Killing in Combat; the Diverging Mental Health Impact on Distinct Veteran Populations –
A Two-Sample Study

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Abstract

This study examined the warzone stressors: killing in combat, experiencing personal threats, or traumatic witnessing during deployment in relation to psychological distress, alcohol consumption and quality of life at long-term follow-up. The study was conducted in two samples of Norwegian veterans who had served in Afghanistan (Study 1, $N = 4,053$) or in Lebanon (Study 2, $N = 10,605$), respectively. Data were collected through two postdeployment mental health surveys conducted by the Norwegian Armed Forces Joint Medical Services. Using linear regressions, we investigated the impact of warzone stressors on posttraumatic stress symptoms, depression, anxiety, insomnia, alcohol use, and quality of life. In study 1 (Afghanistan veterans), killing was not a significant predictor of psychological distress, alcohol use, or quality of life, when controlling for Personal Threats and Witnessing exposure. In study 2 (Lebanon veterans) killing remained a significant predictor ($p < .001$) of symptoms of posttraumatic stress, depression, and anxiety, after controlling for other warzone stressors. However, killing was not a significant predictor of alcohol use or quality of life in Study 2. In summary, killing in combat may be associated with increased reports of psychological distress, but there were distinct results in the two studies. Differences in mission statements, rules of engagement, and mental states during combat could explain the diverging outcomes. The results indicate that it may be erroneous to ubiquitously regard killing in combat as a moral stressor, and highlight the importance of clear rules of engagements that accounts for the “on the ground” reality of soldiers.

For most civilians in the modern era, killing another human is a rare experience (Pinker, 2011; Weiss, Santos, Testa & Kumar, 2016). However, it is not an uncommon incident for soldiers deployed to a warzone (Hoge et al., 2004; Maguen et al., 2010). One of the primary tasks of soldiers deployed to an area of conflict is to engage, and thereby potentially harm or kill, enemy combatants – acts that are considered highly immoral in a peacetime civil society. Such experiences can form distinct autobiographical memories that may have long lasting impact on health and well-being (Purcell, Koenig, Bosch, & Maguen, 2016). Several studies have demonstrated an association between killing in combat and posttraumatic stress among military veterans across various military engagements (Fontana, Rosenheck, & Brett, 1992; Maguen et al., 2009; Maguen et al., 2010; Maguen et al., 2011; Van Winkle & Safer, 2011). Even so, there has been limited epidemiological research on the psychological consequences of killing, and few studies have concurrently compared the impact of killing across several samples (Porter, 2018). The negative psychological effects of taking a life may be dependent on the context of the action (Purcell et al., 2016), thus a comparison of killing across distinct cohorts of soldiers seem warranted. Moreover, human conspecific killing is a subject where many people have strong moral intuitions due to the societal norms in western democracies regarding acts of violence (Farnsworth, Drescher, Nieuwsma, Walser & Currier, 2014). There are likely biases in the interpretation of research results on this topic, as people may be uncomfortable discussing the subject, and there can be preconceptions to people's understandings of the psychological costs of killing in combat (Porter, 2018). Despite these challenges, the implications of such experiences on soldiers are important to understand, given the large number of veterans returning from recent era conflicts in the Middle East and Asia. Accordingly, calls have been made for more epidemiological studies on how killing in combat may affect soldiers (Presseau et al., 2019).

Common perceptions of killing in combat have been guided by some seminal contributions. In particular, David Grossman's (1996) book "On Killing", provides a hypothesis on the psychology underlying killing in warfare. Grossman claims that "*there is within most men an intense resistance to killing their fellow man*" (Grossman, 1996, p. 4). However, this statement is often not congruent with the soldiers' experiences (Bourke, 1999; Engen, 2009; Nadelson, 2005; Bradley, 2009; Møller, 2010; Reichelt, 2016), and has been criticized for being founded on methodologically unsound studies (Chambers, 2003).

