

A MULTI-METHOD INITIAL EFFECTIVENESS TRIAL OF AN ONLINE
RELATIONSHIP EDUCATION PROGRAM FOR RESERVE COMPONENT COUPLES

By

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ABSTRACT

Objective: Couples connected to the Reserve Component face significant challenges attributed to military service including prolonged separation, stressful life events, and increased mental health rates including increased suicide risk. Although existing studies document these challenges and clinical approaches to mitigate them, few studies have documented how relationship education will improve the psychological and family health of these reserve component couples. Informed by cognitive behavioral and social learning theories, this study documents the use and effectiveness of using the electronic Prevention and Relationship Education Program (ePREP) tool to strengthen psychological and family health in a cohort of currently serving Guardsmen and their significant others.

Method: A total of 11 National Guard connected couples (N = 24 participants, 11 men, 13 women) completed an online relationship education program called ePREP. They were assessed for base line relationship and psychological health and completed follow-up assessments post treatment and focus groups following training.

Results: Results indicated that participants who received the training improved pre to post assessment in the domains of communication and worry for both men and women, as well as depression, and alcohol use behaviors for women, all with large effects. Thematic analysis indicated several factors that led participants to attend, challenges in attending, their experiences with the curriculum as well as with a couple coach, differences between in-person and online delivery of the same curriculum, and a gendered difference centered on safety.

Conclusion: Relationship education delivered online with coaching is an innovative may be an effective way to improve relationship functioning and psychological health for National Guard connected couples. Implications for funding and policy are discussed.

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This dissertation is dedicated to the men and women who
selflessly sacrifice their time together in support of our Nation.

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CHAPTER ONE: INTRODUCTION

This research study examines the efficacy of a relationship education (RE) intervention, delivered online, to military couples in the National Guard, and evaluates the effects of this intervention on their relationship and psychological health. The RE intervention delivered was the Prevention and Relationship Education Program curriculum online (ePREP) with added couple coaching provided by National Guard Chaplains. Strengthening relationships has important implications for couples. With changes in income levels, a push for young adults to pursue college, and the advent of online dating apps, among others, the way people form intimate relationships has seen unprecedented changes over the past few decades (Daugherty, 2016; Hunter & Commerford, 2015; Markman & Rhoades, 2012; Moloney & Weston, 2012). Many of these changes place couples at increased risk for future relationship distress and dissolution (Markman & Rhoades, 2012), with as many as 77% of couples classified as at risk for relationship break up (Cordova et al., 2005). Researchers observed this trend toward relationship distress in the current divorce rate, which remains high at around 2.9-3.4 per 10,000 first-time marriages per year or roughly 45% of first marriages ending in divorce (Centers for Disease Control and Prevention, 2020; Markman & Rhoades, 2012). Although difficult to assess, some researchers attribute relationship risk to variables such as cohabitation before marriage (Allen, Rhoades, Markman, & Stanley, 2015; Stanley, 2021; Stanley, Markman, & Whitton, 2002), lower socioeconomic status (Cherlin, Cross-Barnet, Burton, & Garrett-Peters, 2008), and previous divorce (Whisman, 2008), among others. Despite this relationship distress and dissolution trend, Johnson et al. (2002) identified only 19% of couples and 37% of divorcing couples as having sought couples' therapy indicating that marriage/couple therapy may not be an acceptable option for many couples.

These trends are surprising considering the benefits of a healthy, committed relationship. The beneficial impact that a committed relationship has on the couple and their children are wide-reaching. For example, in Brown's 2010 review of literature on marriage and child well-being, they show that children from families with healthy marriages were more likely to do better in school, society, and have better cognitive outcomes than children from divorced families. Positive relationship functioning also has an impact on other factors such as improved mental health. For example, Blow, Farero, Ganoczy, Walters, and Valenstein (2018) found that relationship satisfaction buffers suicidality among military service members who meet the diagnostic criteria for a mental health condition. In another study, researchers found that increases in relationship satisfaction improves a couple's psychological and physical health (Roddy, Rhoades, & Doss, 2020). The evidence is strong that committed relationships that are functioning well are beneficial to individuals in these relationships. The need to strengthen and improve existing relationships is an important need across society in general, and as I will argue, also for military families (Butler, 1999).

As a cross-section of the greater society, military relationships are prone to many of the same issues as their civilian counterparts. These issues, however, can be exasperated by a myriad of military-related factors including incentives for service members to marry early (better pay and housing) (Lundquist & Smith, 2005), prolonged separations, and increased risk for psychological health concerns such as post-traumatic stress and depression (Gorman, Blow, Ames, & Reed, 2011). When narrowing military service down to the Reserve Component (RC), which comprises nearly 50% of the overall military strength, these issues appear to only worsen (Cohen, Fink, Sampson, & Galea, 2015). Many researchers partially attribute the worsening of risk factors in the RC relationships to deficits in support systems including cultural intelligence

about the military (Tanielian, Farris, Batka, Farmer, & Robinson, 2014), and the disruption of normal life to meet military obligations (Cohen, Fink, Sampson, & Galea, 2015).

Stigma is a huge barrier to help seeking for many people, and this is a particular concern for military populations (Gaubert, Gubits, Alderson, & Knox, 2012). For example, when evaluating barriers to care among the military, Hoge (2004) found that military service members with a diagnosable mental health condition reported approximately twice the amount of stigma around help-seeking than those who did not meet cut-off criteria for a diagnosable mental health condition. Variables that prevented individuals from seeking help included being seen by others as weak, and fear of how military leadership would react and view their mental health concern. This example, among other evidence, requires innovative interventions for the military that skirts around the stigma associated with traditional therapy as usual.

Military culture shapes help seeking for military connected couples (Georgia Salivar, Knopp, Roddy, Morland, & Doss, 2020). Specific barriers to military couples seeking care consist of geographical isolation, a lack of cultural competency by providers, a lack of knowledge about existing services, and concerns about confidentiality (Karney & Crown, 2007; Tanielian, Farris, Batka, Farmer, & Robinson, 2014). Each of these barriers to help seeking bears with them unique military concerns such as fear about the ability for the service member to maintain their military employment, and concerns about how they will be perceived by leadership and other service members among others (Hoge, et al., 2004).

Relationship education (RE) programs have targeted military couples to help strengthen their relationships. These programs include the Prevention and Relationship Education Program (PREP) within the Army and Air Force, iRelate within the Marines, and Essential Life Skills for Military Families (ELSMF) for the National Guard (Allen , Rhoades, Markman, & Stanley,

2015; Carroll, Behnke, Smith, Day, & Raburn, 2013; Lloyd, et al., 2015). Researchers have studied these approaches in various modes of delivery including in-person retreat style events such as the Army Strong Bonds program, in-person during drill events such as ELSMF, and tiered events that take place every few weeks such as iRelate. However, no known RE studies targeting military couples evaluate hybrid delivery methods nor online Relationship Education programs. Civilian RE studies show that premarital and marital education programs are successful in improving relationship quality including satisfaction and communication as well as decreasing divorce out to the two-year follow-up, and conclude that innovations that include changes to delivery format and content (Markman, Whitton, Kline, Stanley, & al., 2004) can be just as effective. These researchers call for RE adaptations to meet the needs of diverse communities and in diverse settings (Hawkins, Carroll, Doherty, & Willoughby, 2004; Markman & Rhoades, 2012). Scholars view adapting RE to on-line delivery formats (Braithwaite & Fincham, 2007) as important, especially for transient populations or populations where there exists high stigma for these types of programs. These innovations seek to increase the acceptability of the intervention and diminish barriers associated with attending RE programs in person. Studies suggest that RE acceptability may have significant impacts on a couples choice to complete the program as intended and that the change attributed to the intervention may be greater than if the program had not been viewed as acceptable (Milosevic, 2015).

The Toll of Prolonged Military Engagements

Since September 11th, 2001, the U.S. Government called upon the military to engage in the longest war in its history. The government codified these engagements in the names of the Global War on Terrorism, Operation Iraqi Freedom, Operation Freedom Sentinel, Operation Inherent Resolve, and Operation New Dawn, among others (U.S. Department of Veterans

Affairs, 2020). These engagements represent nearly 20 years of continuous combat operations. Given the duration of these conflicts, service members and their families have seen unprecedented challenges ranging from increases in mental health rates, substance use, comorbidity, relationship distress, and suicidality, among others (Hoge, et al., 2004). However, service members' increased risk for psychological distress varies across military branches and components.

According to multiple sources, service members belonging to the RC are at increased risk for psychological distress when compared to their Active Duty (AD) counterparts (Cohen, Fink, Sampson, & Galea, 2015; Gorman, Blow, Ames, & Reed, 2011; Griffith, 2010). Researchers partially attribute this distress to a lack of support found within the communities in which RC Service members live. For example, Tanielian, Farris, Batka, Farmer, and Robinson (2014) found that only about 13% of mental health providers in civilian communities across the U.S. have the cultural competency and evidence-based training to serve military-connected families effectively. This lack in military cultural competency and evidence-based practice dramatically decreases the further respondents live from a Veterans Affairs facility or Active Duty (AD) installation. In other words, the further a provider lives from a military installation the less competency they have in serving military connected families. This finding is particularly problematic when considering that many states such as Michigan do not have any AD installations meaning that the possibility of finding a provider who meets competency becomes even more difficult.

Current Study

This study focused on an innovative way to help National Guard service members through strengthening the relationships of military couples. Using an online Relationship

Education (RE) program (ePREP), this study explored how PREP delivered electronically with coaching impacts the wellbeing of members of the National Guard who are in committed relationships.

Statement of the Research Problem

Committed military relationships face increased stress due to the nature of military service. Compared to their civilian counterparts, military relationships face increased pressure attributed to frequent relocation, deployment stress, family separation, early family formation, intimate partner violence, substance abuse, and increased risk for psychological health concerns (Caska & Renshaw, 2011; Werber Castaneda et al., 2008). Stress associated with military service can be compounded when the military couple belongs to the Reserve Component (RC) which comprises both the Reserves and National Guard. RC service members are individuals who straddle military and civilian life. Traditionally these individuals occupy civilian jobs and live in civilian communities dispersed throughout the U.S. They are different from their civilian counterparts because they also traditionally serve on military assignments for one weekend a month, and two weeks a year. They are similar to their AD counterparts because they are expected to meet the physical and intellectual needs of the military and to deploy upon the request of the President of the U.S. and/or their governor. The lack of time these individuals spend with their military leadership makes it difficult for leaders to observe and provide for the RC Service member's needs, and geographic dispersion becomes problematic when establishing programming, policies, and practices that meets their needs.

RC members may live with mental health or family problems because of the stress of military life, and they may not receive optimal help because of the shortage of accessible

resources. In contrast to their AD counterparts, the resources that support healthy relationships for the RC may not be available, and when they are available, they may be difficult to access because of a lack of awareness of the resource, or the geographic distance between the resource and the person/couple needing assistance. Even when services are available, they may not be the best care for military related problems. Furthermore, navigating eligibility criteria for specific services can be exceedingly difficult for RC service members because many of the resources, such as those from Veterans Affairs Agency, are only available to AD military members or those who have served on an AD status. Simply put, not all resources and services are available to every Service member. For example, even though psychological and relationship health between the RC and AD are similar (albeit slightly worse for the RC), not all communities offer the support required to meet these needs. The U.S. government designs AD installations to meet the increased needs of AD families. These services include Army Community Services, Moral Welfare, recreation, and childcare including resources such as the Exceptional Family Member Program which aids families with children with special needs (National Military Family Association, 2021). The RC conversely relies on their civilian communities to provide these services, which may not always be available depending on the community. To help diminish these disparities the U.S. government funds some of the same programs for the RC that are offered on AD installations. One such program is the Army Strong Bonds program which is a commander's chaplain led relationship enrichment program. This program uses several curricula tailored to help build healthy relationships for service-connected relationships (Department of the Army, 2023). However, these programs are not always able to be delivered in person. For example, in a COVID environment, these programs were difficult to offer due to limitations on in-person

gatherings and travel restrictions. In another example, during deployment, it is not possible to bring couples together in the same location. One way around these issues is to offer the curriculum electronically which increases access and works around restrictions imposed by in-person programming.

ePREP is an evidence-based relationship education intervention that has demonstrated efficacy at improving relationships, positively affecting psychological and physical health, and is effective for a variety of populations including low income and college age participants (Braithwaite & Fincham, 2007; Braithwaite & Fincham, 2009; Roddy, Rhoades, & Doss, 2020). As such, ePREP is an innovative program to help overcome some of the issues faced by military connected couples serving within the RC. A recent addition to the ePREP curriculum is a hybrid adaptation which includes couple coaching (Roddy, Rhoades, & Doss, 2020). A recent meta-analysis of family coaching suggests that family coaching improves behavioral outcomes, improves the long-term gains from the intervention, and helps diminish stigma associated with receiving care (Rotheram-Borus, Swendeman, Rotheram-Fuller, & Youssef, 2018). When couple coaching was included in the ePREP curriculum, gains from the intervention appeared to be greater than those of the intervention alone (Roddy, Rhoades, & Doss, 2020).

Relationship Education in a COVID-19 Environment

The current study occurred during the latter part of the COVID-19 pandemic. The disparities regarding the unique stress of military service on committed relationships were compounded during the global pandemic. Although there is little research on how the SARS-CoV-2 or COVID-19 viral outbreak affects relationship functioning at the time of this writing,

a few points seem to surface from previous studies following fallout from natural disasters (Stanley & Markman, 2020).

Economic Stress. The global pandemic created an uncertain financial situation for many couples (Bauer, Broady, Edelber, & O'Donnell, 2020). For AD personnel, their financial situation is relatively fixed, except for retirement plans that are tied to financial markets. For RC connected couples, however, they rely on traditional employment throughout the communities they serve. Their connection to the community placed some RC couples at increased risk for financial stress due to government shutdowns within various industries which do not affect their AD counterparts' monthly income.

General Uncertainty. During the global pandemic, life around the world changed bringing about a time of general uncertainty. According to Konoangelos, Economou, and Papageorigiou (2020), the general uncertainty faced by people in the wake of COVID-19 has led to an increase in cases of psychological distress, including members of the military. This same distress has led to an increased utilization of free counseling services offered by organizations such as Give an Hour which caters to military connected families. In an open letter sent to Give an Hour providers in October, 2020, the organization's head thanked providers for their willingness to serve the spike of military connected couples during COVID-19. For RC Service Members, their general uncertainty may have increased as State Governments called upon the RC as a stopgap for community support. For example, the Governor of Michigan called up the Michigan National Guard to serve as the national Command and Control element for COVID-19 support. Some of these service members were sporadically relocated from state to state as the pandemic spread. These sporadic moves increased uncertainty because they were in response to the unknowns of the spread and

containment of the virus. The members of the National Guard continued to provide COVID-19 support for the majority of the pandemic in addition to their other duties such as supports for wildfire support in the West, civil unrest such as January 6th, and other missions pertinent to the safety and wellbeing of U.S. citizens (46 Military Police Command, 2021).

Relationship Education in the Reserve Component

Existing evidence suggests that relationship education can offset various relationship stressors, however, no significant study has documented the efficacy of relationship education within the RC. The largest and most rigorous study on RE within the military suggests that RE may bolster the health of RC marriages (Stanley et al, 2010), and more recent evidence suggests RE may even increase psychological and physical health of participants (Roddy, Rhoades, & Doss, 2020). Furthermore, current data suggests that online delivery modalities may be just as effective as programs delivered in other formats, and potentially more effective when coupled with a coach rather than the traditional delivery of these programs (Roddy, Rhoades, & Doss, 2020). These findings become much more important when considering the COVID related social distancing practices which limited in person events, and likely exasperated the stress experienced by couples (Stanley & Markman, 2020).

Finally, while studies exist evaluating RE within military contexts, few have examined the acceptability of the program within a military culture. This is particularly valuable because each military branch has a specific culture and expectation of their service members. By exploring the same training within different branches and with the same variables, this study expands our knowledge of how to tailor programming for the military for the greatest effect.

Description of Studies that have Addressed this Issue

RE programs have varying degrees of effectiveness across diverse demographics. Meta-analyses of RE show that the degree of program effectiveness varies based on a multitude of factors including duration, dosing, acceptability, instructor enthusiasm, how researchers measure effectiveness, and other methodological considerations (Blanchard, Hawkins, Baldwin, & Fawcett, 2009; Jakubowski, Milne, Brunner, & Miller, 2004; Markman & Rhoades, 2012; Margolin, Chien, Duman, Fauchier, & Gordis, 2005; Hunter & Commerford, 2015). According to three meta-analyses evaluating studies conducted on RE, RE effectively improves communication and relationship satisfaction over the short term with significant, moderate effect sizes (Blanchard, Hawkins, Baldwin, & Fawcett, 2009; Hawkins & Erickson, 2015; Hunter & Commerford, 2015). However, these authors critique these studies because they primarily focus on healthily married couples, lack sample diversity, and do not have longitudinal designs. Furthermore, these authors note a current need for evidence-based programs that meet the needs of an increasingly diverse population (Markman & Rhoades, 2012).

Of the 143 recent studies and curricula evaluated in the metanalysis, the Prevention and Relationship Education Program or PREP (Stanley, et al., 2017) curriculum rises to the top as the most studied. PREP has demonstrated efficacy in improving relationship satisfaction, communication skills, psychological and physical health, across a wide variety of participants, and has multiple randomized control trials going out to the eight-year time point (Allen, Rhoades, Markman, & Stanley, 2015; Rhoades, Stanley, Markman, & Allen, 2015).

PREP, the US Army, and the Development of ePREP

The history of PREP for the U.S. Army goes back to the 1990s when the PREP developers delivered its first training at Scofield Barracks and a follow-up training lead by Chaplains called Building Strong and Ready Families (BSRF) with added modules of spirituality and psychological health (Allen, Rhoades, Markman, & Stanley, 2015; Stanley, et al., 2005). Shortly after this initial implementation of PREP for the Army, the Chief of Chaplains funded a study of BSRF (Stanley, et al., 2005). The findings from this initial study indicated that BSRF was effective at improving relationship satisfaction, communication, and confidence in the permanency of the marriage (Stanley, et al., 2005). With the initial documentation of efficacy, the same researchers conducted a larger quasi experimental study with a control group and longitudinal design starting in 2007. This new study tracked 662 couples for several years. Researchers intended to evaluate the long-term effects of BSRF, later coined as PREP 8.0, on couples. Outcomes from this study indicated that PREP 8.0 was an effective intervention at improving communication, relationship satisfaction, relationship confidence, positive bonding, dedication, sacrifice, and forgiveness (Allen, Rhoades, Markman, & Stanley, 2015). However, despite these initial gains, this study also found that PREP 8.0's protective factor for divorce significantly diminished at the two-year follow-up (Stanley, Allen, Markman, Rhoades, & Prentice, 2010). Since the conclusion of the large PREP 8.0 study, no further evaluations exist for PREP in the military.

Simultaneous to the 2007 evaluation of PREP for the AD Army, Braithwaite and Fincham, (2009), adapted the PREP curriculum for use online as an attempt to reach premarital college age couples. The intent of ePREP was to help couples establish safety, effective communication, and problem-solving within their relationships. The online version

of PREP included the core four modules of PREP and folded in some of the other content not always covered when delivering PREP in person. The final version consisted of six modules lasting approximately one hour each. In addition to the core four modules, these authors added in XYZ statements, the Problem-Solving Model, and Commitment. Over time, these same authors started to explore a hybrid version of ePREP which included couple coaching. In a recent large scale RCT of this hybrid model with people two times below the poverty level, Roddy, Rhoades, and Doss (2020) found that gains from completing this program were similar to, if not greater than, the traditional in-person delivery.

Building on these findings was a key component of the current study for multiple reasons. First, although researchers evaluated ePREP with low income and college-aged cohorts, it has not been evaluated within the military or RC, which has its own unique stressors as mentioned above (Braithwaite & Fincham, 2009; Braithwaite & Fincham, 2007; Roddy, Rhoades, & Doss, 2020). Given findings that ePREP with and without coaching improves relationship and psychological health, it was expected that we would uncover these same findings in a cohort of NG Service members.

This is a crucial task as the political environment currently shifts within the Department of the Army. For one, the Army Chief of Chaplains announced in 2019 that he is shutting down the Strong Bonds Program because it is expensive and has minimal reach. ePREP may help to overcome this gap, because it allows service members to complete the RE program online as opposed to the weekend-long retreat format typically employed by the Strong Bonds Program. Secondly, in November 2020, the Secretary of the Army, in a letter to the Force, announced that the Army is shifting from a focus on contingency operations to a focus on individual Soldier wellbeing. This shift is most obvious in a revision of FM 7-22

Holistic Health and Fitness which clearly delineates the five pillars of comprehensive wellness. Within this publication the Army states:

Developing and maintaining good relationships requires effective communication. Poor communication leads to isolation and difficulty coping with daily stressors. When Soldiers encounter challenges or stress, they find it much easier to cope if they have the support of unit, family, or community. Soldiers are more effective in their professional mission if they can completely resolve conflicts with other Soldiers and with their own doubts about the mission. Self-awareness, self-confidence, assertiveness, and conflict resolution skills allow Soldiers to successfully navigate normal interpersonal problems.

(Headquarters, Department of the Army, 2020; p. 9-10)

These changes within the Army suggest that there is an openness to RE type programs, and this timing provides an optimal opportunity to evaluate the effectiveness of electronic RE in increasing couples' associated relationship and psychological health.

Overview of the PREP Curriculum

PREP was developed by Dr. Howard Markman in the late 1970s incorporating findings from his doctoral dissertation and other studies within the field (Markman & Floyd, 1980). After reviewing hours of tape on reel-to-reel projectors of couples interacting, Markman noted that every couple had conflict in their relationship, and it was the skills they employed that helped them to successfully navigate that conflict without it inducing harmful stress. Following this finding, Markman developed the first edition of PREP called the Premarital Relationship Education Program. The intent of this program was to help college aged couples, who were thinking about marriage, to refine skills that would help them in their committed

relationships. These skills still serve as the core content of PREP and include: The Three Keys to Success, Danger Signs and Time Out, the Speaker Listener Technique, and Fun and Friendship. Developers have subsequently added multiple other skills to the PREP curriculum and established unique adaptations to meet needs of specific people groups such as A Lasting Promise a Christian adaptation to the PREP curriculum and the aforementioned BSRF/PREP 8.0.

Researchers have studied PREP all around the world with diverse groups of people in countries such as Singapore, Qatar, Estonia, and Germany. PREP is currently used by multiple military organizations in countries such as the U.S. and Norway among others (Markman, 2020). Existing studies have documented PREP's efficacy across multiple racial and ethnic communities, military branches, and people of varying socioeconomic statuses.

The Purpose Statement

Given the lack of research on RE for RC couples, online delivery of RE, and hybrid RE with couple coaching, the purpose of this study was to evaluate the effectiveness of an electronic version of an evidence based RE program (ePREP with couple coaching) in a cohort of National Guard couples. The focus was to find if ePREP plus Coaching is effective for RC couples in improving both relationship and psychological health (Roddy, Rhoades, & Doss, 2020). To accomplish these goals, the study consisted of an initial efficacy trial with volunteers who attended the training through the Strong Bonds program. This program offered six modules of online ePREP training enhanced with couple coaching to a cohort of Army and Air NG service-connected couples in a Midwest state. No Air connected couple ended up taking part in the training. To benchmark change, the study collected data at pre and post training with the same measures that focus on relationship and psychological health as used in

other studies. In addition, the study asked a series of seven questions to assess retention of training content at follow up (Allen, Post, Markman, Rhoades, & Stanley, 2017).

Furthermore, the study evaluated program acceptability and satisfaction post training to understand how satisfied couples were with the intervention using a post survey and by conducting two focus groups with 18 total participants. Changes in these relationship and psychological health scales helped the study assess if ePREP with couple coaching is an effective way for the military to improve both committed relationships and the mental health of participants.

Theoretical Orientation

According to Markman and Rhoades (2012) a significant issue surrounding existing RE programs are that they lack a theoretical base. Theories provide a way for researchers to develop their hypotheses and provide ways to benchmark program success (White, Klein, & Martin, 2015). For the purposes of this evaluation, two main theories, social learning theory and cognitive behavioral theory guided the intervention.

Social Learning Theory (SLT). Bandura states that learning happens through four distinct phases: attention, retention, reproduction, and motivation (Bandura, 1979). This theory informs the evaluation because it helps describe the learning, use, and retention process of ePREP with couple coaching. SLT suggests that learning ePREP is only effective if couples attend to the curriculum on an online platform. However, the existing curriculum platform does not offer researchers a way to evaluate if the couple paid attention during the intervention (i.e., pre and post-test on content covered) which proves problematic when trying to benchmark program efficacy. With this limitation in mind, the hybrid version of ePREP with couple coaching helps the evaluation assess couple's curriculum attentiveness through

the roleplaying with the couple coach. Although the study does not evaluate the coaching sessions, coaches attend consulting sessions and follow a manualized approach which helps them ensure couples attended the online modules between coaching sessions. The study also ensured couples completed the ePREP content between coaching sessions through the coach consulting sessions with the curriculum developers. These sessions reviewed recorded coaching sessions answered any questions the coaches had, and reviewed any updates to the project. During these meetings coaches would share their impressions about the couples progress, and in some cases indicated that the coaching session was rescheduled to ensure couples completed the curriculum. This model greatly improved the studies ability to ensure program adherence.

A specific subset of Social Learning also applies to RE with a couple coach. The Flipped Classroom model (College of Human Medicine, Michigan State University, 2020) is a model used in the education field. This model essentially flips Bloom's Taxonomy of learning so that the students learn on their own via homework and then come to school to "experience" what they have learned. This model moves the teacher from a purely instructor role and places them, and the other students into a collective learning/experiencing role. Theoretically, the flipped classroom increases the retention of the curriculum and furthers learning because students experience the curriculum in vivo. Within the experiencing of the curriculum both the teacher and other students assist each other in the acquisition of knowledge. This process is akin to Vygotsky's theory of scaffolding whereby educators and fellow classmates increase learning by adjusting the level of support to help the student internalize the content (Verenikina, 2020).

In regards to the current study, the flipped classroom paradigm captures the process of the couple attending the curriculum on their time prior to engaging in the coaching sessions. The coaching sessions then become an in vivo practice, and application of the content that theoretically increases the retention of the curriculum. This process also informs the evaluation because the study sought to understand if the ePREP with couple coaching is an acceptable delivery format for RC couples. According to multiple studies evaluating stigma within military (Hoge, et al., 2004) and RE (Rotheram-Borus, Swendeman, Rotheram-Fuller, & Youssef, 2018), coaching models that align with the flipped classroom appear to be an innovative way to increase accessibility and acceptability of the ePREP curriculum.

In regards to evaluation, SLT guided the development of the focus group questions. Through these questions, the study explored the experience of couples attending the training and the coaching sessions. Evaluators asked couples questions that probed their feelings toward the coaching model and its ability to enhance learning.

