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Communication Mediators of the Link Between Depressive Symptoms and Relationship Satisfaction Among Army Soldiers

Objective: We evaluated two fundamental communication processes, self-disclosure and destructive conflict management strategies, as mediators of the link between depressive symptoms and relationship satisfaction among married U.S. soldiers.

Background: Identifying the communication behaviors underlying why people with depressive symptoms are less satisfied with their romantic relationship is a high priority for research, and pinpointing relevant mediators is especially important among military personnel who face particular job stressors and relationship challenges.

Methods: We analyzed cross-sectional self-report data from a representative sample of 4,196 married U.S. soldiers who participated in the all-Army component of the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS).

Results: Mediation was apparent such that people's depressive symptoms had indirect associations with their relationship satisfaction through both their self-disclosure and their reports of their partner's destructive conflict management

strategies. In contrast, mediation was not evident for their reports of their own destructive conflict management strategies.

Conclusion: Less self-disclosure and more destructive conflict management strategies by a partner may be reasons why soldiers experiencing depressive symptoms are less satisfied with their romantic relationship.

Implications: Communication skills training for self-disclosure and conflict management may help break the link between depressive symptoms and relationship dissatisfaction.

Depressive symptoms are a key problem facing the U.S. military (Eibner et al., 2008). Prevalence estimates suggest that approximately 13% to 18% of service members suffer from depressive symptoms (Britton et al., 2011; Russell et al., 2015), with aspects of military life such as frequent deployments and combat exposure contributing to depressive symptoms (Mayo et al., 2013; Russell et al., 2015; Wells et al., 2010), and military values such as strength and stoicism serving as impediments to seeking help (Brown & Bruce, 2016; Flynn et al., 2013). Not only do depressive symptoms interfere with operational performance (Welsh et al., 2015), but they also hinder the ability of service members to maintain satisfying relationships (Knobloch & Theiss, 2011). For example, depressive symptoms among military personnel correspond with

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less marital quality (Trump et al., 2015) and less effective family functioning (Collins et al., 2017).

Explaining *why* people experiencing depressive symptoms are less satisfied with their romantic relationship is complex. Indeed, Gustavson et al. (2012) labeled the search for an explanation as “a major issue” (p. 777) in the study of civilian couples. Similarly, explaining the link between depressive symptoms and relationship dissatisfaction among military couples is imperative for maintaining the resilience of service members and their families (e.g., Kelley et al., 2017; LeardMann et al., 2013). More insight into the generative mechanisms linking people’s depressive symptoms with their relationship satisfaction is vital for guiding prevention and intervention activities (Kouros & Cummings, 2011) for civilian and military couples alike.

Calls are mounting for scholars to examine communication processes as an explanation for the link between depressive symptoms and relationship satisfaction among both civilian couples (e.g., Gustavson et al., 2012; Kouros & Cummings, 2011; Roberson et al., 2018) and military couples (e.g., Knobloch & Theiss, 2011). A focus on communication is especially important because people’s behaviors are presumably more modifiable than their personality traits (e.g., Novak et al., 2017). We seek to advance the literature by considering two core communication processes that have particular relevance to the stressors facing military couples: self-disclosure (Tardy & Dindia, 2006) and destructive conflict management strategies (Canary, 2003). We evaluate mediation using cross-sectional self-report data from 4,196 married Army soldiers. Our results have conceptual value for theorizing about depressive symptoms, empirical value for understanding self-disclosure and destructive conflict management, and pragmatic value for practitioners working to preserve the relationship satisfaction of military personnel.

DEPRESSIVE SYMPTOMS AND RELATIONSHIP SATISFACTION

Ample research demonstrates that individuals experiencing depressive symptoms are less satisfied with their romantic relationship (Whisman & Beach, 2015). The link is a strong one: Not only do people’s depressive symptoms

correspond with both their own and their partner’s concurrent relationship satisfaction (Whisman et al., 2004), but a bidirectional association exists between depressive symptoms and relationship satisfaction over time (e.g., Gustavson et al., 2012; Roberson et al., 2018; Whitton & Whisman, 2010). Within military populations, depressive symptoms and relationship satisfaction are negatively correlated among both service members (Foran et al., 2011; Knobloch & Theiss, 2011) and their romantic partners (Dolphin et al., 2015; Oblea et al., 2016).