There are contending lines of thought on how to understand human conspecific killing in the context of war. Even though the impact of taking lives has not been extensively studied within traumatology and clinical psychology (Porter, 2018; Presseau et al., 2019), the issue has been hotly debated in the social sciences. Some scholars argue that the taboos against killing reflect deontological truths about human nature, i.e., that killing another human is innately an "unnatural" act for most people (Dyer 1985; Grossman 1996; Browning 1998). There is a major paradox in this theory, as it raises the question of why humans should possess such aversions. Several social scientists of different disciplines have noted; conspecific killing, either as the result of personal aggression, or in the context of armed conflict, seems to have existed in all known human societies (Daly & Wilson, 1988; Keeley, 1996; Darby & Mac Ginty, 2002; Pinker, 2011). In a species that routinely kills and makes war on its own members, innate aversion towards conspecific killing in combat seems disadvantageous, and would thus be unlikely to evolve and persist in humans (Duntley & Buss, 2008).

In contrast, evolutionary psychologists argue that rather than being naturally averse to conspecific killing, humans are adapted specifically for such behavior (Duntley & Buss, 2008; Shaver & Mikulincer, 2011). In particular, developing dispositions for strategic coalitionary killings of members of a rival group, reminiscent of modern warfare, could historically have had evolutionary advantages for humans (Wrangham, 1999; Wilson and Wrangham; 2003). Such

claims may seem contrary to the fact that modern societies have enjoyed a steady reduction in the acts of violence and killing (Pinker, 2011). However, perceptions of violence and killing have changed dramatically over the last centuries, particularly in western cultures, likely due to the humanistic values introduced during the enlightenment era (Henrich et al., 2006; Weiss, Santos, Testa & Kumar, 2016). People are generally less accepting of violence when compared to previous societies (Pinker, 2011). Accordingly, declining violence could primarily be a result of the increasing societal and interpersonal sanctions of individuals who violate social and behavioral norms (Richerson & Boyd, 1999; Boyd, Gintis, Bowles & Richerson, 2003; Henrich et al., 2006).

In addition to the evolutionary perspective, the high intelligence of humans and our capacity for advanced mental models of the self and of the world also influence the capacity for killing, even in societies where there is normative pressure against violence (Roscoe, 2007). Psychological strategies such as sorting people into ingroups and outgroups or employing psychological defenses, e.g., intellectualization, can enable people to make moral justifications for morally transgressive actions (Schein & Gray, 2018). Such psychological strategies are particularly apparent in the context of war, and seem to circumvent cultural taboos we may have toward killing our own species if the violence is framed as protecting one's own group from an external threat (Böhm, Rusch & Gülerk, 2016).

There is behavioral and neurological evidence for distinguishing between two types of aggression both in humans and other animal species: *reactive aggression* and *proactive aggression*, i.e., the theory of dual genetic selection for aggression (Weinshenker & Siegel, 2002; Siegel & Victoroff, 2009; Babcock, Tharp, Sharp, Heppner, & Stanford, 2014). Some researchers posit that there has been a selective pressure for lower levels of reactive violence in humans due to our dependence on social groups in order to survive, and simultaneously an evolutionary favoring of our propensity for proactive outgroup violence (Henrich et al., 2006; Wrangham, 2019). Reactive aggression is typically a result of feeling acutely threatened, prompting an affect-driven

“hot” reaction, that serves to protect against harm. On the other hand, proactive aggression is instrumental, deliberate, and “cold”. This aggression is usually premeditatively employed as a means of obtaining a desired outcome. Relative to other species, humans display low levels of reactive aggression, but high levels of proactive aggression (Wrangham, 2018/2019). Taken together, the theory of dual genetic selection for distinct modes of aggression may be a parsimonious explanation of why humans seem to be peaceful towards people perceived as being part of the ingroup, and strategically violent to others (Wrangham, 2018).

