

# Self-Directed Violence Aboard U.S. Navy Aircraft Carriers: An Examination of General and Shipboard-Specific Risk and Protective Factors

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**ABSTRACT** Self-directed violence (SDV), which includes suicidal ideation with and without intent, suicidal preparatory behaviors and attempts with and without harm, non-suicidal self-directed violence, and completed suicide, has been a rising concern in the military. Military shipboard personnel may represent a unique subset of this population due to the distinct nature of deployment stressors and embedded supports. As such, one might expect differences in the prevalence of SDV between this group and other active duty personnel, signifying a distinct operational impact. This study analyzed the prevalence of SDV among personnel assigned or deployed to U.S. Navy aircraft carriers, and examined whether occurrences varied by descriptors commonly identified in the literature (e.g., age, gender, marital status, pay grade/rank). This study also examined characteristics specific to life aboard a U.S. Navy aircraft carrier in order to better understand the issues particular to this population. Descriptive analyses and relative risk findings suggested similarities in demographic risk factors to the general military population, but also striking differences related to occupational specialty and assigned department. This study is the first to shed light on risk and protective factors relevant to shipboard personnel.

## INTRODUCTION

Before Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF), the military demonstrated suicide rates lower than civilian counterparts after adjusting for demographics.<sup>1-4</sup> During the past decade, the Department of Defense introduced a standardized suicide surveillance system, Department of Defense Suicide Event Report (DoDSER), so that such data could be tracked more consistently. More recent DoDSER findings<sup>5-7</sup> showed an increase in overall military rates of suicide, and in some specific services the military rate surpassed the civilian rate. Although it is possible to attribute increased suicide rates to the increased frequency of deployments for service members during this time, these reports showed that the minority of suicides and attempted suicides were directly associated with OEF/OIF, and only a small percentage were associated with multiple deployments or with involvement in direct combat. Meta-analysis findings<sup>8</sup> showed no evidence of increased risk of completed suicide among individuals with posttraumatic stress disorder. Instead, several studies showed that current stressors were more strongly related to suicidal behavior than deployment and war exposure variables.<sup>9</sup> In other words, postdeployment stressors, and in particular the end of a significant relationship or experiencing a major life change, were significantly and positively related to suicidal behavior.

Joiner's Interpersonal-Psychological Theory of Suicide (IPTs)<sup>10</sup> offers a thoughtful and comprehensive way to understand suicidal behavior, and ultimately improve assessment

and intervention efforts, with applications for the general population as well as the military. IPTs proposes three necessary factors to complete suicide: (1) thoughts and feelings one does not belong with other people ("thwarted belongingness"), (2) thoughts and feelings one is a burden on others or society ("perceived burdensomeness"), and (3) an "acquired capability" to overcome fears and pains associated with suicide (includes past suicide attempts, previous exposure to violence). Joiner et al<sup>11</sup> demonstrated that thwarted belongingness and perceived burdensomeness predicted suicidal ideation, and these two variables along with acquired capability predicted suicide attempts, beyond depression indices and other key variables identified in the literature.

The relationship between suicidal behavior and military service is complex. Although military service may become a risk factor for some, it may also serve as a protective factor for others. Selby et al<sup>12</sup> provided a good summary within the IPTs framework on how military service can offer protection regarding relational issues, but may also increase risk, and how these issues may pertain to suicide. First, in a positive or protective manner, military service often enhances one's feelings of belonging to a group. However, postdeployment (and with respect to thwarted belongingness), such individuals may have difficulty relating to family and friends who have trouble understanding such experiences. Upon returning from deployment, service members often report being "on guard" with others as they integrate back to civilian life, another distancing mechanism. This may be exacerbated by feelings of mistrust that can result from combat. As well, it should be acknowledged that sometimes newer personnel who have not yet made connections with their new family of "shipmates" may experience heightened disconnection that contributes to feelings of thwarted belongingness. Regarding the second IPTs variable, perceived burdensomeness,

