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A component analysis of a brief psycho-educational couples' workshop: one-year follow-up results

Julia C. Babcock,[a] John M. Gottman,[b]
Kimberly D. Ryan[b] and Julie S. Gottman[b]

This study tested moderators of treatment outcome of the 'Art and Science of Love (ASL) Workshop', a couples' group psycho-educational intervention with 80 distressed married couples. Couples were randomly assigned to one of four conditions: (1) friendship enhancement alone, (2) conflict management alone, (3) combined friendship enhancement + conflict management or (4) bibliotherapy. Three outcomes were assessed: (1) relationship satisfaction, (2) friendship quality and (3) destructive conflict at pre-, post- and one year following the intervention. All conditions led to increased marital satisfaction and decreased problems with friendship and destructive conflict at one-year follow-up. Examining exposure to the components of the ASL workshop in a 2×2 design – friendship enhancement (yes/no) vs. conflict management (yes/no) – revealed differential impact for men's and women's relationship outcomes over time. Results suggest that the combined condition produced the greatest changes in marital satisfaction and the greatest decreases in problems in friendship and conflict, particularly for men.

Practitioner points

- A combination of friendship enhancement and conflict management is recommended to maximize outcomes.
- Bibliotherapy alone may be effective for significantly distressed couples without co-morbid problems.
- Psycho-education is recommended before a course of more intensive couple therapy.
- Men and women have different needs and respond to particular aspects of the programme.
- Women particularly value the component concerning how to deal with conflict constructively and require more than the friendship enhancement component of the programme.

Keywords: brief therapy; couple therapy; marital research.

[a] University of Houston, 126 Heyne Bldg, Houston, TX 77204-5022, USA
[b] The Gottman Institute, 1401 East Jefferson Street, Suite 501, Seattle, WA 98122, USA

Introduction

A variety of marital therapy interventions have demonstrated their efficacy in increasing marital satisfaction for distressed couples (Baucom *et al*., 1990, 1998; Christensen *et al*., 2004; Christensen and Heavey, 1999; Jacobsen and Addis, 1993; Johnson *et al*., 1999; Snyder and Halford, 2012). In fact, *any* couples' intervention may be superior to a waiting-list control because couples on a waiting list tend to deteriorate over time without treatment (Baucom *et al*., 2003; Jacobson and Christensen, 1996). While various couples' interventions have been found to be equivalent in efficacy (Benson *et al*., 2012), most therapies combine specific strategies into a therapy package (Baucom *et al*., 1998). Few studies have examined which components of couples' interventions are particularly effective for what type of couple – that is, examine attribute by treatment interactions (Jacobson and Addis, 1993).

To our knowledge, only one previous study has examined the efficacy of specific therapeutic components of couples' therapy as it relates to relationship outcomes. Jacobson *et al*. (Jacobson 1984; Jacobson *et al*., 1985, 1987) conducted a dismantling study of behavioural marital therapy, evaluating conflict management and behaviour exchange separately and in combination. Behaviour exchange, designed to enhance positive interactions, had a smaller effect size as compared to conflict management alone. However, even though the conflict management techniques had larger effect sizes, there was significant relapse by the one-year follow-up. However, when behaviour exchange was combined with the conflict management, relapse was significantly reduced. Hence, there is some reason to believe that a combination of interventions focused on improving conflict and enhancing positive exchanges and friendship might be most efficacious for distressed couples.

The present study used a similar dismantling research design to investigate the relative effects of these two kinds of interventions: friendship building and conflict management. We used a brief psycho-educational group training, rather than a private dyadic therapy format. Research suggests that brief couples' group psycho-educational approaches can produce significant improvements in the marital satisfaction of distressed couples (Gottman, 1979; Halford *et al*., 2001; Kaiser *et al*., 1998; Van Widenfelt *et al*., 1996), and they tend to be less expensive than traditional couples therapy. However, three issues need to be investigated in psycho-educational pro-

grammes for distressed couples: (1) if couples relapse over time, (2) if psycho-educational intervention works for severely distressed couples and (3) how this change comes about. In this article we investigate all three questions.

Content of The Art and Science of Love workshop

The present investigation evaluated treatment outcomes and moderators of treatment outcomes of the Art and Science of Love (ASL; Gottman, 1999) two-day workshop. This workshop includes one day on enhancing friendship and one day focusing on conflict management. Day 1, the deepening friendship and intimacy day, covers three topics: (1) acquiring knowledge of the partner's inner psychological world, which we call building a 'love map', by asking open-ended questions (Gottman, 1994, 1999), (2) expressing affection and respect on an everyday basis, which we call building the 'fondness and admiration system' (Gottman and Silver, 1999) and (3) turning toward one's partner's bids for emotional connection (Driver and Gottman, 2004a). These three components were derived from decades of research with couples showing that friendship and admiration predict relationship satisfaction and stability over time (Belsky and Kelly, 1994; Cowan and Cowan, 2002; Driver and Gottman, 2004b; Shapiro *et al*., 2000). In fact, it is the absence of positive affect and not the presence of negative affect that predicted the couples who would later divorce (Gottman, 1994). Moreover, intimacy and friendship appear to be especially important for women (Fehr, 2004, Grabill and Kerns, 2000).

Day 2 of the workshop, the conflict management intervention, addresses how to tackle solvable and unsolvable or 'gridlocked' issues (Gottman, 1994) in a two-pronged approach. For solvable problems we employ behavioural communication skills training, teaching a gentle approach to conflict management (softened start-up, accepting influence, effective repair and compromise). We also use affective techniques to address the existentially based hidden agendas and underlying dreams within the conflict. For unsolvable problems, or gridlocked conflict, we use existentially based interventions. We use what we call the 'dreams-within-conflict' intervention. The hidden agendas in gridlocked conflict tend to be about basic philosophical and emotionally based beliefs tied into people's life histories. This intervention examines the *meaning* of each person's position, the 'life dream' that underlies each person's position on the issue and the

personal history of this dream. Couples talk about the dream behind their position and then find a way to honour one another's dreams within the conflict (Gottman, 1999). This reconceptualizing tends to lessen the intensity of their conflict. Whereas women appear to be particularly sensitive to connection and friendship, decreased conflict appears to be particularly important for men's overall happiness and health (Levenson *et al*., 1994).

Goals of the current study

To test the separate and additive effects of friendship enhancement and conflict management techniques, distressed couples were randomly assigned to the friendship enhancement-alone condition or the conflict management-alone condition, attending the first or second day of the workshop, respectively. Those assigned to the combined condition attended the full two-day workshop. For the bibliotherapy condition, couples were assessed and given a copy of *The Seven Principles for Making Marriage Work* (Gottman and Silver, 1999), which addresses both friendship enhancement and conflict management strategies.