Cognitive Behavioral Couple Theory (CBCT). Among the most prominent theoretical bases for RE is a variant of cognitive-behavioral theories (Markman & Rhoades, 2012; Shadish & Baldwin, 2003). According to the Beck Institute (2020), the cognitive model asserts that “people’s perceptions of, or spontaneous thoughts about, situations influence their emotional, behavioral (and often physiological) reactions.” The reason why so many of the RE programs follow this theoretical construct is its emphasis on skill-building and refinement, a hallmark of cognitive-behavioral, and RE practices, where couples practice healthy relationship skills to improve their relationships (Markman & Rhoades, 2012).

CBCT serves as the basis for RE, and PREP specifically, in many ways. First, CBCT asserts that people are shaped by and shape their environment (Epstein, Baucom, & Daiuto,

1997). This process of shaping is evident in committed relationships whereby the thoughts, feelings, and actions of one partner impact the thoughts, feelings, and actions of the other partner. With this assertion in mind, the goal of CBCT and RE is to help couples gain skills and knowledge to positively shape each other which brings about a happy and healthy relationship.

The process of skill building and behavioral techniques takes many forms. Within the PREP curriculum, the hallmark skill taught is effective communication called the speaker listener technique (Owen, Manthos, & Kelley, 2013). With speaker listener, couples learn a form of communication that they can apply when their discussion starts to get emotional (Stanley, et al., 2017). During emotionally charged discussions, couples have a tendency to revert to one of four harmful conflict states, invalidation, escalation, withdraw, and/or negative interpretation (Stanley, et al., 2017). The intent of the skill is to slow the couple down, build a sense of understanding, and help the couple resolve the conflict without imposing harm to the relationship. This skill is similar to those employed in CBCT, such as the emotional expressiveness training, because it helps couples speak in “I” statements, acknowledge their partners’ points of view, and helps the couple seek consensus (Epstein, Baucom, & Daiuto, 1997).

After the couple learns the concept, they then practice that concept with a trained coach. The trained coach is not a therapist which lends this model to greater dissemination to a wider audience than clinical couple counseling. For more information on how the coaches are trained see chapter three. Coaches guide the couples through the process of enacting the concepts covered in the curriculum. By guiding these couples, the coach helps them uncover what the concept looks like in practice, which furthers the couples’ understanding of positive

and negative behaviors and cognitions. This process intends to sharpen the skills of the couple without going into a clinical relationship with the coach.

The process of attending to participants' cognitions often takes the form of psychoeducation within the PREP curriculum. For example, PREP educates participants on events where people get upset and the underlying issues and needs that fuel the situation (Stanley, et al., 2017). From a CBCT perspective, these items address couples' assumptions, standards, selective attention, attributions, and expectancies (Epstein, Baucom, & Daiuto, 1997). According to Epstein, Baucom, and Daiuto (1997), these cognitions fuel participants' positive and negative thoughts about their partner. If a partner acts in a way that is contrary to the other partner's expectations, for example, the partner with the expectation may feel like their spouse does not care for them. In response, they then act in accordance to their feeling indicating the cyclical nature of CBCT.

Although this is a very brief review of some of PREP's modules, it helps to illustrate the ways in which CBCT has and continues to shape the skill building, and psychoeducational elements of the curriculum. However, it is important to mention that despite the call by some authors to move RE into a more clinical model, the PREP authors stress that PREP is education, not therapy (Markman & Ritchie, 2015).

Research Questions

The following research questions will guide this research study.

1. Is ePREP + Coaching effective in a) strengthening RC couple relationships in a sample of National Guard couples?

H1. The online RE program, ePREP + coaching, will lead to positive increases in relationship satisfaction for both service members and their partners in the area of

communication, relationship satisfaction, sexual intimacy, and decrease break-up potential;

2. Is ePREP + Coaching effective in decreasing psychological problems in a sample of National Guard couples?

H2. The online RE program, ePREP + coaching, will lead to improved psychological health for both service members and their partners in the areas of depression, post-traumatic stress, alcohol use, and suicidality.

3. What is the feasibility of conducting online relationship education for National Guard connected couples?
 - a. What motivated RC members to enroll in and complete the program?
 - b. What were participants' experiences of a computer-based relationship education program?
 - c. What barriers did participants face when engaging in online relationship education?
4. How did participants view the curriculum?
 - a. Was the curriculum acceptable for military couple participants?
 - b. Did the curriculum meet their needs?
5. What were participants' views on couple coaching?

Terms

Relationship Education: Programs designed to assist couples at improving their relationship health with a primary focus on building skills and psychoeducation.

The Prevention and Relationship Education Program: An evidence-based RE curriculum developed in 1979 to assist college aged participants in establishing health committed relationships.

Reserve Component: Military members who are trained and equipped the same as their Active Duty counterparts but traditionally work one weekend a month and two weeks in the summer.

Military Connected Couples: Couples in both the RC and AD who have one or more members currently serving in the military.

Relationship Health: How well the relationship functions as measured by variables such as relationship satisfaction and skills that donate the wellbeing of the relationship and its likely hood for success.

Psychological Health: A mark of cognitive wellbeing as measured by items including depression, anxiety, and reliance on substances.

CHAPTER TWO: LITERATURE REVIEW

Relationship Education (RE) within the military is well documented within the existing research. Existing research includes evaluations within multiple military branches (Lloyd, et al., 2015) and large scale trials which evaluate RE's impact on military relationships including eight years of follow-up data in one study (Allen, Rhoades, Markman, & Stanley, 2015). However, RE evaluation within the Reserve Component (RC) is exceedingly limited with only one trial (Carroll, Behnke, Smith, Day, & Raburn, 2013) to date. This limited dissemination trial focused more on the feasibility of implementing a new training not previously evaluated as opposed to evaluating an existing program.

The scarcity of RE research within the RC is alarming when considering the needs of these citizen service members, policies incentivizing marriage (Lemmon, Whyman, & Teachman, 2009; Lundquist & Smith, 2005), and previous rallying of RE researchers to do more with diverse populations (Larson, 2004; Markman & Rhoades, 2012). Existing evidence supports the needs of RC service members as different than their civilian and military counterparts. For example, when evaluating suicide rates, while the civilian suicide rate is gradually increasing with a current ratio of 14.2:100,000, for Active Duty (AD) service members, suicide rates double to approximately 24.8:100,000, and for the National Guard it increases to 30.6:100,000 (Department of Defense, 2019; National Institute of Mental Health Information Resource Center, 2020). These trends also remain true regarding mental health disparities between civilians, AD, and RC service members (Cohen, Fink, Sampson, & Galea, 2015; Lane, Hourandi, Bray, & Williams, 2012).

Researchers have continuously evaluated the disparity in suicide and mental health rates between civilians, AD, and the RC since the beginning of Operation Enduring Freedom and Iraqi

Freedom (Cohen, Fink, Sampson, & Galea, 2015). Many of these researchers point to disparities in community support systems. For example, Tanielian, Farris, Batka, Farmer, and Robinson (2014) evaluated mental health providers' ability to provide basic mental health care to service members, veterans, and their families. Their review, based on a nationwide sample of mental health providers, suggests that on average only 13% of providers meet the cultural competency and evidence-based training needed to provide a basic level of care for these military connected individuals. Furthermore, these researchers discovered that the distance the provider lived away from an AD base or large VA facility had direct implications on their level of competency with those living closer to these locations as being more equipped to provide care. Their finding is concerning for states such as Michigan where no AD installation exists and the distance a veteran may live from a large VA facility is often more than an hour drive. This evidence suggests that the ability to meet the needs of the RC can be problematic when the service member and their family live in areas void of the Federally funded existing support system. Furthermore, some researchers such as Cohen, et al., (2015) suggest that issues such as problematic drinking, which is approximately 4% higher in the RC from the AD, can be attributed to preparation and military engagement differences between components. This component difference alludes to difficulties some RC families have in balancing military civilian life responsibilities and differences in their active versus passive coping tendencies (Giff, Renshaw, Carter, & Paige, 2020).

Given the increased stress RC service-connected couples face, the gap in community supports, and elevated mental health concerns, this literature review focuses on broad themes within RE research and zeros these broad themes into more specific findings as they relate to RE's impact on mental health. Through this process, the review will discuss the relationship of

key variables with each other, their use as an independent or dependent variable, and a critique around some of the limitations in the way researchers have evaluated RE to date.

Variables Commonly Studied within RE Research

The Intervention Itself

Needless to say, the most commonly studied variable in RE research for any demographic is the intervention itself. The intervention in these studies serves as the independent variable. Researchers assess how the intervention affects outcomes such as relationship satisfaction, communication, divorce potential, and effects on children (Reardon-Anderson, Stagner, Macomber, & Murray, 2005). However, there are a myriad of interventions that have been studied that fall into the RE category ranging from recent educational curricula designed to meet a specific need, e.g., iRelate for young Marines (Lloyd, et al., 2015), Essential Life Skills for Military Families for RC soldiers (Carroll, Behnke, Smith, Day, & Raburn, 2013), to curricula that have been in use for decades such as the Prevention and Relationship Education Program (PREP; Stanley, et al., 2017) and its many adaptations including Building Strong Ready Military Families (Allen, Rhoades, Markman, & Stanley, 2015) and ePREP (Braithwaite & Fincham, 2009). Given the many interventions to choose from, some scholars choose to study two curricula in tandem such as Roddy, Rhoades, and Doss (2020) who conducted a longitudinal evaluation of ePREP and Our Relationship. RE curricula have a variety of delivery formats ranging from large group in person lectures to electronic delivery. However, no current study exists evaluating how different delivery methods of these same curricula, such as electronic, kinesthetic, and in person, impacts the program outcomes. Future studies could explore the different delivery formats of the same curriculum such as PREP and ePREP and compare the outcomes over time along with other metrics such as user engagement and feasibility. These

studies will greatly improve the scientific understanding of best practices within the field of RE research.

The primary way researchers evaluate RE interventions are through longitudinal designs that evaluate outcomes between pre, post, and most often three to six-month follow-up. These longitudinal studies allow researchers to see how the gains from attending the intervention maintain or attenuate over time. One unfortunate reality within the RE field, in regards to longitudinal studies, are the lack of studies evaluating outcomes beyond the six-month follow-up (Markman & Rhoades, 2012) and understandings of the sustainability of skill use and relationship satisfaction over the six-month follow-up. Only a handful of studies document outcomes beyond one-year (Hunter & Commerford, 2015).

Other shortcomings of existing RE studies include a lack of evaluation within different relationship types such as cohabitating couples or LGBTQ relationships, a lack of studies consisting of diverse samples, curricula employing a theoretical basis, evaluations on relationship aggression, studies evaluating existing curricula (i.e. researchers tend to evaluate their own intervention which opens the study up to bias interpretation by the researcher), and studies that do not use longitudinal designs (Markman & Rhoades, 2012). These current shortcomings make RE an ideal field of study for future research.

To evaluate the RE program, researchers typically evaluate how the program improves relationship and other health domains. However, how researchers evaluate training methods and approaches remains limited. In addition, as cited by multiple meta-analyses, many RE studies lack rigorous designs, which leaves the findings subject to scrutiny (Markman & Rhoades, 2012). These designs consist of post only, or pre/post designs. These methods are problematic

because they do not contain a control group to compare results. The lack of a control means that researchers cannot attribute change solely to the intervention.

Among more stringent methods, RCTs remain elusive. Few studies employ a true RCT design favoring the less stringent quasi-experimental design. Underlying reasons for researchers to use the quasi-experimental designs remain nebulous within the research. However, considerations around ethics, feasibility, and funding all surface as plausible explanations for the use of a less stringent design. Some researchers suggest that it is ethically problematic to withhold beneficial training from subjects so the research can contain a control group to be (Leavy, 2017) in some contexts. When researchers do RCTs, they ideally offer two beneficial programs and compare results between their findings and/or using a waitlist control. For example, Roddy, Rhoades, and Doss (2020) did both by conducting an RCT that compared differences between two evidence-based curricula, *Our Relationship* and *ePREP*. To document program efficacy, they used a six-month waitlist control so they would not be violating any ethical guidelines. The downside of this design is that researchers can only evaluate outcome variables out to the six-month follow-up, which leaves the longer-term effects unknown and results in attrition within the waitlist control.

Another innovative way researchers have evaluated program efficacy is in how they recruit couples. Some researchers such as Conradi, Dingemanse, Noordhof, Finkenauer, and Kamphuis (2018) evaluate differences in training efficacy by comparing results between two different groups of people. In their design, these researchers compared results between participants who were clinician referred and self-referred. The intent of this design is to see if gains from attending the training would be different between couples who were and were not seeking therapy. The problematic side of this approach is that it diminishes generalizability that

researchers would have observed with a large diverse population, something generally lacking within the existing research (Hunter & Commerford, 2015; Markman & Rhoades, 2012).

ePREP Evaluations

Originally adapted from the PREP curriculum (Stanley, et al., 2017) by Braithwaite and Fincham (2007), researchers have evaluated how ePREP improves relationship, psychological, and physical health of participants. Initial evaluations conducted by the ePREP developers intended to see how attending the program affected participants anxiety and depressive symptoms in a cohort of dating college students (Braithwaite & Fincham, 2007). These initial findings indicated that ePREP was just as effective at improving anxiety and depressive symptoms as the computer-based anxiety prevention program which utilized a cognitive behavioral paradigm out to the eight and 10-month follow-follow-ups, and that ePREP strengthened some relationships while other relationships resulted in dissolution (Braithwaite & Fincham, 2007; 2009). Of the evaluated curricula, ePREP is innovative for its use of technology and emerging adaptations. Given that due to COVID-19, the government restricted traditional in person programs, ePREP remains as the only evaluated program that couples could still attend, despite the pandemic.

Following the initial evaluation of ePREP for college students, Roddy, Rhoades, and Doss (2020) conducted a large scale RCT comparing ePREP and an emotionally focused therapy adaption called Our Relationship for lower socio-economic class participants in the U.S. Although their findings are currently being published, their initial evidence suggest that participants in both the ePREP and Our Relationship arms reported large improvements in psychological health and smaller improvements in physical health variables as compared to their waitlist control between pre and posttests. Perhaps more notably in regards to the current study,

is the use of a couple coach employed by these researchers. These coaches worked with couples between every other module during the ePREP intervention to practice the skills learned during the curriculum. Their study used a paraprofessional couple coach to reinforce learning.

Couple Coaching as an Innovative Model

Couple coaching is an understudied concept in relationship education. In the words of Markman in 2020 “It’s not a gap, it’s a chasm” (Markman, personal communication). However, studies conducted in the health sciences suggest that the addition of a couple coach helps participants adhere to the program, and the research protocol (Roddy, Rhoades, & Doss, 2020). Furthermore, a meta-analysis conducted by Rotheram-Borus, Swendeman, Rotheram-Fuller, and Youssef, (2018) suggest that the use of a couple coach improves treatment outcomes and patient self-management. These findings are important when considering perceived barriers to care such as stigma associated with attending traditional therapy and to a lesser extent RE programs because participants may view a paraprofessional couple coach in the same light as a licensed clinician. However, at the current juncture, couple coaching remains an understudied construct within RE programs.

One may argue that any time a couple attends an RE program, they are coached. However, within the context of Roddy, Rhoades, and Doss (2020) the coach is much more active with the couple than a facilitator is at an in-person event. In their model, the coach works directly with the couple as they learn the skills taught during the curriculum. This one-on-one coaching is much different than coaching conducted in large events because the couple gets special attention for the allotted 20 minutes with the coach. With this consideration in mind, RE research needs to consider what constitutes a coach, in terms of role, amount of coaching needed, and best definitions. In the ePREP study with the National Guard, coaches consist of trained individuals

often belonging to the Chaplain Corps who attend bi-weekly consultation sessions with the curriculum developers and an individual involved in the Roddy, Rhoades, and Doss study. These supervisions focus on reviewing the voice-recorded session between a coach and two participants with the intent to build the coaches confidence and refine the coaching process for all those involved. During coaching sessions with couples, the coach assists the couple as they hone effective communication skills, primarily the speaker listener technique. Each coaching session follows a script adapted from Roddy, Rhoades, and Doss's 2020 evaluation of ePREP with specific adaptations for military related needs to help ensure adherence to the protocol.

Relationship Satisfaction

Relationship satisfaction serves as both a dependent and independent variable within RE research. As a dependent variable, researchers evaluate how couples relationship satisfaction changes as a result of communication skills (Allen, Rhoades, Markman, & Stanley, 2015), self-regulation (Halford, Moore, Wilson, Farrugia, & Dyer, 2004), coping (Mitchell, et al., 2015), alliance with the RE trainer (Owen, Antle, & Barbee, 2013), and RE delivery format (Owen, Quirk, Bergen, Inch, & France, 2012), among others. Within the context of this review, relationship satisfaction is of the utmost importance because of its associations with improved active coping following deployment (Giff, Renshaw, Carter, & Paige, 2020), and its unique buffering of suicidality among service members with a diagnosable mental health condition (Blow, Ganoczy, Walters, & Valenstein, 2018).

Researchers often use relationship satisfaction as an indicator of change within other variables. For example, Butler's (1999) metanalytic study on couple communication programs identified 10 studies evaluating how pre-existing relationship satisfaction moderated effects of a couple communication program. However, relationship satisfaction is a nebulous term with lots

of subjectivity and variations in measurement. For example, when evaluating the validity of relationship satisfaction across three different measures, Omani-Samani, Maroufizadeh, Ghaheri, Amini, and Navid, (2018) found significant variance in Pearson's r which ranged from -0.330 to 0.614 between relationship satisfaction measures, which is well below the multicollinearity of $r > .7$ one would expect to see in measures proposing to measure the same construct (Evans, 2014; Tabachnick & Fidell, 2018). Researchers can attribute much of the variance in study findings to how they measure relationship satisfaction. Many marital satisfaction measures apply a multifactorial heuristic whereby relationship satisfaction is a sum of multiple smaller relationship dimensions such as commitment. For example, the Dyadic Adjustment Scale (Spanier, 1976), a multifactorial instrument, is a 32-item measure designed to evaluate couples' cohesion, consensus, and satisfaction (Graham, Liu, & Jeziorski, 2006). Other surveys, such as the Kansas Marital Satisfaction Scale (Schumm et al., 1986), which researchers frequently use in the reviewed studies, applies a three-factorial approach with one item per factor asking about relationship satisfaction generally across three components of the relationship. A brief survey such as the Kansas has the advantage of brevity, but introduces variance in how couples interpret the term "satisfaction." These findings point to the complexity in identifying satisfaction within committed relationships, and makes finding the mechanisms of change within RE programs much more difficult to pin down as attested to by Wadsworth and Markman, (2012). These difficulties in establishing a unified definition and paradigm of relationship satisfaction are further complicated by cultural, religious, and societal norms that shape the scientific understanding of what satisfaction within a relationship is to begin with. As RE research advances, researchers need to take strides in codifying the terms used and how to measure them.

With the complexity of establishing a defined explanation of what constitutes relationship satisfaction, researchers often turn to other measures which help to fill out the complexity of relationships. These items include instruments measuring communication skills, conflict, danger signs, patterns, relationship self-regulation, relationship alliance, divorce potential, and aggression, among others.

Among the most studied variables, in conjunction with relationship satisfaction, is couple communication. Researchers view that improvements in couple communication by attending the training improves relationship satisfaction. How they evaluate communication, however, is not straightforward. Simply put, improvements in healthy communication and decreasing negative communication indicates improvements in relationship satisfaction which in turn diminishes divorce potential. However, what the research suggests is that although couples attending RE have immediate improvements in both communication and satisfaction, these improvements are short lived with many couples indicating a decrease in positive communication between post intervention and six-month follow-up (Butler, 1999; Blanchard, Hawkins, Baldwin, & Fawcett, 2009).

Another way researchers evaluate communication and satisfaction together is via the moderating effect of pre-training negative communication has on relationship satisfaction. Studies evaluating this association suggest that those at greater risk, as indicated by their negative communication, experience the greatest gains in attending RE programs. Unfortunately, it is also these same individuals who experience the quickest decline in the gains attained during the program. This finding indicates that preexisting negative communication moderates long term gains in relationship satisfaction over time (Blanchard, Hawkins, Baldwin, & Fawcett, 2009).

Researchers need to make a methodological consideration when evaluating how attending an RE program affects relationship satisfaction. Many of the meta-analyses on RE programs point to more rigorous methods showing greater effect sizes across all variables (Blanchard, Hawkins, Baldwin, & Fawcett, 2009). Furthermore, much of the existing research on RE programs uses a short-term longitudinal design which ends at the six-month to one-year follow-up and couples who are generally functioning well (Markman & Rhoades, 2012). These short-term longitudinal designs leave the long-term effects of RE training yet to be discovered across many demographics except for the few long-term studies existing for military and people who attended RE at a religious organization.

On a final note regarding relationship satisfaction as a variable, some researchers argue that RE can and should serve as a selective intervention tailored to the needs of high-risk couples (Hunter & Commerford, 2015) and advocate for RE to shift to a more clinical model due to the high-risk people who may attend a workshop over therapy (Markman & Ritchie, 2015). However, existing evidence suggests that gains in satisfaction from attending the training tend not to stick for as long with at risk couples as compared to healthy couples (Markman & Rhoades, 2012). Given RE's appeal as an intervention that is not therapy, at risk couples may be more likely to attend. This trend is in part due to stigma associated with attending therapy. Given the variance in relationship satisfaction measures between at risk and healthy couples, more research is needed to parcel out the type of risk RE is uniquely suited to help with and how those gains change over time. This dichotomy is particularly important to tease out because according to a report compiled for the U.S. Department of Health and Human Services, RE programs may be more effective at improving couple communication than traditional therapy options (Reardon-

Anderson, Stagner, Macomber, & Murray, 2005), which in turn has the potential to improve relationship satisfaction above traditional therapy.

Communication

Researchers have studied how communication skills impact couple's breakup potential (Braithwaite & Fincham, 2009), and as a predictor of relationship satisfaction (Carlson, Guttierrez, Daire, & Hall, 2014), among others. Communication is an important variable because it directly correlates with how the couple functions. According to Wadsworth and Markman (2012), negative communication may be the likely mechanism of change that has alluded researchers to this point in time. Negative communication has direct implications towards how connected the couple feels, and safety within the relationship among others (Stanley, et al., 2017). The thought behind diminishing negative communication and improving positive interactions is that this change will help promote health, safety, and coping within the relationship. However, as stated multiple times already, the longevity of communication gains following training leaves much to be desired. This phenomenon indicates a need for couples to attend RE programs periodically through their relationship to help the gains stick, which suggests the need for more studies evaluating the dosing and duration needed to ensure the maximum effect of attending RE programs.

Frequently, researchers evaluate how communication is impacted by the intervention. As such, communication is one of the most studied variables be it as a dependent or independent variable. As a dependent variable, researchers typically evaluate how communication changes pre, post, and follow-up as a result of attending the training. Researchers have successfully documented how communication changes as a result of the intervention and that these improvements have a tendency to attenuate at the six-month to one-year follow-up. These same

researchers have evaluated how changes in communication varies between specific risk factors such as relationship aggression (Braithwaite & Fincham, 2007), and couples in distress (Markman & Rhoades, 2012), among other moderating variables. A current belief within RE research is that communication is likely the mechanism of change within RE programs (Markman, Hawkins, Stanley, Halford, & Rhoades, 2021). This is a positive sentiment due to the number of studies that demonstrate that RE improves communication even above that as observed in therapy (Reardon-Anderson, Stagner, Macomber, & Murray, 2005). However, as stated above, how researchers measure communication bears with it significant differences in effect sizes as recorded in every meta-analysis within this review and dating back to the 1980's indicating that more needs to be done in homogenizing the how of evaluating communication within RE (Blanchard, Hawkins, Baldwin, & Fawcett, 2009; Butler, 1999; Hunter & Commerford, 2015; Markman & Rhoades, 2012).

The frequency with which researchers evaluate communication within committed relationships resulted in two different meta-analyses focusing on how RE changes communication patterns for couples. Many articles including Stanley and Markman (2020) evaluate the association between effective communication, conflict resolution, commitment, closeness, and emotional safety. However, the extent to which couples practice communication skills after the intervention is something less than impressive. According to Butler and Wampler (1999), "Communication gains deteriorated substantially by follow-up" (p. 223). Furthermore, multiple studies including Carlson, Guttierrez, Daire, and Hall (2014) and Braithwaite and Fincham (2007), demonstrate that communication skills training acquired during the intervention often diminishes to a point of undetectability, or a lack of mastery, at six-month follow-up. These findings indicate limitations in current evidence for how the hallmark technique, communication

skills, improves relationship functioning and satisfaction beyond the six-month to one-year follow-up.

A recent model shift in the field of marital research forces researchers to rethink the role communication changes, attributed to an RE program, play in improving relationship satisfaction. In one study, Lavner, Karney, and Bradbury (2016) evaluated if positive communication is a result of a healthy relationship or if a healthy relationship is the result of positive communication. Although their models lacked robustness, their findings suggest the need to reconceptualize the directionality of these two variables, specifically what variable effects the other more, which has shaped much of RE research to this day. In rethinking the directional association of these variables, researchers gain new insights into how to tailor RE programs for the greatest effect by targeting specific outcomes through the intervention.

Studies regarding RE focus on various forms of communication which include conflict, danger signs, patterns, and other items identified when coding recordings of the couple. Communication danger signs and skills surfaced as the top two items evaluated in regards to RE effectiveness. For communication danger signs, which serve as both independent and dependent variables, researchers tend to use the Danger Signs Scale developed by Stanley and Markman (1997). These developers created the Danger Signs Scale to tease out the items of invalidation, escalation, withdrawal, and negative interpretation in couples' communications (Owen, Manthos, & Kelley, 2013), which they identified to be particularly harmful to relationships and strong indicators of future relationship distress. Another prolific RE researcher, Gottman also identified the same variables as being particularly harmful to the relationship (Lisitsa, 2020). Given the harmfulness of invalidation, escalation, withdrawal, and negative interpretation, RE programs seek to mitigate these patterns by helping couples slow down emotional discussions before they

become heated and cause damage to the relationship (Stanley, et al., 2017). The primary technique used in the PREP curriculum to mitigate these harmful behaviors is a form of active listening called the Speaker Listener technique, and the use of the “time out” technique which allows couples to pause a heated conversation to calm down prior to reengaging in a safe manner.

As a dependent variable, researchers focus on how the intervention changes communication patterns of participants. For example, Owen, Antle, & Barbee (2013) evaluated how group cohesion and alliance with group leader impacted couple communication danger signs among other variables. These findings add to the scientific understanding of the importance of RE in improving communication, a skill that some scholars believe to be the mechanism of change within RE programming. These findings also force researchers to consider other variables that affect change within the relationship which may not have been considered previously.

In contrast to communication danger signs, some researchers focus on the healthy communication of couples. Often employing the Communication Skills Test (Saiz & Jenkins 1995), researchers focus on how effective communication impacts divorce and divorce potential within studies. Researchers such as Stanley, Markman, Allen, Rhoades, and others, tend to focus on how communication changes to a more positive form as a result of the intervention. These evaluations help researchers understand the importance of healthy communication within committed relationships and how it affects other variables under study.

