Systematic Review of the Impact of Marriage and Relationship Programs

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Introduction

Family structure in the United States changed rapidly in the second half of the twentieth century. A wide variety of family forms increasingly replaced the two-parent family norm. In 2001, 69 percent of children lived in two-parent families, down from 77 percent in 1980 (Federal Interagency Forum on Child and Family Statistics, 2002). Divorce is common. About half of all recent first marriages are expected to end in divorce (Ooms, 2002). Of children born into two-parent families, 34 percent will experience a disruption of their parents' union by age 16. One-third of all births are out-of-wedlock. And couples opting to cohabit rather than marry is becoming an increasingly common phenomenon. Forty percent of all births occur within cohabiting unions rather than marriages (Bumpass & Lu, 2000). Some European countries also experienced a precipitous decline in marriage rates but have recently seen those rates level and even rise (Ford, 2002).

A vast accumulation of research suggests that children do not fare as well in these alternative family structure forms as children living with their two married biological parents. Numerous studies indicate that children growing up in single-parent families experience worse outcomes than children growing up in two-parent families (Acs & Nelson, 2001; Amato & Keith, 1991; McLanahan & Sandefeur, 1994; Wu & Martinson, 1993). And many studies show that divorce, specifically, is correlated with negative effects on children's well-being (Amato, 1993; Amato & Keith, 1991; Chase-Lansdale, Cherlin, & Kiernan, 1995; Chase-Lansdale & Hetherington, 1990). Even when parents remarry, a synthesis of the research suggests that this does not appear to improve outcomes (Amato, 1993).

Recent research also suggests a relationship between marriage and positive outcomes for adults. Married couples build more wealth on average than singles or cohabiting couples, while divorce and unmarried childbearing increase the risk of poverty for children and mothers (Lupton and Smith, 2002). Individuals who are married are found to have better health and longer life expectancies than similar singles (Lillard and Waite, 1995). Married mothers have lower rates of depression than cohabiting or single mothers (Brown, 2000). Research also shows that unhappily married adults who divorce or separate, on average, are no happier than unhappily married adults who stay together (Waite et al., 2002).

Relationship Programs

A diverse set of relationship programs currently exists to improve relationships and marriages. Marriage and relationship education programs vary by sponsoring organization, curricular focus, client learning style, and target population. They are developed from government, research, or faith-based initiatives, or they may operate privately for profit. Programs may operate in mental health centers, hospitals, public assistance offices, churches, or universities, among other places. Curricula deal with topics such as communication, parenting or finances. Providers utilize formats that may be instructive, group-oriented, or analytic, and programs may operate with different group sizes and treatment dosage amounts. The programs reach many populations,

including individuals (e.g. youth, fathers, mothers), couples (e.g. pre-marital, married), and families.

While the interpretation of outcomes research on marriage and relationship programs is complex, experts in the field suggest generally there is promising evidence that couples can learn specific skills to improve their relationships (Stanley, Markman, & Jenkins, 2002). According to these experts, couples can learn to reduce patterns of negative interaction and maintain higher levels of relationship satisfaction. They noted that in some studies, higher-risk couples show the strongest program effects, and some studies have found that the beneficial effects appear to last up to five years after the training.

U.S. Policy Response

Recently marriage has become a national issue of public policy in the United States. The Bush Administration has proposed that the Federal government dedicate $300 million a year as part of the Temporary Assistance for Needy Families (TANF) program to "help couples form and sustain healthy marriages." Proposed legislation focuses on eight allowable activities:

1. Public advertising campaigns on the value of marriage and the skills needed to increase marital stability and health.
2. Education in high schools on the value of marriage, relationship skills, and budgeting.
3. Marriage education, marriage skills, and relationship skills programs, which may include parenting skills, financial management, conflict resolution, and job and career advancement, for non-married pregnant women and non-married expectant fathers.
4. Pre-marital education and marriage skills training for engaged couples and for couples or individuals interested in marriage.
5. Marriage enhancement and marriage skills training programs for married couples.
6. Divorce reduction programs that teach relationship skills.
7. Marriage mentoring programs, which use married couples as role models and mentors.
8. Programs to reduce the disincentives to marriage in means-tested aid programs, if offered in conjunction with any activity described in this subparagraph.

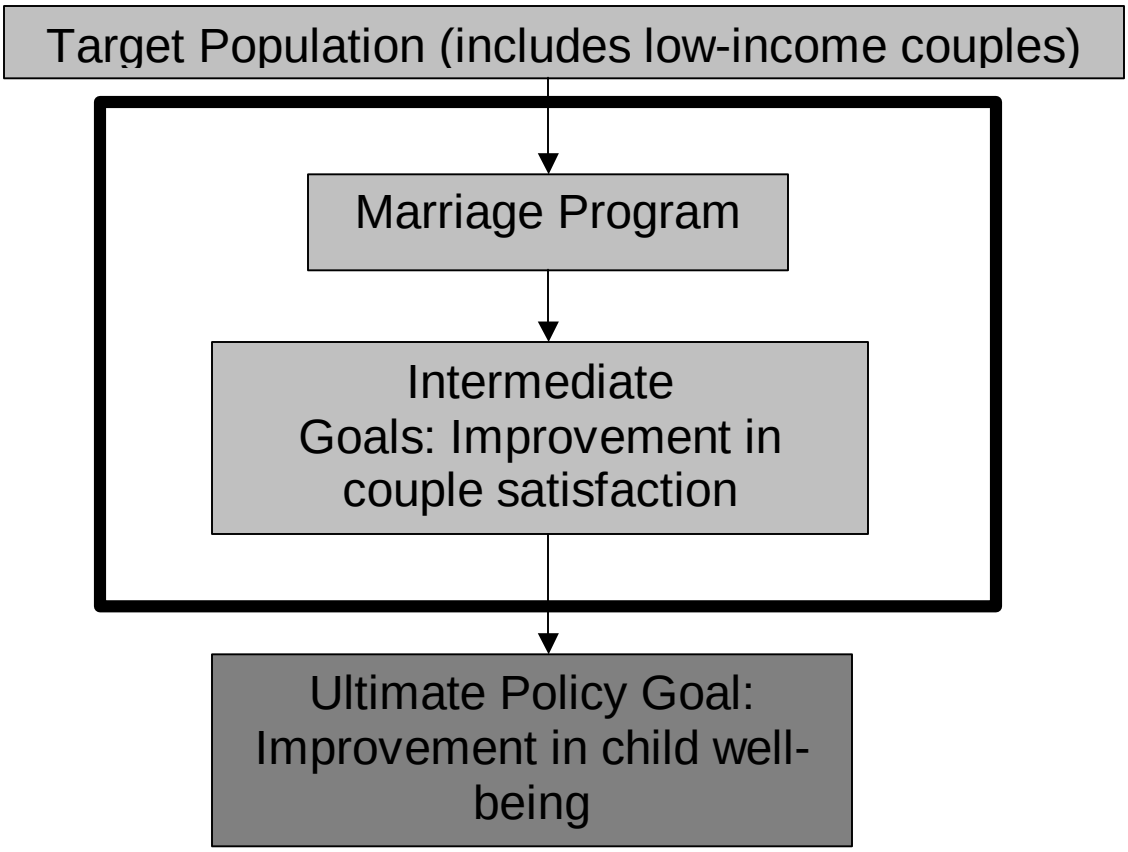
Source: Personal Responsibility, Work, and Family Promotion Act of 2003. H.R.4.IH

Current Review

This review is designed to inform U.S. policymakers in their effort to provide funding for marriage and relationship programs and will examine specifically how these programs impact measures of relationship satisfaction and communication. However, the greater policy question surrounding the effects of marriage programs relates to the well-being of children and adults, particularly in low-income families. The administration is interested in promoting these programs with the hope that they will lead to an improvement in marital satisfaction and ultimately child well-being outcomes for their participants' children. It is especially interested in the ways that programs could effectively serve low-income couples. This review can provide an answer to the most immediate policy

question: What do published and unpublished evaluations of marriage and relationship programs indicate about the impact of interventions on the satisfaction of couples? Figure 1 below shows this logic model.

Figure 1



General policy question; black box indicates question answered by the current review.

More specifically, this review is a systematic review of evaluations of marriage and relationship programs, which are defined as those that aim to improve the relationship between two people involved romantically. Reviewers performed a systematic search of literature sources and obtained studies for this review that met the following criteria: first, each study had at least one treatment group as well as a no-treatment or wait-list control group; second, each demonstrated that these two groups were created by random assignment or high-quality quasi-experimental methods; third, each presented results on relationship satisfaction, communication, or both that could be converted to standardized effect sizes; and fourth, each study demonstrated that at least 40 percent of its original sample was assessed at pre- and post-test. This review analyzes a final set of 39 studies that met these inclusion criteria. Reviewers find an average effect size of .68 for relationship satisfaction and .26 for relationship communication.

Funding
The U.S. Department of Health and Human Services, Administration for Children and Families (ACF), funded this review to inform policymakers of the existing research on the effectiveness of marriage programs as Congress debates TANF reauthorization. ACF also funded this review to guide implementation of new legislative mandates related to promoting healthy, stable marriages.

Past Reviews

Many reviews have examined the evidence on the effects of marriage programs. Some of these are narrative reviews, which differ from the current review because they do not synthesize results quantitatively. Rather, they present a reviewer's summary of a group of selected studies. One such narrative review examined relationship satisfaction rates and concluded that marital and family enrichment programs produce positive results, leading to significant improvements in pre-marital, marital, and family capabilities (Guerney & Maxson, 1990).

There are also several reviews that have examined the effects of marriage programs using meta-analysis to synthesize findings. In a meta-analytic review, each study included in the review is treated as a data point. Reviewers create an effect size for each study that is based upon results presented by authors of the studies. Reviewers then derive an average impact and associated confidence interval of the interventions from these data.

