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Effects of Relationship Education on Emerging Adults' Relationship Beliefs and Behaviors [post-print]

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Running head: EFFECTS OF A RELATIONSHIP INTERVENTION

Abstract

In this multisite study, we used a randomized, controlled trial to examine how a relationship

education intervention affected emerging adults' maladaptive relationship beliefs, mutuality,

relationship decision-making, relationship quality, and psychological distress. In addition, we

explored whether one intervention modality (i.e., facilitated group discussion) was more/less

effective than another (i.e., self-facilitated online) and whether there were differential effects for

participants in a relationship. We found that the facilitated group evidenced declines in

maladaptive relationship beliefs and an improvement in deliberate decision-making. Moreover,

facilitated group participants in a relationship reported higher levels of mutuality. Contrary to our

hypothesis, there were no changes in relationship quality or psychological distress. Implications

for the content and delivery of relationship education for emerging adults are discussed.

Effects of Relationship Education on Emerging Adults' Relationship Beliefs and Behaviors

The use of relationship interventions in the form of educational programs to inform and guide romantic couples is by no means a new phenomenon, especially for professionals in family or marriage counseling. Encouraging healthy, fully functional relationships, be they romantic or otherwise, is not without good reason, as there are multiple physical and psychological benefits to being in a secure relationship (Baumeister, & Leary, 1995; Braithwaite, Delevi, & Fincham, 2010a). The majority of relationship interventions, however, have focused on adult, married couples, which does not allow for an examination of whether relationship education can enhance competencies much earlier on in the relationship development process. With over half (57%) of the college population in a committed romantic relationship, and an additional 29% desiring to be in such a relationship (Fincham, Rhoades, & Stanley, 2011), the college years may be an optimal time to deliver relationship education. Indeed, the prevalence of behaviors such as physical aggression, present in over one in three college student relationships (Straus & Ramirez, as cited in Fincham et al. 2011), and cheating behavior, reported in 65-68% of relationships (Shackelford, LeBlanc, & Drass, 2000; Wiederman & Hurd, 1999), suggests that college students stand to benefit considerably from learning more adaptive thinking patterns, effective communication skills, and strategies for deliberate relationship decision-making during this formative time (Fincham et al., 2011).

Although a few studies have begun to examine relationship education among emerging adult college students (Braithwaite & Fincham, 2007, 2009, 2011; Braithwaite, Lambert, Fincham, & Pasley, 2010b; Fincham et al., 2011), there are several gaps in this research, which we focused on in the current study. First, prior research largely has focused on college students who are already in romantic relationships. However, many college students are not in romantic

relationships and yet may benefit from a relationship education intervention as they begin to

explore relational dynamics in college. Indeed, it is quite plausible that the skills learned in these

interventions could extend to interactions with peers, friends, and/or family members. Second,

we focused on two outcomes that have received minimal attention in relationship education

research previously: maladaptive relationship beliefs and mutuality (i.e., availability, openness,

and responsiveness to a partner), which have been identified as predictors of relationship quality

in previous research. Finally, as the zeitgeist becomes increasingly technological, with potential

romantic partners at the swipe of a thumb, there may be reason to move traditional relationship

interventions from the counseling center to the desktop. While research has shown that

computer-based relationship education can be effective, no studies have compared the efficacy of

relationship education delivered via a computer with in-person facilitated group discussion.

Knowing which modality is more efficacious is critical to informing dissemination efforts.

Literature Review

Relationship education is defined as, "the provision of information designed to help

couples and individuals experience successful, stable, romantic relationships" (Braithwaite et al.,

2010b, p. 740). Intervention programs typically focus on helping people to learn which aspects

of oneself and one's partner are more or less amenable to change, in addition to teaching more

effective means of communicating and addressing conflict. A variety of strategies may be

employed to support skill acquisition, including "experiential exercises […], role-playing,

workbook exercises, and practice homework assignments" (Fincham et. al, 2011, p. 295).

Despite a wide range of available programs, not all have demonstrated comparable efficacy,

and/or not all have been evaluated using a randomized, controlled design, which is essential to

determine whether a program is efficacious (Jakubowski, Milne, Brunner, & Miller, 2004). In a

review of 13 existing marital enrichment programs, only four were deemed "efficacious,"

meaning two separate research teams deemed the program to be effective using a randomized,

controlled trial (Jakubowski et al., 2004). One efficacious program, the Prevention and

Relationship Enhancement Program (PREP), was the only program evaluated beyond one year

(Jakubowski et al., 2004). Accordingly, we chose to adapt PREP in the current study given its

considerable empirical grounding and potential for durable effects.

The four main goals of PREP are: "to teach couples better communication skills and

conflict management strategies, to aid couples in clarifying and evaluating expectations, to

promote the understanding of and choices reflecting commitment, and to enhance the positive

bonding in the relationship" (Jakubowski et al., 2004, p. 529). Studies of PREP have shown that

it is associated with a decreased risk of divorce, enhanced relationship and sexual satisfaction,

and improved communication and confidence in one's relationship (see Jakubowski et. al, 2004

for a review). Recently, elements of PREP were adapted and integrated into a 13-week college

course (i.e., Project RELATE) for the purpose of engaging emerging adults both in and out of

relationships (Fincham et al., 2011). Fincham et al. (2011) described how the *Within My Reach*

curriculum, an adaptation of PREP used in Project RELATE, focuses on helping people achieve

stability and good communication in existing relationships; exit unhealthy relationships without

harm; select romantic partners thoughtfully; prevent "sliding" into significant relationship

decisions (i.e., engage in deliberation about decisions regarding sexual behavior, cohabitation,

etc., instead of allowing these events to simply unfold); and recognize what changeable and

unchangeable attributes they bring to a relationship and how those factors have been shaped by

one's family background, upbringing, and socialization (Pearson, Stanley, & Rhoades, as cited in

Fincham et al., 2011). Encouragingly, a quasi-experimental evaluation of Project RELATE

showed that the program positively affected emerging adults' functioning across a wide range of areas. Program participants reported a greater willingness to improve their relationships, increased recognition of warning signs of problematic relationships, more deliberate decision-making around behaviors such as physical intimacy, less aggressive and avoidant behavior, and finally, among participants in a committed relationship, fewer instances of cheating on their partner (Braithwaite et al., 2010b; Fincham et al., 2011). Although these results are promising, they are limited by the quasi-experimental nature of the research, making it hard to know whether students who are randomly assigned to the intervention, rather than choosing to attend the sessions, would show similar benefits.

A computer-delivered version of PREP (ePREP) was created to permit even wider dissemination of the curriculum (Braithwaite & Fincham, 2007). Following a one-time, 60-90 minute self-directed online session, participants received weekly reminders for approximately 6 weeks encouraging them to implement the skills they acquired from the presentation. ePREP has been evaluated in several randomized controlled trials and largely has demonstrated positive effects on emerging adults' intra- and interpersonal functioning. For example, Braithwaite and Fincham (2007) found that, relative to a placebo intervention, ePREP led to declines in depression, anxiety, psychological and physical aggression, and an increase in trust of one's partner at a two-month follow-up among college students who were in a relationship. In a longer-term study, Braithwaite and Fincham (2009) assessed college students ten months after exposure to ePREP and found that ePREP participants showed a significant decline in anxiety (but not depression), psychological aggression, and physical aggression over this period. That these positive effects were observed even for people whose relationships *dissolved* over the study period suggests that the beneficial effects were not contingent on consistent engagement in a

relationship. Contrary to their hypothesis, ePREP did not have a significant effect on

constructive communication or relationship satisfaction. In addition, ePREP participants first

evidenced some regression, or worsening on the study variables at the two-month follow-up,

before improving ten months after the intervention. Taken together, these findings suggest that

ePREP may affect a wide range of mental health and relationship outcomes in emerging adults,

but its potency may not be immediately evident.

