

Evaluation of the *Connections: Relationships and Marriage Curriculum**

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Connections: Relationships and Marriage is a high school marriage education curriculum designed to teach students how to develop healthy relationships and marriages. This study evaluated the effectiveness of this curriculum with 410 high school students who were in Connections or a control group. Although the effects were relatively small, findings suggest that the curriculum increases knowledge of relationship concepts, decreases violence in dating relationships, decreases risk factors for adolescent pregnancy, and positively impacts attitudes related to future successful marriage. Implications for further development of the curriculum and other implications for practitioners are discussed.

Marital distress negatively affects children, adults, and the community. Marital distress is linked to manifestations of stress in children, including internalizing and externalizing behavior problems (Buehler et al., 1998), conduct disorders (Coie et al., 1991), poor academic performance, low self-esteem (Goldberg, 1993), youth crimes (e.g., theft, robbery, violence, gambling, sexual crimes; Hooper, 1985), social and emotional disturbance in school (Mattison, Morales, & Bauer, 1992), and adolescent suicide (Nelson, Farberow, & Litman, 1988). Marital distress also has been linked to adult manifestations of stress, including substance abuse, criminal activity, eating disorders (Goldberg), psychopathology (Brown, 1996), marital battering and domestic violence (Goldberg; Markman, Floyd, Stanley, & Storaasli, 1988), depression (Horwitz, White, & Howell-White, 1996; Klerman & Weissman, 1990), and suicide (Nelson et al.). Further, marital distress is related to problems in the workplace, such as decreased work productivity and increased absenteeism (Forthofer, Markman, Cox, Stanley & Kessler, 1996; Goldberg; Thomas & Caverly, 1998). In fact, Gottman (1998) estimated that 30% of absenteeism is due to marital distress, costing \$8 billion per year in the United States.

The effectiveness of premarital prevention programs in reducing future marital distress is well documented (see Carroll & Doherty, 2003, for a recent review). However, Gardner and Howlett (2000) argued that more effort should be placed on teaching marriage and relationship skills to youth while they are in school. Many relationship attitudes and behavior patterns are developed well before young adulthood and engagement, when most couples attend premarital prevention programs. Durlak (1995) calculated that up to one half of our nation's young people are at risk for later life adjustment problems, thus emphasizing the need for primary prevention (prevention aimed at everyone, not just those who are most at risk).

With the recent resurgence of interest in the well-being of marriage in general (see Doherty & Johnson, 2004), many new

and established enrichment programs enjoy increased attention. Among the new programs are specialized curricula that target marriage and relationship education in the secondary schools. Although much energy, hope, and enthusiasm exist for these new curricula, they generally have yet to be studied empirically.

Currently, seven such programs are available nationally for use with school children (Coalition for Marriage, Family, and Couples Education, 2003). These programs include: *The Art of Loving Well* (Ellenwood, McLaren, Goldman, & Ryan, 1993), *Building Relationships* (Olson, DeFrain, & Olson, 1999), *EQ* (Hannah & Marrone, 2000), *Connections (Connections: Relationships and Marriage, Connections +PREP, and Connections: Dating and Emotions; Kamper, 1996), PAIRS for Peers* (Gordon, 2000), *Partners* (American Bar Association, Section of Family Law, 1999), and *RQ: Building Relationship Intelligence* (Panzer, 1999). More detailed information about each curriculum is available in a report by the National Marriage Project (Pearson, 2000).

Our study focused on the evaluation of one of the most popular of these curricula, *Connections: Relationships and Marriage*. *Connections* is a curriculum used by teachers, counselors, and others who work with youth in grades 11 and 12 (Dibble Fund for Marriage Education, 2004). The content of the curriculum aims to fulfill the needs of today's youth for self-understanding and self-esteem, healthy dating relationships and values, effective communication and conflict-resolution skills, and awareness of skills needed to build a successful marriage.

