

**Exploring Participants' Variation in Relational Outcomes based on
Couple Relationship Education Curriculum**

by

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Abstract

The purpose of this study was to advance explorations of content of two different Couple Relationship Education (CRE) curricula, *ELEVATE* and a *Mindfulness-Based CRE* (MBCRE), and how each of two program experiences influenced individual and couple outcomes to varying degrees. Results indicated that MBCRE participants ($n = 60$) experienced greater declines in stress levels and greater improvements in positive interactions with their partner, compared to ELEVATE participants ($n = 157$). Participants from both MBCRE and ELEVATE experienced significant declines in their negative interactions with their partner and felt more confident in their relationship. This study also found that change in positive interactions was the most potent predictor of change in confidence level for both ELEVATE and MBCRE participants and also predicted change in relational quality for ELEVATE participants. This comparison of program influence on similar outcomes informs facilitators on mechanisms of change following CRE participation.

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I. Introduction

Couple Relationship Education (CRE) programs have been implemented over the past several decades, with many studies showing that these programs have benefitted couples by enhancing relational qualities and skills that are associated with healthy relationships (Hawkins, Blanchard, Baldwin, & Fawcett, 2008; Hawkins & Ooms, 2012; Markman & Rhoades, 2012). These include prosocial behaviors, such as communication and problem-solving skills (Gottman & Silver, 1999; Reardon-Anderson, Stagner, Macomber, & Murray, 2005), as well as commitment and forgiveness (Finchman, Stanley, & Beach, 2007). Consequently, couples who participate in CRE programs are likely to exhibit these behaviors and skills; which have been linked to benefits both for physical and mental health (Hawkins & Ooms, 2012; Markman & Rhoades, 2012). Although the research provides support for CRE, there are implicit assumptions that all programs are similar. Much less is known about variations in effectiveness based on program content. Additionally, minimal attention is given to processes of change (Wadsworth & Markman, 2012).

A few comparisons of curricula have occurred. One recent study examined three different programs and found similar outcomes for participants (Rogge, Cobb, Lawrence, Johnson, & Bradbury, 2013). Two studies have examined differences for specific subpopulations of participants based on content of the curricula for male participants and stepfamilies (i.e., Male participants: Gregson, Adler-Baeder, Parham, Ketring, & Smith, 2012; Stepfamilies: Lucier-Greer, Adler-Baeder, Ketring, Harcourt, & Smith, 2012). The current study will advance explorations of content of the curricula and how each of two program experiences influences outcomes. The differential effects for individuals who participated in *ELEVATE* (Futris, Adler-Baeder, Ketring, Smith, et al., 2014) and *Mindfulness-based CRE* (MBCRE), will be compared.

ELEVATE is a program that focuses primarily on educating couples on key relational skills. MBCRE focuses predominantly on stress reduction, self-awareness, and partner awareness, as well as mindful practices useful in relationships. Comparing each program experience's influence on similar outcomes will be valuable in promoting our understanding of mechanisms of change following CRE participation as well as for program planning.

Overarching Theory

Several theoretical approaches have been used to explain how adults change their behaviors by attending CRE programs. Primarily social learning theory and experiential theory have been used to understand the link between an educational experience and changes. The experiential learning theory (Kolb, 1984) suggests that adults learn through specific events that involve interaction. A social learning theory perspective (Bandura, 1977) focuses on the social context of experiences and suggests that individuals will take on behaviors that they are taught and that are modeled for them by people they view as more knowledgeable. Further, it is assumed that people develop a better understanding through social interaction of the consequences of their behaviors, whether those are positive or negative (Bandura & Walters, 1963). In addition, it is also assumed that people actively choose to engage in behaviors that will benefit them, as opposed to behaviors that will result in taxing consequences (Thibaut & Kelley, 1959). Based on these theories, it is expected that participants in CRE programs are actively learning new skills that they will utilize in their romantic relationships away from the class experience and will choose to engage in prosocial behaviors that facilitate positive outcomes in their relationships (Carroll & Doherty, 2003).

ELEVATE

ELEVATE (Futris et al., 2014) is a curriculum derived from the National Extension Marriage and Relationship Education Model (NERMEM) (Futris & Adler-Baeder, 2014) which was developed based on a deductive research process in which information from the extant literature on marital quality was assessed and recommendations for key skills for CRE were derived from thematically coding predictors of marital quality. The ELEVATE curriculum teaches skills that primarily focus on the dyadic couple relationship and has one module focused on each of the seven core skills associated with healthy relationships (Choose: actively choosing to work on one's relationship; Know: getting to know one's partner; Share: developing and sharing interests; Care: caring for one's partner; Manage: managing conflict; and Connect: connecting as a couple to the broader community) (Futris & Adler-Baeder, 2014). The program also contains some information on self-care (i.e., Care for Self). Information in this module fosters an understanding of the physiology of emotions and their effect on relationships. In addition, it introduces participants to some basic stress reduction techniques through brief mindful practices. It is expected that participants who participated in ELEVATE will experience stress reduction, reduce their use of negative behaviors and increase their use of prosocial skills, thus enhancing their relationship quality and stability.

Mindfulness-based CRE

While the theoretical foundation of the MBCRE program is similar to that of the ELEVATE curriculum with its emphasis on teaching and modeling skills for transfer into the couple relationship, it also draws from stress theory (McCubbin, Joy, Cauble, Comeau, Patterson & Needle, 1980) and assumes that relational health is most closely related to individual health and well-being and assumes that an individual's ability to manage stress is key for healthy

relationships (Amato & Booth, 1997; Blum & Mehrabian, 1999; Bradbury & Karney, 2004).

Research has shown that stress may alter emotion regulation and behavioral expression, thus influencing the quality and satisfaction within a couple's relationship (Gottman, Coan, Carrere, & Swanson, 1998).

Fortunately, learning how to manage stress and emotions can be taught (Fetsch, Schultz, & Wahler, 1999; Gross, 2001). Some of these skills include recognizing physiological changes, arousal triggers, and finding behaviors to help calm these responses. These skills are the main focus of MBCRE, in which an individual is taught to focus on the self in the here-and-now. It is then expected that if an individual learns how to effectively manage stress by focusing on his or her physiological responses and daily utilizing practices that calm and center the individual, he or she will be better able to handle challenges and stressors and better able to utilize prosocial behaviors in his or her relationship (Boorstein, 1996), thus leading to higher quality, and more satisfying couple relationships (Gottman et al., 1998; Nichols, 2009; Rowan, Compton, & Rust, 1995).

While various stress management strategies exist in intervention programs (e.g., Bundy, Carroll, Wallace, & Nagle, 1998; Häfner, Stock, Pinneker, & Ströhle, 2014; Russell, Cooke, & Rogers, 2014) the focus on mindfulness practices is based on the growing emphasis and empirical evidence that these practices, specifically, are linked to improved mental and physical health (Grossman, Niemann, Schmidt, & Walach, 2004) and higher quality relationships (Kozlowski, 2013; McGill, Adler-Baeder, & Rodriguez, under review). Thus it is assumed that couples who participated in MBCRE will experience reductions in stress and enhance their relational skills, thus leading to higher quality, more stable couple relationships.

Current Study

The current study explored the differences in outcomes between participants attending ELEVATE and those attending MBCRE. Overall, it was assumed that CRE would enhance participants' self-disclosure skills, positive interactions, confidence and dedication level and relational quality, and would reduce their stress levels and their use of negative interactions, but likely to varying degrees depending on the CRE programs in which they participated. Prior research has found that self-disclosure in romantic relationships increases a sense of intimacy and is associated with an increase in marital satisfaction and quality (Komarovsky, 1962; Rubin, Hill, Peplau, & Dunkel-Schetter, 1980). Couples who engage in more positive interactions in general and during conflict, are likely to report a higher relational quality than couples who engage in more negative interactions (Gottman, 1999). Consequently, prior studies have found that when a couple is exhibiting positive behaviors towards each other, their perception about their relationship is also positive which in turn boosts their confidence in their relationship and promotes stability (Stanley, Amato, Johnson, & Markman, 2006). In addition, individuals who experience lower distress levels tend to also report higher relationship quality and confidence in the stability of their relationship (Karney & Bradbury, 1995).

Evidence suggests that changes in relational behaviors following CRE participation predict changes in cognitions related to the relationship, such as commitment and confidence, rather than vice versa (Rauer, Adler-Baeder, Lucier-Greer, Skuban, Ketring, & Smith, 2014). This study focused on understanding the comparative changes experienced after exposure to each curriculum. Because previous research is limited on each of the curricula tested, the current study utilized an exploratory approach and series of research questions:

- RQ 1- Do individuals who participated in MBCRE experience more change in stress and self-disclosure than individuals who participated in ELEVATE?
- RQ 2- Do individuals who participated in the ELEVATE class experience greater changes in positive and negative interactions compared to individuals who participated in MBCRE?

Because it is not clear which of these program experiences is more beneficial for enhancing relationship quality and confidence, we further explored the following research question:

- RQ 3- Are there significant differences in improvements in relational quality and confidence level between participants who participated in ELEVATE and MBCRE?

In addition, we explored:

- RQ 4- What change (i.e., change in stress, self-disclosure skills, positive interactions, and negative interactions) is the most potent predictor of concurrent relational quality and confidence level changes in each curriculum group (ELEVATE and MBCRE)?