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in an optimistic fashion, military service generally offers identification with a positive occupational experience, instilling feelings of honor, a sense of being part of important missions, protecting family and country, and individual feelings of accomplishment. Service members may experience a sense of pride as they show friends and family around “their ship.” However, postdeployment or upon separation from the military, individuals may experience a loss of that sense of purpose, and begin to feel like a weight for others. In terms of the third variable, acquired capability, military service can entail exposure to pain and violence, and it is possible this may be associated with decreasing fears associated with SDV. Postdeployment, or while “in port,” the diminished protections such as weapons access restrictions (and strict regulations regarding use of alcohol in a duty status) may increase vulnerability for service members “off duty.”

The military is a heterogeneous group, with much variability in individual characteristics and life circumstances. Unfortunately, extant suicide research does not provide substantially descriptive information regarding such variations, including the demands and rewards of particular occupational specialties, or the types of supports available before, during, or after deployments. In a supplement to a recent issue of the *American Journal of Public Health* focused entirely on suicide risk among veterans of military service,<sup>13</sup> little information regarding specific types of military experiences or deploying units was provided. There is a distinct demanding deployment cycle associated with shipboard assignment. There are particularly stressful occupational specialties. And, there are unique operational supports such as noted camaraderie among crew, and embedded shipboard mental health personnel. As such, there may be both unique risk factors and protective variables, and we might expect differences in the prevalence in suicide and other forms of self-directed violence between this group and other active duty personnel, signifying a distinct operational impact. Further, little is known about the risk factors of the embarked Air Wing members, who are not part of ship’s company but must integrate into this operational environment. The term self-directed violence (SDV) includes completed suicide, suicidal ideation with and without intent, suicidal preparatory behaviors and attempts with and without harm, and non-suicidal self-directed violence. Understanding the risk factors associated with SDV is critical to continued success of projecting sea power worldwide.

The overall objective of this project was to provide insight into the prevalence of SDV among personnel assigned or deployed to U.S. Navy aircraft carriers. We predicted there would be a significant difference in prevalence of SDV by age, gender, marital status, and pay grade/rank among personnel on aircraft carriers, and that the differences between groups would be similar to those among other active duty military personnel as reported in the DoDSERs for the past 3 years. Review of these reports indicated demographic risk patterns, including concerns regarding young, junior enlisted service members, divorced service members, and service members living off

base. In this study, we were also interested in better understanding the impact of variables unique to shipboard life, and predicted there would be a significant difference in prevalence of SDV by stage of deployment cycle, occupational specialty, assigned department, and between individuals assigned (ship’s company) compared with individuals deployed (Air Wing) to aircraft carriers. Finally, we were interested in learning more about the triggers for SDV and whether they fit within the IPTS framework regarding relational disruptions.

## METHODS

### Subjects

This project utilized data gathered retrospectively. The data were drawn from an existing data base created and organized by the Ship Psychologists stationed on board 7 of the 11 U.S. Navy aircraft carriers (the remaining four Ship Psychologists expressed they were not interested in participating in the study). The research was approved by a full board review of the Institutional Review Board (IRB) at Naval Hospital Portsmouth (Clinical Investigation Study NMOTC.2014.0003; NMCP IRB1; DoD-N40003; DON IRB No. 000317; FWA No. 00006001; OHRP IRB No. 00003882). The data base used was the Self-Directed Violence Classification (SDVC) Tracker, and was initiated in May 2012 by the Ship Psychologists as an internal quality assurance mechanism to provide base rate information about incidents of SDV to their Senior Medical Officers on board the aircraft carriers. Data were collected for health care and process improvement purposes by medical personnel on board the ships. The tracker is an Excel spreadsheet completed by the Ship Psychologists. Subjects included personnel assigned or deployed to the ship who were patients seen for evaluation or ongoing therapy by the Ship Psychologist, and who had expressed during session they experienced suicidal ideation, had made a suicide attempt, or had engaged in another form of self-harm. As well, when the Ship Psychologist learned of a completed suicide of someone assigned or deployed with the ship, but that person was not a patient of the Ship Psychologist, then that individual was included in the SDVC Tracker. Attempts to de-identify the information as much as possible were undertaken, as each entry by the Ship Psychologist was given a unique identifier number, and no names or social security numbers were used. After IRB approval, the data from May 2012 to October 2013 were submitted to the research team via password-protected encrypted email.