The curriculum consists of 15 one-hour lessons that comprise four units on personality, relationships, communication, and marriage. The three personality lessons address concepts, such as the uniqueness of the individual, how personality changes over time, self-concept, how needs motivate behavior, goal setting, establishing expectations, and drafting a flexible life plan. In the relationships section (three lessons), students learn concepts and skills, such as how relationships and families change over time, the differences between primary and secondary relationships, the characteristics of positive relationships, how dating behaviors and expectations relate to mate selection, how to establish clear expectations for self and partner in dating relationships (sexual and general dating expectations), the emotional investment in relationships, how differences in relationship goals and expectations may be factors in ending a relationship, signs of a deteriorating relationship, and how to recover from a broken relationship. In the two communication lessons, students learn a number of positive skills, including the influence of family-of-origin communication patterns, the power of compromise, how to change negative statements into positive ones, how to send clear messages, and guidelines for good listening. Last, there are seven

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lessons on marriage. In these lessons, the students learn different types of love relationships, the most common causes of faulty mate selection, principles for successful marriages, the impact of children on marriage, the basics of family finances, how to manage a family crisis, the importance of family time together, and the benefits of marriage.

In addition to using common didactic teaching methodologies, a student workbook also is used to benefit student learning in each lesson. One unique aspect of the curriculum is the “Bogus Marriage” assignments. For these, students select a partner either in their class or at their school who is willing to complete the assignments with them. This couple completes assignments on the impact of children on their “marriage,” and how they will handle a family crisis. They also must develop a budget based on their income and family size (income and number of children are selected at random).

Research on Connections

Only two of the existing seven marriage education curricula have been evaluated to date. *The Art of Loving Well* is a literature-based relationships curriculum for middle school and high school students (Ellenwood, et al., 1993). The evaluations assessing the effects of the curriculum, which focused specifically on reducing sexual risk-taking in relationships, were positive. Among other findings, the results suggested that of the 8th-grade students who identified themselves as virgins at the beginning of the school year, only 8% of participants reported that they had sex during that year, compared with 28% in the control group (Kreitzer, 1992).

The *Connections* curriculum has been evaluated once by Gardner (2001). Using a quasi-experimental design, he found that students taking *Connections* improved their conflict-resolution skills (increased use of reasoning as a conflict tactic), became less likely to see divorce as a good option for troubled marriages, and were more likely to report they would take advantage of premarital and postmarital programs to build better marriages. Of these effects, only the attitudes toward divorce had a significant time \times group interaction effect. All others showed significant change over time for the *Connections* group; however, for the control group, these changes were not statistically different. This preliminary study had a number of methodological limitations, including measurement problems and limited generalizability, because the sample was rural and mostly Caucasian (88%).

The current study sought to validate the results from Gardner (2001) and increase generalizability by correcting some of the methodological limitations. This was accomplished by refining some of the measures and using a larger, more diverse sample.

Given the lack of research on high school marriage education curricula, more information on program effectiveness is needed. In a report summarizing these new curricula, Mack (2000) argued for independent evaluations that measure specific outcomes. Laner and Russell (1995) suggested that future studies use pre- and posttest comparison and that studies assess changes in the participants' relationships over time. Other studies (Luster & Youatt, 1989) have emphasized the need to assess behavioral outcomes.

Purpose and Hypotheses

This evaluation of *Connections* examined changes in select areas of student knowledge, behaviors, and attitudes as a result of participation. We offered several hypotheses. First, we