A significant problem emerges within the literature when evaluating communication within committed relationships. Multiple studies dating back to the late 1970s indicate that how researchers evaluate communication, observational or self-report, has a significant

impact in the observed effect size post intervention. According to Blanchard, Hawkins, Baldwin, and Fawcett (2009), variability in effect sizes exists between observational and self-report measures. They cite Butler and Wampler (1999) who reported an observational effect size for couple communication of (post $d = .95$; follow-up $d = .69$) and a self-report measure couple communication effect size of (post $d = .21$; follow-up $d = .08$). Butler and Wampler (1999) attest to the difficulty in understanding the disparity within effect size based on observational and self-report measures stating, “observational measures of communication are highly contextualized whereas self-report measures likely reflect general, personal schema” (p. 204).

Divorce Potential

Reviewing the history behind RE indicates that the U.S. Government has invested millions of dollars in these programs to decrease divorce (Butler, 1999; Reardon-Anderson, Stagner, Macomber, & Murray, 2005). The reasoning behind this large investment by the government comes from the potential negative effects associated with divorce and relationship dissolution on family members as noted in chapter one. Given the government’s focus on diminishing divorce and funding RE, it is no surprise that a review of the literature indicates divorce or divorce potential as one of the most studied dependent variables.

Studies attempt to answer the simple question of how does RE protect participants from divorce out to the 14-year follow-up (Scott, Rhoades, Stanley, Allen, & Markman, 2013). Studies indicate that RE protects some couples from divorce and accelerates others toward relationship dissolution (Braithwaite & Fincham, 2007). For both healthy and unhealthy couples, RE often serves as a protective factor to divorce out to the two-year follow-up, with the greatest effects observed to those in greater distress in the short term (Rhoades, Stanley, Markman, &

Allen, 2015; and Stanley, Rhoades, Loew, Allen, & Carter, 2014). However, for couples who are in a committed relationship and have an increase in negative communication, RE appears to accelerate their choice to discontinue the relationship at ten-month follow-up (Braithwaite & Fincham, 2007). Long term studies extending to eight-year follow-up (Markman, Rhoades, Stanley, & Peterson, 2013) and 14-year follow-up (Scott, Rhoades, Stanley, Allen, & Markman, 2013), indicate RE's protective factor from divorce is no longer significant which indicates a need for couples to attend RE programs every couple of years to maximize skills learned as a protective factor on their relationship. The trend toward RE protecting couples from divorce seems to attenuate at the two-year follow-up, after which no statistically significant differences remain between treatment and control groups (Allen, Rhoades, Markman, & Stanley, 2015).

Another significant shortcoming within RE literature is the effects of RE programming on committed relationships, other than marriage. In an era where couples are delaying marriage until later in life, and with an increase in individuals deciding not to marry, RE research needs to adjust its focus to keep pace with current trends. For example, no known studies exist which demonstrate RE effectiveness for same sex couples. Given the recent changes in same sex unions across the U.S., and the military specifically, such as the legalization of same sex marriages and extension of military benefits to same sex partners, researchers need more studies to evaluate if the gains for same sex couples will be the same as those observed in their heterosexual counterparts.

Finances

Given that many studies have documented the outcomes of living in poverty, it is no surprise that finances are a commonly evaluated variable within RE (Mitchell, et al., 2015). The way researchers evaluate participants' finances is usually via one item asking about participants'

annual income. In some cases, such as Roddy, Rhoades, and Doss (2020), financial standing is a condition for participating in the study. In other cases, such as Stanley, Markman, and Whitton (2002) finances serve as a moderating variable studied within the context of communication and relationship satisfaction.

Typically, researchers evaluate how the training improves financially distressed individuals' relationship satisfaction. However, within these studies the sample population does not always mirror the intent of the study. For example, Mitchell et al. (2015), when describing their sample uses the word “typically” to capture the variance in financial standing of participants. Roddy, Rhoades, and Doss define the annual income of participants ranging between \$6,000-\$108,000 with a mean of \$29,046. The variance in income recorded by these authors brings into question if and why the researchers analyzed such a broad range of income together and did not focus solely on those at the lower end of the income spectrum, especially when the title of their article calls out “low income couples”. Finally, the literature often attributes financial standing to racial and ethnic variables. Teasing out how the program impacts participants based solely on finances becomes difficult if not impossible, because researchers can attribute change to other factors shaping the participants' lives such as the availability of childcare, work schedules, transportation needs to attend the intervention, and racial/ethnic variables. With these considerations, more studies need to consider other factors relating to program efficacy in lower socioeconomic status individuals.

Mental Health Variables Studied in RE Research

Given RE's demonstrated effectiveness in improving relationship satisfaction and communication, recent evaluations explore how RE impacts psychological health of participants. Studies by scholars such as Braithwaite and Fincham (2007, 2009), Conradi, Dingemanse,

Noordhof, Finkenauer, and Kamphuis, (2018), Halford et al. (2017), and Roddy, Rhoades, and Doss (2020), indicate that RE maybe an innovative way to improve participants' psychological health whilst avoiding the stigma associated with seeking mental health care. These studies report results from five stringently developed and analyzed RE programs (PREP, iRelate, Relate, CoupleCARE, and Hold me Tight) which brings into question the relative efficacy of the multitude of other RE programs at improving mental health variables. This shortcoming alludes to the need for continued study of other RE programs ability to assist in the improvement of mental health and beckons consideration of what constitutes an RE program (e.g., what areas should RE programs improve to be classified as such).

The need to evaluate RE's effect on mental health variables in the military is of utmost importance. First, the military has faced significant issues regarding mental health concerns along with poor help seeking behaviors (Hoge, et al., 2004). If RE is successful at improving mental health, it can help reduce stigma around mental health help seeking (Rotheram-Borus, Swendeman, Rotheram-Fuller, & Youssef, 2018). Second, although talked about by military leaders, long term psychological health in the military is something rarely equated into the cost of serving in the military. According to Gabriel (1987) "Nations customarily measure the cost of war in dollars, lost production, or the number of soldiers killed or wounded. Rarely do military establishments attempt to measure the costs of war in terms of individual human suffering. Psychiatric breakdown remains one of the most costly items of war when expressed in human terms" (Grossman, 2009). Factoring how RE programs can mitigate the psychological trauma of serving in the military serves as a way military leaders can improve the lives of its service members once they leave the formation.

Depression

According to the Centers for Disease Control and Prevention, (2020), roughly 4.7% of Americans struggle with regular feelings of depression. For the National Guard demographic this percentage is much higher at around 21% for the service member and 22% for their significant other (Gorman, Blow, Ames, & Reed, 2011). In studies evaluating how RE impacts participants' psychological health, Braithwaite and Fincham (2007) found that after intervention, couples in the ePREP arm indicated an approximate 50% reduction in depression which was similar to those in the Cognitive Behavioral Analysis System of Psychotherapy arm. In a follow-up analysis, these same authors found that participants largely maintained the improvements in depressive symptoms out to the 10-month follow-up (Braithwaite & Fincham, 2009). Largely replicating Braithwaite and Fincham's findings, Roddy, Rhoades, and Doss et al. (2020) found similar findings albeit with different instruments. These findings indicate that RE has the potential to help depressed individuals who may not otherwise seek treatment due to stigma around mental health and traditional RE programs.

Anxiety, Worry, and Post-Traumatic Stress Disorder

Anxiety and post-traumatic stress disorder are two frequently evaluated variables for the general population. However, differentiating these for military populations becomes tricky when evaluating the literature because most studies focus on the latter. According to studies conducted on military populations post-traumatic stress disorder percentages range between 2.9-24.6% for the National Guard and Reserves (Smith, Ryan, & Wingard, 2008; Thomas, Wilk, & Riviere, 2010). Unlike their AD counterparts who have built in support systems to help them cope with their experiences, the RC does not have a built-in support network and this lack of support can

prolong and exasperate their symptoms. RE, however, can serve as an innovative solution to help these individuals cope.

Building on their findings regarding the impact ePREP has on depression, Braithwaite and Fincham also evaluated anxiety as measured on the Beck Anxiety Inventory (Beck, Epstein, Brown, & Steer, 1988). Their findings indicated that couples in the ePREP arm experienced a 30% reduction in anxiety as compared to the control (Braithwaite & Fincham, 2007) and these gains were largely sustained out to the 10-month follow-up (Braithwaite & Fincham, 2009). Their pre/post findings were also similar to those found by Roddy et al.'s (2020) evaluation of ePREP within a different demographic of individuals. These findings indicate that RE may be an innovative solution to helping individuals with anxiety, however there is a current gap in the literature on how RE impacts trauma and stressor related disorders such as PTSD.

Alcohol Use, Abuse, and Dependence

RE research typically omits variables regarding alcohol use. However, the military culture is one who embraces the use of alcohol when off duty. Historians have documented the military's embracing of alcohol in multiple countries over the course of several decades. For example, armies over time used access to alcohol as a reward for a good days' worth of work (e.g., Martyris, 2015; Newfield, 2020). Today, the military uses alcohol in many different formats such as the ritualistic drinking of the grog at military formal events (Page, 2020), and when on post, tax free alcohol sales. This cultural identity plays out in heavy alcohol use rates ranging between 31.8-38.6% depending on branch of service (Ames & Cunradi, 2020). Furthermore, researchers have documented how coping strategies correlate with relationship satisfaction for the service member and their spouse. When service members or their spouse engage in passive coping (e.g., coping using alcohol), their relationship satisfaction suffers,

whereas when they use problem focused coping, relationship satisfaction increases (Giff, Renshaw, Carter, & Paige, 2020). This is an important consideration within the context of the current review because RE programs are uniquely situated to assist these couples in developing positive coping strategies and equipping them to communicate more effectively especially during emotionally charged conversations such as those attributed to the service member sharing their military experiences with their significant other, discussions about military separation, and other military attributed stressors.

Of the reviewed studies, one evaluated how attending a RE program changed alcohol use for participants. Using a pre- post-test design, Roddy, Rhoades, and Doss (2020) found that following training, couples reported significant reductions in alcohol use as recorded on the PROMIS (Pilkonis et al., 2013) for individuals well below the national poverty line. However, their findings indicate that reducing alcohol consumption may be feasible by conducting RE for military couples by improving their ability to collectively cope with the stress and strain of military life.

Variables not Commonly Evaluated and Dissemination Trials

Training Satisfaction

Given the many benefits of RE, surprisingly few studies evaluate training satisfaction within their analyses. Of the studies who evaluated training satisfaction, those relating to dissemination studies rise to the top. For example, Allen et al. (2017) evaluated how program satisfaction impacted communication skills of participants. In their analysis, they found that overall program satisfaction does not predict improvements within communication. However, when the researchers broke down program satisfaction into smaller portions consisting of its helpfulness, learning, and participants willingness to recommend the training, only helpfulness

and learning were shown to be predictive of improved communication at follow-up. Stanley et al. (2001) found that training satisfaction at religious organizations offering PREP or another premarital training showed that those who attended PREP were more satisfied with the training. Lloyd, et al. (2015) evaluated training satisfaction, however they used this variable to refine the training to make it more appealing to their young newly married Marines. In general, researchers do not always evaluate training satisfaction. When they do, they do so with one question attempting to refine the curriculum making it more appealing to participants. Initial findings on the PREP curriculum when offered to military populations indicated that the program was impactful, helpful, and enjoyable with an average score of 6.1 on a 7-point Likert scale (Allen, Rhoades, Markman, & Stanley, 2015).

Multiple issues arise when evaluating training satisfaction. First, as noted by Butler (1999), many of the studies on RE were conducted by the writers of the curriculum under evaluation. This general trend, which seems to hold true today, is problematic because it introduces the potential for bias within the design and analysis. Future studies in the RE field should consider having analyses conducted by researchers who are independent of the curriculum, be it in development or delivery, to avoid the potential for bias in their findings. Second, after reviewing studies that document training satisfaction, how researchers measure training satisfaction becomes an issue. As noted above, most studies use one item asking if the participants were satisfied with the training. This unidimensional question is subject to the participants' judgment of what constitutes satisfaction whereas a multi-dimensional questionnaire will provide greater insight into specific elements of the training that may impact its acceptability by participants. For example, as stated above, Allen et al. (2017) parceled training acceptability into three distinct items. These items were then used to better understand

specific training satisfaction variables that provided much clearer insight into how the program impacted other outcome variables. Moving forward, evaluators would benefit from taking Allen's et al. (2017) lead in documenting training satisfaction via a multivariate questionnaire and should consider the many facets of providing an effective training. Finally, there is a significant gap in the literature evaluating program acceptance for different delivery formats. The majority of existing literature documents in-person training events. Given that society now lives in the shadow of an era defined by social distancing standards to mitigate viral spread, more studies should evaluate how electronic delivery is received by program participants as well as how its delivery method impacts change as compared to the traditional in person training events. Evaluating electronic delivery acceptability bears with it the potential to reach a broader degree of participants who are unable to attend in person events.

Future studies can build upon this information to help researchers understand ways to help the program appeal to participants which, theoretically, should bring more people into these programs. As evidenced by Halford et al. (2004), Hook et al. (2011), Lloyd, et al. (2015), and Stanley et al. (2001), training satisfaction is important in refining the program during dissemination trials. However, how researchers assess for satisfaction, be it a single item or a small battery, likely has implications on findings. Current evidence suggests that the PREP and ePREP curriculums meet the felt needs of young couples (Kanter, Conner, Vennun, Deitz, & Taylor, 2020); however this is something yet to be evaluated within the RC, especially because of the unique aspects of military culture. Future studies would benefit from a comprehensive training satisfaction measure which evaluates the many facets of the training which have implications into how appealing it is. For example, future measures should consider the trainers' knowledge in the subject, their preparedness, and engagement with the participants. Measures

which evaluate the training space, and logistics, prior communication, break length and frequency, among other variables will help RE programs refine the way in which practitioners experience them, which will likely have implications in regard to participants' ability to be engaged during the training and remember the curriculum.

Dissemination Trials

Not surprising within a field of research approximately 40 years old is the abundance of dissemination trials. These studies evaluate a myriad of variables to either hone the training to meet the needs of a given population (Lloyd, et al., 2015) or to evaluate the acceptability and feasibility of RE training (Carroll, Behnke, Smith, Day, & Raburn, 2013; Markman, Whitton, Kline, Stanley, & al., 2004). These studies tend to be more descriptive of how evaluators implemented the training, however, some publish specific results of the intervention. The variance within these studies are attributed to the multiple factors that have implications for how the studies are being implemented and the demographics they target. One such example comes from Lloyd, Munoz, Tiremblay, Foskett, Hallett, and Distelberg's (2015) evaluation of iRelate. Within this evaluation, these authors used the post only results to hone the curriculum to the needs of young Marines. To do this, they had to build an understanding of the Marines' thoughts about marriage, then implement a training, evaluating its acceptability before developing a case for wider distribution. Many other studies follow a similar implementation pattern where researchers conduct a needs assessment prior to the development, piloting, and greater dissemination of the curriculum (Carroll, Behnke, Smith, Day, & Raburn, 2013; Hunter & Commerford, 2015; Markman & Rhoades, 2012; Markman, Whitton, Kline, Stanley, & al., 2004).

Moderators of Effects

Many studies conducted on RE evaluate moderators of effects. These moderators indicate a change between two variables only when the moderator is in play within the analysis.

According to a review of PREP for Strong Bonds, multiple factors acted as moderators within their analysis (Allen, Rhoades, Markman, & Stanley, 2015). Among these variables, gains in the protective factors from divorce for attending the training were moderated by both minority status and economic strain (Stanley, Rhoades, Loew, Allen, & Carter, 2014). Infidelity served as a moderator of marital quality indicating that couples who have a history of infidelity did not notice the same marital quality gains as those without a history of infidelity (Allen, Rhoades, Stanley, Lowe, & Markman, 2012). Negative communication and physical aggression moderated divorce following training (Markman, Rhoades, Stanley, & Peterson, 2013). Initial mental and physical health moderates mental and physical gains after attending the training (Roddy, Rhoades, & Doss, 2020). Finally, precommitment cohabitation moderated the effects of both marital quality and divorce outcomes (Rhoades, Stanley, Markman, & Allen, 2014). These moderators suggest that some relationships are predisposed to behaviors that place them at greater risk for dissolution, and that RE does not offset this risk. Couples who have these preexisting behaviors would likely benefit more from couples therapy rather than RE programs.

Shortcomings of Existing Studies

Existing studies are not perfect and suffer multiple shortcomings, some of which were already defined in earlier sections. Among these shortcomings uncovered during this review are issues with measures, a lack of diversity within samples including relationship status and age (Hunter & Commerford, 2015), interventions not based in theory or science, a lack of evaluation of existing programs, and a lack of longitudinal studies (Markman & Rhoades,

2012). Furthermore, few, if any, studies evaluate dosing, duration (Reardon-Anderson, Stagner, Macomber, & Murray, 2005), and variations in program delivery (other than in-person). In general, the fuzziness of how researchers evaluate RE programs urges future evaluations to seek homogeneity in measures, the codification of terms such as relationship satisfaction, and a consideration of how the methodology impacts the outcomes of the studies.

Reviewing the literature suggests that the multitude of measures used to evaluate the same concept makes it difficult to compare outcomes between studies and even more difficult to discover the elusive mechanisms of change across diverse populations. There also seems to be a need for mixing methods within studies. With observed effect sizes shifting significantly between observational and self-report measures, mixing methods may shed light onto why there is such a difference (Creswell, 2015). It is surprising that with the forty years that scientists have noticed effect size differences between observational and self-report measures that this review uncovered no studies to help elucidate the phenomena. This is even more critical when considering that recent thoughts within the field consider that communication is likely the mechanism of change for RE. Simply put, for RE to advance into the next generation of science, RE researchers need to dedicate time to uncover why differences in observational and self-report measures of communication have such difference in their results.

Previous evaluations focusing on military connected couples are now dated. Findings from studies conducted in the early 2000s on AD military couples provide hints at what to expect today but do not provide an accurate appraisal of both program efficacy for military population nor the RC in particular. Today it is much more likely that a person will put off marriage until later in life. This is not to say that these same individuals don't have committed relationships; rather, the formal act of codifying that relationship as a marriage is often

postponed until the individual graduates college and or has a stable income to support a family. Furthermore, changes in policy now allow same sex couples to be legally married within the military, something that was not authorized and even grounds for separation from service three years before the writing of this paper. Finally, the military formation of today is filled with “slick sleeve” soldiers, a sizeable group of soldiers who have not deployed. The lack of a deployment implies that these individuals have vastly different life and military connected experiences. These changes among others point to the need for a current evaluation of RE to ensure that it meets the needs of a changing population.

Existing studies regarding RE for any population frequently struggle to obtain enough power in analysis. Researchers attribute this lack of power to small samples and small effect sizes. For example, Halford et al. (2004) only reached power in the testing of the first hypothesis of their study, while their other two hypothesis lacked power in the analysis despite a sample size of 54 couples, which according to a power calculator should have been sufficient to test all three hypotheses. Future studies need to consider the possibility of small effect sizes when in the conception phase and adjust both their funding requirements and sample sizes to accommodate accordingly.

Finally, the existing data suggest that in-person RE is effective at improving multiple aspects of committed relationships and psychological/physical health; however there is a significant gap of studies that evaluate alternative means of training delivery. This review uncovered only two studies evaluating electronic delivery of RE and no studies evaluating video, or book offerings of RE programs. This is a significant issue because these alternative means of offering RE have the potential to reach a broader demographic of participants at a fraction of the cost of offering in-person events, and these modes of delivery help participants

skirt around the stigma associated with attending a RE program. Furthermore, with advances in telecommunication technology and the ability to provide remote services, more studies need to focus on the efficacy of hybrid RE programs which include a multi-format approach such as that conducted by Roddy et al. (2020).

These multi-format approaches, in combination with electronic delivery, seems to be particularly important for military connected relationships. These relationships experience frequent separations lasting months at a time. The hybrid, electronic delivery methods may serve as an innovative way for these couples to build their relationship as they experience one of the greatest stress producing elements of military life, separation. However, existing evidence in the effects of these programs is still forthcoming and needing evaluation within more diverse populations.

Conclusion

This literature review focused on elucidating specific variables analyzed within RE research as well as identify specific issues in the measuring of these variables including different effect sizes based on method used, the use of language, and the assumptions that participants make regarding wording, and the use of different measures to measure the same construct. These findings indicate that although RE research has been around for over 40 years, there is still much to learn about the mechanisms of change and how effects vary based off different delivery formats, dosing, and duration, as well as populations studied. While RE has been shown to be an effective intervention for a wide range of populations, more studies are needed of different modes of delivery and populations, hence this study's focus on electronic delivery with a RC population.

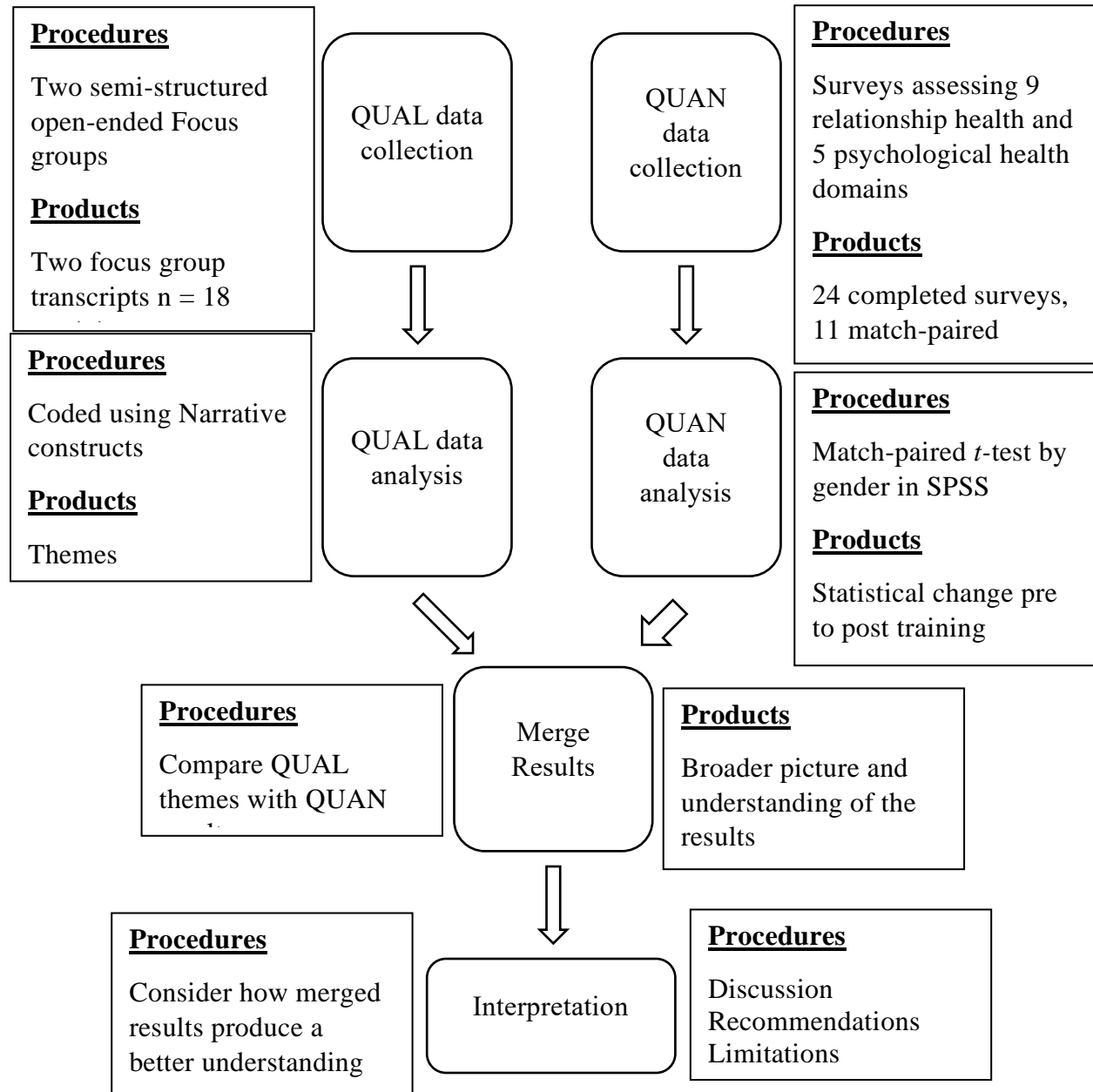
CHAPTER THREE: METHODS

This study is an initial efficacy trial employing a parallel convergent mixed methods research design (QUAL + QUAN) evaluating how attending the electronic Prevention and Relationship Education Program (ePREP) improves relationship and psychological health in a cohort of National Guard couples. Parallel convergent mixed methods design (Fig. 1) is well suited for an initial efficacy trial because it provides a more holistic understanding of the phenomenon under study by both describing and explaining it (Creswell, 2015). Such designs collect quantitative and qualitative data in tandem, analyze them separately, then merge findings to uncover areas of convergence and divergence which would remain unknown if only one method were used (Creswell, 2015). Given the limited research on relationship education (RE) in the Reserve Component (RC) a convergent mixed methods design is an appropriate choice for an initial efficacy trail.

Figure 1:

Convergent Mixed Methods Process

(Creswell, 2015)



Existing studies on RE either employ a qualitative or quantitative design alone despite many of them collecting both types of data (Markman & Rhoades, 2012). Given that my

research questions and hypotheses seek to both describe “in depth personal descriptions of individuals” and “general trends and relationships” (p. 36, Creswell, 2015), the parallel convergent mixed methods design helps to see the same problem in many ways. Employing this design also helps to gain a broader picture of the problem under study, which informs the direction, design, and implementation of future programs and evaluations.

The primary justification for the specific methods used come from existing research in the field of RE. A pre/post design is commonly employed to evaluate how couples’ relationship factors change as a result of attending the training (Markman & Rhoades, 2012). Although longitudinal designs are desired to show how changes attributed to the training attenuate overtime, this study was unable to include follow-up data due to timing constraints attributed to fiscal year limitations in the military.

Mixed-methods is still a relatively novel concept; however, this design provides greater insight into program delivery and effectiveness (Creswell, 2015). When used in tandem with quantitative findings, qualitative findings are also crucial for communicating findings to stakeholders as they paint the quantitative findings within context. Using a convenience sample for an initial efficacy trial is common when first evaluating a program within a specific demographic (Creswell & Poth, 2018; Patton, 2014). Within RE, researchers typically employ the specified measures to evaluate both military and civilian RE programs. Furthermore, the use of similar measures to other studies allows researchers the ability to compare outcomes from this evaluation to other RE programs, and research with the same sample at an earlier and later time point.

Research Questions

The following questions were used to guide the data collection, methods used, and approach to the analysis.

1. Is ePREP + Coaching effective in a) strengthening RC couple relationships in a sample of National Guard couples and what are the differences between men and women?

H1. The online RE program, ePREP + coaching, will lead to positive increases in relationship satisfaction for both service members and their partners in the area of communication, relationship satisfaction, sexual intimacy, and decrease break-up potential;

2. Is ePREP + Coaching effective in decreasing psychological problems in a sample of National Guard couples and what are the differences between for both men and women?

H2. The online RE program, ePREP + coaching, will lead to improved psychological health for both service members and their partners in the areas of depression, post-traumatic stress, alcohol use, and suicidality.

3. What is the feasibility of conducting online relationship education for National Guard connected couples?

- a. What motivated RC members to enroll in and complete the program?
- b. What were participants' experiences of a computer-based relationship education program?
- c. What barriers did participants face when engaging in online relationship education?