The scholarly discourse concerning killing is particularly relevant to the emerging concept of Moral Injury (MI) (Purcell et al., 2016). MI provides a wider framework for understanding a range of trauma-related psychological responses, and their precipitating stressors, not encompassed by traditional conceptions of PTSD (Stein et al., 2012). The symptom cluster labelled as MI typically does not conform with conceptualizations of posttraumatic distress as a primarily anxiety-based syndrome resulting exclusively from experiences of intense fear (Jordan, Eisen, Bolton, Nash, & Litz, 2017; Nordstrand et al., 2019). Rather, MI is usually described as a cluster of guilt- and shame-based responses to *“perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations”* (Litz et al., 2009). These types of experiences are often referred to as “potential morally injurious events” (pMIEs) (Jinkerson, 2016). Several studies within MI research have specifically analyzed killing in combat (Frankfurt & Frazier, 2016), and commonly regard such experiences to be an archetypical pMIE (Maguen et al., 2012; Maguen et al., 2013; Farnsworth et al., 2014; Kline, Weiner, Interian, Shcherbakov, & St. Hill, 2016).

Research conceptualizing killing as a pMIE, i.e., a morally transgressive act, have identified links between killing in combat and increased reports of psychological distress (Fontana & Rosenheck, 1999; Rona et al. 2009; Maguen et al., 2009; Maguen et al., 2013). Moreover, killing in combat was found to be uniquely detrimental to the mental health of soldiers, also when

controlling for other co-occurring warzone stressors (Maguen et al. 2010; Kline et al., 2016).

However, recent studies have found contradicting results, indicating that killing enemy combatants is not intrinsically morally injurious and may even buffer against PTSD (Cesur, Sabia, & Tekin, 2013; Shea, Plessieu, Finley, Reddy & Spofford, 2017; Porter et al., 2018). Overall, the impact of this central warzone stressor is not yet fully understood.

Studying the links between specific stressor exposure and trauma in military populations is associated with particular challenges (Tanielian, Tanielian & Jaycox, 2008; Able & Benedek, 2019). Civilian trauma cohorts often consist of people who have been the victim of a singular horrific event, such as a manmade or natural disaster, sexual assault or an act of violence (Atwoli, Stein, Koenen & McLaughlin, 2015; Gradus, 2017). In contrast, military personnel deploying to a warzone usually reside there for a prolonged period, and in combat they may be both the receivers and perpetrators of violence (Pietrzak, Whealin, Stotzer, Goldstein, & Southwick, 2011; Yehuda et al., 2015). Moreover, when operating in a warzone, soldiers routinely witness the suffering and death of both the local civilian population and other injured soldiers (Fontana & Rosenheck, 1999; Tanielian et al., 2008). There is a growing body of research demonstrating how distinct warzone experiences such as acute fear, witnessing suffering, and exposure to moral transgressions may precipitate specific psychological effects in veterans (Ramage et al., 2015; Shea, Plessieu, Finley, Reddy & Spofford, 2017; Vermetten & Jetly, 2018; Nordstrand et al., 2019).

The current study aimed to explore the relationship between killing in combat, experiencing personal threats, as well as witnessing atrocities and suffering, and reported psychological distress, alcohol use, and quality of life after deployment. Psychological distress in the current study was indicated by reported posttraumatic stress symptoms, depression, anxiety and insomnia. In order to control for the impact of non-trauma related factors, we added age, education, and cohabitation as covariates and controlled for the time between the last deployment to a warzone and participation in the study. These analyses were carried out in two samples of

Norwegian veterans with distinct mission statements. The sample in Study 1 consisted of veterans from the recent era NATO missions in Afghanistan ($N = 4,053$), and the sample in study 2 consisted of veterans who had deployed as United Nations (U.N.) peacekeepers to Lebanon ($N = 10,605$). We hypothesized that experiences of personal threats, as well as witnessing atrocities and suffering, would significantly influence reported psychological distress, alcohol use, and quality of life. Due to conflicting results in previous studies, we did not have a specific hypothesis concerning the unique impact of killing during deployment after partialling out the impact of other warzone stressors.

Methods

Participants and Procedures

All survey data from both studies were extracted from the Norwegian Armed Forces Health Registry and the Norwegian Labor and Welfare Administrations (NAV). The researchers only had access to anonymous data. All participants provided written informed consent to participate. All procedures, data collection, and storing and distribution of data were done in accordance with the existing legislation regulating the Norwegian Armed Forces Health Registry. Additional anonymous collection of health information about the nonresponders was approved by the Regional Committee for Medicine and Health Research Ethics of South-East Norway.