Explanations for why people grappling with depressive symptoms are less satisfied with their romantic relationship are complicated, as noted by scholars investigating both civilians (Gustavson et al., 2012) and service members (Knobloch & Theiss, 2011). Several theories imply that individuals with depressive symptoms behave in ways that create problems in relationships. For example, the stress generation model contends that people’s own cognitions and behaviors elicit stress and exacerbate their depressive symptoms (Hammen, 2006). Integrative interpersonal theory argues that individuals with depressive symptoms frustrate their romantic partner by excessively seeking reassurance and negative feedback (Joiner & Metalsky, 1995). In reviewing theory and research on the topic, Hammen (2006) identified communication as a priority for study:

Does a depressed person elicit rejection, reject others, start conflicts, make excessive demands, withdraw from others? These are basic questions, but behavioral details might help to fill in the gaps in understanding problematic behaviors and styles that could be targeted for intervention. (p. 1075)

More than a decade later, scholars continue to call for research identifying the particular communication behaviors that connect depressive symptoms and relationship dissatisfaction (Gustavson et al., 2012; Kouros & Cummings, 2011; Roberson et al., 2018). We focus on self-disclosure (Tardy & Dindia, 2006) and destructive conflict management strategies (Canary, 2003) for three reasons. First, both constructs are richly theorized as fundamental features of interaction (Canary & Canary, 2014; Petronio, 2018). Second, both disclosing information (e.g., Knobloch & Theiss, 2017) and managing conflict (e.g., Knobloch-Fedders

et al., 2017; LaMotte et al., 2014) are especially applicable to the unique challenges of military life. Third, both constructs are well-suited for inclusion in interventions for military families (e.g., Kees & Rosenblum, 2015; Taft et al., 2016).

Self-Disclosure

Self-disclosure occurs when individuals share personal information about themselves with a partner (Tardy & Dindia, 2006). Self-disclosure is central to building intimacy, but it also can spark discord, elicit rejection, and breach privacy (Petronio, 2018; Tardy & Dindia, 2006). Self-disclosure is particularly complicated for military couples (Joseph & Afifi, 2010; Knobloch & Theiss, 2017), who need to navigate the benefits and risks of sharing information against the backdrop of frequent separations, potentially dangerous working conditions, operational security requirements, and rigid privacy boundaries (e.g., Carter & Renshaw, 2016).

A signature feature of depressive symptoms is the tendency to turn inward and withdraw from others (e.g., Cruwys et al., 2014). This tendency may be pronounced among military personnel socialized to project power and mask weakness (e.g., Abraham et al., 2017; Castro et al., 2015). Accordingly, service members experiencing depressive symptoms may close themselves off from disclosing to a partner, thereby diminishing relationship satisfaction. We are not aware of any research evaluating self-disclosure as a mediator among civilian or military populations, but investigations of civilians suggest the potential for mediation. For example, Cuming and Rapee (2010) showed that people's depressive symptoms were negatively correlated with their disclosure of emotions to their romantic partner, and Farber and Sohn (2007) observed that self-disclosure was positively associated with relationship satisfaction among spouses receiving mental health treatment. Culp and Beach (1998) documented the prerequisite conditions for mediation such that people's reports of self-disclosure were negatively associated with depressive symptoms and positively associated with marital quality, but they did not evaluate self-disclosure as a mediator. We hypothesize that self-disclosure mediates the negative association between depressive symptoms and relationship satisfaction among U.S. Army soldiers (H1).

Destructive Conflict Management Strategies

Destructive conflict management strategies are negatively valenced antagonistic behaviors for dealing with disagreements, including yelling, accusing, sulking, and lashing out verbally and physically (e.g., Canary, 2003). Compared with constructive conflict management behaviors (e.g., cooperative statements, supportive remarks, affiliative nonverbal cues), destructive conflict management behaviors tend to impede problem-solving and intensify hostility (e.g., Bevan et al., 2017; Papp et al., 2009). Destructive conflict management behaviors can escalate quickly and create a toxic climate within romantic relationships. Such behaviors merit special attention in military populations given notable rates of aggression, violence, and abuse reported by military couples (e.g., Rodrigues et al., 2015).

Depressive symptoms entail a pervasive negative view of self, others, and situations (e.g., Gollan et al., 2016). Civilians with depressive symptoms tend to communicate with hostility in marital interactions in general (Rehman et al., 2008) and conflict episodes in particular (Du Rocher Schudlich et al., 2004). Similarly, service members with depressive symptoms are more likely to behave aggressively toward others (Gallaway et al., 2012). All of these behaviors are likely to be dissatisfying within romantic relationships. Consequently, destructive conflict management strategies may mediate the link between depressive symptoms and relationship satisfaction.