   A close examination of the PREP curriculum suggests there may be other important

aspects of relationship functioning, not yet reported on, that would change following exposure to

this intervention. In the current study, we focused on two additional components of relational

functioning, namely mutuality and dysfunctional relationship beliefs, that we thought would be

useful and important targets of change. Both PREP and ePREP teach communication techniques,

which encourage authentic expression and ownership of one's feelings as well as reflective

listening and discrete opportunities for each partner to express his/her thoughts and feelings. For

example, participants learn the XYZ communication technique (i.e., "I feel X, when you do Y, in

situation Z"), which cultivates authenticity and empowerment, and the Speaker-Listener

technique (i.e., providing time for each partner to speak, after which the other partner

paraphrases his/her words), which cultivates empathy and engagement. We would expect these

components to have a positive effect on *mutuality*, which refers to the "empathy, engagement,

authenticity, zest, diversity, and empowerment" one demonstrates in close relationships (Genero,

Miller, Surrey, & Baldwin, 1992, p. 38). Perceived mutuality with romantic partners and friends

has been associated with higher relationship cohesion and relationship satisfaction and inversely

related to depressive symptoms (Genero et al., 1992). In a more recent study of people in

romantic relationships, Weigel (2010) found that actual mutuality was associated with a range of

relationship quality dimensions, including perceived satisfaction, intimacy, trust (although for

men only) and love. These findings suggest that mutuality may be an important precursor to

relationship quality and satisfaction. However, mutuality has not been examined in prior

relationship education research, so it is unclear whether it is modifiable. Importantly, its

assessment might provide a window into mechanisms of change following exposure to the PREP

curriculum.

A second important indicator of relational functioning that might change following

exposure to PREP is maladaptive relationship beliefs, which are "a species of knowledge,

structure, schema, or judgment that concerns all aspects of close relationships" (Fletcher &

Kininmonth, 1992, p. 371). PREP not only helps participants become more cognizant of their

relationship beliefs, but also educates them about how their upbringing affects their relationship

expectations (Fincham et al., 2011). Interestingly, although ePREP is closely aligned with PREP,

ePREP largely does not address the topic of relationship beliefs and their development. We

believed it was critical to retain this topic in the current study's intervention given that irrational

relationship beliefs have been shown to correlate negatively with relationship adjustment and

satisfaction (Bradbury & Fincham, 1988; Eidelson & Epstein, 1982; Möller & Van Zyl, 1991)

and have been associated with ineffective problem-solving (Metts & Cupach, 1990). Further, the

recognition and modification of irrational beliefs is a central component of cognitively-focused

marital therapies (Epstein, 1986), indicating that it may be an important component of

relationship education.

In an effort to help individuals recognize and change irrational relationship beliefs,

educating people on the genesis of these beliefs seems paramount. Encouraging participants to

examine their *attachment style*, which concerns their mental representations of relationships

derived from early interactions with caregivers (Bowlby, 1973, 1977, 1980), might be a viable

means of accomplishing this goal. Empirically, Stackert and Bursik (2003) showed that people

with a more secure attachment style, characterized by feelings of closeness, trust, and appropriate

dependence on others (Hazan & Shaver, 1987), endorsed fewer maladaptive relationship beliefs

(e.g., disagreement is destructive, mindreading is expected, partners cannot change, etc.) and

greater overall relationship satisfaction. Kilmann (1996) developed an intervention specifically

targeting enhanced awareness and understanding of attachment style's role in current

relationships so as to promote more positive relationship attitudes, behaviors, and experiences.

Results across several studies found that participants improved relationship satisfaction,

interpersonal style, functional relationship beliefs, and self-esteem as a result of participation in

the attachment-focused intervention (Kilmann, Laughlin, Carranza, Downer, Major, & Parnell,

1999; Kilmann, Urbaniak, & Parnell, 2006). Kilmann's work suggested that when people

recognize their *patterns* of ineffective relational behavior they are more likely to modify their

maladaptive relationship beliefs, and, as a result, experience improved relationship satisfaction.

Thus, these findings suggest that maladaptive relationship beliefs are modifiable and attachment

theory may be one useful lens through which to understand and address these beliefs in

relationship education. However, the lasting impact of Kilmann's intervention on long-term

relationship beliefs was not supported in the 2006 study, which encourages further development

of relationship education programs and investigation of the factors that help create lasting change

in relationship patterns and experiences.

The Current Study

While Project RELATE's integration of elements of PREP into a college course

curriculum lends itself to wider dissemination, some institutions might not be able to deliver the

program in this manner, and/or might not be able to accommodate the 13-session curriculum.

ePREP is a viable alternative; however, it may be that the group discussion format utilized in

Project RELATE lends itself to superior skill acquisition because of the longer time frame and

opportunities for in vivo practice. With these considerations in mind, we developed a condensed

version of the PREP curriculum delivered via a group discussion format so that it could be

compared against an expanded version of ePREP (and a placebo condition) in the current study.

We incorporated several components of Kilmann's attachment-focused intervention to the PREP

curriculum, namely discussion about (a) one's attachment style and characteristic behaviors, (b)

typical maladaptive relationship beliefs, and (c) more adaptive relationship beliefs. Although the

original intervention focused on romantic relationships, we emphasized that the skills could be

used across a wide range of relationships, including parental and peer relationships. Finally,

given that we expected some of our sample to express a preference for same-sex partners, we

altered several graphics and vignettes to depict same-sex relationships.

We sought to replicate Braithwaite and Fincham (2007, 2009), who showed that the

computer-based PREP curriculum (i.e., ePREP) led to declines in depression and/or anxiety. We

also sought to replicate Fincham et al. (2011), who showed that the PREP curriculum delivered

via a college class led to less relationship "sliding," and greater recognition of warning signs in a

relationship. We addressed several limitations of the previous research by including people who

were not in a relationship, assessing change in mutuality and relationship beliefs, and comparing

the facilitated group modality to computer-based delivery. Moreover, as scholars have suggested

that interventions need to be validated by independent teams of investigators (Jakubowski et al.,

2004), our study is the first randomized trial of ePREP conducted by a research team other than

the program's developers (Braithwaite & Fincham, 2007). We examined several hypotheses:

First, we expected that participants who were exposed to the active intervention [i.e., facilitated group or computer-based intervention (ePREP)] would show a decrease in dysfunctional relationship beliefs and an increase in active relationship decision-making, recognition of warning signs in relationships, and confidence in relationships. Second, we hypothesized that exposure to the intervention would lead to an increase in the ability to express mutuality in one's close relationships and to improved relationship quality. Finally, we hypothesized that those exposed to the active treatment conditions would show decreased levels of psychological distress when compared to placebo participants. Because of the lack of previous research, we did not advance specific hypotheses regarding the relative efficacy of the computer-based versus the facilitated group modalities. Relatedly, although we examined the effect of relationship status on the study outcomes, we did not make specific predictions regarding how the intervention might differentially affect those in and out of a relationship.

