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Premarital Education, Marital Quality, and Marital Stability: Findings From a Large, Random Household Survey

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One of the limitations of experimental studies on the effectiveness of premarital education is the reliance on samples of mostly White, middle-class couples. In contrast, although survey methods allow only weak inferences about causal relations, representative surveys can yield important information about use and estimated effects across a diverse population. Using a large random survey of 4 middle American states, the authors found that participation in premarital education was associated with higher levels of satisfaction and commitment in marriage and lower levels of conflict—and also reduced odds of divorce. These estimated effects were robust across race, income (including among the poor), and education levels, which suggests that participation in premarital education is generally beneficial for a wide range of couples.

Keywords: premarital education, prevention, divorce, commitment, conflict

Given the growth in public and private sector efforts designed to help couples be successful in fulfilling their aspirations for happy and healthy marriages, it is important to understand whether premarital education is generally effective. A number of reviews have suggested that premarital education is effective (e.g., Hahlweg & Markman, 1988; Halford, Markman, Kline, & Stanley, 2003; Sayers, Kohn, & Heavey, 1998; Silliman, Stanley, Coffin, Markman, & Jordan, 2001). However, there are serious methodological challenges in assessing effects, and many unanswered questions remain, such as questions about the types of premarital education that are most effective for particular types of couples (Stanley, 2001).

In a recent meta-analysis, Carroll and Doherty (2003) examined 11 experimental studies that randomly assigned participants to treatment and control groups, and two quasi-experimental studies. Outcomes in these studies included problem-solving skills, marital conflict, and marital satisfaction. Overall, 12 of the 13 studies found significant differences favoring couples that received premarital education. The mean effect size across all experimental and quasi-experimental studies was .80—a large effect size. Across all marital outcomes (scored in a positive direction), the typical couple that received premarital education scored higher than 79% of couples that did not. Carroll and Doherty (2003) also discussed two survey or ex post facto studies. Sullivan and Bradbury (1997) studied a sample of couples who were recruited as newlyweds and concluded that couples who are at relatively low risk of marital problems are those most likely to use premarital education services. Furthermore, they found no evidence that these services provided an increased likelihood of positive marital outcomes. Schumm, Resnick, Silliman, and Bell (1998) evaluated the effectiveness of premarital education on wives' marital satisfaction using a large sample of military couples and found positive effects for participation.

As noted by Carroll and Doherty (2003), and also by Silliman and Schumm (2000), a serious limitation of existing evaluations is reliance on samples of mostly White, middle-class couples. Experimental (and, at times, quasi-experimental) studies like those reviewed by Carroll and Doherty typically assess couples pre- to postintervention with variations in follow-up periods, measurement of outcomes, and types of control group. Such studies usually have high internal validity and some ability to isolate causal elements. The controlled conditions necessary for high internal validity, however, make testing more typical experi-

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ences (treatment as usual) difficult. Furthermore, although survey methods can allow for only weak causal inferences, survey research can address some questions with higher external validity. In particular, in the current study we seek to address some gaps in existing knowledge about the effects of premarital education by using survey procedures to assess effects across diverse participants. Specifically, we use survey data to determine whether premarital education is associated with marital quality and stability in the general population—as well as within specific groups of interest (varying by economic hardship, education, or race)—while controlling for other variables that could account for associations between participation and marital quality (e.g., marriage in religious settings [or not], age at marriage, children from marriage, and duration of marriage [adds a control for cohort effects]).

The data analyzed here were derived from a random, representative sample of over 3,000 adults in four states (Oklahoma, Kansas, Arkansas, and Texas). Overall, the current study had four specific goals. First, we assessed whether use of premarital education increased over the decades and also whether use varied by dimensions such as race and education. Second, we determined whether the use of premarital education was related to reports of marital quality and stability in the married (or ever married) population. Third, we assessed whether the links between premarital education and marital outcomes were moderated by people's characteristics, including race, education, reliance on public assistance, and age at marriage. Fourth, for exploratory purposes, we examined the extent to which characteristics of premarital education programs were related to marital outcomes: specifically, whether premarital education occurred in a religious or a secular setting, and the length of the program in hours.