These meta-analytic reviews are similar to the current review because they use quantitative methods to synthesize results but they differ in that they do not always employ a systematic approach. One meta-analysis examined marital therapy programs and concluded that they are effective, (Shadish et al., 2000). Another meta-analysis examined the effectiveness of two types of therapy programs—behavioral marital therapy and behavioral pre-marital intervention programs. The review indicated that both are more effective than no treatment (Hahlweg & Markman, 1988). Another meta-analysis examined 85 studies of pre-marital, marital and family enrichment programs and also concluded that these programs were effective (Giblin et al., 1985). And a meta-analysis of 16 studies of one program, Couples Communication, concluded that positive couple benefits can be anticipated from the program (Butler, 1999). Finally, one meta-analysis that focused on therapy programs and employed a systematic search found a relationship between the effectiveness of the therapy programs and different types of formats used in family and marital psychotherapy (Shadish, 1993).

Usefulness of Another Review?

This review builds on these previous reviews and confirms their findings that marriage programs lead to positive effects for couples. Still, it differs from each review in at least one way. It is different from the Guerney & Maxson (1990) review because it synthesizes results quantitatively, examines marital enrichment programs *and* other program types (therapy, education, pre-marital preparation, and counseling), and employs a systematic review process. Following a systematic review process means that prior to conducting the review, reviewers planned exactly how they would search for evaluations and how they would screen studies for inclusion, and documented these search and inclusion criteria prior to the start of the review in a protocol. These methods contribute to transparency of the review methods and remove one possible source of reviewer bias. Though the Shadish et al. (2000) and Hahlweg & Markman (1988) reviews are also meta-analyses, the current review is distinguishable by the fact that it goes beyond reviewing evaluations of marital therapy programs to include studies of other program types. It is also a systematic review. The review differs from the Giblin et al. (1985) and Butler (1999) reviews because it goes beyond evaluations of enrichment programs and

communication skills programs, respectively, and is also systematic. The current review differs from a systematic meta-analysis, the Shadish (1993) review, because it covers studies of other types of programs besides therapy programs. And finally, this review is unique because it specifically aims to inform policymakers at the U.S. Department of Health and Human Services.

The review will also be submitted to the Campbell Collaboration's Social Welfare Review Group to become an approved Campbell review. The Campbell Collaboration—modeled after the Cochrane Collaboration for reviews of medical research trials—is a group that promotes the creation and dissemination of systematic reviews in the fields of social welfare, education, and crime and justice. The group has strict guidelines for the reviews it approves and mandates that reviewers include all obtainable high quality evidence available on a given topic. The review must also be done systematically to eliminate any reviewer bias. The current review has been conducted in parallel with several other Campbell-style reviews that are funded by the Smith Richardson Foundation.

Criteria for study inclusion

This review includes rigorous evaluations of programs designed to improve the relationship between two people involved romantically. Specifically, several inclusion criteria were used.

1. Goals of the intervention: The intervention must serve both members of a couple that is romantically involved. A principal component of the intervention must be relationship improvement, but there may be other goals of the intervention.
2. Counterfactual treatment: The study must contain a control group that does not receive the treatment evaluated by the study between the time of pre- and post-intervention measurements, or by the time follow-up measures are taken if applicable. However, this group would be able to receive treatment from an outside source during the evaluation if the group members chose to do so.
3. Target population: The focus of the study analyses must be on the individuals who are part of a couple relationship.
4. Outcomes measures—type: The study must include measures of relationship satisfaction or communication. Specific examples of measures found by the studies are detailed later in the "characteristics of studies/results presented by studies" section.
5. Outcomes measures—unit: The measures may be taken at the individual or couple level.
6. Outcomes measures—reporting: The study must present sufficient data from which to calculate standardized effect sizes and weights based upon the inverse of the variance of the effect size.
7. Study quality: The study design must be random assignment, matched random assignment, or a high quality quasi-experimental design (meaning that evaluators created a control group using rigorous statistical techniques). In addition to this, the evaluation report must indicate that the attrition rate between the time of random assignment and the time the post-test measures were taken was no higher than 40 percent. Reviewers will assess independently those studies that demonstrate an attrition rate of 20 percent or lower.

8. Year of publication: The evaluation must have been published or completed since 1960.

Search strategy
The reviewers' search strategy for identifying relevant studies included four components: database searches of published literature; internet searches for published and unpublished research; manual searches of journals, books, and other reviews on relationship program evaluations; and professional contacts.

Reviewers limited the search to literature published or completed since 1960. Although the bulk of research on this topic occurred between 1977 and 1982, experts in the field cite studies as far back as 1962 (Hunt et. al., 1998). Moreover, a change arguably came about in western society as a result of the sexual revolution of the 1960s, which brought about changes in the family form. Reviewers included both published and unpublished work from any country and in any language.

The reviewers used the following method to conduct a search for evaluations. They searched *sources*, such as databases and Internet sites, for *records*, which in most cases were titles and abstracts of reports or journal articles. If there were fewer than 100 records available from a specific source, reviewers selected all records for screening. In the interest of time, it did not make sense to implement a specific search "strategy" for such a small number of records. If there were between 100 and 500 studies available from a source, the reviewers keyed in " marriage OR marital OR pre-marital OR relationship OR couple OR premarriage OR newlywed " and screened all records retrieved. If there were between 500 and 2,000 records available, reviewers searched using the following phrase ("marriage" OR "marital" OR "pre-marital" OR "relationship" OR "couple" OR "premarriage" OR "newlywed") AND ("program" OR "satisfaction" OR "quality" OR "stability" OR "enrichment" OR "education" OR "therapy" OR "counseling" OR "learning" OR "outcome" OR "communication" OR "treatment").

If the search engine was not sophisticated enough to allow reviewers to use a complex search string, reviewers entered the phrases "marriage* and program*," "marriage* and satisfaction," "marriage* and quality," and so on. If there were more than 2,000 studies returned from this search, then reviewers crossed this search with an "AND" statement and the following words "evaluation* OR impact* OR experiment* OR intervention* OR random* OR control*."

Reviewers implemented this search strategy on several academic databases:

> *Databases*—Cochrane Central Register of Controlled Trials (CENTRAL); Dissertation Abstracts International; EconLit; ERIC; LILACS; Mental Health Abstracts; POPLINE; Population Index; PsychInfo; Sage Family Studies Abstracts; Social Science Citation Index; Social Services Abstracts; Social, Psychological, Educational, and Criminological Trials Register (SPECTR); Sociological Abstracts; Substance Abuse and Mental Health Data Archive.

Reviewers searched websites of government agencies, research organizations, professional associations, information services, university policy and social research programs, relationship programs, faith-based groups, and foundations. Specifically, reviewers searched the following sites for documents:

Government agencies—Commonwealth Department of Family and Community Services (Australia); Department of Health and Human Services—Administration for Children and Families (ACF, USA); Department of Health and Human Services—Substance Abuse and Mental Health Services Administration (SAMHSA, USA); Federal Statistical Office (Germany); INSEE (French government's statistics bureau, France); main government websites for Australia, Canada, and the EU (as well as individually: the United Kingdom, Sweden, Norway, Denmark, Spain, and France); National Institute of Mental Health (NIMH, USA); Oklahoma Marriage Initiative (USA); Statistics Norway (Norway); Swiss Federal Statistics Office (Switzerland); and state government websites for Arizona, Arkansas, Florida, Louisiana, Maryland, Minnesota, Michigan, Oklahoma, Utah (USA).

Research Organizations—Alan Guttmacher Institute (USA); Alternatives to Marriage Project (USA); American Association for Marriage and Family Therapy (USA); Australian Institute of Family Studies (Australia); Brookings Institution (USA); Austrian Institute for Family Studies (Austria); BC Council for the Family (Canada); Building Family Strengths Parent Information Center (USA); Center for Law and Social Policy (USA); Child Trends (USA); Council of Contemporary Families (USA); European Observatory on the Social Situation, Demography, and Family (Europe); Family Research Council (USA); Heritage Foundation (USA); Human Science Research Council (South Africa); Institute for American Values (USA); Interdisciplinary Centre for Comparative Research in the Social Sciences (ICCR) (Austria and France); International Academy for Marital Spirituality (Belgium); National Center for Children in Poverty (USA); National Center for Policy Research for Women and Families (USA); National Council on Family Relations (NCFR) (USA); National Fatherhood Initiative (USA); National Governor's Association (USA); National Institute of Relationship Enhancement (USA); National Marriage Program (USA); National Marriage Week (U.K.); One Plus One (U.K.); Penn Council for Relationships (USA); Tavistock Marital Studies Institute (UK).

Professional associations—American Bar Association; American Psychological Association (APA, USA); American Psychological Society (APS, USA); Australian Psychological Society; British Psychological Society; Canadian Psychological Association; Children, Youth, and Families Education and Research Network (USA); Directory of Scholarly and Professional E-Conferences; Stepfamily Association of America (USA); European Association for Advancement of the Social Sciences; European Health Psychology Society; European Sociological Association; Family Law Section (USA); International

Association of Applied Psychology; International Society of Health Psychology Research; Marriage and Relationship Educators' Association of Australia Inc. (Australia).

Information services—Americans for Divorce Reform (USA); National Research Council Research Information Service (USA); Research Engine for the Social Sciences (USA); Smart Marriages (USA); UK Online

University Policy and Social Research Programs—Center for Family Research; University of Cambridge (UK); Center for Marital and Family Studies; Center for Research and Child Well-Being at Princeton University (USA); Center for Marital and Family Studies, University of Denver (USA); Center for Research on Family, Kinship, and Childhood, University of Leeds (UK); Family Action Centre; University of Newcastle (Australia); Family Centre, University of Queensland (Australia); Family Research Unit, University of Jyvaskyla (Finland); Gottman Marriage and Family Institute (USA); Institute of Family and Sexuality Studies at the School of Medicine, Catholic University of Leuven (The Netherlands); Institute for Family Research and Counseling at the University of Fribourg (Germany); Institute for Social and Economic Research at the University of Essex (U.K.); Newcastle Center for Family Studies; University of Newcastle (Australia); Rutgers University (The National Marriage Project); School of Higher Studies (Paris); University of Washington (USA).