Method

Participants & Procedure

A total of 112 emerging adult participants (M_{age} = 19.78, SD = 2.07, Range 17.50-32.17 years[1]) completed a baseline study questionnaire and thus were eligible for randomization. The baseline questionnaire included all of the measures described below, in addition to questions about participants' demographic characteristics and relationship history.[2] Over half of the participants (n = 62; 55%) were from a mid-sized state university in the Mid-Atlantic region of the United States and the remainder (n = 50; 45%) were from a small, private liberal arts college in the Northeastern United States. Students enrolled in one or more undergraduate psychology

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[1]We obtained a parent signature on the consent form for the one participant under 18 years of age.
[2]The baseline survey also included measures of intimate partner violence, heterosocial competence (modified to ask about same-sex relationships when relevant), attachment, physical well-being, and mindfulness. These variables were not included in the analyses presented below.

courses or who were declared psychology majors were sent an invitational email toward the end

of the preceding semester. Participants had to have had at least one romantic relationship lasting

a minimum of one month, although it was not necessary for participants to be in a relationship at

the time of the study. Preliminary analyses did not indicate any significant differences between

the two sites, with the exception of higher SAT scores at the Northeast site [$M_{\text{mid-atlantic university}}$

=1543.69 (255.81) vs. $M_{\text{northeastern university}}$ = 1893.26 (144.17), $t(88) = -7.58$, $p < .001$]. The

sample was primarily female (84%); just over half were first-year students (59%), and most

identified as heterosexual (93%). Almost half of participants (48%) were not dating anyone at

the time of the study (see Table 1). Of those who reported current involvement in a serious

relationship, the mean relationship duration was 84.83 weeks (SD=75.56; Range 5–262 weeks).

Over half of the sample (59%) reported that they had been in a relationship at some point in their

lives for more than one year; 22% reported at least one romantic relationship that lasted six

months to one year; and 19% had a relationship that lasted less than six months.

Participants who completed the baseline survey were stratified based upon relationship

status (i.e., currently in a relationship vs. not currently in a relationship) before being randomly

assigned to one of three intervention conditions: (1) a facilitator-led, group-based relationship

education intervention program; (2) a single-participant, computer-based relationship education

presentation (ePREP); or (3) an inert information control group. One month following the start of

the group or the in-person session (i.e., ePREP/control), 85% of participants completed the

following measures via an online survey: Relationship Deciding Scale, Relationship Beliefs

Inventory, Network of Relationships Inventory, and the Depression, Anxiety, and Stress Scale.

The two-month follow-up online survey, which had a response rate of 77%, contained the same

scales, with the addition of the Mutual Psychological Development Questionnaire. See Figure 1

for more details about participant flow. Participants received course credit, extra credit, and/or

small denominations of cash ($5-$10) or gift cards for their participation in the intervention and

follow-up assessments.

Facilitated group. The group-based intervention (n=37) consisted of four in-person

group meetings (Mean number of participants=7) that occurred once a week over a 4-5 week

period, co-led by two counseling students in a Master's Level graduate program (an

undergraduate served as a co-facilitator in one case), and lasted 1-1.5 hours. Facilitators attended

approximately 13 hours of training with three doctoral-level psychologists (i.e., first, second, and

third authors), in which the key concepts were discussed and group activities were role-played[3].

During the four intervention sessions, participants discussed information relating to relationship

functioning (i.e., irrational relationship beliefs), practiced specific relationship skills (e.g.,

listening, communication) through group role-play scenarios, and learned how to make better

decisions within their respective relationship (for a list of key topics covered in the intervention,

see Table 2). These skill-building exercises and associated information were adapted from

Braithwaite and Fincham's (2007) ePREP curriculum into a semantically similar instructor

manual for use by the group facilitators leading each session. After the four sessions, participants

received one to two follow-up e-mails with reminders about the skills and information they had

learned, as well as encouragement to practice using those skills in their current relationships

(romantic or otherwise).

ePREP. Participants (n=35) took 60-90 minutes to view the ePREP PowerPoint

presentation. ePREP was originally developed by Braithwaite and Fincham (2007); however, as

aforementioned, we modified ePREP and the facilitated group content to include information

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[3]The undergraduate co-facilitator viewed key segments of the training via recorded video.

about attachment style and relationship beliefs (see Table 2). The ePREP presentation was not narrated, however there were several embedded videos throughout the presentation illustrating problematic relationship communication patterns (e.g., withdrawal, invalidation). Participants also completed seven 'mastery' quizzes throughout the presentation. Finally, participants received four weekly homework assignments to encourage their practice of key skills (e.g., time-out and XYZ communication). Participants did not receive feedback regarding the accuracy of their responses to the quiz questions, nor did they submit their reactions to the homework exercises; rather, the quiz/homework questions were meant to reinforce key points and encourage active engagement and attentiveness during the presentation and in the weeks following the presentation.

Control. Participants (n=40) were brought into an identical lab space and shown a PowerPoint presentation lasting approximately 60 minutes. In contrast to the ePREP condition, which focused on relationship skill-building, the control condition focused on diagnostic criteria for depression, anxiety, and panic disorders; causal factors implicated in these disorders; effective psychological and pharmacological treatments for these disorders; and the effects of anxiety and depression on relationship functioning. Similar to ePREP, the control presentation was not narrated, but there were several embedded videos to reinforce the presentation's content (e.g., "What is depression?"). Control participants also completed seven mastery quizzes, which were embedded throughout the presentation, and similar to ePREP, feedback about the accuracy of their responses was not provided. There were no follow-up homework assignments as in ePREP.

Measures

Participants provided basic demographic information regarding their age, gender,

ethnicity, sexual orientation, and family composition. They also responded to 11 items pertaining

to their relationship history, including their sexual orientation, the length of their longest

romantic relationship (i.e., *at least a year or more, over 6 months, less than 6 months, and less

than 1 month*), their current relationship status (i.e., *serious relationship, casually dating, not

dating*), the duration of their current relationship (in weeks), and how their most recent

relationship was initiated (and why it dissolved, if applicable).

Dysfunctional relationship beliefs. The Relationship Beliefs Inventory (RBI; Eidelson

& Epstein, 1982) is a 40-item self-report measure designed to assess participants' unrealistic

beliefs about marriage and relationships. The RBI is comprised of five subscales (with 8 items

per subscale) reflecting agreement with irrational relationship beliefs. These subscales included:

disagreement is destructive (e.g., "If your partner expresses disagreement with your ideas, s/he

probably does not think highly of you"); *mindreading is expected* (e.g., "It is important to me for

my partner to anticipate my needs…"); *partners cannot change* (e.g., "My partner does not seem

capable of being other than s/he does now"); *sexual perfectionism* (e.g., "When I do not seem to

be performing well sexually, I get upset"); and *sexes are different* (e.g., "You can't really

understand someone of the opposite sex"*)*. Participants endorsed the beliefs on a scale of 1=*I

strongly believe that the statement is false* to 5=*I strongly believe that the statement is true,* with

higher scores indicating more maladaptive relationship beliefs in that domain. Because of multi-

collinearity among these subscales, and in an effort to reduce the number of variables examined

in this study, we focused on one overall relationship beliefs summary score in this study, which

was highly internally consistent across all three time points (α =.81, .89, .91 at baseline, 1-month,

and 2-months, respectively).