hypothesized that students would increase in their knowledge of relationship concepts and that they would report (a) less engagement in troublesome behavior at home and at school, (b) improved communication with parents about serious relationships and other issues, (c) less verbal aggression and violence in their close relationships, and (d) more use of reasoning in their interpersonal conflicts. In addition, we hypothesized that student attitudes would change such that they would express more positive attitudes toward marriage, marriage preparation, marriage counseling, and marriage enrichment classes. At the same time, we predicted that they would develop less positive attitudes toward divorce and cohabitation. Further, we hypothesized that as students began to learn skills for a successful marriage, they would become more confident that their future marriage would not end in divorce and also perceive that fewer marriages overall in our society end in divorce. Given the emphasis in the first three lessons of the curriculum on valuing individual uniqueness and self-esteem, we also posited that self-esteem would improve as a result of completing the curriculum. Finally, we hypothesized that the curriculum would positively affect adolescent pregnancy protective factors, such as communication with parents, perceived ability to resist sexual advances, and reported likelihood of waiting to be involved in sexual intercourse. Although the curriculum does not include a specific lesson on sexual abstinence, it emphasizes a number of concepts that could lead to these changes (e.g., open communication, setting relationship expectations and ideals, and clarifying how true love is mature and reasoned rather than sexual).

Method

Participants and Procedure

Connections was evaluated in six California public high schools. A list of teachers in California who were actively using the curriculum (regularly ordering student manuals) was used to recruit teachers. Twenty teachers were contacted, and six agreed to participate; thus, 30% volunteered. Surveys were sent to the six teachers who agreed to participate in the research (one teacher per site participated; consent of the school principal also was required). By agreeing to participate, the teachers also agreed to administer the survey to their students being taught *Connections* before beginning the curriculum, and to one other class that they taught without *Connections*. All students were given a posttest questionnaire in both classes after the completion of *Connections* (approximately 3 months later). Teachers collected parental consent forms and returned all materials to the research team.

A total of 562 students completed and returned both sets of questionnaires. Of those, 410 remained in the final sample used for analyses. Student surveys were excluded ($n = 152$) for one of the following reasons: no valid parental consent form was returned, only a pretest or a posttest (but not both) was completed, or the student appeared to guess or randomly mark large portions of the survey (e.g., answering all the questions as “As” for several pages).

Of the sample of 410 students, 4.9% were African American, 30.1% were Hispanic, 10.3% were Asian, 1.7% were Native American, 38.4% were White, and 14.7% “other” (including those who marked more than one category). The participants were, on average, 16.5 years old (range 14–19 years, $SD = .98$), 21% were male, and 79% were female. Two hundred sixty-three students participated in the *Connections* curriculum, and 147

students were in the control group. Student reports of family income ranged from the category of *under \$10,000* to *\$80,000+*, with a median income category of *\$30,000–\$40,000*.

Analyses showed that the two groups did not differ significantly on any of the demographic variables (gender, race, income) except age. Those in *Connections* were slightly older ($M = 16.66$ years old, $SD = .90$) than those not in the program ($M = 16.34$ years old, $SD = 1.09$), $t(408) = -3.20$, $p < .001$. This difference was accounted for in the analysis using analysis of covariance (ANCOVA), where the dependent variable was significantly related to age (e.g., on some of the sexuality questions, older students tend to answer differently from younger students, so age was statistically controlled).

Measures

The survey assessed demographic variables, select behaviors in relationships, select attitudes regarding relationships and marriage, and knowledge of the curriculum concepts. The specific behaviors assessed included a self-report of the number of times during the past 4 months the student had been in trouble at school and at home and the frequency of various tactics used to resolve conflicts with a boyfriend, girlfriend, or best friend. Some of the variables assessed were measured by a single item. Attitude toward cohabitation was based on the question, "It's O.K. to live with a dating partner and not be married." Answers ranged from *strongly agree* (1) to *strongly disagree* (4). Attitudes toward their own marriages ending in divorce was measured by asking, "If you get married, what percent chance is there that your marriage will end in divorce?" Percentages were entered as scores ranging from 0 to 100. Students also were asked, "What percent of marriages end in divorce?" Again, the percentages were entered as scores ranging from 0 to 100.

