REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From – To)*
29 Sep 2014	Journal Article	Jan 2010 – Dec 2012

4. TITLE AND SUBTITLE
Symptoms of Psychological Distress and Post-Traumatic Stress Disorder in United States Air Force "Drone" Operators

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
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5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
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8. PERFORMING ORGANIZATION REPORT NUMBER

AFRL-SA-WP-JA-2013-0029

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

Distribution A: Approved for public release; distribution is unlimited. Case Number: 88ABW-2013-2433, 12 Jun 2013

13. SUPPLEMENTARY NOTES

14. ABSTRACT

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15. SUBJECT TERMS
Stress, drone operator, PTSD, USAF

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Wayne Chappelle
U	U	U	SAR	9	19b. TELEPHONE NUMBER *(include area code)*

Symptoms of Psychological Distress and Post-Traumatic Stress Disorder in United States Air Force "Drone" Operators

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ABSTRACT The goal of this study is to repeat a survey administered in 2010 to assess for changes in mental health among United States Air Force aircrew operating Predator/Reaper remotely piloted aircraft, also commonly referred to as "drones." Participants were assessed for self-reported sources of occupational stress, levels of clinical distress using the Outcome Questionnaire-45.2, and symptoms of post-traumatic stress disorder (PTSD) using the PTSD Checklist-Military Version. A total of 1,094 aircrew responded to the web-based survey composed of the commercially available standardized instruments mentioned above. The survey also contained nonstandardized items asking participants to report the main sources of their occupational stress, as well as questions addressing demographics and work-related characteristics. The estimated response rate to the survey was 49%. Study results reveal the most problematic self-reported stressors are operational: low manning, extra duties/administrative tasks, rotating shift work, and long hours. The results also reveal 10.72% of operators self-reported experiencing high levels of distress and 1.57% reported high levels of PTSD symptomology. The results are lower than findings from the 2010 survey and from soldiers returning from Iraq and Afghanistan. Implications of the study and recommendations for United States Air Force line leadership and mental health providers are discussed.

INTRODUCTION

Since the onset of Operations Enduring and Iraqi Freedom, United States Air Force (USAF) Predator/Reaper remotely piloted aircraft (RPA) (commonly referred to as "drones") emerged as critical assets to intelligence, surveillance, reconnaissance (ISR), and close air support operations. Although advancements in satellite communication technology allow Predator/Reaper operators to remain stationed within the nation's borders, the bases are tasked to provide 24-hour support 7 days a week to military missions on the other side of the globe. The increased requirement for mission support has created a rapidly expanding need for Predator/Reaper operators (pilots, sensor operators, and mission intelligence coordinators) to keep pace with the surge in drone operations and the evolving paradigm of this modernized form of warfare.

Previous research identified several potential operational and combat-related stressors routine to the Predator/Reaper drone work environment affecting the health and well-being of operators.[1,2] Operational stressors are those associated with available manpower, equipment, training, schedules, and general resources to accomplish occupational tasks and objectives. Such stressors include, but are not limited to, long hours, rotating shift work, ergonomic design of the work station, sustaining vigilance, and processing continuous auditory and visual data during aerial missions.[3] Combat-related stressors are those associated with direct participation in ISR and weapons deployment missions and include the use of high-definition video feeds to track, target, and destroy enemy combatants and assets; provide force protection to ground troops; and provide surveys of postbattle damage. Although such drone operators are not "deployed" in hand-to-hand combat and are usually protected from direct threat, they are often involved in operations where they witness and make decisions that lead to the destruction of enemy combatants and assets. They can still become attached to people they track, experience grief from the loss of allied members on the ground, and experience grief/remorse when missions create collateral damage or cause fratricide.[1]

The increasing demand for Predator/Reaper drone operations has led to a significant increase in work hours, shift changes, and virtual exposure to streaming data and images of combat operations. However, there is limited research on the impact of this unique form of modern warfare and high operational tempo on the mental health of operators. There is also limited research in assessing if continuously balancing warfighter roles with domestic/personal lives and intermittent (and virtual) exposure to combat elevates their risk for clinical distress and post-traumatic stress disorder (PTSD). It is widely accepted that exposure to combat heightens the risk for emotional problems (e.g., depression, anxiety, PTSD) as well as behavioral problems (e.g., increased alcohol and substance use) in military personnel who have been deployed.[4–10]

