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Characteristics of U.S. Army Reserve and National Guard couples who use family readiness programs

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Abstract

Use of family readiness programs (FRPs) by military families is not well understood. This work uses the Gelberg-Andersen Behavioral Model to identify characteristics of Reserve and National Guard (R/NG) couples who access FRPs. Data are from Operation: SAFETY, a study of R/NG soldiers and partners. Logistic regression models examined odds of accessing FRPs based on predisposing, enabling, and need factors. Greater length of military service, greater presence of non-military social ties, and civilian partner reports of adequate support during deployment were associated with higher likelihood of accessing FRPs. Results provide information on FRP utilization and may help inform outreach efforts.

Keywords

military; Reserves; National Guard; family; deployment; reintegration; Gelberg-Andersen Behavioral Model; readiness

The United States military's Reserve Component includes personnel in the Reserve and National Guard (R/NG) and represents 38% of the total military force (U.S. Department of Defense, 2016). The R/NG population warrants attention in behavioral health research, not only because of its significant presence but also because of the unique military experiences that differentiate R/NG from other military personnel. According to the Department of Defense's Total Force Policy, R/NG personnel typically have civilian jobs and also participate in mandatory weekend military training once per month at nearby military installations, which differs from active duty personnel who are involved in full-time military service (Carafano, 2005; La Bash, Vogt, King, & King, 2009). However, while R/NG personnel spend relatively limited time engaging in military training and service, they are still eligible for deployment (Department of Defense, 2008). Starting with Operation Desert

Storm up to the current conflict climate, R/NG personnel have become increasingly relied upon as part of the combat force (Gouré, 2013; Jacobs, 2001). As of 2010, R/NG comprised one-third of all deployed personnel, with Army R/NG representing the largest portion (66.5%) of total deployed R/NG (Institute of Medicine, 2013).

The military experience of R/NG personnel is associated with unique stressors for the overall family unit. Since R/NG personnel typically hold full-time civilian jobs, R/NG families deal with income loss during a soldier's deployment and post-deployment financial issues related to a soldier having difficulty resuming his or her civilian job (Griffith, 2015). R/NG families must also cope with the stress of balancing military and civilian lives (Castaneda et al., 2008; Griffith, 2010). The stress from such a balance is likely even further heightened by the ever-changing Reserve and National Guard force identities, as deployments have increased and missions have changed over the past three decades (Griffith, 2011). Families also must deal with deployment-related and civilian job-related mental health consequences for the military family member (Cerde et al., 2014; Riviere, Kendall-Robbins, McGurk, Castro, & Hoge, 2011; Thomas et al., 2010) and deployment-related mental health consequences for the civilian partner (de Burgh, White, Fear, & Iversen, 2011; Trone et al., 2017). Additionally, compared to active duty families, R/NG families have more difficulty reintegrating after return from deployment (Hinojosa, Hinojosa, & Hognas, 2012; Kelly, Berkel, & Nilsson, 2014; Kline, Ciccone, Falca-Dodson, Black, & Losonczy, 2011). They are also less integrated into military life and less likely and willing to access unit and formal support programs (Burrell, Durand, & Fortado, 2003). R/NG families deal with stresses related to all phases of deployment due to issues such as reduced notice of an impending deployment and less access to support services (Lapp et al., 2010).

With family stresses in mind, research has demonstrated the need for pre-deployment preparation as well as support of families during deployment and during post-deployment reintegration (Kelley, 2002; Vest, 2014). Family readiness programs (FRPs) are family support resources that exist to address wellbeing and can be particularly useful for R/NG families. FRPs are voluntary support programs that are offered both in person and virtually and can include support groups, class sessions, and online forums for sharing information with and between families. Such programs are offered at or near military installations but are also available in locations where installations may not be located to support R/NG families with personnel who live further away from their assigned training location. FRPs such as the Army's family readiness groups are often sponsored by specific commands, and organized and led by family members within given units (Sahlstein Parcell & Maguire, 2014). Though the program formats are variable, FRPs are family-focused, emphasizing tenets such as effective communication and resiliency against stress. FRPs can also be used to link families to resources for education, employment, health, and general family wellness (Scherrer et al., 2014). They are also often focused on distributing official command-related information to families and helping with family problem-solving (U.S. Army FRG Leader's Handbook, 2010).

Such programs are available for families who have experienced a deployment, but can also be accessed by those who have not. The use of FRPs in light of deployment is important to consider in the context of Army R/NG personnel, given that they have become increasingly

relied upon during wartime (Jacobs, 2001). A study of deployment experiences of R/NG families found that approximately 41% of spouses and 45% of service members used FRP-type programs (Castaneda et al., 2008). Qualitative research examining effects of one type of FRP, the Army's family readiness groups, provides evidence that they can be a source of coping and shared identity for civilian partners during their soldiers' deployment (Sahlstein Parcell & Maguire, 2014). Even in light of the importance of FRPs in helping to maintain civilian partner and family resilience, there has been limited research to assess utilization and impact.