Method

Sample

The sample was recruited as part of the Oklahoma Marriage Initiative Statewide Baseline Survey. In 2001, interviewers used random-digit-dialing methods to contact households in Oklahoma and three adjoining states. The survey involved a sample of 2,323 adults residing in Oklahoma, along with 1,021 adults living in Arkansas, Kansas, and Texas. The overall response rate to the survey, among individuals contacted, was 58%. To improve the representativeness of the sample, we weighted the data by education, race, gender, and age (separately within each state) on the basis of figures from the 2000 Census (U.S. Census Bureau, 2002). To correct for the effect of sample weights on standard errors, we relied on the survey module in STATA for significance testing. (For information on general survey results, as well as more information on sample and response rates, see Johnson et al., 2002. All procedures were approved by a university institutional review board.)

Variables

Premarital education. The interview schedule contained two questions on whether married respondents (or previously married respondents) obtained premarital education. Currently married respondents (n = 1,977) were asked, "Did you and your current spouse have premarital preparation, such as educational classes, a workshop, or counseling designed to help you get a good start in marriage?" (0 = *no*, 1 = *yes*). Similarly, individuals whose prior marriages had ended in divorce (n = 1,118) were asked, "Did you and your previous spouse have premarital preparation, such as educational classes, a workshop, or counseling designed to help you get a good start in marriage?" (0 = *no*, 1 = *yes*). Follow-up questions focused on the setting and duration of premarital education: "Was your premarital preparation inside or outside of a religious setting?" and "About how many hours did you spend in premarital education?"

Marital quality and stability. We created three scales to assess marital quality. Marital satisfaction was based on two items from the General Social Survey: "Taking things altogether, how would you describe your marriage?" (1 = *not too happy*, 2 = *pretty happy*, 3 = *very happy*), and "All in all, how satisfied are you with your marriage?" (1 = *not at all satisfied*, 2 = *not very satisfied*, 3 = *somewhat satisfied*, 4 = *very satisfied*, 5 = *completely satisfied*). We equally weighted and added the two items to form a scale of marital satisfaction (α = .73).

Marital conflict was based on four items: "How often do you and your spouse experience each of the following situations: Little arguments escalate into ugly fights with accusations, criticisms, name calling, or bring up past hurts? My spouse criticizes or belittles my opinions, feelings, or desires? My spouse seems to view my words or actions more negatively than I mean them to be? When we argue, one of us withdraws, that is, does not want to talk about it anymore or leaves the scene" (1 = *never or almost never*, 2 = *once in a while*, 3 = *frequently*). We equally weighted and added the four items to create a scale of marital conflict (α = .76). These items have demonstrated excellent reliability and validity (e.g., Stanley, Markman, & Whitton, 2002).

Interpersonal commitment or dedication (hereafter, referred to as *commitment*) was based on three items: "My relationship with my spouse/partner is more important to me than almost anything else in my life," "I may not want to be with my spouse a few years from now," and "I like to think of my spouse and me more in terms of *us* and *we* than *me* and *him/her*" (1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*). We equally weighted and added these three responses (scored in the direction of higher commitment) to produce a total score (α = .69). Items were derived from Stanley and Markman's (1992) study and demonstrate excellent reliability and validity (e.g., Stanley et al., 2002).

History of divorce was coded for all ever-married respondents (0 = *not divorced*, 1 = *divorced*). For those married more than once, we focused on the outcome of the prior marriage.

Control variables. To minimize the possibility of observing a spurious association between premarital education and marital outcomes, we controlled for variables that may be correlated with both. Depending on the analysis, these variables included whether respondents had been married in a church or religious setting (0 = *no*, 1 = *yes*), whether respondents had cohabited prior to marriage (0 = *no*, 1 = yes), the respondent's age at marriage, whether the marriage produced children (0 = *no*, 1 = *yes*), the duration of marriage in years, the duration of marriage squared (to capture nonlinear trends), the respondent's education (1 = *less than high school*, 2 = *high school graduate*, 3 = *some college*, 4 = *college graduate*, 5 = *postgraduate degree*), the respondent's gender (0 = *man*, 1 = *woman*), the respondent's race (coded as a series of dummy variables representing Blacks, Latinos, Native Americans, and other races, with Whites serving as the omitted comparison group), whether respondents had been married previously (0 = *no*,

1 = *yes*), whether respondents had ever used public assistance (0 = *no*, 1 = *yes*), and the year in which the marriage occurred (to capture cohort effects). Controlling for marriage in a religious setting was especially important, because most premarital education is provided in churches, and religiosity is positively associated with marital satisfaction and stability (Bramlett & Mosher, 2002; Heaton & Pratt, 1990). (We did not control for the respondent's current level of religiosity because this variable could have been affected by receiving premarital education or having a religious wedding. Nevertheless, preliminary analyses indicated that controlling for religiosity did not affect the results reported below.)

