Negative Life Events (NLEs) Contributing to Psychological Distress, Pain, and Disability in a U.S. Military Sample

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ABSTRACT Introduction: The objective was to explore how negative life events (NLEs, e.g., litigation related to pain and disability, failing most recent physical fitness test, and financial difficulties) are related to pain coping and psychological adjustment to pain in active duty military personnel. Materials and Methods: Data were gathered as part of the Evaluation of Suicidality, Cognitions, and Pain Experience study, a DoD-funded cross-sectional assessment of chronic pain and emotional coping among a cohort of military members. The investigators examined data from 147 respondents with complete survey and pain assessment data. Results: The sample was active duty, male (62.6%), in a relationship or married (83.0%), and had children (68.7%). The majority of the sample endorsed zero NLEs (72.0%); 23.8% endorsed one NLE, 4.2% endorsed two NLEs, and no one endorsed all three NLEs. A significantly higher proportion of participants endorsing one or more NLEs reported suicidal ideation compared to those who reported no NLEs ($\chi^2(2) = 8.61, p = 0.014$). A higher number of endorsed NLEs coincided with higher symptom severity related to psychosocial distress (depression, thwarted belongingness, perceived burdensomeness, PTSD, and suicide cognitions) and poor pain coping (rumination, helplessness, and less acceptance of chronic pain). Conclusions: Findings revealed that NLEs may impart a significant burden on military pain sufferers. Greater numbers of endorsed NLEs are associated with increased psychosocial distress and poor pain coping. Future longitudinal studies examining long-term psychosocial distress/poor pain coping as related to NLEs would help to elaborate the long-term consequences of NLEs on pain coping and psychosocial distress.

INTRODUCTION

Over the past 30+ years, questions of employment, disability compensation, and litigation have received a great deal of attention in civilian pain research, though the issue of how these negative life events (NLEs) are related to chronic musculoskeletal pain (CMP) and disability claims is complex. While some early studies have shown that CMP patients who litigate work-related claims demonstrated higher levels of pain-related disability and were less responsive to treatment, others show that claims litigation has little in common with pain coping and psychological adjustment to pain in active duty military personnel. The potential for increased mental health comorbidity, indeed, NLEs (e.g., litigation related to pain and disability, failing most recent physical fitness test, and financial difficulties) are related to pain coping and psychological adjustment to pain in active duty military personnel. The investigators examined data from 147 respondents with complete survey and pain assessment data. Results: The sample was active duty, male (62.6%), in a relationship or married (83.0%), and had children (68.7%). The majority of the sample endorsed zero NLEs (72.0%); 23.8% endorsed one NLE, 4.2% endorsed two NLEs, and no one endorsed all three NLEs. A significantly higher proportion of participants endorsing one or more NLEs reported suicidal ideation compared to those who reported no NLEs ($\chi^2(2) = 8.61, p = 0.014$). A higher number of endorsed NLEs coincided with higher symptom severity related to psychosocial distress (depression, thwarted belongingness, perceived burdensomeness, PTSD, and suicide cognitions) and poor pain coping (rumination, helplessness, and less acceptance of chronic pain). Conclusions: Findings revealed that NLEs may impart a significant burden on military pain sufferers. Greater numbers of endorsed NLEs are associated with increased psychosocial distress and poor pain coping. Future longitudinal studies examining long-term psychosocial distress/poor pain coping as related to NLEs would help to elaborate the long-term consequences of NLEs on pain coping and psychosocial distress.

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As a result, it is reasonable to assume that NLEs like disability and disability litigation could have a novel effect on military CMP experience.