Although no work has investigated our reasoning among military personnel, studies of civilians are consistent with the general premise. Cross-sectionally, depressive symptoms are positively associated with negatively valenced conflict behavior via people's own reports and the ratings of independent observers (Du Rocher Schudlich et al., 2004). Longitudinally, women's depressive symptoms correspond with both men's and women's destructive conflict management strategies over time (Kouros & Cummings, 2011; Laurent et al., 2009). More depressive symptoms and more destructive approaches to problem-solving among new parents coincide with greater declines in relationship satisfaction over time (Trillingsgaard et al., 2014). In the most direct test of our logic, Heene et al. (2005) found that couple-level conflict patterns (e.g., when both partners behaved positively or when one person made demands and the other person withdrew) mediated the

cross-sectional association between depressive symptoms and marital adjustment.

A lingering question is whether the mechanism connecting depressive symptoms and relationship satisfaction involves the behavior of individuals or the dynamics of couples. Namely, do people's depressive symptoms correspond with their relationship satisfaction via their own behavior during conflict, their partner's behavior during conflict, or both? Answering this question by disentangling people's reports of their own versus their partner's destructive conflict management behaviors is important for (a) advancing theorizing about individual-level versus couple-level pathways, (b) identifying the most accurate unit of analysis for research moving forward, and (c) distinguishing whether interventions to help military couples maintain satisfying relationships in the wake of depressive symptoms should target individual behavior or couple patterns. To that end, we evaluate people's reports of their own destructive conflict management strategies (H2) and their partner's destructive conflict management strategies (H3) as mediators of the negative association between depressive symptoms and relationship satisfaction among U.S. Army soldiers.

METHOD

We analyzed data from the all-Army component of the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS; Ursano et al., 2015) after receiving approval from the Institutional Review Boards of the University of Illinois and the University of North Carolina at Charlotte. The study collected cross-sectional data from a representative sample of U.S. soldiers. Military personnel were excluded from data collection if they were undergoing basic training, deployed to combat, or assigned to a unit containing fewer than 30 soldiers. Units were stratified by Army Command location and then selected for inclusion based on probabilities proportional to authorized unit strength.

All soldiers in selected units without a scheduling conflict received a duty assignment to attend a session about the study. During the session, they learned about the project, provided written informed consent, and completed a 90-minute self-administered questionnaire via computer or hard copy. Participants also were invited to consent to linking their questionnaire

responses with their U.S. Department of Defense (DoD) administrative records (see Kessler, Colpe, et al., 2013).

Given the questionnaire length, the Army STARRS research team faced challenging decisions regarding the breadth versus depth of measurement (Ursano et al., 2014). Efforts to maximize response rates motivated single-item measures of some constructs, including self-disclosure, destructive conflict management strategies, and relationship satisfaction. Although multi-item scales offer important advantages, single-item measures can be appropriate for soliciting global ratings of unidimensional constructs (e.g., Fuchs & Diamantopoulos, 2009; Petrescu, 2013), including relationship satisfaction (Goodwin, 1992; Sharpley & Cross, 1982). Single-item measures also can be beneficial in large-scale studies when participant fatigue and attrition bias are concerns (Petrescu, 2013). Accordingly, we deemed the single-item measures as providing limited but still useful data for evaluating our hypotheses.

Participants

Soldiers were eligible for our analyses if they (a) completed all sections of the questionnaire and consented to linkage with their DoD administrative records ($N = 21,449$), (b) were married at the time of their participation ($n = 10,649$; 49.6%), and (c) received the version of the questionnaire containing the measures of conflict ($n = 4,196$; 19.6%). Thus, our study is based on a cohort of 4,196 soldiers.

Most participants completed the questionnaire via computer ($n = 2,438$; 58.1%) within the continental United States ($n = 3,924$; 93.5%). Most were male ($n = 3,758$; 89.6%) versus female ($n = 420$; 10.0%; unreported $n = 18$; 0.4%). They ranged in age from 18 to 61 years old ($M = 30.51$ years, $SD = 7.29$ years). Most reported their highest level of education as (a) high school diploma ($n = 1,129$; 26.9%), (b) some post-high school education ($n = 1,256$; 29.9%), (c) 2-year college associate degree ($n = 503$; 12.0%), or (d) 4-year college degree ($n = 527$; 12.6%). A total of 679 participants (16.2%) reported being of Spanish, Hispanic, or Latino origin. In response to a separate item in which participants could check multiple categories, they reported their race as (a) White ($n = 2,938$; 70.0%), (b) Black or African

American ($n = 678$; 16.2%), (c) American Indian or Alaskan native ($n = 116$; 2.8%), (d) Asian ($n = 153$; 3.6%), (e) Native Hawaiian or other Pacific Islander ($n = 61$; 1.5%), and (f) other ($n = 369$; 8.8%).