Analytic Strategies

Logistic regression analyses with 2,533 ever-married respondents (unweighted) were used to determine the characteristics of individuals who received premarital education versus those who had not. For divorced individuals, we used data from the prior marriage.

To assess whether premarital education was associated with divorce, we relied on discrete time, event history methods. These methods are preferred when the dependent variable is a single event that occurs at a specific point in time. To conduct this analysis, we created a person-year file, beginning with the first year of marriage. Respondents contributed one observation to this file for every year they remained married. Respondents were censored from the file in the year they divorced or, among continuously married respondents, the year of the interview. This procedure generated a file of 44,519 person years that were based on 2,533 ever-married respondents and 1,118 divorces (unweighted). The analysis included all of the control variables described earlier. Duration of marriage was a time-varying variable that was updated each year, and the other control variables were fixed at a single value for each case. Note that the large number of person years in a discrete time, event history analysis does not distort standard errors or significance tests. (For more information on this procedure, see Allison, 1984.)

We used ordinary least squares (OLS) regression to determine whether premarital education was associated with marital satisfaction, marital conflict, and commitment. To facilitate the interpretation of regression coefficients, we standardized the dependent variables to have means of zero and standard deviations of one. A total of 1,977 currently married individuals (unweighted) were included in this analysis. For individuals married more than once, this analysis focused on premarital education prior to the current marriage.

To assess whether unobserved variables may have accounted for the observed association between premarital education and divorce, we also conducted a biprobit analysis. This is an econometric procedure that adjusts for unobserved heterogeneity, that is, unmeasured variables that may affect the independent as well as the dependent variable and, hence, could result in a spurious association. This analysis made it possible to estimate the effect of premarital education on divorce, adjusting for all unobserved variables. (For a description of this method, see Greene, 1997. For an example, see the appendix in McLanahan & Sandefur's, 1994, study.) Using this method, we estimated two equations simultaneously, one with premarital education serving as the dependent variable and the other with divorce serving as the dependent variable. Because the equations were estimated simultaneously, it was possible to calculate the correlation between error terms, with a significant correlation indicating the existence of omitted variables that affected both dependent variables. Incorporating this correlation into the analysis made it possible to adjust for unmeasured variables in estimating the effect of premarital education on the odds of divorce. This procedure assumes that the correlated part of the error terms represents nonrandom, systematic variance associated with variables that are unmeasured but nevertheless related to both participation in premarital education and divorce likelihood.

Two items (Latino ethnicity and whether respondents had ever used public assistance) had 2% missing data, and all other items had less than 2%. Because deleting cases tends to bias parameter estimates (Allison, 2002), we relied on the expectation maximization algorithm to impute missing values. Preliminary analyses based on listwise deletion and expectation maximization imputation yielded similar results, but we report only the latter findings for the sake of parsimony.

Results

Sample Characteristics

Table 1 shows the means and standard deviations for all variables that were based on the individual case file of currently married respondents and the person-year file of ever-married respondents. Of all currently married individuals, 31% reported some type of premarital education experience. The majority of people in the sample (78%) were married in a church or religious setting, 31% cohabited prior to marriage, and 30% had been married previously. The

Table 1
Means and Standard Deviations of All Variables Used in Regression Analyses

Variable	Case file		Person-year file	
	M	*SD*	*M*	*SD*
Premarital education	0.31		0.25	
Religious wedding	0.78		0.79	
Cohabitation	0.31		0.16	
Children	0.77		0.79	
Age at marriage (years)	26.14	9.64	21.08	4.76
Duration of marriage	21.30	16.15	34.01	14.48
Remarriage	0.30			
Education	3.08	1.53	3.00	1.55
Women	0.54		0.56	
Black	0.04		0.04	
Latino	0.05		0.03	
Native American	0.04		0.04	
Other race	0.07		0.05	
Public assistance	0.22		0.18	
Marital satisfaction	0.00	1.00		
Marital conflict	0.00	1.00		
Commitment	0.00	1.00		
Divorce			0.02	
Marriage cohort				
1930–1949	0.06		0.12	
1950–1959	0.09		0.22	
1960–1969	0.11		0.22	
1970–1979	0.17		0.21	
1980–1989	0.22		0.15	
1990–2001	0.35		0.07	

Note. n = 1,977 (case file) and 45,037 (person-year file). The case file included individuals currently married at the time of the survey. The person-year file was based on 2,533 ever-married individuals. Means and standard deviations are based on weighted data. Standard deviations are excluded for dichotomous variables.

mean age at marriage was 26 years, and the mean duration of marriage was 21 years. The values in the case file and the person-year file differ because, as explained above, the person-year file was based on years rather than individual respondents. Although divorces occurred in only 2% of person years, the percentage of marriages ending in divorce was much higher. Although not shown in Table 1, 44% of all first marriages ended in divorce.

