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Preliminary Evaluation of the Couple LINKS Program

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ABSTRACT

Relationship education (RE) is becoming more common, and new curricula are being offered in many venues, which vary in strength and effectiveness. To date, there have been no evaluations of Couple Lasting Intimacy Nurturing Knowledge and Skills (LINKS), a couple education program. Using hierarchical linear mixed-effects models, we conducted a preliminary evaluation of the LINKS program, with outcomes of communication, commitment, and relationship knowledge ($N = 789$). We found evidence of program effectiveness on all three outcomes, with medium-size to large effect sizes. The largest effect size was for relationship knowledge, and the smallest was for communication. Differences between LINKS and other RE curricula are discussed. The influence of covariates is considered. Overall, there is preliminary evidence for the effectiveness of the LINKS program.

KEYWORDS

Relationship Eeducation (RE); CRE program evaluation; married couples

Couple relationship satisfaction is related to adult well-being (Carr, Freedman, Cornman, & Schwarz, 2014) and child well-being (e.g., Brown, 2010). Conversely, relationship distress is linked to adult general distress and poor perceived health (Whisman & Uebelacker, 2006) and externalizing and internalizing problems in children (e.g., Buehler & Welsh, 2009). Given the importance of couple relationships to personal and child well-being, relationship education (RE) has become more widely available and common as a primarily preventative intervention (Markman & Rhoades, 2012). Typically offered as in-person, educational courses, RE has been shown to have a positive impact on communication and relationship quality (Hawkins, Blanchard, Baldwin, & Fawcett, 2008). However, various aspects of the effectiveness of RE are still in debate (Hawkins & Erickson, 2015); this is in part due to the wide variety of education programs available, with some programs showing more success than others (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2012). Couple Lasting Intimacy Nurturing Knowledge and Skills (LINKS; Van Epp, 2014) is becoming a widely offered program, but its impact has not yet been examined. The

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purpose of this study is to conduct a preliminary evaluation of the Couple LINKS program, in relation to how it improves communication, commitment, and knowledge.

The role of a satisfied relationship in a satisfied life

Educators, therapists, and others who offer couple interventions care about romantic relationships because they play an important role in people's well-being and life satisfaction. While there is some evidence that simply being in a more committed relationship increases the quality of people's life (Adamczyk, 2017; Boyce, Wood, & Ferguson, 2016; Dush & Amato, 2005), there is also evidence that the *quality* of the relationship matters, as increases in relationship happiness is associated with increases in well-being, regardless of relationship type (Dush & Amato, 2005). Indeed, in a 3-year longitudinal study, Gustavson, Røysamb, Borren, Torvik, and Karevold (2016) found that relationship satisfaction was predictive of life satisfaction across all 3 years. For men, relationship satisfaction has been linked to life satisfaction in a cyclical relationship (Roberson, Lenger, Norona, & Olmstead, 2018), and for mothers (from pregnancy through toddlerhood), relationship satisfaction predicted life satisfaction more than the reverse (Dyrdal, Røysamb, Nes, & Vittersø, 2011). Other research indicates that for males, aspects of relationship *satisfaction* are linked to subjective well-being, and that for females, overall relationship *quality* is linked to subjective well-being (Love & Holder, 2016). Overall, research points to the importance of obtaining and maintaining a quality and satisfying romantic relationship.

The role of relationship education

In general, RE consists of "efforts or programs that provide education, skills, and principles that help individuals … and couples … increase their chances of having healthy and stable relationships" (Markman & Rhoades, 2012, p. 169). RE is typically standardized with a manual, frequently based on research, and—compared with traditional couples' therapy—may be more accessible in terms of time, money, and stigma (Markman & Rhoades, 2012; Stewart, Bradford, Higginbotham, Skogrand, & Jackson, 2014). For men, who traditionally have been considered slow to utilize therapy (Doss, Atkins, & Christensen, 2003), the affordance of a greater sense of privacy and less stigma associated with RE may be particularly appealing (Moynehan & Adams, 2007). This may help explain why RE has become relatively more common in recent years. In a study of a community sample ($N = 1{,}986$), only about 9% had participated in marital

therapy in the past year, but approximately 27% had participated in some sort of RE in the past year (Stewart et al., 2014). In a longitudinal study ($N = 426$), 39% of couples sought therapy during a 5-year period, whereas 53% of couples sought RE (Doss, Rhoades, Stanley, & Markman, 2009).