Knowledge scale. Based on the objectives and key concepts sections for each lesson from the teacher's manual, 30 true/false questions were asked both before and after taking the curriculum to measure knowledge gains about relationship concepts. Sample questions included: "Most long-term marriages have never had a crisis" and "Opposite personality types tend to have more satisfying and longer lasting relationships." Scores could range from 0 to 30, with a higher score indicating answering more items correctly. In assessing the reliability of the scale, it was determined that three questions were not worded well, or the students were not understanding them. These three questions were eliminated from the analysis. The final knowledge test had a Cronbach reliability coefficient of .71.

Conflict tactics scales (Straus, 1979). A revision of Form-R was used. Students indicated how often they had employed each of 18 tactics for resolving conflicts in the past 2 months by choosing from six categories that ranged from *never* (0) to *more than 20 times* (6). Rather than asking about how often the student had done these things with a spouse, the words "boyfriend, girlfriend, or best friend" were used. More violent tactics, such as "Threatened him or her with a knife or gun," were not included at the request of the school administrators. This scale produces three subscale scores. The Reasoning subscale consisted of three items (e.g., how often participants had "Discussed an issue calmly"). Scores may range from 0 to 18, with a higher score indicating more frequent use of reasoning as a conflict tactic. The Verbal Aggression subscale consisted of eight items (e.g., "Yelled at him or her"), and scores may range from 0 to 48, with higher

scores indicating a more frequent use of verbal aggression as a tactic to resolve conflicts. Last, the Violence subscale consisted of six items and includes items such as "Slapped him or her." Scores may range from 0 to 36, with higher scores indicating more frequent use of violence to resolve interpersonal conflicts. Straus (1990) reported validity information for the CTS and alpha coefficients of .61 for Reasoning, .80 for Verbal Aggression, and .79 for Violence. Coefficient alphas at pretest for this study were similar: .54 for Reasoning, .85 for Verbal Aggression, and .87 for Violence.

Communication with parents. This scale consisted of responses to three items answered on a 4-point scale, ranging from *strongly agree* (1) to *strongly disagree* (4). Sample questions are, "Do you personally talk to your parent or guardian when something is bothering you?" and "Do you talk to your parent or guardian about having a boyfriend or girlfriend?" Possible scores range from 3 to 12, with lower scores indicating better communication. Reliability for this scale was $\alpha = .78$ (ranged from .77 to .79 on pre- and posttests, respectively).

Divorce attitudes. This attitude scale consisted of eight questions answered on a 4-point scale from *strongly agree* (1) to *strongly disagree* (4). Questions were designed to assess the circumstances under which the students felt that divorce was justifiable. Each question was asked for two situations: when a couple had and did not have children. Sample questions include, "It's OK for a couple WITH NO children to divorce if one spouse cheats on the other," and "It's OK for a couple who fights all the time to divorce if they have children." Possible scores range from 8 to 32, with lower scores indicating a more favorable attitude toward divorce. Alpha reliability was .82.

Marriage attitudes. Two questions assessed attitudes toward marriage on a 4-point scale ranging from *strongly agree* (1) to *strongly disagree* (4). Questions include "Marriage is a good and desirable thing" and "I will likely get married some day." Possible scores range from 2 to 8, with lower scores indicating a more favorable attitude toward marriage. The alpha reliability was .74.

Attitudes toward counseling. Four items asked about student attitudes toward premarital counseling, marital counseling, and marriage enrichment programs. Responses ranged from *strongly agree* (1) to *strongly disagree* (4). Sample questions include, "I will go to premarital counseling with my fiancé before I get married" and "After I'm married, I will attend a marriage enrichment class with my spouse." Possible scores range from 4 to 16, with lower scores indicating more favorable attitudes toward these activities. Alpha reliability was .78.

Resisting sexual pressure. These items asked about student perceptions of their ability to resist sexual pressure and consisted of five questions answered on a 5-point scale, from *strongly disagree* (1) to *strongly agree* (5). Sample questions include, "I feel good enough about myself that I can say 'no' to sex even if my friends are pressuring me to say 'yes'" and "I intend to say 'no' if I am being pressured to have sex." Possible scores range from 5 to 25. Higher scores reflect more perceived ability to resist sexual pressure. The alpha reliability was .64.