Variables Associated With Premarital Education

Table 2 reveals the characteristics of individuals who received premarital education. One of the strongest predictors of obtaining premarital education was being married in a religious setting. The odds ratio for this variable indicates that the odds of premarital education were over 7 times higher for individuals who married in religious settings than for individuals who married in secular settings [$(8.61 - 1) \times 100 = 761\%$ increase in the odds]. Education also was associated with premarital education, with each year of education increasing the odds of receiving premarital education by 28%. Blacks were less likely than Whites (the omitted comparison group) to receive premarital education, whereas Latinos were more likely than Whites. Ever having received government assistance (an indicator of economic hardship) was associated with less premarital education. Finally, with each decade since the 1930s and 1940s (the comparison period), there was an increase in the odds of obtaining premarital education. Although not shown in Table 1, the percentage of individuals who received premarital education was only 7% for those married in the 1930s or 1940s. This figure increased to 12% in the 1950s, 22% in the 1960s, 25% in the 1970s, 32% in the 1980s, and 44% in the most recent period.

Table 2
Logistic Regression of Variables Associated With Obtaining Premarital Education

Variable	*b*	Odds ratio
Religious wedding	2.15***	8.61
Cohabitation	−0.24	0.79
Age at marriage (years)	−0.01	0.99
Education	0.24***	1.28
Women	0.20	1.23
White		
Black	−0.90**	0.41
Latino	0.65*	1.91
Native American	0.16	1.17
Other race	0.42	0.66
Public assistance	−0.50***	0.60
Marriage cohort		
1930–1949		
1950–1959	0.78*	2.18
1960–1969	1.25***	3.50
1970–1979	1.62***	5.07
1980–1989	1.91***	6.75
1990–2001	2.51***	12.31
Constant	−5.17	
Chi-square ($df = 15$)	522.31***	

Note. $n = 2{,}533$ ever-married respondents.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Premarital Education and Divorce

Table 3 shows the results from the discrete time, event history analysis in which premarital education (along with the control variables) was used to predict divorce. This analysis revealed that premarital education was negatively and significantly associated with divorce. More precisely, the odds ratio indicated that premarital education was associated with a decline of 31% in the annual odds of divorce. To put this finding in more concrete terms, we used the regression equation to calculate the probability of divorce during the first 5 years of marriage for a group of individuals with the mean score on all control variables. For respondents who did not use premarital education services, the probability of the marriage ending in divorce within 5 years was .14, compared with .10 for respondents who used premarital education services.

Several control variables also yielded results that were consistent with prior research. For example, cohabitation prior to marriage and reliance on public assistance appeared to increase the odds of divorce, whereas being married in a religious setting, having children, and being married at older ages appeared to decrease the odds of divorce. Finally, a clear cohort effect was present. Compared with individuals married in the 1930s and 1940s (the omitted group), the odds of divorce were slightly (but not significantly) higher for individuals married in the 1950s. The odds of divorce rose substantially (and significantly) for individuals married in the 1960s, 1970s, and 1980s. For the most recent marriage cohort, the odds ratio declined slightly from earlier years. This pattern reflects the general rise in divorce since the 1950s and the modest decline during the 1980s and 1990s (U.S. Census Bureau, 2002).

Premarital Education and Marital Quality

Table 4 shows the results of three OLS regression models (unstandardized *b* coefficients) in which marital satisfaction, marital conflict, and commitment were regressed on whether respondents had any form of premarital education (along with the control variables). Premarital education was positively and significantly associated with marital satisfaction and commitment and negatively and significantly associated with marital conflict. Because the dependent variables were standardized, the regression coefficients can be interpreted as effect sizes, that is, as standardized mean differences between people who did and did not receive premarital education (Cohen, 1988). In other words, people who reported premarital education scored .15 of a standard deviation higher on marital satisfaction, .17 of a standard deviation lower on marital conflict, and .21 of a standard deviation higher on commitment.