Relationship decision-making. The Relationship Deciding Scale (RDS; Vennum &

Fincham, 2011) is a 12-item self-report measure that assesses participants' confidence about

their relationship skills (e.g., "I have the skills needed for a lasting…relationship"); awareness of

relationship warning signs (e.g., "I am quickly able to see danger signals in a…relationship");

and thoughtfulness about relationship decisions (e.g., "It is important to me to discuss with my

partner each major step we take in the relationship"). Responses are assessed on a scale of

1=*strongly disagree* to 5=*strongly agree*. The RDS comprises three subscales, namely

relationship confidence (αs=.83, .81, .93, for baseline, one-, and two-month follow-ups),

warning signs (αs =.75, .74, .82), and *deciding* (αs =.72, .57, .54).

Mutuality. The Mutual Psychological Development Questionnaire (MPDQ; Genero et

al., 1992*)* is a 22-item self-report measure that assesses perceived mutuality in close relationships

(αs=.90, .92 at baseline and two-month follow-up). Participants indicated how likely they were to

engage in certain behaviors with their partner (e.g., try to understand; avowing being honest) on

a scale of 1=*never* to 6=*all of the time*. They also indicated how often their partner displayed

certain behaviors (e.g., pick up on feelings; share similar experiences) on the same scale.

Relationship quality. The Network of Relationships Inventory (NRI; Furman &

Buhrmester, 2009) is a 30-item self-report measure describing the supportive and discordant

characteristics across different types of family and interpersonal relationships. We focused on the

best friend and romantic partner ratings, given their relevance to our study. The relationship

qualities assessed were behavioral and observable (e.g., "How often do you turn to these people

for support with personal problems?") and were rated on a "how often" frequency scale ranging

from 1=*never or hardly at all* to 5=*always or extremely much*. We created one overall

relationship quality score for each relationship using 17 items from six of the ten subscales of the

NRI: *Companionship, Intimate Disclosure, Satisfaction, Emotional Support, Conflict,* and

Criticism (items from the last two subscales were reverse-coded before they were averaged).

These summary scores were highly internally consistent across time points and relationships

(αs= .90, .92, .92 for best friend and .90, .90, .92 for romantic partner).

Psychological distress. The Depression, Anxiety, and Stress scale (DASS-21; Lovibond

& Lovibond, 1995*)* is a 21-item self-report of symptoms commonly associated with *stress* (e.g.,

difficulty relaxing, nervous arousal, and being easily upset/agitated;); *anxiety* (e.g., autonomic

arousal, situational anxiety, and subjective experience of anxious affect); and *depression* (e.g.,

dysphoria, hopelessness, self-deprecation, anhedonia, inertia). Participants indicated to what

degree the symptom had been present during the last week using a 0-3 scale, with higher overall

scores denoting greater depression, anxiety, and stress, respectively. Given the significant

correlations among the subscales (*r*s=.66-.69), we focused on one mean score for psychological

distress (αs=.91, .93, .95 at baseline, 1-month, and 2-month post-treatment).

Group experiences questionnaire. Finally, in order to assess how well our facilitated

groups were received by the participants, we had participants complete a group experiences

questionnaire at the 2-month follow-up assessment point. The questionnaire consisted of 12

questions; eight questions were drawn from Group Psychotherapy Intervention Rating Scale

(GPIRS; Burlingame, McClendon, & Alonso, 2011) and four were developed for the purpose of

this study. They were rated on a five-point scale (1=*Strong Disagree* to 5=*Strongly Agree)*. A

sample question included from the GPRIS was "Leaders encouraged active emotional

engagement between group members". A sample question from the remaining four questions

was "The information I learned in the group was interesting and/or thought-provoking". The 12

questions showed good internal consistency within our sample (α=.85).

Data Analysis

A series of 3 (TIME: baseline/one month follow-up/two month follow-up) x 3 (GROUP: control/ePREP/facilitated group) x 2 (RELATIONSHIP STATUS: in a romantic relationship/not in a relationship) Repeated Measures ANOVAs were conducted on the outcome variables of interest. A 2 X 3 X 2 ANOVA was conducted to examine changes in mutuality, since we only assessed this measure at two time points (i.e., baseline and two month follow-up). We utilized Mauchly's test to assess whether there were violations of the sphericity assumption. In line with the suggestions of Field (2013), when the assumption was violated, we applied the Greenhouse-Geisser correction to the degrees of freedom when the Greenhouse-Geisser estimate was less than .75; in cases where the estimate was larger than .75, we applied the Huynh-Feldt correction. To facilitate interpretation, we do not report the adjusted degrees of freedom, but we do report the p-values associated with the adjusted degrees of freedom.

Results

Effects of Interventions on Relationships Beliefs and Relationship Decision-Making

Consistent with our first hypothesis, we found a statistically significant interaction effect between group and time on dysfunctional relationship beliefs, suggesting that participants modified their endorsement of these beliefs differentially as a function of the group to which they were assigned [$F (4,142) = 3.27$, $p = .016$]. This interaction effect was not qualified by a three-way interaction with relationship status (see Table 3). To explore further the interaction between group and time, we conducted a series of follow-up tests, comparing baseline to 2-month post-intervention levels of dysfunctional relationship beliefs, separately within each group (we focused on the baseline and 2-month follow-up time points to examine intervention effects over the longest period in the study and in order to conduct a limited set of comparisons, thereby minimizing the possibility of type I error). As seen in Table 4, participants in the facilitated

group and the ePREP conditions significantly decreased their endorsement of dysfunctional

relationship beliefs from baseline to two-months following treatment, whereas participants in the

control group showed no significant change in relationship beliefs (see Figure 2). The Cohen's *d*

value of .63 for the facilitated group and .43 for ePREP suggests a medium and small-to-medium

effect of the interventions, respectively, on dysfunctional relationship beliefs (Cohen, 1977).

We also found an interaction effect for group and time on deliberate decision-making that

approached significance [F (4,152) = 2.464, *p.* = .05]; this interaction was not further qualified

by a 3-way interaction with relationship status. Follow-up tests showed that only participants in

the facilitated group reported more deliberate decision-making in relationships from baseline to

2-month post intervention, whereas ePREP and control participants showed no significant

change (see Table 4). The Cohen's *d* value of .63 suggests a medium effect size for the

facilitated group. The recognition of warning signs and relationship confidence subscales of the

RDS showed main effects for time [Warning Signs: $F(2,152)$ = 25.25, *p*<.001; Confidence: *F*

$(2,152$ = 5.53, *p*=.005], but no group by time interaction effects. More specifically, overall,

participants were better able to recognize the warning signs of a bad relationship by the two-

month follow-up (*M*=3.96, *SE*=.07) compared to baseline (*M*=3.44, *SE*=.08). Similarly,

participants overall felt more confident in their relationship skills over time, as indicated by a

higher mean score at the two-month follow-up (*M*=4.27, *SE*=.08) compared to baseline (*M*=4.02,

SE=.08). Finally, a main effect of relationship status for relationship confidence and decision-

making suggested that those in a romantic relationship were more confident about their

relationship skills [$F(1,76)$ = 8.510, *p* = .005] and felt more skilled at decision-making [$F(1,76)$ =

12.074, *p* = .001] than those not in a relationship [for Confidence: $M_{\text{in a relationship}}$= 4.33 (.10) vs.