Unfortunately, little is known about how disability affects military CMP because the military and veterans disability systems differ significantly from systems serving civilians with CMP. For example, while on Active Duty status, military members with CMP are provided with rapid medical and rehabilitation services with the primary goal of returning the service member to duty, and those who are unable to return to duty risk discharge from military service and the potential for lifetime medical benefits through the Departments of Defense (DoD) and Veterans Affairs (VA). According to a report by the RAND Corporation, the DoD and VA pay approximately $35 billion per year in disability payments to over 3 million U.S. military veterans. Interestingly, the RAND report details key differences between the DoD and VA disability systems (consideration of civilian earnings potential, contribution of time in service to benefits, annuity across disability ratings) that demonstrate how military members with service-connected pain conditions (which are among the top 10 most common reasons for VA disability benefits) face multiple disability systems, each with their own stressors. Although the report concludes that military veterans likely receive benefits for service-connected disability that exceed lost income from civilian employment opportunities, RAND does not describe how disability benefits and related financial concerns (hereafter described as “negative life events; NLEs”) contribute to psychosocial distress and pain coping among active military members and veterans with disabling pain conditions. There is little recourse for active duty personnel when it comes to pain-related litigation, which is a major difference between litigation for active duty personnel compared to civilians. For example, a civilian could sue a corporation for compensation in a pain disability case. Additionally, recent failure of a physical fitness test is a potential NLE unique to active military members since continued service depends on maintaining a certain level of readiness. While one failure of a physical fitness test does not result in immediate job loss, there is additional pressure to pass the next one in order to maintain active duty status. This unique military NLE has not been covered in the existent research literature.

The present study used a secondary analysis of data from the cross-sectional Evaluation of Suicidality, Cognitions, and Pain Experiences (ESCAPE) study to explore the relationship between NLEs linked to disabling pain conditions and pain coping in U.S. military service members seeking treatment for pain conditions in military clinics. The primary objective of this analysis was to explore how NLEs (i.e., pending litigation related to disability, financial difficulties, and failed fitness tests) affect pain coping and pain-related psychosocial distress in active duty military personnel. NLEs include both established stressors (i.e., financial difficulties, pending disability litigation) and novel stressors unique to the military (i.e., failed fitness tests as an indicator of possible job loss). The resulting data offer the first known description of the burden of NLEs on pain experience in U. S. military pain sufferers. Using ESCAPE data, the present study sought to test the following hypotheses:

Hypothesis 1: Higher levels of NLEs (based on the number of NLEs endorsed during the ESCAPE study) will be linked to increased risk for psychosocial distress (depression, suicidal cognitions, post-traumatic stress disorder (PTSD)) and poorer pain coping (fear avoidance, pain catastrophizing, low pain acceptance, disability).

Hypothesis 2: NLEs will be significantly related to psychosocial distress and poorer pain coping in terms of strength of relationship and magnitude.

Hypothesis 3: Greater NLEs in an active military population will be associated with suicidal ideation.

METHODS
Data for this study were gathered as part of the ESCAPE study, a DoD-funded cross-sectional assessment of chronic pain and coping among a large cohort of military service members, family members and retired military members receiving treatment for at least one chronic pain condition in the Southern United States (unpublished manuscript). The parent study collected data on 228 participants of which 147 were active duty personnel. Retired military members and family members were excluded as we chose to examine NLEs that uniquely impact current military members. Participant concerns primarily included chronic lower back pain (34%), headaches (10%), lower extremity (13%), upper extremity (6%), “other” spinal pain (12%), multi-spinal (4%), and whole body pain (6%). Additional pain sources included fibromyalgia syndrome, temporomandibular disorder and other myofascial pain, arthritis, complex regional pain syndrome, and chronic pain related to other health problems. For this secondary analysis, the investigators examined data from 143 of 147 active duty respondents with complete survey and pain assessment data. NLEs were assessed using items asking the respondent to endorse whether or not he or she experienced past legal problems (e.g., pain related claims dispute), financial problems (e.g., debt), or failed a recent physical fitness test. Respondents endorsed either “yes” or “no” and a total number of NLEs was derived based on the frequency of “yes” endorsements. The goal of this study was to explore if endorsement of more NLEs (two well established in the civilian literature, i.e., financial difficulty and pending litigation, one arguably novel to a military context, failed fitness tests), would be related to increased severity.