Relationship Programs—Fragile Families (USA), Marriage Alive (USA), Marriage Savers (USA), PAIRS (USA), PREP (USA).

Faith-based Groups—Catholic Society for Marriage Education (Australia)

Foundations—Annie E. Casey Foundation (USA)

News/media—The American Prospect (USA)

Reviewers also conducted manual searches of journals by searching tables of contents from these journals since 1960 or the inception of the journal if it began after 1960. These journals included American Journal of Family Therapy, Family Relations, Journal of Consulting and Clinical Psychology, Journal of Marital and Family Therapy, and the Journal of Sex and Marital Therapy. Reviewers chose these journals because they published a large number of the evaluations originally returned by the search. Reviewers also screened lists from 53 other reviews of marriage and relationship program evaluations. They obtained all studies that fit the inclusion criteria for the current review.

Reviewers contacted experts in the field of marital and family therapy—including Alan Hawkins (Brigham Young University), Bill Coffin (U.S. Department of Health and Human Services), Thomas Bradbury (UCLA), Benjamin Karney (University of Florida), and Bill Doherty (University of Minnesota)—to determine if any studies were missing from the list of included studies for this review. Of these experts, two (Karney and

Bradbury) responded and suggested several titles beyond the current group of 39. Reviewers determined that all of these studies had been part of the original set of 514 evaluations screened previously in the review but were eliminated because they did not contain a no-treatment control group.

Contacting authors of studies for missing data

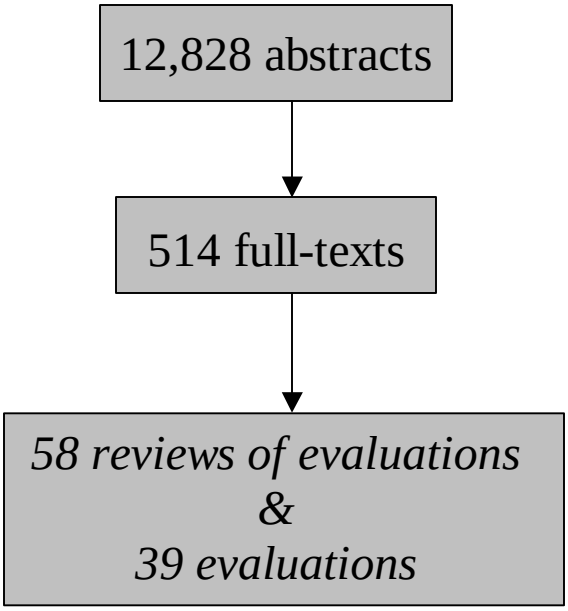
Reviewers contacted study authors if a study had insufficient information—either relating to attrition rates or to results. Study authors either did not present information on attrition rates for their sample, or they presented results in a way that made it impossible for reviewers to create an effect size. Unfortunately, some of these authors could not be found. Of those who reviewers contacted successfully, none were able to produce the missing data.

Outcome of the Search

Reviewers obtained 12,828 abstracts from the aforementioned sources. They immediately screened all abstracts that were clearly not evaluations of programs. Most of these citations were articles related to marriage or marriage programs, but were not actual program evaluations. For those of a somewhat unclear nature, reviewers extracted full texts for further analysis. They obtained 514 full-text articles in this stage of the review, and most of these were program evaluations.

Reviewers screened the 514 full-texts based upon the inclusion criteria, and the majority of the studies did not meet the criteria. Fifty-nine of these were other reviews of marriage evaluations, which were used to further inform the reviewers of the current review. Of the citations deleted from the group 514, some were not evaluations of marriage programs (179) or available in full text (46). There were studies without random assignment (54), with poor random assignment (3), or with poor quality quasi-experimental designs (1). Other studies did not contain a control group or control group data (129), presented results that could not be converted into effect size form (14), or had attrition that exceeded 40 percent (4). Reviewers retained 39 evaluations of marriage programs for analysis.

Figure 2



Thirty-nine studies remained after reviewers checked the evaluations against the inclusion criteria. Table 1 (in attached documents) provides descriptive information on each of these studies. The table highlights the following characteristics: program type, publication year, location, program intensity, total length of time in session, number of couples in each session group, sample characteristics, distress level, and follow-up assessment.

Characteristics of Studies

Program Type

The reviewers separated the final sample of 39 studies into groups according to the type of program that was evaluated, as defined by the author(s) of each evaluation. According to the study authors' definitions, this review contained 17 evaluations of "therapy" programs, 4 "pre-marital preparation" programs[1], 3 "enrichment" programs, 3 "education" programs, 9 "communication skills" programs, and 3 "counseling" programs. In general, therapy and counseling programs are those that operate in a clinical setting with a trained psychologist administering treatment. These can be based upon a variety of different treatment formats. A recent meta-analytic review of pre-marital programs (Carroll and Doherty, 2003) notes that these programs are generally skills-based training programs designed to help couples gain information that will help them in their upcoming

[1] Programs targeting pre-marital couples are referred to as either "pre-marital preparation" or "pre-marital prevention" by the research field. For the purposes of this review, we will refer to programs that target pre-marital couples are "pre-marital preparation" programs.

marriage (Senediak, 1990). Enrichment programs are those that are "generally limited to 'normal and healthy' couples and families" (Giblin, Sprenkle, & Sheehan, 1985). Education and communications skills programs tend to be didactic in nature and serve both distressed and non-distressed couples. For example, one researcher explains that in the *Couple Communication Program*, provider teach communication skills to couples in a small group format using brief lectures, directed practice, and assignments between sessions (Wampler, 1990).

Publication Year

Reviewers searched for studies that were published or produced in 1960 or afterwards. Of the 39 studies included for final analysis, 8 studies were published in the 1970s, 17 during the 1980s, 15 in the 1990s, and 2 since 2000.

Location

The reviewers determined the location of the study based either upon the location of the intervention, if mentioned, or the location of the publisher. There were 27 studies from the United States, 8 from Canada, 2 from Germany, 1 from the Netherlands and 1 from Australia. All of these studies were printed in English. Originally, there were other studies printed in either Dutch or German, but reviewers eliminated them after language translation revealed they did not meet the inclusion criteria for other reasons.

Within the United States, if the evaluation mentioned the setting of the actual intervention, then reviewers recorded the state location. If authors did not mention location but the location of a local publisher was available (e.g. University), then reviewers recorded this location. Of the evaluations conducted in the United States, the states that were represented were as follows: Arkansas, California (2), Colorado, Indiana, Massachusetts, Michigan (2), Minnesota (2), New Jersey, New York, North Carolina (2), Pennsylvania (3), Texas, Virginia, Washington (3), and Wisconsin. For all other studies, this information was missing.

Program Intensity: Number and Length of Sessions

Total length of program (hours in each session times the number of sessions)
Five studies evaluated a program that was fewer than 10 hours in length, 16 were between 10 and 15 total hours, and 15 were longer than 15 hours. There were 3 studies that did not provide information on the length of the sessions in their programs.

Number of Sessions
All 39 studies reported on the number of sessions in their interventions. Nine studies evaluated programs with fewer than 5 sessions, 20 were between 5 and 10 sessions, and 10 had 12 or more sessions.

Average Session Length
Thirty-five studies reported the length of the interventions. Fourteen studies evaluated programs with hour-long sessions, 19 had sessions between 2 and 4 hours, and 3 had sessions lasting 8 hours.

Number of Weeks in Program
Thirty-five studies reported how long their programs lasted. Four studies evaluated "weekend" programs, 17 evaluated programs lasting fewer than 10 weeks, and 12 evaluated programs lasting between 10 and 15 weeks.

Program intensity: Number of Couples in Each Session Group
Studies also differed in the number of couples included in each session group. It is important to note that not all self-defined therapy and counseling programs were one-on-one treatment programs, as one might expect. For example, nineteen studies evaluated programs with one couple per group (i.e. one-on-one therapy with the provider), and not all of these were called therapy or counseling programs. Two were communications skills programs, and one was a pre-marital preparation program. Fourteen studies contained 3 to 5 couples per group, and 3 of these were therapy programs. Two studies contained 10 to 12 couples per group, one of which was a counseling program. The other four studies did not present this information.

Sample Characteristics
Most of these studies had relatively small samples. The average sample size of combined treatment and control groups was 34 couples. Most studies presented data on age, years of education, and length or relationship or marriage. For most evaluations, the reviewers were unable to determine the income level for the sample. Information on the sample was available for most of the studies, and reviewers present it here as an "average of the average," the studies' average of the couples' average in each study.

The average age of the couples was 34 and the average number of years of education was 14.6. Reviewers find that the average relationship length for the couples in these studies was 9.3 years. However, this number should be considered an underestimate because some study authors provided "relationship length" as the length of a couple's marriage,

while other study authors provided the total length of the relationship. Couples that were married actually had longer relationship lengths that were not captured by these studies.

Distress Level

To determine the distress level of couples in these interventions, reviewers took the evaluation authors' description of the sample as distressed or non-distressed. If this information was not available, the reviewers took the average MAT (Marital Adjustment Test, Locke & Wallace, 1959) or DAS (Dyadic Adjustment Scale, Spanier, 1976) score for the group and used cutoff points for distressed couples used in the research field {MAT—100 (out of a score range of 2 to 158) and DAS—107} to classify the sample. The reviewers chose these scores because the field considers these score cutoffs to define "distressed" couples. Crane, et al. recommended that 107 was a comparable DAS cutoff score to the MAT's 100.

It is important to note that some of these programs may have contained both distressed and non-distressed couples. Reviewers classified all pre-marital education programs as serving non-distressed couples. They made this decision because experts note that pre-marital programs traditionally focus on non-distressed couples and help couples maintain an already high level of functioning while preventing further problems (Carroll & Doherty, 2003).