4. How did participants view the curriculum?

- c. Was the curriculum acceptable for military couple participants?
- d. Did the curriculum meet their needs?

5. What were participants' views on couple coaching?

Methodological Orientation

Existing studies on RE use a myriad of methods and designs (Blanchard, Hawkins, Baldwin, & Fawcett, 2009). Of these designs, those employing more robust methods such as the quasi-experimental and randomized controlled trials, with longitudinal data yield greater effect sizes (Blanchard, Hawkins, Baldwin, & Fawcett, 2009; Markman & Rhoades, 2012). RCTs, the gold standard of research designs, have multiple limitations and barriers to implementation. According to William, Sanson-Fisher, Bonevski, Green, and D'Este, (2007), RCTs require large samples, are often expensive, and their ethics questioned. Given that this study is limited to an initial efficacy trial, has limited funding, and the available population interest unknown, a RCT was not feasible.

One solution RE researchers have employed to navigate the cost, and scale of RCTs is the use of a quasi-experimental design (QED). The use of the QED has been on the rise in education research for the past 30 years (Gopalan, Rosinger, & Bin Ahn, 2020). Researchers attribute this rise in the QED to its lesser cost, and the ethics behind withholding treatment from individuals randomly assigned to the treatment or control arm of the study. However, QEDs still require a large enough sample to include a control arm albeit naturally occurring. Provided the unknowns on the interest of participants to take part in an initial efficacy trial, this study used a small sample of participants to justify further evaluation using a more stringent design.

Initial efficacy trials are not perfect. For one, the findings of such studies lack generalizability, and can be scrutinized because the observed change may be attributed to factors outside of the study, among others (Gaille, 2020). However, this weaker design

provides justification for a larger evaluation of the intervention under study in the future, is relatively inexpensive, requires no control group, and overcomes some of the ethical considerations that come with more stringent designs such as the RCT and QED (Gaille, 2020). For these reasons, this study employed an initial efficacy trial without control, with the understanding of its limitations and the considerations during the interpretation of the data.

Quantitative Design

The quantitative strand of this study provides a preliminary understanding of change in relationship and psychological health for couples who attend ePREP + couple coaching (RQ1 and RQ2). Current evidence suggests that ePREP with couple coaching improves relationship and psychological health with a medium effect for participants two times below the national poverty level (Roddy, Rhoades, & Doss, 2020). However, these findings lack generalizability to members of the National Guard because psychological health rates and socio-economic status are different than the civilians included in the previous study. Furthermore, existing studies evaluating RE for the RC are exceedingly limited to only one other initial efficacy trial (Carroll, Behnke, Smith, Day, & Raburn, 2013) which makes this evaluation particularly valuable as the military seeks to build relationships and improve communication of its members (Headquarters, Department of the Army, 2020). Therefore, this study expands the knowledge of the effects of ePREP with couple coaching to a new hard to reach demographic.

Inclusion and Exclusion Criteria

To be eligible to participate, couples needed to be in a committed relationship defined by cohabitation, commitment to marry, or marriage, and were 18 years old or older. One or both members of the relationship needed to be currently serving in the National Guard, Army or Air. These participants all were required to attend ePREP with couple coaching within a

three-week time frame, and were willing to consent to participate and complete the pre survey prior to starting the training.

Sampling and Recruitment

Participants (N = 24) came from a convenience sample of couples with at least one member currently serving within the National Guard, either Army or Air, who attended an ePREP training with couple coaching. This number is based on previous initial efficacy trials such as that completed by Weissman, et al., (2018) whose evaluation of Emotionally Focused Couples therapy with veterans with PTSD contained 15 couples. I recruited couples via internal listserv emails for the Michigan National Guard, word of mouth, and social media posts prior to the trainings. Commanders, First Sergeants, Readiness Non-Commissioned Officers, Chaplains, and Religious Affairs Specialists were also asked to spread the word to their respective units during drill periods. Internal to the National Guard, this study published a Memorandum of Instruction (MOI) describing the program. The MOI was received and reviewed by unit full-time staff and outlined pay and incentives for participants who sought to participate in the training. Although the convenience sample limits the findings of the study, it is an appropriate method to reach difficult populations and in the conduct of initial efficacy trials (Rudestam & Newton, 2015).

Interest in the program

While 125 service members/spouses/partners indicated an initial interest in the program, only 11 couples (19.2%) enrolled in the program and by association, the research study. While analysis of actual data from participants sheds light on the reasons for non-participation, it is not completely clear why individuals expressed an initial interest but then failed to engage in the training.

Incentivization

To increase the probability of couples continuing through the project's duration, participants received up to \$25.00 in gift cards for completing surveys, were placed on military orders while they did the training providing them pay for their time and leverage to take civilian work time off, and had the option of being placed at the top of the list for the next in-person Strong Bond training. Incentivization for the research portion consisted of a \$10.00 gift card for the pre survey, and a \$15.00 gift card for the second survey. Participants who opted into the focus groups also received a \$50.00 gift card for participation. The research team distributed gift cards via mail and email.

Data Collection

Employing a pre/post design, the quantitative component of this study involved data collection before and after couples completed ePREP with couple coaching, while the qualitative component collected focus group data following the completion of the training. Data were collected using online data collection software that meets the Department of Defense (DoD) Information Assurance (IA) guidelines (i.e., Qualtrics and HIPPA compliant Zoom). Recruiting efforts directed service members to click a link which routed them to the ePREP website where they were instructed to review the informed consent and take the pre assessment if they wished to participate. After completion of the preassessment, an email notification went to a member of the research team who provided the participant with a \$10.00 gift card and linked them to their coach. The coach then contacted the couple to schedule their first meeting and begin the training. Following the training, the research team provided the follow-up survey link and answered any questions the couple had. The couple once more reviewed the informed consent and completed the survey at their own will. Once

completed, a member of the research team provided a \$15.00 gift card for completing the survey after receiving an email notification that the survey was completed. For the focus groups, participants who completed the surveys received an email from a member of the evaluation team asking if they would be interested in taking part in a 60–90-minute focus group held via Zoom and receive \$50 per person for participation. If participants were interested, they were asked to sign up for one of two focus groups which took place approximately 30-90 days post training.

The research team tracked participant's engagement in the training via an online dashboard provided by PREP.inc. This dashboard allowed the team to view content the couple had completed, when, and the number of times the modules were reviewed prior to the coaching sessions. It was important to know the number of views of the curriculum because some participants were separated due to geographic separation including deployment during the program, a variable tracked in the demographics portion of the survey and to ensure both members of the couples were completing the content. To link data across time points, participants, and couples, each created a unique identifier that they provided at the beginning of each survey consisting of the first two letters of their mother's maiden name and the first two numbers of their address. They were also asked to provide this same information for their partner which allowed the research team to link couples during analysis. In situations where the unique identifiers did not exactly align, the team consulted the unredacted dataset with email addresses. This additional data helped the team link the few couples whose unique codes were not lining up exactly. In accordance with Department of the Army and Institutional Review Board requirements, all personally identifiable information (PII) was removed from the responses to protect participants from spillage, and before storage on a

secure approved cloud drive until analysis. All data sets were encrypted using SPSS 26 encryption option which allowed only those with the encryption key to view the data. For a brief review of the data collection plan, see Table 1.

Table 1

Data Collection Plan

Quantitative Measures					
				Time Frame	
			Number of Items	Pre	Post
Domain	Variable	Measure			
		Demographics	14	X	
		Post Training Items	40		X
Relationship Health		RDAS	14	X	X
		Locke-Wallace sub scale on agreement	9	X	X
		CSI-4	4	X	X
		Marital Instability Index	3	X	X
		Communication Skill (nFORM)	6	X	X
		Communication Conflict (nFORM)	6	X	X
		Trust and Intimacy (nFORM)	5	X	X
		Sexual Intimacy (PAIR)	6	X	X
		Relationship Knowledge	6	X	X
	Psychological Health	Depression	Physicians Checklist 9	9	X
PTSD		Post-Traumatic Stress Checklist 5	20	X	X
Suicide		Suicide Behavior Questionnaire Revised	4	X	X
Alcohol		Alcohol Use Disorders Test	10	X	X
Use					
Qualitative Measures					
Couples Focus Group		Motivation, Curriculum, Coaching, Logistics	21		X

Measures

To test the first and second hypotheses, I used a combination of relationship and psychological health measures commonly used in RE research. Relationship health measures include assessments that evaluate dyadic adjustment, relationship stability, intimacy (sexual

and non-sexual), positive options, relationship confidence, positive and negative communication, and relationship knowledge. For psychological measures, I used assessments that measure depression, post-traumatic stress, suicide, worry, alcohol use, and suicidality. All measures were used in the analyses comparing changes in mean scores pre to post training for men and women.

Relationship Health Measures

Revised Dyadic Adjustment Scale (Busby, Christensen, & Larson, 1995): This 14-item measure evaluates the general health of the relationship with higher scores indicating a healthier relationship. An example question from this survey is “Most people experience disagreements in their relationships. For the next 6 items, please estimate the extent of agreement or disagreement between you and your partner.” Participants indicate level of agreement on a six-point Likert with 1 being always agree and 6 being always disagree, another six-item Likert with 1 being all the time and 6 being never, a five-point Likert with 1 being every day and 5 being never, and a following six-item Likert with 1 being never and 6 being more often. Some of these items are reverse coded to ensure validity. The DAS is the most used measure in RE research and has high validity with alphas ranging between .87-.95 (Carlson, Guttierrez, Daire, & Hall, 2014). The calculated Cronbach’s alpha for this assessment was .895.

Locke-Wallace Relationship Adjustment Test (Locke & Wallace, 1959): With alphas ranging from .72-.83, this fifteen-item measure evaluates couples’ relationship health in the areas of happiness, agreement, conflict resolution, shared activities, and expectations of marriage (Jiang, et al., 2014). Individuals answer on various Likert scales which are weighted in the analysis. This study used the subscale for agreement which consist of eight items scored

on a six-point Likert ranging from “Always Agree” to “Never Agree” and a Cronbach’s alpha of .931.

Couple Skill Index-4 (Funk & Rogge, 2007): This brief four item measure evaluates couples’ relationship satisfaction. Item one is scored on a seven-point Likert ranging from “Extremely Unhappy” to “Perfect”. Item two is scored on a six-point Likert ranging from “Not at all True” to “Completely True”. Items three and four are also scored on a six-point Likert ranging from “Not at all”, to “Completely”. To score, items are summed with higher scores indicating greater levels of relationship satisfaction and scores below 13 suggesting significant dissatisfaction (Rogge, 2023). The CSI-4 has excellent internal consistency with a Cronbach $\alpha = .91$ and strongly associated with the Marital Instability Index-Adapted (Booth, Harris, O’Quin, & Lane, 2017) $r = .84$, $p < .001$ (Lamela, Figueiredo, Morais, Matos, & Jongenelen, 2020). The calculated Cronbach alpha for this study was .928.

Marital Instability Index (Edwards, Johnson, & Booth, 1987): This brief three item subscale evaluates the break up potential of a married couple with high reliability ($\alpha = 0.84 - 0.91$). It is scored on a five-point Likert with higher scores indicating greater probably of relationship dissolution (Barton, Lavner, Hawrilenko, & Doss, 2021). The calculated Cronbach alpha for this study was .924.

Personal Assessment of Intimacy in Relationships (PAIR, Schafer & Olson, 1981): This scale measures intimacy within the relationship. This 18-item measure has an alpha above .70 and has been a fundamental measure for relationship therapists since the early 1980s (Schaefer & Olson, 1981). Higher scores on the PAIR indicate greater sexual satisfaction for the couple. The calculated Cronbach alpha for this study was .854.

Relationship Knowledge (Barton, Hatch, & Doss, 2020): With a published alpha of

0.68, this six-item scale assesses participants awareness of items that cause stress in the relationship. Participants rate their level of agreement and disagreement on a five item Likert with 1 being strongly disagree and five being strongly agree. The calculated Cronbach alpha for this study was .748.

nFORM Assessment: The Information, Family Outcomes, Reporting, and Management (nFORM) sub-scales for Communication Skills, Communication Conflict, and Trust and Intimacy were used to assess these variables (Mathematica Policy Research, 2020). The subscales of the nFORM on communication skills, communication conflict, and trust and intimacy help researchers to better understand domains attributed to healthy relationships. Higher scores on each of the subscales indicate greater communication skills, greater conflict, and greater intimacy (non-sexual). The full nFORM is currently used by the Office of Planning, Research, & Evaluation under the U.S. Department of Health and Human Services for grantees to report progress of programs evaluating the 2020 Healthy Marriage and Responsible Fatherhood Grants (U.S. Department of Health and Human Services, 2020). Currently there are no known reported alphas for these scales in the existing literature. The alphas reported here were calculated based on the current study for both men and women. The following subscales of the nFORM were used in this analysis.

Communication Skills (Mathematica Policy Research, 2020): This six-item subscale evaluates positive and negative communication habits between the partner and their spouse. Individuals answer on a four-point Likert with 1 being never and 4 being often. An example of a question from this measure is, “Within the past month,” “My partner/spouse and I were good at working out or differences.” Alphas for the Communication Skill sub scale ranged between .777-.813 for this evaluation. Higher scores on this scale indicated greater skills in

couple communication.

Communication Conflict subscale (Mathematica Policy Research, 2020): This six-item subscale evaluates positive and negative communication skills between the partner and their spouse. Individuals answer on a four-point Likert with 1 being never and 4 being often. An example of a question from this measure is, “My partner/spouse was rude or mean to me when I disagreed.” Alphas for the Communication Conflict subscale ranged between .579-.655 for this evaluation. Lower scores on this scale indicate lower levels of dyadic conflict in communication.

Trust and Intimacy subscale (Mathematica Policy Research, 2020): This five-item subscale evaluates the trust and intimacy between the partner and their spouse. Individuals answer on a four-point Likert with 1 being strongly agree and 7 being strongly disagree. An example of a question from this measure is, “My partner/spouse knows and understands me.” Alphas for the Trust and Intimacy subscale ranged between .797-.968 for this evaluation. Higher scores in this scale indicates greater levels of trust and intimacy for the couple.

Psychological Health Measures

Patient Health Questionnaire 9 (PHQ-9; Spitzer et al., 1999): This nine-item measure evaluates a person’s depression level based on Diagnostic and Statistics Manual IV cut-off levels. Depending on the population studied, this brief assessment has alphas above .85 (Wells, Horton, LeardMann, Jacobson, & Boyko, 2013). Higher scores on the PHQ-9 indicate higher levels of depression for the participant. This measure can be used as a continuous variable or categorical with cut-offs ranging between 0-4 for no depression to 20-27 indicating severe depression (Patient Platform Limited, 2021). For the current study, this scale was used as a continuous variable. The calculated Cronbach alpha for this study was

.905.

Alcohol Use Disorders Identification Test (AUDIT; World Health Organization, 1997): This 10-item measure evaluates an individual's alcohol consumption behaviors. The AUDIT is the leading assessment for evaluating alcohol use in the U.S. (Higgins-Biddle & Babor, 2018). Higher scores on the AUDIT indicate greater problems with alcohol consumption. This scale can be used as a continuous or categorical variable with ranges between 0-7 non-harmful alcohol consumption to 15 or more indicating probable alcohol dependence (Saunders, Aasland, Babor, & al, 1993). The calculated Cronbach alpha for this study was .826.

Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990): This instrument evaluates occurrence, intrusiveness, pervasiveness, and other items related to worry. It has high internal consistency ($\alpha = .94$) and test-retest reliability (Meyer, Miller, & Metzger, 1990). The PSWQ consist of 16 items scored on a five-point Likert with one being not at all typical of me and five being very typical of me. Multiple items of the PSWQ are reverse coded, however, a greater score indicates greater worry for the participant. The calculated Cronbach alpha for this study was .825.

Posttraumatic Check List 5 (PCL-5; Blevins et al., 2015): This measure evaluates posttraumatic stress disorder via 20 items. It has a high alpha ($\alpha = .85$) and convergent validity (Ibrahim, Ertl, Catani, Ismail, & Neuner, 2018). Higher scores on the PCL-5 indicate greater symptomology, however, researchers and clinicians often set a cut-off score between 35 to 42 allowing this measure to be used as either a continuous and categorical variable. This scale was used as a continuous variable to document changes in overall PTSD symptomology for the current study. The calculated Cronbach alpha for this study was .958.

Suicide Behaviors Questionnaire-Revised (SBQ-R, Osman et al., 1999): This brief four-item measure assesses suicidality in the adult population in four specific domains: lifetime suicidality, the frequency of suicidality, threat of suicide attempt, and probability of future suicide behaviors (Osman, et al., 2001). The psychometric properties of this assessment indicate a 93% sensitivity and 95% specificity for the general adult population (Osman, et al., 2001). Several studies have documented the reliability and internal consistency of the SBQ-R with recorded alpha of .8 (Cassidy, Bradley, Bowen, Wigham, & Rodgers, 2018). Each question of the SBQ-R is scored differently with a range of three to six points possible depending on the question and a total possible score of 18 points indicating greater suicide risk. The calculated Cronbach alpha for this study was .809.

Qualitative Strand: Narrative Focus Groups

Qualitative data within the study was collected to explore the experiences participants had with the curriculum, online delivery, and a couple's coach. These data provided insight that was less likely to be gained through quantitative methods alone (Creswell, 2015). Within the realm of qualitative inquiry, I chose narrative inquiry, because it allows participants to share how they view their experiences with the curriculum in story form (Creswell & Poth, 2018). Gaining this understanding provided insight that can then be used for future curriculum development and program implementation (Lloyd, et al., 2015). The primary questions for the qualitative strand were:

3. What is the feasibility of conducting online relationship education for National Guard connected couples?
 - a. a What motivated RC members to enroll in and complete the program?

- b. What were participants' experiences of a computer-based relationship education program?
 - c. What barriers did participants face when engaging in online relationship education?
- 4. How did participants view the curriculum?
 - a. Was the curriculum acceptable for military couple participants?
 - b. Did the curriculum meet their needs?
- 5. What were participants' views on couple coaching?

Inclusion and Exclusion Criteria

To be included in the two focus groups (n =18), participants must have completed the ePREP + coaching intervention, have met the inclusion criteria outlined within the quantitative strand of the study, completed the pre and post assessments, and agreed to participate in the 60–90-minute focus group which was hosted using Zoom.

Sampling and Recruitment

Couples were recruited into the focus group via a verbal invitation offered to them at the conclusion of the training as well as an emailed invitation. This convenience sample consisted of 8 individuals in group one and 10 individuals in group two. Each focus group lasted approximately 90 minutes.

Data Collection

All focus groups were hosted on a HIPPA compliant Zoom and took place between 30-90 days after couples completed the training. At the beginning of the focus group the interviewer reviewed the informed consent with participants verbally and had participants agree to the terms before starting the interview. Once recording started, the interviewer

thanked the participants for their willingness to take part in the qualitative portion of the study which provided an opportunity for participants to decline to participate. During the focus group, the interviewer voice record sessions and another member of the research team took notes. This information was then stored on a secure hard drive before being synthesized into a transcript of each group and analyzed in MS Word.

Semi-structured Interviews

The semi-structured interview lasted approximately 90 minutes for each group and followed a semi-structured interview guide (Table 2). The guide allowed me to probe deeper into participants responses and allowed for participants to respond to each other's statements. The intent of these focus groups was to provide context to the experiences of couples who attended the intervention to determine the suitability and acceptability of ePREP + coaching for use in the RC.

The focus group consisted of couples and individuals who completed the program and participated in the quantitative surveys. Some individuals attended without their partner due to scheduling conflicts, and in one case deployment. These focus groups helped determine if couples experienced the ePREP + coaching as an acceptable delivery format for RE in the RC. As several of these couples also attended the in-person events before the online version, I inquired about differences in the program delivery with a slant toward which format the couples enjoyed more and reasons behind their choices. To this point over 50% of couples mentioned that they attended an in-person Strong Bonds event in the past or shortly following the ePREP training. Other questions included a focus on duration, flexibility, and technicality of attending an online RE program. Couples were also asked about how they felt the program impacted their relationship, and what modules/aspects of the program were most impactful

and why.

Quantitative Analysis

To test the hypotheses predicting change in relationship and psychological health, I scored all variables in accordance with guidelines established in the literature. Following variable scoring, I ran a series of matched paired t-test comparing means of pre and post training for men, women, and a repeated measures ANOVA testing for within and between subjects effects for men and women within the sample using SPSS 26 general linear model. Effect size estimates were calculated by dividing the mean of the pre- and post-test scores by the pre-test standard deviation resulting in Cohen's d/Hodges g estimate. To account for inflation of effect sizes for small samples, each effect size was corrected using Hodges g correction (Hedges, 1981) which was 0.962 for men, and 0.968 for women. The corrected effect size is reported in the table (Table 4). Given the lack of post-test data for non-completers and a low sample size which limits analyses that can handle incomplete data, these results only include those for the participants who completed the training. In cases where a participant did not answer items on one of the variables, that data was omitted from analysis. All other scales were completed by each participant, had no missing data, and were subsequently used in the analysis.

Qualitative Analysis

To analyze the qualitative data, I used Chan's (2010) narrative analysis. This analysis' blend of narrative analysis with phenomenology was useful in exploring participants' sentiments in relation to preexisting themes pertinent to the topic of study (Creswell, 2015). Within this model, the researcher introduces the situation (i.e., what are the experiences of couples who attend an online relationship education program), presents themes (i.e., do they

find it acceptable, does it meet their needs, is it feasible for them to attend), then analyzes the themes in terms of what happened. This process provided context to the couples' experiences to answer the research questions around the acceptability and feasibility of the intervention for military connected couples. The intent of the qualitative component of this study was to deduce the fundamental themes around what lead participants to, and their experiences during the training to better inform future program delivery and development.

After collecting data from the focus groups and taking notes, I transcribed the interviews into a Microsoft Word document taking more notes on items that stuck out such as participants nonverbals during the focus groups. Following transcription, I read each document from start to finish to familiarize myself with the data. During the first reading I took notes of items that stuck out from the transcripts to use during the coding process. Following familiarization, I re-read the documents start to finish, this time creating initial codes that fit the introduced themes. Following the development of these initial codes, the documents were reread again, this time referencing identified codes between transcripts. This read through solidified codes, which were then organized into the themes of the analysis. I determined saturation when several statements from different participants supported a conclusion. In a couple of cases I included participants non-verbal reactions (nodding heads, thumbs up, etc.) to what was said where there was not enough verbal data to determine saturation for a theme. To ensure trustworthiness, a theme was not identified until it had multiple endorsements from other participants. After developing these themes, I shared findings with two members of the committee and received feedback. Themes were then reviewed for how they fit within the research questions and a report was generated. To protect

the privacy of participants I replaced their names in the transcripts with a one to two letter code. For a list of focus group questions see Table 2.

Following the quantitative and qualitative analyses, I merged the results to identify areas of convergence and divergency (Creswell, 2015). This process provides a fuller understanding of the topic under study by painting the quantitative findings within the context of peoples' lived experiences going through the training. After merging findings, I developed another report found in Chapter Five discussing how the quantitative and qualitative data aligned, and describing why some of the quantitative findings may have turned out the way they had. For this review, all qualitative themes aligned with the quantitative findings. See Figure 1 for a review of the convergent mixed methods process followed during this study.

Threats to the reliability and validity

The use of an initial efficacy trial has multiple shortcomings as previously specified. Among the most salient shortcomings is the lack of a control group. Lacking a control group means that the changes observed within the study may be attributed to factors outside the control of the researcher. At worse, the results can be interpreted as spurious.

Ethical Considerations

Leavy (2017) defines ethical considerations in human subject research around three foci; philosophical, praxis, and reflexivity. Each of these considerations are described in depth below.

Philosophical (or Value System)

Shaped by the atrocities of World War II Nazi research and the Tuskegee Syphilis Experiment, to name a few, the government and international treatises such as the Nuremberg Code (1949) and the Declaration of Helsinki (1964) govern ethical considerations in research

(Leavy, 2017). It is out of these that research, including this project, must have informed consent, and, in accord with the National Commission for the Protection of Human Subjects, respect the participants, be beneficial, and just. This project was also subject to the Internal Review Board review and the Army Human Research Protection Office to ensure its ethical design, implementation, and conclusion.

Praxis

Praxis is, by definition, the action or practice of (Miriam-Webster, 2020). In this case, it is the practice of conducting research. According to Leavy (2017), ethics in praxis play out three ways when conducting research: procedural, situational, and relational. As such, considerations around conflicts of interest and protection of the participants become the focus. Perhaps the most noticeable ethical consideration within this project is my close ties to the military and the Strong Bonds Program, the Army's RE program. With these close ties I needed to ensure distance between the participants and myself. This distance included using participants who are unknown to me, deidentification of their data to protect privacy, and the use of trained coaches who worked directly with the couple during the intervention. My role remained behind the scene, except for the focus groups where the participants and I did not know each other.

Reflexivity

According to Leavy (2017), reflexivity ethics pertains to how power comes to bear. Regarding the current study, considerations such as rank differences, the project's ability to accurately reflect the participant's experience and outcomes, and as an initial efficacy trial consideration around nuanced language come to mind. Coming from a position of power within the military, all participants were lower ranking than myself. As such, I needed to be mindful of

how participants may have perceived the project. For example, participants may feel that they are being ordered to participate so my role in the project remained separate from the actual coaching and direct participant contact to account for this power differential. Finally, coders and statisticians must consider who and what they are and how their identity shapes the qualitative findings' interpretation. For this reason, it is typical for qualitative papers to provide a reflexivity statement, or full disclosure of whom the researcher is acknowledging that their identity shapes how they view the world (Braun & Clarke, 2022; Charmaz, 2014; Creswell & Poth, 2018).

Reflexivity Statement

I am a service member with 6 years enlisted time in the Army Reserves and 13 years' time as a National Guard Chaplain where I have served as a staff officer in positions ranging from the battalion to the state level. During my time as a Chaplain, I have worked with service members and their families' conducting weddings, counseling, and managing the Strong Bonds Program for the Michigan Army National Guard. Overseeing the Strong Bond Program, I received feedback through the years indicating how happy service members and their families were for the program, but no empirical evidence of program effectiveness existed for the program. A primary motivation for completing this study was to develop a base level of effectiveness and to capture participants experiences through this program.

Summary

This project is an initial efficacy trail consisting of quantitative data collected at two time points and qualitative data collected post training. Justification for this design stems from existing evidence and best practices in initial efficacy trials. The sample (N = 24) consist of members of the National Guard and their significant others with data linked to each participant and the couple. The decided measures come from previous RE and behavioral health studies, all

of which have high internal validity. The statistics used to measure outcomes are consistent with the best practices of data analysis after initial descriptive and correlations are calculated. There are several shortcomings of this study, however given the limitations and the need to first establish base line data, the methods suffice. There are multiple ethical considerations with the current study as well. These consideration were accounted for by the research team and molded the study to ensure the safety and wellbeing of each study participant. This study will help us identify if and how well electronic RE (ePREP) + couple coaching suites the needs of the RC from a relationship and psychological health perspective.