Forms of SDV were classified into five categories:<sup>14</sup> (1) suicidal self-directed violence: self-directed behavior that deliberately results in injury or the potential for injury to oneself—there is evidence, whether implicit or explicit, of suicidal intent; (2) non-suicidal self-directed violence: self-directed and deliberately results in injury or the potential for injury to oneself—there is no evidence of suicidal intent; (3) undetermined self-directed violence: self-directed and deliberately results in injury or the potential for injury to

oneself—suicidal intent is unclear; (4) suicide attempt: non-fatal self-directed potentially injurious behavior with any intent to die as a result of the behavior—a suicide attempt may or may not result in injury; and (5) interrupted self-directed violence: by self or by other—a person takes steps to injure self but is stopped by self or another person before fatal injury.

The SDVC tracker data were recoded using numerical categories for all variables examined, and the interim unique identifiers were eliminated. Information regarding the following variables was tracked: age, gender, marital status, pay grade/rank, occupational specialty, department, division, stage of ship's deployment cycle, type of SDV, disposition, and triggers.

### Statistical Analysis

SPSS v. 19 (IBM Corporation, Armonk, New York) was used for statistical analyses. We conducted initial descriptive analyses of demographics to reveal potential variables to scrutinize. To make meaningful comparisons across multiple discrete variables, we used relative risk measures (the ratio of the probability of the event occurring in the “exposed” group versus a “non-exposed” group) to investigate hypotheses outlined above. A relative risk ratio (R/R) of 1 means there is no difference in risk between groups.  $R/R > 1$  means that an event is more likely to occur, and  $R/R < 1$  means that an event is less likely to occur. 95% Confidence intervals are also included. Relative risk was assessed among personnel assigned to U.S. Navy aircraft carriers by using one of the ship's Enlisted (and Officer) Distribution and Verification Reports (EDVR), which provides the current manning of the ship, including both officers and enlisted personnel. The EDVR provides a “potential  $n$ ” ( $n = 3,153$ ) used to establish a baseline  $n$  with the SDVC database. Relative risk was examined by comparing patients who expressed SDV to the Ship Psychologists to the remainder of personnel in each department, or occupational specialty, per the EDVR.

## RESULT

### Demographic Findings

Data from May 2012 to October 2013 yielded an  $n = 425$  cases or individuals across the seven aircraft carriers who experienced suicidal ideation with or without intent, suicidal preparatory behaviors and attempts with or without harm, non-suicidal self-directed violence, or completed suicide. These included 261 males (61.4%) and 164 females (38.5%). Most were young and enlisted, i.e., less than 25 years old (77.2%), with a rank of E1 to E4 (81.9%), and were never married (62.6%). Table I depicts demographic data.

Our findings for the demographic variables of gender, age, and pay grade were similar to DoDSER results, although marital status differed between the two. In both groups (i.e., across the military as reported in DoDSER and in our study), young (less than 25 years old), lower pay grade (E1–E4), and male service members were more likely to experience SDV.