Wait to have sex. Students were asked six questions about their intent to wait to have sex until they are older. Responses ranged from *strongly disagree* (1) to *strongly agree* (5). Sample questions were, "I intend to have sex while I am a teen (reverse coded)" and "I intend to wait to have sex until I can handle the things that may result from having sex." Possible scores range from 6 to 30, and higher scores indicate more intent to wait. The alpha reliability was .81.

Rosenberg Self-Esteem Scale. Reliability and validity have been established for this popular measure and are reported in Silber and Tippett (1965). This scale measures adolescent self-esteem and is based on nine statements using a 5-point Likert scale, ranging from *almost never* (1) to *almost always* (5). Sample statements include, "I feel that I'm a person of worth, at least on an equal basis with others" and "I feel I have a number of good qualities." Possible scores range from 9 to 45, and higher scores indicate higher global self-esteem. The alpha reliability was .86.

Results

We used repeated measures analyses of variance (ANOVAs) where the pre- and posttest scores were the repeated measure, and group was participants in *Connections* versus nonparticipants. The principal outcome we looked for in each analysis was the presence of a Time X Group interaction. Finding an interaction suggests that although the *Connections* group improved over time (pretest to posttest), the control group did not improve significantly in comparison (see Table 1). For analyses in which the pretest scores differed between the groups, the repeated measures ANOVA was followed by an ANCOVA using pretest scores as the covariate and posttest scores as the dependent variable. In every case, the interaction effects remained statistically significant. The results are presented in terms of knowledge, behavior, and attitudes.

Knowledge

If the curriculum was effective in transmitting information, we expected that students would score higher on concepts from the curriculum after finishing the course. In fact, findings showed that the Time X Group interaction was significant, $F(1, 337) = 25.41, p < .0001$. This suggested that the *Connections* group became more knowledgeable about the key content and concepts of the curriculum, whereas the control group showed no change. However, the improvement in knowledge scores was very small (less than 2 points improvement).

Behavioral Indicators

A major goal of any effective curriculum is to affect the current and future behavior of the students. Specific behaviors

assessed here were (a) reported use of violence, (b) verbal aggression, and (c) reasoning as ways of resolving conflicts with a boyfriend, girlfriend, or best friend, (d) the number of times reported being in trouble at school and at home, and (e) the likelihood of talking to parents about serious relationships and other issues. The results showed that for use of violence to resolve conflict, the Time X Group interaction was significant, $F(1, 345) = 17.99, p < .0001$ (see Table 1). The *Connections* group decreased their reported use of violence after taking the class, whereas the control group reported using more violence in resolving conflicts with boyfriends, girlfriends, or best friends over time.

For use of verbal aggression, although the Time X Group interaction was not significant, $F(1, 332) = 3.44, p = .06$, a trend in this direction was apparent. Whereas the *Connections* group reported a decrease in their use of verbally aggressive tactics, the control group remained about the same. The groups showed no significant differences in terms of how often they used reasoning as a tactic for resolving interpersonal conflicts, $F(1, 346) = .73, p = .39$. In addition, in self-reports of getting into trouble at home, the Time X Group interaction was not significant, $F(1, 334) = 1.00, p = .26$.

Communication with parents showed a significant Time X Group interaction, $F(1, 351) = 8.75, p = .04$, with the *Connections* group reporting slightly higher quality of communication with their parents over time, and the control group remaining about the same in their communication with their parents. Lastly, no significant difference was found for the number of times that the students reported getting into trouble at school, $F(1, 346) = .01, p = .91$.