One way to remedy this gap in the literature is to use a behavior model to understand what family characteristics are associated with use of FRPs. One such theory of health behavior is the Gelberg-Andersen Behavioral Model (G-ABM), which has been widely used to examine reasons for seeking a variety of healthcare treatments and services (Babitsch, Gohl, & von Lengerke, 2012). The G-ABM conceptualizes predisposing, enabling and need factors in light of health service use (Gelberg, Andersen, & Leake, 2000). Predisposing factors include sociodemographic characteristics, such as education and family size, and other pre-existing factors that shape potential need; enabling factors are characteristics that promote use or make resources more accessible, such as income and community characteristics; and need factors are illnesses or impairments that necessitate use (Andersen, 1995, 2008; Gelberg et al., 2000).

The G-ABM is of particular interest because it extends the original Andersen Behavioral Model to apply to vulnerable populations and considers potential vulnerabilities within each of the three factor types (Gelberg et al., 2000). It is also a parsimonious model (Epstein, 1984), with broad factor types that are flexible enough to account for characteristics that are specific to military families, such as deployment characteristics. The model may also be considered more comprehensive and explanatory in predicting utilization compared to the Theory of Reasoned Action, which focuses on beliefs and attitudes that proximally influence treatment seeking (Fishbein & Ajzen, 1975; Mojtabai, Eaton, & Maulik, 2012). The G-ABM has been previously used in military research to consider challenges from vulnerabilities along with other factors when assessing utilization of mental health and substance use treatment (Wooten et al., 2017; Wooten et al., 2013). An earlier version of the G-ABM has been suggested for the assessment of voluntary community-based program utilization (Mitchell & Krout, 1998), but no research on the military to date has examined use of community-based FRPs. With this in mind, the goal of the current study was to use the G-ABM as a framework to examine the influence of predisposing, enabling, and need factors on accessing FRPs among Army R/NG families. Specifically, the current study sought to examine: 1) the association of individual factors with accessing FRPs, 2) the relationship of all factors combined with accessing FRPs, and 3) whether there were differences in which factors were associated with accessing FRPs when stratifying by whether couples had previously experienced deployment.

Methods

Study Design

The current study uses baseline data from an ongoing longitudinal study, Operation: SAFETY (Soldiers and Families Excelling Through the Years), which is broadly focused on the health of R/NG soldiers and their partners (Heavey, Homish, Goodell, & Homish, 2017; Hoopsick, Vest, Homish, & Homish, 2017; Kozlowski, Homish, & Homish, 2017; Vest, Heavey, Homish, & Homish, 2017). The study examines the health and wellbeing of soldiers and partners separately as well as the interdependent impact of individuals' health behaviors on one another; thus, only couples where both partners completed the survey were included. A total of 418 couples had both partners who completed the baseline survey, and the current analyses are based on a subset from 411 heterosexual couples.

Recruitment and enrollment.—The Operation: SAFETY study recruited participants over a 15-month period (Summer 2014 to Fall 2015) from 47 Army R/NG units in upstate New York. Recruitment was limited to New York because of potential variation in National Guard units across different states, as the National Guard forces are state assets and not federal assets. During training weekends, the study recruitment team provided 10-minute study overviews, explaining project goals. Confidentiality procedures were discussed, including an assurance to soldiers that the military would not know who participated and that their partner would not learn of their responses. Additionally, participants were informed that a certificate of confidentiality was obtained from the US Department of Health and Human Services to protect participant information from being disclosed in response to court or other legal orders. After all questions were answered, soldiers were invited to complete a one-page screening form to assess six eligibility criteria. All soldiers were provided an information packet to take home and share with their partner to accurately explain the study. Following the in-person screening, all soldiers were contacted within one week regarding their eligibility status.

Eligibility for the parent study (and the current sub-study) was based on the following six inclusion criteria: (1) the couple is married or living as if married; (2) one member of the couple is a current Army R/NG soldier; (3) the soldier is between the ages of 18 and 45; (4) both partners are able to speak and understand English; (5) both partners are willing and able to participate; and (6) both partners have had at least one alcoholic beverage in the past year (i.e., if both members did not have even one drink in the past year, they were excluded). Figure 1 displays how the final sample for Operation: SAFETY was derived. A total of 1653 soldiers completed screening forms during recruitment into the study, and 922 did not qualify (579 were single, 329 failed on one or more of the eligibility items, and 14 submitted incomplete forms). The resulting 731 couples were considered eligible for the study, and of those, 572 (78%) agreed to participate, with 472 couples (83% of those agreeing) completing at least a partial baseline survey. A final total of 418 couples had both partners who completed the entire baseline survey. Differences were examined between those that passed and enrolled versus those who passed and did not enroll based upon the screening form. Couples where a civilian partner screened for the study ($n = 11$) were less likely to

enroll ($p < .001$). No differences existed on the soldier health screening variables between those who enrolled and completed versus those who enrolled and did not complete.