From the sample of 39 evaluations, twenty studies assessed distressed couples. Fourteen studies contained couples that were non-distressed. Reviewers could not interpret this information from the reports of the other 5 studies.

Follow-up Assessment

All of the 39 evaluations included in this review included assessments of the sample at both pre-test (before intervention) and post-test (directly after intervention). Many researchers continued to follow their treatment group(s) after the post-test assessment to see if the initial impacts were sustained over time. However, the majority of studies did not assess the control group at these times because most control groups in the studies were on a wait-list for treatment. Control group participants often received the intervention directly after the post-test evaluation period.

However, eight studies did assess both treatment and control groups at follow-up periods after the post-test evaluation. The longest follow-up assessment periods for these studies ranged from 3 weeks to 12 months after post-test, and the median follow-up period was 2.5 months. The average effect size for relationship satisfaction taken at follow-up is .29 (95% confidence interval: .01, .58) and for relationship communication, it is .11, (95% confidence interval: -0.42, 0.65). This suggests that the impacts of these programs may deteriorate over time, however these estimates are based upon very small sample sizes (5 studies measuring follow-up for satisfaction and 2 studies measuring follow-up for communication).

Results Presented by Studies
The measures used to evaluate clients in these studies were either self-report or provider-report questionnaires on the topic of either relationship satisfaction or communication. The studies report the findings from the questionnaires in the form of an average "score" from each questionnaire. Studies derived all outcomes for relationship satisfaction from self-report questionnaires, while studies used a mixture of self-report and provider-report questionnaires to determine communication outcomes. Most studies reported mean scores and standard deviations for both the treatment and control groups at pre-test and post-test. Reviewers converted this information to create a standardized gain score difference effect size. Reviewers explain the derivation of this effect size later in the report.

The most common outcome measures used in these evaluations are the Dyadic Adjustment Scale (Spanier, 1976) and the Marital Adjustment Test (Locke and Wallace, 1959). Both of these are self-report questionnaires, as noted previously. The most common measures of communication are two observer-report questionnaires—the Marital Interaction Coding System (MICS) and Communication Skills Test (CST)—and one self-report questionnaire, the Marital Communication Inventory (MCI). These measures are widely used in this field of research, and there is a body of research documenting their validity. Other studies in this review used similar measures that are either specific to the study or less common in the field but have similar properties.

Meta-analysis: Outcomes and Analysis Methods

Effect Size Creation
Reviewers created an effect size for satisfaction, communication, or both for each study. They analyze the two effect sizes separately. Of 39 studies, 28 measured relationship satisfaction, and 13 measured communication. Reviewers created a type of effect size called the standardized gain score difference. To create this effect size, they took the gain score (post-test score minus pre-test score) for the control group, subtracted it from the treatment group gain score, and divided the treatment/control difference by the pooled pre-test standard deviation.[2]

Interpreting the Effect Size Statistic
A positive effect size indicates that the treatment group had a larger increase than the control group between the pre- and post- intervention periods in the measure observed. For example, in one study that measures couples' satisfaction with the DAS and has an effect size of .5, the control group gained .94 DAS points (93.06 to 94) and the treatment group gained 12.5 DAS points (88.1 to 100.63). In a similar study with a much larger effect size of 1.5, the control group gained 1.2 DAS points (66.9 to 68.1) and the treatment group gained 19.8 DAS points (76.6 to 96.4). A widely used convention for appraising effect sizes was established by Cohen (1977, 1988), who reports that the

[2] Many studies presented data for men and women separately. When this occurred, the reviewers combined the two groups and created a single effect size based on the combined results. All studies that reported data at the individual level as opposed to the couple level provided information on both members of the couple. The reviewers did not find any cases where data were only given for one member of the couple.

standardized mean difference effect sizes fall into the following ranges over a wide range of behavioral science research: small (ES<= .20), medium (ES=.50), and large (ES>=.80).

Weighting Strategy
The effect sizes are weighted by the inverse of the study variance for each study. The smaller the variance in a study's sample, the more precise the study is likely to be, and thus the larger weight it receives in the overall effect size. Reviewers calculate the mean effect sizes using these weights. They chose a random effects model weighting strategy because the studies failed the test for homogeneity. This indicates that the variability among the effect sizes is greater than what is likely to have resulted from subject-level sampling error alone. However, the alternative weighting strategy—a fixed-effects model—produces identical mean effect sizes.

Results
The reviewers created an effect size (standardized mean gain difference) for both relationship satisfaction and communication.

Relationship Satisfaction
The average effect size for relationship satisfaction is .68. This finding is based upon a sample size of 28 studies because only 28 of the 39 studies in this review measured relationship satisfaction. This effect size is statistically significant, meaning that the impact of the intervention on the treatment group is different from the impact on the control group. Reviewers used an ANOVA for all tests of statistical significance. Average effect sizes for satisfaction are available in Table 2.

Relationship Communication
The average effect size for the total sample of 39 studies for relationship communication is .26 (N=13 studies). This effect size is statistically significant. Average effect sizes for communication are available in Table 3.

Group differences
The reviewers present the effect sizes for certain groups below to examine how the effect size varies by characteristic in the studies (see Tables 2 and 3). In cases where the sample sizes of studies do not add up to the total studies available for each measure (satisfaction and communication), there is missing information on the specific characteristics (program type, hours in program, etc.) from each study left out of the analysis.

Program Type—Satisfaction
The mean effect size for studies of therapy programs is .86 (N=15), pre-marital preparation is .08 (N=1), enrichment is .23 (N=2), education / communication skills is .58 (N=8), and counseling is .94 (N=2).

Program Type—Communication
The mean effect size for studies of therapy programs is .38 (N=5), pre-marital preparation is .11 (N=2), enrichment is -.43 (N=2), and education / communication skills is .51 (N=4). There were no studies of counseling programs that measured relationship communication.

Total hours in program—Satisfaction
The mean effect size for studies of programs lasting fewer than 10 hours is 1.17 (N=2), between 10 and 15 hours is .71 (N=13), and over 15 hours is .59 (N=10).

Total hours in program—Communication
The mean effect size for studies of programs lasting between 10 and 15 hours is .12 (N=6) and .37 for studies over 15 hours (N=7). No evaluations of programs lasting fewer than 10 hours measured communication.

Number of sessions—Satisfaction
The average effect size for programs with fewer than 5 sessions is .06, between 5 and 10 sessions is .66, and 12 sessions or more is .98.

Number of sessions—Communication
The average effect size for programs with fewer than 5 sessions is .36, between 5 and 10 sessions is .11, and 12 sessions or more is .45.

Session length—Satisfaction
The average effect size for programs that have hour-long sessions is .88, for 2- to 4-hour long sessions it is .47, and for programs with sessions lasting 8 hours is .15.

Session length—Communication
The average effect size for programs that have hour-long sessions is .20, for 2- to 4-hour long sessions it is .18, and for programs with sessions lasting 8 hours is .49.

Number of weeks—Satisfaction
The average effect size for weekend-style programs is .15, for programs lasting between 1 and 10 weeks is .55 and .90 for those between 10 and 15 weeks.

Number of weeks—Communication
The average effect size for weekend-style programs is .49, for programs lasting between 1 and 10 weeks is -.04 and .45 for those between 10 and 15 weeks.

Level of couple distress—Satisfaction
The mean effect size for studies with a distressed-couple sample is .94 (N=18) and .43 for a non-distressed sample (N=7).

Level of couple distress—Communication
The mean effect size for studies with a distressed-couple sample is .39 (N=6) and -.12 for a non-distressed sample (N=5).

Number of couples receiving treatment in each session—Satisfaction
In this section of the report, the reviewers consider "treatment group size" to be the number of couples that are present during a therapy / education session in the programs. The mean effect size for studies of programs with a treatment group size of more than one couple is .40 (N=7) and .80 for one couple (N=19).

Number of couples receiving treatment in each session—Communication
The mean effect size for studies of programs with a treatment group size of more than one couple is .29 (N=6) and .18 for one couple (N=6).

Attrition Rates
The reviewers examine average effect sizes for studies that exhibit high retention (80 percent and higher). All of the studies that examine communications skills already fit this description. For programs measuring satisfaction, there are 24 that exhibit retention rates of 80 percent or higher and 4 that do not (they have between 60 percent and 79 percent retention rates). The high retention studies have an average effect size of .65, while those with lower retention have an average effect of .99.

Summary of Meta-analytic Findings
Relationship Satisfaction
A statistically significant average effect size for relationship satisfaction indicates that these relationship programs are effective in improving couple satisfaction overall. Looking at differences in effect sizes across characteristics of programs reveals a more complex picture. When program types (therapy, pre-marital, enrichment, education/communication skills, and counseling) are compared to each other, the only two that differ are therapy and pre-marital programs (see Table 2). However, when comparing the effect size for a particular program type to the average effect size of *all other* program types combined, each program type with the exception of counseling differs from the average of the others. Similarly, when comparing programs on characteristics like total hours or the number of sessions, differences were not detected when comparing individual subgroups to each other, yet differences often emerged when comparing a particular subgroup to the average of the others. For example, one notable pattern is that more sessions, although not necessarily longer sessions, may be more effective at improving couple satisfaction. Yet given these differences only occur when statistical power is increased by comparing the subgroup to the average of all other groups, rather than to individual subgroups, these results should be considered preliminary. More evidence will be needed to detect subgroup differences with confidence.

When only two subgroups are compared, differences can be stated with more confidence because the subgroup sample sizes are larger. For example, studies of programs with treatment group sizes of one couple indicate a greater impact on couples than studies of programs with larger treatment group sizes. And relationship programs appear to be more effective at improving relationship satisfaction for distressed couples than for non-distressed couples.