The control variables yielded results that were consistent with previous research. For example, cohabitation prior to marriage was associated with lower marital satisfaction, more marital conflict, and lower commitment. Marital duration was associated with marital satisfaction in a curvilinear fashion, being lower in the early years of marriage and greater in the later years—a probable survivor effect in this

Table 3
Logistic Regression of Divorce in First Marriages on Premarital Education and Control Variables

Variable	*b*	Odds ratio
Premarital education	−0.37***	0.69
Religious wedding	−0.45***	0.64
Cohabitation	0.47***	1.60
Children	−1.37***	0.25
Age at marriage (years)	−0.08***	0.92
Duration of marriage	0.02	1.03
Duration squared	−0.001***	0.99
Education	0.03	1.03
Black	−0.01	1.01
Hispanic	−0.19	0.83
Native American	0.09	1.09
Other race	−0.43	0.65
Public assistance	0.70***	2.02
Marriage cohort		
1930–1949		
1950–1959	0.20	1.22
1960–1969	0.69***	1.99
1970–1979	0.88***	2.40
1980–1989	0.85***	2.33
1990–2001	0.63**	1.87
Constant	−1.54	
Chi-square ($df = 18$)	1,002.00***	

Note. $n = 44{,}519$ person years (2,533 respondents); total number of divorces = 1,118.
** $p < .01$. *** $p < .001$.

cross-sectional sample. In contrast, commitment declined continuously with marital duration. (For reviews of the correlates of marital quality, see Bradbury, Fincham & Beach, 2000; Glenn, 1990; Karney & Bradbury, 1995.)

Biprobit Analysis

Biprobit analysis was used to explore the probable effect of unmeasured variables on the negative association between premarital education and divorce. To conduct this analysis, we estimated the equations in Table 2 (for premarital education) and Table 3 (for divorce) simultaneously. Premarital education, however, was omitted from the equation for divorce. This analysis revealed a significant correlation between error terms ($\rho = -.19$, $SE = .04$, $p < .001$). This suggests the existence of unmeasured variables that increased the likelihood of participating in premarital education and decreased the likelihood of divorce. The magnitude of rho, however, indicates that the correlation between unobserved variables across equations was modest. In a second biprobit analysis, we estimated the effect of premarital education on divorce, including the correlation between error terms. Although it is not possible to directly compare estimates of effect size before and after adjusting for unobserved heterogeneity, the analysis revealed a significant association between premarital education and divorce ($b = -0.82$, $SE = 0.20$, $p < .001$). Hence, premarital education appeared to predict divorce even after adjusting for unobserved variables that could have produced a spurious association.

Interactions Involving Premarital Education

To see whether the estimated effects of premarital education were stronger for some groups of respondents than others, we examined interactions between premarital education and a variety of respondent characteristics, including gender, race, education, age at marriage, presence of children, use of public assistance, and marriage cohort. We also considered interactions involving duration of marriage. These tests revealed only two significant interactions ($p < .05$). First, the estimated effect of premarital education on marital conflict was stronger in the early years of marriage than in the later years. Imputing values into the regression equation revealed that the *b* coefficient for premarital education and marital conflict was strongest in the 1st year of marriage ($b = -0.23$). After 10 years of marriage, the *b* coefficient declined to −0.16, and after 20 years of marriage, the *b* coefficient declined to −0.09. This finding is consistent with the assumption that the beneficial effects of premarital education decline with time.

The second significant interaction involved education and divorce, with the estimated effect of premarital education being stronger for well-educated individuals than for poorly educated individuals. Among respondents without a high school diploma, premarital education was essentially unrelated to the odds of divorce. The decline in the odds of divorce was stronger among individuals who graduated from high school (17%), stronger yet among individuals with some college (32%), and strongest among college graduates (44%). These results suggest that individuals with low levels of education (not graduating from high school) do not experience a reduction in the odds of divorce by participating in premarital education. However, it is impor-

Table 4
Associations Between Premarital Education and Measures of Marital Quality

Variable	Marital satisfaction	Marital conflict	Commitment
Premarital education	.15*	−.17**	.21***
Religious wedding	.20*	.01	.10
Cohabitation	−.20**	.27**	−.24***
Children	−.08	.04	−.17*
Age at marriage (years)	.00	−.02***	−.02**
Duration of marriage	−.013*	−.008	−.02*
Duration^2	.0003**	.00	.0001*
Remarriage	.03	.12	.08
Education	−.01	−.02	.03
Women	−.04	−.15*	−.09
White			
Black	−.32*	.30*	−.11
Hispanic	−.29	−.01	−.55***
Native American	.05	−.04	−.01
Other race	−.03	.05	−.18
Public assistance	−.15	.26**	−.11
Constant	.04	.54	.73
R^2	.05***	.09***	.07***

Note. $n = 1{,}977$ married individuals. Table values are unstandardized regression coefficients. Dependent variables are standardized to have means of zero and standard deviations of one.
* $p < .05$. ** $p < .01$. *** $p < .001$.

tant to note that the interactions between premarital education and the respondent's level of education were not significant with respect to marital satisfaction, marital conflict, or commitment. Hence, premarital education appears to lower the odds of divorce primarily among moderately educated and well-educated individuals; however, it also appears to have beneficial effects on the quality of marriages irrespective of education levels. The estimated effects of premarital education did not differ significantly for individuals who did or did not use public assistance.