Table 2*Qualitative Interview Guide*

Motivation	What motivated you to sign up for ePREP?
	Was there anything specific that motivated you to complete the online modules? How about the coaching sessions?
	Why did you decide to start/complete the program?
	Was this a couple decision or individual? Elaborate.
	How did any discussion with you and your partner go?
	Was the discussion helpful?
Curriculum	If you were to do things differently with the program, what would they be and why?
	Tell me 3 positive things and 3 negative things about the program.
	If there were one thing you would like others to know about this program, what would it be?
	What elements of the program worked well for you? Why?
	Were there any elements of the program that were problematic? If so, what and why?
	Can you describe what challenges you had to completing the program?
Logistics	Were these barriers different with your partner?
	What are some elements we can adjust to make the program better for you and your spouse to be able to complete?
	Can you tell me what aspects of the program helped your relationship?
	How do items such as being on orders, being able to complete as part of IDT, etc. affect your ability to complete programs such as these?
	How does having these types of programs delivered in a hybrid model affect your ability and motivation for attending them?
	Were you able to meet with your couple coach? How many times?
Coaching	Can you describe how your coach worked with you and your spouse?
	What elements of the coaching sessions seemed to be beneficial and why?
	Were there any elements of working with a coach that was challenging? Why?
	Are there any other items you'd like to share with me before we close this session?

CHAPTER FOUR: RESULTS

Demographics

Participants for the current study (N = 24) consisted of mostly married couples (11 couples, one participant whose partner was excluded from analyses and another participant whose spouse did not complete the post assessment) with one member of the couple currently serving in a Midwest State's National Guard. The sample is largely homogenous with 23 individuals identifying as white and one black. Their annual level of income ranged between \$25,000- \$100,000+ with a mean of \$50,000-\$75,000. Participants had been married an average of 10 years, with three couples attending the program as part of their pre-marriage counseling. Their ages ranged from 26 to 53 years old with the majority (n = 13) between 30-35 years old. Their average level of education consisted of a bachelor's degree (n = 11). Of the sample, all National Guard members served at least one deployment overseas, and in addition, four served at least an additional deployment within the continental United States. All male participants were currently serving National Guard members and one couple (male and female) were dual status military. See Table 3 for a full review of demographic characteristics.

Table 3

<i>Descriptive Statistics</i>		
Gender		
	<u>n</u>	<u>%</u>
Male	11	42.30%
Female	13	50.00%
Race		
White	23	96
Black	1	4

Table 3 (cont'd)

Level of education		
	<u>n</u>	<u>%</u>
HS Diploma	1	3.80%
Some College	7	26.90%
Technical		
Certification/	1	3.80%
Associates		
Batchelor	11	42.30%
Graduate	4	15.40%
Annual income		
	<u>n</u>	<u>%</u>
\$25-50K	3	11.50%
\$50-75K	7	26.90%
\$75-100K	10	38.50%
>\$100K	4	15.40%
How many years partnered ¹		
	<u>n</u>	<u>%</u>
0	1	3.80%
2	2	7.70%
4	2	7.70%
6	2	7.70%
8	2	7.70%
11	2	7.70%
13	3	11.50%
17	1	3.80%
25	1	3.80%
26	1	3.80%
Age		
	<u>n</u>	<u>%</u>
20-30	5	21%
31-40	12	58%
41-50	5	21%

¹ Not all participants completed this question.

ePREP's Effectiveness

Change in Relationship Health Variables

This section answers the research question, “Is ePREP + Coaching effective in strengthening couple relationships in a sample of National Guard couples for men and women?” It also examined the following hypothesis, “The online RE program, ePREP + coaching, will lead to positive increases in relationship satisfaction for both service members and their partners in the areas of communication, relationship satisfaction, sexual intimacy, and will result in a decrease break-up potential.”

After completing paired samples t-test for both men and women in the sample, few variables reached significance. These low powered variables include results from the RDAS, Locke-Wallace sub scale for agreement, CSI-4, Marital Instability Index, PAIR, Relationship Knowledge, and the nFORM subscales for Communication Skills, Communication Conflict, and Trust and Intimacy. Table 4 includes a full list of means, pre/post difference, effect sizes, and power for all variables. For both men and women, the communication sub-scale of the nFORM indicated large gains in couples’ ability to communicate effectively with women’s gains $t(12) = -8.596$, $p < .001$, $d = -2.232$, CI [-3.46, -1.29], one-tailed, being much greater than their male counterparts $t(10) = -4.962$, $p < .001$, $d = -1.381$, CI [-2.36, -.60], one-tailed, both with large effect sizes. These findings suggests that the intervention will likely improve relationship satisfaction variables for participants, although, given the small sample these changes could be due to chance.

Change in Psychological Health Variables

This section answers the research question, “Is ePREP + Coaching effective in decreasing psychological problems in a sample of National Guard couples for men and

women?” It also tested the following hypothesis, “The online RE program, ePREP + coaching, will lead to improved psychological health for both service members and their partners in the areas of depression, post-traumatic stress, alcohol use, and suicidality.”

When assessing the second hypothesis/question that ePREP + Coaching will yield positive results in psychological health variables, one variable reached significance for men, and three for women. The variables that did not reach significance were suicidality and PTSD for both men and women, and alcohol misuse and depression for men indicating that women may benefit more from this training than men. For psychological health variables, women benefited more than men as a result of the intervention in the areas of depression, worry, and alcohol use behaviors, whereas men only indicated significant change in their level of worry. For women, change in their perceptions of their levels of depression dropped an average of 2.84 points on the PHQ-9 $t(12) = 1.946$, $p < .05$, $d = -0.505$, CI [-.54, 1.11], one-tailed, their level of alcohol use dropped an average of 1.84 points on the AUDIT $t(12) = -7.886$, $p < .001$, $d = -2.991$, CI [-3.20, -1.15], one-tailed, and their level of worry dropped an average of 10.15 points on the PSWQ $t(12) = 5.258$, $p < .001$, $d = 1.365$, CI [5.95, 14.36], one-tailed, all with large effect sizes. As a result of the intervention for men, their scores dropped an average of 8.54 points on the PWSQ $t(10) = 2.396$, $p < .05$, $d = 0.667$, CI [.04, 1.38], one-tailed, indicating a large effect size. These results suggests that the intervention will likely improve psychological functioning of participants. However, given the small sample these findings could be due to chance. For a comprehensive list of psychological health variables, and effect sizes, see Table 4.

Table 4*Pre-post differences in relationship and psychological health domains*

	Men						Women					
	<u>Mean</u> (pre/post)	<u>N</u>	<u>Delta</u>	<u>t</u>	<u>Cohen's</u> <u>d^a</u>	<u>p¹</u>	<u>Mean</u> (pre/post)	<u>N</u>	<u>Delta</u>	<u>t</u>	<u>Cohen's</u> <u>d^a</u>	<u>p¹</u>
RDAS	57/ 57	11	0	0	0	.50	59.92/ 58.61	13	-1.308	1.195	0.310	.128
Locke-Wallace	35.63/ 36.36	11	0.727	-1.077	-0.300	.153	38.07/ 38.15	13	0.077	-0.106	-0.027	.459
CSI-4	17/ 18.45	11	1.455	-1.520	-0.423	.080	19.30/ 18.61	13	-0.692	1.028	0.267	.162
Marital Instability Index	8/ 8.27	11	0.273	-0.896	-0.249	.196	7.61/ 7.76	13	0.154	-0.413	-0.107	.344
PAIR	19.36/ 17.72	11	-1.636	1.784	0.496	.052	19.07/ 20	13	0.923	-1.115	-0.289	.143
Relationship Knowledge	23.27/ 24.09	11	0.818	-0.917	-0.255	.190	23.07/ 23.61	13	0.538	-1.167	-0.303	.133
Communication Skill	17.54/ 20.90	11	3.364	-4.962	-1.381	<.001	18.76/ 22.46	13	3.692	-8.596	-2.232	<.001
Communication Conflict	15.72/ 14.81	11	-0.909	1.363	0.379	.101	14.38/ 14.38	13	0	0	0	.50
Trust and Intimacy	15.36/ 15.36	11	0	0	0	.50	17.30/ 16.92	13	-0.385	0.923	0.24	.187
PHQ-9	11.72/ 10.63	11	-1.091	1.058	0.298	.157	16/ 13.15	13	-2.846	1.946	-0.505	.038
AUDIT	13.36/ 13.45	11	-.091	-.146	-.040	.444	11.69/ 9.84	13	-1.846	1.979	-.514	.036
PSWQ	41.81/ 33.27	11	-8.545	2.396	0.667	.019	54.69/ 44.53	13	-10.154	5.258	1.365	<.001
PCL-5	24.27/ 25	11	0.727	-1.268	-0.353	.117	32.23/ 30.92	13	-1.308	0.343	0.089	.369
SBQ-r	6/ 5.27	11	-0.727	0.812	0.226	.218	4.92/ 5	13	0.077	-0.192	-0.050	.425

¹. All *p* values are one-tailed

ePREP Skill Acquisition

To illustrate the effectiveness of the curriculum teaching PREP skills to military connected couples, the post survey included a series of seven items which are shown to assess if couples acquired relationship knowledge (Allen et al., 2017). This section answers the question “How did the online version of PREP do in terms of teaching PREP skills?” This information is critical in understanding curriculum retention following training. In general, high scores in these seven items post test indicate retention of material at the follow-up. These items include constructive communication, investment, teamwork, relationship knowledge, commitment, communication, and conflict management(Allen, Post, Markman, Rhoades, & Stanley, 2017).

The analysis indicated that participants experienced acquisition of knowledge in each of the assessed items as a result of the intervention. Of these gains, participants reported that the intervention had the greatest effects in their ability to invest time in their relationship ($n = 25$, $\mu = 4.6$, $\sigma = 0.707$) and their confidence in their ability to effectively communicate ($n = 24$, $\mu = 4.54$, $\sigma = 0.658$). The latter finding is congruent with findings from the full quantitative analysis which indicated a strong improvement in communication skills based on the Information, Family Outcomes, Reporting, and Management (nFORM, Mathematica Policy Research, 2020) sub scale for communication skills (men: $\Delta = 3.364$, $t = -4.962$, $d = -1.381$, $p < .01$; women: $\Delta = 3.692$, $t = -8.596$, $d = -2.232$, $p < .01$). Items assessing their ability to manage conflict ($n = 25$, $\mu = 4.48$, $\sigma = 0.586$) and overall healthy relationship knowledge ($n = 25$, $\mu = 4.48$, $\sigma = 0.707$) demonstrated the second largest reported gains. These variables did not reach significance in their sister variables within the nFORM, pre to post, however, relationship conflict was trending down for men ($\Delta = -.909$, $t = 1.363$, $d = -$

.379, $p < .10$). The variables that participants reported having the least amount of gain resulting from the training included increases in communication skills ($n = 25$, $\mu = 4.44$, $\sigma = 0.712$), working more as a team ($n = 25$, $\mu = 4.44$, $\sigma = 0.768$), with participants scoring their understanding of commitment the lowest of assessed variables ($n = 25$, $\mu = 4.2$, $\sigma = 0.866$). The item assessing participants ability to manage conflict had the tightest distribution despite not reaching significance in its sister variable from the nFORM with the pre post t-test within the sample, whereas the item assessing commitment had the widest distribution. Despite the variance within each item, scores remained high with the lowest score for each item being a 3, neither agree nor disagree. These results support that ePREP with couple coaching is an effective way to teach the content, and that it meets the needs for military connected couples. Because I did not collect pre-test data, we can only conclude that the participants possessed key content taught in ePREP after the training was over. For a full report of satisfaction scales see Table 5 and for a report on all quantitative data see the above section and Table 4.

Table 5*Because of this training...*

	<u>n</u>	<u>Mean</u>	<u>Mode</u>	<u>SD</u>	<u>neither</u> <u>agree nor</u> <u>disagree</u> <u>(n/%)</u>	<u>somewha</u> <u>t agree</u> <u>(n/%)</u>	<u>strongly</u> <u>agree</u> <u>(n/%)</u>
I have confidence that my partner and I can talk about things constructively	24	4.54	5	0.658	2/7.7%	7/26.9%	15/57.7%
I will invest more time in our relationship	25	4.6	5	0.707	1/3.8%	7/26.9%	17/65.4%
I think my partner and I will work more as a team	25	4.44	5	0.768	4/15.4%	6/23.1%	15/57.7%
Increase my knowledge about what a healthy relationship and marriage looks like	25	4.48	5	0.707	4/15.4%	5/19.2%	16/61.5%
Increased my understanding of the nature and importance of commitment	25	4.2	4	0.866	7/26.9%	6/23.1%	12/46.2%
Improved my communication skill with my partner	25	4.44	5	0.712	3/11.5%	8/30.8%	14/53.8%
Increased my confidence in managing conflict and escalation with my partner/spouse	25	4.48	5	0.586	1/3.8%	11/42.3%	13/3.8%

Feasibility of Conducting on-line RE for the National Guard

This sections, answers the following research question. What is the feasibility of conducting online relationship education for National Guard connected couples?

- a. What motivated RC members to enroll in and complete the program?
- b. What were participants' experiences of a computer-based relationship education program?
- c. What barriers did participants face when engaging in online relationship education?

What motivated RC members to enroll in and complete the program?

Life changes and relationship uncertainty. The research team asked questions in the focus groups about what led participants to sign up for the curriculum in the first place. What surfaced as the major theme is that many couples who signed up had recently undergone a significant life change, were currently experiencing troubles in their relationships. This finding accounted for 15 endorsements within the transcripts. These events centered around experiencing relationship discord, deployment, and, in one case, relationship dissolution where one partner filed for divorce and the other thought of this as a last-ditch effort to reconcile differences. GE, when discussing other support programs for service members said, "It was just, you know, like all other resources that are offered to military and their families like, this was just another one that when it hit us, it hit the right place and we didn't have to go out and search for something." GE and his spouse had recently had their first child and learning how to negotiate schedules and ensuring to carve time out for their own marriage was challenging. AM when describing what lead them to sign up for the curriculum shared, "We

were kind of going through a rough patch. So, it was kind of really perfect timing, and then as well as like right before the wedding, it really fell on into our plate at a really good time.”

Timing and RE program availability and access. Others were at a point in their relationship where a RE program was good timing for the stage of their relationship. For example, AM and her partner used the ePREP with coaching to fill in their desire to have premarital counseling, something that they did not know how to obtain. Given that the Army can only pay for couples who are legally married, this was the only military sponsored event open to AM and their spouse except for counseling through a chaplain. However, given her partners negative experience with chaplains, seeking care through the Chaplain Office was not an option for premarital counseling for them. Like AM and her partner, LA, a seasoned Army chaplain, and her partner also attended ePREP prior to their wedding, despite being in separate countries.

Incentives. A unique element of the military is that it often pays for participants to attend Strong Bonds or Building Strong and Ready Teams events. This pay and allowances are a significant pull for participants to attend and it was a leading motivator for participants to complete the online training and accounted for 13 endorsements within the transcripts all with positive sentiment. When asking why couples signed up for ePREP to begin with, some couples stated they signed up simply for the incentives, indicating the significance incentives have on the recruiting and retention of participants. These incentives varied ranging from Amazon gift cards, which were research incentives provided to complete surveys and the focus group (\$150 total), to being put on a paid status (\$53-\$366 per day (Department of Defense, 2023), to being placed at the top of the list for the next in-person Strong Bonds event which typically happen at resorts around the State (approximately \$1,000 per Solider per

event including meals, lodging, and travel for three days plus military pay). For example, M stated, with his spouse laughing in the background, that “We can go. We really wanted to go to Great Wolf Lodge with the kids.” JO conversely stated, “Like everyone else said, I thought that orders were a great incentive.” TY shared continuing with this theme said “It's an easy, you know, like three days of orders...” can be a significant amount of money for many individuals. Furthermore, some participants shared that the military orders allowed them the latitude to approach their civilian employer to get time off work to attend as ST shared “I would say it definitely helps, because between my full-time job and then having my, my drills on the weekend, I really don’t have a whole lot of time.” Yet others such as SA shared that the gift cards were what initially motivated them to start the curriculum or a combination of incentives offered. These considerations, financial gain, and the latitude to leverage military orders to participate in a relationship education program are unique to the military setting, yet in every case, participants shared that the curriculum was worth their time because it met a need in improving their relationship.

Individual choice. When continuing to understand why participants signed up for the curriculum in the first place, an unexpected challenge emerged centering around who’s choice it was to sign up. These questions illustrated that in four of eleven responses, one member of the couple signed up before telling the other, i.e., it was an individual decision regardless of gender. When asking why people signed up before talking to their spouse, monetary rewards surfaced as a prime motivator. For example, when SA was recounting her decision to start the curriculum she stated:

“I like doing this type of thing, so I just dragged him along, checking it out and see if he’d be willing to do it with me. It was our decision, but it was really my

decision. I kind of planted the seed and brought it up here and there and then finally he decided ‘you know that’s a great idea’ so it was alright.”

KE, when responding to her spouse’s choice to sign up without her agreement, stated, “well, TY signed me up without me knowing [laughs] and I was pretty skeptical of the idea of a chaplain providing therapy. But once it was made clear that that wasn’t therapy, I felt better about it just being that sort of skills lesson.” When recounting his choice to sign up without his partner’s consent, TY responded, “If I could have done anything different, I would probably tell her first and ask if it was okay.” These findings suggest that couples who start these programs may not have made the choice together and that the coaching model needs to account for this incongruence during the first touchpoint.

What were participants’ experiences of a computer-based relationship education program?

When assessing the couples’ experiences of completing ePREP for RC Couples I unearthed several considerations related to the delivery of the PREP curriculum electronically. These sentiments centered around multiple factors including the flexibility afforded by online delivery, the ability to pause when they wanted to discuss a point in more depth with their partner, the consistency of the program, and the confidentiality provided by doing the curriculum in their own home and on their own time.

Flexibility of doing curriculum on own time. Seven participants discussed their appreciation of being able to do ePREP on their own time. When talking about the challenges faced by different schedules JO said “You know, my wife and I rarely were able to do or watch the modules at the same time. So it was, I watched it at a different time than she watched it...” GE supported this theme when he was discussing the timing of the ePREP course “Positive is you could do it from your house or one of our sessions with the chaplain

had to be over the phone because we were driving to a family members house over the holiday weekend for a get together. So, I mean, we're [inaudible] accommodating." Later in the interviews M shared the difficulties he and his spouse had shuffling schedules around a busy homelife with kids. GE also picked up on this positive sentiment when he shared "I mean positives wise, the scheduling worked around our schedule, and the counseling [coaching] sessions were build around our schedule." Many participants endorsed this same notion of flexibility partly because the Chaplains Office offered the course at the end of the military fiscal year when the military tries to spend down remaining funds. One participant whose spouse was in the process of deployment expressed their appreciation for the online version due to the frequency of their partners schedule shifting and the challenges of completing modules:

"Yeah, his schedule is crazy with work. So, it was really hard to find a consistent time to work on it. And when he did have the time, because he was working 12 and 16 hour days there for a while, he didn't really want [to] focus on the program. He wanted to just kind of, you know, decompress, which I completely understood. So, a little bit of timing little bit of motivation... We kind of had a bit of the opposite problem between his military schedule, changing constantly, and his work schedule changing constantly. We couldn't schedule anything I think we had to reschedule the counselor [coach] at least twice, because now he's working late so just everything changing constantly made it really, really hard to stay consistent." -SA

These experiences suggest that online delivery met a need for increased flexibility to contend with challenging schedules for military connected couples.

Online modules were easy to follow and use. Continuing to talk about participants' experiences completing the program online, M shared "I think it was very well laid out, and the fact that you could save it and go back and complete a module later. It was awesome. There's really no other way to make it better to complete." GEO continued to share his impressions of the lengths of modules when he said:

"They're reasonable enough in terms of size where we could get them done around a bunch of different, you know different types of schedules. Whether it was all blocked out or we had to do it in chunks. I think there was one where there were some longer videos, towards the end. That was maybe a little bit harder, but you could always hit pause so not a big deal."

These experiences suggest that the duration of the modules helps ensure participants get the right amount of content to stay engaged and maintain autonomy of taking the online course.

Safety of completing on line. Another point that came up regarding the experiences of couples completing the online curriculum, especially for the women in the focus groups, centered on a feeling of safety. Three people from the focus group endorsed this theme. L A, when sharing her experience of completing the training, said:

"It takes the anxiety of public speaking. It (the online program) takes that completely out, you know. Even though we have lots of couples to come the Strong Bonds. Everybody is not so apt to stand up and talk. But this creates a safer space where it's just you and your partner, and you can kind of be vulnerable, and you can really talk about it."

For context, LA was completing the curriculum with their partner despite being geographically separated with a six-hour time difference. This same theme was resonated by

KY who shared that “...it kind of dug deeper, and we were able to do the questions at home versus, you know, in person with other groups of people we were allowed to get more and depth into our conversations.” This sentiment was picked up by CE who shared:

“I thought the in person was actually less personable because you're in a room full of strangers with one chaplain leading a group, and you'd write down your thoughts, or whatever in the workbook. And then, you're on to the next subject but you didn't spend any time discussing or really interacting, or at least, or when you did, it was very minimal with, again, strangers at the table you happen to be sitting at.”

These statements among others suggest that the safety provided by not having prying ears of other couples nearby helped her and her partner delve deeper into the content than in person events, a theme also resonated by others. For some military couples, talking about difficulties in a group and being vulnerable, is a challenge, as the above quotes suggest.

Challenge of language use with online delivery. Despite the positives of the online content and delivery A shared concern over some of the language used. PREP 8.0 was developed with married people in mind. However, in a society where more people are cohabitating and delaying marriage, the language of “spouse”, “husband”, and “wife” negates these other forms of committed relationships. Given that non-married couples can complete ePREP, but not attend in person events due to liability (a military rule), he shared:

“Supposed to be a little less exclusionary, as from Strong Bonds, which is, we don't have to be married to do this part. So maybe, having that language kind of tweaks to be more consistent and more inclusionary to the fact that there are people that aren't married, that still wanna do this program, or still are able to

do this program kind of having that language reflect that and personally for me, if I'm probably I'm A like crazy. I like more graphics. But the dude's voice was not like computerized. So that kind of helped that it was actually a real person."

This statement although not verbally emulated resonated with others during the focus groups with several other participants nodding their head in agreement. This statement bears with it a unique consideration on how similar programs delivered in different ways need to consider their target audience and the language used in the delivery of the content. A was one of three couples who attended before getting married.

Difference between online and in person events. Through the focus groups, an unexpected finding emerged around the differences between online and in-person events. Much to the chagrin of the researchers, nearly every married couple had attended an in-person RE event prior to completing ePREP. This finding accounted for 19 endorsements within the focus groups with both positive and negative sentiment. Their discussions suggest that they preferred ePREP over in-person events because it offered them an opportunity to dig deeper into the curriculum, cover all the material, provided flexibility, and that it afforded safety not afforded by the large group setting. In one case, ST said, "we definitely wanted to see the nuances between being there in-person and then see if ePREP was as good, and it actually was good." GE, when describing his feelings between the two delivery methods recalled, "so, it [ePREP] kind of dug deeper and we were able to do the questions at home versus, you know, in-person with other groups of people. We were allowed to get more in-depth into our conversations." And M, when critiquing the in-person events, said,

“A lot of times the in-person, they skip over sections because they run out of time... while the Strong Bonds is going on being at home, it gives you unlimited time to actually talk and through each question and understand each other more than just ‘okay, next section, next section.’”

These findings in addition to CE’s quote two sections above suggest that in some context, such as participants with busy lives, online delivery provides a greater sense of security, time to reflect and interact with their partner, and may be more acceptable to some participants than the in-person events, which pose challenges with traveling several hours, schedules, having time restraints which diminishes the depth presenters can go, and large group settings that diminish feelings of security.

Need for printed material. Among the challenges in conducting ePREP, four participants frequently suggested the need for printed materials. As delivered during this initial efficacy trial, the research team relied solely on the online platform and virtual coaching sessions. These efforts left the participants desiring a workbook and other reference materials they could go back to in the future. 30% of the areas of improvement for delivering ePREP was to include some form of printed materials. When recounting some of the challenges they had doing ePREP AM stated her desire for printed material when she shared “One of the things we kind of came up with..., as maybe a negative was... having a packet for people.” Other participants who have attended PREP in a large group format suggested that at a minimum participants should receive a small tool such as a 4” * 4” card with directions to help them practice the skills often referred to as a “floor card”. JU when describing things that could have made their time going through the curriculum smoother stated:

“We're kind of more hands on, like paper people, like we, technology is great, and everything, but we still like to have hard copies of things, and you have paper, and had, I mean we brought paper and pen to every session, and we're writing things down. But I think having the workbook. If there was a workbook to reference, I would rather have had the workbook.”

Picking up on what JU said GE continued:

“The speaker listener technique little card definitely (floor card). If anything you could have provided or not... I'm just saying [the] program can provide... it would have been to have the card.”

Although these small printed materials may seem trivial to include for participants, their need was the greatest stated negative apart from the timing of the events, and the cost.

Need to extend time to complete the curriculum. Expounding on the previous section regarding the timing of the training, two couples suggested the need to stretch out the curriculum longer. A programmatic challenge the research team faced in completing this project was the need to get the remaining couples through the curriculum in a short period of time because fiscal year limitations on funding imposed by the military. To accomplish this, the team pushed half of the participants through the curriculum in a three-day time period during a holiday weekend. Although the feedback gained from couples remained positive, the need to conduct one to two modules per week coupled with coaching surfaced as an area of improvement that is tied to the feasibility of conducting ePREP. This need surfaced in 30% of areas to improve the curriculum. For example, when discussing the challenges, they had in completing the program, JO stated “I do think spacing it out, giving you some time to digest the material [would be beneficial].” DE also noted:

“So from our perspective, obviously, the time of year [being on a holiday weekend] it wasn’t a good time of year. So, hosting it in the different part of the fiscal year would probably been more beneficial to [inaudible] what some of the other comments have been about digestion.”

These negative sentiments speak to the need for planners to consider the restraints they have in scheduling and conducting these types of programs and aligning course offerings during time that are most feasible for participants to attend. This can be particularly challenging when considering the burden of placing participants on a paid status three times as opposed to one time, the ebbs and flows of the military fiscal calendar, and when funding is available.

What barriers did participants face when engaging in online relationship education?

The focus groups described some challenges participants had in completing ePREP. These reasons include challenging schedules, condensed course offering time frame, challenges with the internet, and getting their partner onboard.

Time challenges. Regarding challenging schedules, couples often described the challenge of completing the curriculum with young kids. GE for example, described how he and his partner needed to coordinate babysitting with parents to watch their one-year-old so they could complete the modules. M also described the challenge children posed when completing ePREP when he said:

“...just trying to find the time when you got four kids. So, moving and work, so moving your schedule around their schedule and work schedule and hence why we are sitting here doing this in the car because our daughter has a softball clinic right now. So, time, timeliness is our struggle.” -M

The theme of fitting the program into busy schedules resonated with nearly all participants. Some of these challenges centered on scheduling around children such as that shared by M and GE, others centered on hectic work schedules such as that shared by SA who previously discussed the challenge of her husband's schedule changing prior to deployment.

Challenges with the internet. Couples also reported some challenges using different platforms for the coaching sessions. These findings are reported in Coaching technological challenges below.