Although the media focus on exposure to combat operations as a major problem among Predator/Reaper drone operators,

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Presented at the Military Health System Research Symposium in Fort Lauderdale, FL, August 2012.

doi: 10.7205/MILMED-D-13-00501

recent research found operational stressors to be their primary concern. Chappelle et al[11] surveyed 670 USAF Predator/Reaper drone operators in 2010 from several different squadrons within the United States. The survey asked participants to self-report the main sources of occupational stress affecting their performance and general health. The results revealed the most prominent stressors were (a) long work hours and low manning, (b) rotating shift work, (c) balancing domestic roles and responsibilities with their warfighter role, (d) the ergonomic design of ground control work stations and inefficient computer-based procedures, and (e) sustaining vigilance to continuously monitor high levels of auditory and visual streaming data. Such stressors are not unlike those faced by other USAF "virtual warriors" sustaining around-the-clock operations such as USAF image analysts and intelligence operators,[12] as well as cyber warfare operations.[13] The results of their studies were consistent with an earlier study finding elevated levels of fatigue among USAF Predator drone operators having to sustain around-the-clock shift work.[14]

The term "distress" is used to refer to an unpleasant state characterized by negative emotional (e.g., feelings of anger, agitation, sadness), behavioral (e.g., trouble getting along with others), physical (e.g., difficulty sleeping, fatigue, muscle tension, headaches), and cognitive (e.g., difficulty concentrating, sustaining attention) symptoms. The study by Chappelle et al of Predator/Reaper drone operators surveyed in 2010[11] included a standardized measure of distress (Outcome Questionnaire-45.2[15]) commonly used within USAF mental health clinics. The results of their study revealed approximately 20% of survey participants reported high levels of distress, which may be reasonably perceived to elevate the risk for human factor contributions in USAF drone mishaps.[14,16,17] Elevated distress scores have also been found among those seeking outpatient mental health care.[15] Although there is no published research linking elevated distress scores (as measured by the OQ-45) with a specific mental health diagnoses in civilian or military populations, USAF mental health providers use the instrument and elevations in self-reported distress for augmenting mental health evaluations and monitoring treatment progress for various conditions (i.e., adjustment, anxiety, and mood-related disorders).

In addition to general distress, PTSD is a well-known psychological condition that may develop after exposure to a traumatic event (witness or experience events that lead to actual or threatened death, injury to others) where the individual experienced intense feelings of fear, helplessness, or horror. The exposure is followed by a month-long bout of symptoms that fall within the categories of (a) a sense of re-experiencing the event (e.g., recurrent and intrusive recollections of the event, distressing dreams of the event, acting or feeling as if the traumatic event were recurring, physiological reactivity to cues that resemble an aspect of the event); (b) persistent avoidance of stimuli associated with the event or numbing of general responsiveness (e.g., avoidance of activities that arouse recollections of the event; feeling of detachment from others; restricted range of affect); as well as (c) increased arousal (e.g., difficulty falling or staying asleep, increase in outbursts of anger, hyper-vigilance, exaggerated startle response). It is the clustering, severity, and persistence (i.e., greater than 1 month) of such symptoms accompanied by significant distress and/or impairment in an important area of functioning (e.g., social or occupational) that is required for the diagnosis of PTSD.[18]

