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The Moderating Effect of Race on IPTS Factors and Suicidal Ideation in a Military Sample

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July 2023

Abstract

Suicide rates have increased over the last 20 years in all ethnic and racial groups in the US, but most prominently for veterans and non-white racial subgroups. Suicidal Ideation is a predictor for suicide but there is limited research looking at mental health differences in the at-risk military community due to race. 794 military personnel were surveyed electronically on a range of mental health measures in a southern US joint forces training center between 2014 and 2015. Guided by the Interpersonal-Psychological Theory of Suicide, this secondary data analysis considered the moderating effect of a three-group race model on the relationship between Thwarted Belongingness and Perceived Burdensomeness on Suicidal Ideation, with exploratory analyses considering social support as an additional predictor. Results showed that race did moderate the relationship between Perceived Burdensomeness and Suicidal Ideation, with the Combined racial group being significantly different from the comparison White group. These results imply that military service may equalize risk for those in the African American group and exacerbate risk for those in the Combined group, specifically those who identify as Hispanic/Latino(a), when compared to the White group. Future research should focus on those within the Combined group, and suicide prevention interventions focused on Perceived Burdensomeness and Thwarted Belongingness should supply additional resources to military members who identify as Hispanic/Latino(a), Asian/Pacific Islander, and/or Native American for the best chance of decreasing suicide risk.

Introduction

Suicide & Suicidal Ideation

Suicide is a leading cause of death in the United States (CDC, 2022). US suicide rates have increased by 30% over the past two decades (Inoue et al., 2022) and rates are even higher for Veterans and vary significantly by race (CDC, 2022). Suicidal Ideation (SI), defined as a range of contemplations, wishes, and preoccupations with death, is a key predictor of suicide (Harmer et al., 2022). Veterans are more likely to experience both Depression and SI than the general population (Rozanov & Carli, 2012) and are also 1.5 times more likely to commit suicide than non-Veterans (DeAngelis, 2022; Inoue et al., 2022; U.S. Department of Veterans Affairs, 2022). Elevated risk for SI is most severe for military members transitioning out of service, with racial/ethnic minorities having an overall higher chance of high-risk SI (Hoffmire et al., 2022). The fact suicide rates have increased in all racial and ethnic groups over the past two decades, but most prominently within African American, Asian/Pacific Islander, American Indian/Alaska Native, and Hispanic populations (Karaye, 2022), is a pressing cause for concern.

Race Research in the Military Community

There are reported differences in Suicidal Ideation and mortality based on race. Racial minorities have been shown to experience more stress that can be a direct path to SI and suicide attempts (J. Chu et al., 2020), and in the military community, Hispanic veterans diagnosed with traumatic brain injuries have higher mortality rates than White or Black veterans with the same comorbidities and demographic backgrounds (Egede et al., 2012). A study looking at the relationship between pain and suicidal desire found race to have an exacerbating effect on that relationship in non-military African American adults (Shannonhouse et al., 2022). Interestingly, military service may provide a greater mortality benefit to African American service members

than White service members (Landes et al., 2017), as the suicide rate of White veterans is double that of African American veterans (U.S. Department of Veterans Affairs, 2022). When these rates are compared to non-veteran counterparts, the difference between Black and White veterans' suicide rates is much less distinct than the difference between Black and White non-veterans (Sheehan & Hayward, 2019). This could indicate less risk based on racial identity, but researching ways race concretely impacts service-related suicide is needed.

Unfortunately, race research in the military community has systematic problems regarding misclassification of data, limited categories unable to reflect social identities, and inappropriate aggregation of ethno-racial subgroups (Onoye et al., 2017) that can lead to potentially skewed interpretations. As seen above, while White veterans are shown to have much higher rates of suicide than their African American counterparts, the pattern of minority suicide could be masked by the higher number of White service members in the population compared to the number of African American service members (Wang et al., 2016). Likewise, ethnic and racial minority military members do not portray suicidal intent the same way as their White cohort mates. Much research suggests Suicidal Ideation in minority individuals only becomes evident after a suicide risk assessment because they are less likely to come forward with their mental health concerns (K. M. Chu et al., 2021; Morrison & Downey, 2000), and differ in their mental health care preference (Harada et al., 2002) and usage (Tang et al., 2022). Race's impact on suicide in the military community needs to be given due course to understand what circumstances impact risk.

Interpersonal-Psychological Theory of Suicide

One explanation for increased Suicidal Ideation rates in military personnel and minorities could relate to the Interpersonal-Psychological Theory of Suicide (IPTS). Thomas Joiner's (2005) theory posits that for an individual to attempt suicide they need *desire*, caused by

experiences of Thwarted Belongingness (TB) and Perceived Burdensomeness (PB), and the *acquired capability* to perform the act. Perceived Burdensomeness defines a personal and incorrect perception that one's presence is a burden to those around them and that they would be worth more dead than alive (C. Chu et al., 2017; Joiner, 2005; Van Orden et al., 2012a).

Thwarted Belongingness is described as a painful mental state that arises when the need for connectedness and desire to belong are unmet, such as in circumstances where one is lonely, lacks reciprocal care, or is alienated from family, a circle of friends, or valued group (Joiner, 2005; Van Orden et al., 2012b).

Perceived Burdensomeness is a significant predictor of SI (Van Orden et al., 2006) and is associated with increased suicidality in military samples (Bryan et al., 2012). Both PB and TB associate positively and strongly with suicide factors, but SI, suicide risk, suicide attempt history, and suicide lethality in various circumstances have been shown to have a stronger relationship with PB than TB (C. Chu et al., 2017; Joiner et al., 2002, Raines et al., 2022).