II. Review of Literature

Overview

Healthy relational behaviors have been linked to positive well-being for both partners in romantic relationships (Kiecolt-Glaser & Newton, 2001), as well as for families and children (Grych & Fincham, 1990; Kirkland, et al., 2011). Partners in these relationships have a longer life expectancy (Ross, Mirosky, & Goldstein, 1990) and report fewer health problems (Waite & Gallagher, 2000). Based on these findings, efforts have been made to offer CRE programs that promote these behaviors. Researchers have examined and have found these programs to be effective in promoting elements related to healthy relationships (Hawkins et al., 2008; Hawkins & Ooms, 2012; Markman & Rhoades, 2012), such as communication and problem-solving skills (Gottman & Silver, 1999; Reardon-Anderson et al., 2005), as well as commitment and forgiveness (Finchman et al., 2007). In addition to enhancing indicators of relational quality, CRE programs have also been associated with preventing relational dissolution and distress (Carroll & Doherty, 2003; Stanley, Allen, Markman, Rhoades, & Prentice, 2010; Stanley et al., 2014). Because of this, government-funded initiatives recently have been implemented in order to promote relational satisfaction and stability among more diverse families in the U.S. (U.S. DHHS, 2010).

Although the literature provides ample support for CRE effectiveness for the “average” participant, many researchers have encouraged more exploration of CRE programs (Fawcett, Hawkins, Blanchard, & Carroll, 2010; Wadsworth & Markman, 2012) that involves understanding more about the variations in effectiveness based on program content and processes of change. The following section provides a summary of previous research on CRE, with particular focus on the limited research evaluating the effectiveness of specific program content

and relationships among outcome variables. In addition, theory revolving around CRE programs is delineated, as well as the literature surrounding the curricula that will be compared and reasoning for including certain outcomes. Finally, the rationale and approach for the study is presented.

Evaluation of CRE Programs

The vast majority of research on CRE has combined samples across sites and across studies (i.e., meta-analyses) and focused on assessing overall program effects. Implicit in this approach is that CRE programs are similar and deliver the same message. Differences, however, exist; for instance, some CRE programs focus almost exclusively on empathy training (e.g., *Mastering the Mysteries of Love* [Guerney & Ortwein, 2004]), others include additional content specific to cultural and situational context of subpopulations (e.g., *Basic Training for Couples: A Black Marriage Education Curriculum* [Slack & Muhammad 2005]; *Smart Steps for Stepfamilies: Embrace the Journey* [Adler-Baeder, 2007]; *Together We Can: A Curriculum for Unmarried Parents* [Shirer, Chen, Contreras, Hamler, Harris, & Lacina, 2009]). In a “next generation” of studies of CRE, evaluators are encouraged to take these differences into account (Wadsworth & Markman, 2012).

Only a few previous studies have specifically examined the differences in outcomes based on content of the curricula (Gregson et al., 2012; Lucier-Greer et al., 2012). One study focused on men, and whether they benefitted differently based on the curriculum used in the program they attended (Gregson et al., 2012). Men’s change in outcomes were compared based on three curricula (*Mastering the Mysteries of Love* [MML; Guerney & Ortwein, 2004], *Together We Can* [TWC; Shirer, et al., 2009], and *Black Marriage Education* [BME; Slack & Muhammad, 2005]). The study found that on average, men improved in targeted relational,

individual, and parenting outcomes; however, this varied by program. Specifically, results indicated that men who received MML and BME, but not TWC, significantly increased in couple quality and trust over time. Men who received TWC and BME, but not MML, significantly increased in co-parenting quality. Across the sample in this study and in all three curriculum groups, men significantly increased in their self-report of individual empowerment after the program was completed. These findings offer implications for understanding which curricula is the best fit to offer to men, depending on the targeted outcomes determined.

Another study that examined how a certain subpopulation benefits from CRE examined how stepfamily relationships are affected by different CRE programs (Lucier-Greer et al., 2012). This study focused on understanding whether participants who identified as being in a stepfamily benefitted differently when choosing to take a CRE course primarily focused on stepfamily challenges and strategies compared to those who chose to take a “general” CRE course. Results indicated no significant differences in outcomes for participants based on program attended. Participants in both groups reported a positive change in functioning in individual, couple, and parenting measures. One specific explanation for this finding is that participants likely selected into the program that best met their immediate needs (couple or stepfamily relationships). One study compared three curricula, PREP (couples trained in communication skills and conflict management), CARE (couples trained in skills related to acceptance, support and empathy), and RA (relationship awareness), to a no treatment group for similar relational outcomes (Rogge et al., 2013). The sample consisted of engaged couples and newlyweds. The goal of this study was to examine if the curriculum content influenced variations in couples relational outcomes. It was predicted that the couples who participated in the more intensive programs – PREP and CARE – would experience better relationship outcomes than couples who received RA and no treatment.

It was predicted that couples in RA would experience enhancements in relationship functioning compared to the no treatment group. Since the content of the curricula focused on different aspects of relationship functioning, it was predicted that couples who engaged in the PREP program would experience steeper declines in negative behaviors than couples who took part in CARE. On the other hand, couples who engaged in CARE would experience greater enhancements in emotional support and affection than couples who were in the PREP program. The results were unexpected in that there were no differences in relationship satisfaction or relationship dissolution in all three program groups. Couples who engaged in RA demonstrated similar benefits to the couples who engaged in CARE and PREP, which was surprising because this group did not learn pro-relational skills, but were taught simply about the importance of such skills. Regarding specific patterns of change per curriculum, results did not support expected patterns.

A multitude of CRE programs exist (Avellar et al., 2012) and it is likely that curriculum content may influence participants differently. Only a handful of studies exist that compare programs on outcomes – and importantly – explore different pathways to enhancing relationship quality. Thus more studies of this type are both critical and valuable.

Theoretical Approaches to the Study of Relational and Individual Outcomes for Participants in CRE

It is vitally important to understand and apply theory to CRE program design, implementation, and evaluation (Adler-Baeder, Higginbotham, & Lamke, 2004; Higginbotham, Henderson, & Adler-Baeder, 2007), though, surprisingly, this is seldom done. Many CRE programs are based implicitly on behavioral, social learning and experiential theory assumptions and target change in behaviors (Markman & Rhoades, 2012). From a social learning theory

perspective (Bandura, 1977), individuals learn about relationship behaviors by models provided through a social context. In CRE programs, it is assumed that during the classes, the experiences that participants engage in will influence participants to begin to take on the behaviors that are taught and modeled for them by facilitators guiding CRE programs. In addition, it is assumed that individuals also begin to understand that their behaviors result in either positive and/or negative consequences (Bandura & Walters, 1963); thus resulting in individuals actively choosing to engage in behaviors that will benefit them (Thibaut & Kelley, 1959).

The experiential learning theory suggests that adults learn through synergetic interactions between themselves and their environment (Kolb & Kolb, 2012). In addition, experiential learning theory assumes that adults will begin to change their future behaviors based on events and choices that they live through and experience. Thus, it is assumed that participants who engage in CRE programs will learn about positive behaviors and their benefits, practice these behaviors in class, and begin to implement these prosocial behaviors in their daily lives (Carroll & Doherty, 2003).

CRE-ELEVATE

The ELEVATE CRE program uses assumptions from social learning and experiential learning theory and its content is based on a deductive process in which scholars identified seven key predictors of marital quality that are considered “teachable” (Futris et al., 2014). These seven core concepts make up the National Extension Relationship and Marriage Education Model (NERMEM) (Futris & Adler-Baeder, 2014). The NERMEM is a framework offered for CRE content and summarizes the research rationale for including content focused on: *Choose, Care for Self, Know, Care, Share, Manage* and *Connect*. *Choose* is the principle that focuses on making intentional relationship choices (e.g., committing effort to the relationship). *Care for Self*

refers to maintaining physical, sexual, emotional, and spiritual wellness (e.g., managing stress in healthy ways). *Know* involves efforts to gain and maintain knowledge of one's partner (e.g., their family background). *Care* centers on demonstrating kindness, showing affection, and supporting one's partner. *Share* focuses on the friendship and interconnectedness that one experiences with one's partner. *Manage* encompasses how one partner handles repeated stressors, conflicts and difficulties surrounding one's relationship. *Connect* emphasizes efforts to develop a sense of community and social support outside of the couple relationship (Futris & Adler-Baeder, 2014). The ELEVATE program has one module that provides information and teaches skills relevant to each of these seven core principles.

Since research has shown that individuals who are stressed have less ability to regulate their emotion (Buck & Neff, 2012), this program also incorporates information on self-care and behaviors that are considered to be effective in managing conflict and stressors. Such strategies that are taught in the program consist of briefly explaining how physiology of emotions affects relationships and interactional processes. In addition, some basic stress reduction techniques are introduced and taught and modeled for participants. It was expected that participants in ELEVATE would reduce their stress and their use of negative behaviors and increase their use of prosocial skills, which in turn would enhance their relationship quality and stability.

Mindfulness-Based CRE

The concept of mindfulness originated in Eastern traditions and is often associated with the formal practice of mindful meditation, which is the process of being aware of the present moment. Such awareness may be exhibited by using meditative techniques such as bringing awareness to the breath during deep breathing exercises, practicing yoga, and engaging in focused activities such as mindful eating or walking (Barnes, Brown, Krusemark, Campbell, &

Rogge, 2007). Prior research has shown that mindfulness is associated with improved mental and physical health (Grossman et al., 2004). Further, mindfulness practice is associated with improving self-esteem and reducing stress, which allows for individuals to reframe negative experiences into positive ones (Samuelson, Carmody, Kabat-Zinn, & Bratt, 2007; Shapiro, Oman, Thoresen, & Flinders, 2008). Some research has shown that practicing mindfulness has positively influenced social connectedness (Deci & Ryan, 1991), social skills and perspective taking (Schutte et al., 2001), and has inhibited negative reactivity during conflict (Baer, 2003). This may be due to having an open awareness of the present moment (Kabat-Zinn, 1991).

John Kabat-Zinn developed the Mindfulness-Based Stress Reduction (MBSR) program in 1979 to be used in clinical settings. His primary focus was to assist individuals who were medically ill to regain control of their mental and emotional health, and to have some peace of mind (Kabat-Zinn, 1991). He found that mindfulness is an individual practice, in which individuals are actively choosing to engage in mindful behaviors; however, this practice has been found to increase unity and closeness within relationships. This may be due to individuals changing their perception of the stress they are experiencing and developing enhanced awareness and compassion (Kabat-Zinn, 1991).