**TABLE I.** Demographic Variables and Prevalence of SDV

Gender	
Male	61.4% ( $n = 261$ )
Female	38.5% ( $n = 164$ )
Age	
<25	77.2% ( $n = 328$ )
25–29	13.2% ( $n = 56$ )
30–34	5.4% ( $n = 23$ )
35–39	3.5% ( $n = 15$ )
40–44	0.7% ( $n = 3$ )
Pay Grade	
E1–E4	81.9% ( $n = 348$ )
E5–E9	18.1% ( $n = 77$ )
Marital Status	
Never Married	62.6% ( $n = 266$ )
Married	29.6% ( $n = 126$ )
Divorced	4.2% ( $n = 18$ )
Separated	3.5% ( $n = 15$ )

However, whereas the recent DoDSERs show divorced individuals with a greater number of suicides and attempts, in our study, “never married” were at higher risk.

### Shipboard-Specific Findings

We also looked at characteristics specific to life aboard aircraft carriers. First, we posited that there might be increased prevalence of SDV while deployed at sea, because of potentially heightened stressors and increased operational tempo while deployed. Alternatively, prevalence might be greater in port when camaraderie and supports potentially diminish, and less restricted access to means might increase. There were 198 SDV events at sea ( $R/R = 0.55$ ;  $CI = 0.51–0.60$ ) versus 227 SDV events in port ( $R/R = 0.48$ ;  $CI = 0.43–0.53$ ) suggesting that individuals at sea were not any more or less likely to experience SDV than those in port.

Second, we wanted to see whether certain occupational specialties (designated by department assigned or military rate) were more at risk than others. Table II shows all incidents and relative risk for each department on board.

Two departments were identified as having a markedly increased likelihood of personnel experiencing SDV. These were Deck and Reactor departments, which accounted for over 25% of the events on board, with risk ratios of 3.55 ( $CI = 2.57–4.91$ ) and 2.35 ( $CI = 1.94–2.85$ ), respectively. Air Wing was at a much reduced risk than Air Department ( $R/R = 0.23$  versus 1.34).

Within the departments, several occupational specialties/rates were at heightened risk. These occupational specialties/rates are outlined in Table III, along with the departments with which they are typically associated.

Within the at-risk departments, the rates particularly at risk were Seaman, who are generally within Deck Department:  $R/R = 4.4$  ( $CI = 2.89–6.59$ ), and Machinist's Mate, from Reactor Department:  $R/R = 2.72$  ( $CI = 1.88–2.87$ ). Airman, generally within Air Department:  $R/R = 2.72$  ( $CI = 1.88–3.92$ ),

**TABLE II.** Departments in U.S. Navy Aircraft Carriers and Prevalence of SDV

Department	Frequency of Events	Percentage of Total Events	Typical Department Size	Percentage of Total Crew <sup>a</sup>	Relative Risk (Confidence Interval)
Administration	4	1	54	1.2	0.81 (0.3–2.2)
Aviation Intermed Maintenance	26	6	283	6.3	1.0 (0.70–1.47)
Air	79	19	653	14.6	1.34 (1.1–1.63)
Air Wing	28	7	1311	29	0.23 (0.16–0.33)
Combat Systems	28	7	199	4.5	1.56 (1.09–2.24)
Religious Ministries	2	0.5	11	0.25	2.03 (0.5–8.31)
Deck	34	8	109	2.4	3.55 (2.57–4.91)
Dental	2	0.5	18	0.4	1.23 (0.30–4.97)
Engineering	25	6	249	5.6	1.11 (0.76–1.62)
Legal	0	0	7	0.15	0
Media	6	1.4	25	0.56	2.71 (1.21–6.06)
Medical	0	0	42	0.94	0
Navigation	2	0.47	14	0.3	1.59 (0.39–6.46)
Operations	20	5	378	8.5	0.58 (0.38–0.89)
Reactor	84	20	400	9	2.35 (1.94–2.85)
Safety	1	0.2	12	0.27	0.91 (0.12–6.66)
Security	0	0	42	0.94	0
Strike Group	3	Undetermined <sup>b</sup>	Undetermined	Undetermined <sup>b</sup>	N/A
Supply	42	10	397	8.9	1.17 (0.88–1.56)
Training	0	0	12	0.26	0
Weapons	24	6	248	5.5	1.07 (0.72–1.58)
Missing Data	15	N/A	N/A	N/A	N/A
Total	425	100	4464		

<sup>a</sup>Based on average department size and average total crew size across all ships. <sup>b</sup>Unable to calculate due to insufficient information on Department size.

and Culinary Specialist, in Supply Department: R/R = 2.32 (CI = 1.88–2.87) were at heightened risk too.