$M_{\text{not in a relationship}}$= 3.98 (.07); for Decision-Making: $M_{\text{in a relationship}}$= 3.77 (.07) vs. $M_{\text{not in a relationship}}$=

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3.48 (.05)].

Effects of Intervention on Relationship Behaviors and Psychological Distress

With regard to our second hypothesis, we found a statistically significant 3-way interaction effect between group, time, and relationship status for mutuality [F (2,71) = 3.505, p = .035]. Follow-up tests showed a significant effect for participants in the facilitated group who were in a romantic relationship; specifically, they showed an increase in levels of mutuality (an increase of approximately.4 points on a 5-point scale) (see Table 4). Further, the Cohen's d of .90 suggests a large effect size. We regarded this as support for the idea that an interactive relationship enhancement group helps college students demonstrate greater mutuality when they are already in a romantic relationship (see Figure 3). We found no effects of either intervention on participants' reports of the overall quality of their relationships with their best friends or romantic partners (if they had one). We did find a main effect of romantic relationship status on best friend relationship quality, such that those in a romantic relationship reported lower quality relationships with their best friend than those not in a romantic relationship [$M_{\text{in a relationship}}$ = 3.98 (.11) vs. $M_{\text{not in a relationship}}$ = 4.34 (.09), F(1,61) = 6.100, p =.016]. Additionally, in contrast to our third hypothesis, we found no effects of the intervention on psychological distress levels post-intervention.

Facilitated Group Experience

Mean scores on the group experience questions suggested that facilitated group participants regarded the group experience favorably [M = 4.57 (SD=.46) on a five-point scale]. Further, there was no difference in group participant satisfaction by university site [$M_{\text{mid-atlantic university}}$ = 4.61 (SD=.51) vs. $M_{\text{northeast university}}$ = 4.49 (SD=.35), t(18) = .565, p = .579], suggesting that the intervention was equally well received at both sites. There was some variability in group

composition at the Northeastern site (i.e., some facilitated-group participants attended a different group session from the one to which they were originally assigned) in order to accommodate participants' schedules; however, as aforementioned, experiences at both sites were comparable.

Discussion

The current study sought to extend the literature on relationship education for emerging adults by comparing two intervention modalities using a randomized, controlled design. The intervention largely was adapted from ePREP, an established relationship education program (Braithwaite & Fincham, 2009), with additions from work focusing on relationship beliefs extending from one's attachment style (Kilmann, 1996). While some of our findings mirrored those from the previous literature, others did not. Most notably, over a two-month period, participation in the facilitated group condition led to the greatest change in dysfunctional relationship beliefs and thoughtfulness about relationship decisions. For those in a romantic relationship at the time of the intervention, mutuality also was enhanced if one was assigned to the facilitated group condition. Thus, it appears from this study that in-person delivery and practice of relationship skills led by trained facilitators may be superior to learning the same material independently in an electronic format, with respect to promoting change in relationship-related cognitions.

The clearest change came in reducing intervention participants' dysfunctional relationship beliefs, which was a primary focus of the intervention. PREP was designed with the reduction of irrational, potentially harmful beliefs, as a primary goal (Fincham et al., 2011), as is consistent with the aims of cognitive-behavioral approaches to marital therapy (Epstein, 1986). Our intervention extended this segment of PREP by incorporating material on the genesis of relationship beliefs via attachment style, consistent with Kilmann's work (1996). Similarly,

participants in the facilitated group condition showed improvement in thoughtfulness around relationship decisions as a result of the intervention, though this unique effect of the group was not evident for relationship confidence and identification of warning signs in relationships, since participant functioning in these areas improved across all participants. These findings were in contrast to Fincham et al. (2011), who found that group intervention participants showed a greater degree of change in recognizing warning signs. Lastly, facilitated group participants in a romantic relationship showed change in mutuality, or authentic, empathic, two-way engagement with one's relationship partner. The PREP curriculum teaches communication strategies that would presumably enhance authenticity between partners in relationships, though this variable had not been examined previously. While the participants in the ePREP condition were encouraged to practice the skills in their relationships, the facilitated group spent time rehearsing and practicing the skills in the group with a peer before being encouraged to practice in their relationships, which may have contributed to greater confidence using the skills outside the group. The same finding did not emerge for those not in a romantic relationship (in any condition), or those in a relationship in the ePREP and placebo conditions.

Individuals in the ePREP condition also demonstrated significant changes in dysfunctional relationship cognitions, but no change in deliberate decision-making, or mutuality. It could be that learning this material via an electronic format allowed participants to think differently about their relationships, but without the added practice of the facilitated group condition, did not allow them to make any notable behavioral changes in their current relationships, which may have accounted for the greater mutuality reported on by participants in a romantic relationship who took part in the facilitated groups.

Our hypothesis regarding the effects of this relationship education intervention on

relationship satisfaction was not supported. The literature on the effects of the PREP curriculum on relationship satisfaction is somewhat mixed, with earlier studies showing an effect (e.g., Jakubowski et. al, 2004) and more recent studies with emerging adults (Braithwaite & Fincham, 2007, 2009) and married couples with one member in the military (Stanley et al., 2014) not showing an effect. Interestingly, a recent study showed that PREP did increase relationship satisfaction among military couples who reported infidelity (Allen, Rhoades, Stanley, Loew, & Markman, 2012), suggesting that couples with higher distress might stand to benefit more from the intervention. Of all the outcomes assessed in the current study, it is likely that relationship satisfaction may take the longest to change, as one member of the dyad must implement a sufficient number of changes to promote more favorable interaction patterns. Compared to marital relationships, in which the intervention has had a more consistent effect on satisfaction, relationships in emerging adulthood may be less intense and/or be characterized by fewer interactions on a daily basis, making it more challenging to see immediate changes in the quality of interaction. In addition, PREP led to a reduction in divorce rates among military couples two years following the intervention, but no change in relationship satisfaction (Stanley et al., 2014), which suggests that a change in relationship satisfaction may not be critical for changes in other important relationship outcomes to occur.

Finally, it was surprising that our intervention did not produce declines in psychological distress, as this contradicts previous research on ePREP (Braithwaite & Fincham, 2007, 2009). That previous studies focused exclusively on emerging adults in a romantic relationship suggests that this subpopulation might have a greater propensity to change with respect to negative affect. Another plausible explanation is that changes in distress may not be evident immediately, as suggested by Braithwaite and Fincham (2009), who found that participant distress increased two

months after participating in ePREP, but declined after ten months. Evidently, more longitudinal

inquiry is needed to determine how modifiable intrapersonal factors such as depression and

anxiety are in the context of relationship education and whether certain characteristics (e.g.,

relationship status, pre-intervention distress) are associated with differential change following an

intervention.