However, there is mixed evidence for the effectiveness of RE (Hawkins et al., 2008; Hawkins & Erickson, 2015). Markman and Rhoades (2012) summarized most of the research on RE from 2002 to 2012, and their summary indicates RE has shown both effects and noneffects, and effectiveness varied from program to program. For example, they reported that the Marriage Moments program for expecting couples and the PREP program for premarital couples had no significant changes in marital satisfaction, whereas a unique intervention for married Kuwaiti couples, the Couples Coping Enhancement training, and some mindfulness-based RE all were associated with increases in satisfaction or quality. Additionally, some programs, such as Within My Reach, RELATE, and PREP delivered by army chaplains all showed increases in communication, although others, such as Couple CARE, Couples Coping Enhancement training, and some evaluations of PREP showed no or inconsistent changes in communication. This difference in program effectiveness is important, because in order for educators and agencies to select which program will be best for the needs of the population they are serving, they need to know which programs are effective, and for what outcomes. Research, though, can lag behind policy intervention and, as emphasized by Markman and Rhoades (2012), most programs in use have not been evaluated. One such program is Couple LINKS.

The couple LINKS program

One notable reason for investigating the LINKS program is its unique perspective on addressing couple needs. Most RE programs are informed by behaviorist and social learning theories, and focus on skills training as an early intervention to adjust later marital trajectories (Markman & Rhoades, 2012). Although many programs are beginning to incorporate other theoretical perspectives, such as transformative processes (Fincham, Stanley, & Beach, 2007) and marital virtues (Fowers, 2001), these other perspectives do not make up the core of the curricula (Markman & Rhoades, 2012). The LINKS program, on the other hand, centers on bonding behaviors using a conceptual model known as the relationship attachment model (RAM, described in more detail later; Van Epp Cutlip, 2013). On the surface, it appears much like other programs — it consists of five units of instruction, discussion, and a workbook and includes elements of skill learning (Van Epp, 2014) — but has a wider theoretical base and focuses on specific aspects of couples relationships.

LINKS is one of two RE programs that uses the RAM. The other RE program, Premarital Interpersonal Choices and Knowledge (PICK), focuses on single individuals. Evaluative research on PICK (Bradford, Stewart, Pfister, & Higginbotham, 2016; Van Epp, Futris, Van Epp, & Campbell, 2008) supports the utility of the RAM for singles. In the PICK program (for singles), the RAM suggests an order to the development of relationships. In the LINKS program (for couples), RAM is reframed in terms of balancing and adjusting the relationship to keep it healthy and happy.

The RAM model. The RAM model defines the sense of love that a couple shares as a relationship bond, which is made of five dynamic bonds: know, trust, rely, commit, and touch. These dynamic bonds represent the ways in which couples can become closer, and increasing these bonds increases the overall relationship bond (Van Epp Cutlip, 2013). Decreases in the bonds can cause imbalances in the relationship, and the LINKS course is designed to help teach couples to be aware of and to fix these imbalances.

Each element of the RAM is designed to represent an aspect of the self: the sensory, the mental, the emotional, the volitional, and the sexual, respectively. Each of these aspects of the self are built from psychological and relational theories. The sensory self is derived from Ayres' (1972) sensory integration theory. The basic premise is that in order to know and be known requires the integration of the senses and cognitive capacities of a person through talking and listening (Van Epp Cutlip, 2013). The mental self comes from object-relations theory (Siegel, 2015) and its offshoot, attachment theory (Bowlby, 1969). Fundamentally, the RAM model posits the mental objects of people, and the sense of security that comes from these, are used to establish and maintain a sense of trust in the relationship (Van Epp Cutlip, 2013). The emotional self also draws from attachment theory (Bowlby, 1969), as well as social exchange theory (Cropanzano & Mitchell, 2005). These two theories inform how reliance in the RAM is derived from the emotional needs and capacities associated with attachment, and the mutual exchange of affectional rewards in social exchange maintains a sense of reliance (Van Epp Cutlip, 2013). The volitional self refers to a person's will and self-control, and uses literature from motivation and self-control (e.g., Vohs et al., 2014; see also Deci & Ryan, 2008). Creating and maintaining commitment in a relationship calls upon an individual's motivation and self-control (Van Epp Cutlip, 2013). The sexual self draws on Harlow's (1962) work that highlights the need for physical touch. Similar to how it functions is early life, touch is theorized to create intimacy through a sense of safety, security, and love (Van Epp Cutlip, 2013).

After being introduced to the RAM model in general, the participants in LINKS learn about its five dynamic bonds in detail. The first element—to know—is considered the most basic of the dynamic bonds. Participants are

taught that knowing your partner is achieved through talk, togetherness, and time. They also learn communication skills and strategies. The second element—trust—is built from day-to-day interactions with that partner, which generates a sense of consistency and expectation. Participants learn to maintain positive mental images of one's partner and how to rebuild trust where needed. Reliance—third aspect of the RAM—is the willingness and ability of the partners to meet each other's needs and partners are taught to recognize and meet each other's needs. The fourth element—commitment—is defined as a sense of belonging to one's partner, and is reflected in a sense of the partner's presence, even when the partner is not around. Participants learn about resiliency models and how to use life change and difficulties to increase commitment. Physical and sexual intimacy are covered under the fifth dynamic bond—touch. Intimacy is defined as being emotional and relational, in addition to being physical, and as a tool to renew relationships. Participants learn to understand and deal with differing sexual needs and drives in a relationship.