The primary objective of the current study was to test the long-term effects on changes in friendship quality and destructive conflict across the four distinct delivery formats: (1) friendship enhancement alone, (2) conflict management alone, (3) the combined intervention and (4) a bibliotherapy control that contained no structured presentation of conflict or friendship enhancement. This study also tests relationship satisfaction and gender as moderators of the friendship and conflict management outcomes. Dismantling studies, also called component analyses (Jacobson *et al*., 1985), may help to determine which therapeutic technique is accounting for different treatment effects, allowing us to begin to verify the change mechanisms. For the ASL workshop, each procedure is expected to impact its intended target: exposure to the friendship enhancement should lead to decreased problems in friendship, whereas exposure to the conflict management should decrease harmful conflict. By comparing these components with one another and with the total workshop package, one can assess whether the intervention works for the reasons that we hypothesize it does.

First, we hypothesized that couples in all intervention formats would show increases in marital satisfaction and decreases in problems with friendship quality and destructive conflict over time. Second, couples receiving the combined intervention were expected to demonstrate greater gains in satisfaction, friendship and conflict

than couples in the other three conditions. Third, initial levels of marital distress were thought to moderate treatment outcome. Specifically, all intervention formats were expected to be more effective for moderately distressed couples than severely distressed couples. Finally, our clinical experience suggests that men typically enter treatment seeking less conflict, whereas women typically enter treatment seeking better friendship and intimacy through better emotional connection. Hence, our fourth hypothesis was that husbands and wives would show differential treatment effects across intervention formats. Based on clinical experience, we expected that men would gain more from the conflict management than women, whereas women would gain more from the friendship enhancement than would men.

Methods

Participants and screening measures

Eighty maritally distressed couples were recruited to particpate in a psycho-educational intervention outcome study in Seattle, Washington. Radio and television interviews, newspaper advertisements and flyers described the free psycho-educational intervention. All couples who responded to advertisements answered a set of telephone survey questions that assessed marital status, marital satisfaction and availability to attend the intervention weekends. To be eligible for the study couples had to (1) be living together and legally married, (2) be able to attend the scheduled psycho-educational workshops and (3) have at least one partner with a marital satisfaction score of less than 93 on the Marital Adjustment Test (MAT, Locke and Wallace, 1959). This is a common cut-off score for marital distress on the MAT (Abramowitz and Sewell, 1980). This randomized clinical trial recruited distressed couples, because previous research has found that interventions for non-distressed couples can lead to worsening marital satisfaction (Halford *et al*., 2001). Couples meeting these initial selection criteria were mailed a packet of questionnaires to complete individually, a consent form, a cover letter with directions and a pre-paid return envelope. For safety purposes, couples were excluded if they reported suicidality, substance addiction, domestic violence and antisociality on the questionnaires designed for this purpose (Gottman, 1999). Care was taken so that couples matched the ethnic composition of the Greater Seattle Metropolitan Area. Using a random numbers table, the couples from each ethnic identity category (White, African-American, Hispanic, Asian-American, Pacific Islander or Hawaiian

and Native American) were randomly assigned to participate in one of the four psychoeducational interventions. The process of random assignment using a random numbers table continued until each intervention format was assigned twenty couples. Given the work suggesting that treatment conditions should be perceived as equally credible by participants (Jacobson and Baucom, 1977), the procedures for assignment described each condition as a psychoeducational intervention designed to decrease marital distress. All participants were offered the workshop or book free of charge, but were not paid for their participation in assessments. None of the couples refused to participate on the basis of their assignment to an intervention group. Following assignment, all couples were scheduled for a pre-intervention and a post-intervention laboratory session.

Assessment procedures

Couples participating in this randomized clinical trial were mailed a packet of questionnaires, which they brought with them to the pre-intervention laborary assessment, during which the couple engaged in a videotaped conflict discussion. Then, with the exception of the bibliotherapy condition, all couples participated in either a one-day or a two-day manualized marital workshop modelled on the Gottman Institute's 'The Art and Science of Love' workshop. This two-day manualized workshop focuses on friendship enhancement on the first day and conflict management on the second day. The friendship enhancement alone condition was the first day of the workshop. The conflict management alone condition was the second day of the workshop. The combined condition was the two-day 'Art and Science of Love' workshop (Gottman, 1999). Data were collected on twenty couples in a fifth condition, the two-day workshop plus a relapse prevention module (Ryan, 2001), but that condition is not included in the current paper. Each workshop day was eight hours in length, and was conducted by Dr John Gottman and Dr Julie Schwartz-Gottman. Approximately one week after attending the workshops, all couples were mailed a packet of post-treatment questionnaires. These questionnaires were collected at the post-treatment laboratory session, which was identical to the pre-intervention laboratory session. Couples were contacted by mail six months later for a brief assessment of marital satisfaction and marital status (together, separated or divorced). Finally, couples completed the full questionnaire battery and laboratory assessment at a one-year follow-up.

The interventions

Friendship enhancement alone. The goals of this component, delivered on Day 1 of the workshop, were to enhance couple friendship (e.g. building love maps, building fondness and admiration, and enhancing emotional connection through turning toward one another in everyday interaction) and to decrease problems in couple friendship quality. These topics were examined using lectures, discussions, direct instruction and participation in structured exercises. For the sake of providing a reasonably complete theory of how marriages function, the manual included an abbreviated section on repair and exercises on repair of negative interactions. Couples broke into dyads and practised having a recovery conversation using the 'Aftermath of a Fight' procedure (Gottman, 1999, p. 189). Finally, lectures were used to underscore the importance of couple friendship in carrying out effective repair.

Conflict management alone. In this condition, delivered on Day 2 of the workshop, lectures and exercises were used to teach couples to regulate gridlocked conflict by using the 'dreams-within-conflict' exercises for gridlocked problems (Gottman and Silver, 1999, pp. 215–241). The management of solvable conflict was addressed by teaching behavioural communication skills, including softened start-up, accepting influence, effective repair, physiological self- and partner-soothing, taking effective breaks, and compromise.

Combined condition. This condition, where couples attended both days of the workshop, involved a combination of the two treatment components, providing couples with the skills to address both friendship enhancement and conflict management within their relationship.

Bibliotherapy. A control group was given a book about marriage to read. Because couples in waiting-list control or no-treatment control conditions show deterioration in marital quality during the waiting period (Baucom *et al*., 2003; Wesley and Waring, 1996), we chose instead to employ a minimal treatment, bibliotherapy control group. Couples in this group received only a copy of Gottman and Silver's (1999) book *The Seven Principles for Making Marriage Work* plus participated in our repeated assessments. While it is possible that the couples in the bibliotherapy condition received an intervention similar to those in the combined psychoeducational workshop condition, their

exposure to the materials was not structured or monitored. There was no assessment as to whether partners actually read the book.

Outcome measures

Outcome measures assessed couple relationship satisfaction, couple relationship status and two of the major domains of the Sound Marital House model hypothesized to be mechanisms of change, namely friendship and conflict.