Setting and Duration of Premarital Education

We assessed two characteristics of the premarital education experience. First, we considered whether individuals who received premarital education in religious settings differed from people who received premarital education in nonreligious settings. Of the 595 currently married individuals who reported receiving premarital education, the great majority (93%) did so in a religious setting. Despite the small number of people who received premarital education in nonreligious settings, the two groups differed significantly on marital conflict, at least at the bivariate level. Individuals who received premarital education in a religious setting scored .32 of a standard deviation lower on the marital conflict scale than did individuals who received premarital education elsewhere, $t(593) = 2.41$, $p < .05$. This difference no longer was statistically significant, however, when the control variables (described above) were included in a regression analysis. Similarly, an event history analysis that was based on the person-year file revealed that receiving premarital education in a religious setting was associated with a decline in the odds of divorce ($p < .01$). Once again, however, this association no longer was significant when the control variables were added to the equation. These findings suggest that premarital education is no more (or less) effective in religious settings than in nonreligious settings, after other background characteristics of participants are taken into account.

Second, we considered whether the duration of premarital education (number of hours) was related to marital outcomes. The modal number of hours for premarital education was reported to be 2 hr, the median number was 8 hr, and the longest report was 40 hr. Because this variable was positively skewed, we normalized the distribution with a log (Base 10) transformation prior to analysis. This variable was not related to any marital outcome at the bivariate level. With all variables in an OLS regression model, however, the number of hours spent in premarital education was positively and significantly associated with marital satisfaction ($b = 0.19$, $p < .01$) and negatively and significantly associated with marital conflict ($b = -0.21$, $p < .01$). Further inspection of these data with scatterplots and locally weighted polynomial regression (also known as lowess modeling, see Motulsky & Christopoulos, 2003) revealed that the associations were not strictly linear. Marital conflict declined continuously as premarital education increased from 1 to 10 hr but declined little with additional hours. Correspondingly, marital satisfaction increased gradually as premarital education increased from 1 to 20 hr and changed relatively little after this point.

Discussion

We discuss the findings under headings that correspond to the four specific questions presented at the conclusion of the introduction framing this research. In addition, selection/causality and limitations/contributions are discussed.

Use of Premarital Education

At least in the states represented in the survey, there has been a dramatic rise in the use of premarital education over the decades, with only 7% of those married in the 1930s and 1940s having taken part compared with 44% of those married since 1990. The growth in overall participation rates reported here corresponds well to estimates from a nationwide, random phone survey conducted in 1996 (Stanley & Markman, 1997). Although Schumm and Silliman's (1997) results were not based on a broad survey, they found that rates of participation are strongly associated with availability, suggesting that use goes up directly with increased availability.

Among subgroups, Blacks were less likely to have participated than Whites, with Latinos being most likely to have participated. The latter finding may reflect the fact that Latinos are especially likely to be Catholic, and the Catholic Church has been a strong proponent of premarital education. Those experiencing economic hardship (defined here by receipt of government supports) or with low levels of education were relatively unlikely to have participated. One could incorrectly assume that the poor are uninterested in premarital education. Lower levels of participation may reflect a lack of access rather than a lack of interest (Markman, 2000). Analyses of the broader survey from which these data were obtained demonstrate that younger, lower income, and Black respondents were more—not less—likely than others to report interest in such relationship education (Johnson et al., 2002).

Religious organizations in poor communities may not have the resources to provide such services. Furthermore, economically stressed couples face serious roadblocks in attending (such as lack of affordable child care or transportation, and time constraints associated with shift work; Ooms & Wilson, 2004). Thus, it is particularly important to reduce such barriers. Vulnerable groups may also need more extensive services (Ooms & Wilson, 2004), including a focus on sexual mistrust and domestic violence (Edin & Kefalas, 2005; Seefeldt & Smock, 2004).