Post-Deployment Social Support

Social support, a related concept to Thwarted Belongingness and Perceived Burdensomeness, is another crucial factor to consider as research suggests existing theoretical frameworks like the Interpersonal-Psychological Theory of Suicide may be missing important elements of social support and interpersonal interactions that impact suicidal behaviors and thoughts (Arenson et al., 2021). The APA (2023) defines social support as:

The provision of assistance or comfort to others, typically to help them cope with biological, psychological, and social stressors. Support may arise from any interpersonal relationship in an individual's social network, involving family members, friends, neighbors, religious institutions, colleagues, caregivers, or support groups. It may take the

form of practical help (e.g., doing chores, offering advice), tangible support that involves giving money or other direct material assistance, and emotional support that allows the individual to feel valued, accepted, and understood.

Social support is negatively associated with both TB and PB (Van Orden et al., 2012b), and post-deployment social support at greater levels can act as a protective factor against SI in the military community (Arenson et al., 2021; Pietrzak et al., 2010, 2011, 2017; Wilks et al., 2019).

Unfortunately, when service members come home from war they often feel isolated from those supportive and understanding relationships they developed during deployment, leading to further feelings of isolation and negative mental health outcomes (DeAngelis, 2022; McElhinny, 2021).

As a result, it is important to determine which of these similar factors, Thwarted Belongingness, Perceived Burdensomeness, or social support, if any, are more influential on Suicidal Ideation.

Proposed Project

The proposed project aims to bridge the gap in military research regarding the possible moderating effect of race on Suicidal Ideation. Population-sensitive and culturally relevant suicide information is the first step to finding possible factors that could benefit the diverse military community. While much research points toward a protective factor regarding race within the military community, just as much research suggests there are no appreciable differences in SI between racial groups (George et al., 2019). Consequently, determining more resolutely the role race plays in the relationship between Perceived Burdensomeness or Thwarted Belongingness and Suicidal Ideation is invaluable. This is especially impactful considering this dataset was collected from a mainly National Guardsmen population (see Table 1) who have been shown to have significantly higher levels of TB and PB than active-duty soldiers (Podlogar et al., 2017).

Previous research using this dataset looked at the relationship between Thwarted Belongingness, Perceived Burdensomeness, and Suicidal Ideation and found both TB and PB to be predictive of SI (Anestis et al., 2015), but did not break this down by race. The goal of this project is to determine if the interaction between race and Thwarted Belongingness/Perceived Burdensomeness predicts Suicidal Ideation in the military community. It is predicted that: (1) Perceived Burdensomeness will have a positive relationship with Suicidal Ideation for all racial groups, (2) Thwarted Belongingness will have a positive relationship with Suicidal Ideation for all racial groups, (3) Perceived Burdensomeness will have a stronger positive relationship with Suicidal Ideation than Thwarted Belongingness, (4) Race will moderate the positive relationship between Perceived Burdensomeness and Suicidal Ideation where relationship strength will stay the same for White participants, weaken for African American participants, and escalate for Combined racial groups, and (5) Race will moderate the positive relationship between Thwarted Belongingness and Suicidal Ideation where relationship strength will stay the same for White participants, weaken for African American participants, and escalate for Combined racial groups.

Methods

Participants

The total sample was 953 US military personnel, mostly from the National Guard, at a US joint base training center (see Table 1). As a function of participants being able to input their own participant ID, there were an erroneous handful of cases where participants duplicated subject IDs. All afflicted cases were compared using demographic information starting with age, sex, and race, and then moving onto deployment history to ensure they were distinct individuals.

Eighty-four individuals were removed for false-start data where no data were collected or a participant started but was interrupted and had to begin again (creating an invalid duplicate),

four entries were removed because race was left blank, and 34 entries were removed because race was marked as Other, which could not be meaningfully distinguished from other categories for analysis purposes because it could indicate mixed status, desired racial group was not present, prefer not to say, or any number of other reasonings. Additional removals because of incomplete cases included: 20 entries with totally missing scales and 17 entries with 40% or more missing responses on a scale (Madley-Dowd et al., 2019). After all removals, only 794 individuals' data were considered for main data analysis (see Figure 1 for a more specific removal breakdown).

Of the 794 participant sample, 81.96% were men, average age was 27.08 ($SD = 8.19$), and individuals identified as 64.74% White, 27.46% African American, 4.66% Hispanic/Latino(a), 2.02% Asian/Pacific Islander, and 1.13% Native American. For the purposes of data analysis, while it was not ideal, groups were analyzed via a comparative White, African American, and Combined group format. The Combined group included Hispanic/Latino(a), Asian/Pacific Islander, and Native American identities to account for the smaller sample sizes collected from each but to still include them in analysis (see sample characteristics in Table 1).

Procedures

This secondary data analysis resulted from a 2014 to 2015 Military Research Consortium mental health survey project conducted at a southern US joint forces training center. Recruitment consisted of military higher-ups sending groups of service members to participate. Military personnel who consented to project participation answered a multitude of laptop-based, self-report questionnaires on Qualtrics spanning Thwarted Belongingness, Perceived Burdensomeness, Suicidal Ideation, Post-Deployment Social Support, and more, and were monetarily compensated for their time (\$20). While any service member could participate, no active-duty personnel could receive compensation. Surveys took anywhere between 1 to 2.5

hours to complete and were done on a secured, private wireless network. There were no participant exclusion criteria.