Relationship Communication
A statistically significant overall average effect size for relationship communication indicates that relationship programs are effective in improving couple communication. Some differences between and among types of programs exist. For example, enrichment programs are less effective at improving couple communication than education and communication skills programs (see Table 3). And the effect size of enrichment programs is significantly less than the average effect size of all other program types combined. The effect size for programs lasting between 1 and 9 weeks is less than the combined effect size of weekend programs and programs lasting longer than 9 weeks, but is not different from these two subgroups when compared individually. Thus, the difference in effect size for programs lasting 1 to 9 weeks should be interpreted with caution, since it only emerges when statistical power is increased by comparing one group to the average of all other groups, rather than comparing subgroups to each other.

Quality Assessment
The studies in this sample tend to be in the upper range in terms of quality, given the rigorous criteria for inclusion. The review's inclusion criteria required that study authors demonstrate that they either created a treatment and control group through pure or matched random assignment or through a high-quality quasi-experimental process, by which researchers create a control group using advanced statistical analysis. The review also mandates that studies must demonstrate a retention rate from random assignment to post-test analysis of at least 60 percent.

Still, within that range, there is variation with respect to study quality. There are several quality issues and their potential role in introducing a bias in the review or a study that are worth examination.

Random Assignment—All studies demonstrated that they implemented random assignment of some form, but they varied in their methods. Four studies used matched random assignment, and the rest used a pure random assigned strategy. The studies that used a matching design first measured couples on demographic characteristics and/or levels of relationship distress before randomly assigning them to groups. Couples that were similar on these measures were placed into dyads or triads before random assignment to treatment and control groups. The reviewers considered this methodology sufficient to meet the requirements of a high quality study. The rest of the studies used a regular random assignment strategy.

Verifying random assignment—Some studies employed checks to make sure random assignment led to treatment and control groups that appeared similar on measurable characteristics. They checked to see if there were statistically significant differences between the treatment and control groups created in the study. Assuming random assignment was effective, there should be no detectable differences between the two groups. However, because these studies tend to have small sample sizes, it is likely that random assignment will not always produce identical samples. Twenty-one studies checked for statistically significant differences between the treatment and control groups and found none. Five studies detected and noted some differences but did not control for

them in their results. The other 12 studies did not report that they checked for differences. It is possible that there are other similarities or differences between the groups that may exist but are not measured by the studies' authors or differences that simply cannot be measured. The effect sizes for the treatment and control groups were very different at pre-test for many of the studies, suggesting that random assignment was not sufficient for some studies to create identical groups within their small samples.

Attrition—Studies still varied in attrition rates although the baseline retention rate was set at a minimum of 60 percent for inclusion in the review. From the time of random assignment to post-test, 13 studies demonstrated a 100 percent retention rate, 5 studies retained 95-99.9 percent of their sample, 9 studies retained 90-94.9 percent , 6 studies retained 80-89.9 percent , and 6 studies retained 70-79.9 percent . Reviewers dropped 4 studies because they either could not demonstrate a retention rate of at least 60 percent or they specifically reported having a retention rate lower than 60 percent .

Treatment of attrition—Studies also varied in their methods to deal with attrition at post-test. Some studies attempted to follow an "intent-to-treat" evaluation model by considering couples that dropped out of the program at any point during the study as part of their original treatment group. These studies attempted to follow up with such couples in order to include their results in later stages of the evaluation. Of the 26 studies that demonstrated some attrition, there were three studies that attempted this "intent to treat" model. However, for these studies it was unclear as to whether the evaluators were actually able to include some or all of the data for these couples. Of the remaining 25 studies demonstrating attrition, 20 demonstrated in their reports that they did not follow couples that dropped from the program at any point, and in 2 studies it was unclear whether or not researchers followed couples that dropped out of the intervention.

Conflict of interest—There were two types of conflict of interest in these studies. The first is that in some of these studies, the evaluators studied programs that they created. In other studies, evaluators acted as therapists during treatment. In both of these cases, there is a possible bias on the part of the evaluator to inflate results.

In 11 of the 39 studies, the evaluator studied an intervention that he developed. Of these 11 studies, 4 evaluators also acted as a therapist, while the others either did not or the information was not available.

The evaluator acted as either the sole therapist or one of the therapists in 13 of the studies. Three studies specifically mentioned the evaluator was not involved directly in the treatment as a therapist. In 22 studies, the information could not be confirmed either way.

Data Collection—Another possible quality issue arose in the method used for data collection for these studies. Reviewers obtained information on the site and method used for pre-test and post-test data collection for each study. It is assumed that results that are taken onsite and/or by the treatment provider would be biased in the upward direction for the treatment group because the clients might feel pressured to provide a positive

evaluation of the program. Clients were evaluated onsite in 15 studies in the pre-test and 16 of the studies in the post-test. In 4 of the studies the therapist or evaluator proctored the client assessments for both the pre-test and post-test measurement periods. Four of the studies had their clients fill out their assessment forms at home for the pre-test, and one study did this for post-test. Aside from this information, all other studies did not report on these items.

Results presentation—Another quality issue relates to the presentation of results. As mentioned before, most studies in this review presented results as means and standard deviations of scale measures. However, there are some studies that did not present this information. These studies either presented effect sizes or data from specific significance tests that were done by authors. A bias may result if these authors presented the results from their study that were statistically significant and positive and did not present results that might not have been so.

Allocation concealment—None of the studies addressed whether or not the individual(s) who implemented random assignment was aware of which group each couple was assigned.

Selection bias—Selection bias appears not to be a problem because all of the studies used random assignment to create their treatment and control groups. Many studies tested for differences between treatment and control groups at pre-test.

Sample sizes—Treatment and control group sample sizes are fairly small for this set of studies. These studies will likely have a greater error variance. The average sample size (treatment and control groups combined) is 34 couples.

Control group contamination—Control group contamination appears not to be a problem for any of these studies because the control groups for all of these studies were held on a wait-list while the treatment groups received treatment.

Other concerns
Generalizability—The programs evaluated may be not representative of the programs operating in the field for a few reasons. First, the sample of studies is very small—39 studies. Also, the majority of these studies were evaluated in a clinical setting. These studies are more likely to be evaluated because the providers of the treatment have careers in research, as well.

Income of the sample—The reviewers are also concerned that the clients of the evaluated programs are rarely low-income. ACF is interested in knowing how these programs will help the low-income population, and this review falls short of informing this specific issue because the studies included do not specifically target low-income couples. There is one study available that includes “low-income” couples, defined as couples that score as low-income on the SES scale, but reviewers eliminated this study from the sample of studies because authors did not demonstrate a low attrition rate.

Conclusions

The current review supports evidence from previous narrative reviews and meta-analyses that marriage and relationship programs provide benefits for the couples they serve. Average effect sizes of .68 for relationship satisfaction and .26 for relationship communication indicate that in these programs evaluated, the couples that received treatment made significant gains in satisfaction when compared to couples that did not receive the treatment.

Still, the results presented in this review should be interpreted with caution for several reasons. First, despite the rigorous inclusion criteria applied to this group of studies, there are numerous quality concerns—all of which were identified in the previous paragraphs. Second, this review was not able to examine thoroughly the types of raw data that comprised effect size statistics. Most measures used by these studies were well-documented indicators of satisfaction and communication, but it is still unclear exactly what each questionnaire asked and how different topics within the questionnaires were weighted versus others. Authors of the studies do not provide this information. Thus, reviewers were cautious to include only measures that are recognized in this field of research, but specific information about them is still unknown. Third, a sample size of 39 studies is very small. A small sample of studies inhibits the reviewers from thoroughly examining the correlation between different characteristics of studies, programs, and samples and the studies' impacts. Fourth, most—32—of these studies assessed both the treatment and control groups only at pre- and post-intervention measurement periods. They do not take follow-up measurements to assess impacts over time. Therefore, for the majority of the studies, reviewers are unable to ascertain how the couples' outcomes would change over time. Thus, while this group of 39 studies represents the highest quality evidence available in the field, there are still many concerns that should caution the reader of this review.

Answering the policy question

As explained previously, this review is designed to provide answers to a general policy question posed by the U.S. Department of Health and Human Services. This is the question of how programs may help improve the relationships of couples (specifically low-income couples) and how their improvement may affect the well-being of children. This review informs policymakers on this topic in several ways. First, it presents the current state of high-quality evidence in the field of marriage program evaluation. Second, it reports an average impact of the evaluations as an average effect size and examines how this effect size changes for different types of relationship programs, clients, and studies. The review brings good news, as it indicates that evaluations of marriage programs show significant positive effects on average. Third, it provides a thorough examination of the quality of these studies, thus flagging general quality issues that face the field of program evaluation, and specifically marriage program evaluation.

There are several pieces of the greater policy question that this review is not able to answer, simply because the answers do not yet exist in this field of research. As there are no studies that include "low-income" couples, the review cannot determine the impact of

marriage programs on low-income populations. Also, because very few of these studies follow an "intent-to-treat" model, the review cannot measure the impact of these interventions on couples that drop out of the program, nor can it predict how likely couples would be to want to participate in such a program in the first place. Another concern is that while this review does report on the effectiveness of programs *evaluated* by the field, it is not able to speak to the effectiveness of the current programs in operation at the moment. Because this review examines only the impacts of *evaluated* programs, one must consider whether or not evaluated programs would be different from non-evaluated programs. Lastly, these studies do not evaluate the impact of relationship programs on clients' children. Some studies do mention whether or not the clients have children, but there are no measures taken on their well-being. Thus the review is not able to assess the programs' effectiveness on children of clients. In the future, it will be necessary for researchers to examine programs that serve low-income clients and assess the well-being of clients' children in order to inform policymakers on questions of greater interest.