How Participants Viewed the Curriculum

Was the curriculum acceptable for military couple participants?

Regardless of their motivation to start the curriculum based on incentives and it meeting a need in their relationship, every participant stated that the value of the curriculum was worth their time. SA for instance stated "I started because of the money, but once I found that there was actual value to the program, that's what encouraged me to continue on." Three other participants resonated with her statement during the interviews, indicating that incentives provide the initial desire to start the curriculum but the value of the content is what kept the participants coming back.

Did the Curriculum Meet Participants' Needs?

Initial skepticism. For those who completed the program, participants were overwhelmingly accepting of ePREP. Two participants, however, expressed an initial bout of skepticism over the curriculum. These feelings of initial skepticism wore off after the initial session. For example, JK, when discussing the value of the curriculum, said:

"At the risk of being a little cheesy. I was very skeptical at the beginning, but then, once they got going, after they sold themselves, it kind of became

apparent that the stuff was just take it as it is, seemed down to Earth, not trying to force you into some, you know, fake environment that some other curriculums seem to create.”

Other participants echoed this theme, some of whom stated that they took the curriculum solely to set an example for their Soldiers under their command.

Setting an example for subordinates. Continuing to build on the theme of starting the curriculum three participants shared the did so to set an example for their subordinates. TY for example with approximately 40-120 service members under his leadership shared “Well, I did this as a commander, right, to kind of give the information back to my troops about how it's not a waste of time... But I did it to give that information back to them. So that was really the reason that I that I did it.” LA a Chaplain with over 1,000 people under her chaplaincy also commented that she did the program to set an example and expectation when she shared “I've been pushing the ePREP to [redacted]. And I said, you know I'm asking these soldiers to do something I should be myself, and so it motivated me to do [it].” These statements in addition to GE’s who also expressed his initial desire to set an example to subordinates are in line with military teaching and culture that leaders lead from the front by establishing expectations for subordinates by their own actions. All three of these individuals expressed throughout the interviews that they found the training beneficial for their use despite their motivation for attending. These findings illustrate that, in general, participants who complete the curriculum are acceptable of its online offering due to its ability to meet their needs.

Ability to attend prior to marriage. Another unique finding that emerged from the focus groups was that three couples, or 1/3 of the participants in the focus groups, attended

prior to their weddings. According to Strong Bonds policy at the time of the program, participants needed to be legally married to participate with in person events due to liability and funding restrictions. However, given that the online version did not require funding for lodging and food, participants who would otherwise not be able to participate were allowed to. TY for example when sharing his views on the online delivery recounted:

“So I wanna say from my fox hole I know usually all those strong bond retreats. You're it's basically required that you have a military dependent, and this ePREP it wasn't the case that I know in today's world less and less people are getting married legally, or you know like having that legal dependent kind of status. So, that was the pull for me because we're really two years in, and we're not married yet. So that was my reason.”

This phenomena resonated with A who shared:

“So, yeah... we weren't married yet, and they so we couldn't still go to that, even though we were engaged, and whatnot so wanted to kind of have that experience. And then, you know, we were just talking about. Oh, oh, my goodness! We actually get to go to our Strong Bonds whenever the next one pops up in [redacted].”

These finding suggest that online delivery fills a current gap in military context of providing relationship education to participants who do not meet the requirements to attend an in-person event and that it serves the needs by some for pre-marital relationship work.

What were participants' views on couple coaching?

To understand participants' perspectives and experiences with their coach, the research team probed participants to share their thoughts on the topic. This probing yielded mostly positive experiences but also suggested areas to improve the coaching model.

Coaching positives. Most positive couples cited in working with a coach centered on the content reinforcement the coach provided, the ability to practice the content, having a neutral source to work with, and having someone who they felt accountable to for completing the modules. These positives account for 31 endorsements within the transcripts all with positive sentiment. When talking about the benefit the coach provided, JO shared “I thought it was good, like just getting the reinforcement that you know... Like reinforcing or giving the opportunity to have, you know, that semi-personal interaction even [if] it was an electronic medium.” SA when describing their coaching sessions recounted:

“I think for me it was just nice. That it kind of hit home that we were doing it right. In a way, you have someone who's listening to you and how you guys are, you know, and how we're using the techniques like, ‘yeah, that's exactly how you should be using it’ or, ‘no you could tweak it this way a little bit to make it so it doesn't sound so argumentative’ was kind of nice.”

Other participants echoed these same experiences citing that the coach was instrumental in helping them refine their use of the content, which in the case for several participants extended to other areas in their lives including their relationship with their children, and in their interactions with people at work. For example, GO shared “It was nice to reinforce some of the lessons that we learned. Actually, we still use the techniques even a few weeks later after it and I'm actually implementing in my daily work now.” These experiences point to the

value of having an outside neutral source work with couples to enhance the skills they gain during the online sessions and how the skills gained from the curriculum can spill over into other relationships the participants have.

Concerns for coaching. Despite 81% of comments regarding coaching being positive, couples cited some areas to improve the coaching model. These six endorsements include cutting people off, a desire for longer sessions, a desire for more sessions, a desire to continue sessions beyond the curriculum time frame, personality differences, and scheduling challenges.

Longer sessions. When describing area's where they thought the coaching model could improve AM suggested "I wish the sessions with the chaplains were just a little bit longer. Each time we went over." MI continuing this theme suggest having sessions:

"...more consistent basis like twice a month or something... I think first I'll kind of hit here like AM said for us, the coaching session could have gone a little bit longer than 15 min. Seemed like it was super condensed."

These statements suggest that for some people a longer block of time may be warranted to get the full benefit of the coaching session especially in a military context.

Blurring coaching and therapeutic roles. One item that surfaced during the interviews from the couple who was currently in the process of divorce was a challenge around the role of the coach. "He just, he talked over me the whole time. He didn't give me a word in. At one point, he literally told me what to say and then I said it, and then he told me it wasn't good enough." recalled CH. This same participant continued to describe the discord she had with the coach who kept cutting her off during sessions. These experiences point to a need for coaches to consider the context of the relationship they are coaching. In some cases,

high conflict in the relationship may permeate into the coaching alliance creating a negative environment and experience.

Personality challenges. The personality of the coach also surfaced as a point that can build or diminish from participants experience using this model. Participants shared how the coaches they worked with generally created positive relationships that helped the couple stay invested in the curriculum. For example, TY when explaining his experience working with a coach said “I wish I could remember the name of the chaplain we had, because he was really great. I’ve known some weird ones but ours was great.” This statement indicates that some chaplains may not be well suited to be couple coaches despite his coach ability to meet the couple where they were at.

Coaching technological challenges. Another aspect regarding the feasibility of delivering ePREP centers around technological issues during coaching sessions. Through interviews, couples described that, despite the variety of communication methods offered by the coach (i.e., phone, Zoom, MS Teams, etc.) they had challenges with the internet and different platforms for the coaching modules. For example, when describing the challenge of their first coaching session ST said “We had quite a few like we’re having now difficulties with Internet. So that was probably the hardest thing...” Echoing this sentiment TY recalled “...our first meeting with the chaplain we couldn’t see him at all. I requested we use Teams just because that’s what I’m familiar with from work stuff, but he was not familiar with it.” These challenges, although minor and affecting only two of the couples in the focus group illustrate a need to use familiar platforms for both parties and stable internet to effectively conduct coaching sessions.

Summary of Results

In partial support for the hypotheses, the data suggest the ePREP with couple coaching for RC connected couples may help to improve the domains of communication, and worry for both sexes, and the areas of depression and alcohol use for women with medium to large effect sizes. The other variables such as dyadic adjustment, sexual intimacy, positive bonding, post-traumatic stress, and suicidality were underpowered in the analysis indicating a potential for a small effect in these areas. In consort with the qualitative findings, couple communication skills grew significantly with several participants indicating the use of effective communication in other areas of their lives and three months post training. Couples tended to view the curriculum favorably citing that the online format lending itself to greater security, deeper content coverage than in person events, and flexibility. Couples also reported overall greater investment into the curriculum than in person events. This may be particularly attributed to the need to keep their motivation up to complete the program. When merging the findings, new insights surface. Gains in relationship and psychological health may be attributed to the precipitating factors for couple completing the program following significant life events or relationship distress. Life events and relationship distress can lead to poorer presurvey scores. As discussed by Stanley (2005) lower presurvey scores tend to show greater gains postsurvey in PREP evaluations, but these scores tend to attenuate more quickly over time. These findings suggest that ePREP with couple coaching may be an innovative way to address unmet relational and mental health needs of RC connected couples.

CHAPTER FIVE: DISCUSSION

Merging of Findings

To provide greater insight into the findings, I analyzed the data separately in the quantitative and qualitative strands of the study, then merged the findings (Creswell, 2015). This (QUAN + QUAL) process provides greater insight into the findings.

Communication

As noted by Stanley (2005) initial lower scores for studies on PREP typically lead to larger gains as a result of the intervention (Stanley, 2005), but these initial gains may be shorter lived than healthier functioning couples (Blanchard, Hawkins, Baldwin, & Fawcett, 2009). This ePREP intervention resulted in a large gain in communication skills for participants pre to post assessment. These gains may be attributed to multiple factors which emerged during the focus groups. Several couples who attended this training attended following a major life change or a period of relationship distress. These types of challenges may lead to initial lower scores in communication, as well as to more receptivity to the content. The addition of couple coaching may also have had a significant impact on the couples' ability to communicate well. Couples expressed during the focus groups several items that lent to increases in communication including having a personal coach who is an expert in the topic working with the couple on their communication, having a dedicated time to practice, having an opportunity to ask questions or clarification on specific items described in the curriculum, and suggestions that several participants were using the skills in new context such as with children and at work as much as 30 days post training. Current studies that assess online relationship education with coaching have yet to demonstrate how coaching, in addition to RE, affects communication in other populations indicating that this may be the

first study to document this finding. Furthermore, studies documenting alliance between the trainer and couple may have bearing on this finding although these studies pertain to large group in-person formats of RE (Owen, Antle, & Barbee, 2013). Couples frequently reported favorable interactions with their coaches citing that “they were great,” which aligns with a resonant theme in RE that “the messenger matters;” however further studies are needed in this area to document how and why the alliance between the coach and couple affects change.

Psychological Health

The quantitative analysis revealed statistically significant improvements in worry for both men and women, and depression and alcohol use for women. When taking into account the context of peoples’ lives, namely attending after a significant life event, may be what lead to these findings. People remarked that they attended because “it was the right thing at the right time,” and that there was a major life shift such as having a first child that led to them taking the training. Researchers have noticed a cyclical relationship between relationship satisfaction which may suffer during significant events, and psychological health in the areas of anxiety, depression, negative self-concept, somatization, and hostility whereas an improvement in relationship satisfaction is positively correlated with improvements in the other psychological domains (Uludagli & Pekcetin, 2021). Given this potential for diminished health in these areas, the intervention may lead to a halo effect whereby an impression of improved communication may be leading to inflated opinions of growth in the domain of psychological health. Improving an individual’s ability to communicate effectively during these life challenges may lead to improved positive dyadic coping resulting from the training.

Changes in both psychological and relationship health domains from the quantitative component of this study may also be attributed to individual’s desire to improve. During the

focus groups, people discussed how they wished the coaching, or in some cases “counseling”, sessions could have gone longer than 20 minutes, and longer than the duration of the training. This positive sentiment indicates that people were genuinely interested in improving their relationship and were willing to put forth the effort to improve, and may also allude to why they completed the training in the first place. Furthermore, people remarked that even though they may have been skeptical at the onset of ePREP with coaching that they became fully invested following the first module. This increased level of investment in the training and their alliance with the coach may have been the leading cause for improvements in all assessed areas.

Quantitative

Relationship Health. Of the assessed relationship health measures, communication was the only one to reach significance. Researchers have documented that RE, and PREP specifically, leads to significant positive gains in communication skills with small to medium effect sizes, however, these gains tend to attenuate over the subsequent six-months (Blanchard, Hawkins, Baldwin, & Fawcett, 2013; Owen, Manthos, & Kelley, 2013). The observed effect size of this study are consistent with other studies with a pre/post one group design (e.g., Blanchard, Hawkins, Baldwin, & Fawcett, 2013). These studies typically yield a mean Cohens d of 1.567, which is comparable of the average effect size of $d = 1.8065$, of this study. The gains observed in communication must be interpreted through the lens of the way it was measured in this study. According to Blanchard, Hawkins, Baldwin, and Fawcett, (2013) self-report measures produce smaller effects than observational assessments due to the contextual nature of the measurement and construct. If this is indeed the case, the reported effects of the training on communication may be greater than observed. However, as

Blanchard, Hawkins, Baldwin, & Fawcett report, "...interpreting the meaning of this difference is difficult" (p. 203).

When considering gender differences in communication skill, the finding in the current study is consistent with other studies. According to another study evaluating differences between men and women, gains in communication resulting from RE programing indicate that women benefit more (Halford, Moore, Wilson, Farrugia, & Dyer, 2004). Other studies over the past 10 years have also noticed that gains attributed to various RE programs affect men and women differently in areas such as aggression, self-regulation, parenting stress, and positive/negative communication with one report (Moore, Avellar, Patnaik, Covington, & Wu, 2018) demonstrating women benefiting more in areas of communication (Markman, Hawkins, Stanley, Halford, & Rhoades, 2021). .

If women gain more than men in communication, this could have positive effects in relationships, especially in cases where the female spouse is the pursuer. Stanley, Markman, and Whitton (2002) note that men have a tendency to be more psychologically impacted by negative interactions than their female partners. This suggest that positive improvement in women's communication, especially in the start up of conversations, may have an effect on their male counterpart's responses.

Relationship health null findings. When considering the null findings, several considerations surface. Within the existing literature, relationship education demonstrated effectiveness in improving domains of relationship satisfaction, communication skills, communication conflict, among others (Markman, Hawkins, Stanley, Halford, & Rhoades, 2021). However, these studies typically produce small to medium effect sizes with Cohen's $d < .5$ (Markman, Hawkins, Stanley, Halford, & Rhoades, 2021). Given the small sample of the

current study, effect sizes below Cohen's d of .5 are unlikely to be significant. A second consideration is the condensed time between pre and post test for this study. Existing evaluations typically take place over the course of several weeks (Hunter & Commerford, 2015) unlike the current study where over half of the participants completed the program in a three-day timeframe. These considerations, a small sample and condensed delivery, among others may contribute to the numerous null findings.

Psychological Health. When considering the RE training effects on psychological health, the domains of worry were significant for both men and women, and depression and alcohol use were significant for women only. This finding suggests that women may benefit more from the training in the realm of psychological health than men. This intimates that ePREP with coaching may be an innovative way around some of the barriers such as stigma, and a lack in culturally competent providers of seeking care experienced by military connected couples.

Worry. Doss et al. (2019) observed that as a result of OurRelationship, another online RE program, participants noticed a considerable improvement in their anxiety. This is consistent with the findings of the current study, that both men and women experience a large improvement in the area of anxiety after attending an online RE program. The construct of worry centers on pervasive negative cognitions a person has related to their ability to perform or deliver. This construct is central to generalized anxiety disorder and closely related to depression (Meyer, Miller, & Borkovec, 1990). Within the current study, both men and women reported significant gains in their level of worry pre- to post- test, with women's effect size being twice as large as their male counterparts. This finding suggests that as a result of the training, both men and women noticed improvements in their general feelings

about their ability to perform and deliver in normal life situations (e.g., their ability to completed tasks, feel at ease when starting new tasks, and feeling at ease when working toward the completion of a task). However, the study did not ask specifically about worrying within the relationship (i.e., fear of marital dissolution) indicating more studies are needed to ascertain RE's effect on relational worry.

Depression. Depression continues to be problematic for service members and their families with 21% of service members and 22% of their significant others meeting diagnostic criteria within the National Guard (Gorman, Blow, Ames, & Reed, 2011). Depression's close ties with suicidality also makes it a frequently discussed area to focus efforts within the Department of Defense. Within the current sample the average scores for men met the criteria for moderate depression and women for moderate to severe depression (Sun, et al., 2020). These scores diminished for some pre to post training indicating that RE may be an innovative way to meet a need expressed by 20% of National Guard connected couples who meet the diagnostic criteria for depression as reported by Gorman, Blow, Ames, Reed (2011). This information, when combined with relationship dissolution being the leading cause for suicide in the Department of Defense (Department of Defense, 2021), suggests that RE may be uniquely suited to help mitigate service member suicides for some individuals, although the current study did not have significant findings in this domain. However, RE targets multiple known antecedents to suicide, i.e., relationships, depression, and alcohol use, and these findings suggest that RE may be an important intervention for suicide prevention for some couples. Given the relatively small change in depression and the few numbers of completed suicides per year in the military overall, documenting this effect would remain difficult.

In comparison to other studies documenting the effect of ePREP on depression, the current study demonstrated lower effect sizes. Braithwaite and Fincham, (2009) study documenting the effects of ePREP on college aged students indicated a large effect out to the 10-month follow-up (Hodges' $g = -1.28$). This difference can be attributed to multiple factors including sample characteristics, initial depression levels, timing of pre and post assessment or measure used. The primary difference between these samples is an average age difference of approximately 10 years and college versus working adults. This difference may suggest that the effects of ePREP may be more salient for college aged students. When considering initial levels of depression, the National Guard sample indicated greater levels of depression at pre-test than the college sample who had fewer depressive symptoms at pre-test. This however runs contrary to Stanley et al. (2005) assertion that people with higher levels of distress will benefit more in the short term from these trainings. However, Stanley was referring to gains in relationship health not psychological health. The timing of the assessments may also sway the observed effect for depression. The current study ensured that participants completed the pretest within a few days before starting the curriculum, and the post-test within a few days after completing the training. Braithwaite and Fincham, (2009) however did not publish how closely pre to post surveys were completed making it difficult to ascertain if the timing of pre to post assessment is affecting observed effects. Finally, the measure used may explain the observed effects. Braithwaite and Fincham, (2009) used the Beck Depression Inventory, whereas the current study used the PHQ-9. When evaluating differences in the measures, the Beck Depression Inventory demonstrates better psychometric properties than the PHQ-9 (Titove, et al., 2011) indicating that the college age cohort may

have a more accurate assessment of their depression than those in the current National Guard sample.

Alcohol Use. Alcohol use continues to be problematic for the Department of Defense and the National Guard (Gorman, Blow, Ames, & Reed, 2011). However, despite this known problem, few programs exist for military connected families to get help in this area. The only known program to help with alcohol use within the National Guard is the Limited Use Policy. According to AR 600.63 “The Limited Use Policy exists to encourage Soldiers to proactively seek help” (Department of the Army, 2023; p. 50). This policy only protects service members from administrative actions for seeking help for their alcohol or drug use if they report before there is an incident. If the soldier uses the Limited Use Policy, they will then be referred to a psychoeducational program designed to help in this area. However, the use of this policy is riddled with challenges because use of these services are akin to psychological help and cloaked in stigma, making it less likely for service members to use these services. Furthermore, this program is only for the service member meaning that the significant other remains without support. Thus, the finding that RE improves the area of alcohol use for the significant others as reported in this study, a finding supported by the Roddy, Rhoades, and Doss (2020) study, suggests that RE may be useful in reducing problematic alcohol usage.

When considering the current study’s findings in comparison to an existing study with the same model and curriculum, the effects were greater for reduced alcohol use behaviors. Roddy, Rhoades, and Doss reported effect sizes between $d = .04$ to $d = .11$ depending on the level of distress the couple was in at the time of the training. The observed effects of the current study were five times greater than these. This difference may be attributed to multiple factors such as the population under study with Roddy et al., which focused on people in

poverty, and this study which focused primarily on middle class military families, the measure used, i.e., the PROMIS versus the AUDIT, the dosing and duration of the training, or the length of time between pre and post test measurements. When assessing the differences between assessments, the PROMIS and AUDIT both demonstrate multicollinearity in samples ($r = .79$) and similar results despite the PROMIS being a brief assessment. When looking at differences in the effect sizes, the dosing and duration of the training seems to be the most plausible explanation. Roddy et al. required participants to complete the training and coaching in under two months whereas the current study had an abbreviated average of three days for participants to complete the training and coaching. This greater dosing may be the leading cause for such a profound difference in effect sizes pre to post than the Roddy et al. study. A final consideration is the duration between pre and post assessment following the training. As stated above, the current study ensured participants completed pre and post surveys within a few days before or after the training, however, we do not know the time between pre and post assessment for the Roddy et al. study. This lack of information makes it difficult to ascertain if the duration between assessment and training have a bearing on findings.

Psychological health null findings. This study sought to partially demonstrate the effectiveness of RE on psychological health variables but found null changes in the domains of post traumatic stress and suicide for both men and women and in alcohol use and depression for men. These findings can be attributed to several factors including the small sample size that makes it difficult to observe a medium or small effect, the condensed delivery timeframe, the measures used and their psychometric properties and accuracy, and the condensed delivery of the program. Furthermore, when considering prevalence rates of these variables, it is possible that the sample did not contain enough participants with high

enough scores in these domains to demonstrate effectiveness. Future studies are needed to elucidate REs effect on the domains that did not reach significance in this study.

Qualitative

Life Changes. Throughout the focus groups, participants frequently said that they started the program during significant life events or at a time of relational discord. These findings support Hunter and Commerford's (2015) assertion that RE may be more suited as a selective intervention than the universal intervention proposed by Markman and Rhoades (2012), meaning that couples may be most open to learning during a challenging time in their relationship. However, current discussions centering on prevention efforts suggest that universal prevention efforts always have participants who are needing greater support who are in attendance, and that these participants benefit not only from the training, but also by connecting with additional resources. When considering marketing of these programs though, targeted marketing to couples at transitional stages in life such as the birth of a child, retirement, and deployment may yield couples who are more likely to benefit from the curriculum and who are more motivated to complete the program as discussed by Carroll, Behnke, Smith, Day, and Raburn (2013) and other contemporary sources. This point became evident through the marketing of this program in that many couples considered the program but did not engage. However, if marketing to couples with greater need, the focus groups suggested a need to increase the time for coaching session to more than 20 minutes and to offer it beyond the training period itself.

Engagement. As previously noted, this training may be of greatest benefit to those who recently went through normative life changes or relationship conflict and these individuals, although harder to reach may be more vested in the curriculum. Through the

study over 120 people signed up, yet only 24 couples engaged in and completed the training. When assessing why this was the case, having the motivation to improve one's relationship seems to surface as a reason given by those in the focus groups. What drives this motivation varies from person to person, but the interviews suggest that participants were feeling strain on their relationship and that they truly wanted to work to keep their relationships healthy. However, when considering the training's moderation effects for people in great distress due to things such as infidelity, which this study did not assess, the gains couples would experience likely will attenuate much quicker than their healthy relationship counterparts as noted by Blanchard, Hawkins, Baldwin, and Fawcett (2009). More studies are needed however to discern if this is indeed the case for online relationship education with coaching.

Gender. The only finding that seemed to vary between men and women in the qualitative aspects of the study was that of safety. Three women and no men mentioned that the ePREP curriculum provided greater safety than in person events. This difference may be attributed to several factors such as sex-role socialization, and gendered relational dynamics. Sex-role socialization is a process by which people from infancy are indoctrinated with socially acceptable attributes, how to behave, and so on (Moore, 2023). Within this context, the way that men and women are socialized to behave in specific settings and context may predispose women to feel unsafe due to prying ears, and men to not notice. This may be particularly salient in a military setting where sharing your difficulties in front of others is not something that is valued or encouraged. The online format allowed couples to complete the training in the privacy of their homes.

Flexible Delivery Modalities. In addition to providing greater security for couples to have more in-depth conversations during the training, online delivery provided couples a

significant latitude on when they completed the training. Couples frequently stated that although they were on a three-day order, that they could pause the curriculum when needed to tend to other things or talk about a point with their partner, that they could watch the videos independently when schedules did not align, and that coaches were generous in scheduling times to meet outside of normal office hours. These findings suggest that RE programing needs to consider delivery methods that provide a larger degree of flexibility than is often provided. Existing National Guard programs, for example, require the participants to travel significant distances and take three days away. This delivery method, although compensated, may limit couples from attending especially those with hectic schedules, a theme endorsed by nearly all participants.

Extending Touchpoints. Through the focus groups, several couples suggested a need to have the coach reach out to them following the training. This effort may support the gains couples reported after attending training and may help diminish the amount of attenuation typically observed following RE programs. Future studies should consider including follow-up touch points with participants and assess how maintaining that connection with the couple effects long term improvement.

Program Appeal. The low engagement rate of the current study suggests that more is needed to “sell” the program. The recruiting efforts that consisted of internal emails, memoranda, social media, and word of mouth netted 0.02% of people in the target demographic over two years. This is despite several efforts to entice participation such as gift cards and first rights to the next in person event. The main thing that brought people to complete the program was through externally motivating to receive pay and allowances for three days. This same pay and allowance also afforded participants the opportunity to legally

tell their civilian employer that they could not come into work due to military obligations without fear of reprisal. Participants also noted that even though they may have been skeptical starting the program, the program sold itself after the first module. This suggests that pay and allowances and other financial benefits get people in the door, but it is the curriculum and a desire to improve their relationship during normative change that keeps them motivated and coming back.

Choosing the Right Coaches. Owen et al. (2013) hypothesized that alliance with the trainer would have positive effects on RE training outcomes. Although his hypothesis was not evaluated in this study, the value of a skilled and personable coach resonated throughout the focus groups. This theme is similar to those in the psychological literature evaluating mental health providers alliance with clients. These studies suggest that much of the change experience by the client is largely attributed to the therapeutic alliance they have with their provider (Fredrik, Fredrik, & Rolf, 2013). These findings can help guide future development and the use of coaching models in the RE field, and should be a key consideration when assigning coaches with couples.

Dosing and duration. A hallmark of the current study is its condensed delivery time frame. Developers typically develop RE programs to be delivered over the course of weeks (Hunter & Commerford, 2015), whereas this study is the only known to document RE effectiveness in a condensed three-day time frame. More attention should be dedicated to the optimal dosing and duration of RE programs to find their optimum effectiveness. These future studies can assess the addition of follow up modules or coaching sessions as described by participants of this study to maintain gains attributed to going through the program. These

studies will also provide insights into the way gains attributed to RE programs seem to attenuate at the six-month follow-up.

Real world application. The military continues to have challenges with service members seeking help for psychological health with stigma being a lead challenge (Gaubert, Gubits, Alderson, & Knox, 2012). The current study suggests that RE programming may be one way to work around these challenges and promote psychological wellbeing in a way that is acceptable to service members and their significant others. As such, considerations around funding these programs in the future and continuing to understand their spillover effects into other domains such as physical health (Roddy, Rhoades, & Doss, 2020) remains an important area of focus moving forward. Also, considering the military's current efforts to integrate efforts across programmatic lines and its ardent focus on primary prevention, this program is one that accomplishes these tasks. ePREP with couple coaching works across programmatic lines in its flexible delivery format in that coaching does not require credentialling. Also, from a primary prevention perspective, these programs have demonstrated effectiveness in mitigating domestic violence and other areas directly linked to suicidality within the military. When considering the effect domestic violence and suicide have on unit readiness, this program are one unique way to ensure service members are ready to deploy and do their jobs in the future.