Attitudes

A second major goal of this evaluation of *Connections* was to assess changes in attitudes that affect future behaviors. We assessed attitudes toward marriage, divorce, cohabitation, likelihood of their future marriages ending in divorce, and premarital and marital counseling and marriage enrichment. Results showed that for attitude toward marriage, the Time X Group interaction was significant, indicating that *Connections* students reported a slight increase in their likelihood of seeing marriage as a good and desirable thing, whereas the control group reported slightly less favorable attitudes toward marriage over time, $F(1, 356) = 7.78$,

Table 1
Mean Scores and Standard Deviations for Dependent Measures and Analysis of Variance Time X Group Interaction Effects

Variable	Connections (n = 263)				Control (n = 147)				F
	Pretest		Posttest		Pretest		Posttest		
	M	SD	M	SD	M	SD	M	SD	
Relationship knowledge	15.08	2.92	16.32	3.67	13.78	3.00	13.35	3.20	25.41***
Violence	2.70	5.42	1.93	4.87	1.87	3.58	3.49	6.57	17.99***
Verbal aggression	13.23	9.56	11.09	8.91	14.85	10.00	14.41	10.39	3.44
Communication with parents ^a	6.53	2.47	6.19	2.40	6.86	2.41	6.90	2.34	8.75*
Ability to resist sexual pressure	21.94	3.12	22.65	2.79	21.20	3.80	21.26	3.72	3.11
Attitudes toward marriage ^b	2.80	1.16	2.68	1.10	2.79	1.23	2.92	1.36	7.78**
Attitudes toward premarital/ marital counseling and marriage enrichment ^c	9.31	2.60	8.29	2.98	9.97	2.81	9.70	2.82	7.69**

Note: ^aLower scores indicate better communication with parents. ^bLower scores indicate more positive attitudes toward marriage. ^cLower scores indicate more positive attitudes toward counseling and enrichment.

* $p < .05$. ** $p < .005$. *** $p < .0001$.

$p = .006$. For the attitudes toward divorce, the Time X Group interaction was not significant, $F(1, 331) = 2.06, p = .15$.

For students' attitude toward cohabitation, again the Time X Group interaction was not significant, $F(1, 353) = 1.76, p = .19$. Although the *Connections* students became less favorable toward cohabitation in comparison with the control group, there was no significant difference. For the reported chance (percent) of the participant's own future marriage ending in divorce, there also was no significant interaction effect, $F(1, 312), p = .92$.

For attitudes about participating in marriage preparation, marriage counseling, or marriage enrichment, the Time X Group interaction was significant, $F(1, 349) = 7.69, p = .006$. That is, the *Connections* group reported being more likely to participate in marriage preparation classes before marriage, marriage counseling if their marriage has problems, and marriage enrichment opportunities along the way. On the other hand, the control group became less likely to take advantage of these important opportunities. No significant difference was found for the groups' ratings for self-esteem, $F(1, 323) = .004, p = .95$, or for the groups' perceptions of the percent of marriages in general that end in divorce, $F(1, 305) = .001, p = .97$.

Adolescent Pregnancy Prevention Risk Factors

The questionnaire assessed risk factors for adolescent pregnancy identified in the research, including having poor communication with parents, the ability of youth to assertively reject sexual advances, and those who expect to wait to be involved in sexual intercourse. For communication with parents, the Time x Group interaction was significant, $F(1, 351) = 4.26, p = .04$. Thus, whereas the *Connections* group slightly increased their reported quality of communication with their parents after taking the curriculum, the control group stayed about the same in their communication with their parents over the same period. For the ability of the youth to resist sexual pressure, the interaction effect did not reach significance, $F(1, 331) = 3.11, p = .08$, but a trend is apparent. No significant change occurred for either group for likelihood of waiting to engage in sexual intercourse until they are older, $F(1, 331) = .11, p = .74$.

Discussion

This study builds on findings from Gardner's (2001) original study and yields results that are more generalizable to high school students. Gardner found no effects on the knowledge or the behavioral indicators but did show change in divorce attitudes. That is, *Connections* students became less positive in their attitudes toward divorce. However, the results of the current study show other areas that are affected by the *Connections* curriculum.