Study 1

The study used data from a cross-sectional, postdeployment survey carried out during the spring of 2012. All Norwegian military personnel deployed to Afghanistan between late 2001 and the end of 2011 were invited to participate. The identified personnel received an invitation to take part in the study by completing a 20-page questionnaire by mail. A printed version of the survey questionnaire, as well as a letter containing an internet link and unique login credentials, were mailed to all invited participants, giving them the choice of answering either the printed version or an equivalent digital version of the questionnaire. At the completion of the survey, each

participant was included in a lottery for three sport watches. The data collection phase lasted thirteen weeks, from February 20 to May 24, 2012 with two reminders to those who did not respond. The first survey reminders were sent by mail, and the second by both mail and SMS.

A total of 7,155 male and female personnel were recruited into the survey sample. Of the invited personnel, 4,225 (59.0%) responded: 1,931 (45.7%) by mail and 2,294 (54.3%) on the web. Of the responses, 172 (4.1%) were either incomplete or active refusals. The total excluded sample (nonresponders, incomplete responses, and active refusals) amounted to 3,102 (43.3%) persons. In all, 4,053 individuals returned fully completed questionnaires, resulting in a final response rate of 56.7%.

To validate the representativeness of the responders in the sample, NAFJMS conducted a nonresponders analysis of those veterans who did not participate in the Afghanistan 2012 study. The nonresponders ($n = 3,102$) were compared with the responders ($N = 4,053$) using Pearson's chi-square tests of independence. This comparison was done on demographic variables retrieved from the central health registry that includes all Norwegian military personnel, as well as data from the NAV. There were significant differences in biological sex and age between responders and nonresponders ($p < .001$). Women and older veterans had higher response rates.

Study 2

The second sample used data from a cross-sectional, postdeployment survey of Norwegian peacekeepers deployed to the U.N. Interim Force in Lebanon (UNIFIL). The survey was conducted by the NAFJMS between September 2014 and April 2015. All Norwegian military personnel deployed to Lebanon between 1978 and 1998 were invited to participate ($N = 20,678$ men and women). The average time since deployment was 28 years (range: 18–38 years). Of the invited personnel, 11,633 individuals responded. However, 1,028 of these were either active refusals ($n = 913$) or incomplete responses ($n = 115$), resulting in 10,605 valid responses and a final positive response rate of 51.3%.

A printed version of the survey questionnaire, as well as a letter containing an internet link and unique login credentials, were mailed to all invited participants, giving them the choice of answering either the printed version or an equivalent digital version of the questionnaire. The data collection period lasted from September 16, 2014 to April 1, 2015. The first survey reminders were sent by mail, and the second by both mail and SMS.

In order to determine the generalizability of the study sample to the entire Lebanon veteran cohort, a nonresponders analysis was conducted. Register data on sick leave and benefits for the period 1985-2015 was extracted from the NAV. Using Pearson's chi-square tests of independence, the responder group and the nonresponders group were compared on the following variables: biological sex, age, short-term sick leave, long-term sick leave, long-term welfare benefits, and sick leave due to mental illness. The responders were significantly older and had significantly lower frequencies of short- and long-term sick leaves; long-term welfare benefits; and sick leave due to mental illness ($p < .001$). There was no significant difference between responders and nonresponders with regard to biological sex.

Measures

Demographic Variables and Time Since Deployment

The demographic variables of age, level of education, and cohabitation have all been found to influence levels of psychological distress, well-being, and behavior after exposure to major stressors (Schnurr, Lunney & Sengupta, 2004; Riddle et al., 2007; Iversen et al., 2008; James et al., 2013). Accordingly, these variables were used as covariates in the regression equations in order to control for possible demographic moderator effects (see Tables 1 & 3 for M and SD). In both studies, all respondents living with a partner, both those married and unmarried, were categorized as cohabitants in dummy variables. Age was entered as continuous variables. Due to the large male bias in both samples (Study 1 = 91.7% males, Study 2 = 97.1% males), we did not control for biological sex. In order to control for the possible effects of the time since trauma, we

added the length of time since the last deployment prior to the participation in the surveys as a covariate in both studies. This variable does not accurately measure the time since experiencing warzone stressors, but it provides an approximation of the time elapsed since likely exposure.