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Table 1: Characteristics of Included Studies

Study								
Author	Intervention type	Publication year	Country	Location	Follow- up length (months)	Control sample	Treat sample	Total sample
Kelly, Adrian B, Halford, W. Kim, Young, Ross McD	Education	2000	Australia	INT	1	9	14	23
Baucom DH, Lester GW	Therapy	1986	USA	S	0	8	8	16
Beach-SRH Oleary-KD	Therapy	1992	USA	NY	0	12	12	24
Hickmon-WA Protinsky-HO Singh-K	Counseling	1997	USA	AK	0	12	12	24
Sweany, Susan Love	Education	1987	USA	WA	7	7	7	14
Brainerd, Gary L	Communication	1977	USA	CA	0	8	28	36
Ewart, Craig K	Therapy	1978	USA	CA	0	3	10	13
Schaden, J. Robert	Premarital preparation	1981	USA	MI	0	21	21	42
Harrington, Christine Marie	Premarital preparation	1997	USA	PA	0	46	38	84
Molmer D, Wilson L, Cummings S	Communication	1995	Canada	INT	6	29	41	70
Snyder DK, Wills RM	Therapy	1989	USA	MW	0	20	29	49
Baucom DH, Sayers SL, Sher TG	Therapy	1990	USA	NC	0	12	12	24
Kaiser, Andrea, Hahlweg, Kurt, Fehm-Wolfsdorf, Gabriele, Groth, Thomas	Education	1998	Germany	INT	0	36	31	67
Goldman-A Greenberg-L	Therapy	1992	Canada	INT	0	14	14	28
Fals-stewart-W Birchler-GR Ofarrell-TJ	Therapy	1996	USA		12	40	40	80
Ripley-JS Worthington-EL	Enrichment	2002	USA	VA	0.75	16	16	32
Davidson-GNS Horvath-AO	Therapy	1997	Canada	INT	0	20	19	39
James, Paul S	Counseling	1991	Canada	INT	0	14	14	28
Dandeneau, Michel L, Johnson, Susan M	Therapy	1994	Canada	INT	0	12	12	24
Floyd, Frank J	Premarital preparation	1988	USA	MI	0	16	16	32
Montag, Kimberly R, Wilson, Gregory L	Therapy	1992	USA	WA	0	5	5	10
MacPhee, David C; Johnson, Susan M; Van Der Veer, Monika M C	Therapy	1995	Canada	INT	0	24	25	49
Jacobson NS	Therapy	1977	USA	NC	0	5	5	10
D'Augelli AR, And Others	Communication	1974	USA	PA	0	17	17	34
Witkin SL, Edleson JL, Rose SD, Hall JA	Communication	1982	USA		2	18	18	36
Miller, Sherod, Nunnally, Elam W, Wackman, Daniel B	Communication	1976	USA	MN	0	15	17	32
Ely, A. L., Guerney, B. G., Jr., & Stover, L.	Therapy	1973	USA	NJ	0	11	11	22
Wimberly, JD	Therapy	1997	USA	WI	0	9	8	17
Trathen, DW	Premarital preparation	1995	USA	CO	0	22	26	48
Baucom, D. H.	Therapy	1982	USA	TX	0	18	18	36
Harrell, J.E.	Enrichment	1974	USA	PA	0	15	15	30
Adam, D and Gingras, M	Enrichment	1982	Canada	INT	0	19	19	38
Hahlweg, K., Revenstorf, D., & Schindler, L.	Communication	1982	Germany	INT	0	25	25	50
Jacobson, N.S.	Communication	1984	USA	WA	0	18	18	36
Boelens, W., Emmelkamp, P., MacGillavry, D., & Markvoort, M.	Counseling	1980	The Netherlands	INT	0	5	8	13
OFarrell, T.J., Cutter, H.S.G., & Floyd, F.J.	Therapy	1985	USA	MA	3	12	10	22
Johnson, S.M.	Therapy	1986	Canada	INT	0	15	15	30
Nunnally, E.W.	Communication	1971	USA	MN	0	15	16	31
Warner, M.D.	Communication	1984	USA	IN	0	12	10	22

Table 1 (continued)

Study	Program				
Author	Number of sessions	Session length	Program duration	Total hours	Group size
Kelly, Adrian B, Halford, W. Kim, Young, Ross McD	6	1	42	6	5
Baucom DH, Lester GW	12	2	84	24	1
Beach-SRH Oleary-KD	17	1	105	17	1
Hickmon-WA Protinsky-HO Singh-K	2	8	2	16	12
Sweany, Susan Love	8	2	56	16 .	
Brainerd, Gary L	8	1.25	56	10	1
Ewart, Craig K	10	1	70	10	1
Schaden, J. Robert	2	4	2	8 .	
Harrington, Christine Marie	3	3	21	9	5
Midmer D, Wilson L, Cummings S	2	3 .		6	5
Snyder DK, Wills RM	19	1	84	19	1
Baucom DH, Sayers SL, Sher TG	12	1	84	12	1
Kaiser, Andrea, Hahlweg, Kurt, Fehm-Wolfsdorf, Gabriele, Groth, Thomas	2	8	2	16	4
Goldman-A Greenberg-L	10	1	70	10	1
Fals-stewart-W Birchler-GR Ofarrell-TJ	12	1	84	12	1
Ripley-JS Worthington-EL	2	8	2	16	4
Davidson-GNS Horvath-AO	12	1	28	12	1
James, Paul S	12	1	84	12	1
Dandeneau, Michel L, Johnson, Susan M	6	2	42	12	1
Floyd, Frank J	5	3	35	15 .	
Montag, Kimberly R, Wilson, Gregory L	8	2	56	16	1
MacPhee, David C; Johnson, Susan M; Van Der Veer, Monika M C	10 .		70		1
Jacobson NS	8 .		63 .		1
D'Augelli AR, And Others	8	2	56	16	3
Witkin SL, Edleson JL, Rose SD, Hall JA	6 .	.	.	.	
Miller, Sherod, Nunnally, Elam W, Wackman, Daniel B	4	3	28	12	4
Ely, A. L., Guerney, B. G., Jr., & Stover, L.	9	2	70	18	3
Wimberly, JD	12	2	84	24	3
Trathen, DW	6	2	42	12	1
Baucom, D. H.	10	1	70	10	1
Harrell, J.E.	8	2	56	16	3
Adam, D and Gingras, M	8	3	56	24	5
Hahlweg, K., Revenstorf, D., & Schindler, L.	14	2 .		28	3
Jacobson, N.S.	12	1.25 .		15	1
Boelens, W., Emmelkamp, P., MacGillavry, D., & Markvoort, M.	10	1	56	10	1
O'Farrell, T.J., Cutter, H.S.G., & Floyd, F.J.	10	2	70	20	4
Johnson, S.M.	8	1	56	8	1
Nunnally, E.W.	4	3	28	12	4.5
Warner, M.D.	4	3	28	12	10

Table 1 (continued)

Study	Recruitment					
Author	News/media	Prof referral	Client initiated	Church	Already in treatment	Classes/lectures
Kelly, Adrian B, Halford, W. Kim, Young, Ross McD	Yes	No	No	No	No	No
Baucom DH, Lester GW	Yes	Yes	Yes	No	No	No
Beach-SRH Oleary-KD	Yes	No	No	No	No	No
Hickmon-WA Protinsky-HO Singh-K	No	No	No	Yes	No	No
Sweany, Susan Love	.	.	.	.	.	.
Brainerd, Gary L	Yes	Yes	No	No	No	No
Ewart, Craig K	Yes	Yes	No	No	No	No
Schaden, J. Robert	.	.	.	.	.	.
Harrington, Christine Marie	No	No	Yes	No	No	No
Midmer D, Wilson L, Cummings S	No	No	No	No	Yes	No
Snyder DK, Wills RM	Yes	No	No	No	No	No
Baucom DH, Sayers SL, Sher TG	No	Yes	Yes	No	No	No
Kaiser, Andrea, Hahlweg, Kurt, Fehm-Wolfsdorf, Gabriele, Groth, Thomas	Yes	No	No	No	No	No
Goldman-A Greenberg-L	Yes	No	No	No	No	No
Fals-stewart-W Birchler-GR Ofarrell-TJ	No	Yes	Yes	No	No	No
Ripley-JS Worthington-EL	Yes	No	No	No	No	No
Davidson-GNS Horvath-AO	No	Yes	Yes	No	No	No
James, Paul S	Yes	No	No	No	No	No
Dandeneau, Michel L, Johnson, Susan M	Yes	No	No	No	No	No
Floyd, Frank J	Yes	No	No	No	No	No
Montag, Kimberly R, Wilson, Gregory L	Yes	No	No	No	No	No
MacPhee, David C; Johnson, Susan M; Van Der Veer, Monika M C	Yes	No	No	No	No	No
Jacobson NS	Yes	No	No	No	No	No
D'Augelli AR, And Others	No	No	No	No	No	Yes
Witkin SL, Edleson JL, Rose SD, Hall JA	Yes	No	No	No	No	No
Miller, Sherod, Nunnally, Elam W, Wackman, Daniel B	Yes	No	No	No	No	Yes
Ely, A. L., Guerney, B. G., Jr., & Stover, L.	No	No	No	No	No	No
Wimberly, JD	Yes	No	No	No	No	No
Trathen, DW	.	.	.	.	.	.
Baucom, D. H.	Yes	No	No	No	No	No
Harrell, J.E.	Yes	No	No	No	No	Yes
Adam, D and Gingras, M	Yes	No	No	No	No	No
Hahlweg, K., Revenstorf, D., & Schindler, L.	Yes	Yes	No	No	No	No
Jacobson, N.S.	Yes	Yes	Yes	No	No	No
Boelens, W., Emmelkamp, P., MacGillavry, D., & Markvoort, M.	No	Yes	No	No	No	No
O'Farrell, T.J., Cutter, H.S.G., & Floyd, F.J.	No	Yes	No	No	No	No
Johnson, S.M.	Yes	No	Yes	No	No	No
Nunnally, E.W.	Yes	No	Yes	No	No	No
Warner, M.D.	No	No	No	Yes	No	No

Table 1 (continued)