Study purpose

RE programs vary widely with regard to their models of change and models of relationships, with differing levels of effectiveness shown in evaluative studies (Markman & Rhodes, 2012). The use of the RAM model in RE for existing couple relationships is unique to the LINKS program (Van Epp, 2014). The effectiveness of the RAM model in PICK (Bradford et al., 2016; Van Epp et al., 2008), and its ability to describe marital relationships (Van Epp Cutlip, 2013), suggest it's potential usefulness to help couples form healthy relationships. However, the impact of the LINKS education program for couples has not been examined. The purpose of this study is to put forth a preliminary evaluation of the LINKS program in relation to previously studied outcomes of RE. The requirements of the funding agencies precluded obtaining data from a control group. As a result, we included factors that may contribute to the program's effectiveness as statistical controls, while recognizing that statistical design cannot compensate for study design in terms of causality. Still, preliminary evidence from this and subsequent studies may be useful in helping educators, therapists, and stakeholders make programmatic decisions.

Method

Procedures

The LINKS program was offered throughout a Western state through a land-grant university's extension program. Participants self-selected and

were recruited from the community through billboards, word-of-mouth, print advertisements (64%) and through Department of Workforce Services locations around the state (36%). Data were gathered from participants in classes offered between November 2014 and April 2017; participants filled out a pretest measure at the beginning of the course, and then a posttest measure at the end of the course. Courses were offered in 8-hour (17% of classes) or 6-hour (83%) formats. Classes were typically split into 2-hour sessions across multiple weeks, with some locations offering all 6 hours in a single class (37%). Participants received the course materials and a meal at each session. All participation (in both classes and surveys) were voluntary and procedures were approved by the university's institutional review board.

Participants

Data were obtained from 1,155 participants. We removed data from analysis for those who indicated that they were single and not in a romantic relationship (83 individuals). An additional 283 participants were removed from analysis for missingness on covariates; the final sample was $N = 789$. Planned analysis accounted for missingness in dependent variables using maximum likelihood, but required complete data for predictors and covariates (Bates, Maechler, Bolker, & Walker, 2015). Because almost all of the covariates included in the analysis were demographic variables (see measures section for a complete list), it was not deemed appropriate to use imputation.

Of those included in the analyses, a little over two-thirds (70%) attended the course with their partner. Participants on average were 37.40 years old ($SD = 11.92$), reported a mean household income of \$57,837 ($SD = \$29{,}210$), and had a mean relationship length of 10.24 years ($SD = 10.19$). The majority of the participants reported being married (81%), Caucasian (86%, with 7% Hispanic/Latino and 3% Asian or Pacific Islander), and female (54%). Regarding educational attainment, 18% had no college, 29% had some college, and 53% had a college degree. Most of the participants had experienced some RE before (61%) and most had never divorced (69%).

We ran *t*-tests to evaluate any differences between those who were removed from analysis and those who were included. Those who were removed from analysis did not differ from those who were included in terms of educational attainment, relationship length, or previous experience with RE. However, there were differences detected in terms of age, $t(327.01) = 3.44$, $p < .001$, income, $t(208.41) = -2.84$, $p = .005$, history of divorce, $\chi^2(1) = 20.90$, $p < .001$, and ethnicity, $\chi^2(5) = 13.15$, $p = .022$.

Those who were removed from analysis were, on average, older by three years, made about $8,000 less per year, had higher history of divorce (39% reported never divorced), and had a greater number who were non-Caucasian (63% reported their ethnicity as Caucasian). These differences indicate that those who were included in the analysis do not fully represent all those who are likely to attend the LINKS course. Those who didn't report on at least one aspect of their demographics were likely to be in a minority group, relative to the norms of the rest of the sample. This implies that the preliminary evaluation conducted may not represent the effectiveness of LINKS for those who do not match the demographics of those included in the evaluation.

Measures

Communication was measured using six original items created to measure how couples feel and communicate about aspects of the RAM model, including the importance of communicating about emotional and sexual needs (e.g., "I think it is helpful to discuss sex with my spouse/partner", "I feel comfortable discussing my emotional needs with my spouse/partner"). Participants marked their level of agreement with the six statements on a 5-point Likert-type scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Cronbach's α was .82 for the pretest and .87 for the posttest.