MEASURES
In addition to completing demographic information as well as questions related to visits to the ER for pain, participants...
completed a standardized intake assessment that consisted of several self-reported measures of psychosocial distress including the 21-item Beck Depression Inventory—Second Edition (BDI-II), the 15-item Interpersonal Needs Questionnaire (INQ; two subscales: thwarted belongingness and perceived burdensomeness), the PTSD Checklist—Military/Civilian (PCL), and the 20-item Suicide Cognitions Scale (SCS). Suicidal ideation was examined using item 9 (dichotomously coded as endorsed = 1 and denied = 0) of the BDI-II. The PCL and BDI-II are widely used, validated measures of PTSD and depression symptoms, which are frequently comorbid with chronic pain. The SCS measures specific beliefs about suicide and has been shown to be predictive of suicidal ideation in active duty military personnel. The BDI suicide item alone is predictive of suicide attempts and death by suicide and, therefore, was chosen as a variable to be examined in the analyses. Perceived burdensomeness and thwarted belongingness are constructs which are expected to relate to suicide risk in veterans. Perceived burdensomeness has been defined as a belief that “others would be better off without me” and Thwarted Belongingness has been defined as a perception that one either does not belong or that one lacks interpersonal connections.

Several self-report measures of pain-related coping were also given at intake, such as the 16 item Fear Avoidance Beliefs Questionnaire (FABQ; two subscales Work and Physical Activity), the 13-item Pain Catastrophizing Scale (PCS; three subscales: Rumination, Magnification, and Helplessness), the 20-item Chronic Pain Acceptance Questionnaire (CPAQ; two subscales: Engagement and Willingness), the 10-item Oswestry Disability Index (ODI), and the 3-item Pain Severity subscale of the Multidimensional Pain Inventory (MPI).

**Statistical Analyses**

Prior to analyses, data were cleaned and the assumptions of normality were tested to ensure that they were met. Violations for assumptions of normality were identified using Shapiro–Wilk, Kolmogorov–Smirnov, Cramer–von Mises, and Anderson–Darling statistics for all variables in order to guide selection of statistical tests. Preliminary analyses were conducted to identify significant differences in reporting of NLEs by the participants’ demographic characteristics using chi-square tests. Univariate analyses were conducted using ANOVA for variables with normal distribution, and Kruskal–Wallis tests for non-normally distributed variables to determine whether there were significant differences between the number of NLEs reported and psychosocial distress and pain coping (Hypothesis 1). Tukey’s HSD and Dwass, Steel, Critchlow-Fligner (DSCF) methods were used to conduct pairwise comparisons between number of reported NLEs for each variable (Hypothesis 2). The strength of relationships between the number of NLEs and each variable was determined using Spearman’s rank correlations (Hypothesis 2). Due to the low frequency endorsement of suicidal ideation and the binomial nature of the SI variable, a bivariate negative binomial regression was conducted to determine the relationship between suicidal ideation and number of NLEs reported (Hypothesis 3). A post hoc negative binomial regression was conducted to determine which types of NLEs were significantly related to suicidal ideation. All analyses were conducted using SAS 9.4 statistical software.

**RESULTS**

Univariate analyses are presented in Tables I and II. The majority of the sample was male (62.6%), in a relationship or married (83.0%), and had children (68.7%). Sixty-four (45.1%) participants had visited an ER for pain related issues and 10 (9.0%) reported suicidal ideation (SI) according to the BDI-II item 9. The majority of the sample endorsed zero NLEs (n=103; 72.0%); thirty-four (23.8%) endorsed one NLE, six (4.2%) endorsed two NLEs, and no one endorsed all three. Of the NLEs reported, 26 participants endorsed having a failed PT test, 17 reported having financial stress, and 3 reported having pending litigation. A significantly higher proportion of participants endorsing one or more NLEs reported suicidal ideation compared to those who reported no NLEs ($\chi^2(2) = 8.61, p = 0.014$). There was no significant relationship between number of reported NLEs and gender, relationship status, having children, or visiting the emergency room for pain.