Only two published studies of mindfulness-based relationship education programs exist (Carson, Carson, Gil, & Baucom, 2004; Carson, Carson, Gil, & Baucom, 2007; Gambrel & Piercy, 2014a; Gambrel & Piercy, 2014b). Carson and colleagues (2004 & 2007), assessed the effectiveness of mindfulness and marital satisfaction or quality in non-distressed couples. In this 8 week couples program, 22 heterosexual couples were part of the mindfulness program and 22 were in a control group, and were assessed on multiple individual and relational outcomes. Couples who participated in the program, increased in relationship satisfaction, autonomy,

relatedness, closeness, acceptance of one another, relaxation, relationship and psychological distress. In addition, couples maintained these benefits at the 3-month follow-up. The authors also instructed couples who participated in the program to complete daily diaries. The daily diaries revealed that on days that couples engaged in mindful exercises, couples reported higher levels of relationship happiness, stress coping efficacy, and lower levels of relationship stress, and overall stress. These findings revealed that this novel mindfulness-based relationship enhancement program was efficacious for non-distressed couples.

In addition, Gambrel and Piercy (2014a, 2014b) found that for men in expecting couples, their relationship satisfaction increased after engaging in a four week mindfulness class. Thirty-three couples engaged in this study, in which 16 couples were part of the Mindful Transition to Parenthood Program and 17 were in the waitlist control group. Results in this study revealed that men improved in their relationship satisfaction, mindfulness practice, and negative affect. In addition, the researchers of this study interviewed 13 of the 16 couples who engaged in the program and found that couples increased their acceptance and awareness, deepened connections with their partners, and led them to be more confident about becoming parents. Men in particular revealed that they were more competent in becoming a parent.

These two programs support the notion that mindfulness is associated with higher relational quality (Burpee & Langer, 2005) and supports the assumption that couples who participate in a MBCRE program will experience reductions in stress and have stronger self-awareness and be better able to self-disclose. Since the emergence of MBCRE is fairly new, the mindfulness curricula that will be examined in this study will draw from stress theory with the assumptions that relational health is most closely related to individual health and well-being,

suggesting that an individual's ability to manage stress is key for healthy relationships (Amato & Booth, 1997; Blum & Mehrabian, 1999; Bradbury & Karney, 2004).

Although the research is clear that stress may alter emotion regulation and behavioral expression, resulting in a decline of relational quality and satisfaction (Gottman et al., 1998) learning how to manage stress and emotions can be taught (Fetsch et al., 1999; Gross, 2001; Keiley, 2002). Some of the skills that are taught in the MBCRE program include recognizing physiological changes, arousal triggers, and finding behaviors to help calm these responses. It was then expected that if an individual learned how to effectively manage stress by focusing on their physiological responses and daily mindfulness practices that allow for self-awareness, he or she would be better able to manage stressors and better able to engage in prosocial behaviors in his or her relationship, in turn experience higher relational quality and stability (Gottman et al., 1998; Nichols, 2009; Rowan, Compton, & Rust, 1995).

Understanding Mechanisms of Change Following CRE Participation

Many CRE programs base curricula content on social learning theory and altering relationship quality by improving couple behavioral skills (Hawkins, Carroll, Doherty, & Willoughby, 2004; Stanley et al., 2006). Similarly, behavioral theory suggests that individuals will experience an increase in commitment and stability based on the positive behaviors they have enhanced in their relationship (Weiss, 1984). In order to address the concerns Wadsorth and Markman (2012) delineated on understanding the true mechanism of change in CRE participants, one study began exploring the process of change in CRE (Rauer et al., 2014). This study examined two competing theories- social-cognitive theory and behavioral theory- in order to understand if behavioral change affects cognitive change (increase in positive behaviors influences an increase in relational commitment) or if cognitive change affects behavioral change

(an increase in relationship commitment influences positive relational behaviors). The sample consisted of 2,824 diverse individuals who participated in CRE programs. Results supported the behavioral theory model, in which an increase and change in positive behaviors influenced an increase in relational commitment, thus increasing relationship quality. In addition, they found these processes were consistent across subgroups and were not moderated by social address (race, marital status, and income) or participant's experience (attending with one's partner and beginning the program at a lower functioning level). These findings help practitioners understand that an emphasis on practical skills may be most helpful in affecting change in commitment and relationship quality.

Critical Factors Related to Relationship Quality

The study includes an examination of varying intermediate outcomes and their relationship to relational quality. Prior research has found that self-disclosure not only has individual benefits, for instance an increase in self-esteem and health (Sprecher & Hendrick, 2004), but there are also relationship benefits, such as an increase in relationship satisfaction (Hendrick, 1981). Self-disclosure is vital in all types of relationships, especially when it comes to developing new relationships (Sprecher, Treger, Wondra, Hilaire, & Wallpe, 2013). For instance individuals who engage in reciprocal self-disclosure during initial interactions, will increase positive outcomes such as liking the other individual and wanting to continue the relationship.

This finding is grounded in social exchange theory (Archer, 1979) which posits that partners intentionally seek equality and reciprocity in relationships. In romantic relationships, couples who self-disclose to each other report a sense of intimacy and an increase in marital satisfaction (Komarovsky & Philips, 1962; Rubin et al., 1980). In addition, research has shown that validating a partner's thoughts and feelings during their self-disclosure (Reis & Patrick,

1996; Reis & Shaver, 1988), promotes a close and more intimate interaction (Laurenceau, Feldman, Barrett, & Pietromonaco, 1998). Other research has found that a lack of self-disclosure about stressful and traumatic events can make an individual's immune system vulnerable, due to the stress that is on the body (Pennebaker, Kiecolt-Glaser, & Glaser, 1988).

Other research emphasizes the connection between relational behaviors and relationship satisfaction (Gottman, 1999). For instance, it is best for couples to engage in five positive interactions for every one negative interaction during a conflict resolution (Gottman, 1999) and in general (Hawkins, Carrere, & Gottman, 2002). Based on the behavior exchange model (Jacobson, McDonald, Follette, & Berle, 1985), partners engage in certain behaviors and evaluate the interactions that are experienced based on the ratio of rewards to costs. Couples who engage in constant negative interactions (i.e., defensiveness, contempt), are likely to experience harmful consequences for their mental and physical health (Levinger & Moles, 1979). On the other hand, couples who engaged in positive interactions (i.e., humor, affection) did not experience the same harmful individual consequences. Engaging in positive interactions (i.e., being supportive of one's partner, working to maintain close connection with one's partner) has been shown to predict marital satisfaction and quality (Canary, Stafford, & Semic, 2002; Gottman & DeClaire, 2001; Huston, Coughlin, Houts, Smith, & George, 2001). Couples, who engage in a preponderance of positive interactions compared to negative interactions, are likely to experience greater trust and are better able to handle difficulties in their relationship (Karney & Bradbury, 2000). In addition, Stanley, Amato, Johnson, and Markman (2006) have suggested that couples who engage in more positive behaviors are likely to have positive perceptions about their relationship, which consequently, boosts one's confidence and relational stability.

Effective conflict management has also been associated with couple satisfaction and stability (Gottman et al., 1998). Specifically, conflict management is related to managing stressors and research has found that individuals who effectively manage stressors in their romantic relationships, report higher relationship quality and confidence in the stability of their relationship (Karney & Bradbury, 1995; Wiley, 2007). Similarly, researchers have found that the way partners in a romantic relationship respond to each other in times of stress will influence whether the stressful situation will worsen or not (Acitelli, Douvan, & Veroff, 1997; Rowan, Compton, & Rust, 1995). Thus it is important for partners to learn how to manage stressful situations and how to effectively respond to their partner during times of stress (Gottman & Silver, 1999).

Overview of the Current Study

This study will begin to fill in the gap in understanding more about differences in program experiences and the process of change in different curricula. Each of the curricula included in the study were expected to affect the stress levels, relational skills, and relationship confidence and quality for participants. However, because the curricula each differ in the skills emphasized, we explored comparative changes following participation. Specifically, we explored: Do individuals who participated in MBCRE experience more change in stress and self-disclosure than individuals who participated in ELEVATE (RQ1)? Do individuals experience more change in their positive and negative behaviors based on their participation in ELEVATE or MBCRE (RQ2)?

In addition, this study explored whether there were greater benefits in either curriculum group for enhancing relational quality and confidence (RQ3). For all analyses, time spent in CRE

program (i.e., dosage), was controlled for, as well as any demographic factors found to differ by group.

Finally, it was expected that the four outcomes of positive interactions, negative interactions, stress and self-disclosure were influential in enhancing relational quality and confidence; however, it was likely that there were differential effects by curriculum group. As a fourth research question, we explored which change (i.e., change in stress, self-disclosure skills, positive interactions, and negative interactions) was the most potent predictor of concurrent changes in relational quality and confidence for each curriculum group. Exploring these research questions help promote our understanding of differing CRE experiences, as well as mechanisms of change following CRE participation and serve to inform both researchers and practitioners.

III. Method

Participants

Participants were recruited as part of a federally funded healthy marriage and relationship education initiative. Participants were recruited using several methods. First, advertisements were placed in community newspapers for both programs, and for ELEVATE, local billboards were also utilized for advertising. Second, social media was utilized to advertise the free workshops that were being offered in the community. Both programs were open to the community and no selection criteria were used. The sample consists of a total of 217 participants, 157 participants in ELEVATE (60 couples and 37 individuals) and 60 participants in MBCRE (28 couples and 4 individuals) who completed a minimum of 3 hours of the program ($M=8$, $SD=1.11$); 15% of the MBCRE participants also participated in ELEVATE. MBCRE participants spent on average 8.8 hours in class ($SD=.21$; range 6 to 12) and ELEVATE participants spent on average 8 hours in class ($SD=.00$).