Marital Adjustment Test (MAT). Developed by Locke and Wallace (1959), the MAT is a fifteen-item self-report measure covering domains of marital functioning such as disagreement, communication, leisure time activities and regrets about marrying your spouse. The MAT is one of the most widely used measures in the field, and is considered to be a highly reliable and valid measure (Burgess *et al*., 1971). The MAT is internally reliable (alpha = 0.73), and its three-month test–retest reliability is approximately 0.68 (MacEwen and Barling, 1988). The MAT was administered at all timepoints: telephone screening, pre-intervention, post-intervention and six-month and one-year follow-up. In the current study the MAT was used as an outcome measure, primarily to compute the reliable change index and the negative reliable change index. A composite score of couples' pre-intervention relationship satisfaction (the centred average of husband and wife screening MAT scores) was also entered into a generalized linear model (GLM) as a between-subject factor to test for differential efficacy of treatment by level of relationship distress.

Sound Relationship House questionnaires (SRH). The SRH questionnaires are a set of true/false self-report scales developed by Gottman (1999, pp. 379–386) to assess domains of marital functioning relevant to the stability of and communication patterns within couple relationships. These domains include friendship quality, sex, romance and passion, shared meaning and destructive conflict. Friendship quality and shared meaning was combined to assess problems in friendship. Destructive conflict questionnaires were used to assess problems with destructive conflict. Decreased problems with friendship was thought to be a mechanism of change of friendship enhancement; decreased problems with destructive conflict was hypothesized to be a mechanisms of change of the conflict management intervention.

Problems in friendship quality. This outcome was computed by summing the number of problems (yes/no) on six scales on friendship and

shared meaning: (1) love maps (twenty items, sample item: 'I know my partner's current worries' $\alpha = 0.60$), which assesses interest in and knowledge of partner's inner psychological world; 2) fondness and admiration (twenty items, sample item: 'I am really proud of my partner' $\alpha = 0.89$), which assesses affection and respect in the marriage; (3) turning toward (twenty items, sample item: 'My partner is usually interested in hearing my views on things' $\alpha = 0.89$), which assesses the quality of everyday emotional connection; (4) shared goals (ten items, sample item: 'We share many of the same goals in our life together' $\alpha = 0.75$), which assesses shared values and life goals; (5) shared rituals (twenty items, sample item: 'During weekends we do a lot of things together that we enjoy and value' $\alpha = 0.69$), which assesses shared rituals of connection (Doherty, 1997); and (6) shared symbols (twenty items, sample item: 'We see eye-to-eye about what a "home" means' $\alpha = 0.84$), which assesses shared definition of central symbols (e.g. a home, love). These six subscales were combined into a composite outcome variable to improve the normality of the distribution. The composite variable for problems in friendship was the sum of problems on love maps, fondness and admiration, turning toward, shared goals, shared rituals and shared symbols (range 0–6).

Problems with destructive conflict. This outcome is computed from eight scales: (1) harsh start-up (twenty items, sample item: 'I hate the way my partner raises an issue' $\alpha = 0.93$), which is starting the discussion with criticism; (2) accepting influence (twenty items, sample item: 'I believe in lots of give and take in our discussions' $\alpha = 0.79$), which is accepting the partner's ideas; (3) compromise (twenty items, sample item: 'In discussing issues we can usually find our common ground of agreement' $\alpha = 0.76$), which is moving toward a shared solution to the problem being discussed; (4) the Four Horsemen of the Apocalypse (thirty-three items, sample item: 'I can get mean and insulting in our disputes' $\alpha = 0.89$), which assesses the effects of criticism, defensiveness, contempt and stonewalling in couple interactions; (5) gridlock on perpetual issues (twenty items, sample item: 'The same problems keep coming up again and again in our marriage' $\alpha = 0.91$), which assesses repeating cycles of negative affect or emotional disengagement on recurring or perpetual marital issues; (6) flooding (fifteen items, sample item: 'I feel overwhelmed by our arguments' $\alpha = 0.88$), which reflects physiological symptoms over hyperarousal; (7) negative perspective taking (twenty items, sample item: 'I wanted to protect myself' $\alpha = 0.88$) assesses a negative state of mind during conflict; and

(8) repair attempts (twenty items, sample item: 'When I apologize, my partner usually accepts it' $\alpha = 0.87$) assesses the ability to recover after a disagreement. The composite variable for reported destructive conflict is the sum of problems on these eight scales: gridlock, the Four Horsemen, harsh start-up, accepting influence, compromise, flooding, negative perspective taking, and repair attempts (range 0–8). The final Cronbach alphas in the current dataset were, for husband and wife, respectively: problems in friendship: 0.93, 0.91 and problems with destructive conflict: 0.94, 0.94.

Results

In the general population, the MAT has been standardized so that the mean is 100.0 and the SD is 15.0. Hence, in the general literature on couples' intervention, a score of 85 or less for at least one partner is taken as a sign of couple distress. In our sample, average marital satisfaction scores on the MAT (Locke and Wallace, 1959) at screening were 80.77 (SD = 23.49) for husbands and 74.85 (SD = 22.45) for wives, suggesting that we were successful in recruiting a maritally distressed sample. Table 1 presents the means and standard deviations for men and women at each of the subsequent time points. Of the eighty couples screened into the study, six failed to come into the lab. Figure 1 shows the CONSORT flowchart of attrition. By six months, four couples had separated. By one year, two couples were separated and three had divorced. One outlier case was removed. There were no significant differences in marital satisfaction, marital status or on demographic variables for couples completing all assessments and those attriting after the post-intervention assessment.

Effects on relationship satisfaction

Table 1 shows the mean MAT scores by intervention and gender over time. Overall group differences were significant only at the six-month follow-up, averaging across men and women, $F(3,60) = 2.77$, $p = 0.48$. Univariate tests of MAT scores by gender reveal that women's MAT scores differed by condition at the one-year follow-up, $F(3,59) = 2.89$, $p = 0.043$. There was a significant quadratic effect due to time, $F(1,56) = 13.10$, $p < 0.001$, with all groups showing increased MAT scores at T2 and a slight drop in MAT scores after one year, except for the conflict management only group, which maintained its gains in marital satisfaction over time.

TABLE 1 *Marital satisfaction scores for wives and husbands by intervention and time*

	Biblio		Friendship		Conflict		Combined		Univariate Fs(3,57)
	M	SD	M	SD	M	SD	M	SD	ME of group
Wives									
Pre (n = 74)	68.00	(15.07)	81.24	(16.73)	78.65	(27.46)	77.21	(26.02)	1.92
Post (n = 69)	78.44	(21.12)	86.47	(21.29)	88.90	(25.83)	86.59	(29.42)	1.51
6-month follow-up (n = 68)	69.22	(24.21)	85.13	(28.02)	92.03	(20.34)	91.80	(27.74)	1.93
1-year follow-up (n = 62)	69.80	(21.44)	85.47	(25.78)	94.19	(25.97)	88.25	(30.72)	2.89*
Husbands									
Pre (n = 74)	81.78	(27.04)	82.23	(27.45)	86.67	(25.30)	85.60	(26.48)	0.37
Post (n = 70)	84.61	(27.34)	90.13	(26.32)	96.20	(30.83)	91.75	(21.74)	1.46
6-month follow-up (n = 68)	83.14	(30.46)	88.87	(28.01)	96.65	(26.10)	92.87	(17.09)	0.75
1-year follow-up (n = 62)	80.80	(28.56)	92.33	(24.57)	96.694	(35.02)	89.13	(29.40)	0.82

Notes: *$p < 0.05$. Higher scores indicate higher marital satisfaction. No interactions were significant.