Importantly, demographic and military characteristics of the soldiers in the overall study are representative of Reserve and Guard soldiers nationally (Department of Defense, 2016). The majority of soldiers are male (84%, $n = 371$); however, the female numbers are similar to national estimates (16%, $n = 70$). The overall soldier sample is diverse, with 19% of males and 18% of females belonging to a racial or ethnic minority group. Approximately 31% of soldiers have a bachelor or advanced degree, slightly higher than the national estimate (23%) for the Army Reserve and National Guard. On average, soldiers were around 30 years old (M_{Males} : 31.7 (standard deviation [SD] = 6.6); M_{Females} : 29.9 ($SD = 5.4$)). Approximately 61% of soldiers in the study have ever been deployed, which is consistent with national estimates of deployment history for Reserve and Guard soldiers (Institute of Medicine, 2010). Units were diverse in terms of soldier's military occupational specialties (MOS) and included combat, engineer, medical, logistics, and support roles.

Survey administration.—After eligibility was determined and consent was obtained from both the soldiers and their partners, participation involved completing three online surveys (baseline and two yearly follow-ups), covering a variety of health topics. Baseline surveys took approximately 2.5 hours to complete. Soldiers and their partners each received incentive checks for their completed baseline surveys. It is common for R/NG soldiers to live great distances from their unit location. It is also possible for soldiers to be deployed during the study. For these reasons, the surveys were administered through a secure HIPAA-compliant online survey programming software StudyTrax™ which allowed for data encryption. Soldiers and partners who lived in the Western New York area were invited to the State University of New York at Buffalo Center for Health Research (UBCHR) to complete their online surveys. Partners could come in together or separately, and were each given a private room with a touchscreen computer on which to complete their survey. Informed consent was conducted with a research staff member. For soldiers and partners outside of the Western New York area, separate login information was sent to each partners' email. Participants created their own unique password and then were given an online version of the same consent form. Once the participant completed the consent process, s/he gained access to the survey. The State University of New York at Buffalo's Institutional Review Board and the Army Human Research Protections Office, Office of the Chief – Army Reserve, and the Adjutant General of the National Guard all approved and vetted the Operation: SAFETY protocol.

Study Sample

The current analyses are based on a cross-sectional subsample from the overall Operation: SAFETY study. Starting from 411 heterosexual couples in the overall study, the subsample of interest consists of 262 couples who have 1) ever experienced a deployment of either partner during the current partnership or 2) never experienced a deployment ($n_s = 132$ and 130, respectively). Couples were excluded if the soldier partner had experienced all of his or her deployments before the current partnership ($n = 149$). Table 1 provides a summary of partner-level characteristics of the study sample by gender. Of the total couples, 244 (93.1%)

had a male soldier, and 18 (6.9%) had a female soldier. The average age of participants was 31.2 ($SD = 6.8$) years for male partners and 30.2 ($SD = 7.0$) years for female partners. The majority of the sample was non-Hispanic White (80.6% of male partners and 85.9% of female partners), with at least some college education or a college degree (85.5% of male partners and 87.4% of female partners). Approximately two-thirds of couples were married (63.7%; $n = 167$), and one-third was living as married. About half of male soldiers had been deployed at least 1 time (53.3%; $n = 130$), and 16.7% ($n = 3$) of female soldiers had ever been deployed.

Measures

The G-ABM was used to frame predisposing, enabling, and need-based factors that may be associated with family use of FRPs. Previous civilian and military literature was used to select specific influence variables, and all variables are measured at the family level in light of FRPs being focused on wellbeing and readiness of the entire family unit.

Predisposing factors.—Possible family-level predisposing factors included the length of marital partnership (including time married and/or living as married), the number of children in the household, and the highest level of education attained by either partner. Based on the distribution of the variable for number of children, observations with three or more children were categorized as 3+. Military-contextual predisposing factors included the partnership type in terms of which partner was in the military, either male-soldier or female-soldier; length of military service of the military partner; and number of deployments experienced by the family, categorized as 1, 2, and 3+.