**Hypothesis 1**

Table II presents the results from univariate analysis of psychosocial distress and pain coping variables. With the exception of the ODI, CPAQ-Engagement subscale, and CPAQ-Willings

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>NLEs Endorsed</th>
<th>$\chi^2$</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>64 (62.1%)</td>
<td>20 (58.8%)</td>
<td>5 (83.3%)</td>
</tr>
<tr>
<td>Female</td>
<td>39 (37.4%)</td>
<td>14 (41.2%)</td>
<td>1 (16.7%)</td>
</tr>
<tr>
<td>In relationship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>87 (84.5%)</td>
<td>29 (85.3%)</td>
<td>5 (83.3%)</td>
</tr>
<tr>
<td>No</td>
<td>16 (15.5%)</td>
<td>5 (14.7%)</td>
<td>1 (16.7%)</td>
</tr>
<tr>
<td>Have children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>69 (67.0%)</td>
<td>28 (82.5%)</td>
<td>4 (66.7%)</td>
</tr>
<tr>
<td>No</td>
<td>34 (33.0%)</td>
<td>6 (17.5%)</td>
<td>2 (33.3%)</td>
</tr>
<tr>
<td>ER visit for pain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>42 (59.2%)</td>
<td>17 (51.5%)</td>
<td>5 (83.3%)</td>
</tr>
<tr>
<td>No</td>
<td>61 (40.8%)</td>
<td>16 (48.5%)</td>
<td>1 (16.7%)</td>
</tr>
<tr>
<td>Reported SI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>3 (3.8%)</td>
<td>6 (20.7%)</td>
<td>1 (25.0%)</td>
</tr>
<tr>
<td>No</td>
<td>75 (96.2%)</td>
<td>23 (79.3%)</td>
<td>3 (75.0%)</td>
</tr>
</tbody>
</table>

**TABLE I. Participant Demographic Data**
### TABLE II. Psychosocial Distress and Pain Coping by NLEs Endorsed

<table>
<thead>
<tr>
<th>Scale or Subscale: Range</th>
<th>NLEs Endorsed (NLEs)</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>$\chi^2$/F</th>
<th>$p$-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDI-II: (0–63)</td>
<td>4.0</td>
<td>19.9*</td>
<td>29.0</td>
<td>13.77</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>INQ PB: (9–56)</td>
<td>14.1</td>
<td>19.6*</td>
<td>19.2</td>
<td>12.27</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>INQ TB: (9–56)</td>
<td>19.5</td>
<td>26.2*</td>
<td>35.0</td>
<td>9.42</td>
<td>0.018</td>
<td></td>
</tr>
<tr>
<td>PCL: (0–80)</td>
<td>24.0</td>
<td>38.0*</td>
<td>58.0</td>
<td>12.68</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>SCS: (0–80)</td>
<td>18.0</td>
<td>18.0</td>
<td>33.0</td>
<td>8.04</td>
<td>0.018</td>
<td></td>
</tr>
<tr>
<td>FABQ-W: (0–42)</td>
<td>10.0</td>
<td>22.0*</td>
<td>26.0</td>
<td>24.36</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>FABQ-PA: (0–24)</td>
<td>14.0</td>
<td>16.0</td>
<td>19.0</td>
<td>10.21</td>
<td>0.006</td>
<td></td>
</tr>
<tr>
<td>PCS magnification: (0–12)</td>
<td>2.0</td>
<td>4.0</td>
<td>5.0</td>
<td>5.93</td>
<td>0.051</td>
<td></td>
</tr>
<tr>
<td>PCS helplessness: (0–24)</td>
<td>5.0</td>
<td>9.0</td>
<td>12.0</td>
<td>9.61</td>
<td>0.008</td>
<td></td>
</tr>
<tr>
<td>PCS rumination: (0–16)</td>
<td>4.0</td>
<td>7.0</td>
<td>9.0</td>
<td>9.34</td>
<td>0.009</td>
<td></td>
</tr>
<tr>
<td>CPAQ engagement: (0–66)</td>
<td>40.4</td>
<td>35.3</td>
<td>27.0</td>
<td>5.08</td>
<td>0.008</td>
<td></td>
</tr>
<tr>
<td>CPAQ willingness: (0–54)</td>
<td>29.0</td>
<td>24.6</td>
<td>20.2</td>
<td>4.08</td>
<td>0.019</td>
<td></td>
</tr>
<tr>
<td>ODI: (0–50)</td>
<td>27.7</td>
<td>41.9*</td>
<td>36.7</td>
<td>11.42</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>MIP pain severity: (0–6)</td>
<td>3.3</td>
<td>4.3*</td>
<td>4.2</td>
<td>13.62</td>
<td>0.001</td>
<td></td>
</tr>
</tbody>
</table>