Killing in Combat

We identified separate killing variables for the two studies (see Tables 1 & 3 for *M* and *SD*). Study 1 had two items related to killing, i.e., “I took lives in combat” and “I think I took lives in combat”, both with the response options 0 (*no*); 1 (*1–2 times*); 2 (*3–12 times*); 3 (*13–50 times*); and 4 (*50 times or more*). The two items were merged in order to create a single variable that was used to indicate having killed. Study 2 had a single item than captured killing events: “I took a life/lives while I was deployed to Lebanon” with the response options 1 (*no*); 2 (*yes, 1–2 times*); 3 (*yes, 3–5 times*); and 4 (*yes, more than 5 times*). This item was used to indicate anyone who had killed during their deployment. The killing variables in both studies were converted into dummy variables for further analysis, with the nominal values: *not killed* (0) and *killed* (1).

Warzone Stressors

The research teams of the Afghanistan 2012 survey and the Lebanon 2016 survey developed distinct warzone stressor indices for their respective surveys, however there were substantial overlap. The events described in both the indices covered a range of previously described aversive warzone stressors common to military deployment (Fontana et al., 1992; King, King, Gudanowski, & Vreven, 1995; Litz et al., 2009; Pietrzak et al., 2011; Stein et al., 2012; Maguen et al., 2010; Nash, & Figley, 2007). At the outset, the warzone indices of the Afghanistan 2012 survey and the Lebanon 2016 survey consisted of 23 and 39 items, respectively. There were some differences in the wording of described events in the two surveys, idiomatic to the respective mission areas. Both indices were self-report scales and measured the frequency of exposure to different types of warzone stressors, such as hazardous environments, threats to life or of physical harm, as well as witnessing death and injury in others. In both studies, the items were rated on a 5-

point Likert scales. In the Afghanistan 2012 survey (Study 1), the response options were 0 (*not experienced*); 1 (*experienced 1–2 times*); 2 (*experienced 3–12 times*); 3 (*experienced 13–50 times*); and 4 (*experienced 50 times or more*), giving a total score range of 0 to 92, with higher scores indicating exposure to more stressors. In the Lebanon 2016 survey (Study 2), the response options were 1 (*no*); 2 (*yes, 1–2 times*); 3 (*yes, 3–5 times*); and 4 (*yes, more than 5 times*), giving a total score range of 39 to 156, with higher scores indicating exposure to more stressors.

Based on literature reviews (Green et al., 1990; Fontana & Rosenheck, 1999; Ozer et al., 2003; Riddle et al., 2007; Iversen et al., 2008; Pietrzak et al., 2011; Maguen et al., 2013; Ramage et al., 2015; Shea et al., 2017; Jordan et al., 2017), we constructed a Personal Threats and a traumatic Witnessing variable for both studies. The Personal Threats variables in Study 1 ($M = 1.32$, $SD = 1.86$, $\alpha = .69$) and Study 2 ($M = 1.31$, $SD = 1.87$, $\alpha = .65$), consisted of four and six items, respectively. The Witnessing variables consisted of five items in Study 1 ($M = 2.60$, $SD = 2.38$, $\alpha = .64$), and five items in Study 2 ($M = 2.61$, $SD = 2.90$, $\alpha = .67$). The Personal Threats items in both studies consisted of questions related to life-danger experiences, e.g., “I experienced a moment I thought I would die” and “I was attacked by the enemy”. The traumatic Witnessing items in both studies related to experiences of other people’s suffering or death, e.g., “I handled dead bodies or body-parts” and “I witnessed innocent victims of war”. The stressor variables were not mutually exclusive; we assumed that some events could involve multiple stressor types.