Limitations and Future Research

This is an initial efficacy trial of an online relationship education program with couple coaching for couples connected to a Midwest state National Guard. As such the results should be interpreted accordingly. Given the lack of a control group we are unable to show causations with this study, as such, future evaluations should consider using a control to

further understand causation with this model within the same and similar demographics. This initial efficacy trial contained a small sample that was 96% white, middle class, heterosexual couples with the majority between 30-35 years old. Future trials should include larger samples and more diverse populations including same sex couples, non-binary participants, and racial ethnic groups. Furthermore, future studies should seek to expand these findings to other state National Guard units that may have different cultural expectations for relationship functioning as well as other branches of service such as the Air Force and Navy, and other components such as the active duty and reserves.

The quantitative strand of this study used only self-report measures asking participants to rate their level of relationship satisfaction, communication, sexual intimacy, and psychological health at pre and post training. These assessments may increase the potential for increasing shared variance and reported changes attributed to the evaluation (Roddy, Rhoades, & Doss, 2020). Self-reported measures may also yield different effect sizes than observational measures due to the subjectivity of the concepts under study (Markman & Rhoades, 2012). These same differences in effect sizes could be attributed to study design with more robust designs yielding higher effects (Markman & Rhoades, 2012). Without the inclusion of a control group, gains in the training may furthermore be attributed to other elements not controlled for in the evaluation. Future studies would also benefit from the inclusion of a follow-up assessment to help researchers understand how gains attenuate over time as well as a control group.

The majority of participants completed the intervention in a three-day time period which is in contrast to the developer's intent that the training be completed over a three week or longer timeframe such as the 6-8 week period of previous studies (Braithwaite & Fincham,

2007; 2009; Roddy, Rhoades, & Doss, 2020). Future evaluations should consider the effective dosing and duration of online relationship education and how effects vary to achieve the maximum effect. Also, the majority of participants who completed this training attended an in-person relationship education program at an earlier timepoint, which indicates that findings of this study need to be interpreted as this being a retraining for participants with a base level of training in the same curriculum. Future studies can also consider how the completion of ePREP, prior to an in-person retreat, can move the in-person event away from PowerPoint slide learning to more in-depth experiential activities.

Conclusion

Although studies assessing the associations between gains in relationship and psychological functioning attributed to relationship education are continuing to show positive trends in different demographics (Braithwaite & Fincham, 2007; 2009; Roddy, Rhoades, & Doss, 2020), this is the first known study to partially replicate these findings in the military and the National Guard. This evaluation extends the evidence that online relationship education with couple coaching may be an innovative method to improve psychological health in populations where treatment stigma remains high.

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APPENDIX A: AHARPO CONCURRENCE MEMO



DEPARTMENT OF THE ARMY
OFFICE OF THE SURGEON GENERAL
7700 ARLINGTON BOULEVARD
FALLS CHURCH, VA 22042

DASG-HRPO

22 February 2021

MEMORANDUM FOR Paul Lepley, Michigan State University (MSU), Suite 4
Human Development and Family Studies (HDFS), 552 West Circle Drive, East Lansing,
MI 48824, lepleyp1@msu.edu.

SUBJECT: Army Research Protections Office (AHRPO) Administrative Review of
Protocol titled "Benchmarking success, an evaluation of an electronic relationship
education program for military couples (ePREP)," Principal Investigator (PI): Adrian
Blow, Ph.D., AHRPO Protocol Number a-FY21-03.

1. Review Outcomes

a. The AHRPO administrative review of the above referenced protocol is complete,
and AHRPO concurs with the MSU Institutional Review Board's (IRB) approval of the
protocol.

b. Through the administrative review, AHRPO has ensured that:

(1) Department of Defense (DoD) supported human subjects research (HSR) is
compliant with DoD requirements in DoD Instruction (DoDI) 3216.02. Support is defined
as funds or assistance that are provided by the DoD to non-DoD institutions for HSR
through a grant, contract, or similar arrangement subject to the DFARS or other
applicable DoD regulations, such as the DoD Grant and Agreement Regulations.
Included in this definition is the DoD's provision of assistance to non-DoD institutions,
whether or not through collaboration between DoD and non-DoD institutions, such as
facilities, equipment, personnel (investigators or other personnel performing tasks
identified in the research protocol), access to or information about DoD-affiliated
personnel for recruitment, or data or specimens. The DoD-support of the above
reference activity includes the provision of access to DoD-affiliated personnel for
recruitment as subjects in this project and information about those personnel. DoD
funds were dispersed to Michigan Army National Guard (MIARNG)/Michigan Air
National Guard (MIANG) to purchase curriculum and pay for DoD-affiliated personnel
involved in the study to be on orders. No DoD funds are being provided to MSU.

(2) DoD institutions conducting HSR in collaboration with non-DoD institutions
with comply with all requirements in DoDI 3216.02 pertaining to DoD-conducted
research in accordance with (IAW) DoDI 3216.02, Section 3.5.a(9). The only member of
the MIARNG engaged in the conduct of research is the student investigator who will be

DASG-HRPO

SUBJECT: Research Protections Administrative Review (RPAR) for Protocol "Benchmarking success, an evaluation of an electronic relationship education program for military couples (ePREP)," PI: Adrian Blow, Ph.D.

occupying his dual roles as personnel affiliated with both MSU and MIARNG when conducting research activities. All research activities will be covered by the MSU Federalwide Assurance (FWA).

(3) Documentation of deferral of the administrative review from Air Force Medical Readiness Agency, Air Force Research Oversight & Compliance Division (AFMRA/SGE-C) for the MIANG will be kept on file.

2. Requirements

a. The non-DoD institution must promptly notify the AHRPO of the following:

(1) IRB-approved changes to HSR that involve changes to key investigators or institutions; decreased benefit or increased risk to subjects in greater than minimal risk research as defined in Part 219 of Title 32; addition of vulnerable populations, or DoD-affiliated personnel as subjects from any other groups not addressed in this approval

(2) Transfer of HSR oversight to a different IRB.

(3) Notification by any federal body, State agency, official governing body of a Native American or Alaskan native tribe, other entity, or foreign government that the non-DoD institution's DoD-supported HSR is under investigation.

(4) Any problems involving risks to subjects or others, suspension or termination of IRB approval, or any serious or continuing noncompliance pertaining to DoD-supported HSR.

(5) The results of the IRB's continuing review, if required.

(6) A DoD-supported study's closure.

(7) Change in status when a previously enrolled human subject becomes pregnant, or when the researcher learns that a previously enrolled human subject is pregnant, and the protocol was not reviewed and approved by the IRB in accordance with Subpart B, Subpart 46 of Title 45, CFR.

(8) Change in status when a previously enrolled human subject becomes a prisoner, and the protocol was not reviewed and approved by the IRB in accordance with Subpart C, Subpart 46 of Title 45, CFR.

DASG-HRPO

SUBJECT: Research Protections Administrative Review (RPAR) for Protocol "Benchmarking success, an evaluation of an electronic relationship education program for military couples (ePREP)," PI: Adrian Blow, Ph.D.

b. The non-DOD institution must comply with all applicable sections of DODI 3216.02 that are applicable to the conduct of the DOD-supported research activities.

c. The non-DOD institution must comply with all reporting requirements that may otherwise be applicable.

d. The non-DOD institution make records that document compliance or noncompliance with this issuance accessible for inspection and copying, as determined by DoD Human Research Protections Program (HRPP) personnel, by authorized DoD representatives.

e. Failure to comply with applicable requirements may result in the DoD:

(1) Wholly or partially terminating or suspending the award;

(2) Temporarily withholding payment under the award pending correction of the deficiency;

(3) Disallowing all or part of the cost of the activity or action that is not in compliance; and/or

(4) Contacting publishers of articles that reference the noncompliant HSR.

3. Caution: do not construe this AHRPO memorandum as IRB approval, DoD Institutional approval, or other DoD support agreement. This review confirms only that the above reference project is deemed by AHRPO to be compliant with the requirements identified in the DODI 3216.02.

4. The AHRPO Point of Contact (POC) for any questions regarding this memorandum is the undersigned at 703-681-3115 or megan.m.clippinger2.civ@mail.mil.

CLIPPINGER.ME
GAN.MCFARLAN
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Megan Clippinger, MS, CIP, CCRP
Research Ethics and Compliance Officer
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APPENDIX B: MSU IRB APPROVAL

MICHIGAN STATE UNIVERSITY

Modification / Update APPROVAL Revised Common Rule

January 21, 2021

To: Adrian J Blow

Re: **MSU Study ID:** STUDY00002109
IRB: Social Science / Behavioral / Education Institutional Review Board
Principal Investigator: Adrian J Blow
Category: Expedited 7
Submission: Modification / Update MOD00003562
Submission Approval Date: 1/21/2021
Effective Date: 1/21/2021
Study Expiration Date: **None; however modification and closure submissions are required (see below).**

Title: Benchmarking Success, an evaluation of an electronic relationship education program for military couples (ePREP)



**Office of
Regulatory
Affairs
Human Research
Protection Program**

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Suite 136
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www.hrpp.msu.edu

This submission has been approved by the Michigan State University (MSU) SIRB. The submission was reviewed by the Institutional Review Board (IRB) through the Non-Committee Review procedure. The IRB has found that this study protects the rights and welfare of human subjects and meets the requirements of MSU's Federal Wide Assurance (FWA00004556) and the federal regulations for the protection of human subjects in research (e.g., 2018 45 CFR 46, 21 CFR 50, 56, other applicable regulations).

This letter notes approval of changes to the study's title, protocol, and consent form.

The study title has been changed from "A mixed-methods initial efficacy trial of electronic couple relationship education for National Guard couples" to "Benchmarking Success, an evaluation of an electronic relationship education program for military couples (ePREP)." The changes to the study protocol that were reviewed and approved include revisions to subject privacy, financial compensation, and data management and confidentiality. This letter also notes the approval of changes to the "Privacy and Confidentiality" section in the consent form.

Institutional restrictions to in-person human subject research activities conducted by MSU employees, MSU students, or agents of MSU are in place, but MSU is phasing in human research that has the potential for in-person interactions with participants, using a Tier approach. Restrictions to in-person interactions with human research participants by MSU employees, MSU students, or agents of MSU are in place until the activity is permitted under a Tier and a Human Research Plan for a Safe Return is approved. Visit <http://hrpp.msu.edu/COVID-19/index.html> for the restrictions, Tiers, forms, and the process.

How to Access Final Documents

To access the study's final materials, including those approved by the IRB such as consent forms, recruitment materials, and the approved protocol, if applicable, please log into the Click™ Research Compliance System, open the study's workspace, and view the "Documents" tab. To obtain consent form(s) stamped with the IRB watermark, select the "Final" PDF version of your consent form(s) as applicable in the "Documents" tab. Please note that the consent form(s) stamped with the IRB watermark must typically be used.

Expiration of IRB Approval: The IRB approval for this study does not have an expiration date. Therefore, continuing review submissions to extend an approval period for this study are not required. **Modification and closure submissions are still required (see below).**

Modifications: Any proposed change or modification with certain limited exceptions discussed below must be reviewed and approved by the IRB prior to implementation of the change. Please submit a Modification request to have the changes reviewed.

New Funding: If new external funding is obtained to support this study, a Modification request must be submitted for IRB review and approval before new funds can be spent on human research activities, as the new funding source may have additional or different requirements.

Immediate Change to Eliminate a Hazard: When an immediate change in a research protocol is necessary to eliminate a hazard to subjects, the proposed change need not be reviewed by the IRB prior to its implementation. In such situations, however, investigators must report the change in protocol to the IRB immediately thereafter.

Reportable Events: Certain events require reporting to the IRB. These include:

- Potential unanticipated problems that may involve risks to subjects or others
- Potential noncompliance
- Subject complaints
- Protocol deviations or violations
- Unapproved change in protocol to eliminate a hazard to subjects
- Premature suspension or termination of research
- Audit or inspection by a federal or state agency
- New potential conflict of interest of a study team member
- Written reports of study monitors
- Emergency use of investigational drugs or devices
- Any activities or circumstances that affect the rights and welfare of research subjects
- Any information that could increase the risk to subjects

Please report new information through the study's workspace and contact the IRB office with any urgent events. Please visit the Human Research Protection Program (HRPP) website to obtain more information, including reporting timelines.

Personnel Changes: Key study personnel must be listed on the MSU IRB application for expedited and full board studies and any changes to key study personnel must be submitted as modifications. Although only key study personnel need to be listed on a non-exempt application, all other individuals engaged in human subject research activities must receive and maintain current human subject training, must disclose conflict of interest, and are subject to MSU HRPP requirements. It is the responsibility of the Principal Investigator (PI) to maintain oversight over all study personnel and to assure and to maintain appropriate tracking that these requirements are met (e.g. documentation of training completion, conflict of interest). When non-MSU personnel are engaged in human research, there are additional requirements. See HRPP Manual Section 4-10, Designation as Key Project Personnel on Non-Exempt IRB Projects for more information.

Prisoner Research: If a human subject involved in ongoing research becomes a prisoner during the course of the study and the relevant research proposal was not reviewed and approved by the IRB in accordance with the requirements for research involving prisoners under subpart C of 45 CFR part 46, the investigator must promptly notify the IRB.

Site Visits: The MSU HRPP Compliance office conducts post approval site visits for certain IRB approved studies. If the study is selected for a site visit, you will be contacted by the HRPP Compliance office to schedule the site visit.

For Studies that Involve Consent, Parental Permission, or Assent Form(s):

Use of IRB Approved Form: Investigators must use the form(s) approved by the IRB and must typically use the form with the IRB watermark.

Copy Provided to Subjects: A copy of the form(s) must be provided to the individual signing the form. In some instances, that individual must be provided with a copy of the signed form (e.g. studies following ICH-GCP E6 requirements). Assent forms should be provided as required by the IRB.

Record Retention: All records relating to the research must be appropriately managed and retained. This includes records under the investigator's control, such as the informed consent document. Investigators must retain copies of signed forms or oral consent records (e.g., logs). Investigators must retain all pages of the form, not just the signature page. Investigators may not attempt to de-identify the form; it must be retained with all original information. The PI must maintain these records for a minimum of three years after the IRB has closed the research and a longer retention period may be required by law, contract, funding agency, university requirement or other requirements for certain studies, such as those that are sponsored or FDA regulated research. See HRPP Manual Section 4-7-A, Recordkeeping for Investigators, for more information.

Closure: If the research activities no longer involve human subjects, please submit a Continuing Review request, through which study closure may be requested.

Closure indicates that research activities with human subjects are no longer ongoing, have stopped, and are complete. Human research activities are complete when investigators are no longer obtaining information or biospecimens about a living person through interaction or intervention with the individual, obtaining identifiable private information or identifiable biospecimens about a living person, and/or using, studying, analyzing, or generating identifiable private information or identifiable biospecimens about a living person.

For More Information: See the HRPP Manual (available at hrpp.msu.edu).

Contact Information: If we can be of further assistance or if you have questions, please contact us at 517-355-2180 or via email at IRB@msu.edu. Please visit hrpp.msu.edu to access the HRPP Manual, templates, etc.

Expedited Category. Please see the appropriate research category below for the full regulatory text.

Expedited 1. Clinical studies of drugs and medical devices only when condition (a) or (b) is met.

(a) Research on drugs for which an investigational new drug application (21 CFR Part 312) is not required. (Note: Research on marketed drugs that significantly increases the risks or decreases the acceptability of the risks associated with the use of the product is not eligible for expedited review.)

(b) Research on medical devices for which (i) an investigational device exemption application (21 CFR Part 812) is not required; or (ii) the medical device is cleared/approved for marketing and the medical device is being used in accordance with its cleared/approved labeling.

Expedited 2. Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture as follows:

(a) from healthy, nonpregnant adults who weigh at least 110 pounds. For these subjects, the amounts drawn may not exceed 550 ml in an 8 week period and collection may not occur more frequently than 2 times per week; or

(b) from other adults and children, considering the age, weight, and health of the subjects, the collection procedure, the amount of blood to be collected, and the frequency with which it will be collected. For these subjects, the amount drawn may not exceed the lesser of 50 ml or 3 ml per kg in an 8 week period and collection may not occur more frequently than 2 times per week.

Expedited 3. Prospective collection of biological specimens for research purposes by noninvasive means.

Examples: (a) hair and nail clippings in a nondisfiguring manner; (b) deciduous teeth at time of exfoliation or if routine patient care indicates a need for extraction; (c) permanent teeth if routine patient care indicates a need for extraction; (d) excreta and external secretions (including sweat); (e) uncannulated saliva collected either in an unstimulated fashion or stimulated by chewing gumbase or wax or by applying a dilute citric solution to the tongue; (f) placenta removed at delivery; (g) amniotic fluid obtained at the time of rupture of the membrane prior to or during labor; (h) supra- and subgingival dental plaque and calculus, provided the collection

procedure is not more invasive than routine prophylactic scaling of the teeth and the process is accomplished in accordance with accepted prophylactic techniques; (i) mucosal and skin cells collected by buccal scraping or swab, skin swab, or mouth washings; (j) sputum collected after saline mist nebulization.

Expedited 4. Collection of data through noninvasive procedures (not involving general anesthesia or sedation) routinely employed in clinical practice, excluding procedures involving x-rays or microwaves. Where medical devices are employed, they must be cleared/approved for marketing. (Studies intended to evaluate the safety and effectiveness of the medical device are not generally eligible for expedited review, including studies of cleared medical devices for new indications.) Examples: (a) physical sensors that are applied either to the surface of the body or at a distance and do not involve input of significant amounts of energy into the subject or an invasion of the subject's privacy; (b) weighing or testing sensory acuity; (c) magnetic resonance imaging; (d) electrocardiography, electroencephalography, thermography, detection of naturally occurring radioactivity, electroretinography, ultrasound, diagnostic infrared imaging, doppler blood flow, and echocardiography; (e) moderate exercise, muscular strength testing, body composition assessment, and flexibility testing where appropriate given the age, weight, and health of the individual.

Expedited 5. Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis). (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(4). This listing refers only to research that is not exempt.)

Expedited 6. Collection of data from voice, video, digital, or image recordings made for research purposes.

Expedited 7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b)(3). This listing refers only to research that is not exempt.)

Expedited 8. Continuing review of research previously approved by the convened IRB as follows:

- (a) where (i) the research is permanently closed to the enrollment of new subjects; (ii) all subjects have completed all research-related interventions; and (iii) the research remains active only for long-term follow-up of subjects; or
- (b) where no subjects have been enrolled and no additional risks have been identified; or
- (c) where the remaining research activities are limited to data analysis.

Expedited 9. Continuing review of research, not conducted under an investigational new drug application or investigational device exemption where categories two (2) through eight (8) do not apply but the IRB has determined and documented at a convened meeting that the research involves no greater than minimal risk and no additional risks have been identified.

APPENDIX C: ATAG APPROVAL



DEPARTMENTS OF THE ARMY AND THE AIR FORCE
MICHIGAN ARMY NATIONAL GUARD JOINT FORCE HEADQUARTERS
3411 NORTH MARTIN LUTHER KING JR. BOULEVARD
LANSING MI 48906

NGMI-TAG-AR

18 May 2020

MEMORANDUM FOR Army Human Research Protections Office, 7700 Arlington Blvd.,
Falls Church, VA 22042

SUBJECT: Research Access Permission Evaluating Impact of Strong Bonds on
Relationship and Mental Health

Name of Researcher: Dr. Adrian Blow

Army POC: CH (MAJ) Paul Lepley

Title of Protocol: A Mixed Methods Initial Efficacy Trial of Electronic Couple Relationship
Education (Strong Bonds) within the Michigan National Guard

Protocol Number: STUDY00002109

Date of Protocol: 14 June 2019 (Revised: 15 May 2020)

1. References:

- a. Title 32 Code of Federal Regulations, Part 219, Protection of Human Subjects.
- b. Department of Defense (DOD) Instruction 3216.02, Protection of Human Subjects and Adherence to Ethical Standards in DOD-Supported Research.
- c. Army Regulation 70-25, Protection of Human Subjects in Research.

2. Approval. I hereby approve the request for support described below.

3. Scope. I give permission for National Guard jurisdiction to provide support to the above referenced research via access to the following installation assets and/or personnel: Army and Air personnel on Title 32 status on and off drill who attend a Strong Bonds event.

4. Conditions of approval for research involving human subjects: If this activity is research involving human subjects, this approval is provided on the condition of, and with the understanding that, the researcher's institution will:

- a. Provide to my command any human research protection program-related support necessary to implement and oversee the above referenced activity.
- b. Obtain and comply with the terms of its Federal Assurance for the Protection of Human Research Subjects for this DOD supported research involving human subjects.

NGMI-TAG-AR

SUBJECT: Research Access Permission Evaluating Impact of Strong Bonds on Relationship and Mental Health

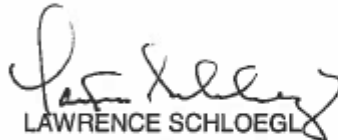
c. Inform me via my point of contact below regarding any relevant unanticipated problems involving risk to subjects or others, or serious or continuing noncompliance.

d. Obtain publication clearance review from my command before publishing or otherwise releasing findings from this research to members of the public (e.g., via abstracts).

5. Affirmation. By endorsing this request, I affirm I have determined the above-referenced activity is mission critical and will be worth the time/cost of Army support. I acknowledge that my office assumes responsibility for ensuring the portion of the activity supported by my area of responsibility meets all applicable regulatory requirements.

6. The POC for this is the action officer, CH (MAJ) Paul Lepley, State Family Life Chaplain at (517) 489-0991 or via email at paul.a.lepley.mil@mail.mil

Encl:
Institutional Review Board Approval
Letter for Above Referenced Study


LAWRENCE SCHLOEGL
Brigadier General, MIARNG
Assistant Adjutant General - Army

APPENDIX D: FUNDING SELECTION LETTER



NATIONAL GUARD BUREAU
111 SOUTH GEORGE MASON DRIVE
ARLINGTON VA 22204-1373

3 April 2020

MEMORANDUM FOR RECORD

Subject: Warrior Resilience and Fitness Innovation Incubator (WRFII) FY20
Cohort - Pilot Program Selection

1. The WRFII aims to identify, select, evaluate, and disseminate evidence-based practices to promote resiliency and prevent harmful behaviors. Congratulations on your selection as an NGB J1 WRFII FY20 Cohort Pilot Program!
2. This year, the Warrior Resilience and Fitness (WRF) Division (NGB-J1-WRF) received many innovative and exciting proposals. A panel of subject matter experts completed a comprehensive review and evaluation of each of this year's proposed programs, and WRF leaders selected the following programs to participate in the FY20 WRFII Cohort and receive technical assistance and/or funding: SafeUTNG Mobile App (UT NG), SASSI-4 Substance Abuse Assessment (OK NG), Prime for Life (NM NG), Breaking Through Barriers (MD/DC/DE NG), Brain Optimization/CERESET (VT NG), Experiential Couples Relationship Education (MI NG), Expedition NG (AR/MO/OK NG), Embedded Resiliency Teams (OR NG), AXE: Attack eXercise through Education; (KY/IN NG), First Line Leader Course – Relational Leadership (OH NG), Risk Reduction Psycho-Education (CT NG), and CSF2 Resource Text Line (IN NG).
3. All participants will be required to participate in monthly Community Calls, provide monthly updates on program status, and submit quarterly data reports. Participants may also have opportunities to be highlighted in legislative engagements, media engagements, and briefs to senior leaders. WRF looks forward to working with each program selected to explore innovative methods to provide care to Service members.
4. Point of contact is MAJ Emily Vernon; emily.1.vernon2.mil@mail.mil.

SECRET

MATT KLEIMAN
CAPT (O6), USPHS
Chief, Warrior Resilience and Fitness
Division/Director of Psychological
Health
National Guard Bureau/J1

APPENDIX E: MINIMAL RISK INFORMED CONSENT

Research Participant Information and Consent Form

Study Title: Benchmarking success, an evaluation of an electronic relationship education program for military couples (ePREP).

Researcher and Title: Dr. Adrian Blow (PI), Paul Lepley, PhD Student

Department and Institution: Human Development and Family Studies, MSU

Contact Information: paul.a.lepley.mil@mail.mil, lepleyp1@msu.edu,

Sponsor: National Guard Bureau

BRIEF SUMMARY

You are being asked to participate in a research study. Researchers are required to provide a consent form to inform you about the research study, to convey that participation is voluntary, to explain risks and benefits of participation including why you might or might not want to participate, and to empower you to make an informed decision. You should feel free to discuss and ask the researchers any questions you may have.

You are being asked to participate in a survey that evaluates an existing on-line marriage enrichment program. Your participation in this study will take about 30 minutes at three time periods for a total of 90 minutes. You will be asked to provide information regarding your relationship with your spouse and psychological health. Your participation in the evaluation is voluntary. You can choose to stop participation at any time and for any reason. You may participate in the relationship education program without taking part in the research study.

The most likely risk of participating in this survey is stress associated with reflecting on your relationship and mental health.

The potential benefits to you for taking part in this survey is gaining a fuller understanding of your relationship with your significant other. Your participation in this study may contribute to the understanding of how electronic delivery of relationship education impacts relationship and psychological health.

PURPOSE OF RESEARCH

The purpose of this research is to understand: how couples learn relationship skills, relationship determinants of psychological wellbeing, and to determine effective ways of improving marital quality within the National Guard.

WHAT YOU WILL BE ASKED TO DO

During this project, you will be requested to complete pre, post, and a six month follow-up survey comprised of questions regarding your relationship and psychological health on an approved secure online platform. A select few will be requested to participate in a focus group lasting about one hour. We will conduct the focus group via an online meeting platform. You will be asked to provide consent at each time point, i.e., before completing a survey or before participation in the focus group. Participation is voluntary and not required to take part in the marriage enrichment program. You may decide to stop participation at any point during the study. You may also skip any questions or section of questions you do not want to answer. If you do participate, your responses will be kept confidential with your responses known only to the research team. Individual responses will not be used in any publications that may arise from this study.

POTENTIAL BENEFITS

Little is known about the relational determinants of psychological wellbeing for National Guard families. Your participation in this survey helps us understand how electronic delivery of relationship education improves relationship and psychological health of participants. This information can then be used to help improve innovative ways to help families cope with stress associated with service within the National Guard..

POTENTIAL RISKS

Relationships can be tricky at times and when participating in the survey, unresolved issues may arise. These issues may result in heightened emotions, psychological distress, or feelings of discomfort during any point in the survey.

PRIVACY AND CONFIDENTIALITY

Your privacy is of the utmost importance to the research team. You will be asked not to use any names if you chose to participate in the focus group. Please be advised that although the researchers will take every precaution to maintain confidentiality of the data, the nature of focus groups prevents the researchers from guaranteeing confidentiality. The researchers will remind participants to respect the privacy of fellow participants and not repeat what is said in the focus group to others. Audio recordings of the focus group and all survey data will be stored in an approved system locked by a minimum of two locks, and encrypted. The audio recordings will be destroyed as soon as they are transcribed with any identifying information redacted. Your research data will be labeled with a unique code and linked with your

spouse's responses. The code key that links your unique code to your contact information will be stored on an encrypted spreadsheet separate from your survey. Per MSU HRPP policy 4-7, records shall be retained for at least 3 years after completion of the research. The Department of Defense and State/Federal representatives may access these records to ensure regulatory compliance. All results from this study will be shared in aggregate form with no identifying information. All material collected will be stored electronically and protected by a minimum of two locks using two factor identification maintained on a certified system to protect personal identifiable information and meet HIPPA standards. The primary researcher will maintain control of all collected information if they move on to a different institution from MSU. De-identified summary information may be shared with MIARNG leadership to inform future marriage enrichment programs.