$M = $ mean; Medians reported unless specified.

*p-DSCF < 0.05 for 0 versus 1 NLEs.

*p-Tukey’s HSD < 0.05 for 0 versus 1 NLEs.

$p$-DSCF < 0.05 for 0 versus 2 NLEs.

*p-Tukey’s HSD < 0.05 for 0 versus 2 NLEs.

Key: BDI-II (Beck Depression Inventory-Second Edition); INQ-PB, INQ-TB (Interpersonal Needs Questionnaire, thwarted belongingness and perceived burdensomeness); PCL (PTSD Check-List Military/Civilian); SCS (Suicide Cognitions Scale); FABQ-W/PA (Fear Avoidance Beliefs Questionnaire: Work and Physical Activity); PCS (Pain Catastrophizing Scale); CPAQ (Chronic Pain Acceptance Questionnaire); ODI (Oswestry Disability Index); MPI (Multidimensional Pain Inventory).

subscale, all variables violated assumptions of normality and therefore differences between the number of NLEs endorsed and psychosocial characteristics were assessed using Kruskal–Wallis tests. With regards to psychosocial distress, median scores were significantly different across different frequencies of NLEs for BDI-II ($\chi^2$(2) = 17.37, $p < 0.001$), INQ-PB ($\chi^2$(2) = 12.27, $p = 0.002$), INQ-TB ($\chi^2$(2) = 9.42, $p = 0.009$), PCL, $\chi^2$(2) = 12.68, $p = 0.002$), SCS ($\chi^2$(2) = 8.04, $p = 0.018$; Table II).

For the pain coping variables, median scores were significantly different across the different frequencies of NLEs for FABQ work subscale ($\chi^2$(2) = 24.36, $p < 0.001$), FABQ physical activity subscale ($\chi^2$(2) = 10.21, $p = 0.006$), PCS Helplessness ($\chi^2$(2) = 9.61, $p = 0.008$), PCS Rumination ($\chi^2$(2) = 9.34, $p = 0.009$), and MPI pain severity ($\chi^2$(2) = 13.62, $p = 0.001$). Mean scores for the three groups were also different for the ODI ($F(2, 133) = 11.42, p < 0.001$), CPAQ-Engagement subscale ($F(2, 135) = 5.08, p = 0.008$), and CPAQ-Willingsess subscale ($F(2, 135) = 4.08, p = 0.019$). A higher number of endorsed NLEs was related with higher symptom severity related to disability, poor pain coping including rumination and helplessness, acceptance of chronic pain (negative correlation), depression, thwarted belongingness, perceived burdensomeness, PTSD, and suicide cognition symptoms (see Table II). Of the scales examined, only the PCS magnification subscale was not significantly different.

### Hypothesis 2

Tukey’s HSD and DSCF methods were used to determine between group differences of number of NLEs for each variable. For the psychosocial distress variables, depression scores significantly increased by 15 points for those with one NLE compared to none ($DSCF = 5.49, p < 0.001$). The perceived burdensomeness subscale score of the INQ increased by 5.5 points for those with one NLE compared to none ($DSCF = 4.49, p = 0.004$). The thwarted belongingness subscale score of the INQ increased by 6.7 points for those with one NLE compared to none ($DSCF = 3.61, p = 0.029$). PCL scores significantly increased by 14 points for those with one NLE and by 34.0 points for those with two NLEs compared to none ($DSCF = 3.62, p = 0.028$; $DSCF = 3.82, p = 0.019$, respectively). SCS scores increased by 15 points for those with two NLEs compared to no NLEs ($DSCF = 4.12, p = 0.010$).