Concerning vulnerabilities, the analyses examined predisposing factors related to mental and behavioral health issues currently being experienced by either partner. Such issues included hazardous drinking, illicit drug use, and posttraumatic stress disorder (PTSD) symptoms. Current hazardous alcohol use was assessed using the Alcohol Use Disorders Identification Test (AUDIT), a 10-item measure with a summed scale score from 0 to 40 to indicate drinking severity levels (Cronbach's $\alpha_{\text{males}} = 0.76$ and $\alpha_{\text{females}} = 0.80$) (Babor & Del Boca, 1992). A binary variable was used to indicate scores of 8 or higher reflecting hazardous or harmful drinking (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993). Past three-month illicit drug use was assessed using the NIDA Modified ASSIST 2.0 (WHO Assist Working Group, 2002) and was captured as any frequency of use beyond none at all of any of the following: cannabis, cocaine, methamphetamine, inhalants, hallucinogens, street opioids, and/or any other specified drugs. Past 30-day PTSD symptom severity was measured on a continuous scale using the PTSD Checklist (PCL-5), a 20-item instrument to measure increasing PTSD symptom severity through scores ranging from 0 to 80 (Cronbach's $\alpha_{\text{males}} = 0.95$ and $\alpha_{\text{females}} = 0.95$) (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Weathers et al., 2013). The PCL-5 is an adaptation of the original that has been adapted to map on to DSM-5 criteria (Bovin et al., 2015).

Enabling factors.—Possible family-level enabling factors included family income (measured in \$10,000 increments) and the extent of civilian social support, recorded as the maximum number of non-military-affiliated social ties, individuals who were considered

“important to [the respondent] in one way or another during the past year,” reported by either partner. Military-contextual enabling variables included service member rank (enlisted or officer) and presence of military social support, represented by the maximum number of current military-affiliated social ties for either partner. Similar to what was done for number of children, maximum number of non-military and military ties were considered continuous variables up to 16+ and 4+, respectively.

The current study also examined enabling factors specifically for couples that had experienced at least one deployment. Such factors included combat exposure, pre-deployment training and preparation of the soldier partner before the most recent deployment, and support from family and friends reported by both soldiers and civilian partners during the most recent deployment. All three factors were assessed using subscales from the Deployment Risk and Resilience Inventory-2 (DRRI-2), which assesses risk and resiliency factors associated with military deployments and stressors (Vogt, Smith, King, & King, 2012). The combat exposure subscale contains 17 items about a range of combat- and trauma-related situations that are each scored from 1 to 6, for a total score range of 17 to 102 and with greater scores indicating greater exposure to combat (Cronbach’s $\alpha_{\text{males}} = 0.94$ and $\alpha_{\text{females}} = 0.90$). The pre-deployment training and preparation subscale is comprised of 10 items examining soldiers’ perceptions of readiness and is scored from 10 to 50, with greater scores indicating greater perception of preparedness (Cronbach’s $\alpha_{\text{males}} = 0.93$ and $\alpha_{\text{females}} = 0.88$). The family and friend support subscale measures the extent to which the soldier or civilian partner feels emotionally supported and able to count on family and friends during the most recent deployment (Cronbach’s $\alpha_{\text{military males}} = 0.95$ and $\alpha_{\text{military females}} = 0.94$). The subscale is comprised of eight items, with total scores that range 8 to 40, with greater scores indicating greater perceived support. Although the subscale is originally intended for military personnel, it was adapted to be used to measure civilian partners’ social support experience during the deployment of their military partner (Cronbach’s $\alpha_{\text{civilian males}} = 0.99$ and $\alpha_{\text{civilian females}} = 0.97$).

Need factors.—This study assessed aspects of marital wellbeing as need factors. Such factors included marital satisfaction, intimate partner violence (IPV), and closeness to divorce. Marital satisfaction was measured from each partner’s perspective using the Marital Adjustment Test (MAT). The MAT is a 15-item scale scored from 2 to 158, with greater scores indicating more satisfied marriages (Cronbach’s $\alpha_{\text{males}} = 0.76$ and $\alpha_{\text{females}} = 0.79$) (Locke & Wallace, 1959). The average MAT score between the two partners was used in the current analyses to examine how satisfaction may influence FRP use. Presence of any past-year physical IPV was assessed using the associated subscale of the Conflict Tactics Scales (Cronbach’s $\alpha_{\text{males}} = 0.86$ and $\alpha_{\text{females}} = 0.85$) (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). Response variables for the subscale were dichotomized to indicate any experience of directed physical victimization (husband-to-wife or wife-to-husband) on a range of scale-specific items. Endorsement of physical IPV was obtained through maximum reporting (report by one or both partners). Relationship instability was measured using a module adapted from the Closeness to Divorce Scale (Heyman, 2001). Participants reported on eight true-false items over the course of the past year, measuring how close a couple is to divorcing. Items were summed with an overall score range from 0 to 8, with greater scores

indicating a couple being closer to divorce (Cronbach's $\alpha_{\text{males}} = 0.81$ and $\alpha_{\text{females}} = 0.85$). The maximum score between the two partners was used in the analyses.

Dependent variable.—The outcome of interest, access of FRPs, was a binary variable, operationalized as current or previous use of any of four family-based readiness programs by the respondent, spouse/partner, or other immediate family member. These programs included two targeted specifically for Army R/NG families (“Army Reserve Family Programs” and “Strong Bonds”), one for families of all branches of the R/NG (“Yellow Ribbon Reintegration Program”), and one for military families more broadly (“Family Readiness Group”).