We hypothesized that students' knowledge, behaviors, and attitudes related to marriage would be positively impacted as a result of taking the *Connections* curriculum. Several results emerged that supported this hunch. As expected, *Connections* students improved slightly in their knowledge of relationship concepts from the curriculum, whereas the control group remained about the same. However, the finding that the *Connections* students only got one additional question right on the knowledge test at posttest compared with the pretest is not impressive. The reasons for this poor improvement in knowledge gained needs to be investigated before we can be confident that students remember the specific content of the curriculum.

Use of violence decreased and communication with parents increased among the *Connections* students, but the use of violence increased for the control group. Similarly, verbal aggression showed a positive trend as well for the *Connections* students. It is noteworthy that these kinds of current relationship behaviors are affected, however small the changes may be, because the intervention is only a 15-lesson course. If adolescents can decrease their use of violence and verbal aggression in their current relationships, they will be less likely to develop abusive behaviors that are carried into their future marriages. Importantly, students not taking the curriculum actually reported an increase in the use of violent tactics in their close relationships. This may be due to having a limited repertoire of healthy conflict tactics and communication skills, whereas students taking the curriculum learn to set and openly discuss dating expectations, distinguish healthy relationships from unhealthy ones, and consider their ideal relationships. The other students may not have learned these skills.

Reasoning behavior did not increase in the *Connections* group in contrast to findings by Gardner (2001). This may be due to the low reliability score ($\alpha = .54$) for the reasoning subscale for this sample. The other subscales had more internal consistency (.85 and .87). It may be that this scale does not adequately measure reasoning among adolescents and needs revision.

Communication with parents increased for the *Connections* students, but remained about the same for the control group. The *Connections* students appear to have benefited from the two lessons dedicated to communication. One lesson specifically addressed listening skills, which may have improved parent communication. The student workbook also requires students to assess their typical patterns of communication, asks them to describe how their communication patterns may lead to problems in relationships, and then asks, "What changes could you make?" The students then have the opportunity to write a description of what they could change. Perhaps the students actually followed through with some of these changes, or simply their perceptions of their behaviors changed.

Attitudes toward marriage were more positive for the *Connections* group, such that they were more likely to agree with the idea that marriage is generally a good and desirable institution and that they would likely marry some day, compared with students in the control group. Given Waite and Gallagher's (2001) findings on the many benefits of marriage, it is important that adolescents recognize that for most people, marriage is likely to produce positive outcomes for adults and children.

Attitudes toward attending counseling and enrichment programs also improved slightly as a result of participating in the curriculum. However, there is evidence that students were not sure about participating in these services. Before participating, students tended to be neutral in their attitudes toward participating in these services. After completing the curriculum, *Connections* students were somewhat more likely to agree, whereas members of the control group were less likely to agree that they would take advantage of these services. Given the research suggesting positive outcomes for such programs and services (e.g., Carroll & Doherty, 2003), *Connections* may be valuable in helping students consider such help in the future.

In addressing the subject of adolescent pregnancy prevention, the *Connections* group improved in their reported communication with parents and showed a positive trend in their perceived ability to resist sexual pressure, whereas the control

group stayed about the same. It may be that the increase in parental communication fostered by *Connections* led to more open discussions of sexual issues with parents and friends. Such open communication may help combat negative peer pressure in the form of sexual pressure.