Posttraumatic Stress Symptoms

The Posttraumatic Stress Disorder Checklist-17, military version (PCL-M; Weathers, Litz, Herman, Huska, & Keane, 1993) was used to capture posttraumatic stress (PTS) symptoms in both Study 1 ($M = 20.92$, $SD = 6.05$, $\alpha = .89$) and in Study 2 ($M = 23.17$, $SD = 10.68$, $\alpha = .95$). The self-report scale contains 17 items gauging symptoms of PTSD (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996). The PCL-M is widely used to indicate PTSD; it has excellent internal consistency across populations, and a high concurrent validity with other measures of PTSD

symptoms (Weathers, Litz, Herman, Huska, & Keane, 1993). Each item is rated on a 5-point Likert scale with responses ranging in intensity from 1 (*not at all*) to 5 (*extremely*). The total possible score range is 17–85, with a higher score indicative of more symptoms.

Anxiety and Depression

The Hospital Anxiety and Depression Scale (HADS) is a widely used measure of symptoms of anxiety and depression (Zigmond & Snaith, 1983). The scale contains 14 items and consists of two subscales: Anxiety (HADS-A; seven items) and Depression (HADS-D; seven items). The two subscales have been found to be sensitive, symptom-specific, and valid for independent use as separate indicators of anxiety and depression (Bjelland, Dahl, Haug, & Neckelmann, 2002). Each item is rated on a 4-point severity scale ranging from 0 to 3, giving a score range of 0 to 42 for the total scale and 0 to 21 for each of the two subscales. A higher score is indicative of a higher level of symptoms. In both studies, we used the HADS-A and HADS-D to indicate the levels of anxiety (Study 1: $M = 2.93$, $SD = 2.78$, $\alpha = .77$; Study 2: $M = 3.49$, $SD = 3.79$, $\alpha = .88$) and depression (Study 1: $M = 1.78$, $SD = 2.43$, $\alpha = .78$; Study 2: $M = 2.44$, $SD = 3.33$, $SE = .03$, $\alpha = .84$), respectively.

Insomnia

The Insomnia Severity Index (ISI; Bastien, Vallières & Morin, 2001) was used to capture reports of insomnia in Study 1 ($M = 3.68$, $SD = 3.99$, $\alpha = .89$) and in Study 2 ($M = 5.57$, $SD = 5.77$, $\alpha = .93$). The scale is seven item self-report instrument measuring insomnia symptoms, as well as the degree of concerns or distress caused by those symptoms. Each item is rated on a 5-point scale that ranges from 0 to 4, giving a total score range of 0 to 28, with higher scores reflecting a higher level of symptoms. The ISI has good face validity, and it has excellent psychometric properties (Morin et al., 2011).

Alcohol Use

The Alcohol Use Disorder Identification Test (AUDIT; Babor, Higgins-Biddle, B., & Monteiro, 2001) is a widely used 10-item questionnaire developed by the World Health Organization to identify individuals with problematic alcohol use patterns. It has shown high validity and reliability internationally and in Norwegian samples (Gundersen et al., 2013). Eight items regarding current alcohol use are rated on a 5-point scale from 0 to 4, and two items are rated with scores of 0, 2, or 4, giving a total score range of 0 to 40, with higher scores indicating more alcohol use. The AUDIT indicated alcohol use in both studies (Study 1: $M = 6.34$, $SD = 3.64$, $\alpha = .71$; Study 2: $M = 5.38$, $SD = 4.30$, $\alpha = .82$).

Quality of Life

The Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) is a 5-item, self-report measure of the satisfaction with life. Each item is rated on a 5-point scale that ranges from 1 (*completely disagree*) to 5 (*completely agree*). Only the first four items of the SWLS were available, both in study 1 and study 2. In addition, a single item commonly used to indicate quality of life (QoL) in Norwegian general health surveys (e.g., Stordal, Bjelland, Dahl, & Mykletun, 2003) was added in both studies; “When you think about how you are feeling these days, are you mostly satisfied with your existence or are you mostly unhappy with your existence?” This added item was rated from 1 (*very dissatisfied*) to 7 (*very satisfied*). Grouped as a single variable, the possible score ranged from 5 to 27 and indicated QoL in both studies (Study 1: $M = 19.66$, $SD = 3.71$, $\alpha = .85$; Study 2: $M = 19.72$, $SD = 4.53$, $\alpha = .88$). A higher score represented better quality of life. The SWLS have previously displayed excellent psychometric properties (Pavot & Diener, 2009).