Statistical Analyses

Analyses are cross-sectional using baseline data from the Operation: SAFETY study and use regression models to understand family-level factors associated with accessing FRPs. Specifically, logistic regression models were used to initially examine the univariate relationships between each of the predisposing, enabling, and need variables and the odds of ever accessing FRPs. Then, a multiple variable logistic regression model containing all variables for the three factors was used to examine effects on the likelihood of accessing FRPs. Since FRPs are available for use by both deployed and non-deployed couples, and because factors associated with accessing FRPs might be different between the two, analyses were stratified by whether or not a couple had ever experienced a deployment during the current partnership. The choice to stratify was further supported by comparison of descriptive statistics across deployment status using t-tests and chi-square tests. Stata 14.2 was used in all analyses (StataCorp, 2015).

Results

The objective of this work was to use the G-ABM to examine the influence of predisposing, enabling, and need factors on accessing FRPs. Analyses first examined differences in characteristics of interest across deployment status because FRPs are available to R/NG families who have been deployed as well as those who have not. Table 2 displays these comparisons for the 262 couples that had either ever or never experienced deployment during the current relationship. Of the 132 couples who experienced deployment, 90 (68.2%) reported accessing FRPs, while a significantly lower proportion of the 130 total non-deployed couples did the same ($n = 41$ or 31.5%; $p < .001$). Concerning predisposing factors, length of partnership was significantly greater for deployed couples (10.8 vs. 4.9 years, $p < .001$), as was number of children (1.8 vs. 1.0, $p < .001$). For military characteristics, significantly fewer deployed couples had female military members (1.5% vs. 12.3%, $p = .001$), and non-deployed couples had significantly shorter average length of military service (5.4 vs. 12.6 years, $p < .001$). For mental and behavioral health vulnerabilities, the data showed fewer reports of either partner recently using illicit drugs in deployed couples compared to non-deployed (4.6% vs. 13.1%, $p = .015$). For enabling factors, a significantly larger percentage of deployed couples were in upper income brackets compared to non-deployed couples ($p < .001$), and deployed couples reported significantly greater numbers of important military-affiliated social ties compared to non-deployed (1.6

vs. 1.3, $p < .001$). Concerning need factors, non-deployed couples reported greater marital satisfaction compared to deployed couples (116.8 vs. 109.0, $p = .009$).

Univariate and multiple variable logistic regression models were used to examine the individual and joint influence of predisposing, enabling, and need factors on access of FRPs. Results by each factor type are examined below for both non-deployed and deployed couples.

Predisposing Factors

According to the multiple variable model for non-deployed couples (Table 3), couples with a female soldier were marginally less likely to access FRPs, compared to non-deployed couples with a male soldier (odds ratio [OR] = 0.29, 95% CI [0.07, 1.20], $p = .087$). Also for non-deployed couples, illicit drug use in the past 3 months by either partner was associated with marginally significantly higher odds of accessing FRPs, compared to non-deployed couples with no recent drug use (OR = 2.99, 95% CI [0.86, 10.46], $p = .086$). For both deployed and non-deployed couples, with each additional year of service by the current military partner, the odds of accessing FRPs increased by 13-14% (respectively, OR = 1.13, 95% CI [1.02, 1.26], $p = .020$; and OR = 1.14, 95% CI [1.02, 1.26], $p = .019$).

Enabling Factors

Concerning enabling factors for deployed couples, every additional important non-military social tie was associated with a 16% greater likelihood of accessing FRPs (OR = 1.16, 95% CI [1.01, 1.34], $p = .039$). Additionally, also within deployed couples, civilian partners who reported feeling more adequately supported by family and friends during their soldier partner's deployment were significantly less likely to access programs (OR = 0.91, 95% CI [0.84, 0.99], $p = .027$).

Need Factors

Although a marginally significant univariate relationship was observed between any physical IPV and greater likelihood for accessing FRPs specifically in deployed couples (OR = 2.50, 95% CI [0.99, 6.31], $p = .052$), no significant relationships were observed for any of the marital factors in the final multiple variable regression models.

Discussion

The findings from the current study suggest a number of factors that appear to influence the likelihood of an Army R/NG couple accessing FRPs. Notably, for both deployed and non-deployed couples, the predisposing influence of length of military service was positively related to accessing FRPs. Importantly, average length of military service and prevalence of FRP use are both significantly greater for deployed couples compared to non-deployed (Table 2), which may speak to the possibility that military service and not deployment status is a primary driver in likelihood of FRP use. However, when examining factors associated with the likelihood of accessing FRPs in deployed and non-deployed couples separately, longer military service was a significant factor for both. Regardless of deployment status, the longer a couple is connected with the military, the more likely they are to learn about and

become familiar with available services and resources. Thus, couples that have spent fewer years associated with the military may be less integrated and less likely to know about FRPs as a source of support.