Evaluating for symptoms of general psychological distress and PTSD among deployed military personnel supporting combat operations in theater is a standard practice. It is reasonable to consider the same precautions with Predator/Reaper drone operators providing continuous support to battlefield operations. Maguen et al,[19] in a study of over 2,700 U.S. Army service members, found that the soldiers' perception of their role in "killing" and "being responsible for killing" was associated with PTSD symptoms and other emotional problems. The results of the study by Chappelle et al[11] of Predator/Reaper drone operators surveyed in 2010 also included the Post-Traumatic Stress Checklist-Military Version (PCL-M). The authors of the study used a cutoff score of 50 for the PCL-M for identifying those at high risk of PTSD based on the accuracy rates of such scores reported in previous research.[20–23] The results of their study revealed Predator/Reaper drone operators were at higher risk for PTSD (5%) than noncombatant airmen at the same installation (2%). This percentage is significantly less than the estimated 12% to 17% of soldiers returning to the United States following deployment to Iraq or Afghanistan with self-reported high levels of PTSD symptomology.[24]

The survey conducted by Chappelle et al[11] elevated situational awareness to the sources of stress and the mental health of RPA drone operators to their commanders, but it had several shortcomings. The researchers travelled to each unit's location and distributed paper versions of the survey to operators. They arranged to meet with operators in large groups and during pre-/postmission debriefings. The methodology was costly in terms of researcher time, as well as disruptive to the schedule of those already engaged in operational missions. The requirements made the survey difficult to repeat or sustain over prolonged periods of time. As a result, a web-based version of the survey was developed so participants could complete the survey from their work station and researchers were not required to travel.

The goal of this study is to re-administer the mental health survey used in 2010[11] utilizing a more efficient web-based platform to compare results on (a) main self-reported sources of occupational stress and (b) the levels and prevalence of clinical distress and PTSD among operators to those from 2010.

METHODS

Participants

A total of 1,094 Predator/Reaper drone operators participated in the survey across 17 different squadrons based in the

United States. Participants were from Air Combat Command, Air National Guard, and Air Force Special Operations Command squadrons. Based on numbers of assigned personnel, the overall estimated response rate was 49%. The total number of Predator/Reaper drone operators assigned to each unit based in the continental United States was obtained from Air Force operational leadership. This number was then compared with the number of drone operators that participated in the study to obtain an overall estimated response rate. See Table I for demographics of participants in comparison to 2010 study participants.

Instruments

Participants were given a demographics questionnaire to complete, which was composed of items that assessed duty position, rank, gender, age range, marital status, length of time serving in their duty position, average number of hours worked in a typical week, and current shift they were working (day, swing, night). Participants were also asked to report their top occupational stressors that lead to high occupational stress. The demographics questionnaire was developed to ensure anonymity to support self-disclosure in a community where there may be stigma associated with mental health problems.

Outcome Questionnaire (OQ-45.2)

The OQ-45.2 is a self-report instrument assessing symptoms of psychological distress over the last week including difficulties in interpersonal relationships, social roles, and general quality of life and has reasonable reliability and high concurrent validity.[15,25,26] The instrument consists of 45 items, all of which are based on a 5-point Likert-type frequency scale with the values of 0 (never), 1 (rarely), 2 (sometimes), 3 (frequently), and 4 (almost always). Several items are reverse-scored to reduce random responding. The total score on the OQ-45.2 ranges from 0 to 180, with higher scores representing higher levels of psychological distress.[15] A total score of 63 or more may be considered indicative of high levels of distress.[15,26] Concurrent validity estimates for the total score range from 0.64 to 0.88, and test–retest reliability and internal consistency values range from 0.84 to 0.93. The OQ-45.2 is commonly used at mental health clinics on USAF installations to assess psychological

TABLE I. Drone Operator Participant Demographics by Year

Demographic	2010 Survey (N = 670; Estimated Response Rate: 39%)		2012 Survey (N = 1094; Estimated Response Rate: 49%)	
	n	%	*n*	%
Gender				
Male	533	80	965	88
Female	130	19	125	12
No. That Declined to Report Gender	7	1	4	<1
Age				
18–25	259	39	222	20
26–30	202	30	367	34
31–34	101	15	184	17
35–39	60	9	151	14
40+	48	7	168	15
No. That Declined to Report Age	N/A		2	<1
Rank and Duty Position				
Enlisted (Sensor Operator and MIC[a])	453	68	562	51
Officer (Pilot)	217	32	523	48
No. That Declined to Report Duty Position	N/A		9	<1
Marital Status				
Single	298	45	398	36
Married	372	55	692	63
Time on Station				
Less Than or Equal to 24 Months	242	36	637	58
Greater Than 24 Months	428	64	456	42
No. That Declined to Report Time on Station	N/A		1	<1
Shift Schedule				
Standard Day Shift	379	57	195	18
Swing or Night Shift	291	43	893	82
No. That Declined to Report Shift Schedule	N/A		6	<1
Hours Worked Per Week				
Less Than or Equal to 50 Hours	430	65	668	61
Greater Than 50 Hours	240	35	425	39
No. That Declined to Report Hours Worked	N/A		1	<1