Data Analysis

The frequency distribution of the responses to Killing, Personal Threats and traumatic Witnessing were calculated in both samples. Subsequently, we conducted a series of linear

regressions to identify any predictors of the dependent variables; PTS, depression, anxiety, insomnia, alcohol and QoL.

In order to compare the relative contributions of the different independent variables in relation to the outcome measures, stepwise regressions were completed for each dependent variable. Age, education, cohabitation and time since the last deployment (Model 1) was entered in the first step (as covariates) in all the regression equations. In the next step we added Killing (Model 2) as a predictor in the regression equation. Finally, in the third step we added the Personal Threats and Witnessing (Model 3). The last analyses included all three warzone stressor variables and explored the relative predictive values in relation to the reported psychological distress, alcohol use, and QoL.

Correlation matrices show the bivariate relationships between the variables in the two studies (Table 1 and Table 2). The tests of collinearity i.e., tolerance and variance inflation factor (VIF) were all within acceptable limits for both studies; the assumption of not getting into multicollinearity was met (Hair, Anderson, Tatham, & Black, 1998; Coakes, 2005). All analyses were performed using IBM SPSS Statistics (Version 25.0; (IBM Corp., 2017).

Results

Study 1

In Study 1, 13.1% of Afghanistan veterans ($n = 527$) reported Killing during the deployment. Exposure to Personal Threat was reported by 49.7% of the sample, while traumatic Witnessing were reported by 77.6%. Table 1 presents Pearson's correlations between all variables in the study.

In Study 1, the final linear regression models (Table 2) showed mixed associations between the demographic variables (age, education, cohabitation) and reports on psychological distress. Older age was a significant predictor of less PTS and less anxiety in the final models but was not associated with symptoms of depression or insomnia. Higher levels of education and

living with a partner significantly predicted less PTS, less symptoms of depression and less insomnia in the final models, but were not associated with anxiety. Similarly, older age, higher levels of education, and living with a partner were all significant predictors of lower alcohol use and higher QoL in the final models.

The regression equations show that Killing was a significant predictor of PTS, depression and alcohol use, however, this effect dissipated when we controlled for other warzone stressors. In the final models, Killing was not associated with any of the outcome measures.

Of note, in the final model, exposure to Personal Threats was a significant predictor of increased PTS and increased alcohol use. In contrast, traumatic Witnessing was a significant predictor of all measures of psychological distress. Traumatic Witnessing also predicted lower QoL but was not associated with reported alcohol use. Time since deployment was not associated with any of the outcome measures in the final model.

Study 2

In Study 2, 1.5% of the Lebanon veterans ($n = 152$) reported Killing during the deployment. Exposure to Personal Threats was reported by 48.6% of the sample, while traumatic Witnessing was reported by 47.3%. Table 3 presents Pearson's correlations between all variables in the study.

In Study 2, the final linear regression models (Table 4) show that older age, higher education, and living with a partner were all significant predictors of less psychological distress. Exposure to Personal Threats and traumatic Witnessing were significant predictors of psychological distress in all regressional equations. Moreover, even after controlling for the influence of Personal Threats and traumatic Witnessing, Killing remained a significant predictor of increased PTS, as well as of increased symptoms of depression and anxiety. Killing was not associated with insomnia (in the final model). Time since deployment was not associated with any of the psychological distress measures.

In the final linear regression model, older age, higher education, and living with a partner were all significant predictors of lower alcohol use. In contrast, reported exposure to Personal Threats and traumatic Witnessing were both significant predictors of increased alcohol use. In the final models, time since deployment was also a significant predictor of higher alcohol use. Killing was not associated with increased alcohol use after controlling for exposure to Personal Threats and traumatic Witnessing.

With regard to the reported QoL, the final regression equation showed that older age, higher education, and living with a partner were all significant predictors of a reported higher QoL. In contrast, exposure to Personal Threats and traumatic Witnessing were significant predictors of a reported lower QoL. Killing and time since deployment were not associated reported QoL (in the final model).