Commitment was measured using three items from Stanley and Markman's (1992) commitment inventory. Although the original commitment inventory measured both constraint and dedication commitment, RE focuses on increasing personal commitment; as a result, we only used items from the dedication commitment (original α was .95). Program logistics necessitated brevity in the surveys, leaving only room for three items. We chose representative items from the three subscales that had the highest factor loadings on dedication commitment (Stanley & Markman, 1992). Using a 5-point Likert-type scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), participants reported their agreement with following statements: "My relationship with my spouse/partner is more important to me than almost anything else in my life" (primacy of relationship subscale); "It is important to me to think about how things affect 'us' as a couple than how things affect 'me' as an individual" (couple identity subscale); "I feel I know how to keep this relationship strong no matter what rough times we may encounter" (relationship agenda subscale). Cronbach's α for the pretest was .62. As coefficient α is, in part, a result of the number of items in the measure (Cortina, 1993), this α is acceptable for a three-item measure, particularly in emerging research (Lance, Butts, & Michels, 2006). For the posttest, α was.71.

Knowledge was measured using three items from the Perceived Relationship Knowledge scale (Bradford, Stewart, Higginbotham, & Skogrand, 2015). On a 5-point Likert-type scale ranging from 1 (Poor) to 5 (Perfect), participants were asked to rate their knowledge of how to listen, their understanding of how to solve problems, and their awareness of the importance of spending time together. Cronbach's α was .64 for the pretest and .74 for the posttest.

In order to examine the level of relational distress or satisfaction of program participants prior to the course, *relationship satisfaction* was measured using the Kansas Marital Satisfaction scale (Schumm et al., 1986), a three-item measure that uses a Likert-type scale ranging from 1 (extremely dissatisfied) to 7 (extremely satisfied). The three items measure the participants' satisfaction with their marriage, spouse, and relationship. For our sample, Cronbach's $\alpha = .95$.

Covariates included program dosage, age, income, education, relationship length, relationship satisfaction, previous RE, single session format or multiple sessions, and whether participation occurred in a community (e.g., public library, Extension office, school, etc.) or DWS location. Program dosage was calculated by taking a percent of hours in the program over the total number of hours possible. Income was grouped in units of $10,000 and had a log transformation applied to account for the theoretical view that as income gets larger, its utility in improving quality of life gets smaller (McGillivray & White, 1993). Educational attainment was collapsed into three categories for simplification purposes: no college, some college, and a college degree, as levels of college education are related to divorce and marriage trends (Amato, 2010; Cherlin, 2010). Relationship length was reported using years and months. Participants were asked if they had "none, some, or a lot" of previous RE.

Plan of analysis

In this study, we used a pre-post design with statistical controls. We ran hierarchical linear mixed-effects models in R (3.3.1; R Core Team, 2016), using the package "lme4" (Bates et al., 2015). We chose this form of analysis rather than a dyadic approach to capture the variety of participants who may attend courses using the LINKS curriculum—whether alone or with their partner. The use of mixed-effects models allowed us to account for the violation of the assumption of independence that resulted from both partners attending for some of the participants. Variance due to couple dependence was estimated by mixed effects; all other variables were included as fixed effects.

Table 1. Means and SD for scaled variables.

	Time 1		Time 2	
Variable	*M*	*SD*	*M*	*SD*
Communication	4.17	0.61	4.50	0.52
Commitment	3.94	0.66	4.35	0.59
Knowledge	3.32	0.63	3.84	0.57
Relationship satisfaction	5.27	1.34	—	—

Relationship satisfaction was not measured at time 2.

In order to estimate the impact of the course, we ran two models for each outcome variable (communication, commitment, and knowledge). The first model (hereby referred to as the "null" model) consisted only of the main covariates of interest (i.e., other factors that may contribute to the program's effectiveness), and the second model (hereby referred to as the "full" model) added the influence of the course. Null and full models were compared to assess importance of the course on explained variance for each outcome variable. Cohen's *d*, using SD_{pooled}, was calculated to determine effect size.

Results

Means and SDs for the outcome variables and relationship satisfaction are given in Table 1. In general, participants scored high on the outcome measures, even before the course (communication, commitment, and knowledge pretest means were 4.17, 3.94, and 3.32, respectively). Participants were, on average, somewhat satisfied with their relationship ($M = 5.27$; 5 = Somewhat Satisfied, $SD = 1.34$) at pretest. Using the cutoff of less than 17 for summed scores of relationship satisfaction (Crane, Middleton, & Bean, 2000), 39% of men and 52% of women in this community sample were clinically distressed.

Our data were structured such that pretest and posttest times were each their own observation, with the time variable being used to represent the influence of the course. In the first step of our hierarchal linear mixed-effects models, we ran the null model, where we included only the covariates in the model for each outcome variable. In the second step, we ran a model with the course added as an additional predictor. The coefficient for the course indicates the mean pretest-posttest differences, net of the statistical controls. For each of the three outcome measures, the full model was a significantly better fit than the null model (Table 2), suggesting that the course explained a significant portion of the variance in outcome variables. Full model summaries are included in Table 3.

On average, the course appears to have helped participants increase on each of the outcome variables. The estimated effect of the course, after controlling for measured covariates, was a mean score increase for

Table 2. Model fit summary statistics.