Study	Sample details									
Author	Couple type	Average age	% white	% married	Years education	Avg income	Years together	% religious	Post-test attrition rate	Follow-up attrition rate
Kelly, Adrian B, Halford, W. Kim, Young, Ross McD	Distressed	43.9	.	.	.	.	12.7	.	71.9%	34.4
Baucom DH, Lester GW	Distressed	32.1	.	100.0%	15.6	.	.	.	100.0%	50.0
Beach-SRH Oleary-KD	Distressed	40.7	.	100.0%	14.2	$49,387	14	.	80.0%	80.0
Hickmon-WA Protinsky-HO Singh-K	Unknown	32.5	.	100.0%	16	$34,040	10	100.0%	91.7%	91.7
Sweany, Susan Love	Distressed	36.5	.	100.0%	.	.	.	.	100.0%	100.0
Brainerd, Gary L			92.0%	100.0%					97.3%	97.3
Ewart, Craig K	Distressed	38.8	.	100.0%	15.4	$70,500	12.3	.	72.2%	72.2
Schaden, J. Robert	Nondistressed	23.3	100.0%	0.0%	.	.	.	.	100.0%	100.0
Harrington, Christine Marie	Nondistressed	27	.	0.0%	14.7	$34,560	1.25	100.0%	91.3%	91.3
Midmer D, Wilson L, Cummings S	Nondistressed	30.9	86.0%	97.0%	16.7	.	.	.	79.5%	80.7
Snyder DK, Wills RM	Distressed	38.6	84.0%	100.0%	15.7	.	12.6	.	96.0%	96.0
Baucom DH, Sayers SL, Sher TG	Distressed	34.1	97.0%	100.0%	16.3	.	8.1	.	100.0%	80.0
Kaiser, Andrea, Hahlweg, Kurt, Fehm-Wolfsdorf, Gabriele, Groth, Thomas	Unknown	38.8	100.0%	79.0%	.	.	10.9	32.0%	100.0%	71.6
Goldman-A Greenberg-L	Distressed	38.5	100.0%	.	13	$50,438	11.3	.	100.0%	89.3
Fals-stewart-W Birchler-GR Ofarrell-TJ	Distressed	33.6	85.0%	100.0%	11.8	$11,720	6.1	.	92.5%	N/A
Ripley-JS Worthington-EL	Nondistressed	37.8	76.0%	100.0%	15	$49,143	9.5	12.0%	91.4%	82.9
Davidson-GNS Horvath-AO	Distressed	35.9	100.0%	.	.	.	.	.	97.5%	N/A
James, Paul S	Distressed	.	.	.	15	.	9.64	.	100.0%	N/A
Dandeneau, Michel L, Johnson, Susan M	Nondistressed	40.9	.	100.0%	.	.	15.7	.	100.0%	N/A
Floyd, Frank J	Nondistressed	23	.	0.0%	14.6	$7,500	.	.	80.0%	N/A
Montag, Kimberly R, Wilson, Gregory L	Distressed	37.9	.	93.0%	.	.	14.7	.	100.0%	80.0
MacPhee, David C; Johnson, Susan M; Van Der Veer, Monika M C	Both	41.5	.	.	.	.	14	.	90.7%	N/A
Jacobson NS	Distressed	30.9	.	100.0%	.	.	5.2	.	83.3%	N/A
D'Augelli AR, And Others	Nondistressed	19.8	.	0.0%	14	.	1.25	.	70.8%	N/A
Witkin SL, Edleson JL, Rose SD, Hall JA	Nondistressed	32.5	.	100.0%	16	.	7.5	.	90.0%	N/A
Miller, Sherod, Nunnally, Elam W, Wackman, Daniel B	Nondistressed	.	.	0.0%	.	.	.	.	100.0%	N/A
Ely, A. L., Guerney, B. G., Jr., & Stover, L.	Unknown	32.6	.	100.0%	.	.	10	.	95.7%	N/A
Wimberly, JD	Distressed	39.8	85.0%	.	15.7	.	7.98	.	77.3%	N/A
Trathen, DW	Nondistressed	30	95.0%	.	.	.	1.75	.	90.6%	N/A
Baucom, D. H.	Distressed	32	.	100.0%	14	.	.	.	100.0%	86.1
Harrell, J.E.	Nondistressed	30.2	.	100.0%	14.6	.	8.9	70.0%	85.7%	N/A
Adam, D and Gingras, M	Nondistressed	31.5	.	92.0%	15.6	.	8	.	100.0%	57.9
Hahlweg, K., Revenstorf, D., & Schindler, L.	Distressed	33.3	.	90.0%	.	.	8.4	.	89.3%	89.3
Jacobson, N.S.	Distressed	37.4	.	100.0%	14	.	10.1	.	91.7%	N/A
Boelens, W., Emmelkamp, P., MacGillavry, D., & Markvoort, M.	Distressed	32.4					8.1		83.3%	83.3
O'Farrell, T.J., Cutter, H.S.G., & Floyd, F.J.	Distressed	41.4	.	100.0%	12.4	.	15.8	.	91.7%	N/A
Johnson, S.M.	Distressed	35.3			15		8.6		100.0%	100.0
Nunnally, E.W.	Nondistressed	.	.	.	14.4	.	1.429	.	79.5%	N/A
Warner, M.D.	Nondistressed	29.7	.	.	.	.	7.02	100.0%	95.5%	N/A

Table 1 (continued)

Study	Quality		
Author	Random Assignment	Intent to treat	Treatment/ control differences
Kelly, Adrian B, Halford, W. Kim, Young, Ross McD	Pure random	Did not follow up attrition couples	unknown
Baucom DH, Lester GW	Pure random	No attrition couples	Checked for and found none
Beach-SRH Oleary-KD	Pure random	Did not follow up attrition couples	Checked for and found none
Hickmon-WA Protinsky-HO Singh-K	Pure random	Did not follow up attrition couples	unknown
Sweany, Susan Love	Pure random	No attrition couples	unknown
Brainerd, Gary L	Matched random	Did not follow up attrition couples	unknown
Ewart, Craig K	Pure random	Did not follow up attrition couples	Checked for and found some
Schaden, J. Robert	Pure random	No attrition couples	unknown
Harrington, Christine Marie	Pure random	Did not follow up attrition couples	Checked for and found none
Midmer D, Wilson L, Cummings S	Pure random	Followed up attrition couples	Checked for and found none
Snyder DK, Wills RM	Pure random	Did not follow up attrition couples	Checked for and found none
Baucom DH, Sayers SL, Sher TG	Pure random	No attrition couples	unknown
Kaiser, Andrea, Hahlweg, Kurt, Fehm-Wolfsdorf, Gabriele, Groth, Thomas	Pure random	No attrition couples	Checked for and found none
Goldman-A Greenberg-L	Pure random	No attrition couples	Checked for and found none
Fals-stewart-W Birchler-GR Ofarrell-TJ	Pure random	Followed up attrition couples	Checked for and found none
Ripley-JS Worthington-EL	Pure random	Did not follow up attrition couples	Checked for and found none
Davidson-GNS Horvath-AO	Pure random	unknown	Checked for and found none
James, Paul S	Pure random	No attrition couples	Checked for and found none
Dandeneau, Michel L, Johnson, Susan M	Pure random	No attrition couples	unknown
Floyd, Frank J	Matched random	Did not follow up attrition couples	Checked for and found none
Montag, Kimberly R, Wilson, Gregory L	Pure random	No attrition couples	Checked for and found none
MacPhee, David C; Johnson, Susan M; Van Der Veer, Monika M C	Pure random	Did not follow up attrition couples	Checked for and found some
Jacobson NS	Pure random	Did not follow up attrition couples	Checked for and found none
D'Augelli AR, And Others	Pure random	Did not follow up attrition couples	Checked for and found none
Witkin SL, Edleson JL, Rose SD, Hall JA	Pure random	Did not follow up attrition couples	Checked for and found none
Miller, Sherod, Nunnally, Elam W, Wackman, Daniel B	Pure random	No attrition couples	unknown
Ely, A. L., Guerney, B. G., Jr., & Stover, L.	Pure random	Did not follow up attrition couples	unknown
Wimberly, JD	Matched random	Did not follow up attrition couples	Checked for and found none
Trathen, DW	Pure random	Did not follow up attrition couples	unknown
Baucom, D. H.	Pure random	No attrition couples	Checked for and found none
Harrell, J.E.	Pure random	Did not follow up attrition couples	Checked for and found none
Adam, D and Gingras, M	Pure random	No attrition couples	unknown
Hahlweg, K., Revenstorf, D., & Schindler, L.	Pure random	Did not follow up attrition couples	Checked for and found none
Jacobson, N.S.	Pure random	unknown	unknown
Boelens, W., Emmelkamp, P., MacGillavry, D., & Markvoort, M.	Pure random	Did not follow up attrition couples	Checked for and found some
O'Farrell, T.J., Cutter, H.S.G., & Floyd, F.J.	Pure random	Followed up attrition couples	Checked for and found some
Johnson, S.M.	Matched random	No attrition couples	Checked for and found none
Nunnally, E.W.	Pure random	Did not follow up attrition couples	Checked for and found some
Warner, M.D.	Pure random	Did not follow up attrition couples	Checked for and found some

Table 1 (continued)