In the sample, 75% of the participants were married, 8% were engaged, 14% were dating, 2% were separated, and 1% were widowed. Fifty-three percent of the participants were women, 54% identified as Caucasian/White, 30% identified as African-American/Black, 8% identified as Asian-American, 3% identified as Hispanic/Latino, and 5% identified as another racial group. In addition, 51% had children. The mean age for participants was 36 years old ($SD=12$; range 18 to 79 years). Ninety-three percent attended the classes with their partner. Fifty-seven percent of participants were employed full-time, 16% were employed part-time, 16% were retired, 5% were disabled, and 6% were unemployed. Twenty-eight percent were students. Educational attainment level varied for participants, 13% had completed high school/GED or had less than a high school education, 16% had some college, 3% had a technical/vocation school degree, 9% had an

associate's degree, 30% had a 4 year college degree, and 29% had a post-college degree (e.g., Master's, MBA, MD, Ph. D.). Six percent of the couples had a combined income less than \$7,000, 8% had a combined income that fell between \$7,000 and \$13,999, 16% were between \$14,000 to \$24,000, 17% were between \$25,000 and \$39,000, and 26% of the couples combined income fell between \$40,000 to \$74,999, 12% had an income between \$75,000 and \$99,999, and 15% had a combined income over \$100,000. T-tests and chi-square test results indicated no demographic differences between participants who attended ELEVATE and those that attended MBCRE.

Program Design and Implementation

Both programs, *ELEVATE* and *Mindfulness-based CRE* (MBCRE), are couple focused and center on the romantic relationship. Participation in the CRE classes was voluntary. Classes were taught by a male/female team of relationship/marriage educators. The teams were jointly trained in program delivery and evaluation data collection.

ELEVATE is an 8 hour program and was delivered in a one day conference. The program includes workbooks for participants to complete individually and with their partner, and videos and activities that supplement the main point of the module lesson and assist in discussions. The ELEVATE curriculum has different modules that align with the seven core NERMEM skills (e.g., *E* stands for *Empower*, which is identical to *Care for Self*; *L* stands for *Lay the Foundation*, which is identical to *Choose*; *E* stands for *Enlighten*, which is identical to *Know*; *V* stands for *Value*, which is identical to *Care*; *A* stands for *Attach*, which is identical to *Share*; *T* stands for *Tame*, which is identical to *Manage*; and *E* stands for *Engage*, which is identical to *Connect*). One example of an activity that was utilized during the program is from the *Enlighten* module of the program and is similar to the "Newlywed Game." Couples' are instructed to answer a variety

of questions as if they were their partner. Then their partner is to check if the answer is correct. The objective of this activity is to help participants understand the importance of maintaining and updating one's "love maps" (Gottman, 1998) and the commitment to constantly be learning about one's partner. According to Gottman (1998), "love maps" address partners knowledge about each other and the ability for one to know and respect their partner's preferences in many different realms of the relationship (e.g., intimacy, spending money, how to spend time). In addition, the facilitators explain that couples, who are knowledgeable about each other, find it easier to handle conflicts. The ELEVATE curriculum is now available free online for marriage/relationship educators (<http://www.nermen.org/ELEVATE.php>).

Based on the research indicating the value of mindfulness practices for individuals and relational health, and because participants' responded well to the mindfulness practices taught in ELEVATE, a stand-alone MBCRE curriculum was developed. This program primarily emphasizes physiology, emotion, and mindfulness-based stress reduction skills to address stress within relationships. MBCRE consists of 1.5 hour classes held over a 6 week period and couples are encouraged to attend together.

The MBCRE program focuses on the process of how physiology, stress, and awareness all impact couple functioning. For instance, there is a natural inclination to push away from one's partner during times of stress and with the use of mindfulness, it allows for one to go inward and turn towards one's partner more easily during those times of stress. Each week, there is a different class objective and weekly homework assignments are implemented to guide participants in using the mindfulness stress-reduction strategy that are learned in class.

The class is divided into two separate sections. The first half of the program focuses on the care for self. During the first class of the program, the information is focused on what it

means to be mindful and when mindfulness is used. In addition, there are seven core attitudes that are delineated (Kabat-Zinn, 1991). The attitudes are non-judging, patience, beginner's mind, trust, non-striving, acceptance, and letting go. An activity that is taught in this first class is awareness and focus on one's breath; which is also that week's homework assignment. The second class of the program focuses on the impact stress has on the brain, health, and relationships and how the use of mindfulness can facilitate well-being during stress. More of the benefits of mindfulness are shared during this time of the program (e.g., improving sleep problems, weight issues, alleviating headaches, and lowering depressive symptoms). An activity that is taught during the second class is the body scan technique. This technique systematically involves bringing awareness and attention to specific regions in the body and moving this awareness from the feet up to one's head and focusing on any sensations that may occur. Participants are then instructed to practice this exercise every night for homework. The third class of the program focuses on the importance of mindful movement, such as yoga, and how awareness of self is a core component of yoga. Participants engage in a yoga session during this class time and are assigned to practice yoga and mindfulness 15 minutes every day for homework.

The second half of the program is focused on care for others and stressful and conflictual events that occur in the relationship. Thus, for the fourth class of the program, the focus is on the benefits of mindfulness for one's relationship (e.g., promoting unity, connection, and closeness). In addition, the participants are taught the importance of touch in romantic relationships and review the importance of communicating about one's sexuality with their partner. The activity for that class is a "loving-kindness" meditation. This meditation involves the individual to focus on loving and caring for him or herself and then extending this care and kindness to his or her

partner. For example, an individual may focus on the following thought “may I be filled with loving-kindness, may I be well, may I be happy” and then turn this thought to focus on his or her partner “may my partner be filled with loving-kindness, may my partner be well, may my partner be happy.” This meditation promotes unity and closeness and is that week’s homework assignment. The fifth class of the program emphasizes conflict management and reviews how stress and conflict impact health. In addition, this class delineates how mindfulness can help individuals control their stress response when getting worked up during an argument and help a couple turn towards each other, during conflictual events. The exercise that participants engage in is “mindful connection.” During this meditation, individuals focus on what they can say or do differently to improve their relationship. This exercise is then assigned to be done every day for homework. For the last class, the information is focused on the relationship and incorporates the use of music during breathing exercises. In addition, participants are taught how linking music and positive memories helps them connect to their partners emotionally. At the end of the last class, couples are encouraged to practice being mindful and engaging in breathing exercises together.

Procedure

Participants completed a pre-program questionnaire prior to beginning the ELEVATE and MBCRE program. Some MBCRE participants completed the pre-program questionnaire a few months prior to beginning the program. This time lapse was controlled for in the analyses. The questionnaire had approximately 260 self-report items regarding their global stress level, self-disclosure, positive and negative interactions, relationship quality, and relational confidence in addition to socio-demographic information about their household and other measures not utilized in the current study prior to the start of the classes. Questionnaires took approximately

30–45 minutes for participants to complete. Because the ELEVATE program was delivered in one day, these participants completed a post program survey six weeks later and had the option to complete either a hard copy, which was mailed to them, or complete it online via Qualtrics. A post-program questionnaire was completed following the last of six weekly sessions of the MBCRE program. Most participants returned their post-program survey within two weeks of completing the last class. The post-program questionnaire was identical to the pre-program questionnaire with the exception of items querying the participants' impressions of the class and the educator(s). Participants were instructed to complete all questionnaires independently. Participants were paid \$50 for completing the set of questionnaires. No differences were found between participants who completed the questionnaire online or on paper.

Measures

For the following measures, selected items were used from established scales, as opposed to the full scale. Prior pilot studies and the use of psychometric analysis validated the minimization of items in each scale. Further information about this process can be obtained from the authors.

Global Stress Level. In order to assess participants stress level, participants rated their level of stress (See Appendix A) based on a 7-point Likert scale (1=no stress, 4=moderate and 7=high stress) to the following statement, "For the past month, how would you rate your overall level of stress?" A higher score indicates a higher level of stress.

Self-Disclosure. Because of low reliability on the 3-item measure for self-disclosure, we utilized a global item (See Appendix B) from the Interpersonal Competence Scale (Buhrmester, Furman, Wittenberg, & Reis, 1988). Participants responded on a 5-point Likert scale (1=not at all like me, 3=somewhat like me and 5=very much like me) to the following statement, "I let down

my protective "shell" and allow my partner to really know me." A higher score indicates a higher level of self-disclosure.

Positive and Negative Interactions. Two scales were utilized to assess positive and negative couple interactions separately (See Appendix C). The Positive Interaction scale was the average of a 4-item measure (adapted from Huston & Vangelisti, 1991) where participants indicated the extent to which they agreed with statements such as, "On a typical day, how often do you do something nice for your spouse/significant other?" Participants evaluated their behaviors using a 5-point Likert scale, where 1=never, 2= sometimes, but not every day, 3=once or twice a day, 4= often throughout the day, and 5=always. Mean scores were computed. The average score on the measure ranged from 1 to 5, with higher scores indicating a higher level of positive interactions. Chronbach's alpha = .83 at pre-test; .83 at post-test. Similarly, the Negative Interaction scale included 5 items (adapted from Huston & Vangelisti, 1991). Participants indicated the extent to which they agreed with statements such as, "On a typical day, how often do you show anger or impatience toward your spouse/significant other?" These statements were also rated on the same 5-point Likert scale as mentioned for the Positive Interaction scale. Mean scores were computed. The average score on the measure ranged from 1 to 5, with higher scores indicating a higher level of negative interactions. Chronbach's alpha = .75 at pre-test; .76 at post-test.