For the pain coping variables, the work subscale score of the FABQ increased by 11.0 points for those with one NLEs and 16.0 points for two NLEs compared to none ($DSCF = 6.32, p < 0.001$; $DSCF = 3.82, p = 0.019$, respectively). The physical activity subscale score of the FABQ increased by approximately 5.0 points for those with two NLEs compared to none ($DSCF = 3.45, p = 0.039$). The helplessness subscale of the PCS scale increased by 5.0 points for those who reported one NLE compared to none ($DSCF = 3.88, p = 0.017$). The rumination subscale of the PCS scale increased by 3.0 points for those who reported one NLE compared to none ($DSCF = 4.10, p = 0.011$). MPI pain severity scores increased by 1.0 point for those with one NLE compared to none ($DSCF = 4.97, p = 0.001$). The ODI score increased 14.2 points for individuals that reported one NLE compared to none ($Tukey’s p < 0.05$). The CPAQ engagement subscale score significantly decreased 13.4 points for individuals that reported two NLEs compared to none ($Tukey’s p < 0.05$). There were no significant pairwise comparisons between number of NLEs for the CPAQ willingness subscale. The strength of the relationships between NLEs and each variable is shown in Table III. There is a moderate relationship between number of NLEs and depression, disability, reported pain severity, perceived burdensomeness, and pain coping (FABQ work subscale). There are weak-to-moderate relationships between number of NLEs and thwarted belongingness, other pain coping measures (FABQ physical activity subscale, PCS helplessness subscale, and PCS rumination subscale), pain acceptance, PTSD, and suicidal cognitions.

### Hypothesis 3

A bivariate negative binomial regression was performed to determine the relationship between number of NLEs and...
suicidal ideation. An empty model was first estimated to decompose the variation of the suicidal ideation predicted variable. The addition of the number of stressors variable to the model resulted in a significant improvement in model fit ($\chi^2 = 6.64, p < 0.001$). As shown in Table IV, there is approximately a five-fold increase in suicidal ideation for those with a NLE compared to those without a NLE. In a post hoc negative binomial regression examining NLE types, only financial problems were significantly associated with suicidal ideation ($\chi^2 = 6.66, p = 0.010$). Legal issues or a failed physical fitness test were not significantly associated with suicidal ideation.

**DISCUSSION**

Findings from the present study revealed that NLEs may impart a significant burden on military pain sufferers and that, in most cases, this burden is related to increases in severity as higher numbers of NLEs are endorsed among individuals actively seeking treatment for their pain in the U.S. military medical system. As noted in the introduction, there is a deep research literature on the implication of socioeconomic factors on pain and disability, with some suggesting that socioeconomic stressors may have a deleterious impact on rehabilitation outcomes and return to work.\(^31-33\) Consistent with previous findings, there were no differences in numbers of NLEs reported by gender, relationship status, or having children in the home.\(^34,35\)

There was a linear increase in poor pain coping, reported pain severity, disability, and psychosocial distress and decrease in pain acceptance as the number of endorsed NLEs increased. Study participants who reported NLEs were more depressed, more socially distressed, reported higher levels of helplessness and symptom rumination related to their pain, and were at greater risk for comorbid trauma symptoms and suicidality. Once again, the cross-sectional nature of the ESCAPE study makes it difficult to determine...
if NLEs causes or is a result of psychosocial distress and poor pain coping among chronic pain patients. The present study does confirm that NLEs are strongly associated with poor pain coping, pain intensity, and pain-related disability even in the unique and structured military benefits environment.

Comorbid depression may be a particularly important part of the NLE/pain coping relationship, and the present study found alarming high levels of depression among pain patients that increased with the number of NLEs endorsed. Prior studies note that individuals with chronic pain who are also depressed may be uniquely vulnerable to the effects of external stressors such as socioeconomic stress, and that depression symptoms are not adequately addressed as part of their pain care. A study of a large U.S. corporation found that the cost of managing chronic health conditions almost doubled for employees who were experiencing comorbid depression, and depression has been implicated in increased chronicity of pain leading to an increased likelihood of financial and disability problems.