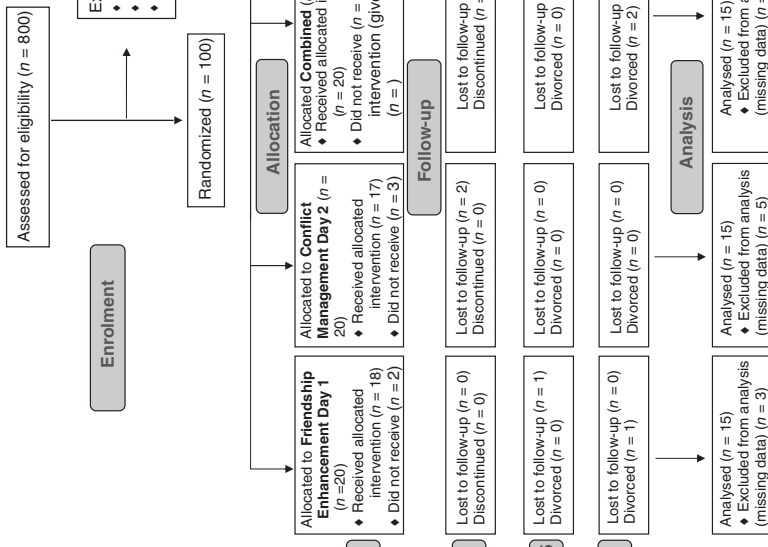

Figure 1. CONSORT flow diagram for 'The Art and Science of Love' randomized clinical trial. The fourth condition in grey, Combined + Relapse Prevention, was not included in this paper. T1 = pre-intervention; T2 = post-intervention; T2.5 = 6-month follow-up (not included in this paper); T3 = 1-year follow-up.

To tease apart the effect due to exposure to friendship enhancement and conflict management training MAT scores were entered into a 2×2×2×4 GLM entering conflict management and friendship enhancement (yes/no) as between-dyad variables, gender as a within-dyad variable, and time as a repeated, within-dyad variable. Men's and women's averaged MAT scores at screening were entered as a covariate. Mauchly's tests of sphericity revealed significant sphericity for screening MAT scores and for time, $p < 0.001$, so Huynh-Feldt statistics are reported. Again, there were significant main effects due to time ($F(3,51) = 2.81$, $p = 0.04$) and screening MAT scores, $F(1,53) = 46.68$, $p < 0.001$. The full factorial model revealed a significant time × gender interaction, with women experiencing greater increases in relationship satisfaction over time than men, $F(2,108) = 3.33$, $p = 0.04$. This analysis also revealed a significant four-way interaction due to the intervention condition: conflict management interacted with friendship enhancement, gender and time to predict marital satisfaction, which remained significant when controlling for baseline differences in couples' MAT scores. To graphically display this four-way interaction, MAT scores over time were reduced to change scores (Time 3–Time 1). Figures 2 and 3 graphically display this interaction, simplified into a three-way interaction. Across all conditions, change in marital satisfaction was in the positive direction. However, men not exposed to friendship enhancement conditions showed relatively little change in marital satisfaction. Women in the combined condition (friendship enhancement+conflict management) showed the highest increase in marital satisfaction.

Jacobson *et al*. (1984; Jacobson and Truax, 1991) recommended that each individual client be categorized as improved if the amount of change for that individual on a given measure exceeded chance expectations (greater than the pooled standard error of the premean). We report the percentage of couples exceeding the reliable change index after one year. For husbands, the reliable change index was for: (1) friendship enhancement, 64.7 per cent; (2) conflict management, 60.0 per cent; (3) combined, 55.6 per cent; (4) bibliotherapy group, 75.0 per cent. For wives, the reliable change index was for: (1) friendship enhancement group, 62.5 per cent; (2) conflict management group, 42.9 per cent; (3) combined group, 55.6 per cent; (4) bibliotherapy group, 56.2 per cent. These figures compare well with the 'slightly more than one-third' after one-year reported by Jacobson *et al*. (1985, p. 553).

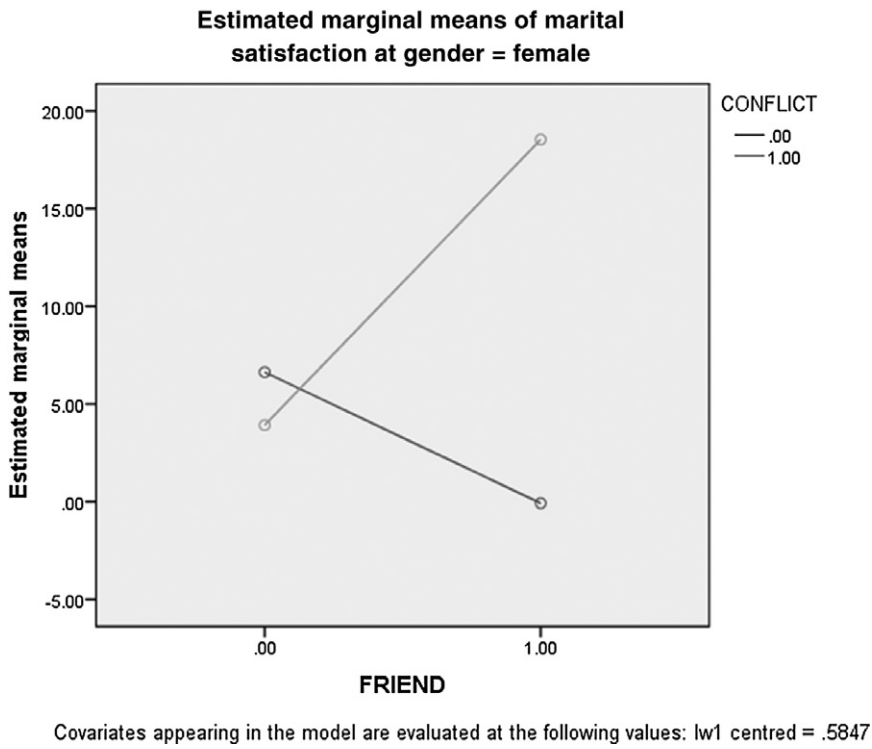

Figure 2. Interaction between exposure to friendship enhancement and conflict management on change in marital satisfaction for women, controlling for screening MAT scores. Three-way interaction of Friendship × Conflict × Gender on change in marital satisfaction. MAT change scores (T3–T1) are plotted on the y-axis. Positive change scores reflect maintenance of marital satisfaction improvements over time.