Couple quality. Participants answered the Quality of Marriage Index (QMI; Norton, 1983). This measure asked participants to indicate the extent to which they agreed with five relationship statements, such as "We have a good marriage/relationship" and "Our marriage/relationship is strong" (See Appendix D). Participants evaluated their relationship using a 7-point Likert scale (1=very strongly disagree, 2=strongly disagree, 3=disagree, 4=mixed,

5=agree, 6=strongly disagree and 7=very strongly agree). Mean scores were computed. The average score on the measure ranged from 1 to 7, with higher scores indicating greater satisfaction. Chronbach's alpha = .97 at pre-test; .98 at post-test.

Confidence. Confidence was assessed using the average of a 5-item measure (See Appendix E) from the Confidence and Dedication Scale (adapted from Stanley & Markman, 1992). Participants responded on a 5-point Likert scale (1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, and 5=strongly agree) to 3 items asking the extent to which they agreed or disagreed with statements such as this: "I feel good about our prospects to make this relationship work for a lifetime." The other two items of the 5-item measure were also on a 5-point Likert scale (1=not committed at all, 3=committed, 5=completely committed). These two items asked participants the following questions: "How committed are *you* to maintaining your current romantic relationship?" and "In your opinion, how committed is *your romantic partner* to maintaining your current romantic relationship?" Mean scores were computed. The average score on the measure ranged from 1 to 5, with higher scores indicating a higher level of confidence and dedication to the relationship. Chronbach's alpha = .91 at pre-test; .94 at post-test.

Plan of Analysis

In order to test if individuals who participated in MBCRE experienced more change in stress and self-disclosure than individuals who participated in ELEVATE (RQ1), a repeated measures mixed between-within analysis of covariance (RMANCOVA) was conducted for each outcome, with curriculum group as the between-groups variable, and with gender entered as a covariate. In addition, total number of hours in CRE (dosage) was a covariate in order to partial out the effect of program content from time spent in CRE. Lastly, time between completing the

pre-program questionnaire and the program starting was also a covariate. Fifteen-percent of the MBCRE participants who participated in the ELEVATE class, did not complete a pre-test at the beginning of the MBCRE class; therefore, their ELEVATE post-test was used as their MBCRE pre-test. The time lapse between the ELEVATE post-test and the start date of MBCRE was then controlled by being entered as a covariate.

In order to test if individuals who participated in ELEVATE experienced greater change in positive and negative interaction to individuals who participated in MBCRE (RQ2), a repeated measures mixed between-within analysis of covariance (RMANCOVA) was conducted for each outcome, with curriculum group as the between-groups variable. Again, dosage was controlled for, as well as gender, and time between pre-program questionnaire and starting the program.

In order to test whether there were differences in change patterns in relational quality and confidence level between participants who participated in ELEVATE and MBCRE (RQ3), a mixed between-within analysis of covariance (RMANCOVA) was utilized, with curriculum group as the between-groups variable. Dosage was controlled for, as well as gender, and time between pre-program questionnaire and starting the program.

In order to test for which change was the most potent predictor of concurrent changes in relational quality and confidence level in each curriculum group (RQ4), hierarchical linear regressions were conducted in which the controls (dosage, gender, and time between pre-questionnaire and start of program) and time 1 (T1) of the outcome (i.e., relationship quality or confidence/dedication) were entered in the first step (Step 1), followed by the difference scores of the predictors (e.g., change in stress, self-disclosure, positive and negative interactions) (Step 2) for MBCRE. For ELEVATE, controls included dosage, gender, and T1 of the outcome (i.e., relationship quality or confidence/dedication) (Step 1), followed by the difference scores of the

predictors (e.g., change in stress, self-disclosure, positive and negative interactions) (Step 2).

Including T1 of the outcome in the model allows for the prediction of change in the outcome;

this is known as auto-regression. Separate models were tested for each curriculum group and for

each outcome and all variables in the models were standardized prior to analyses. SPSS 21.0 was

utilized for all analyses.

IV. Results

Descriptive Statistics and Correlations

Descriptive statistics of the dependent variables for both ELEVATE and MBCRE are shown in Table 1. Table 2 presents the within-group correlations for all measures and as can be seen, the outcome variables are related to each other. These correlations were also utilized to determine which predictors would be used for research question 4. Table 3 presents the correlations of the dependent variables at Time 1 and Table 4 presents the correlations of the dependents variables at Time 2.

Research question 1: Do individuals who participated in MBCRE experience more change in stress and self-disclosure than individuals who participated in ELEVATE?

A repeated measures mixed between-within analysis of covariance (RMANCOVA) was conducted to compare the changes in measures of stress and self-disclosure between MBCRE and ELEVATE participants. After controlling for gender, total number of hours in CRE (dosage), and months between completing the pre-program questionnaire and the program starting, there was a significant time X group interaction effect on stress, $F(1,194) = 4.4, p < .05$, partial eta squared = .022 (see Figure 1). Post-hoc paired-samples t-tests were conducted to compare change in stress for individuals who participated in each curriculum. There was a significant change in scores for individuals who participated in MBCRE (pre-test, $M = 4.31, SD = 1.58$; post-test, $M = 3.91, SD = 1.42$; $t(53) = 1.98, p = .05$), but there was no significant change in scores for individuals who participated in ELEVATE (pre-test, $M = 4.27, SD = 1.60$; post-test, $M = 4.27, SD = 1.59$; $t(145) = -.06, p = .955$). On average, individuals who participated in MBCRE experienced more change in stress than individuals who participated in ELEVATE.

After controlling for gender, total number of hours in CRE (dosage), and months between completing the pre-program questionnaire and the program starting, there was no significant time X group interaction effect on self-disclosure, $F(1, 197) = 2.67, p = .10$, partial eta squared = .013. There was no significant main effect for time on self-disclosure, Wilks's lambda = .994, $F(1, 197) = 1.17, p = .28$, indicating neither subgroup demonstrated change in self-disclosure.

Research question 2: Do individuals who participated in the ELEVATE class experience greater changes in positive and negative interactions compared to individuals who participated in MBCRE?

A repeated measures mixed between-within analysis of covariance (RMANCOVA) was conducted to compare the changes in measures of positive and negative interactions between individuals who participated in the ELEVATE and MBCRE curricula. The analysis for positive interactions did not control for gender or total numbers of hours in CRE (dosage) since these two variables were not significantly correlated with the outcome variable. After controlling for months between completing the pre-program questionnaire and the program starting, there was a marginally significant time X group interaction effect on positive interactions, $F(1, 190) = 2.54, p = .11$, partial eta squared = .013 (see Figure 2). Post-hoc paired samples t-tests were conducted to compare change in positive interactions for individuals who participated in MBCRE (pre-test, $M = 3.57, SD = .86$; post-test, $M = 3.73, SD = .90$; $t(51) = -.205, p < .05$) and for individuals who participated in ELEVATE (pre-test, $M = 3.67, SD = .97$; post-test, $M = 3.67, SD = .96$; $t(141) = .10, p = .925$). Even though there was no clear significant interaction effect, we proceeded with post-hoc paired samples t-tests based on the visualizing trend and because of the small sample size, which may have not had a strong effect. On average, individuals who participated in MBCRE experienced significant change in their positive interactions. Contrary to

expectations, those who participated in ELEVATE did not demonstrate significant change over time in use of positive interactions.

After controlling for gender, total number of hours in CRE (dosage), and months between completing the pre-program questionnaire and the program starting, there was no significant time X group interaction effect on negative interactions, $F(1, 188) = .59, p = .44$, partial eta squared = .003. However, there was a significant main effect for time on negative interaction, Wilks's lambda = .939, $F(1, 193) = 12.53, p < .001$. Thus, regardless of curriculum, all participants showed significant decrease in their negative interactions.

Research question 3: Are there significant differences in improvements in relational quality and confidence level between participants who participated in ELEVATE and MBCRE?

A repeated measures mixed between-within analysis of covariance (RMANCOVA) was utilized in order to test whether there were differences in change patterns in relational quality and confidence level between participants who participated in ELEVATE and MBCRE. The analysis for relational quality did not control for gender or total numbers of hours in CRE (dosage) since these two variables were not significant with the outcome variable. After controlling for months between completing the pre-program questionnaire and the program starting, there was no significant time X group interaction effect on relational quality, $F(1, 191) = .431, p = .51$, partial eta squared = .002. There was no significant main effect for time on relational quality, Wilks's lambda = 1.00, $F(1, 194) = .049, p = .826$. Thus, the group of participants did not report change in their relational quality.

After controlling for gender, total number of hours in CRE (dosage), and months between completing the pre-program questionnaire and the program starting, there was no significant time X group interaction effect on confidence level, $F(1, 192) = .52, p = .47$, partial eta squared =

.003. There was a significant main effect for time on confidence level, Wilks's lambda = .272, $F(1,197) = 528.21$, $p < .001$. Thus, regardless of curriculum, participants felt significantly more confident in their relationship after participation.

Research question 4: What change (i.e., change in stress, self-disclosure skills, positive interactions, and negative interactions) is the most potent predictor of concurrent relational quality and confidence level changes in ELEVATE and MBCRE?

Four separate hierarchical linear regressions were conducted in order to test for the most potent predictor of changes in relational quality and confidence level in each curriculum group. All variables were standardized since the scales were different from each other, then difference scores for the predictors (i.e., change in stress, self-disclosure, positive interactions, and negative interactions) after exposure to the program were calculated by subtracting the pre-test score from the post-test score. Gender, total number of hours in CRE (dosage), and time between pre-questionnaire and start of program, were initially entered as controls at Step 1 for the four models; however, since they were not significant, these the variables were taken out of the model. Time 1 of relationship quality was entered as a control at Step 1 for the MBCRE group (Table 5) and after entry of the predictors (i.e., change in stress, self-disclosure, positive and negative interactions) at Step 2, the total variance explained by the model was 30%, $F(1, 48) = 17.33$, $p < .01$. The predictors explained an additional 3% of the variance after controlling for T1 of relational quality, $R^2 \text{ change} = .035$, $F \text{ change}(4, 44) = .553$, $p = .70$. There were no significant relationships between changes in stress, self-disclosure, positive and negative interactions and change in relationship quality in MBCRE participants.