Alarmingly, the present study found a five-fold increase in odds of suicide ideation among pain patients when NLEs were endorsed. The relationship between chronic pain and suicide risk is well established, but this is one of the first studies to show evidence of a significant contribution of NLEs to suicide risk in a military pain sample. Theory-based examinations of suicide risk in chronic pain samples have shown that distressed interpersonal relations (i.e., thwarted belongingness) and self-perception of being a burden to others (i.e., burdensomeness) significantly predict suicidal ideation among pain patients even after adjusting for other pain characteristics and depression. While the suicide cognitions scale moderately correlated to current suicidal ideation, the SCS had a low correlation with NLEs. This finding may indicate that the SCS measures pre-existing beliefs that are not as sensitive to change in the presence of additional NLEs such as financial difficulties.

Problems with finances (which are common among individuals who are engaged with a disability benefits system) may contribute to feelings of burdensomeness and hopelessness and impart consequent risk for suicide. It is interesting to note, however, that despite the RAND report’s description of VA financial benefits that adequately compensate veterans for lost income, veterans treated in the VA before the onset of the conflicts in Iraq and Afghanistan actually demonstrated higher rates of suicidality than their civilian counterparts. This may suggest that despite adequate compensation, perceived financial difficulty may explain the possible increase in suicidality or that financial distress alone does not adequately explain the connection between NLEs and suicide risk in an active duty population. Our findings suggest that financial difficulty is related to higher levels of suicidal ideation, however, given the limited sample size we cannot conclude with certainty whether financial distress alone accounts for increased rates in ideation.

There are, however, remaining questions about the directional nature of the contribution of psychosocial distress and pain coping variables to NLEs. Although it is possible that psychosocial distress (e.g., depression) among pain patients is a consequence of the stress of engaging the disability system, recent studies suggest that psychosocial distress may actually prompt engagement with the disability system and disability disputes. As described in the RAND report, active duty military members have access to a uniquely supportive medical, disability, and benefit system that may insulate them from the negative socioeconomic stressors. Studies of U.S. military veterans also show that engagement in the structured military and Department of Veteran Affairs (VA) disability systems put military service members and veterans in contact with coping resources that help prevent social isolation and promote healthy functioning.

Limitations
Interpretations of the current findings may be influenced by the following methodological limitations. Individuals experiencing the most pain and distress may have been more likely to agree to participate in the ESCAPE study causing a self-selection bias. Although the survey measures were anonymous, active duty members may have been more likely to underreport their symptoms in fear that their responses would trigger a referral to mental health, impact deployment status, or lead to a medical board examination. It is possible that the number of NLEs increases with age in addition to other variables. Age data were not available and therefore, could not be statistically controlled. Age has been shown to have a weak but significant correlation with pain perception and disability. While relationship status was assessed, this information does not indicate the quality of the relationship experience. Relational conflicts could be another potential stressor that may explain some of the remaining variance in suicidal ideation. Finally, the study’s cross-sectional design does not allow us to establish causality in relationships identified between variables.

Future Directions
Due to our findings, future research regarding NLEs in relation to pain coping and psychosocial distress would be advantageous. More research is warranted to examine the types of NLEs experienced by active duty men and women. A longitudinal study examining long-term psychosocial distress/poor pain coping as related to NLEs would help to elaborate the long-term consequences of NLEs on pain coping and psychosocial distress.

Conclusions
To conclude, this study found a link between NLEs and psychosocial distress and pain coping. The increase in the number of NLEs endorsed led to higher symptom severity in multiple psychosocial and pain-related factors; as such, practitioners should take note of assessing for NLEs when
developing rehabilitation programs for their patients. This current research illuminates the need for clinicians to consider screening and treating depressive symptoms as they are related to NLEs. Clinicians should also consider screening pain patients for suicide cognitions particularly in cases where NLEs are present.

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PREVIOUS PRESENTATION
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