Model	*df*	AIC	BIC	logLik	deviance	χ^2	χ *df*	*p*
Communication null	15	2133.3	2211.3	−1051.66	2103.3			
Communication full	16	1943.0	2026.1	−955.49	1911.0	192.34	1	<.0001
Commitment null	15	2406.4	2484.6	−1188.2	2376.4			
Commitment full	16	2157.9	2241.3	−1063.0	2125.9	250.52	1	<.0001
Knowledge null	15	2581.6	2659.6	−1275.8	2551.6			
Knowledge full	16	2282.4	2365.7	−1125.2	2250.4	301.16	1	<.0001

The null model contained the important covariates, and the course was added to the full model.

Table 3. Full model for each outcome variable.

	Communication		Commitment		Knowledge	
Variable	*B*	*SE*	*B*	*SE*	*B*	*SE*
Intercept	3.049***	0.130	2.633***	0.135	2.306***	0.137
DWS location	−0.051	0.121	−0.028	0.126	0.032	0.122
Dosage	−0.040	0.091	−0.152	0.095	−0.042	0.095
Age	−0.0003	0.002	−0.003	0.002	−0.003	0.002
Income	−0.026	0.026	−0.015	0.027	−0.022	0.027
Some college	0.082	0.051	0.016	0.053	−0.025	0.055
College degree	0.124**	0.048	−0.028	0.050	−0.032	0.052
Relationship length	−0.007**	0.002	0.004	0.002	−0.001	0.002
Relationship satisfaction	0.149***	0.013	0.211***	0.013	0.109***	0.014
Some previous RE	0.065	0.037	−0.026	0.038	0.096*	0.039
A lot of previous RE	0.219**	0.072	0.050	0.075	0.246**	0.078
Single session	0.087	0.120	0.058	0.124	0.131	0.120
Couple LINKS course	0.338***	0.023	0.437***	0.025	0.524***	0.026
Effect size of course	0.60		0.70		0.87	

Education is compared to no college. DWS is compared to being in a community location. The previous RE categories are compared to the group with no previous RE. Single session is compared to multiple sessions. Effect size is measured using Cohen's *d*.
*$p < .05$,
**$p < .01$,
***$p < .001$.

communication of 0.34 ($SD = 0.52$, $p < .001$). This yielded an effect size of $d = 0.60$, which is considered a moderate effect size. Commitment increased by 0.44 ($SD = 0.59$, $p < .001$), for an effect size of $d = 0.70$, which is also considered a moderate effect size. Relationship knowledge increased by 0.52 ($SD = 0.57$, $p < .001$), for an effect size of $d = 0.87$, which is considered a large effect size.

Discussion

We found preliminary evidence for the effectiveness of the LINKS program. From pretest to posttest, the participants showed increases on mean scores of communication, commitment, and relationship knowledge, above and beyond what can be explained by other factors such as education, income, age, relationship length and satisfaction, and previous exposure to RE. Indeed, the magnitude of our findings is encouraging. A meta-analysis found effect sizes ranging from $d = .30$ to .45 for RE outcomes (Hawkins

et al., 2008). Of our three outcomes, participants showed the greatest gains in relationship knowledge, with an effect size nearly double of what was found in the meta-analysis. Although the pretest mean for relationship knowledge was lowest of the three, which suggests there was relatively more room for improvement, the pretest-posttest changes in the means for the other two outcome variables—commitment and communication—also had meaningful, moderate effect sizes larger than those found by Hawkins et al. (2008).

In addition to the basic effectiveness of the course, our findings carry some indication that the LINKS program itself may offer something that other RE courses do not. Communication had the smallest effect size of the three outcomes. Communication is, on average, among the most common of the outcomes measured in RE (Hawkins et al., 2008; Hawkins & Erickson, 2015), but in this study the effect sizes for knowledge and for commitment were larger than the effect size of communication. This may be related to the content of the course. Most education programs include communication skills as a meaningful portion of the program (Fowers, 2001; Markman & Rhoades, 2012). While the LINKS program also includes a section on communication skills, these are only taught within the first element of the RAM, and the rest of the course is dedicated to other aspects of the relationship, and gives more overt attention to knowledge and commitment (as part of the RAM). As a relationship model (Van Epp Cutlip, 2013), the RAM is organized around bonding behaviors more so than particular skill sets. This may be a strength of the LINKS program, as researchers and theorists have posited that a skills deficiency framework for couple functioning is insufficient (Carroll, Badger, & Yang, 2006; Fowers, 2001). These scholars argue that other-centeredness, personal-security (Carroll et al., 2006) and marital virtues (Fowers, 2001) are key components of marital quality. It is possible that the five components of the RAM help participants also increase in loving motivations and marital virtues. For example, trust, rely, and commit, from the RAM, may possibly have overlaps with such marital virtues as courage, trustworthiness, generosity, and self-restraint (Fowers, 2001).