Jacobson and Truax (1991) further recommended that clinical significance be defined as movement from a dysfunctional state to a functional state on dependent variables in the study. That is, for change to be considered clinically significant, the change must move the client into the normal functioning range. The range taken here to represent normal functioning was within one SD of the population mean of a measure. For the MAT the mean is 100 and the SD = 15, as such the range of normal functioning begins at a score of 85 on this measure. For husbands, the percentage who met criteria for both reliable change and marital functioning in the normal range were: (1)

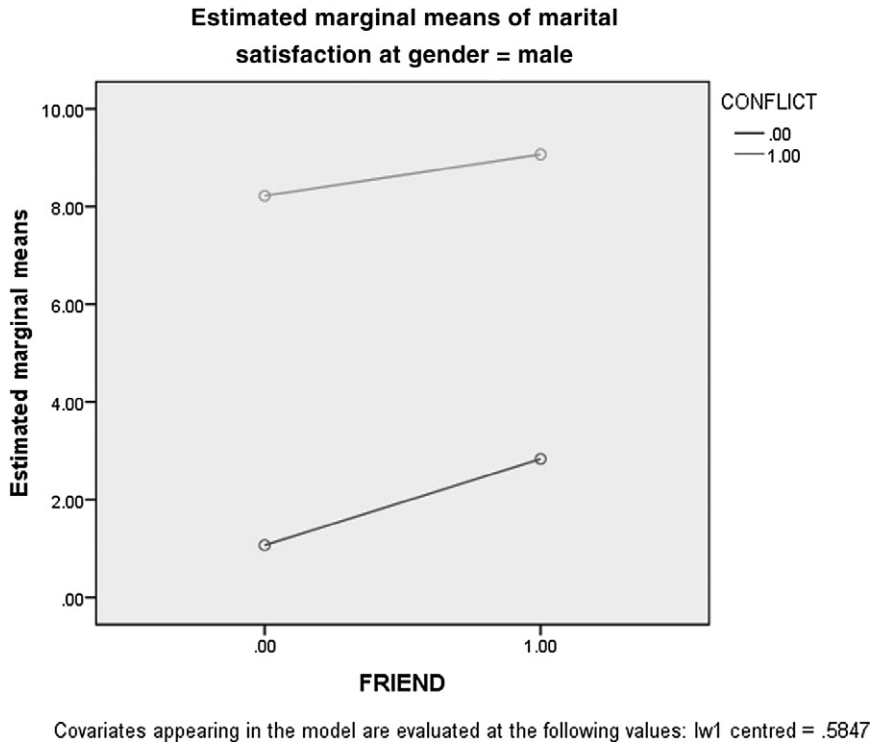

Figure 3. Interaction between exposure to friendship enhancement and conflict management on change in marital satisfaction for men, controlling for screening MAT scores. Three-way interaction of Friendship × Conflict × Gender on change in marital satisfaction. MAT change scores (T3–T1) are plotted on the y-axis. Positive change scores reflect maintenance of marital satisfaction improvements over time.

friendship, 58.8 per cent; (2) conflict management 60.0 per cent; (3) combined, 55.6 per cent; (4) bibliotherapy group, 62.5 per cent. For wives the percentage who met criteria for both reliable change and marital functioning in the normal range were: (1) friendship enhancement group, 25.0 per cent; (2) conflict management, 53.3 per cent; (3) combined, 66.7 per cent; (4) bibliotherapy group, 62.5 per cent. These percentages compare well to the 35 per cent given by Jacobson for behavioural marital therapy one year after termination (e.g. see Jacobson *et al.*, 1985; Jacobson and Addis, 1993).

To assess what proportion of couples experienced deterioration, a negative reliable change index was calculated. The percentage of husbands who reported experiencing negative change that exceeded the reliable change cut-off score was: (1) friendship enhancement alone, 5.9 per cent; (2) conflict management, 6.7 per cent; (3) combined, 5.6 per cent; (4) bibliotherapy group, 18.8 per cent. The percentage of wives who reported experiencing negative change that exceeded the reliable change cut-off score was: (1) friendship enhancement, 18.8 per cent; (2) conflict management, 21.4 per cent; (3) combined, 22.2 per cent; (4) bibliotherapy group, 6.3 per cent. Only two couples had both members report reliable negative change (2.1% of sample); one of these couples was in friendship enhancement group and one was in the combined two-day workshop treatment group.

Mechanisms of change

For the remaining two-outcome variables, two separate repeated measures, mixed-model GLMs were conducted. There were two within-dyadic factors: three time points of measurement (pre, post and one year) and two levels of gender (male, female). There were two between-dyad factors: couples' initial marital satisfaction (the average of husband and wife T1 MAT) and treatment condition. For the first GLM, treatment condition was examined as four separate groups (friendship enhancement only, conflict management only, combined, and bibliotherapy). For the second GLM, to better test the hypothesized mechanisms of change, exposure to treatment components was tested in a 2×2 design, with the presence or absence of friendship enhancement and conflict management training serving as the between-dyad independent variable. Of specific interest are the interactions by time.

Effects on friendship. Table 2 shows the mean and standard deviations of problems in friendship by condition, gender and time. There was a significant main effect due to time, $F(2, 114) = 16.54$, $p < 0.001$, as couples in all condition reported decreased problems in friendship over time. There was a significant main effect due to gender, $F(1,57) = 5.18$, $p = 0.03$, with women generally reporting more problems in friendship in their marriage than men. There was also a main effect due to relationship satisfaction, $F(1,56) = 34.81$, $p < 0.001$, as problems in friendship were highly negatively related to relationship satisfaction, $r > -0.49$, $p < 0.001$.

TABLE 2 *Problems in friendship scores for wives and husbands by intervention and time*

	Biblio		Friendship		Conflict		Combined		Univariate Fs(3,57)
	M	SD	M	SD	M	SD	M	SD	ME of group
Wives									
Pre	4.00	(1.63)	5.00	(1.78)	4.29	(1.07)	3.50	(2.25)	1.83
Post	3.33	(0.93)	4.00	(2.21)	2.93	(1.94)	2.13	(2.06)	1.93
1-year follow-up	3.06	(2.21)	4.07	(1.77)	3.36	(2.06)	3.19	(1.97)	0.69
Husbands									
Pre	3.94	(2.06)	3.07	(2.16)	3.43	(2.14)	3.69	(2.06)	0.43
Post	2.56	(2.07)	2.50	(2.31)	2.96	(1.99)	1.81	(2.32)	0.68
1-year follow-up	2.69	(2.33)	3.07	(1.90)	2.79	(2.08)	2.38	(2.42)	0.43

Notes: Higher scores indicate more problems with friendship and sharing. MANOVA Main Effects significant for Time $F(2, 114) = 16.54$, $p < 0.001$ and Gender, $F(1,56) = 5.68$, $p = 0.02$, controlling for T1 relationship satisfaction.