Limitations

This study was the first to examine the effects of an established relationship education

program across facilitated and online modalities of participation. While the findings suggest

some interesting differences in the effectiveness of the different modalities, the following

limitations should be considered when interpreting the results. First, as there were three

conditions, the number of participants in each condition was relatively small, limiting our power

to detect small effects. It is likely that in a larger sample some of our smaller differences between

the groups would have been statistically significant. Also, due to our relatively small sample

size, we were unable to further divide the group of participants in a relationship by relationship

duration, which precluded us from examining one's relationship experience as a potential

moderator of the intervention's effects. Finally, the data were limited by the number of collection

points, with the latest being two months following participation in the intervention. The effects

of relationship education may likely take longer to emerge as participants have more time to

apply their acquired knowledge to their current relationships, as was found by Braithwaite and

Fincham (2009). Relationship patterns and experiences develop over long periods of time, and

may take equally as long to change.

While the multisite nature of our study suggests that our findings may be generalizable to

college students at small and medium sized four-year institutions and in different geographic

areas of the United States, it is unclear whether relationship education would evidence similar effects with emerging adults at two-year institutions and/or adults not attending college. Finally, consistent with other studies in this area, the majority of our participants were female, limiting our ability to determine if the intervention has comparable effects for males and females. Also, the intervention materials largely focused on heterosexual couples and the majority of our participants identified as heterosexual, so it is unknown whether participants who identified with a different sexual orientation experienced the intervention materials and/or assessments as heteronormative in nature.

Implications and Future Directions

Findings from the current study suggest that the PREP curriculum is an effective tool for enhancing healthy relationship cognitions for emerging adults, regardless of relationship status. Moreover, for participants who are in a relationship, beneficial effects are still observable when only one member of the dyad is exposed to the intervention (Braithwaite & Fincham, 2007), which seems more practical in studies with college students, since studies have shown that 43-50% of students in relationships describe these relationships as long-distance (Dellman-Jenkins, Bernard-Paolucci, & Rushing, 1994; Guldner & Swensen, 1995). The current study modified the curriculum to include a greater focus on the genesis of relationship beliefs via attachment, which appeared to be an effective addition as participants' relationship beliefs showed significant change after participation in the intervention. Further research on PREP and/or ePREP with this modification is needed to determine the long-term implications of developing greater awareness of how existing relationship beliefs stem from early relationship experiences. The current study also suggests that having the opportunity to learn healthy relationship beliefs and practice communication skills in a group of peers and over a longer period of time may be the most

effective way to translate new knowledge to existing belief systems. While electronic delivery of

relationship education is most cost-effective, in-person engagement with this material may have

increased benefits when it comes to creating more functional, healthy relationship beliefs. As

emerging adults now spend much of their time interacting with others online, the value of in-

person, facilitated interventions may seem antiquated. However, evidence from the current study

suggests that not only should this method of delivery for relationship education be considered, it

may be preferred.

Several modifications to the current research design may be beneficial. Future research

with a larger sample and longer-term follow-up assessments may be necessary to elucidate the

differences between facilitated and online mechanisms for relationship education. Moreover,

additional booster sessions for ePREP over a longer period of time, or as an adjunct to the

facilitated group meetings, might produce more pronounced effects on relationship-related

cognitions and behaviors. A larger sample also would allow researchers to explore attachment

style and relationship experience as potential moderators of intervention effectiveness. Finally, it

may be fruitful to provide participants in the ePREP and control conditions with feedback on the

accuracy of their responses to the quiz questions, and/or to require that participants submit

reactions to the homework exercises. Doing so would help to ensure a high level of mastery of

the intervention's key concepts. Relatedly, the accuracy of participants' quiz responses may

serve as a useful index of participants' mastery of the intervention content, which could be

examined as a potential moderator of treatment effectiveness (Braithwaite & Fincham, 2011).

With respect to the design of future relationship education studies, the large percentage of

females engaged in this and previous studies suggests that researchers should consider more

creative ways of engaging males. Perhaps future studies could be introduced by citing challenges

males frequently report experiencing in emerging adult relationships, so as to deliberately target this subpopulation. Or, an exclusively male group might be considered, at least for the facilitated group condition. Also, continuing to engage emerging adults who are not actively in relationships seems paramount, as the intervention may provide valuable opportunities for reflection and may allow these individuals to approach subsequent relationships more adaptively. It was notable that nearly half of our sample was not in a relationship, but still expressed sufficient interest to engage in our study. Importantly, the intervention may require further modification to ensure it is maximally applicable to single adults. For example, participants may be prompted more consistently to identify how various components of the intervention (e.g., XYZ communication technique) could have been helpful in a previous relationship. Or, for this subpopulation, the intervention could explore casual sexual relationships in more depth. Future studies also may separate people into different groups based on their relationship status to enhance perceived similarity among participants, at least in the facilitated group condition.

Given the lack of an effect on relationship satisfaction in this and previous studies with emerging adults, it seems critical to consider whether more emphasis should be placed on specific ways to utilize one's partner (romantic or otherwise) for social support, since this is one of the defining features of a close and satisfying relationship. Helping emerging adults to develop appropriate self-disclosure behaviors may be one specific strategy for achieving this goal and it may be especially important for emerging adults with an insecure attachment style, who may avoid self-disclosure or who may be overbearing in their requests for another's help (Hazan & Shaver, 1987). In conclusion, relationship education has the potential to positively shape the way emerging adults think about relationships, romantic and otherwise. However, in-person practice and long-term follow-up may be essential ingredients for maximally effective

interventions. Expanding the scope of relationships addressed in these interventions, as well as

the scope of emerging adults engaged, are important next steps in this research.

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Table 1

Demographic Characteristics of Participants

Characteristic	n	Percentage (%)
Gender		
Male	18	16
Female	94	84
Race/ethnicity		
White/non Hispanic	65	57
African American/Black	21	19
Asian/Pacific Islander	14	13
Hispanic/Latino	6	5
Native American	3	3
Other	3	3
Class Year		
Freshman	66	59
Sophomore	25	22
Junior	12	11
Senior	8	7
Non-degree Student	1	1
Level of Mother's Education		
Graduate or professional training	27	24
Standard college or university graduation	41	37
Partial college training	29	26
High school diploma or less	15	13
Level of Father's Education[a]		
Graduate or professional training	26	23
Standard college or university graduation	42	38
Partial college training	15	14
High school diploma or less	28	25
GPA [*M (SD)*][b]	3.30 (.43)	
Sexual Orientation		
Straight	105	93
Bisexual	5	4
Lesbian	1	1
Other	2	2
Relationship Status[a]		
In a serious relationship (>1year)	23	21
In a serious relationship (<1year)	17	15
Dating casually but not committed	18	16
Not currently dating anyone	54	48
Parent Marital Status[c]		
Married	84	79
Divorced	14	13
Remarried	7	6
Widowed	2	2

Note. $N = 112$. GPA = Grade point average. [a]$N = 111$, [b]$N = 109$, [c]$N = 107$.