Some of the control variables were also predictive, calling for investigations of what else influences the outcome variables and how that relates to program success. Of notable mention are pretest ratings of participants' relationship satisfaction, which was statistically significant across all three outcomes in the positive direction. This implies that one's relationship satisfaction has impact on what one gains from the program. It seems perhaps paradoxical that those with better relationships get more out of the program. Somewhat similarly, however, research suggests that those who value marriage are more likely to attend RE (Duncan, Holman, & Yang, 2007),

and that RE may not be as effective with at-risk couples (Hawkins & Erickson, 2015).

Education was positively related to communication, though only if the participant had earned a college degree. In other words, education only benefited participant in gains in communication (not the other two outcomes) when the participant had graduated from college. However, our education variable did not distinguish between those who did and did not graduate from high school. Although a college education is associated with successful relationships (Cherlin, 2010), there is the possibility that there are differences in RE gains among those who have not obtained as much education. As many RE curricula are built around relationship skills, such as communication (Fowers, 2001; Markman & Rhoades, 2012), the relation between education and communication that we found may be why some RE is not as effective with the at-risk population (Hawkins & Erickson, 2015).

Compared with having no previous RE, indicating "some" or "a lot" of previous RE was positively associated with increased relationship knowledge, and "a lot" was associated with increased communication. Being in a relationship for a longer time was negatively related to communication, which may be due to set habits of communication that are harder to break. Age and dosage had no significant impact on any of the outcomes, though that may be because couples who had less dosage had more missingness on the posttest variables. Whether courses occurred in a community or DWS setting did not matter for any outcome, nor did having the class in one session compared to multiple sessions. Taken together, our findings about dosage, location, and session format suggest the possibility that receiving any amount of LINKS curricula may be beneficial to participants.

Beyond the relationship between the outcomes and the covariates included in this study, it is worth mentioning that some of the covariates were important for some of the outcomes, but not for others (e.g., previous RE mattered for communication and knowledge, but not for commitment). This implies that beyond the program itself, what influences the success of RE may be unique to the particular outcome being measured. Because the purpose of this study was to provide a preliminary evaluation of the LINKS program, possible mechanisms of influence were not included at this point.

Limitations and future recommendations

The study's greatest limitation is the lack of a control group. These results provide evidence of positive associations of the LINKS program with knowledge, commitment, and communication; however, causal conclusions are not warranted. It is impossible to account for everything that may be influencing the changes in measured constructs, and future evaluations should include a

control group. Additionally, because participants were removed from analysis for missingness, this study does not account for attrition, and removal of participants from analysis may have limited generalizability. Moreover, the sample self-selected and was relatively homogeneous in terms of the measured demographics. The alpha levels of two of the pretest measures were low ($\alpha = .62$ for commitment, and $\alpha = .64$ for knowledge), but such coefficients are often considered to be acceptable in exploratory research (Lance et al., 2006).

Although there is utility to the individual analysis done, dyadic analyses using the couples that did attend could yield different insights on how the bonding nature of the RAM works in the RE setting. Future research should explicitly test dyadic processes and how they relate to the success of the LINKS curriculum. Future research should also consider the role of education in RE success or failure, including both more specificity in measuring education obtained and the possible mechanisms behind the influence of a college degree. As each outcome in RE may not have the same set of predictors, future research should investigate what is important in predicting the success of RE for each type of outcome considered, and why. To improve the effectiveness of administering the LINKS curriculum, additional research is needed to tease out the full set of predictors and the means by which they influence the effectiveness of this RE course. Finally, the mechanisms behind the association between relationship satisfaction and program effectiveness needs further investigation, and needs to be investigated in a variety of circumstances and among different programs.

Conclusions

This study provides preliminary evidence that the LINKS program may be effective in helping individuals improve in commitment, communication, and knowledge. Past research suggests that these components, in turn, predict relationship satisfaction (e.g., Carroll et al., 2006). The improvement in commitment, in particular, also suggests that the bonding mechanisms of the RAM (including their overlap with transformative processes and marital virtues; Fincham, Stanley, & Beach, 2007; Fowers, 2001; Van Epp Cutlip, 2013) may be of benefit—especially in the context of many RE programs using skill based education as their major theoretical orientation (Markman & Rhoades, 2012). The possible gains and overall effectiveness of the LINKS program suggested by this evaluation supports the utility of a more comprehensive test of the LINKS program. Despite its limitations, this study provides information and evidence beyond simple program description, thereby informing practitioners and funding agencies. The results suggest that the LINKS program may be a good fit for helping couples improve their relationships.

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References

Adamczyk, K. (2017). Direct and indirect effects of relationship status through satisfaction with relationship status and fear of being single on Polish young adults' well-being. *Personality and Individual Differences*, *111*, 51–57. doi:10.1016/j.paid.2017.01.056

Amato, P. R. (2010). Research on divorce: Continuing trends and new developments. *Journal of Marriage and Family*, *72*(3), 650–666. doi:10.1111/j.1741-3737.2010.00723.x

Ayres, J. A. (1972). *Sensory integration and learning disorders*. Los Angeles: Western Psychological Services.