To identify hypothesized mechanisms of change, the problems in friendship variable was entered into a 2×2×2×3 GLM, friendship enhancement (yes/no) × conflict management (yes/no) × gender × time. Couples' average T1 relationship satisfaction was entered as a continuous variable. Mauchly's tests of sphericity were not significant. This analysis again showed a linear ME due to time, $F(1,55) = 4.65$, $p = 0.04$. It also revealed a significant four-way gender × time × friendship enhancement × conflict management interaction. That is, intervention condition friendship enhancement (yes/no) × conflict management (yes/no) interacted with gender and time to predict problems in friendship, $F(2, 54) = 3.67$, $p = 0.032$. To clarify this four-way interaction, change in problems in friendship was converted to a change score (T3–T1). Negative scores reflect a decrease in the number of problems over time. This resultant three-way interaction is displayed graphically in Figures 4 and 5. Whereas for women all conditions were related to some decrease in problems in friendship, men showed the greatest in problems in friendship in the combined condition. Men showed almost no change in problems in friendship after having completed the conflict management only condition.

Effects on destructive conflict. Table 3 shows the mean and standard deviations of problems with destructive conflict by the four conditions by gender and time. For men only, there was a significant ME due to group at T2 and a marginal effect at T3. Men in the combined condition tended to report fewer problems post-intervention and at one-year follow-up. There was a significant main effect due to time, $F(2, 114) = 22.98$, $p < 0.001$, as couples in all conditions reported fewer problems with destructive conflict over time. The effect due to time was both linear and quadratic and remained significant when controlling for initial levels of marital satisfaction. The gender × condition × time interaction was marginally significant when controlling for T1 MAT scores, $F(6, 112) = 1.83$, $p = 0.09$.

To test change in destructive conflict as a mechanism of change specific to the conflict management intervention, problems with destructive conflict was entered into a 2×2×3 GLM, friendship enhancement (yes/no) × conflict management (yes/no) × time. Mauchly's tests of sphericity was significant for time, $p = 0.04$, so Huynh-Feldt statistics are reported. This analysis reveals a marginally significant four-way interaction. Friendship enhancement by conflict management interacted with gender and time to predict problems

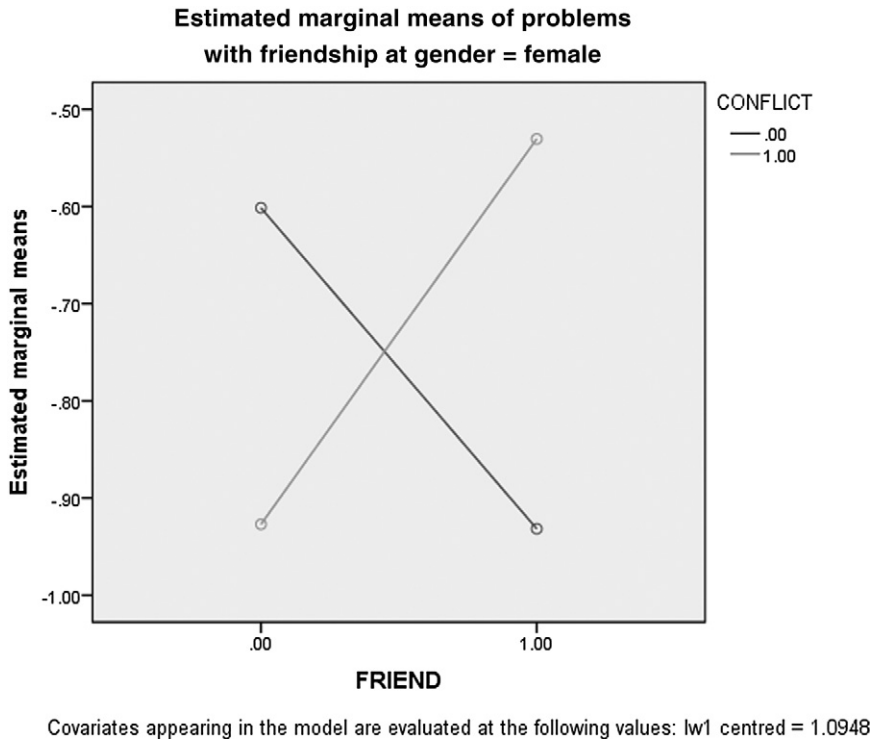

Figure 4. Interaction between exposure to friendship enhancement and conflict management on change in problems in friendship for women, controlling for screening MAT scores. Three-way interaction of Friendship × Conflict × Gender on change in problems with friendship. Change scores in problems with friendship quality (T3–T1) are plotted on the y-axis. Negative change scores reflect maintenance of decreased problems in friendship over time.

in destructive conflict, $F(2, 108) = 2.60$, $p = 0.08$. Examination of contrasts reveals a significant quadratic trend, as destructive conflict was lowest at T2 and rebounded slightly at T3, $p < 0.044$. However, to test maintenance of treatment gains, change scores (T3–T1) were plotted by gender by exposure to treatment component. This simplified three-way interaction is displayed graphically in Figures 6 and 7. Similar to the results with problems in friendship, problems with conflict reduced the most for husbands in the combined condition.

