commitment	164	4.23	0.69	2.00 – 5.00	164	4.17	0.80	1.25 – 5.00
Spousal Support	164	4.02	0.91	1.00 – 5.00	164	4.05	0.93	1.40 – 5.00
Arguing in Front of Youth	164	0.07	1.01	-1.40 – 3.31	164	0.06	1.03	-1.46 – 3.61
<u>Post-test</u>								
Communication	124	0.03	0.93	-2.56 – 1.87	124	0.10	0.90	-2.83 – 1.84
Commitment	121	4.15	0.74	2.25 – 5.00	124	4.14	0.81	1.00 – 5.00
Spousal Support	124	3.93	0.98	1.00 – 5.00	123	3.87	1.00	1.00 – 5.00
Arguing in Front of Youth	120	-0.04	1.02	-1.34 – 2.88	124	-0.09	0.92	-1.45 – 1.95

Note: ^a 1 = married; ^b 1 = yes.

Table 2
Multilevel Regressions for Predictors of Sessions Attended (N = 164 couples)

Variable	Men		Women	
	Coefficient	SE	Coefficient	SE
<u>Couple-level Predictors</u>				
Marital Status ^a	1.07*	0.55	1.08*	0.52
Low Income ^b	0.03	0.40	0.24	0.42
<u>Individual-level Predictors</u>				
Age	-0.02	0.02	-0.03	0.02
Education	0.09	0.09	0.18*	0.08
Depressive Symptoms	-0.97*	0.43	-0.05	0.36
Relationship Satisfaction	-0.07	0.18	-0.09	0.13
Relationship Commitment	-0.20	0.22	0.60**	0.22

* $p \leq .05$; ** $p \leq .01$ (two-tailed tests). ^a 1 = married; ^b 1 = yes.

Table 3
APIM analyses of attendance effects for change in targeted outcomes (N = 164 couples)

Variable	Effective Communication		Relationship Commitment ^a		Spousal Support		Arguing in Front of Youth	
	β	SE	β	SE	β	SE	β	SE
Men								
Sessions Attended	.328*	.14	.310*	.15	.275 [†]	.14	-.170	.15
Pre-Test (Self)	.366**	.08	.246**	.08	.380**	.08	.308**	.08
Pre-test (Partner)	.183*	.09	.224*	.09	.220*	.09	.340**	.08
Women								
Sessions Attended	-.028	.16	-.192	.16	-.196	.14	-.085	.16
Pre-Test (Self)	.559**	.07	.658**	.06	.663**	.07	.571**	.07
Pre-test (Partner)	.118	.08	.052	.07	.061	.08	.086	.08

Note: ^a Correlation between session attendance and women’s pre-test commitment included per significant association identified in Table 2. All models control for female education due to missing data patterns. Standardized coefficients (β) reported. For all four structural equation models, RMSEA < .06, CFI > .97, and TLI > .96.

[†] $p \leq .10$; * $p \leq .05$; ** $p \leq .01$ (two-tailed tests).

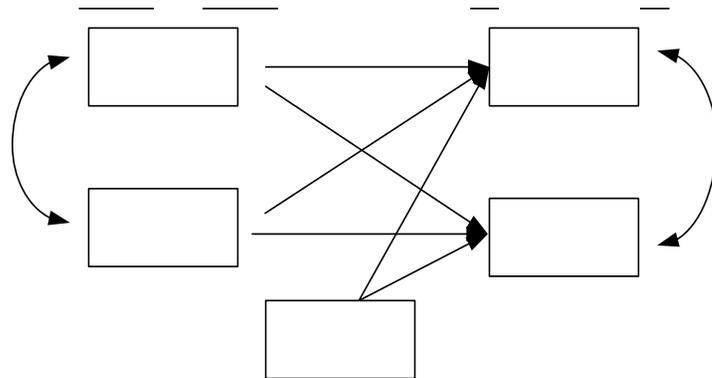


Figure 1. APIM analyses for effect of session attendance in ProSAAF.

Note: Correlation between dependent variables involves residual error terms and not actual variables (not drawn for clarity purposes)