Participants reported the length of their marriage as (a) 0 to 6 months ($n = 377$; 9.0%), (b) 7 to 12 months ($n = 366$; 8.7%), (c) 13 to 24 months ($n = 495$; 11.8%), (d) 2 to 3 years ($n = 779$; 18.6%), (e) 4 to 5 years ($n = 593$; 14.1%), (f) 6 to 10 years ($n = 845$; 20.1%), or (g) 11 or more years ($n = 731$; 17.4%; unreported $n = 10$; 0.2%). Most were parents ($n = 2,785$; 66.4%).

The majority of soldiers were active duty personnel ($n = 3,710$; 88.4%) versus mobilized reserve component personnel ($n = 298$; 7.1%; unreported $n = 188$; 4.5%). A total of 2,500 individuals (59.6%) had been assigned to their current unit for 13 or more months. Some participants had deployed one or more times on a humanitarian mission ($n = 399$; 9.5%), peacekeeping mission ($n = 3,037$; 72.4%), and/or combat mission ($n = 3,096$; 73.8%).

Measures of the Substantive Covariates

We included three substantive covariates known to covary with our independent or dependent variables: (a) religiosity, given that it corresponds with relationship satisfaction among civilian couples (Perry, 2016); (b) chronic physical pain, given that it corresponds with both depressive symptoms and relationship satisfaction among military couples (Trump et al., 2015); and (c) Army career intentions, given that unhappiness with military life corresponds with depressive symptoms (Welsh et al., 2015).

Participants reported how religious they considered themselves to be (1 = *not at all*, 4 = *very*; unweighted $M = 2.32$, $SD = 1.00$; Kessler & Üstün, 2004). They rated their physical pain in any part of their body over the past 30 days (0 = *no pain*, 10 = *pain as bad as could be*; unweighted $M = 3.34$, $SD = 2.53$; Von Korff et al., 1992). They also reported their Army career intentions (1 = *I will definitely stay in the Army until retirement*, 6 = *I will definitely leave the Army after my present obligation*; unweighted $M = 4.15$, $SD = 1.83$; Office of the Surgeon General, 2011).

Measures of the Independent and Dependent Variables

Depressive symptoms. Participants completed four items from the World Health Organization Composite International Diagnostic Interview Screening Scales (Kessler, Calabrese, et al., 2013) prefaced by the stem “How often in the past 30 days did you ...?” (1 = *all or almost all of the time*, 5 = *none of the time*): (a) feel sad or depressed, (b) feel discouraged about how things were going in your life, (c) take little or no interest or pleasure in things, and (d) feel down on yourself, no good, or worthless. After scoring the responses so that higher values represented more depressive symptoms, we averaged the items (unweighted $M = 1.56$, $SD = 0.82$). Reliability was satisfactory ($\alpha = .86$) based on Raykov et al.’s (2015) procedure for calculating coefficient alpha using data from complex sample designs.

Self-disclosure. One item from the Dyadic Adjustment Scale (Spanier, 1976) measured the frequency of people’s self-disclosure: “How often do you confide in your partner?” (1 = *all of the time*, 6 = *never*). Values were reversed so that higher scores reflected more self-disclosure (unweighted $M = 4.94$, $SD = 1.32$).

Destructive conflict management strategies. Individuals completed two items from the World Health Organization Composite International Diagnostic Interview Screening Scale (Kessler & Üstün, 2004) introduced by the statement “Couples handle disagreements in many different ways. Sometimes couples do the following things during a disagreement: (a) yell, insult, or swear; (b) sulk or refuse to talk; (c) say or do something to purposely make them angry or upset; and (d) throw, smash, or kick something.” Then, participants were asked, “When you and your partner have a disagreement, how often do you do any of the things on this list to your partner?” (1 = *often*, 4 = *never*). Next, participants were asked, “How often does your partner do any of the things on this list to you?” (1 = *often*, 4 = *never*). Responses to both the own item (unweighted $M = 2.10$, $SD = 0.90$) and the partner item (unweighted $M = 2.20$, $SD = 0.95$) were reverse-scored so that higher values indicated more destructive conflict management strategies.

Table 1. Bivariate Associations in the Form of Standardized Regression Coefficients

| | V1 | V2 | V3 | V4 | V5 |
|----------------------------------|---------|---------|---------|---------|----|
| V1: Depressive symptoms | — | | | | |
| V2: Self-disclosure | -.21*** | — | | | |
| V3: Own destructive conflict | .23*** | -.23*** | — | | |
| V4: Partner destructive conflict | .22*** | -.27*** | .77*** | — | |
| V5: Relationship satisfaction | -.29*** | .54*** | -.34*** | -.41*** | — |

Note. N = 4,196.

*** p < .001.

Relationship satisfaction. An item from the Dyadic Adjustment Scale (Spanier, 1976) assessed romantic relationship satisfaction: “Which of these responses best describes how happy you are, all things considered, in your relationship? The average response *happy* is the score of most couples” (1 = *perfect*, 7 = *extremely unhappy*). Scores were reversed so that higher values depicted more relationship satisfaction (unweighted $M = 4.84$, $SD = 1.26$).