YOUR RIGHTS TO PARTICIPATE, SAY NO, OR WITHDRAW

You have the right to say no to participate in the research. You can stop at any time after it has already started. There will be no consequences if you stop and you will not be criticized. You will not lose any benefits that you normally receive. Again, your participation in the marriage enrichment program is not contingent upon contributing to the research.

COSTS AND COMPENSATION FOR BEING IN THE STUDY

The intent of this project is to improve the relationships of National Guard couples. Non-military, DoD, or Federal Employee, spouses may receive up to \$150.00 in gift cards for completing three surveys and a focus group.

RESEARCH RESULTS

If you would like to receive information on the results of the overall study, please feel free to contact the Chaplain (MAJ) Paul Lepley at 517.481.7935. Chaplain Lepley is a PhD Student at MSU who is working on this project in collaboration with the Human Development and Family Studies Department at MSU.

FUTURE RESEARCH

Information that identifies you will be removed from the survey responses. After such removal, the surveys could be used for future research studies or distributed to another investigator for future research studies without additional informed consent from you.

CONTACT INFORMATION

If you have concerns or questions about this study, such as scientific issues, how to do any part of it, or to report an injury, please contact the researcher Paul Lepley: paul.a.lepley.mil@mail.mil, 517.481.7935.

If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 517-355-2180, Fax 517-432-4503, or e-mail irb@msu.edu or regular mail at 4000 Collins Rd, Suite 136, Lansing, MI 48910.

DOCUMENTATION OF INFORMED CONSENT.

By clicking continue below you voluntarily agree to participate in this research study.

You will be given a copy of this form to keep.

APPENDIX F: SCIENTIFIC REVIEW

Scientific Review of STUDY00002109

Name of Principal Investigator: Paul Lepley

Name of Sponsor: Adrian Blow

Study Title: A mixed methods initial efficacy trial of electronic couple relationship education for National Guard couples.

Name of Scientific Reviewer: Adam Farero

I understand and agree that the information I will have access to in order to perform this scientific review is to be held confidential. I further acknowledge and agree that I will not, without appropriate authorization from the PI, copy or release such privileged or confidential information to anyone outside of the review process or use such information for any purpose not directly related to the scientific review of this study. I agree that I will not copy/reproduce or otherwise utilize any documentation or written information received unless it is for the express purpose of conducting this scientific review.

Digitally sign inside this box.



☐ Curriculum Vitae (CV) of scientific reviewer attached.

THE SCIENTIFIC REVIEW SHOULD ELABORATE THE FOLLOWING:

Description

1. Essential details of the experimental questions in particular the relationship to the existing literature.

Is the use of ePREP an effective and feasible means for delivery of this couple relationship education program to National Guard soldiers and their partners? Specifically, is it linked to better relational and psychological outcomes? Existing literature indicates that ePREP is effective in a civilian sample, but it has yet to be tested in military couples.

2. The context of the research questions within the protocol/detailed test plan.

In this mixed methods study design, the quantitative data will answer to the effectiveness of ePREP, while qualitative data can provide insight on its feasibility.

3. The experimental design, its suitability and adequacy of the statistical power.

Sample size of 80 calculated based on adequate power and effect size.

4. An analysis of risks/benefits of the proposed research as it relates to the study design.

As this method of relationship education has already proven effective and low-risk in another demographic, the risks for this study appear low also. Coaches are specially trained in order to de-escalate any potential conflict among couples. Potential benefits include positive relationship and mental health outcomes for soldiers and their partners.

5. The adequacy of the method of analysis and validity of the study design.

The mixed method concurrent design should allow qualitative data to help explain and provide context to the quantitative findings on relational and psychological outcomes. This should be an effective approach at answering whether or not ePREP will work well in this population.

The description should detail the protocol to the degree a novice IRB member may make an informed decision as to the scientific value of the proposed research.

Scientific Critique (Strengths, weaknesses and recommendations):

1. Significance - Does this study address a problem of scientific and/or practical importance? Has an adequate literature search been conducted?

Yes, the study of how to improve individual and relational wellbeing in National Guard couples is very relevant. The current literature also lacks the implementation of ePREP in military couples.

2. Approach - Are the conceptual framework, design, methods, and analysis adequately developed, well-integrated, and appropriate to the aims of the study? What are the strengths? What are the weaknesses? Is the statistical analysis sufficient?

Yes, again a mixed methods approach will allow for an in-depth and rigorous analysis of the effectiveness of ePREP in National Guard couples. Incorporation of both quantitative and qualitative data is a strength of this design.

3. Feasibility - Will the environment in which the work will be conducted, be conducive to success of the effort?

Yes, participation will occur primarily online or via smartphone. In-person participation will be encouraged by involving pay for service members and a gift card incentive for partners.

4. Investigator Team -Are the PI and team properly trained and is the work appropriate to the experience level?

Yes – as Paul is a chaplain in the MI National Guard, he is uniquely suited to conduct research with this population. Likewise, Dr. Blow has extensive experience with data collection in National Guard soldiers and their partners, as he did this with his recently funded grant from the Department of Defense.

5. Safety Issues - Have the known risks been fully researched and do the methods within the study design limit such risks and ensure subject safety is appropriate?

Yes, this study design has minimal risk to participants, and preventive measures are in place to mitigate these risks (e.g. trained coaches).

APPENDIX G: EMAIL MARKETING EXAMPLE

Email Marketing:

Dear Service Member and Spouse,

Thank you for your interest in attending the online Strong Bonds online marriage enrichment program. I'm sending this email to you as a potential ePREP participants to invite you to take part in a companion research study to help up understand how these programs impact relationship and psychological health in a global pandemic for military couples.

Your participation in research is voluntary and all collected information confidential. You can withdraw participation in the research at any time. Your participation in the research will not impact your participation in the Strong Bonds online marriage enrichment program nor would it impact your relationship with the National Guard. Any Service Member may participate in the program without being part of the research.

If willing, your participation in the research would consist of completing three surveys lasting approximately 30 minutes each before, after, and six-months post training. These three surveys will ask questions regarding your relationship and mental health. Non-military, DoD, or Federal Employee, spouses may receive up to \$50.00 in gift cards for completing surveys.

Your research participation would also involve allowing the information from your online marriage enrichment program sessions to be included in the research analysis. A select few research participants will also be requested to participate in a focus group which will inform both the researchers about how to improve the Strong Bonds program via a NIH approved COVID 19 mitigation standards.

Sincerely,

Paul Lepley
Full-time State Support Chaplain
Ph: 517.481.0991

APPENDIX H: EXAMPLE OF POST ASSESSMENT MEASURES

Informed Consent

You are being asked to participate in a research study. The purpose of the study is to better understand couple relationship education learning modalities, and relational determinants of psychological health outcomes. You will be asked to complete a pre, post, three subsequent follow-ups about your relationship with your spouse, and psychological health. Your participation is voluntary. You can skip any question you do not wish to answer or withdraw at any time. You must be 18 or older to participate. If you have any questions please contact Adrian Blow, PhD, at 517.432.7092. You indicate that you voluntarily agree to participate in this research study by submitting the survey.

Personal Identification

1. Please write the first two letters of your current last name, and two number year of your birth.

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2. Please write the first two letters of your spouse's current last name, and the two number year of their birth. This will help us link your responses.

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3. To help us send your six-month follow-up survey, please record the email you most often use below. This information will remain confidential and destroyed after the project has finished.

--

4. Please provide the best phone number to reach you at in the space provided below.

--

Post Training Satisfaction

What obstacles, if any, made it difficult to attend the virtual Strong Bond's program? Please bubble all that apply.

- ☐ Actively discouraged by someone of higher rank to attend
- ☐ Lack of childcare to complete modules/coaching
- ☐ Spouse getting time-off from his/her job
- ☐ Too many unit responsibilities to take time off
- ☐ Technology issues
- ☐ Wife not interested in attending
- ☐ Husband not interested in attending
- ☐ Other (if so what?) _____

What kind of things made it possible for you to attend the Strong Bond's program? Please bubble all that apply.

- ☐ Encouragement from those of higher rank in the military
- ☐ Help with childcare
- ☐ Flexibility at work/ release from duty time
- ☐ Support from fellow soldiers/ co-workers, family, and friends
- ☐ Wives enthusiasm
- ☐ Husband's enthusiasm
- ☐ Flexibility with the program
- ☐ Other (if so what?) _____

Please use the following scale to describe the impact of the Strong Bonds program on you, your relationship, and your family.

① ② ③ ④ ⑤ ⑥ ⑦
Less True No Change More True

As a result of attending Strong Bonds, _____ "

1.) I have confidence that my partner and I can talk about things constructively.

① ② ③ ④ ⑤ ⑥ ⑦

2.) I will invest more time in our relationship.

① ② ③ ④ ⑤ ⑥ ⑦

3.) I think my partner and I will work more as a team.

① ② ③ ④ ⑤ ⑥ ⑦

4.) I have greater confidence that our marriage will stay strong through a deployment.

① ② ③ ④ ⑤ ⑥ ⑦

5.) I have greater confidence that we will have a smoother transition as a couple when my spouse returns from deployment.

① ② ③ ④ ⑤ ⑥ ⑦

6.) Overall, I am satisfied with my experiences in the Strong Bonds program.

① ② ③ ④ ⑤ ⑥ ⑦

7.) Overall, I found the Strong Bonds program helpful for my relationship.

① ② ③ ④ ⑤ ⑥ ⑦

8.) I would recommend Strong Bonds to a friend.

① ② ③ ④ ⑤ ⑥ ⑦

9.) What aspect of Strong Bonds did you find most or least helpful?

Most Helpful:

Least Helpful:

How enjoyable did you find the following aspects of Strong Bonds?

①	②	③	④	⑤	⑥	⑦
Least Enjoyable			Somewhat Enjoyable			Most Enjoyable

10.) Learning and practicing the communication skills with a coach.

① ② ③ ④ ⑤ ⑥ ⑦

11.) Meeting other couples.

① ② ③ ④ ⑤ ⑥ ⑦

How helpful did you find the following aspects of Strong Bonds?

①	②	③	④	⑤	⑥	⑦
Least Enjoyable			Somewhat Enjoyable			Most Enjoyable

12.) Spending time with my spouse.

① ② ③ ④ ⑤ ⑥ ⑦

13.) Learning about the principles of a healthy marriage (for example: commitment, sacrifice, forgiveness)

① ② ③ ④ ⑤ ⑥ ⑦

14.) Recommitment ceremony (leave blank if did not attend the ceremony)

① ② ③ ④ ⑤ ⑥ ⑦

15.) How would you rate the quality and effectiveness of your Strong Bonds leader?

- Needs Improvement
- Fair
- Good
- Very Good
- Excellent

16.) In addition to the Chaplain Leaders, were there other people coaching on the communication skills?

- Yes

- No

If yes, did you get any coaching on the communication skills?

- Yes
- No

If yes, how would you rate the quality and effectiveness of the coaching?

- Needs
- Improvement
- Fair
- Good
- Very Good
- Excellent

17.) Any other feedback on your experience with the study or Strong Bonds?

Relationship Satisfaction

The following questions help us determine how Strong Bonds impacts relationship skills, and ultimately help us understand what relationship elements the program impacts the most. When answering the following questions, please think about the relationship with your current spouse only.

Markman Measures

Positive activity scale Agree	Strongly Disagree					Strongly				
We have a lot of fun together.	①	②	③	④	⑤					
We have a satisfying sensual or sexual relationship.	①	②	③	④	⑤					
We regularly have great conversations where we just talk as good friends.	①	②	③	④	⑤					
My partner supports me and my personal goals.	①	②	③	④	⑤					
My partner does little things for me that show me he/she is thinking about me.	①	②	③	④	⑤					
My partner really listens to me when I have something important to say.	①	②	③	④	⑤					
My partner and I are very close.	①	②	③	④	⑤					
My partner is my best friend.		①	②	③	④					
⑤										
My partner listens to me and gives me emotional support when I'm stressed about something other than us.	①	②	③	④	⑤					

Confidence Scale

①	②	③	④	⑤	⑥	⑦					
Strongly Disagree		Neither Agree Nor Disagree				Strongly Agree					
I believe we can handle whatever conflicts will arise in the future.					①	②	③	④	⑤	⑥	⑦
I feel good about our prospects to make this relationship work for a lifetime.					①	②	③	④	⑤	⑥	⑦

We can handle just about anything that comes our way.

① ② ③ ④ ⑤ ⑥ ⑦

I am very confident when I think of our future together.

① ② ③ ④ ⑤ ⑥ ⑦

We have the skills a couple needs to make a marriage last.

① ② ③ ④ ⑤ ⑥ ⑦

Relationship Scale

Please answer each question below by indicating how strongly you agree or disagree with the idea expressed. You can circle any number from 1 to 7 to indicate various levels of agreement or disagreement with the idea expressed. Please try to respond to each item.

① ② ③ ④ ⑤ ⑥ ⑦
Strongly Disagree Neither Agree Nor Disagree Strongly Agree

My relationship with my partner is more important to me than almost anything in my life.

① ② ③ ④ ⑤ ⑥ ⑦

I want this relationship to stay strong no matter what rough times we encounter.

① ② ③ ④ ⑤ ⑥ ⑦

I think a lot about what it would be like to be married to (or dating) someone other than my partner.

① ② ③ ④ ⑤ ⑥ ⑦

I like to think of my partner and me more in terms of "us" and "we" than "me" and "him/her."

① ② ③ ④ ⑤ ⑥ ⑦

My career (or job, studies, homemaking, childrearing, etc.) is more important to me than my relationship with my partner.

① ② ③ ④ ⑤ ⑥ ⑦

My relationship with my partner is clearly part of my future life plans.

① ② ③ ④ ⑤ ⑥ ⑦

I do not want to have a strong identity as a couple with my partner.

① ② ③ ④ ⑤ ⑥ ⑦

I may not want to be with my partner a few years from now.

① ② ③ ④ ⑤ ⑥ ⑦

CST 11 Subscale of Positive Options

① ② ③ ④ ⑤ ⑥ ⑦

Almost Never

Occasionally

Almost Always

When discussing issues, I allow my partner to finish talking before I respond.

① ② ③ ④ ⑤ ⑥ ⑦

When discussing issues, I summarize what my partner says in order to make sure I understand him/her.

① ② ③ ④ ⑤ ⑥ ⑦

When our discussions begin to get out of hand, we agree to stop them and talk later.

① ② ③ ④ ⑤ ⑥ ⑦

When discussing a problem, we try to focus on that problem rather than drifting into other problem areas.

① ② ③ ④ ⑤ ⑥ ⑦

When discussions threaten to boil over, we stop them and take a time out.

① ② ③ ④ ⑤ ⑥ ⑦

When we discuss relationship issues, I show my partner that I am listening by repeating back what I heard.

① ② ③ ④ ⑤ ⑥ ⑦

When discussing an issue, my partner and I both take responsibility to keep us on track.

① ② ③ ④ ⑤ ⑥ ⑦

Even though he/she may feel differently, my partner is able to see things from my point of view.

① ② ③ ④ ⑤ ⑥ ⑦

My partner tries to understand my feelings and concerns.

① ② ③ ④ ⑤ ⑥ ⑦

When discussing problems, we work together as a team until we have a solution.

① ② ③ ④ ⑤ ⑥ ⑦

When discussing possible solutions to a problem, I feel like there is a lot of give and take.

① ② ③ ④ ⑤ ⑥ ⑦

Communication Skills (nFORM)

During the past month, how often did the following happen?

1. My partner/spouse and I were good at working out our differences.
 - ☐ Never
 - ☐ Hardly ever
 - ☐ Sometimes
 - ☐ Often
2. I felt respected even when my partner/spouse and I disagreed.
 - ☐ Never
 - ☐ Hardly ever
 - ☐ Sometimes
 - ☐ Often
3. When my partner/spouse and I had a serious disagreement, we discussed our disagreements respectfully.
 - ☐ Never
 - ☐ Hardly ever
 - ☐ Sometimes
 - ☐ Often
4. During arguments, my partner/spouse and I were good at taking breaks when we needed them.
 - ☐ Never
 - ☐ Hardly ever
 - ☐ Sometimes
 - ☐ Often
5. When my partner/spouse and I argued, past hurts got brought up again.
 - ☐ Never
 - ☐ Hardly ever
 - ☐ Sometimes
 - ☐ Often
6. My partner/spouse understands that there are times when I do not feel like talking and times when he/she does.
 - ☐ Never
 - ☐ Hardly ever
 - ☐ Sometimes
 - ☐ Often

Communication Conflict (nFORM)

1. My partner/spouse was rude or mean to me when we disagreed.
 - ☐ Never
 - ☐ Hardly ever
 - ☐ Sometimes
 - ☐ Often
2. Our arguments became very heated.
 - ☐ Never
 - ☐ Hardly ever
 - ☐ Sometimes
 - ☐ Often
3. Small issues suddenly became big arguments.
 - ☐ Never
 - ☐ Hardly ever
 - ☐ Sometimes
 - ☐ Often
4. My partner/spouse and I stayed mad at one another after an argument.
 - ☐ Never
 - ☐ Hardly ever
 - ☐ Sometimes
 - ☐ Often
5. My partner/spouse blamed me for his/her problems.
 - ☐ Never
 - ☐ Hardly ever
 - ☐ Sometimes
 - ☐ Often
6. My partner/spouse yelled or screamed at me.
 - ☐ Never
 - ☐ Hardly ever
 - ☐ Sometimes
 - ☐ Often

Trust and Intimacy (nFORM)

How much do you agree or disagree with the following statements about your partner/spouse?

1. I trust my partner/spouse completely.
 - ☐ Strongly agree
 - ☐ Agree
 - ☐ Disagree
 - ☐ Strongly disagree
2. My partner/spouse knows and understands me.
 - ☐ Strongly agree
 - ☐ Agree
 - ☐ Disagree
 - ☐ Strongly disagree
3. I can count on my partner/spouse to be there for me.
 - ☐ Strongly agree
 - ☐ Agree
 - ☐ Disagree
 - ☐ Strongly disagree
4. I feel appreciated by my partner/spouse.
 - ☐ Strongly agree
 - ☐ Agree
 - ☐ Disagree
 - ☐ Strongly disagree
5. My partner/spouse expresses love and affection toward me.
 - ☐ Strongly agree
 - ☐ Agree
 - ☐ Disagree
 - ☐ Strongly disagree

Sexual Intimacy (PAIR)

1. I am satisfied with our sex life.
 - ☐ Strongly disagree
 - ☐ Disagree
 - ☐ Neither agree nor disagree
 - ☐ Agree
 - ☐ Strongly agree
2. Our sexual activity is not just routine.
 - ☐ Strongly disagree
 - ☐ Disagree
 - ☐ Neither agree nor disagree
 - ☐ Agree
 - ☐ Strongly agree
3. I am able to tell my partner when I want sexual intercourse.
 - ☐ Strongly disagree
 - ☐ Disagree
 - ☐ Neither agree nor disagree
 - ☐ Agree
 - ☐ Strongly agree
4. I do not “hold back” my sexual interest because my partner makes me feel uncomfortable.
 - ☐ Strongly disagree
 - ☐ Disagree
 - ☐ Neither agree nor disagree
 - ☐ Agree
 - ☐ Strongly agree
5. Sexual expression is an essential part of our relationship.
 - ☐ Strongly disagree
 - ☐ Disagree
 - ☐ Neither agree nor disagree
 - ☐ Agree
 - ☐ Strongly agree
6. My partner seems interested in sex.
 - ☐ Strongly disagree
 - ☐ Disagree
 - ☐ Neither agree nor disagree
 - ☐ Agree
 - ☐ Strongly agree

Psychological Health

The following set of questions ask about your psychological health and alcohol use behaviors. These items help us to identify any changes in psychological health and substance abuse behaviors following a Strong Bonds training.

Depression (Physicians Checklist 9)

Over the last two weeks, how have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day
Little interest or pleasure in doing things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling down, depressed, or hopeless.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trouble falling or staying asleep, or sleeping too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling tired or having little energy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poor appetite or overeating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling bad about yourself- or that you are a failure or have let yourself or you family down.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trouble concentrating on things, such as reading the newspaper or watching television.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Moving or speaking so slowly that other people could have noticed. Or, the opposite-being so fidgety or restless that you have been moving around a lot more than usual.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thought that you would be better off dead, or of hurting yourself in some way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you are in mental distress please call 1-800-273-8155 (confidential) or consult the Chaplain or Behavioral Health Officer.

Alcohol Use (AUDIT)

Please check the response that best reflects your pattern of alcohol consumption.

1. How often do you have a drink containing alcohol?
 - ☐ Never (go to next section)
 - ☐ Monthly or Less
 - ☐ 2-4 times per month
 - ☐ 2-3 times per week
 - ☐ 4 or more times per week
2. How many standard drinks do you have on a typical day when you are drinking? (A standard drink is, for example, one 12 oz. beer, a 6 oz. glass of wine, or a 1.5 oz. shot of hard liquor)
 - ☐ 1 or 2
 - ☐ 3 or 4
 - ☐ 5 or 6
 - ☐ 7 to 9
 - ☐ 10 or more

Please answer the following:

	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
How often do you have six or more standard drinks on one occasion?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often during the last year, have you found that you were not able to stop drinking once you had started?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often during the last year, have you failed to do what was normally expected of you because of drinking?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often during the last year have you had a feeling of guilt or remorse after drinking?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How often during the last year have you been unable to remember what happened the night before because you had been drinking?

☐ ☐ ☐ ☐ ☐

Please answer the following:

	No	Yes, but not in the last year	Yes, during the last year
Have you or anyone else been injured because of your drinking?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Worry (Penn State Worry Questionnaire or PSWQ)

Rate each of the following statements on a scale of 1 (not at all typical of me) to 5 (very typical of me). Please do not leave any items blank.

	1. Not at all typical of me.	2	3	4	5. Very typical of me.
If I do not have enough time to do everything, I do not worry about it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My worries overwhelm me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not tend to worry about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Many situations make me worry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know I should not worry about things, but I just cannot help it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I am under pressure, I worry a lot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am always worrying about something.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I find it easy to dismiss worrisome thoughts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As soon as I finish one task, I start to worry about everything else I have to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I never worry about anything.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When there is nothing more I can do about a concern, I do not worry about it anymore.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have been a worrier all my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I notice that I have been worrying about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Once I start worrying, I cannot stop.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry all the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry about projects until they are all done.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Post-traumatic Stress (Post-traumatic Stress Checklist 5)

Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

1. Repeated, disturbing, and unwanted memories of the stressful experience?
 - ☐ Not at all
 - ☐ A little bit
 - ☐ Moderately
 - ☐ Quite a bit
 - ☐ Extremely
2. Repeated, disturbing dreams of the stressful experience?
 - ☐ Not at all
 - ☐ A little bit
 - ☐ Moderately
 - ☐ Quite a bit
 - ☐ Extremely
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?
 - ☐ Not at all
 - ☐ A little bit
 - ☐ Moderately
 - ☐ Quite a bit
 - ☐ Extremely
4. Feeling very upset when something reminded you of the stressful experience?

- Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?
 - Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
 6. Avoiding memories, thoughts, or feelings related to the stressful experience?
 - Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
 7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?
 - Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
 8. Trouble remembering important parts of the stressful experience?
 - Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
 9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?
 - Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
 10. Blaming yourself or someone else for the stressful experience or what happened after it?
 - Not at all
 - A little bit

- Moderately
 - Quite a bit
 - Extremely
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?
- Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
12. Loss of interest in activities that you used to enjoy?
- Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
13. Feeling distant or cut off from other people?
- Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?
- Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
15. Irritable behavior, angry outbursts, or acting aggressively?
- Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
16. Taking too many risks or doing things that could cause you harm?
- Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
17. Being “super alert” or watchful or on guard?
- Not at all
 - A little bit

- Moderately
 - Quite a bit
 - Extremely
18. Feeling jumpy or easily startled?
- Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
19. Having difficulty concentrating?
- Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely
20. Trouble falling or staying asleep?
- Not at all
 - A little bit
 - Moderately
 - Quite a bit
 - Extremely

Suicide (Suicide Behavior Questionnaire Revised or SBQ-R)

1. Have you ever thought about or attempted to kill yourself?
 - Never
 - It was just a passing thought
 - I have had a plan at least once to kill myself but did not try it
 - I have had a plan at least once to kill myself and really wanted to die
 - I have attempted to kill myself, but did not want to die
 - I have attempted to kill myself, and really hoped to die
2. How often have you thought about killing yourself in the past year?
 - Never
 - Rarely (1 time)
 - Sometimes (2 times)
 - Often (3-4 times)
 - Very often (5 or more times)
3. Have you ever told someone that you were going to commit suicide, or that you might do it?
 - No
 - Yes, at one time, but did not really want to die
 - Yes, at one time, and really wanted to die

- Yes, more than once, but did not want to die
- Yes, more than once, and really wanted to do it
- 4. How likely is it that you will attempt suicide someday?
 - Never
 - No chance at all
 - Rather unlikely
 - Unlikely
 - Likely
 - Rather likely
 - Very likely

If you feel like you are at risk for suicide please reach out to one or more of the following resources for help:

National Suicide Prevention Hotline: 1-800-273-8255

National Guard Chaplains Office: 1-517-481-7935

APPENDIX I: THE COACH COMMITMENT

Couple coaching in conjunction with online relationship education is an effective model to improve relationship, psychological health, and health behaviors (Roddy, Rhoades, & Doss, 2020). As a pilot to demonstrate this effect within the National Guard, Michigan has received funds from NGB to pilot the Electronic Prevention and Relationship Education Program (ePREP) with couple coaches. Following I outline the commitment for these coaches which includes projections on time, training, and feedback.

Time

Everything takes time. As such, coaches are reimbursed on a paid order status to: 1. complete all requisite training as defined by the manager of this project (approximately 2 weeks); 2. conduct four 20 minute couple coaching sessions for each couple assigned to the coach (as planned with the couple (approximately 5.5 hours); 3. willing to provide candid feedback on the program (one day at conclusion of the pilot); 4. attend all coaching consulting sessions with the larger team (six sessions at one hour each).

Training

As mentioned above, training is a hallmark of this pilot. All coaches are expected to be well versed in PREP. This includes having been through ePREP, traditional PREP Certification, PREP for Therapy, and consultation hours. This time is spread over the course of the pilot program.

Feedback

The intent of pilot programs is to benchmark program efficacy, acceptability, and feasibility. All coaches are expected to provide honest feedback on how the program is working. The intent is to identify areas of improvement, and inform higher echelons of electronic delivery of couple relationship programs. The program manager reports this information to the NGB J1 WRF II, who reports program reports to the Joint Chiefs of Staff, U.S. Congress, and the Secretary of Defense.

If you have questions, please reach out to me as needed.