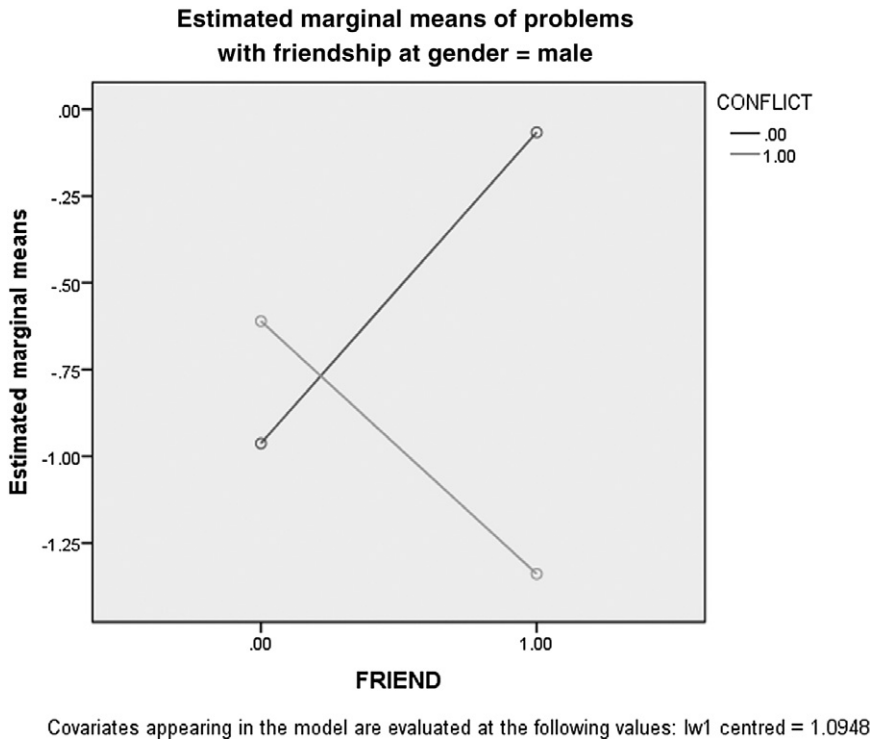

Figure 5. Interaction between exposure to friendship enhancement and conflict management on change in problems in friendship for men, controlling for screening MAT scores. Three-way interaction of Friendship × Conflict × Gender on change in problems with friendship. Change scores in problems with friendship quality (T3–T1) are plotted on the y-axis. Negative change scores reflect maintenance of decreased problems in friendship over time.

Discussion

This article set out to test the effects on marital satisfaction, friendship quality and destructive conflict of two distinct interventions (singly and in combination) designed to enhance couple friendship and teach conflict management skills. Improvements in marital satisfaction, friendship and conflict were found across all interventions, but, as expected, the combined condition produced the most consistent pattern of change. For wives, marital satisfaction is most improved by

TABLE 3 *Problems with destructive conflict for wives and husbands by intervention and time*

	Biblio		Friendship		Conflict		Combined		Univariate Fs
	M	SD	M	SD	M	SD	M	SD	ME due to group
Wives									
Pre	6.94	(1.44)	6.85	(1.57)	7.47	(0.92)	6.00	(2.25)	2.21
Post	5.75	(2.30)	5.00	(2.48)	6.73	(2.09)	4.88	(2.90)	1.59
1-year follow-up	5.63	(3.07)	5.85	(2.30)	6.80	(1.90)	4.81	(2.74)	1.57
Husbands									
Pre	6.25	(3.07)	7.15	(2.04)	6.13	(3.04)	6.13	(2.03)	0.68
Post	5.25	(2.01)	6.31	(2.21)	6.00	(3.16)	3.50	(2.58)	3.70*
1-year follow-up	5.00	(2.73)	5.92	(2.40)	5.33	(2.66)	3.56	(3.05)	2.27†

Notes: * = $p < 0.05$; † = $p < 0.10$. Higher scores indicate more problems with destructive conflict. Main Effect for Time $F(2, 112) = 22.98$, $p < 0.001$, Gender, $F(1,56) = 3.60$, $p = 0.06$, Group × Gender Time interaction, $F(6,112) = 1.83$, $p = 0.09$, controlling for T1 relationship satisfaction.

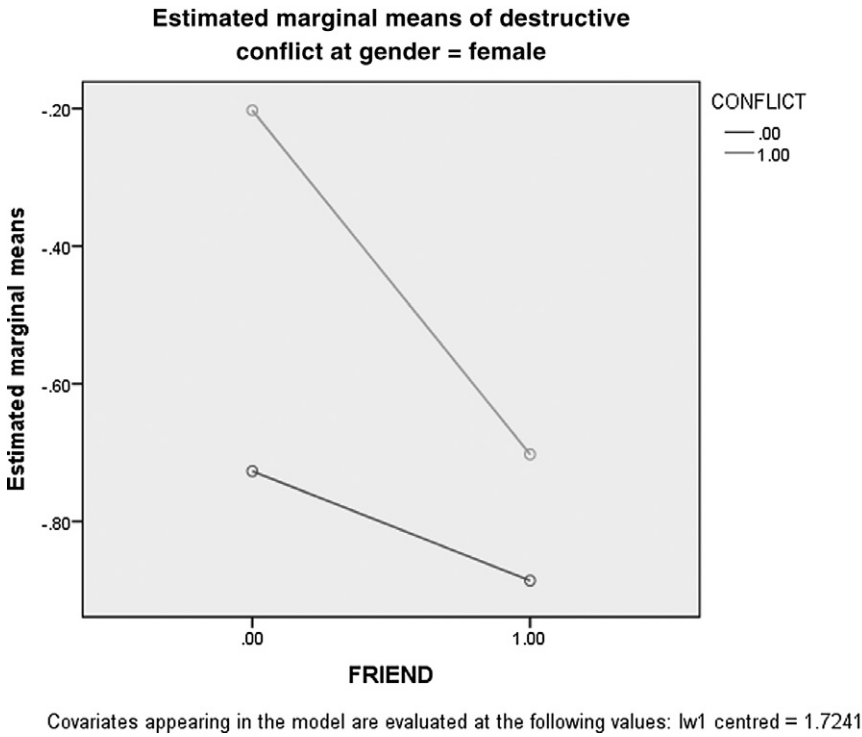

Figure 6. Interaction between exposure to friendship enhancement and conflict management on change in problems with destructive conflict for women, controlling for screening MAT scores. Three-way interaction of Friendship × Conflict × Gender on change in problems destructive conflict. Change scores in problems with destructive conflict (T3–T1) are plotted on the y-axis. Negative change scores reflect maintenance of decreased problems with destructive conflict over time.

a combination of friendship enhancement plus conflict management. For husbands, it appears that friendship enhancement alone may be sufficient to improve marital satisfaction. However, to affect men's report of problems with friendship and destructive conflict, the combined condition fared the best.

In this study we recruited a sample of distressed couples. In fact, this sample was somewhat more distressed than is typical for couples in outcome studies of marital therapy (Greenberg and Johnson, 1988; Christensen *et al*., 2004). We predicted that marital satisfaction would