Data Analysis

Missing data were generally low and ranged from $n = 10$ participants (0.2%) for marriage length to $n = 159$ participants (3.8%) for religiosity. The minimum coverage value (92.2%) exceeded the 90% threshold for concern (Muthén et al., 2016), but responses were not missing completely at random according to Little’s missing completely at random (MCAR) test, $\chi^2(1591) = 2329.29$, $p < .001$. Consequently, we used full information maximum likelihood (see Johnson & Young, 2011) to utilize responses from the whole sample ($N = 4,196$).

We employed two sampling weights in our analyses to more closely align the sample to the population as a whole (see Kessler, Heeringa, et al., 2013). A first weight adjusted for discrepancies between participants who did versus did not consent to linkage with their DoD administrative records. A second weight adjusted for discrepancies between soldiers who consented to linkage and the demographics of the U.S. Army at large.

RESULTS

Bivariate Associations

A preliminary analysis involved computing the bivariate associations among the five

substantive variables. Because calculating zero-order correlations is not straightforward for complex sample designs, we followed Heeringa et al.’s (2017, pp. 146–147) recommendation to compute the simple regression slope for each pair of standardized variables (see Table 1). Relationship satisfaction was positively associated with self-disclosure and negatively associated with depressive symptoms and destructive conflict management strategies.

Substantive Analyses

We evaluated our hypotheses using complex sample procedures for hierarchical linear regression and path analysis in Mplus Version 8 (see Table 2). On the first step, we regressed relationship satisfaction onto five personal attributes and two substantive covariates: (a) sex (1 = men, 0 = women), (b) age, (c) level of education, (d) Spanish, Hispanic, or Latino origin (1 = yes, 0 = no), (e) race (1 = White, 0 = non-White), (f) religiosity, and (g) chronic physical pain. These variables explained 5.0% of the variance. Relationship satisfaction was higher among men ($B = .286$, $p < .001$), younger soldiers ($B = -.014$, $p < .001$), more educated personnel ($B = .063$, $p < .001$), and White service members ($B = .164$, $p < .001$). As expected, results for the substantive covariates showed that religiosity was positively associated ($B = .197$, $p < .001$) and chronic physical pain was negatively associated ($B = -.041$, $p = .008$) with relationship satisfaction.

On the second step, the relationship qualities of marriage length and parental status (1 = yes, 0 = no) accounted for 1.0% of additional variance. Relationship satisfaction was higher among soldiers who were married for less time ($B = -.067$, $p = .001$) and who were not parents ($B = -.123$, $p = .023$).

Table 2. Regression of Relationship Satisfaction Onto the Covariates and Independent Variables

| | R^2 | B | (SE) | β | p |
|--|---------|-------|--------|---------|------|
| Step 1: individual covariates | .050*** | | | | |
| Sex | | .286 | (.059) | .075 | .000 |
| Age | | -.014 | (.003) | -.087 | .000 |
| Level of education | | .063 | (.018) | .088 | .000 |
| Spanish, Hispanic, or Latino origin | | -.012 | (.070) | -.004 | .864 |
| Race | | .164 | (.047) | .062 | .000 |
| Religiosity | | .197 | (.029) | .157 | .000 |
| Chronic physical pain | | -.041 | (.015) | -.082 | .008 |
| Step 2: relational covariates | .060*** | | | | |
| Marriage length | | -.067 | (.020) | -.100 | .001 |
| Parental status | | -.123 | (.054) | -.044 | .023 |
| Step 3: military covariates | .065*** | | | | |
| Duty status | | -.022 | (.052) | -.004 | .675 |
| Length of time with current unit | | -.013 | (.013) | -.020 | .328 |
| Times deployed—humanitarian | | .086 | (.042) | .042 | .042 |
| Times deployed—peacekeeping | | -.019 | (.056) | -.021 | .732 |
| Times deployed—combat | | -.003 | (.053) | -.004 | .950 |
| Army career intentions | | .042 | (.013) | .060 | .001 |
| Step 4: depressive symptoms | .140*** | | | | |
| Depressive symptoms | | -.472 | (.028) | -.290 | .000 |
| Step 5: communication variables separately | | | | | |
| Self-disclosure | .370*** | .484 | (.018) | .499 | .000 |
| Own destructive conflict | .206*** | -.378 | (.031) | -.269 | .000 |
| Partner destructive conflict | .254*** | -.470 | (.025) | -.351 | .000 |
| Step 5: all communication variables | .424*** | | | | |
| Self-disclosure | | .428 | (.017) | .442 | .000 |
| Own destructive conflict | | .001 | (.033) | .001 | .972 |
| Partner destructive conflict | | -.335 | (.030) | -.250 | .000 |

Note. $N = 4,196$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

We added six military characteristics that explained 0.5% more variance on the third step: (a) duty status (1 = active duty, 0 = mobilized reserve component); (b) length of time with the current unit; number of times deployed to a (c) humanitarian zone, (d) peacekeeping zone, and (e) combat zone; and (f) Army career intentions. Soldiers who had deployed more frequently to a humanitarian zone ($B = .086$, $p = .042$) and who intended to leave the Army ($B = .042$, $p = .001$) reported more relationship satisfaction.