Premarital Education and Marital Quality and Stability

The analyses show that participation in premarital education is associated with higher levels of marital satisfaction, lower levels of destructive conflicts, and higher levels of interpersonal commitment to spouses. Similarly, premar-

ital education was associated with a 31% decrease in the odds of divorce, even after controlling for many characteristics correlated with both divorce and premarital education. Overall, although the effect sizes found here were not large in absolute terms, they are noteworthy considering that they were obtained from survey methods that are not optimal for measuring such intervention effects. Furthermore, the effect sizes could be smaller than those seen in controlled experiments that focus on highly developed interventions because the treatment-as-usual hodgepodge of services that the respondents received in this sample, no doubt, included many less thoughtful and less empirically informed efforts. (Beyond this, it is not really feasible to make meaningful comparisons of the magnitude of effects from this survey research to the effect sizes from highly controlled, experimental studies.)

In general, these findings are consistent with those from Carroll and Doherty's (2003) meta-analysis. Though less in magnitude, the association with lower conflict is consistent with outcome studies of programs that include strong conflict management and communication components (e.g., Halford, Sanders, & Behrens, 2001; Markman, Renick, Floyd, Stanley, & Clements, 1993; Ridley, Avery, Harrell, Leslie, & Dent, 1981). This outcome may be particularly important given the evidence that poorly handled conflict is a generic risk factor for marriages (Clements, Stanley, & Markman, 2004; Gottman, 1993; Karney & Bradbury, 1995) and children (Amato, 2001; Cummings & Davies, 1994; Emery, 1982; Fincham, 2002).

Moderators of the Effects of Premarital Education

Generally, we found few statistical interactions between individual characteristics, premarital education, and marital outcomes. This is a central result of our study, for several reasons. First, there is no evidence of any adverse effects of participation in premarital education among particular subgroups in the population. Second, there is no evidence of any differential benefit for those from diverse racial and ethnic backgrounds. Racial and ethnic minorities appeared to be as likely as Whites to derive benefits (although Blacks were less likely to have participated, as noted above). Third, economically disadvantaged individuals appeared to derive benefits comparable with those among more advantaged individuals. Again, economically disadvantaged individuals were less likely to have participated, but those who did participate appeared to derive benefits. Consistent with these results, recent analyses in a very diverse context with young married couples demonstrated no differences in marital education effects on the basis of racial identification or economic levels—at least short-term (Stanley et al., 2005).

People with lower levels of education were just as likely as anyone else to benefit from premarital education with respect to marital satisfaction, conflict, and interpersonal commitment. With respect to odds of divorce, individuals without a high school education were unlikely to benefit. In contrast, among those with at least a high school education, premarital education appeared to reduce the odds of divorce. It could be that the disadvantages associated with being poorly educated are linked to difficulties in learning course content (which could be compounded by the educational level of some materials), preventing interventions from modifying the odds of divorce. Of course, there could be many complex dynamics underlying these findings, and our data are inadequate to pursue these ideas in greater detail.

In summary, these findings suggest that beneficial effects of premarital education are relatively constant throughout the married population. Yet, expanding premarital education opportunities to those who are in poverty or who are less educated will present some challenges. Expanding our knowledge of these possibilities should be a high priority for future research.

Measured Characteristics of Premarital Education Related to Outcomes

In the United States, the vast majority of premarital education services are provided in a religious context. Religious leaders may be well suited to meeting the needs of many couples who are inclined to seek their services. Religious leaders tend to have access to couples, an institutional base of operation (e.g., facilities), a belief in the value of marriage, and a strong tradition of education (Stanley, Markman, St. Peters, & Leber, 1995). Religious leaders can be particularly effective in such work (Stanley et al., 2001, 2005).

Although religious organizations have excellent opportunities to reach many couples with premarital education, there are limits to what religious organizations can do. First, couples who are not religiously inclined generally prefer to obtain services from secular providers (Fournier & Roberts, 2003). Second, many economically disadvantaged people are unconnected with religious (and other) support systems. Hence, although religious organizations can be a good point of access for religiously inclined minorities, they face serious challenges in reaching the very poor. It may be that religious organizations serving poor communities would benefit from more support from other organizations in this mission. Increased availability of services that are not based and delivered through religious organizations and that also reach into the communities of the most disadvantaged are warranted. The best way to reach some couples with relationship education will likely be through their ongoing contacts with government services.