Measures

Beck Scale for Suicide Ideation (BSS)

The outcome of this project was measured via one of the most widely used and empirically supported Suicidal Ideation measures (Podlogar et al., 2022), the 21-item self-report Beck Scale for Suicidal Ideation (Beck & Steer, 1991). Questions one through 19 measured SI severity, with questions 20 and 21 relating to number of suicide attempts and intent to die in the most recent attempt, so only questions one to 19 contributed to the total SI score (Anestis et al., 2015). Participants would select from three answers of escalating suicidal intent, such as “I have a moderate to strong wish to live” to “I have a weak wish to live” to “I have no wish to live,” which would be scored as a zero, one, or two, respectively. Suicidal Ideation severity could sum to a maximum score of 38, with higher scores indicating greater risk of suicide (Beck & Steer, 1991; Kliem et al., 2017). Within this sample, reliability for the BSS was excellent ($\alpha = .92$).

Interpersonal Needs Questionnaire (INQ-15)

The Interpersonal Needs Questionnaire (INQ) measured two of this project’s predictor variables, the distinct but related constructs of Perceived Burdensomeness and Thwarted Belongingness. The INQ is based on the Interpersonal-Psychological Theory of Suicide (IPT) and measures interpersonal need fulfillment, specifically, the degree one sees themselves as a burden to those around them and the extent to which one’s need to belong is met (Van Orden et al., 2012b). Questions were answered on a 7-point Likert scale ranging from one (Not at all true for me) to seven (Very true for me), where higher scores suggested more prevalent PB and TB

(Mitchell et al., 2020). The INQ has been shown to be a consistent measure of SI with good internal consistency and reliability in military samples (Gutierrez et al., 2016).

The Perceived Burdensomeness subscale included six items and consisted of questions like “These days the people in my life would be better off if I were gone” and “These days I think I am a burden on society.” The Thwarted Belongingness subscale consisted of nine items and included questions such as “These days I feel like I belong” and “These days I often feel like an outsider in social gatherings” (Van Orden et al., 2012a). Summed scores for the PB subscale range six to 42 points and summed scores for the TB subscale (after reverse scoring applicable items) range nine to 63 points (Mitchell et al., 2020). The standardized alphas for the Perceived Burdensomeness and Thwarted Belongingness subscales in this sample were high at .89 and .9, respectively.

Deployment Risk and Resilience Inventory - Post Deployment Support (DRRI-PDS)

The Deployment Risk and Resilience Inventory (DRRI) is a supported collection of measures used to assess deployment-related health and well-being in various military populations (Vogt et al., 2008). The last predictor variable, social support, was measured via the DRRI’s 15-item Post-Deployment Support subscale that assesses the extent to which family, friends, coworkers, employers, and/or community provided emotional sustenance and instrumental assistance to a service member post-deployment. Questions were answered on a 5-point Likert scale ranging from one (Strongly Disagree) to five (Strongly Agree) and provided scenarios such as “The reception I received when I returned from my deployment made me feel appreciated for my efforts” or “Among my friends or relatives, there is someone who makes me feel better when I am feeling down” (King et al., 2003). Summed DRRI-PDS scores (after reverse scoring relevant items) could range from 15 to 75, with higher scores suggesting greater

levels of perceived social support. This measure also had remarkably high reliability in this sample ($\alpha = .92$).

Results

Main Analyses

Descriptives

This project determined the moderating effect of race on Thwarted Belongingness and Perceived Burdensomeness on Suicidal Ideation. Initial correlations were conducted between all predictor variables and SI to exclude the possibility of collinearity. The Suicidal Ideation scale was lowly correlated with predictor variables Perceived Burdensomeness ($r = .27$) and Thwarted Belongingness ($r = .28$). Predictors PB and TB were strongly correlated with one another ($r = .67$). Average SI ($M = 0.02$, $SD = 0.1$), PB ($M = 1.31$, $SD = 0.66$), and TB ($M = 2.11$, $SD = 1.17$) scores for the entire sample were relatively low (see Table 2).

These values changed when broken down by racial group. The White group sported mean SI scores at 0.02 ($SD = 0.1$), mean PB scores at 1.31 ($SD = 0.64$), and mean TB scores at 2.05 ($SD = 1.13$). The African American group had mean SI scores at 0.02 ($SD = 0.1$), mean PB scores at 1.31 ($SD = 0.68$), and mean TB scores at 2.29 ($SD = 1.25$). The Combined group produced mean SI scores at 0.02 ($SD = 0.07$), mean PB scores at 1.36 ($SD = 0.74$), and mean TB scores at 1.99 ($SD = 1.11$).

Main Effects

A moderation analysis determined the predictive nature of Perceived Burdensomeness, Thwarted Belongingness, and race on Suicidal Ideation. Consistent with hypothesis one, PB had a positive relationship with and was a significant predictor of SI ($b_{PB} = 0.019$, $SE = 0.009$, $t = 2.108$, $p = .035$, 95% CI [0.001, 0.037]). Consistent with hypothesis two, TB had a positive

relationship with and was a significant predictor of SI ($b_{TB} = 0.016$, $SE = 0.005$, $t = 3.055$, $p = .002$, 95% CI [0.006, 0.026]). Since PB and TB were measured using the same metric, as they are both subscales of the INQ, it allowed for meaningful coefficient comparison. Regarding hypothesis three, the PB coefficient for predicting SI (0.019) was slightly higher than the TB coefficient (0.016), supporting the notion that Perceived Burdensomeness has a stronger positive relationship with Suicidal Ideation than Thwarted Belongingness. Race was not a significant predictor of SI for the African American ($b_{AA} = -0.006$, $SE = 0.018$, $t = -0.338$, $p > .05$, 95% CI [-0.041, 0.029]) or Combined groups ($b_C = -0.02$, $SE = 0.028$, $t = -0.722$, $p > .05$, 95% CI [-0.075, 0.035]) when compared to the White group. Overall, the model significantly predicted Suicidal Ideation ($F_{8,785} = 10.62$, $p < .001$), and when adjusted accounted for approximately 8.84% of the proportion of variance in SI scores.