For deployed couples only, the enabling factors of number of current non-military social ties as well as social support during deployment were influencing factors on FRP access. Greater numbers of current non-military social ties were associated with a greater likelihood of accessing FRPs, and greater social support experienced by the civilian partner during deployment was related to lower likelihood. These findings speak to the possibility that regardless of the number of important ties in deployed families' lives, if those ties are not military-connected, they may not understand the deployment experience or may not be able to anticipate the nature of support that is needed. However, regarding the negative association with the civilian partner's deployment-related social support and using FRPs, our findings appear to complement other research showing that interpersonal support during deployment is beneficial for positive outcomes (Skomorovsky, 2014). If a non-deployed partner feels adequately supported during the time of deployment, he or she may not feel the need to seek support from external services such as FRPs after a deployed partner returns.

Overall, these findings might be addressed by the idea of family socialization into the military environment being a major driver for whether FRPs are accessed. Regardless of deployment status, families who have been associated with the military longer may be more likely to know about and use FRPs. Additionally, longer military service may be connected with greater likelihood that families would establish relationships with military social ties. With military ties in mind and focusing on deployment status, non-deployed families may have shorter time being affiliated with the military and thus less time to establish relationships with military-connected social ties. The resulting surplus of non-military ties does not appear to have a significant impact on non-deployed family FRP access. On the other hand, deployed families who have shorter lengths of service, or have longer lengths of service but lack military socialization for some other reason, may have more non-military ties or inadequate deployment support and be in more need of FRP services, especially in light of post-deployment stressors.

Concerning the lack of significance in relationships between using FRPs and both predisposing mental health factors as well as need factors, a couple of explanations arise. One possibility is that families experiencing problems with mental health, substance use, or marital relations might be already accessing other forms of treatment in place of FRPs. Additionally, although FRPs can provide information about healthcare resources, issues of stigma relating to the social undesirability and illegality of such issues as substance use and IPV might motivate an affected family to avoid a community setting and instead privately seek treatment or do nothing (Kim et al., 2016; Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2009). Perceived stigma surrounding mental health may also influence families with affected R/NG members to avoid engaging in FRPs. Reluctance to seek treatment from mental health providers may result from the concern that mental health issues would be documented on military records (Gorman, Blow, Ames, & Reed, 2011), and the same types of concerns may influence personnel and families to also keep such issues away from FRPs. Additionally, perhaps the lack of significant influence of need factors is related to the

discretionary or voluntary nature of utilizing a community-based FRP. With his original behavioral model, Andersen noted the possibility that need factors play larger roles in influencing services when the need is urgent or immediate, and predisposing and enabling factors may contribute more toward use of services that are more voluntary, such as family readiness programs (Andersen, 1968). This idea has been shown in other research on discretionary service use (Mitchell & Krout, 1998; Wolinsky et al., 1983), and is in line with the current study's findings.

The findings should be viewed in light of a few study limitations. First, findings do not account for a given couple's amount of exposure to available programs and whether FRPs had been accessed once or on a continuous basis. It is also likely that some couples did not access FRPs because they negatively perceived the programs as rumor mills or because they had negative previous experiences with FRPs. Previous research has shown that such programs can have negative impacts on family members through increased stress from serving in a leadership role or being ostracized for not fitting the mold of a "traditional family" (Lapp et al., 2010; Sahlstein Parcell & Maguire, 2014); thus, some couples might have accessed if there had been no perceived negativity or stigma barriers. Even still, this study represents an initial effort to examine family characteristics that may influence any use of FRPs, and future work should conduct more in-depth assessment regarding timing and barriers to access. Since the G-ABM suggests that service use influences subsequent predisposing, enabling, and need factors, which, in turn, then influence use and so on (Andersen, 1995), it is possible that use affects subsequent factors and use. Future research efforts in this area may focus on longitudinal examination to clarify temporality and frequency, and provide a long-term perspective on FRP effectiveness and whether family-level factors for use change over time. In addition, the variables that were fit to each of the three G-ABM factors were based on what was included in the Operation: SAFETY study. As such, the current study was unable to examine other variables that have been suggested as affecting health service utilization in the military, such as health beliefs, negative attitudes, and perceptions of military culture and stigma (Fishbein & Azjen, 1975; Kim et al., 2016; Pietrzak et al., 2009). Even with the absence of such variables, the study had multiple variables to address each of the conceptual pieces of the G-ABM. Next steps for using the G-ABM would be to include attitudes, health beliefs, and stigma as predisposing factor variables that may influence access of FRPs. Finally, the findings are only generalizable to Army Reserve and National Guard partnerships, and future research should focus on Active Duty families, as well as single-parent and same-sex families.