[a]Mission Intelligence Coordinator.

distress and track progress among USAF personnel seeking mental health care.

PTSD Checklist-Military Version

The PCL-M is a 17-item self-report screening instrument based on the Diagnostic and Statistical Manual of Mental Disorders-4th Edition criteria for PTSD.[27] The PCL-M is commonly used in the Department of Defense and Department of Veterans Affairs and has excellent reliability, validity, and diagnostic utility.[20,27,28] Participants are asked to rate a list of PTSD-related problems and complaints on a 5-point scale, with each item being scored on a 1 ("not at all") to 5 ("extreme") rating scale. A total symptom severity score ranges from 17 to 85 and can be obtained by summing the scores from each of the 17 items. A cutoff score of 50 was used for identifying those at high risk of PTSD based on previous research evaluating specificity, sensitivity, and accuracy of PCL cutoff scores.[20–23] When conducting research with the goal of population prevalence estimates (e.g., excluding individuals who do not meet diagnostic criteria for PTSD), utilization of higher cutoff scores (i.e., 50 and above) with the PCL-M is recommended.[22,23] Research with the PCL-M indicates a total cutoff score of 50 correctly identifies 90% or more of those diagnosed with PTSD while minimizing false positive error rates.[23]

Procedure

Requests for participation was sent by USAF group commanders via a mass e-mail to all drone operators assigned to operational units in the United States. The request to participate came from USAF group commanders to validate line operational endorsement and encourage participation. However, to mitigate the potential for coercion, the group e-mail request to participate informed drone operators that participation was voluntary and responses were anonymous. The voluntary and anonymous nature of the survey was to promote participation and self-disclosure. The group e-mail request for participation had an Internet link to the USAF School of Aerospace Medicine (USAFSAM) web-based survey that contained an opening page with an introductory script further explaining the study was conducted by independent researchers and participation was voluntary and anonymous.

Furthermore, before proceeding, participants were asked to respond to a question asking if they understood the nature, purpose, instructions of the survey, and were voluntarily consenting to participate. Those who endorsed "yes" were then allowed to proceed and take the survey. Those who endorsed "no" were not given the survey and redirected to another web page that instructed them on how to contact the independent researchers of the study for additional information. A total of two drone operators, who endorsed "no," contacted the researchers to clarify the purpose of the study.

Additionally, it was stated in the group e-mail request to participate that the results of the survey would be used to help line operator leadership understand the sources and current levels of distress among drone operators. The introductory script on the opening page of the USAFSAM survey further explained to potential participants the nature, purpose, and instructions of the study. The introductory page also informed participants that operational leadership would not have access to individual responses and that results were presented in a summarized format. Potential participants were informed the results would also be utilized by medical leadership to consult with USAF commanders on areas of concern and for developing strategies to mitigate stressful working conditions. The introductory script informed participants they could withdraw at any time without negative repercussions.

The survey was distributed electronically via a Department of Defense-approved electronic survey tool. The survey was open to USAF Predator/Reaper drone operators across the United States over a 4-week period and re-advertised during the second week. In general, it took participants 20 minutes to complete the survey. Participants who completed the survey were instructed on how to obtain the results of the study and when information would be available. Results were aggregated at the squadron level without any identification of individual responses.

Data Analysis

Total scores for the OQ-45.2 and PTSD measures were obtained by summing item responses that corresponded to each scale. Group means and standard deviations were calculated, as well as logistic regression and χ^2 analyses, to identify occupational and demographic predictors of self-reported clinical distress and PTSD symptomology.