Bates, D., Maechler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, *67*, 1–48. doi:10.18637/jss.v067.i01

Boyce, C. J., Wood, A. M., & Ferguson, E. (2016). For better or for worse: The moderating effects of personality on the marriage-life satisfaction link. *Personality and Individual Differences*, *97*, 61–66. doi:10.1016/j.paid.2016.03.005

Bowlby, J. (1969). *Attachment: Attachment and Loss (Vol. 1)*. New York, NY: Basic books. doi:10.1093/sw/26.4.355

Bradford, K., Stewart, J. W., Higginbotham, B. J., & Skogrand, L. (2015). The perceived relationship knowledge scale: An initial validation. *Family Relations*, *64*(2), 305–318. doi:10.1111/fare.12116

Bradford, K., Stewart, J. W., Pfister, R., & Higginbotham, B. J. (2016). Avoid falling for a jerk(ette): Effectiveness of the premarital interpersonal choices and knowledge program among emerging adults. *Journal of Marital and Family Therapy*, *42*(4), 630–644. doi:10.1111/jmft.12174

Brown, S. L. (2010). Marriage and child well-being: Research and policy perspectives. *Journal of Marriage and Family*, *72*(5), 1059–1077. doi:10.1111/j.1741-3737.2010.00750.x

Buehler, C., & Welsh, D. P. (2009). A process model of adolescents' triangulation into parents' marital conflict: The role of emotional reactivity. *Journal of Family Psychology*, *23*(2), 167–180. doi:10.1037/a0014976

Carr, D., Freedman, V. A., Cornman, J. C., & Schwarz, N. (2014). Happy marriage, happy life? Marital quality and subjective well-being in later life. *Journal of Marriage and Family*, *76*(5), 930–948. doi:10.1111/jomf.12133

Carroll, J. S., Badger, S., & Yang, C. (2006). The ability to negotiate or the ability to love?: Evaluating the developmental domains of marital competence. *Journal of Family Issues*, *27*(7), 1001–1032. doi:10.1177/0192513X06287248

Cherlin, A. J. (2010). Demographic trends in the United States: A review of research in the 2000s. *Journal of Marriage and Family*, *72*(3), 403–419. doi:10.1111/j.1741-3737.2010.00710.x

Core Team, R. (2016). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing . URL https://www.R-project.org/.

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, *78*(1), 98–104. doi:10.1037/0021-9010.78.1.98

Crane, D. R., Middleton, K. C., & Bean, R. A. (2000). Establishing criterion scores for the Kansas marital satisfaction scale and the revised dyadic adjustment scale. *American Journal of Family Therapy*, *28*(1), 53–60. doi:10.1080/019261800261815

Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management*, *31*(6), 874–900. doi:10.1177/0149206305279602

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie Canadienne*, *49*(3), 182–185. doi:10.1037/a0012801

Doss, B. D., Atkins, D. C., & Christensen, A. (2003). Who's dragging their feet? Husbands and wives seeking marital therapy. *Journal of Marital and Family Therapy*, *29*(2), 165–177. doi:10.1111/j.1752-0606.2003.tb01198.x

Doss, B. D., Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2009). Marital therapy, retreats, and books: The who, what, when, and why of relationship help-seeking. *Journal of Marital and Family Therapy*, *35*(1), 18–29. doi:10.1111/j.1752-0606.2008.00093.x

Duncan, S. F., Holman, T. B., & Yang, C. (2007). Factors associated with involvement in marriage preparation programs. *Family Relations*, *56*(3), 270–278. doi:10.1111/j.1741-3729.2007.00458.x

Dush, C. M. K., & Amato, P. R. (2005). Consequences of relationship status and quality for subjective wellbeing. *Journal of Social and Personal Relationships*, *22*(5), 607–627. doi:10.1177/0265407505056438

Dyrdal, G. M., Røysamb, E., Nes, R. B., & Vittersø, J. (2011). Can a happy relationship predict a happy life? A population-based study of maternal well-being during the life transition of pregnancy, infancy, and toddlerhood. *Journal of Happiness Studies*, *12*(6), 947–962. doi:10.1007/s10902-010-9238-2

Fincham, F. D., Stanley, S. M., & Beach, S. R. H. (2007). Transformative processes in marriage: An analysis of emerging trends. *Journal of Marriage and Family*, *69*(2), 275–292. doi:10.1111/j.1741-3737.2007.00362.x

Fowers, B. J. (2001). The limits of technical concept of a good marriage: Exploring the role of virtue in communication skills. *Journal of Marital and Family Therapy*, *27*(3), 327–340. doi:10.1111/j.1752-0606.2001.tb00328.x

Gustavson, K., Røysamb, E., Borren, I., Torvik, F. A., & Karevold, E. (2016). Life satisfaction in close relationships: Findings from a longitudinal study. *Journal of Happiness Studies*, *17*(3), 1293–1311. doi:10.1007/s10902-015-9643-7

Harlow, H. F. (1962). Development of affection in primates. In E. L. Bliss (Ed.), *Roots of Behavior* (pp. 157–166). New York: Harper.