Time 1 of confidence/dedication was entered as a control at Step 1 for the MBCRE group (Table 6). After entry of the difference scores of the predictors (i.e., change in stress, self-

disclosure, positive and negative interactions) at Step 2, the total variance explained by the model was 81%, $F(1, 47) = 152.13, p < .000$. The predictors explained an additional 4% of the variance after controlling for T1 of confidence/dedication, R^2 change = .043, F change (4, 43) = 2.38, $p < .10$. In the final model, change in positive interactions after exposure to MBCRE significantly predicted concurrent change in confidence level ($\beta = .17, p < .05$) and was therefore determined to be the most potent predictor of confidence level change for MBCRE participants.

Time 1 of relationship quality was entered as a control at Step 1 for the ELEVATE group (Table 7). After entry of the difference scores of predictors (i.e., change in stress, self-disclosure, positive and negative interactions) at Step 2, the total variance explained by the model was 37%, $F(1, 130) = 61.91, p < .000$. The predictors explained an additional 5% of the variance after controlling for T1 of relationship quality, R^2 change = .045, F change (4, 126) = 2.226, $p < .10$. In the final model, change in positive interactions ($\beta = .19, p < .05$) and stress ($\beta = -.16, p < .05$) significantly predicted variance in concurrent relational quality change for individuals who participated in ELEVATE. Between these, change in positive interactions was the more potent predictor of concurrent change in relationship quality for ELEVATE participants.

Time 1 of confidence/dedication were entered as controls at Step 1 for the ELEVATE group (Table 8). After entry of the difference scores of the predictors (i.e., change in stress, self-disclosure, positive and negative interactions) at Step 2, the total variance explained by the model was 81%, $F(1, 131) = 102.106, p < .000$. The predictors explained an additional 8% of the variance after controlling for T1 of confidence/dedication, R^2 change = .08, F change (4, 125) = 5.332, $p < .001$. In the final model, change in positive interactions ($\beta = .30, p < .000$) and stress ($\beta = -.15, p < .05$) were both significant predictors of concurrent change in confidence

level. Comparatively, and similar to MBCRE participants, change in positive interactions was the most potent predictor of concurrent change in confidence level for ELEVATE participants.

V. Discussion

This study examined how individuals comparatively changed over time following participation in two different CRE curricula (ELEVATE and MBCRE). The outcome variables that were examined were stress, self-disclosure, positive interactions, negative interactions, relational quality, and confidence. In addition, this study explored the mechanisms of change following CRE participation and examined whether change in change in stress, self-disclosure, positive interactions, or negative interactions was the most potent predictor of concurrent change in relational quality and confidence level for each curriculum group.

Differences between Program Experiences

Individuals' outcomes differed based on the CRE class. We further explored repeated measure ANCOVAs by utilizing post-hoc t-tests to examine which group changed to a greater degree for all outcomes. In our sample, individuals who participated in the MBCRE class appeared to have gained more in the short-term than ELEVATE participants. That is, MBCRE participants experienced more change in stress and positive interactions than ELEVATE participants. It also appears that these changes were more closely related to changes in confidence level for MBCRE participants. This may be due to the different emphasis in class content: MBCRE centers on the importance of self-care and managing one's own stress; whereas, ELEVATE targets teaching a variety of relational skills (e.g., communication skills, conflict management, importance of updating love maps, etc.). MBCRE emphasizes the importance of individual health and does this by dedicating half the class sessions to self-care. ELEVATE primarily focuses on the couple relationship and dedicates six of the seven modules to teaching relational skills. It may be that a heavier emphasis on individual stress is likely to

hone a more immediate positive effect than an emphasis on communication skills, which may take more time to adopt and have an effect.

Another difference between the two programs is how they were delivered to participants. MBCRE was offered over six weeks with built in time to practice skills in class and with weekly “homework” assignments that the participants engage in and discuss at the beginning of the following class. ELEVATE was held over a one day conference and participants had limited time to practice skills during the class. In addition, the MBCRE classes were smaller and more intimate compared to the ELEVATE classes. This may have influenced how facilitators connected with the participants and may have influenced how comfortable participants felt to ask questions about skills. In other words, the difference in delivery methods may account for the differential effects. In future work, it will be important to disentangle the methods and the content so that the individual influence can be discerned.

These differences between the programs may have influenced MBCRE participants to report on engaging in more positive interactions. The findings that participants engaged in behaviors that benefitted them and their relationships are supported by the social learning theory (Bandura, 1977) and experiential theory (Kolb, 1984) because assumptions from both theories suggest individuals chose to engage in positive behavior because they learned about the prosocial behaviors from people they view as more knowledgeable than them and effectively implemented these behaviors in their lives.

Neither group showed a significant change in self-disclosure. We feel this may be a measurement issue. The global item that was used was originally from a three item measure and had to be reduced to one item because of low reliability. Further, the item that was used (“I let down my protective shell and allow people to really get to know me”) did not specify the time

period for use of the skill and is not specific to a behavior. Since this was a global item and with a short-term period between the pre-test and post-test, this may be why we did not see a significant change for participants.

Similarities in Program Experiences

Participants from both MBCRE and ELEVATE curricula experienced significant declines in their negative interactions with their partner and felt more confident in their relationship. Both curricula focused on the consequences of engaging in negative interactions; however, each curriculum emphasizes different strategies. ELEVATE has more information on communication skills in conflict, while MBCRE has more emphasis on stress response control and regular stress management practice. It may be that participants engaged in less negative interactions because of understanding the negative consequences and applying the skills they learned (Thibaut & Kelley, 1959). It is likely that this in turn led all participants to feel more confident and dedicated to their relationship. This supports previous work (Stanley, Amato, Johnson, & Markman, 2006) which also found that if you are able to make a positive change in your relationship, then you feel more competent in your relationship and more dedicated. These results further our understanding of how individuals experienced the two different curricula.

Neither MBCRE nor ELEVATE participants showed change in their relational quality from pre-test to post-test. This finding was contradictory to prior findings (Carroll & Doherty, 2003). It may be due to characteristics of the sample. In both program groups, individuals, on average, started the program at a high level of relational quality (ELEVATE pre-test $M = 5.66$, $SD = 1.37$; MBCRE pre-test $M = 5.84$, $SD = 1.26$) and therefore experienced a ceiling effect. For relational quality, the measure is based on 1-7 scale where 1 = very strongly disagree and 7 = very strongly agree and the participants' mean score at pre-test indicates that they agreed or

strongly agreed with most of the items. In addition, adding a retrospective pre-post assessment for relational quality may capture a more realistic sense of change. This would allow for responders to clearly assess where they were at the beginning of the program compared how they may have change after completing the program. Participants in both groups did experience a positive shift in confidence level. Rauer et al. (2014) found that the process of immediate change for participants in CRE was that an increase in positive behaviors influenced an increase in relational commitment, which in turn influenced an increase in relational quality. Based on this finding, it could be that there are delayed effects for relational quality resulting from the increase in confidence. It also may be that the current study's sample size did not have enough power to detect change in relational quality. Follow-up assessment is needed in order to determine if there are mediated and delayed effects.

Examining Relationships among Outcomes

This study also examined what change (i.e., change in stress, self-disclosure, positive and negative interactions) was the most potent predictor in concurrent change in relational quality and confidence level. For the MBCRE group, change in positive interaction was the most potent predictor of change in confidence level, but there was no relationship between change in relational quality in the other outcomes.

Based on prior research (Stijnen, Visser, Garssen, & Hudig, 2008) and the content that MBCRE focuses on, it is assumed that engaging in mindful activities fosters the ability to engage in more positive interactions which is associated with enhanced confidence. It was surprising, however, that change in stress was not a predictor of change in confidence level, since based on the stress theory it is assumed that one's ability to manage his or her own stress response would be linked with other indicators of healthy relationships (McCubbin et al., 1980).

For the ELEVATE group, change in positive interactions was the most potent predictor for both relational quality and confidence level. Change in stress level also significantly predicted change in relational quality and confidence level. These findings were expected since ELEVATE centers predominantly on building skills (i.e., conflict management, reviewing love maps, etc.) but also includes some information on stress management. These findings are supported by prior research that suggest that engaging in positive interactions and managing stress level, fosters confidence and a positive assessment of relationship quality (Bradbury & Karney, 2004; Fowers, Lyons, & Motel, 1996).

Taken together, it is clear that although there were reductions in the use of negative interactions for both groups and reductions in stress for the MBCRE group, it is the increased use of positive interactions that is the most potent predictor of change in both relational quality and confidence level for ELEVATE participants and for change in confidence level for MBCRE participants. Interventions that help couples build skills to engage in more positive interactions are addressing a key aspect for improving relational quality and confidence level (Hawkins, Stanley, Blanchard, & Albright, 2012; Rauer et al., 2014). This study is an initial exploration and is more theoretical because we are looking at concurrent change. This process of change deserves further exploration with a larger sample size, multiple time points, and cross-lag designs.

Implications

Both CRE programs appear to be of benefit to participants. This study found that participants from both groups decreased in their negative interactions. Previous work has shown, engaging in negative interactions can be damaging to one's health (Levinger & Moles, 1979) and

lead to relationship dissatisfaction (Gottman, 1999); therefore, it is expected that participants will benefit in several ways due to less use of negative interactions.

Facilitators can also have some confidence that participants can benefit in other important ways from participating in either curriculum. This study does not have enough evidence to suggest one is necessarily “better” than the other. Future research is needed with larger samples, and several time points. It is likely that each is beneficial in slightly different ways.