**Triggers**

Given research findings that relational issues are possibly more closely related to experiencing SDV than deployment per se, we examined triggers named as preceding the SDV event. Out of *n* = 425 cases, triggers were identified in the data base for only 299 subjects. These fell into 10 categories, as illustrated in Table IV, with the top two triggers being occupational stress and interpersonal stress (note that the latter stressor includes relationship issues).

Pivot tables comparing triggers with demographic variables, stage of deployment cycle, and occupational specialty, revealed that occupational stress was the primary trigger. Occupational stress while the ship was at sea (as opposed to while in port)

was three times as likely to be named as the trigger for SDV. Table V reflects number of events by the top two identified triggers for each of the four departments reporting the highest risk for SDV, along with the rates within each department that were identified as experiencing increased incidence of SDV.

Occupational stress was named as the SDV trigger nearly four times as likely for those working in the Reactor Department, and nearly five times as likely for those working in the Supply Department. Interpersonal stress was named as a more likely trigger in Air Department. There was no difference in Deck Department.

**Limitations of the Study**

A primary limitation of this study was the way that data were collected. Only patients who self-reported suicidal ideation or

**TABLE III.** Occupational Specialties in U.S. Navy Aircraft Carriers and Prevalence of SDV

Department/Rate	Frequency of Events	Percentage of Total Events	Percentage of Total Crew <sup>a</sup>	Relative Risk (Confidence Interval)
Deck Department				
Seaman (Undesignated)	22	5	5	4.4 (2.89–6.59)
Reactor Department				
Machinist’s Mate	71	17	3	2.32 (1.88–2.87)
Air Department				
Airman (Undesignated)	27	6	3	2.72 (1.88–3.92)
Supply Department				
Culinary Specialist	25	6	4	2.32 (1.88–2.87)

<sup>a</sup>Based on average department size and average total crew size across all ships.

**TABLE IV.** Triggers for SDV Events

Trigger	Frequency of Events	Percentage of Total Events
Occupational Stress	135	31.8
Interpersonal Stress	74	17.4
Legal Issues	39	9.2
Secondary Gain	17	4
Adjustment Issues	15	3.5
Grief	9	2.1
Substance Use	7	1.6
Financial Issues	7	1.6
Pre-existing Conditions	6	1.4
Sexual Assault	4	0.9

who attempted or completed suicide or another form of self-harm were included. It is very likely there are many more personnel on board who experience suicidal ideation or another form of SDV, but never seek help. The design of this study was driven, in part, by concerns of patient privacy, which is a persistent issue in military populations for many reasons, including the potential loss of occupational specialty or security clearance as a result of experiencing psychiatric symptoms or SDV. A more proactive design, such as a voluntary self-reported survey, could increase the capture rate of individuals who experience SDV. Future studies should consider these and other ethical concerns endemic to suicide-related research when choosing the study design.

Second, statistical inference was limited by the absence of continuous variables. This limitation was the result of the method with which data were retrospectively reported through the naturalistic design of the study. Future studies could broaden the potential impact of these present findings by introducing continuous variables. Such design would help further examine the relationship between occupational, relational, and other environmental stressors.