Limitations and Recommendations

This study addressed some of the typical limitations in other evaluation studies. The sample was ethnically diverse, covered a range of socioeconomic classes, and was from an urban setting. It is possible that the experimental and control groups were not similar at the outset of the study. Without random assignment to the groups, it is possible that factors external to the curriculum resulted in the statistically significant differences seen. However, the groups did not differ on any demographic variable except age at the outset. In some cases, such as in the area of adolescent pregnancy risk factors, the *Connections* group did have slightly better pretest scores, whereas in other areas, the groups were very similar (i.e., attitudinal measures), and in the case of violence used as a conflict tactic, the *Connections* group reported more violence at pretest. However, future studies could benefit from the use of random assignment to groups. Further, teachers are another external factor that may have affected the outcomes. Because teachers self-selected into the study, the findings may be an artifact of the teachers' attitudes and influence on student attitudes such as attitude toward marriage. Perhaps only teachers who were more promarriage chose to participate in the study.

We should note that this sample was largely female (79%). Although there were no gender differences between the groups, the results reflect a primarily female perspective. The gender imbalance was likely due to the fact that these courses (both the *Connections* and control classes) were elective courses that traditionally are more likely to be selected by females (one school used psychology courses, and the other schools used family and consumer sciences courses). Thus, caution is recommended in generalizing the findings to males, and future studies should include a more equal distribution of gender.

An important next step is to explore the possible longitudinal effects of participation in *Connections*. Laner and Russell (1995) called for a longitudinal study to assess the impact of marriage and family classes on students. Although we assessed students both just before and after taking the curriculum, a longer time is necessary to determine the impact of the program on students' premarital and marriage relationships. Durlak (1995) suggested that the next step in this type of research could be to "identify active program components" (p. 85). Applied to *Connections*, the next stage could determine what specific components of the curriculum were most responsible for effecting changes in behaviors and attitudes in which groups of students (e.g., ethnic groups). In this way, the curricula can be improved, refined, and calibrated for maximum impact on students. These steps also will help to determine why students improved in their behaviors and attitudes, but their knowledge tests showed only slight change. Last, the newest version of the *Connections* curriculum (*Connections + PREP*) expands the communication section and includes a lesson dedicated to cohabitation. This version has yet to be evaluated. Future research on this and other curricula could benefit from random assignment of students to groups, random assignment of teachers, and augmentation of the self-report measures with more objective behavioral measures.

Implications for Practitioners

We offer five implications for practitioners. First, although the changes in attitudes and behavior were relatively small, it appears that marriage education can be taught in the high schools with some positive impact. These small changes may be amplified over time and assessed in longitudinal research. In an era of research-based programs and outcome-based assessment, our findings provide beginning empirical support for those looking for research-based curricula for youth in schools.

Second, violence prevention and adolescent pregnancy prevention are popular topics with significant federal, state, and private dollars attached to them. With the positive findings of this study of a reduction of self-reported violence and adolescent pregnancy risk factors, the argument can be made to suggest that some of these funds be used for marriage education programs like *Connections*.

Third, federal and state governments are beginning to infuse money into healthy marriage initiatives (e.g., Downing, 2003). Program directors and stakeholders should be concerned that a portion of these dollars is used to reach youth through programs such as *Connections*. Those practitioners involved in public policy initiatives to promote marriage education now have some initial evidence as to the effectiveness of marriage education in high schools. This research lends some support to calls for more efforts to require all students to take marriage and relationship education classes in high school.

Fourth, the challenge of premarital preparation classes has long been to get those who actually need the information the most to enroll in the program. Our results suggest that a marriage education curriculum targeted broadly at high school students may increase the likelihood that at-risk individuals will take advantage of other premarital preparation courses, marriage enrichment, and marriage counseling in the future.

Fifth, with a growing number of new marriage education curricula appearing on the market, practitioners should be cautious in their selection of a curriculum. Choosing a curriculum with some empirical support for its effectiveness should be a major criterion in the selection process.

In summary, patterns of intimate relationship attitudes and behavior are learned and developed well before engagement and marriage. Evidence-based programs need to be offered to youth before they develop negative patterns in young adulthood. The present study offers some initial evidence that knowledge, behaviors, and attitudes can be positively modified to increase the likelihood of success and satisfaction in future relationships and marriage.

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