Study	Quality				
Author	Missing data	Pre-test location	Pre-test collector	Post-test location	Post-test collector
Kelly, Adrian B, Halford, W. Kim, Young, Ross McD	Missing data not included	unknown	unknown	unknown	unknown
Baucom DH, Lester GW	no attrition	at home	client	onsite	therapist
Beach-SRH Oleary-KD	Missing data not included	unknown	unknown	unknown	unknown
Hickmon-WA Protinsky-HO Singh-K	Missing data not included	unknown	unknown	unknown	unknown
Sweany, Susan Love	no attrition	unknown	unknown	unknown	unknown
Brainerd, Gary L	Missing data not included	unknown	unknown	unknown	unknown
Ewart, Craig K	Missing data not included	at home	client	unknown	unknown
Schaden, J. Robert	no attrition	unknown	unknown	unknown	unknown
Harrington, Christine Marie	Missing data not included	at home	client	onsite	unknown
Midmer D, Wilson L, Cummings S	unknown	onsite	unknown	at home	client
Snyder DK, Wills RM	Missing data replaced	unknown	unknown	unknown	unknown
Baucom DH, Sayers SL, Sher TG	no attrition	at home	client	onsite	unknown
Kaiser, Andrea, Hahlweg, Kurt, Fehm-Wolfsdorf, Gabriele, Groth, Thomas	no attrition	onsite	unknown	onsite	unknown
Goldman-A Greenberg-L	no attrition	unknown	unknown	unknown	unknown
Fals-stewart-W Birchler-GR Ofarrell-TJ	Missing data estimated	unknown	unknown	unknown	unknown
Ripley-JS Worthington-EL	Missing data not included	onsite	unknown	onsite	unknown
Davidson-GNS Horvath-AO	Missing data not included	onsite	therapist and others	onsite	therapist and others
James, Paul S	no attrition	unknown	unknown	unknown	unknown
Dandeneau, Michel L, Johnson, Susan M	no attrition	onsite	unknown	onsite	unknown
Floyd, Frank J	Missing data not included	unknown	unknown	unknown	unknown
Montag, Kimberly R, Wilson, Gregory L	no attrition	onsite	unknown	onsite	unknown
MacPhee, David C; Johnson, Susan M; Van Der Veer, Monika M C	Missing data not included	unknown	unknown	unknown	unknown
Jacobson NS	Missing data not included	onsite	unknown	onsite	unknown
D'Augelli AR, And Others	Missing data not included	unknown	unknown	unknown	unknown
Witkin SL, Edleson JL, Rose SD, Hall JA	Missing data not included	unknown	not therapists	unknown	not therapists
Miller, Sherod, Nunnally, Elam W, Wackman, Daniel B	no attrition	onsite	unknown	onsite	unknown
Ely, A. L., Guerney, B. G., Jr., & Stover, L.	Missing data not included	at home	client	unknown	unknown
Wimberly, JD	Missing data not included	unknown	unknown	unknown	unknown
Trathen, DW	Missing data not included	unknown	unknown	unknown	unknown
Baucom, D. H.	no attrition	onsite	unknown	onsite	unknown
Harrell, J.E.	Missing data not included	onsite	researcher	onsite	researcher
Adam, D and Gingras, M	Missing data not included	unknown	unknown	unknown	unknown
Hahlweg, K., Revenstorf, D., & Schindler, L.	Missing data not included	onsite	unknown	onsite	unknown
Jacobson, N.S.	unknown	unknown	unknown	unknown	unknown
Boelens, W., Emmelkamp, P., MacGillavry, D., & Markvoort, M.	Missing data not included	onsite	therapist	unknown	unknown
O'Farrell, T.J., Cutter, H.S.G., & Floyd, F.J.	Missing data estimated	onsite	not therapists	onsite	not therapists
Johnson, S.M.	no attrition	onsite	client	onsite	client
Nunnally, E.W.	Missing data not included	onsite	therapist	onsite	therapist
Warner, M.D.	Missing data not included	onsite	therapist	onsite	therapist

Table 1 (continued)

Study	Quality	
Author	Conflict1	Conflict2
Kelly, Adrian B, Halford, W. Kim, Young, Ross McD	Investigator was therapist	unkown
Baucom DH, Lester GW	Investigator was therapist	unkown
Beach-SRH Oleary-KD	unknown	Investigator wrote program
Hickmon-WA Protinsky-HO Singh-K	unknown	unkown
Sweany, Susan Love	Investigator was therapist	unkown
Brainerd, Gary L	Investigator was therapist	Investigator wrote program
Ewart, Craig K	Investigator was therapist	unkown
Schaden, J. Robert	unknown	unkown
Harrington, Christine Marie	unknown	unkown
Midmer D, Wilson L, Cummings S	unknown	unkown
Snyder DK, Wills RM	unknown	unkown
Baucom DH, Sayers SL, Sher TG	unknown	unkown
Kaiser, Andrea, Hahlweg, Kurt, Fehm-Wolfsdorf, Gabriele, Groth, Thomas	Investigator was therapist	Investigator wrote program
Goldman-A Greenberg-L	unknown	unkown
Fals-stewart-W Birchler-GR Ofarrell-TJ	unknown	Investigator wrote program
Ripley-JS Worthington-EL	unknown	Investigator wrote program
Davidson-GNS Horvath-AO	Investigator was one of therapists	Investigator wrote program
James, Paul S	unknown	Investigator wrote program
Dandeneau, Michel L, Johnson, Susan M	unknown	Investigator wrote program
Floyd, Frank J	unknown	unkown
Montag, Kimberly R, Wilson, Gregory L	Investigator was therapist	unkown
MacPhee, David C; Johnson, Susan M; Van Der Veer, Monika M C	unknown	unkown
Jacobson NS	Investigator was therapist	Investigator wrote program
D'Augelli AR, And Others	unknown	unkown
Witkin SL, Edleson JL, Rose SD, Hall JA	Investigator was not one of therapists	unkown
Miller, Sherod, Nunnally, Elam W, Wackman, Daniel B	unknown	unkown
Ely, A. L., Guerney, B. G., Jr., & Stover, L.	unknown	Investigator wrote program
Wimberly, JD	unknown	unkown
Trathen, DW	unknown	unkown
Baucom, D. H.	Investigator was not one of therapists	unkown
Harrell, J.E.	Investigator was one of therapists	unkown
Adam, D and Gingras, M	Investigator was therapist	unkown
Hahlweg, K., Revenstorf, D., & Schindler, L.	Investigator was one of therapists	unkown
Jacobson, N.S.	Investigator was not one of therapists	Investigator wrote program
Boelens, W., Emmelkamp, P., MacGillavry, D., & Markvoort, M.	unknown	Investigator did not write program
O'Farrell, T.J., Cutter, H.S.G., & Floyd, F.J.	Investigator was one of therapists	unkown
Johnson, S.M.	unknown	unkown
Nunnally, E.W.	unknown	unkown
Warner, M.D.	unknown	unkown

Table 2. Relationship Satisfaction				
Condition	**Mean Effect Size**	**Upper limit (95% confidence interval)**	**Lower limit (95% confidence interval)**	**Sample size**
Overall*	0.68	0.54	0.82	28
Program Type				
Therapy*[a]	0.86	0.67	1.06	15
Pre-marital[a]	0.08	-0.48	0.65	1
Enrichment[a]	0.23	-0.27	0.72	2
Education/Communication skills*[a]	0.58	0.32	0.83	8
Counseling*	0.94	0.30	1.58	2
Program Characteristics				
Fewer than 10 total hours*[a]	1.17	0.57	1.77	2
10-15 hours*	0.71	0.51	0.91	13
Over 15 hours*[a]	0.59	0.35	0.82	10
Fewer than 5 sessions[a]	0.06	-0.30	0.42	3
Between 5 and 10 sessions*	0.66	0.46	0.86	16
12 sessions or more*[a]	0.98	0.75	1.22	9
Hour-long sessions*[a]	0.88	0.70	1.06	17
Sessions between 2 and 4*[a]	0.47	0.20	0.75	9
8 hour sessions[a]	0.15	-0.25	0.54	2
Weekend programs[a]	0.15	-0.25	0.54	2
Between 1 and nine weeks*	0.55	0.33	0.78	13
Between 10 and 15 weeks*[a]	0.90	0.68	1.11	11
Treatment group size more than 1*[a]	0.41	0.14	0.67	7
Treatment group size of 1*[a]	0.80	0.63	0.97	19
Study Quality				
High retention only*	0.65	0.50	0.80	24
Low retention*	0.99	0.53	1.45	4
Couples				
Distressed*[a]	0.94	0.75	1.12	18
Non-distressed*[a]	0.44	0.17	0.70	7

* These effect sizes are statistically significant on their own (the treatment group has, on average, a greater increase in satisfaction than the control group)

[a] The difference between this measure and the other measures in the group is statistically significant at the $p<.05$ level.

Table 3. Relationship Communication				
Condition	**Mean Effect Size**	**Upper limit (95% confidence interval)**	**Lower limit (95% confidence interval)**	**Sample size**
Overall*	0.26	0.06	0.45	13
Program Type				
Therapy	0.38	-0.01	0.76	5
Pre-marital	0.11	-0.33	0.55	2
Enrichment[a]	-0.43	-0.93	0.08	2
Education/Communication skills*	0.51	0.20	0.83	4
Counseling				0
Program Characteristics				
Fewer than 10 total hours	N/A	N/A	N/A	0
10-15 hours	0.12	-0.17	0.41	6
Over 15 hours*	0.37	0.11	0.64	7
Fewer than 5 sessions*	0.36	0.00	0.73	3
Between 5 and 10 sessions	0.11	-0.17	0.39	7
12 sessions or more*	0.45	0.02	0.87	3
Hour-long sessions	0.20	-0.23	0.63	3
Sessions between 2 and 4	0.18	-0.08	0.44	8
8 hour sessions*	0.49	0.08	0.89	2
Weekend programs*	0.49	0.08	0.89	2
Between 1 and nine weeks[a]	-0.04	-0.35	0.27	6
Between 10 and 15 weeks*	0.45	0.04	0.86	4
Treatment group size more than 1*	0.29	0.02	0.56	6
Treatment group size of 1	0.18	-0.17	0.46	6
Study Quality				
High retention only*	0.26	0.06	0.45	13
Low retention	N/A	N/A	N/A	0
Couples				
Distressed*	0.39	0.08	0.71	6
Non-distressed	-0.12	-0.43	0.18	5

* These effect sizes are statistically significant on their own (the treatment group has, on average, a greater increase in communication than the control group)

[a] The difference between this measure and the other measures in the group is statistically significant at the $p<.05$ level.