On the fourth step, depressive symptoms were negatively associated with relationship satisfaction ($B = -.472$, $p < .001$) and accounted for 7.5% of additional variance.

We evaluated the communication variables on the fifth step in two ways. First, we entered them into the regression model individually. As

expected, self-disclosure ($B = .484$, $p < .001$, 23.0% of additional variance) was positively associated with relationship satisfaction, and people's own destructive conflict management strategies ($B = -.378$, $p < .001$, 6.6% of additional variance) and their partner's destructive conflict management strategies ($B = -.470$, $p < .001$, 11.4% of additional variance) were negatively associated with relationship satisfaction.

Next, we repeated the fifth step by adding the communication variables simultaneously. They explained 28.4% of additional variance as a set. Both self-disclosure ($B = .428$, $p < .001$) and the partner's use of destructive conflict management strategies ($B = -.335$, $p < .001$) corresponded with relationship satisfaction, but people's reports of their own destructive conflict management strategies did not ($B = .001$,

$p = .972$). Depressive symptoms continued to share a negative association with relationship satisfaction after the communication variables were covaried ($B = -.228, p < .001$). In total, the regression model accounted for 42.4% of the variance with all of the independent variables included.

Finally, we examined the indirect associations linking depressive symptoms with relationship satisfaction using the multivariate delta method to account for the lack of independent observations in the complex sampling design (Sobel, 1982). The total indirect effect with all of the independent variables in the model ($-.244, p < .001$) was roughly similar in size to the total direct effect ($-.228, p < .001$). Consistent with H1 and H3, people's depressive symptoms had indirect associations with their relationship satisfaction through both self-disclosure (specific indirect effect = $-.150, p < .001, 95\%$ confidence interval [CI] $[-.173, -.130]$) and the partner's destructive conflict management strategies (specific indirect effect = $-.095, p < .001; 95\%$ CI $[-.116, -.077]$). Contrary to H2, people's own destructive conflict management strategies were not a mediator (specific indirect effect = $.000, p = .972; 95\%$ CI $[-.017, .015]$).

Sensitivity Analyses

We conducted three sensitivity analyses following best practices for complex sample data (Heeringa et al., 2017). First, we investigated the possibility of multicollinearity by computing variance inflation factor (VIF) values for a simple regression model including all 19 of the covariates and communication variables. None of the values exceeded the 5.00 threshold for concern (all < 4.28). Second, to compare methods for handling missingness, we reanalyzed the data using listwise deletion procedures with $n = 3,512$ participants (83.7%). Results were identical to the full information maximum likelihood strategy with one exception: The number of times deployed to a humanitarian zone was not associated with relationship satisfaction on the third step ($B = .061, p = .123$). Third, to compare methods for handling the complex sampling design, we reanalyzed the data without applying the sampling weights. Again, findings were identical except that the number of times deployed to a humanitarian zone was not associated with relationship satisfaction on the third

step ($B = .028, p = .503$). Thus, our results were largely robust across procedures for addressing the missing data and the complex sampling design.

DISCUSSION

Military personnel with depressive symptoms face challenges in both their professional and personal lives (Karney et al., 2008). Depressive symptoms impede the ability of service members to complete occupational duties (e.g., Welsh et al., 2015) and sustain dyadic relationships (e.g., Trump et al., 2015). In response to calls to examine communication processes as pathways linking depressive symptoms with relationship dissatisfaction (Gustavson et al., 2012; Roberston et al., 2018) and calls to employ probability samples to examine mental health problems among military personnel (Karney et al., 2008), we theorized about self-disclosure and destructive conflict management strategies as reasons why service members experiencing depressive symptoms may be less satisfied with their romantic relationship. We tested our hypotheses using self-report data from a representative sample of 4,196 married U.S. Army soldiers. Although our conclusions are tempered by the cross-sectional design and the single-item measures of some variables, the results imply some support for our logic.