Third, data available precluded meaningful analysis of differences between types of SDV. The majority of SDVs were suicidal ideation ( $n = 289$ , 68%), followed by non-suicidal SDV ( $n = 84$ , 20%), suicide attempt ( $n = 48$ , 11%), and completed suicide ( $n = 4$ , 1%). Descriptive analysis of the four cases of suicide indicated that they were all rather

**TABLE V.** SDV Triggers for Departments at Highest Risk

Department	Interpersonal Stress	Occupational Stress
Air Department (Airman)	$n = 19$ (24%) <sup>a</sup>	$n = 15$ (19%) <sup>a</sup>
Deck Department (Seaman)	$n = 5$ (15%) <sup>a</sup>	$n = 5$ (15%) <sup>a</sup>
Reactor Department (Machinist's Mate)	$n = 10$ (12%) <sup>a</sup>	$n = 38$ (40%) <sup>a</sup>
Supply Department (Culinary Specialist)	$n = 3$ (7%) <sup>a</sup>	$n = 15$ (36%) <sup>a</sup>

<sup>a</sup>Percentage of all events within this department.

young (age = 20–26), junior enlisted (E1–E4), male, and either never married ( $n = 3$ ) or separated ( $n = 1$ ). Two worked in Air Department and two in Reactor. Half occurred at sea, half in port. These most serious cases mirror our general findings.

Fourth, more information is needed regarding the relationship between environmental triggers and personal experiences. Review of the literature on SDV indicates a need to look beyond standard risk assessment tools<sup>15,16</sup> that solely focus on communication of suicidal intent. Instead of looking only at suicidal ideation or expressing a specific plan, research suggests severe anxiety, depressed mood, insomnia, substance use, loss of interpersonal relationship, feelings of hopelessness, helplessness, and worthlessness, and other cognitions<sup>17</sup> are better predictors of suicidal behavior than communication of possible intent. Our study examined only some of these triggering factors.

Finally, our study did not include comparison groups to platforms with similar varied personnel and embedded mental health assets. For example, the U.S. Army Combat Aviation Brigades have recently started to embed Aviation Psychologists. The U.S. Marine Corps Operational Stress Control and Readiness (OSCAR) program includes embedded Psychologists as well. The U.S. Navy has also started to deploy Social Workers and Psychiatrists to other platforms (e.g., amphibious assault ships). Extant literature has not examined the incidence of SDV among these similar populations, though the OSCAR program has tracked psychiatric diagnoses and treatment of military personnel during deployment.<sup>18,19</sup> Future work should identify common and unique stressors, and best practices.

## DISCUSSION

U.S. Navy aircraft carriers comprise floating communities of multidisciplinary crew members who work closely together to support and project the presence of Naval Aviation worldwide. Stressors reported as grueling include long shifts in extreme conditions, inconsistent and sometimes brief periods on shore, and long hours preparing for inspections even when in port. That said, this environment also provides good routine, camaraderie, and other forms of support, which may or may not be as robust while on shore.

The findings regarding demographics were consistent with those previously reported in the literature, i.e., males who are young and junior enlisted appear to be most at risk for SDV. It is feasible these Sailors have not yet developed the sorts of interpersonal connections and supports of their more senior shipmates. Our distinct finding that the “never married” were more at risk may be a function of the population studied. With orders in hand to report to sea duty, which is generally a 4-year commitment for enlisted Sailors (in contrast to ground deployment of 6–12 months), perhaps these young Sailors have chosen to hold off on marriage. Alternatively, we can hypothesize that being unmarried may have only exacerbated thwarted feelings of belongingness.

Regarding aircraft carrier-specific variables examined, this study found that being at sea was no more of a risk than being in port. Despite the demanding nature of deployment at sea, such missions also present dynamic opportunities for connection with others and for identification with a worthy mission. Return to port for some represents a welcome return to loved ones and the comforts of home; however, for others it may amplify feelings of disconnection and distress. Increased access to other stressors, both alcohol and to more lethal means of self-harm, may heighten risk while in port.