Moderation Results

The same analysis determined the moderating effect of the three-group race model [White, Black, Combined (Hispanic/Latino(a), Asian/Pacific Islander, Native American)] on the relationships between PB and TB with SI. Hypothesis four was partially supported as race did moderate the relationship between Perceived Burdensomeness and Suicidal Ideation for the Combined group as their PB scores were significantly higher than the comparison White group ($b_{PB-C} = 0.055$, $SE = 0.026$, $t = 2.084$, $p = .038$, 95% CI [0.003, 0.107]). Comparatively, the African American group's PB scores were not significantly lower compared to the White group as predicted, instead showing no significant difference ($b_{AA} = 0.001$, $SE = 0.015$, $t = 0.075$, $p > .05$, 95% CI [-0.028, 0.03]). A simple slope diagram details the relationship between PB and SI by race in Figure 2. The significant interaction between race and PB produced a small effect size when comparing models with and without the interaction present ($f^2 = .0057$).

Hypothesis five was not supported as race did not moderate the positive relationship between Thwarted Belongingness and Suicidal Ideation for any racial groups ($b_{TB-AA} = 0.002$, $SE = 0.008$, $t = 0.218$, $p > .05$, 95% CI [-0.014, 0.018]; $b_{TB-C} = -0.027$, $SE = 0.017$, $t = -1.543$, $p > .05$, 95% CI [-0.061, 0.007]) when compared to the White group.

Exploratory Analyses

Five-Group Race

Since analyses indicated a moderating effect of race, exploratory analyses were conducted using a five-group race model (now splitting the Combined group into independent Hispanic/Latino(a), Asian/Pacific Islander, and Native American groups) to parse out group-specific differences. None of the five racial groups predicted Suicidal Ideation nor moderated TB's or PB's relationship with SI (see Table 3).

Post-Deployment Social Support

Additional exploratory analyses were conducted on social support using a diminished sample size of 450 participants. The sample dropped by 337 individuals because of a completely missing DRRI-PDS scale, and an additional seven entries were removed for the scale missing more than 40% of responses (see Figure 1) [Madley-Dowd et al., 2019]. This drastic drop occurred because the social support scale was only included in a 6-month follow-up assessment that many participants did not complete. Social support was negatively correlated with Suicidal Ideation ($r = -.17$, $p < .001$), Perceived Burdensomeness ($r = -.35$, $p < .001$), and Thwarted Belongingness ($r = -.35$, $p < .001$).

When analyzing the three-group race format, social support was not a significant predictor of Suicidal Ideation ($b_{SS} = -0.002$, $SE = 0.007$, $t = -0.340$, $p > .05$, 95% CI [-0.016, 0.011]), and Perceived Burdensomeness no longer predicted SI ($b_{PB} = 0.017$, $SE = 0.01$, $t = 1.653$,

$p > .05$, 95% CI [-0.079, 0.05]). However, there was evidence of racial moderation on the relationship between PB and SI given the Combined group's PB scores were significantly higher than the comparison White group's ($b_{PB-C} = 0.068$, $SE = 0.024$, $t = 2.806$, $p = .005$, 95% CI [0.02, 0.116]). Uniquely, race now moderated the relationship between Thwarted Belongingness and SI where the African American group's TB scores were significantly higher than the comparison White group's ($b_{TB-AA} = 0.021$, $SE = 0.009$, $t = 2.212$, $p = 0.028$, 95% CI [0.002, 0.039]).

When analyzing the previous findings within a five-group race breakdown, Hispanic/Latino(a)'s scores on Perceived Burdensomeness were significantly higher than the comparison White group's ($b_{PB-L} = 0.085$, $SE = 0.03$, $t = 2.853$, $p = 0.005$, 95% CI [0.026, 0.143]), with no other racial groups suggesting significance. All other findings from the three-group exploratory analysis on social support stayed the same.

Discussion

This secondary data analysis determined if race moderated the respective impacts of Perceived Burdensomeness and Thwarted Belongingness on Suicidal Ideation using 794 mostly National Guard military personnel. Results indicated that race positively and negatively impacted SI in the military community. When looking at Perceived Burdensomeness, African American racial identity is likely to decrease SI risk to a more equitable state compared to White participants, while Hispanic/Latino(a) identity is likely to increase risk for SI compared to White participants. That said, it is important to remember that while African American military personnels' risk may not be significantly different from White counterparts, all service members have higher SI risk than non-service members (CDC, 2022; DeAngelis, 2022; Inoue et al., 2022; U.S. Department of Veterans Affairs, 2022). As no racial groups had negative Suicidal Ideation

coefficients regarding Perceived Burdensomeness or Thwarted Belongingness relationships, effort should still be invested in diminishing risk for the whole community.