Limitations and Future Directions

This study is one of the first to examine two different curricula influencing individual and relational outcomes to varying degrees. However, there are limitations to the study that must be taken into account. This study was based on a moderate size sample overall, however, the MBCRE group was comparatively smaller. Future research should include a larger and more balanced sample size in order to adequately compare the two curricula. This study was based on the comparison of change patterns between two groups of participants, rather than evaluating the efficacy of the two programs; therefore, future research should utilize a comparison group in order to inform facilitators and policy makers about the effectiveness of participating in these CRE programs compared to non-participation.

A handful of the MBCRE participants also participated in ELEVATE prior to MBCRE. While we controlled for time in CRE, it may be that the experience of some participating in both curricula, slightly skewed the results in favor of slightly better outcomes for MBCRE participants. In addition, these participants that participated in both curricula did not complete a pre-test survey at program start, and instead their post-test from ELEVATE was substituted as their MBCRE pre-test. While we controlled for the time between the ELEVATE post-test date

and the MBCRE start date, future work should utilize procedures for random assignment to groups. That would allow researchers to more precisely compare outcomes.

All measures were self-report, therefore, it is possible that participants answered in a socially desirable way. Researchers should consider adding partner-report measures, in order to further examine the validity of self-report measures. Also, as previously discussed, utilizing items that delineate a recent time period (e.g., in the past week, previous month) or describing a specific behavior (e.g., I often share my inner most thoughts with my partner) for measures examining self-disclosure, may help researchers fully understand how participants are changing after exposure to a CRE class. It would also be beneficial to explore measures that target other health behaviors (e.g., sleep pattern, sexual behaviors, physical exercise), since these behaviors are related to dyadic relationships (Al-Barrak, Shepertycky, & Kryger, 2003; Kahn, Williamson, & Steven, 1991; Sprecher & Cate, 2004).

Another limitation is that the time point between pre-test and post-test was short-term in nature. We cannot fully ascertain the program effects over time and determine if participants maintained change or experienced delayed positive effects or declines. Future research should include follow-up assessments.

This sample was not as diverse as other studies (Rauer et al., 2014) since participants were more economically privileged, with 59% of the participants having a college degree and 53% having a combined income above \$40,000. In addition, there were a greater proportion of married participants (75%). Thus, future research should aim to utilize a more economically and ethnically diverse sample.

There was a lack of correlations among some the predictor standardized difference scores and the time 2 outcomes; this deserves to be expanded on in the future. Some of the predictors

that were not significantly correlated with the outcome variable were still used in the regression model because prior literature has shown that the predictors (i.e., stress, self-disclosure, positive and negative interactions) have been correlated with the outcomes (i.e., relational quality and confidence level). Thus it may not be that the predictors are not related to the outcome; there was just not enough power with the current sample size to detect the significant relationships. In addition, this study lacked the variability in the data to determine which was the most potent predictor in one of the models; thus, a larger sample and more statistical power may be helpful in future research.

This preliminary study of two curricula that were examined can inform future research, facilitators and researchers on how individuals compare in their outcomes after exposure to CRE programs. Facilitators can also explore why a participant chooses a certain program (e.g., learning coping skills, learning how to manage conflict, learning how to engage with one's partner) or can test methods for matching individuals to programs that best fit their perceived needs.

Conclusions

This exploratory study was a first step in understanding the comparative influence of two different CRE curricula and explored the relationship among changes. The current study provides support for the idea that specific curricula can influence individuals and couples in both similar and different ways. This approach is valuable for CRE developers and facilitators to keep in mind since different curricula may meet different needs for couples. Continuing to conduct research on CRE programs that asks more complex questions about factors that influence the process and the outcomes of CRE is important in order to improve the practice of delivering such

content and continuing to improve the lives of a diverse population of individuals, couples, and families.

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Table 1.
Descriptive Statistics of Dependent Variables

	Participants in Elevate (<i>n</i> =157)			Participants in MBCRE (<i>n</i> =60)		
	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>
Stress						
Pre-Test	149	4.27	1.48	58	4.33	1.53
Post-Test	153	4.27	1.61	55	3.89	1.41
Self-Disclosure						
Pre-Test	154	3.23	1.23	57	3.37	1.08
Post-Test	152	3.20	1.17	57	3.46	1.02
Positive Interactions						
Pre-Test	148	3.68	.96	56	3.58	.88
Post-Test	149	3.66	.94	54	3.73	.81
Negative Interactions						
Pre-Test	148	2.12	.63	56	1.94	.54
Post-Test	149	1.97	.53	54	1.87	.42
Relational Quality						
Pre-Test	149	5.66	1.37	56	5.84	1.26
Post-Test	148	5.66	1.37	54	5.77	1.62
Confidence						
Pre-Test	150	4.47	.71	56	4.56	.56
Post-Test	152	5.66	1.01	54	5.69	.88

Table 2.

Correlations of Dependent Variables with Intermediate Outcomes Difference Scores

	Stress	Self-Disclosure	Positive Int.	Negative Int.	T2 Relational Quality	T2 Confidence
Stress	-	-.13	.02	.11	-.05	-.12
Self-Disclosure	-.20	-	.11	-.03	-.12	-.11
Positive Int.	.03	.14	-	-.26**	.09	.29**
Negative Int.	.01	-.08	-.15	-	.04	-.12
T2 Relational Quality	.01	-.01	.19	-.02	-	.70**
T2 Confidence	-.04	.12	.28*	-.09	.54**	-

Note. MBCRE below diagonal, ELEVATE above diagonal, * $p < .05$, ** $p < .01$. All variables have been standardized. Stress, self-disclosure, positive and negative int. are the difference scores.

Table 3.
Correlations of Dependent Variables at Time 1

	Stress	Self-Disclosure	Positive Int.	Negative Int.	Relational Quality	Confidence
Stress	-	-.10	-.22**	.29**	-.40**	-.28**
Self-Disclosure	-.09	-	.13	-.02	.07	.10
Positive Int.	.01	.13	-	-.23**	.50**	.44**
Negative Int.	-.03	-.15	-.26~	-	-.28**	-.28**
Relational Quality	-.10	-.09	.57**	-.26~	-	.73**
Confidence	-.02	.01	.64**	-.26~	.75**	-

Note. MBCRE below diagonal, ELEVATE above diagonal, ~ $p < .10$ ** $p < .01$. All variables have been standardized.

Table 4.
Correlations of Dependent Variables at Time 2

	Stress	Self-Disclosure	Positive Int.	Negative Int.	Relational Quality	Confidence
Stress	-	.00	-.21**	.35**	-.34**	-.34**
Self-Disclosure	-.34*	-	.11	.13	-.19*	-.06
Positive Int.	-.19	.28*	-	-.16~	.41**	.55**
Negative Int.	.29*	-.18	-.44**	-	-.23**	-.30**
Relational Quality	-.08	.06	.55**	-.23~	-	.70**
Confidence	-.13	.15	.72-*	-.31*	.54**	-

Note. MBCRE below diagonal, ELEVATE above diagonal, ~ $p < .10$, * $p < .05$, ** $p < .01$. All variables have been standardized.

Table 5.
Summary of Hierarchical Linear Regression Analysis for Variables Predicting Relational Quality for Mindfulness Participants (N=50)

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
T1 Relational quality	.57	.13	.52***	.57	.14	.53***
Δ Stress				.04	.14	.04
Δ Self-Disclosure				-.16	.16	-.13
Δ Positive Int.				.25	.25	.13
Δ Negative Int.				.06	.16	.05
R^2		.27			.30	
<i>F</i> for change in R^2		17.33***			.55	

Note. *** $p < .001$

Table 6.
Summary of Hierarchical Linear Regression Analysis for Variables Predicting Confidence Level for Mindfulness Participants (N=49).

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
T1 Confidence	.93	.08	.87***	.91	.07	.86***
Δ Stress				-.05	.06	-.05
Δ Self-Disclosure				-.04	.08	-.04
Δ Positive Int.				.29	.12	.17**
Δ Negative Int.				-.10	.07	-.09
R^2		.77			.81	
<i>F</i> for change in R^2		152.13***			2.38*	

Note. * $p < .10$, ** $p < .05$ *** $p < .001$.

Table 7.
 Summary of Hierarchical Linear Regression Analysis for Variables Predicting Relational
 Quality for ELEVATE Participants (N=137).

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
T1 Relational quality	.52	.07	.57***	.55	.07	.61***
Δ Stress				-.16	.08	-.15**
Δ Self-Disclosure				.00	.07	.00
Δ Positive Int.				.19	.08	.16**
Δ Negative Int.				.01	.09	.00
R^2		.32			.37	
<i>F</i> for change in R^2		61.91***			2.23*	

Note. * $p < .10$, ** $p < .05$, *** $p < .001$.

Table 8.
Summary of Hierarchical Linear Regression Analysis for Variables Predicting Confidence Level for ELEVATE Participants (N=133)

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
T1 Confidence	.68	.07	.67***	.69	.07	.67***
Δ Stress				-.15	.07	-.12**
Δ Self-Disclosure				.04	.07	.04
Δ Positive Int.				.30	.08	.24***
Δ Negative Int.				-.06	.08	-.04
R^2		.44			.52	
<i>F</i> for change in R^2		102.102***			5.33***	

Note. ** $p < .05$, *** $p < .001$.