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Table 2

Key Objectives of Facilitated Group and ePREP Interventions

- To make students more cognizant of their relationship beliefs and the impact of those beliefs

on how they approach and engage in relationships

- To explain basic concepts of attachment theory and have students identify their own

attachment "style"[a]

- To describe issues and events that lead to relationship conflict (events, issues, hidden issues)

and the role of attachment style

- To explore unchangeable (e.g., parental divorce) vs. changeable (e.g., unrealistic beliefs)

influences on relationships

- To identify Communication Danger Signs such as "Filters" (e.g., inattention, emotional

states)

- To introduce and practice strategies for improving relationship communication [e.g., XYZ

Communication, the Speaker-Listener approach, Time Outs (i.e., pausing conversations when

they intensify)]

- To emphasize specific building blocks of healthy relationships (e.g., shared core values,

friendship)

- To discuss how deliberate decision making can lead to more lasting and satisfying

relationships and to familiarize students with the idea of passive vs. active decision-making

-To teach the importance of fun and friendship in relationships, and breaking out of ruts

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Note. Adapted from Braithwaite and Fincham, 2009; 2014; Braithwaite et al., 2010; Fincham et al. 2011.[a]Bartholomew and Horowitz's (1991) four-category *Relationship Questionnaire* was used in the facilitated group to help participants identify their attachment style; ePREP participants reviewed descriptions of the three-category model described by Hazan and Shaver (1987).

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Table 3

Analyses of Variance for Effects of Intervention, Time, and Relationship Status on All Outcome Variables

	Main Effects *F*-values (*df*)			Interaction Effects *F*-values (*df*)	
	Time	Condition	Relationship Status (RS)	Time x Condition	Time x Condition x RS
Dysfunctional Relationship Beliefs	14.90*** (2,142)	1.60 (2,71)	.27 (1,71)	3.27* (4,142)	.80 (4,142)
Relationship Deciding Scale					
Relationship Confidence	5.53** (2,152)	1.75 (2,76)	8.51** (1,76)	.16 (4,152)	1.90 (4,152)
Warning Signs	25.25*** (2,152)	.88 (2,76)	.13 (1,76)	2.01 (4,152)	1.55 (4,152)
Deciding	9.54*** (2,152)	.22 (2,76)	12.07** (1,76)	2.46* (4,152)	.97 (4,152)
Mutuality	1.35 (1,71)	.76 (2,71)	1.08 (1,71)	1.10 (2,71)	3.51* (2,71)
Network of Relationships Inventory					
Best Friend RQ	.36 (2,122)	1.66 (2,61)	6.10* (1,61)	.99 (4,122)	.34 (4,122)
Romantic Partner RQ[a]	.42 (2,38)	.14 (2,19)	---	1.26 (4,38)	---
Psychological Distress	.18 (2,130)	.31 (2,65)	.24 (1,65)	1.06 (4,130)	.73 (4,130)

Note. RQ=Relationship quality. [a]Analyses included only participants who endorsed being in some type of romantic relationship.

*p ≤ .05, **p ≤ .01, ***p < .001.

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Table 4

Mean Change in Relationship Beliefs, Decision-Making, and Mutuality from Baseline to Two-Month Follow-Up by Group

	Facilitated Group		ePREP		Control	
	Baseline	2-Month FU	Baseline	2-Month FU	Baseline	2-Month FU
	M(SD)	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*

Dysfunctional Relationship Beliefs

	2.68 (.34)	2.41 (.53)	2.63 (.24)	2.52 (.30)	2.65 (.33)	2.63 (.34)
	t(24) = 2.919, *p* = .008		*t*(24) = 2.071, *p* = .049		*t*(32) = .510, *p* = .614	
	Cohen's d=.63		*Cohen's d*=.43		*Cohen's d*=.10	

Deliberate Decision-Making

	3.42 (.61)	3.76 (.67)	3.62 (.65)	3.69 (.52)	3.55 (.60)	3.69 (.49)
	t(25) = -3.21, *p* = .004		*t*(25) = -.829, *p* = .415		*t*(33) = -1.569, *p* = .126	
	Cohen's d=.63		*Cohen's d*=.16		*Cohen's d*=.27	

Mutuality

In a Relationship

	4.42 (.88)	4.84 (.60)	4.67 (.38)	4.51 (.69)	4.73 (.51)	4.55 (.65)
	t(8) = -2.337, *p* = .048		*t*(6) = .878, *p* = .413		*t*(12) = 1.292, *p* = .221	
	Cohen's d=.90		*Cohen's d*=.45		*Cohen's d*=.37	