RESULTS

Sources of High Occupational Stress

Participants' responses to the item asking them to identify and/or write and rate their top three occupational stressors were analyzed. Three behavioral science researchers performed a qualitative analysis on the content of responses. The notes from each research team member were cross-validated and consolidated into a list of stressors reported to lead to high levels of stress (rated 8 and above on the 0–10 scale) among the drone operators (Table II). Responses appearing to label similar stressors were consolidated under a single category. For example, terms such as "rotating shift schedule every 30 days" and "switching from day to swing shift" were categorized under the main stressor of shift work.

Clinical Distress

The average OQ-45.2 total score was 36.41 (standard deviation [SD] = 20.00) for survey participants. Individuals were separated according to those with OQ-45.2 total scores at and above 63 and those below 63. A total of 116 (11%) participants had high total distress scores at or above 63. The percentage of individuals meeting the OQ-45.2 total score cutoff

TABLE II. Top Self-Reported Occupational Stressors Leading to High Levels of Stress

2010 Survey (n = 670; Estimated Response Rate 39%)	2012 Survey (n = 1094; Estimated Response Rate 49%)
Low Unit Manning Not enough manning to cover required shifts and tasking requirements, cancelled vacation time/work leave to sustain high operational tempo	Low Unit Manning Not enough manning to cover all shifts and tasking requirements, cancelled vacation time/work leave to sustain high operational tempo
Long Hours Working 50+ hours a week to sustain operational mission requirements, 6-day work weeks, 12-hour shifts 4 days in a row	Long Hours Working 50+ hours a week to sustain operational mission requirements, 6-day work weeks, 12-hour shifts 4 days in a row
Rotating Shift Work Rotating every 30 days between day, swing, and night shift to sustain around the clock operations; uncertain predictability of shift rotation schedule	Rotating Shift Work Rotating between day, swing, and night shift to sustain around the clock operations; uncertain shift rotation schedule
Deployed In-Garrison Status Daily balance of warfighter role with domestic tasks and duties, access to base resources during swing/night shift, juggling family obligations and relationships	Extra Duties/Administrative Tasks Assignment of additional supervisory, training, or administrative tasks in addition to standard operational duties; line-of-sight taskings without consideration of equitable workload distribution

Combat operations and/or participation in ISR and weapons deployment were not listed as top stressors by any RPA or intelligence operators participating in this study.

(63 or more) as compared with 2010 survey results is shown in Figure 1. Logistic regression revealed shift work (swing/night shift), working 51 or more hours a week, and being assigned to duties for 24 or more months were significant predictors of total distress scores (χ^2 [11] = 21.03, $p < 0.05$).

Subsequent odds ratios indicated those working more than 50 hours a week were approximately twice as likely (95% CI = 1.09–2.42), those working swing/night shift were approximately twice as likely (95% CI = 1.04–3.53), and those working in their current duties for greater than 24 months were also approximately twice as likely (95% CI = 1.07–2.46) to report OQ-45.2 total scores at or above 63.

Post-Traumatic Stress

The average PCL-M total score was 22.91 (SD = 8.29) for survey participants. Individuals in each group were separated according to those with PCL-M total scores at and above 50 and those below 50. A total of 17 (2%) participants had PCL-M total scores of 50 or higher. The percentage of individuals meeting the discretionary PCL-M cutoff (50 or more) as compared with 2010 survey results is also included in Figure 1. The number of participants with high symptomology was too small to perform logistic regression analyses. However, c^2 analyses were significant (c^2 [11] = 7.46, $p < 0.01$), and subsequent odds ratios indicated those working more than 50 hours a week were approximately four times more likely (95% CI = 1.36–11.16) to report PCL-M scores at or above 50.