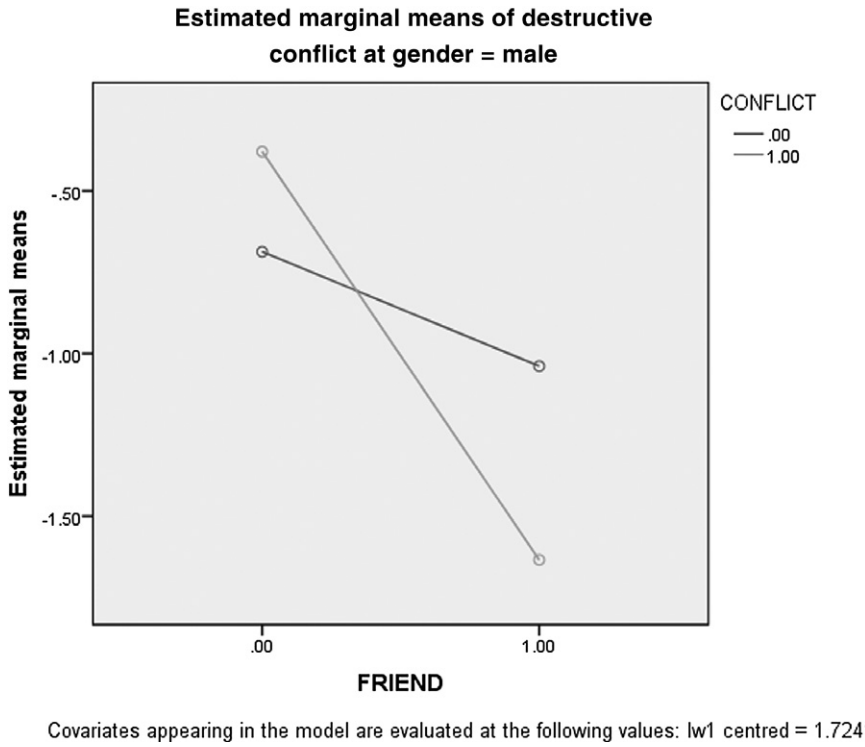

Figure 7. Interaction between exposure to friendship enhancement and conflict management on change in problems with destructive conflict for men, controlling for screening MAT scores. Three-way interaction of Friendship × Conflict × Gender on change in problems destructive conflict. Change scores in problems with destructive conflict (T3–T1) are plotted on the y-axis. Negative change scores reflect maintenance of decreased problems with destructive conflict over time.

moderate the effects resulting from treatment. Indeed, marital distress was highly related to problems in friendship and destructive conflict and pre-treatment marital satisfaction did predict outcome at the one-year follow-up. However, pre-treatment marital distress did not function as a significant moderator of treatment outcome, suggesting that the pattern of results holds for a wide range of distressed couples.

A decade ago, we wrote, 'It is remarkable that after more than 20 years of systematic research with a variety of marital interventions, not one specific marital treatment exists that is based on any dimension of

the marriage. The view promulgated by every marital therapy proposed is a "one size fits all" marital therapy.' (Gottman *et al*., 2002, p. 151). Although we hypothesized that severity of marital distress would interact with time and treatment condition, it did not. Rather, gender moderated with treatment effects over time. The differential effects of the friendship enhancement-alone condition for husbands and wives are interesting, suggesting that its effects on husbands were far greater than its effects on wives. Our data indicate that, while building couple friendship may be adequate for husbands in improving friendship quality, wives require much more. Dealing with conflict constructively is essential for wives if they are to increase the quality of their friendship with husbands, but perhaps less necessary for husbands. This finding is consistent with the notion that men are more conflict-avoidant than women – it is well known that women more frequently begin conversations about problems than men (Ball *et al*., 1995; Oggins *et al*., 1993). Since women tend to raise most of the issues in marriages, constructive conflict discussions may be somewhat more important to them.

The reliable change indices for these interventions are encouraging, particularly as the interventions are relatively inexpensive when compared with the cost of carrying out a typical marital therapy outcome study. We were surprised by the finding that all our interventions, including those in which participants were assigned only to read a book, were effective in terms of changes in marital satisfaction. One potential explanation for this result is that the educational format attracted a different type of couple, perhaps a group more reluctant to go to therapy but less likely to have serious co-morbidities. We need to be cautious in our conclusions, however, given that we did not have a no-treatment control group. It appears probable that couples assigned to the bibliotherapy condition actually read the book, as they showed reliable positive change. Typically, distressed couples seeking therapy but assigned to a no-treatment control condition would show deterioration rather than improvement in relationship satisfaction (Baucom *et al*., 2003; Jacobson and Christensen, 1996). Effect sizes could not be calculated because of a lack of a no-treatment control group. If we could assume that a no-treatment or waiting-list control condition would have no change in marital satisfaction, the resultant effect sizes for all conditions, including the bibliotherapy condition, would be in the large range.

We expected that our brief psychoeducational interventions would be less effective for more distressed couples because more distressed

couples probably need interventions tailored to their specific histories with prior emotional injuries sustained in the relationship. Indeed, Ryan (2001) compared the two-day workshop for twenty couples to another group of twenty couples who received the two-day workshop plus nine sessions of Gottman-method couples' therapy. Ryan found that, as predicted, the additional couples' therapy resulted in far less relapse for the more distressed couples. Those results were somewhat tentative because the workshop-plus-therapy group took longer to complete the treatment than the workshop-only group; as a result, the one-year follow-up was actually only a ten-month follow-up for that group. Outcome studies of couples therapy indicates that between 30 and 50 per cent of couples showing improvement in marital satisfaction at post-treatment relapse within one to two years (Christensen *et al*., 1995). Perhaps by having a brief psychoeducational workshop *precede* the couples' therapy, relapse rates will decrease. Couples' expectations may be higher and they may be more prepared for the therapy having learned the theory and language of the Gottmans' Sound Relationship House theory first. Therefore, we suggest that the normal gains associated with couples' therapy may be enhanced by an educational component, especially for more distressed couples.

Limitations

The sample size of the current study was probably of insufficient power to be able to distinguish among the four intervention conditions. Power analyses suggest that future research should employ a sample size about twice the size of the one used in the current study. However, the 2×2 design afforded more power to detect differential response to the isolated treatment components and detect significant four-way interactions. Future studies with larger samples could further test mechanisms of change using path analysis in SEM. In addition, there were differences in treatment length across the four conditions. Because the combined condition was twice as long as the friendship enhancement alone and conflict management alone conditions, we cannot rule out the rival hypothesis that treatment length produced the larger effects, rather than the impact of combination of the two components. Some researchers have attempted to address this issue inherent in all dismantling studies by using an abbreviated form of the techniques, reducing practice time, speeding up the early stages of the multicomponent intervention or tapering treatment at the end of the single-component interventions (e.g. Baucom *et al*., 1990). While there is no ideal solution

to this problem, we opted for a length of treatment confound rather than potentially watering down the components to fit them into one day. If each component had been abbreviated, the combined condition may not have reflected the true addition of components and thus may not have provided an adequate test of the workshop as it is commonly delivered. For these reasons we decided to have the combined treatment of longer length than the single component treatments. Future studies could test a comparison group for which both components are reduced into a one-day workshop.

Clinical implications

What would one recommend in terms of clinical practice at this juncture? Using our data on relapse, reliable change and deterioration, the combined condition would be the treatment of choice, and after that, the friendship enhancement-alone condition. However, we need to be cautious in concluding that the combined treatment condition was most effective in the conflict outcome because this study did not control for the increased length of treatment in the combined condition. The improvements evidenced in the bibliotherapy condition were both surprising and heartening; however, this condition proved to be the riskiest, in terms of deterioration, for husbands. The conflict enhancement-alone condition appeared to be the riskiest for wives' maintenance of relationship satisfaction gains. Subsequent research and clinical practice might attempt to fit the intervention to the areas of marital functioning most in need of improvement. Our questionnaires appear to have some promise for matching specific components of treatment to specific marital deficits.

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