Main Findings

Main effect results supported hypotheses one and two, suggesting that both Perceived Burdensomeness and Thwarted Belongingness predicted Suicidal Ideation. In circumstances where one experiences feelings of PB and/or TB, occurrences of SI are likely to increase. Hypothesis three was also supported, indicating that between Perceived Burdensomeness and Thwarted Belongingness, PB is likely to raise SI severity more. However, from a practical perspective, the PB coefficient for predicting SI was a mere 0.003 points higher than that of the TB coefficient, indicating that with near identical influence, it would be viable to focus intervention efforts on both PB and TB when attempting to diminish chances of suicide risk.

It is also valuable to consider that, when adjusted, the model significantly explained 8.84% the proportion of variance in Suicidal Ideation scores. This suggests that the variables Thwarted Belongingness, Perceived Burdensomeness, and race do explain some of the outcome, but that there are likely additional variables to assess that could explain more. Explaining less than 10% of SI score variation does not seem substantial, however, it is a step toward understanding the mechanisms of suicide risk. Given how suicide rates are higher based on military status and race (CDC, 2022), this model targets those factors directly, providing preventative guidance based on the percentage unveiled, while simultaneously showing a sizable portion of understanding is still missing and should be probed. From a practical lens, if there is a way to tackle nearly 9% of the cause of suicide risk in racial minority service members, it is a meaningful contribution to stagnating increasing suicide rates (Inoue et al., 2022) while additional research is conducted on other possible influences.

Moderation Findings

While race did not independently predict Suicidal Ideation, further supported by the fact mean SI scores for the sample and partitioned racial groups did not vary, moderation results showed race did significantly change the relationship strength between Perceived Burdensomeness and Suicidal Ideation. Specifically, SI scores for those in the Combined group compared to the White group were significantly higher. This result partially supports hypothesis four and indicates that those who identify as Hispanic/Latino(a), Asian/Pacific Islander, and/or Native American could be at higher risk for increased SI because of PB in military samples. Interestingly, those in the African American group did not have significantly different scores than those in the White group regarding the relationship between PB and SI. This is an encouraging result as it could indicate African American racial status could be a protective factor against SI risk in military samples. This lack of significant difference between groups mimics other findings from the military community that suggest military service could provide a greater mortality benefit to African Americans (regarding natural life expectancy) and more equitable mortality rates when comparing African American and White veterans to non-veteran counterparts (Landes et al., 2017; Sheehan & Hayward, 2019).

Unexpectedly, hypothesis five was not supported as the results showed no evidence of racial moderation on the relationship between Thwarted Belongingness and Suicidal Ideation. Research suggests that TB is less predictive of SI than PB, which could explain these findings (C. Chu et al., 2017; Raines et al., 2022), but the study method could have also played a part in these results. Thwarted Belongingness is highlighted by the experience of isolation, however, because a sizeable portion of the sample surveyed was active duty (see Table 1), it is arguable

that the isolation many military members feel upon leaving the service that can lead to TB would not yet be present because they are still embroiled in the military culture and community.

Exploratory Findings

Considering those in the Combined group had higher Suicidal Ideation scores resulting from Perceived Burdensomeness than White and African American comrades, exploratory analyses were performed to determine which group(s) could be driving that increase in risk. In the 450-participant model that included social support as a predictor, the Hispanic/Latino(a) group was the only one with significantly higher SI risk because of racial status compared to the White group, which emulates findings that suggest higher mortality rates are expected for Hispanic military members with similar backgrounds to White and African American counterparts (Egede et al., 2012). For this project, the results seem to indicate that when the Combined group previously suggested increased risk for Suicidal Ideation, that relationship might have solely been the influence of the Hispanic/Latino(a) group.

These results could be explained via Social Identity Theory, which describes how a person's sense of self and belonging are based on their group membership(s) (Turner et al., 1979). Race is a prominent aspect of one's identity, and in cases where one's group membership is respected it can increase self-esteem, prevent isolation, and promote feelings of belonging that bolster mental and physical health (Ai et al., 2014), but the opposite (a worsened sense of self) can also occur if a person identifies with a mistreated group (Turner et al., 1979). Those who identify as minorities are much more likely to experience minority stress (J. Chu et al., 2020) and feel like they are a societal burden (Keum, 2023), which can exacerbate thoughts of suicide. Social Identity Theory could predict the worse Suicidal Ideation outcome found resulting from Perceived Burdensomeness for those in the Combined group given their disproportionately lower

numbers compared to the White and African American individuals sampled. In 2014 when this sample was collected, the proportion of military service members was only 22% diverse (11.2% African American, 6.6% Hispanic, 1.6% Asian, and 0.6% Native American) [National Center for Veterans Analysis and Statistics, 2016]. By comparison, this project's sample was more representative of African Americans, Asian/Pacific Islanders, and Native Americans, and less representative of Hispanic/Latino(a)s (see Table 1). From a pure proportional standpoint, this diversity spread could explain why in the exploratory analyses only the Hispanic/Latino(a) group seemed to motivate the significant increase in relationship strength between Perceived Burdensomeness and Suicidal Ideation, this was the only underrepresented group.

Limitations

This project was not without limitations. Firstly, 92.23% of this participant pool were from the National Guard, 81.96% were male, and 64.74% were White, so these findings can only generalize to military samples with similar demographics (see Table 1). It would be an asset for future project iterations to incorporate and compare different military branches to determine if findings vary, especially considering higher levels of Thwarted Belongingness and Perceived Burdensomeness are more common in National Guard samples (Podlogar et al., 2017). Additionally, while this sample had the strength of being more racially diverse than the population at the time (National Center for Veterans Analysis and Statistics, 2016), the extra representation still resulted in inadequate group sizes for analysis. The necessity of a Combined group to analyze the data from Hispanic/Latino(a), Asian/Pacific Islander, and Native American participants was less than ideal when one of the key problems with race research in this community is inappropriate aggregation of ethno-racial subgroups (Onoye et al., 2017). However, study members felt it better to include the data and have findings and implications

with caveats for these groups rather than none at all. If this project were to be done again, researchers would have used stratified sampling to ensure adequate sample sizes.