This study did show that particular departments and certain occupational specialties were more at risk than others. Deck Department was nearly four times at risk for SDV than other departments. Individuals in this department are extremely hard working, performing much of the “dirty work” behind the scenes, and service members typically receive little kudos. As such, their “group identity” can be skewed, and this may have implications for fostering that positive and critical sense of belonging. Personnel in Reactor Department were also at heightened risk. These individuals are also some of the hardest working service members, with long duty shifts, responsibilities even when the ship pulls into liberty ports, and increased time away from home spent vigorously preparing for inspections. Given the arduous duties in Reactor Department, it was not surprising that occupational stressors were named more frequently as a trigger for SDV than interpersonal stressors. It should also be noted that historically, some rates within the Reactor Department (i.e., some Machinist’s Mates) have been dissuaded from seeking support from mental health because of the implications on their clearance and ability to continue to work in nuclear field duty. Only recently has a protocol been developed to allow such individuals to seek evaluation and treatment<sup>20</sup> that will ideally assist those in need, and dispel the stigma of seeking mental health support.

Airmen, typically located within Air Department, were also found to be at increased risk for SDV. For this group, interpersonal stressors were listed as triggers more frequently than occupational stressors. Aviation is a “team sport,” and although it is not known whether the “interpersonal stressors” were generally relationship issues outside of work or within the department, it is possible that problems with unit cohesion contributed to thwarted belongingness, and ultimately SDV. It is impressive that the Air Wing, which is deployed to the ship (but not assigned to the ship) was very infrequently cited as experiencing SDV. This may be attributable to the close knit support within each of the squadrons deployed to the aircraft carrier, the heightened support of the Flight Surgeon embedded within each squadron, and increased access to the Wing Chaplain. In contrast, the rest of the Ship’s Company (approximately 3,000 individuals) must rely on one medical department (with one Psychologist) and three other Chaplains. It is also possible that because aviation personnel are more closely screened for physical and psychiatric issues before duty in flight status, a majority of those at risk for SDV were not cleared for such duty.

Finally, Culinary Specialist, one rate within Supply Department, was also at increased risk. This is another extremely hard working, largely behind the scenes group. They work exhausting hours, under taxing conditions, such as in a very hot kitchen preparing food nearly 24 hours, 7 days a week, or in the scullery washing dirty dishes, pots, and pans. This group is not afforded the luxury of sitting down to a meal to enjoy the camaraderie and connection with friends, co-workers, and other shipmates as often as other rates.

This study represents a preliminary attempt to understand demographics and more specific factors associated with SDV for service members serving on board ships. However, to better predict future suicide attempts we need to go beyond asking about current suicidal ideation and history of attempts. Because suicidal ideation may vary with environmental stressors, we need to more thoroughly assess for both environmental factors (e.g., occupational and interpersonal stressors) and chronic risk factors. Recent research<sup>21</sup> has suggested that suicide-specific cognitions may point to more enduring risk, as revealed by a scale that specifically assesses two important factors consistent with IPTS theory. Results indicated that two important cognitions: “unloveability” (perception one is worthless or flawed) and “unbearability” (perception one is incapable of tolerating distress) were associated with heightened risk. Unloveability showed a strong relationship with thwarted belongingness and perceived burdensomeness, and unbearability was more strongly associated with depression and anxiety.

Further investigation is needed to determine what organizational, environmental, and interpersonal factors may contribute to this increased risk to best design treatment strategies, and more importantly, prevention efforts. Recent research suggests such interventions may center on addressing any one of the three IPTS constructs. Military leaders and mental health providers should assess the degree to which personnel/patients feel connected to and cared about by others (belongingness), and whether they feel they provide added value to the mission and have someone to call if upset (burdensomeness). Social support and cognitive interventions by military communities (and mental health personnel) to undermine faulty beliefs about interpersonal relationships is recommended, along with behavioral interventions that focus on distress tolerance and emotional regulation skills. This is particularly relevant to the current study of personnel assigned or deployed to aircraft carriers, as the mental health assets are embedded on board, and provide a unique means to assess, intervene, and garner department, shipwide, and community support. As the present study did not include comparison groups, follow up on studies may best determine whether the shipboard environment and its personnel and support system represent a unique population.

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