Implications for Theory and Research

Our project speaks to the complicated question of why depressive symptoms and relationship dissatisfaction are linked (Kouros & Cummings, 2011; Whitton & Kuryluk, 2012). Findings supported our theorizing about self-disclosure (H1) and a partner's destructive conflict management strategies (H3) as mediators of the association between depressive symptoms and relationship satisfaction. Approximately half of the link represented a direct association between depressive symptoms and relationship satisfaction, and the other half was accounted for by the mediators. These results make two contributions to the literature. First, they highlight the value of leveraging communication constructs to understand mental health issues (e.g., Segrin, 2011). Second, with respect to military personnel, our findings suggest communication as a route for preserving marital satisfaction. Identifying such pathways

is important because service members reap valuable benefits from a healthy marriage, including emotional support, instrumental assistance, and help securing mental health treatment if needed (e.g., Hom et al., 2017; Madsen et al., 2017).

The data also shed light on self-disclosure. To our knowledge, this study is the first to document people's willingness to confide in their partner as a mediator of the association between depressive symptoms and relationship satisfaction (H1). A key implication is that disclosing to a partner may help individuals maintain dyadic well-being in the midst of depressive symptoms. In contrast, military life contains both structural and motivational barriers to openness among spouses (Joseph & Afifi, 2010; Knobloch & Theiss, 2017). Service members may refrain from disclosing their thoughts and feelings because they do not want to worry their partner about military occupational hazards, they are reluctant to cause tension in their relationship, they are motivated to conceal weakness, they are unwilling to risk the privacy violations that run rampant among military personnel living and working in close quarters, and they are bound by military regulations prohibiting them from divulging details about their work (e.g., Carter & Renshaw, 2016; Castro et al., 2015; Joseph & Afifi, 2010). A clear need exists for additional theorizing about the dilemmas of self-disclosure facing service members. We nominate communication privacy management theory (Petronio, 2018), relational dialectics theory (Sahlstein Parcell & Baker, 2018), and protective buffering frameworks (Joseph & Afifi, 2010) as conceptual approaches equipped to drill down into the complexities of self-disclosure among military personnel.

In terms of conflict management, our results add to evidence connecting mental health and hostile conflict patterns within romantic relationships (e.g., Du Rocher Schudlich et al., 2004; Kouros & Cummings, 2011; Laurent et al., 2009). Our data showed an association between people's depressive symptoms and their reports of their partner's destructive conflict management strategies. These findings are notable given that an atmosphere of caustic conflict can ripple through the entire family system to undermine the well-being of adults and children alike (Segrin & Flora, 2017). In fact, a recent study showed that military couples who engaged in more antagonistic conflict with each other reported less teamwork in

parenting, more inconsistent disciplining of their children, and harsher childrearing practices (Giff et al., 2019). Thus, our results linking depressive symptoms with destructive conflict management strategies have implications for military children as well as military couples.

Whereas prior work has emphasized couple-level conflict dynamics as a mediator of the association between depressive symptoms and relationship satisfaction (Heene et al., 2005), we considered the behavior of individuals. A novel finding is that people's reports of their own and their partner's destructive conflict management strategies were negatively associated with relationship satisfaction individually, but when considered collectively, mediation was apparent for people's reports of their partner's destructive conflict management strategies (H3) but not their own (H2). A simple explanation is that people's own problem-solving behaviors factor relatively little into their relationship satisfaction. A more complex explanation suggested by integrative interpersonal theory is that an individual's depressive symptoms elicit rejection and harsh responses from his or her partner (e.g., Joiner & Metalsky, 1995). Alternatively, attribution frameworks imply that a cognitive bias may be operating whereby people with depressive symptoms blame their partner rather than themselves for problems (e.g., Gordon et al., 2005). An explanation grounded in military culture is that service members may be more accustomed to resolving conflict situations by giving and receiving orders than by coping with a partner's destructive conflict management strategies (e.g., Atuel & Castro, 2018; Hall-Clark et al., 2019). We encourage scholars to probe these possibilities in future research.

Implications for Practice

Although caution is warranted when translating data to practice based on a single study, our results coupled with prior work suggest three potentially helpful suggestions for practitioners. One such finding is how a variety of individual, relational, and military characteristics—considered as control variables in our substantive analyses—corresponded with soldiers' relationship satisfaction. Military personnel reporting less relationship satisfaction were female, older, less educated, non-White, married for a longer time, and

parents. Consistent with previous work, they also were less religious (Perry, 2016) and were experiencing more chronic physical pain (Trump et al., 2015). Practitioners offering prevention and intervention programming may have success focusing their efforts on soldiers with those risk markers. Also intriguing is that the military features we examined explained little variance in relationship satisfaction beyond the individual, substantive, and relational covariates (0.5%), with only people's intent to stay in the Army as a reliable correlate of relationship dissatisfaction. The implication is that targeted outreach activity for soldiers should be tailored to individual and relational characteristics over the features of military service we evaluated.