Another drawback was that the analyses that included social support used a smaller sample size, making it harder to make one to one comparisons of the main project findings and the exploratory findings. There was consistency between the results produced from the 794 and 450 participant samples regarding the moderating effect of race on the relationship between Perceived Burdensomeness and Suicidal Ideation, suggesting significance for the Combined group and then drilling down to see this was most likely motivated by the Hispanic/Latino(a) group, but there was also conflicting information. Only in the exploratory analyses was race a moderator of Thwarted Belongingness' relationship with SI where the African American group had increased feelings of TB compared to the White group. It is unclear if this finding is a result of social support being in the model or the diminished sample size that could be tapping into an unidentified group difference between the full sample and the smaller sample of individuals who chose to partake in the study follow-up. So, being unable to include social support as a main predictor and only as an exploratory one was an unfortunate limitation resulting from this project's secondary data analysis nature. If this project were done again, project members would have included social support as a key measure in the first data collection rather than the second to ensure more responses.

Lastly, on a technical note about data collection, this sample had a small group of participants with duplicated project IDs. Since this was a secondary data analysis, the current author had to make data cleaning decisions to remedy this situation. While exhaustive effort was expended to verify all afflicted cases were in fact individual people and not duplicated information, of which only one entry was found to be fraudulent and removed, there is the

chance a small handful of participants submitted data to the project more than once and were not caught. To avoid this complication in the future, study staff would be the ones to assign, input, and record participant IDs during data collection rather than the participants doing it themselves.

Implications and Future Research

Considering this project's findings and limitations, there are a few valuable implications and options for future directions this project inspires. First, when developing interventions to diminish Suicidal Ideation in military personnel, tackling both feelings of Perceived Burdensomeness and Thwarted Belongingness would be protective against SI with near equitable, unique payoff. While this project's diminutive effect size (.0057) reporting below Cohen's (1988) standard small effect cutoff ($f^2 = .02$) could be construed as a limitation that argues negligible clinical implication, that conclusion is not necessarily the case. In a meta-analysis spanning 30 years of research, Aguinis et al. (2005) found startling evidence that most moderation effect sizes were far below standard cutoffs, consistently scoring around a threshold of .002, especially in cases where race/ethnicity was included as a moderator. This project's findings focus on a population and reside in a field of study where the clinical consequence of ignoring the relationships between race, Perceived Burdensomeness, Thwarted Belongingness, and Suicidal Ideation could be severe. In their debate over the importance of effect sizes regarding clinical application, Kraemer and Kupfer (2006) posited that there is no one-size-fits-all effect size for significance and suggested that the seriousness of lacking a treatment should typically be given the most clinical consideration. Consequently, this project's .0057 effect size being above median results for this sort of analysis (Aguinis et al., 2005), being consistent with research in this field (Anestis et al., 2015), and being able to help prevent deleterious outcomes in an at-risk community argues a strong case for clinical relevance.

Second, these results suggest that being within the military may equalize risk for African American individuals compared to White individuals and exacerbate risk for those who are Hispanic/Latino(a), Asian/Pacific Islander, and/or Native American, potentially occurring most in Hispanic/Latino(a) individuals. When developing interventions for at-risk military groups, focusing efforts on the latter three groups would be the best usage of resources. Concurrently, it would also be valuable to analyze why this protective aspect truly exists for those in the African American group compared to the others. Some research suggests that African Americans are favorably selected for military service, receive relatively equitable treatment while in the service, and accrue higher socioeconomic status and receive better health benefits after service that could benefit mortality rates (Sheehan & Hayward, 2019). If this is the case, determining if these same opportunities are present for and would be beneficial to those in more at-risk groups would be a justifiable next step.

Moving forward, it would also be prudent to focus more specified research on those within the Combined group (Hispanic/Latino(a), Asian/Pacific Islander, and Native American). This could be achieved with racially stratified sampling to ensure appropriate sample sizes and sample matching to control for extraneous variables not initially considered. The topic of sample-matching was broached for this project, but it was shown to be infeasible due to a power analysis indicating 720 participants would be required to achieve baseline 80% power. Relatedly, while this sample was representative of the population at the time of its collection, as the military population becomes more diverse it would also be informative to counter the problems with current military race research (Onoye et al., 2017) by broadening racial categories to include mixed identities or split the joint groups into independent identities to get a more granular look at varying risk levels.

Lastly, while this work delved into race's impact on Suicidal Ideation in the military community using factors Perceived Burdensomeness and Thwarted Belongingness from the Interpersonal-Psychological Theory of Suicide (Joiner, 2005), the combination of explored variables explained only roughly 9% of the variability in SI severity scores. Future researchers should consider predictors outside of IPTS factors, such as environmental context, to enrich current findings and explain more of the missing majority of understanding surrounding suicidal circumstance (Hjelmeland & Loa Knizek, 2020).