The other aspect of services measured here was the participants' recollection of the number of hours spent. Although some premarital regimens lasted only a few hours, the median was 8 hr, and about one third of respondents had 9–20 hr of education. We note that these data offer little ability to weigh the relative advantages of differing types of premarital education, even though there are reasons to believe that some approaches are more effective than others (e.g., Halford et al., 2001; Schumm et al., 1998; Stanley et al., 2001). Furthermore, it is likely that couples vary on dimensions that may make some approaches more or less effective for different couples (Halford et al., 2003; Stanley, 2001). For example, a couple in which one or both partners came from high conflict homes would likely need help on

conflict management and communication. Conversely, a different couple may primarily suffer from a lack of clarity about the commitment they are making—because they have moved from cohabitation without a clarity about a future in marriage into a partially constrained motivation to marry because of cohabitation (e.g., see Kline et al., 2004). They may need help carefully exploring expectations and understandings about the commitment they are making more than help with conflict. Overall, although knowledge is advancing, we would like to know much more about dose, content, and risk levels in this field of intervention.

Despite limitations, the findings suggest additional benefit for length of time spent, up through 10 hr, with only slight gains thereafter. This finding mirrors much of the therapy literature that suggests that gains are often front loaded (e.g., Christensen et al., 2004). Some gains may be partly based on the fact of showing up, which could symbolize important elements of commitment between partners. Beyond this, because time spent in education is likely a proxy for intensity and comprehensiveness of services, these findings provide some evidence that better quality premarital education is linked with better outcomes. The optimal type and intensity of services may vary depending on degree of risk, education, and other factors—factors which this research is unable to address. Nevertheless, in the absence of the ability or feasibility of matching individual couples with the components that are most needed on the basis of their specific risk factors, higher quality services that address a number of risk and protective factors would seem more likely to offer benefit to a wider range of couples who attend.

Alternative explanations for these associations are important to consider. As just one example, length of time spent receiving services also could be a marker for level of interpersonal commitment to the relationship or the level of difficulties in the relationship. Of course, such factors cannot be the sole explanation, because couples do not generally set the number of hours of training that organizations are willing to provide.

Selection and Causality

Overall, in our sample (which is larger and more representative than other samples we know of in this literature), there is clear association between premarital education and a range of positive marital outcomes. However, such effects could be entirely because of unmeasured variables and selection factors—variables associated with both lower risks in marriage and increased probability of participation in premarital education. For example, social support could be associated both with likelihood of participation more generally (e.g., related to religious involvement), yet it would also be associated with risk in marriage. Nonexperimental data such as ours cannot fully reconcile this matter. Nevertheless, there are reasons to believe that selection does not account for all of our findings. First, the relatively large number of control variables in our analyses helped to rule out the possibility of observing spurious associations. Second, the biprobit analysis, which adjusted for unobserved sources of heterogeneity, replicated the negative association between premarital education and divorce. Although this method is not foolproof, this result does strengthen a causal inference. Third, the interpretation of premarital education effects is bolstered by two specific findings: (a) The estimated effect on conflict was stronger in the early years of marriage, and (b) the estimated effects on conflict and satisfaction increased with the number of contact hours (which probably reflects better quality services). An explanation based on selection would not have predicted these findings. In summary, the weight of the evidence suggests that real, preventive effects of premarital education are reflected here.

Limitations and Contributions

In addition to the issue of selection versus causality, there are other limitations to this research. First, there could be restrictions on generalizability because these data were gathered in Oklahoma, Arkansas, Texas, and Kansas. Second, our measures were relatively brief and based entirely on self-report. Historically, the strongest findings in the literature on premarital education have come from studies that used complex and expensive coding of videotaped couple interaction (e.g., Hahlweg, Markman, Thurmaier, Engl, & Eckert, 1998; Markman et al., 1993; Stanley et al., 2001). Perhaps the size of our sample allowed for the detection of differences that, heretofore, required more intensive and sensitive measurements to detect. Third, our data involved retrospective accounts of participation and ex post facto inference about the nature of the effects. Even apart from the matter of selection and causality, the results may well be different if the same group of participants had been followed longitudinally through premarriage, premarital education (if any), and into marriage. Fourth, the data set used here was designed for diverse goals and does not provide other specific variables of interest such as the timing of services, provider qualifications, content, and formats (Silliman & Schumm, 1999).

Despite these limitations, our study contributes to a line of research that suggests positive effects for couples who participate in premarital education. The use of sophisticated methods of analysis, combined with the size and representativeness of the current sample, adds weight to the optimistic conclusion that efforts to provide better access to high quality premarital and marriage education services would benefit many couples, including those from diverse backgrounds.

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