This study's main strength is that it contributes new information to military research concerning utilization of services and resources. Findings shed light on characteristics of military families, both deployed and not, that may or may not access FRPs, representing an initial effort to understand who utilizes voluntary military family programs. Additionally, the current operationalization of the G-ABM is novel in that it helps to pinpoint family-level influencing factors instead of traditional individual-level factors. This is important since a main goal of FRPs is the wellbeing and readiness of the entire family unit, even in light of improvements that are needed to make programs more inclusive of partners from non-traditional families (i.e. no children, male civilian partners with a female soldier partner) (Sahlstein Parcell & Maguire, 2014).

Given this study's findings, focus should be placed on connecting families that have spent less time in military life or who are less socialized within the military setting with services that they may not otherwise know about. Additionally, although deployment-related support of the civilian partner by family and friends may result in less access of FRPs for support purposes, there may be other benefits that are being missed. Thus, messaging to R/NG families about FRPs should highlight the additional benefits such as access to health and educational resources. This study's findings may also be used to identify underserved families, such as dual-military couples and those with military wives and civilian husbands, and link them to resources (Goodman et al, 2013; Huffman & Payne, 2006; Kelley, Doane, & Pearson, 2011).

Family readiness programs have been promoted by the military to help bolster wellbeing and resilience among service members and family members in light of the military mission. While FRPs have been largely understudied in military research, this study helps to establish understanding of family characteristics that contribute to accessing FRP services. Further understanding of influencing predisposing and need factors will help to provide a comprehensive profile of families who should be targeted for more prescribed referral to such programs.

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Figure 1.
Sampling Frame of Operation: SAFETY

Table 1

Study Sample Characteristics (N=262), % (n) or M (SD)

Characteristics	Males	Females
Soldiers	93.1% (244)	6.9% (18)
Age (years)	31.2 (6.8)	30.2 (7.0)
Race/Ethnicity		
Non-Hispanic white	80.6% (208)	85.9% (220)
Non-Hispanic black	5.4% (14)	3.5% (9)
Hispanic	8.1% (21)	5.1% (13)
Other ^a	5.8% (15)	5.5% (14)
Education level ^b		
High school graduation	14.5% (38)	12.6% (33)
Some college	55.0% (144)	40.1% (105)
College or beyond	30.5% (80)	47.3% (124)
Partner status		
Married	63.7% (167)	
Living as married	36.3% (95)	
Years served ^c	9.3 (6.2)	5.8 (4.4)
Ever deployed ^c	53.3% (130)	16.7% (3)
Number of deployments ^c	1.7 (0.9)	1.7 (0.6)

Note. Totals within categorical variables may not equal 262 due to missing data.

^aIncludes American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, more than one race, and other specified races.

^b“Some College” includes Trade school, Associate degrees, and other two-year technical degrees, and “College or beyond” includes four-year degrees and graduate degrees.

^cEstimates based on partners who are either current or former.

Table 2
Comparisons of Factor Characteristics Across Couple Deployment Status, % (n) or M (SD)

Characteristics	Deployed n = 132	Non-Deployed n = 130
Predisposing		
Access of family readiness programs	68.2% (90)	31.5% (41)
Length of partnership (years)	10.84 (5.71)	4.92 (4.42)
Number of children	1.79 (1.31)	0.96 (1.27)
Education		
High school & some college	43.9% (58)	49.2% (64)
College or beyond	56.1% (74)	50.8% (66)
Military partnership type		
Male-soldier	98.5% (130)	87.7% (114)
Female-soldier	1.5% (2)	12.3% (16)
Length of military service (years)	12.59 (5.73)	5.38 (4.08)
Number of deployments		
1	55.8% (72)	
2	26.4% (34)	NA
3+	17.8% (23)	
Hazardous alcohol use	18.9% (25)	23.9% (31)
Illicit drug use	4.6% (6)	13.1% (17)
PTSD symptom severity	15.85 (14.19)	14.63 (15.86)
Enabling		
Family income		
<19,999	0.0% (0)	12.5% (16)
20,000-59,999	34.9% (46)	48.4% (62)
60,000-99,999	39.4% (52)	29.7% (38)
100,000+	25.8% (34)	9.4% (12)
Number of non-military social ties	8.10 (3.43)	7.77 (3.40)
Rank		

Characteristics	Deployed <i>n</i> = 132	Non-Deployed <i>n</i> = 130
Enlisted	82.6% (109)	88.5% (115)
Officer	17.4% (23)	11.5% (15)
Number of military social ties	1.64 (0.97)	1.27 (0.62)
Combat exposure	27.49 (12.51)	NA
Deployment preparation and training	38.42 (8.63)	NA
Deployment support		
Soldier	34.98 (6.14)	NA
Civilian partner	30.86 (9.23)	NA
Need		
Marital satisfaction	109.04 (24.53)	116.76 (22.76)
Any physical IPV	28.0% (37)	29.2% (38)
Proximity to divorce	1.86 (2.01)	1.92 (2.03)

Note. “NA” indicates that the variable was specifically deployment-related and was not included in the “non-deployed” models. PTSD = posttraumatic stress disorder; IPV = intimate partner violence. Significance relates to overall tests of differences across couple deployment status.