Hawkins, A. J., Blanchard, V. L., Baldwin, S. A., & Fawcett, E. B. (2008). Does marriage and relationship education work? A meta-analytic study. *Journal of Consulting and Clinical Psychology*, *76*(5), 723–734. doi:10.1037/a0012584

Hawkins, A. J., & Erickson, S. E. (2015). Is couple and relationship education effective for lower income participants? A meta-analytic study. *Journal of Family Psychology*, *29*(1), 59–68. doi:10.1037/fam0000045

Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The sources of four commonly reported cutoff criteria: What did they really say? *Organizational Research Methods*, *9*(2), 202–220. doi:10.1177/1094428105284919

Love, A. B., & Holder, M. D. (2016). Can romantic relationship quality mediate the relation between psychopathy and subjective well-being? *Journal of Happiness Studies*, *17*(6), 2407–2429. doi:10.1007/s10902-015-9700-2

Markman, H. J., & Rhoades, G. K. (2012). Relationship education research: Current status and future directions. *Journal of Marital and Family Therapy*, *38*(1), 169–200. doi: 10.1111/j.1752-0606.2011.00247.x

McGillivray, M., & White, H. (1993). Measuring development? The UNDP's human development index. *Journal of International Development*, *5*(2), 183–192. doi:10.1002/jid.3380050210

Moynehan, J., & Adams, J. (2007). What's the problem? A look at men in marital therapy. *American Journal of Family Therapy*, *35*(1), 41–51. doi:10.1080/01926180600553381

Roberson, P. E., Lenger, K. A., Norona, J. C., & Olmstead, S. B. (2018). A longitudinal examination of the directional effects between relationship quality and well-being for a national sample of U.S. Men and women. *Sex Roles*, *78*(1-2), 67–80. doi:10.1007/s11199-017-0777-4

Schumm, W. R., Paff-Bergen, L. A., Hatch, R. C., Obiorah, F. C., Copeland, J. M., Meens, L. D., & Bugaighis, M. A. (1986). Concurrent and discriminant validity of the Kansas marital satisfaction scale. *Journal of Marriage and the Family*, *48*(2), 381–387. doi: 10.2307/352405

Siegel, J. P. (2015). Object relations couple therapy. In A. S. Gurman, J. L. Lebow, & D. K. Snyder (Eds.), *Clinical handbook of couple therapy* (5th Ed.). New York, NY: Guildford.

Stanley, S. M., & Markman, H. J. (1992). Assessing commitment in personal relationships. *Journal of Marriage and the Family*, *54*(3), 595–608. doi:10.2307/353245

Stewart, J. W., Bradford, K. P., Higginbotham, B., Skogrand, L. M., & Jackson, M. (2014). Relationship help-seeking in a community sample: Testing differences by geography and gender. Forum for Family & Consumer Science Issues, *19*. Retrieved from https://projects.ncsu.edu/ffci/publications/2014/v19-n3-2014-winter/stewart-bradford-higginbotham-skogrand-jackson.php

Van Epp, J. (2014). *Couple LINKS instructor manual*. USA: Love Thinks.

Van Epp Cutlip, M. C. (2013). A qualitative examination of the relationship attachment model (RAM) with married individuals (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global. (UMI No. 1646158378). Retrieved from http://dist.lib.usu.edu/login?url=https://search.proquest.com/docview/1646158378?accountid=14761

Van Epp, M. C., Futris, T. G., Van Epp, J. C., & Campbell, K. (2008). The impact of the PICK a partner relationship education program on single army soldiers. *Family and Consumer Sciences Research Journal*, *36*(4), 328–349. doi:10.1177/1077727X08316347

Vohs, K. D., Baumeister, R. F., Schmeichel, B. J., Twenge, J. M., Nelson, N. M., & Tice, D. M. (2014). Making choices impairs subsequent self-control: A limited-resource account of decision making, self-regulation, and active initiative. *Motivation Science*, *1*(S), 19–42. doi:10.1037/2333-8113.1.S.19

Whisman, M. A., & Uebelacker, L. A. (2006). Impairment and distress associated with relationship discord in a national sample of married or cohabiting adults. *Journal of Family Psychology*, *20*(3), 369–377. doi:10.1037/0893-3200.20.3.369

Wood, R. G., McConnell, S., Moore, Q., Clarkwest, A., & Hsueh, J. (2012). The effects of building strong families: A healthy marriage and relationship skills education program for unmarried parents. *Journal of Policy Analysis and Management*, *31*(2), 228–252. doi: 10.1002/pam.21608