Conclusion

This secondary data analysis considered the moderating effect of race for Perceived Burdensomeness and Thwarted Belongingness on Suicidal Ideation using 794 military personnel from a US joint base training center. Findings suggested that: (a) Perceived Burdensomeness and Thwarted Belongingness both predicted Suicidal Ideation, (b) racial identity could equalize risk of SI resulting from PB for African American service members, and (c) racial identity could intensify SI risk resulting from PB for those identifying as Hispanic/Latino(a), Asian/Pacific Islander, and/or Native American. These results imply that intervention efforts would be most impactful if they aid against both PB and TB and have additional resources for Hispanic/Latino(a), Asian/Pacific Islander, and/or Native American individuals. Future research could benefit from additional research on the Combined group members and more racially sensitive sampling and grouping when collecting and analyzing data. Awareness is the first step toward change, and hopefully the results from this project can function as a touchstone for racial and Suicidal Ideation research in the military community to come.

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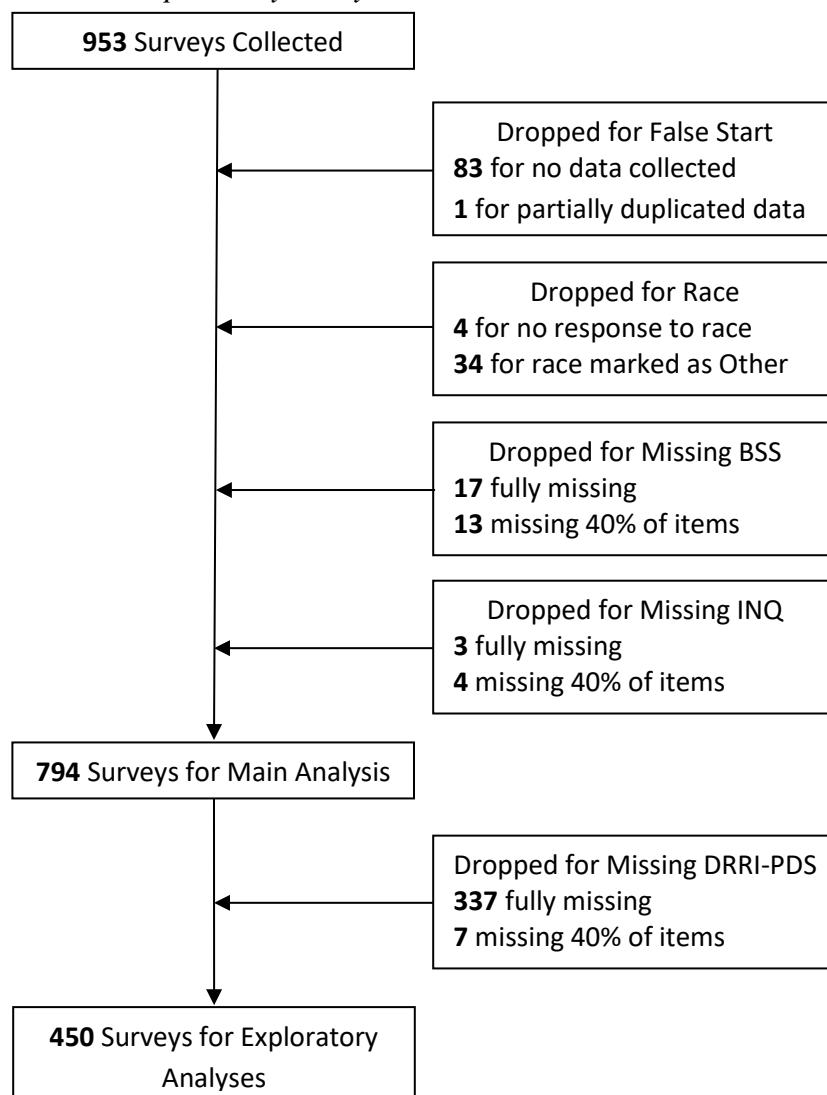
Table 1
Sociodemographic Sample Characteristics

Characteristic	<i>N</i>	<i>n</i>	%
<i>Sex</i>	787		
Male		645	81.96
Female		142	18.04
<i>Race</i>	794		
White		514	64.74
African American		218	27.46
Hispanic/Latino(a)		37	4.66
Asian/Pacific Islander		16	2.02
Native American		9	1.11
<i>Employment Status</i>	790		
I am currently unemployed		179	22.66
I am currently employed part-time		129	16.33
I am currently employed full-time		482	61.01
<i>Deployment</i>	783		
Never been deployed		270	34.83
Less than 1 month		300	38.31
1-6 months		27	3.45
6+ months to 1 year		21	2.68
Between 1 and 2 years		31	3.96
Between 2 and 3 years		43	5.49
More than 3 years		91	11.62
<i>Service Branch</i>	785		
Army National Guard		724	92.23
Air National Guard		3	0.38
US Army		32	4.08
Other		26	3.31
<i>Active-Duty Status</i>	780		
Yes		336	43.08
No		444	56.92

Note. N = 794. Average age of participants was 27.08 (*SD* = 8.19). Percentages are rounded to the nearest two decimal places, so values may not add up to exactly 100%.