Second, our results are promising for intervention because they highlight communication behaviors as potential pathways linking depressive symptoms with relationship satisfaction. Compared with other mediators with a more trait-like nature, such as attachment orientation (Novak et al., 2017) or attribution style (Heene et al., 2005), communication behaviors ostensibly can be adjusted to generate more effective outcomes (e.g., Allen et al., 2015). Several interventions for military families already focus on communication skills training in some vein, including the Prevention and Relationship Education Program (PREP) for Strong Bonds (Allen et al., 2015), Families OverComing Under Stress (FOCUS; Lester et al., 2016), and Strength at Home Couples (Taft et al., 2016). A next step is to examine whether curricula on self-disclosure and conflict management skills, in particular, are helpful for breaking the link between depressive symptoms and relationship satisfaction.

What might an intervention based on our findings look like? First, in light of the robust association between depressive symptoms and relationship satisfaction, treatment for married soldiers with depressive symptoms may be more effective if it takes the relationship into account (e.g., Whisman & Beach, 2015) rather than if it concentrates solely on intrapersonal aspects of depression. Second, with respect to content, educational activities that teach military personnel and spouses best practices and common pitfalls of self-disclosure and conflict management strategies may help preserve relationship satisfaction in the wake of depressive symptoms. Third, given the importance of service members' reports of their partner's

destructive conflict management strategies, practitioners may have success working with spouses on affiliative approaches to resolving disagreements. Although these suggestions remain tentative until our findings can be verified by more data, we offer them as a starting point for supporting the marriages of service members experiencing depressive symptoms.

Strengths, Limitations, and Directions for Future Research

Our study has a variety of strengths and limitations. On the positive side, our data came from a large-scale probability sampling study of U.S. soldiers (Ursano et al., 2015). The stratified random sampling techniques employed by the Army STARRS project are far superior to convenience samples for making claims about soldiers as a whole. Second, compared with other comprehensive investigations of U.S. military personnel, the Army STARRS project solicited high rates of participation and low levels of missing data (Kessler, Heeringa, et al., 2013). Third, the study contained an extensive battery of measures (Ursano et al., 2015), which allowed us to examine a host of covariates representing individual, relational, and military attributes.

A key restriction on generalizability is that the sample was drawn from the Army rather than the U.S. armed forces more broadly. Accordingly, our results do not speak to the potential for branch differences (e.g., Russell et al., 2015). Second, our analyses relied on single-item measures of some constructs. Multi-item indices are preferred for offsetting random measurement errors associated with individual items (e.g., Fisher et al., 2016). Third, the self-disclosure and relationship satisfaction items originally were part of the 32-item Dyadic Adjustment Scale (DAS; Spanier, 1976). The DAS has been criticized for mixing items measuring communication behaviors (e.g., confiding, quarreling, laughing together) and subjective attitudes toward the relationship (e.g., satisfaction; Norton, 1983), but the conceptual overlap between self-disclosure and relationship satisfaction is worth noting. Perhaps most important, the cross-sectional research design forfeits the ability to evaluate time order. Longitudinal data are essential for examining temporal sequences (Kouros & Cummings, 2011), particularly given evidence that depressive symptoms and

relationship satisfaction correspond over time (Gustavson et al., 2012; Roberson et al., 2018; Whitton & Whisman, 2010).

Beyond research that addresses the shortcomings of this investigation, we look forward to work delving into the scope conditions of our findings. Our hypotheses emerged from broad theorizing applicable to both civilians and military personnel, but without comparative data, the generalizability of our results to civilian populations remains unknown. Service members face unique challenges for all three of the independent variables we investigated: Depressive symptoms are complicated by a reluctance to show vulnerability in military culture, self-disclosure is complicated by an atmosphere of secrecy in military culture, and destructive conflict management strategies are complicated by an authoritarian approach to decision-making in military culture (e.g., Knobloch & Wehrman, 2014). A core question lying at the intersection of basic versus applied science is whether our results translate from military personnel to civilian populations and, if so, the relative strength of the associations. Our findings open the door to inquiry along those lines.

Finally, we encourage future studies examining the factors that may amplify or abridge the associations documented here. A growing literature suggests that constructs such as neuroticism (Uebelacker & Whisman, 2006), blame-oriented attributions (Gordon et al., 2005), and commitment (Whitton & Kuryluk, 2012) are moderators of the link between depressive symptoms and relationship satisfaction. Do those same constructs moderate people's communication behaviors as well? If so, then practitioners could offer tailored programming to those most likely to benefit from communication skills training for self-disclosure and conflict management.

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