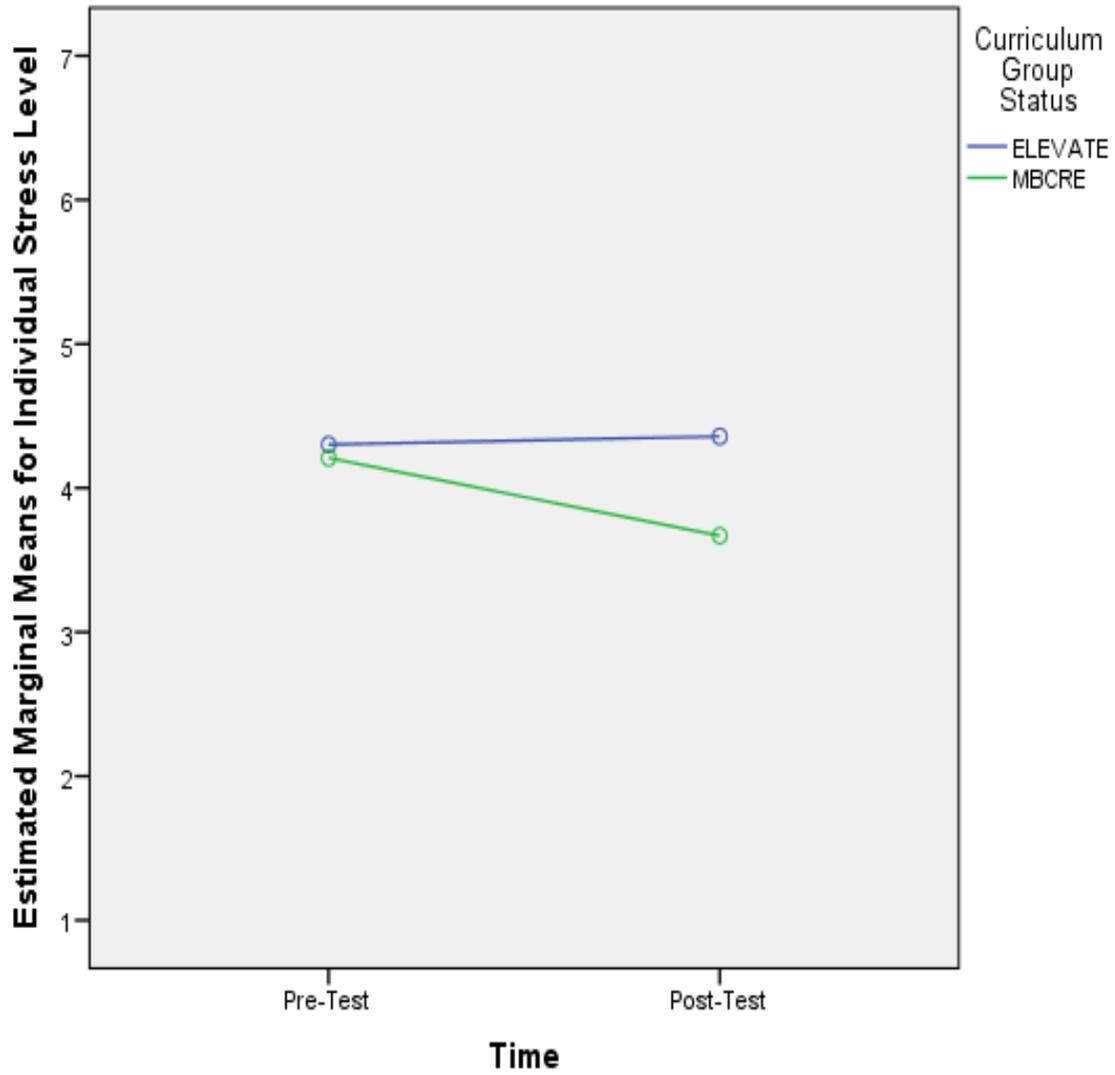


Figure 1. Stress change from pre-test to post-test based on curriculum group.

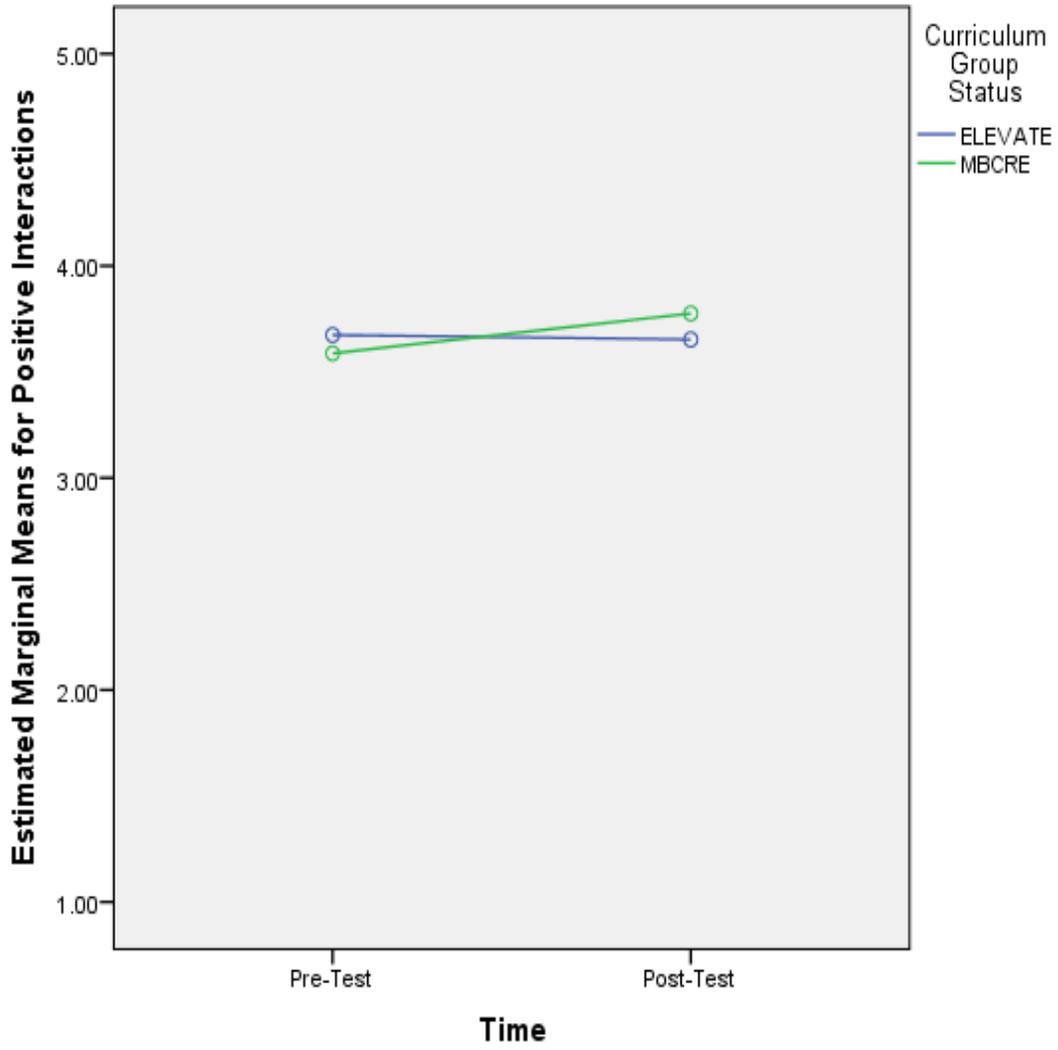


Figure 2. Positive interactions change from pre-test to post-test based on curriculum group.

Appendix A: Global Stress Level Item

For the *past month*, how would you rate your overall level of stress, on a scale from 1 to 7?

No Stress

Moderate

High Stress

①

②

③

④

⑤

⑥

⑦

Appendix B: Self-Disclosure Global Item

Please fill in the bubble for your response for the following statement. When you do, think about how you act in relationships in general- with friends, family, and/or your partner.						
		Not at all like me		Somewhat like me		Very much like me
	I let down my protective “shell” and allow people to really get to know me.	①	②	③	④	⑤

Appendix C: Positive and Negative Interaction Items

	On average, how often do you:	Never	Sometimes, but not every day	Once or twice a day	Often	Always
A.	Say “I love you” to your spouse/significant other	①	②	③	④	⑤
B.	Do something nice for your spouse/significant other	①	②	③	④	⑤
C.	Initiate physical affection with your spouse/significant other (e.g., kiss, hug)	①	②	③	④	⑤
D.	Share emotions, feelings, or problems with your spouse/significant other	①	②	③	④	⑤
E.	Show anger or impatience toward your spouse/significant other	①	②	③	④	⑤
F.	Criticize or complain to your spouse/significant other	①	②	③	④	⑤
G.	Turn down or avoid sexual advances from your spouse/significant other	①	②	③	④	⑤
H.	Fail to do something your spouse/significant other asked	①	②	③	④	⑤
I.	Do things that annoy (e.g., habits) your spouse/significant other	①	②	③	④	⑤

Appendix D: Couple and Marital Quality Items

Please FILL IN ONE circle per question about your current romantic relationship.		Very Strongly Disagree	Strongly Disagree	Disagree	Mixed	Agree	Strongly Agree	Very Strongly Agree
A.	We have a good relationship.	①	②	③	④	⑤	⑥	⑦
B.	My relationship with my romantic partner is very stable.	①	②	③	④	⑤	⑥	⑦
C.	Our relationship is strong.	①	②	③	④	⑤	⑥	⑦
D.	My relationship makes me happy.	①	②	③	④	⑤	⑥	⑦
E.	I really feel like part of a team with my romantic partner.	①	②	③	④	⑤	⑥	⑦

Appendix E: Commitment and Stability Items

	Please use the following scale to FILL IN ONE circle for the answer that best describes your relationship:	Not Committed At All		Committed		Completely Committed
A.	How committed are <i>you</i> to maintaining your current romantic relationship?	①	②	③	④	⑤
B.	In your opinion, how committed is <i>your romantic partner</i> to maintaining your current romantic relationship?	①	②	③	④	⑤

	Please tell us about your couple relationship by filling in the bubble for your response to each of the following statements.	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
A.	I feel good about our chances to make this relationship work for a lifetime.	①	②	③	④	⑤
B.	I am very confident when I think about our future together.	①	②	③	④	⑤
C.	We have the skills a couple needs to make a marriage last.	①	②	③	④	⑤