Figure 1

Flowchart of Disenrollment for Main and Exploratory Analyses



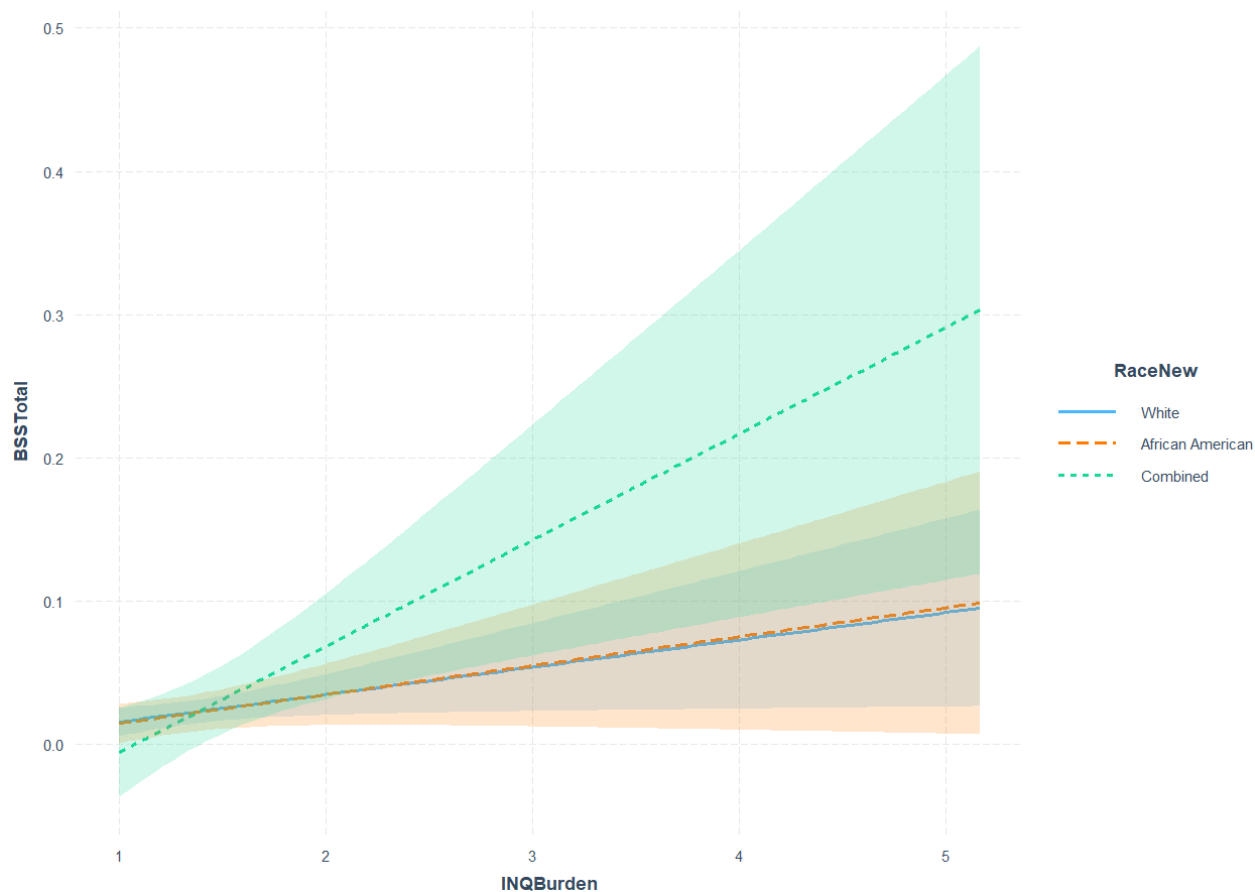
Note. **BSS** = Beck Scale for Suicidal Ideation. **INQ** = Interpersonal Needs Questionnaire. **DRRI-PDS** = Deployment Risk and Resilience Inventory - Post-Deployment Support subscale.

Table 2
Correlations with 95% Confidence Intervals, Means, and Standard Deviations

Variable	<i>M</i>	<i>SD</i>	1	2
1. Perceived Burdensomeness	1.31	0.66		
2. Thwarted Belongingness	2.11	1.17	.67** [.63, .71]	
3. Suicidal Ideation	0.02	0.10	.27** [.21, .34]	.28** [.21, .34]

Note. *M* and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval. * indicates $p < .05$. ** indicates $p < .01$.

Figure 2
Simple Slopes for the Relationship between Perceived Burdensomeness and Suicidal Ideation



Note. This figure represents the relationship between Perceived Burdensomeness and Suicidal Ideation for the White, African American, and Combined racial analysis group. Shaded regions represent 95% confidence intervals.

Table 3*Moderation of Perceived Burdensomeness, Thwarted Belongingness, and Suicidal Ideation*

Predictor	Coefficient	95% Confidence Interval	
		LL	UL
<i>Main Effects</i>			
Intercept	-0.04**	-0.06	-0.02
Perceived Burdensomeness	0.02*	0.00	0.04
Thwarted Belongingness	0.02**	0.01	0.03
Race: African American	-0.01	-0.04	0.03
Race: Hispanic/Latino(a)	-0.05	-0.12	0.02
Race: Asian/Pacific Islander	-0.03	-0.16	0.11
Race: Native American	-0.00	-0.13	0.13
<i>Interaction Effects: Perceived Burdensomeness</i>			
Race: African American	0.00	-0.03	0.03
Race: Hispanic/Latino(a)	0.07	-0.00	0.15
Race: Asian/Pacific Islander	0.05	-0.05	0.15
Race: Native American	0.04	-0.06	0.13
<i>Interaction Effects: Thwarted Belongingness</i>			
Race: African American	0.00	-0.01	0.02
Race: Hispanic/Latino(a)	-0.02	-0.07	0.02
Race: Asian/Pacific Islander	-0.02	-0.10	0.06
Race: Native American	-0.03	-0.10	0.04

Note. * indicates $p < .05$. ** indicates $p < .01$.