*
 $p < .05$.

**
 $p < .01$.

 $p < .001$.

Table 3

Univariate and Multiple Variable Associations with Accessing FRPs

Characteristics	Univariate Models		Multiple Variable Models	
	Deployed <i>n</i> = 132 OR (95% CI)	Non-Deployed <i>n</i> = 130 OR (95% CI)	Deployed <i>n</i> = 132 OR (95% CI)	Non-Deployed <i>n</i> = 130 OR (95% CI)
Predisposing				
Length of partnership	1.04 (0.98, 1.11)	1.08 (0.99, 1.19) ⁺	1.03 (0.94, 1.13)	1.05 (0.94, 1.17)
Number of children	1.07 (0.80, 1.41)	1.28 (0.96, 1.72) ⁺	0.68 (0.42, 1.11)	1.17 (0.79, 1.73)
Education (HS & some college = Ref)				
College or beyond	0.81 (0.39, 1.71)	1.58 (0.75, 3.35)	0.64 (0.21, 1.92)	1.81 (0.71, 4.60)
Military partnership type ^a (Male-soldier = Ref)				
Female-soldier	0.46 (0.03, 7.63)	0.27 (0.06, 1.28) ⁺	--	0.29 (0.07, 1.20) ⁺
Length of military service	1.08 (1.02, 1.16) [*]	1.16 (1.06, 1.26) ^{**}	1.13 (1.02, 1.26) [*]	1.14 (1.02, 1.26) [*]
Number of deployments (1 = Ref)				
2	1.39 (0.56, 3.45)	NA	1.40 (0.47, 4.23)	NA
3+	1.14 (0.41, 3.16)		0.82 (0.15, 4.33)	
Hazardous alcohol use	0.99 (0.39, 2.53)	0.70 (0.28, 1.73)	0.85 (0.27, 2.68)	1.05 (0.40, 2.73)
Illicit drug use ^a	2.41 (0.27, 21.49)	1.22 (0.42, 3.56)	--	2.99 (0.86, 10.46) ⁺
PTSD symptom severity	1.00 (0.97, 1.03)	1.00 (0.97, 1.02)	0.99 (0.95, 1.03)	0.99 (0.97, 1.02)
Enabling				
Family income ^b	1.15 (0.92, 1.45)	1.22 (0.98, 1.52) ⁺	--	--
Number of non-military social ties	1.13 (1.02, 1.26) [*]	1.00 (0.89, 1.11)	1.16 (1.01, 1.34) [*]	0.98 (0.87, 1.11)
Rank (Enlisted = Ref)				
Officer	1.08 (0.41, 2.88)	2.08 (0.70, 6.23)	1.24 (0.35, 4.34)	1.37 (0.37, 5.08)
Number of military social ties	1.08 (0.71, 1.64)	1.19 (0.68, 2.11)	0.84 (0.53, 1.32)	1.52 (0.73, 3.18)
Combat exposure	0.98 (0.95, 1.01)	NA	0.98 (0.94, 1.03)	NA
Deployment preparation	1.02 (0.97, 1.06)	NA	1.03 (0.97, 1.10)	NA

Characteristics	Univariate Models		Multiple Variable Models	
	Deployed <i>n</i> = 132 OR (95% CI)	Non-Deployed <i>n</i> = 130 OR (95% CI)	Deployed <i>n</i> = 132 OR (95% CI)	Non-Deployed <i>n</i> = 130 OR (95% CI)
Deployment support				
Soldier	1.00 (0.94, 1.07)	NA	0.97 (0.90, 1.06)	NA
Civilian partner	0.92 (0.87, 0.98) ^{**}		0.91 (0.84, 0.99) [*]	
Need				
Marital satisfaction ^c	1.00 (0.98, 1.01)	0.99 (0.98, 1.01)	--	--
Any physical IPV	2.50 (0.99, 6.31) [†]	1.19 (0.53, 2.66)	2.58 (0.62, 10.77)	1.72 (0.62, 4.79)
Proximity to divorce	0.97 (0.81, 1.16)	0.98 (0.81, 1.18)	0.90 (0.65, 1.25)	0.94 (0.72, 1.22)
Wald χ^2	29.94 [*]		20.22 [†]	

Note. OR = odds ratio; CI = confidence interval; HS = high school; PTSD = posttraumatic stress disorder; IPV = intimate partner violence. "NA" indicates that the variable was specifically deployment-related and was not included in the "non-deployed" models. Univariate models examined each factor variable individually, and multiple variable models examined all factor variables together.

[†] $p < .10$.

^{*} $p < .05$.

^{**} $p < .01$.

^a Not included in multiple variable analyses for deployed families due to sparse data.

^b Not included because of hypothesized multicollinearity with education and rank.

^c Not included because of hypothesized dependence with "proximity to divorce."