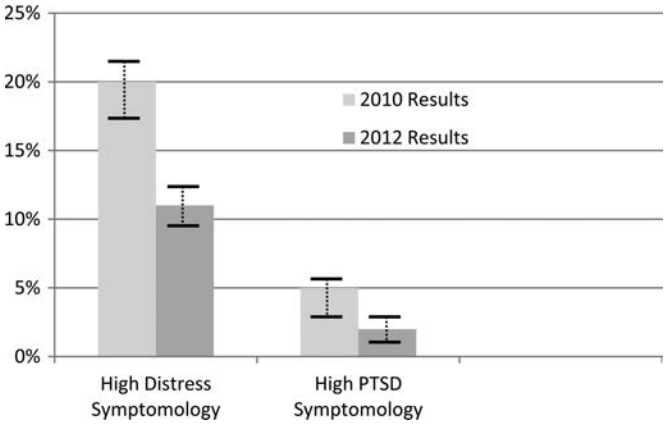

FIGURE 1. Percentage of survey participants endorsing high levels of distress and PTSD symptomology. A total of 95% CI rates for clinical distress range from 17% to 22% (2010) and 9% to 12% (2012), and high-PTSD symptomology ranges from 3% to 6% (2010) and 1% to 3% (2012).

DISCUSSION

The results of the study suggest the most problematic stressors among Predator/Reaper drone operators are operational and include low unit manning, rotating shift work, extra duties/administrative tasks, and long hours. The results of the study are similar to the occupational stressors reported by Predator/Reaper drone operators in 2010,[11] as well as other USAF "virtual warriors" sustaining around-the-clock intelligence exploitation[12] and cyber warfare.[13] The repeated finding of operational stressors, as opposed to combat stressors, as the most problematic self-reported sources of stress is helpful for line commanders and medical personnel in developing interventions for mitigating stress and promoting performance.

Although combat-related stressors were not reported to be a top source of occupational stress, such a finding is interpreted cautiously when evaluating an individual operator. It is possible there are drone operators who perceive the deployment of weapons and exposure to live video feed of combat (i.e., destruction/death of enemy combatants and ground forces) as highly stressful events. As a result, it is recommended military mental health providers continue to monitor the impact of virtual exposure to combat operations and the impact on the emotional well-being of operators.

Given the sensitive, high-demand nature of USAF Predator/Reaper drone operations,[29,30] it is important military commanders gauge the prevalence rates of distress among officer and enlisted airmen engaged in such operations. Results of the

study indicate 1 out of every 10 Predator/Reaper drone operators self-reported high levels of distress. To reach the high distress threshold in this study, such operators needed to endorse a variety of symptoms (e.g., difficulty concentrating and sustaining attention; increased thoughts of worry; difficulty falling and staying asleep, increased feelings of anger, sadness, anxiety; increased alcohol usage; trouble getting along with peers) tied to a decline in their general health and well-being. This includes negative changes in social and interpersonal functioning that increases the difficulty for Predator/Reaper drone operators having to juggle the daily duties of their war fighter roles with their domestic/personal life obligations (and vice-versa). It stands to reason that such distress (whether temporary or chronic) elevates the risk for problems with performance, mishaps, and force sustainment.

Data analyses did not find duty position, gender, marital status, age, or rank to be predictive of higher distress scores. However, the results of the study found those who work more than 50 hours a week, swing or night shift, and have been in their current duties for longer than 2 years are at increased risk for high levels of distress. The results suggest operators sustaining a high operational tempo for long periods of time, especially if performing shift duty, are at elevated risk for the development of emotional difficulties. This group of operators would likely benefit from closer monitoring by commanders, as well as outreach efforts by medical and mental health providers assigned to such units.

The results of the study reveal a low rate of operators (1.57%) endorsing high levels of PTSD symptomology (frequency and severity of symptoms over a 1-month period). This finding suggests the vast majority of Predator/Reaper drone operators within the nation's borders supporting ISR and weapons deployment operations are not experiencing elevated PTSD symptomology. This is consistent with the finding that exposure to combat was not reported a top source of occupational stress. Although prevalence rates were low, data analysis revealed drone operators working more than 50 hours a week are more vulnerable to reporting symptoms of PTSD. It is possible the longer hours may elevate risk via increased levels of vicarious exposure to traumatizing visual images and combat-related events. Data analyses did not find shift work, duty position, length of time performing operational duties, marital status, gender, age, or rank to be predictive of higher PCL-M scores.