Not in a Relationship

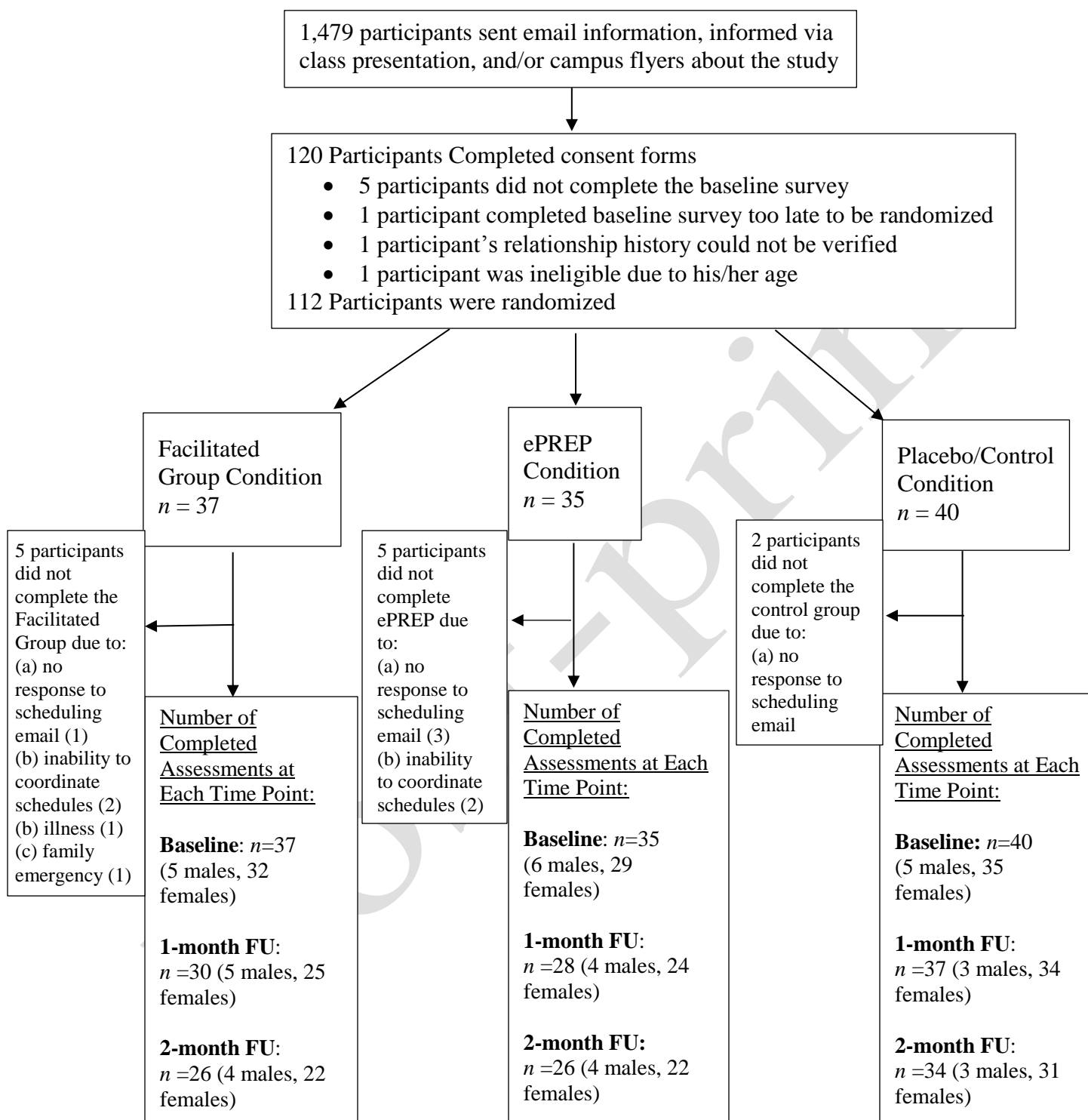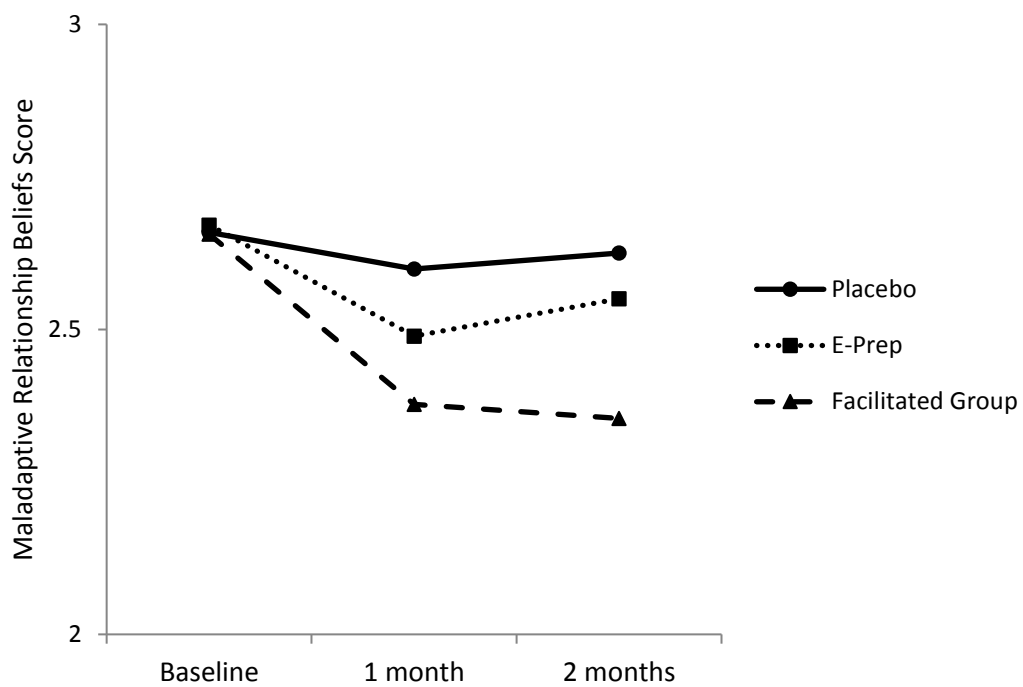|						
	4.39 (.56)	4.41 (.61)	4.24 (.76)	4.43 (.80)	4.59 (.59)	4.78 (.68)
	t(12) = -.124, *p* = .903		*t*(14) = -.996, *p* = .336		*t*(19) = -1.820, *p* = .085	
	Cohen's d=.04		*Cohen's d*=.26		*Cohen's d*=.42	

Figure 1. CONSORT Flow Diagram for Participants in the Study

Figure 2. Maladaptive relationship beliefs as a function of intervention condition (i.e., facilitated group, ePREP, placebo) and assessment time point.
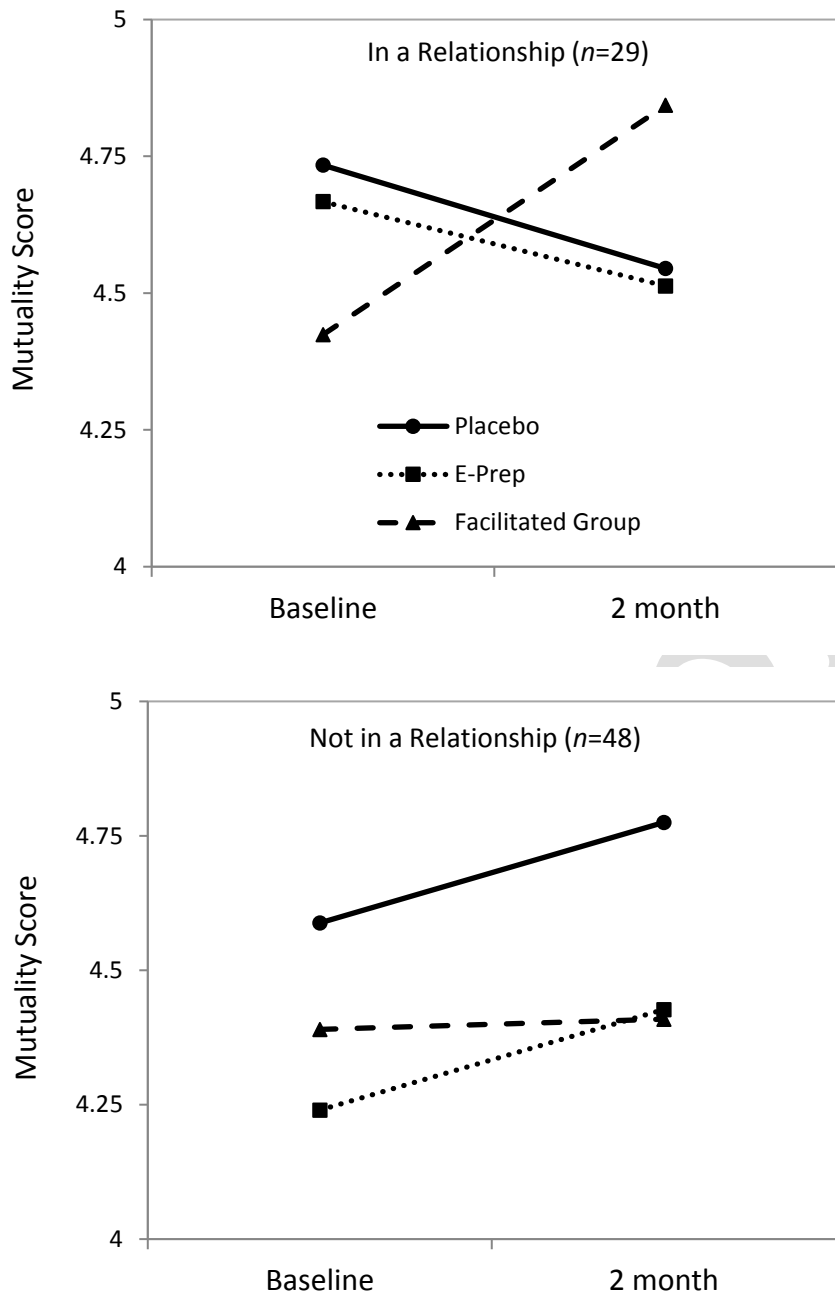
Figure 3. Perceived mutuality as a function of intervention condition (i.e., facilitated group, ePREP, placebo), assessment time point, and relationship status.