The rates of those reporting PTSD in this study were lower than those reported in the 2010 study among Predator/Reaper drone operators using the same instruments and similar methodology.[11] Since the original survey study in 2010,[11] USAF line and aeromedical leadership have implemented changes to address operational stressors and increase access to medical and mental health care. Although an exhaustive list of USAF-wide and unit-specific changes is beyond the scope of this study, some of those changes contributing to lower rates may include (a) active duty installations assigning field-grade, doctoral-level psychologists with top secret security clearances to line units to provide outreach and consultant support on a daily basis to both line operators and flight medicine personnel; (b) Air National Guard units assigning directors of psychological health to develop initiatives that target medical and mental health needs of operators; and (c) line leadership from several units adjusting workload distributions and shift work rotational schedules to increase predictability to allow drone operators advanced planning for balancing work roles with their domestic/personal life obligations. It is possible the reduction in distress may be, in part, due to such changes.

Considerations Regarding Self-Disclosure

Capturing an exact estimate of the rates of distress and PTSD symptomology is difficult and centered on genuine self-disclosure. The reluctance to disclose mental health problems (or any condition impacting duty or retention status) is a phenomenon not unique to aircrew. When studying mental health problems among military members, a methodology that mitigates obstacles to self-disclosure is important, especially when gathering data on those who must adhere to strict medical standards and whose competition for promotion may be affected by an untimely and prolonged period of illness (whether physical or psychological). Additional obstacles to obtaining genuine disclosure may include concerns regarding how disclosure may affect security clearances or participation in sensitive operations and limit career opportunities. However, the anonymous nature of the survey helps mitigate problems with self-disclosure.

A total of 9 drone operators (out of 1,094 participants) did not complete (or only partially completed) the demographic items (i.e., age, gender, rank range, marital status, duty position, shift schedule, hours worked per week). Despite the design of the study and reassurances from the independent researchers and USAF operational leadership, it is possible some respondents remained concerned regarding anonymity. However, the number of respondents was small (less than 1% of the total sample) and data analyses (e.g., logistical regression assessing for demographic and operational predictors of distress) were not likely impacted.

Recommendations

First, as indicated in the analysis, the sources of stress most associated with high stress are operational (and not necessarily exposure to combat). Developing a collaborative line leadership, flight medicine, and mental health provider management strategy to mitigate the impact of long hours, low manning, shift work, and other operational issues appears needed. Second, additional surveillance of occupational stressors and impact of emotional well-being among this unique group of operators appears warranted. The rapidly evolving technology comprising weapon-deploying drone operations along with shifting conflicts across the globe may result in a continuously changing operational environment leading to fluctuations in the sources

and rates of distress relevant to the provision of mental health care. Third, imbedding military mental health providers with top secret security clearances would likely facilitate communication and awareness of the impact of operational and combat-related stressors as well as access to mental health care for those supporting operations on an around-the-clock basis.

Limitations of the Study

This study has several limitations that bear consideration: (a) self-report surveys are prone to response bias from a self-selected sample that might affect generalization of results; (b) the descriptive nature of the study does not warrant definitive cause-effect conclusions between sources and levels of distress; (c) although conservative thresholds were developed for identifying folks with high levels of distress and PTSD symptomology, it is difficult to determine which operators are experiencing chronic versus situational-specific conditions; (d) results should not be generalized to other drone platforms (such as Global Hawk) within the Air Force or across the armed services because of the differences in platforms, missions, and operational requirements; and (e) caution should be taken when comparing 2010 with 2012 results because of differences in methodology and time periods the surveys were administered. Despite these limitations, this study provides descriptive data on rates of distress and PTSD symptomology using an anonymous survey to increase participation and disclosure rates.

CONCLUSION

The findings have implications for future studies and raise awareness to salient sources of stress, rates of distress, and PTSD symptomology within a unique group of airmen who are increasingly relied upon to carry out a wide range of ISR and combat-related weapons strikes in support of joint armed forces operations.

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