Discussion

The current study demonstrates that killing in combat by itself is not necessarily associated with increased reports of psychological distress, increased alcohol use, or reduction in quality of life. Among veterans from the recent era conflict in Afghanistan, we found that killing did not uniquely explain psychological changes in any of the outcome measures (PTS, depression, anxiety, insomnia, alcohol use, or QoL). Rather, in this sample of Afghanistan veterans it seems that such negative outcomes are better explained by exposure to adjunct stressors common to combat situations (Personal Threats and traumatic Witnessing). These stressors are in line with the typical eliciting experiences of PTSD (Ozer et al., 2003; Pietrzak et al., 2011; Porter et al., 2018). In contrast, among Lebanon veterans killing did predict an increase in reported posttraumatic psychological distress (PTS, anxiety and depression), even after controlling for exposure to other warzone stressors. The current results run partially contrary to previous findings reporting that killing during deployment uniquely accounts for psychological distress among veterans (Maguen et al., 2009, Maguen et al., 2010, Van Winkle & Safer, 2011; Maguen et al., 2013; Pitts et al.,

2014; Farnsworth et al., 2014; Kelley, Bravo, Hamrick, Braitman, & Judah, 2019). Our two-sample study highlight the need for more nuanced assumptions on the impact of killing, as the findings do not support regarding killing as *ipso facto* damaging to the mental health of the perpetrator.

Moral Injury and pMIEs is a developing research field. Accordingly, some of the central assumptions, such as defining killing generically as a transgressive act, and thus, as a pMIE, may be premature (Frankfurt & Frazier, 2016). Indiscriminately defining something as a transgressive act can confound a potential stressor with the outcome, for example, equating exposure to an incident with the effects of this exposure. Several researchers have recommended emphasizing mediating factors, e.g., relevant social norm violations as well as feelings of guilt and shame, instead of the external stressors when defining pMIEs (Farnsworth et al., 2014; Jinkerson, 2016; Button, Jinkerson & Bryan, 2017).

This line of thought emphasizes the socially embedded nature of pMIEs, as well as how contextual factors play a major role in whether an act is perceived by the individual as transgressive. Ultimately, it may be that social and contextual factors largely decide if a moral stressor leads to psychological distress. The point can be illustrated by studies indicating that it is more common for soldiers to feel postdeployment guilt about their immediate positive reaction to killing an enemy combatant, rather than feeling guilt over the act of killing itself (Kubany, Abueg, Kilauano, Manke, & Kaplan, 1997; Purcell, et al., 2016). Given societal norms in the Western democracies' against killing (Boyd et al., 2003; Henrich et al., 2006), soldiers may anticipate that taking someone's life should cause distressing feelings, even when it does not.

When attempting adapt to civilian life, a veteran will have to integrate their experience of having killed with the strong societal norms against such actions. This can potentially cause psychological distress and cognitive dissonance (Kubany et al., 1997; Farnsworth et al., 2014). Studies suggest that a negative reevaluation of warzone actions when returning home from

deployment, are particularly dependent on both one's own and others' perceptions of the legitimacy of the violence they perpetrated during combat (Kilner, 2000; Nadelson, 2005; Purcell et al., 2016). As a result, there is a risk that individuals retrospectively de-emphasize the context of killing in combat, such as having protected oneself or one's fellow soldiers (Porter, 2018; Kelley et al., 2019), and that veterans end up interpreting themselves as cold-hearted killers (Brown, Fielding, & Grover, 1999; Janoff-Bulman, 2010).

In the Afghanistan veteran sample, there was a relatively high proportion of respondents who reported killing, however, in the Lebanon veteran sample the reported rates of killing were rather low. This was expected, and reflect the very different kind of mission statements of these military engagements. The deployments to Lebanon were as part of a U.N. mandated peacekeeping mission, and the main objective was not to engage and defeat an enemy, but to maintain order, act as a stabilizing force, and observe and report transgressions of the peace accord (Sareen et al, 2007). Troops had extensive contact with the local population, and they were encouraged to develop positive relationships with the indigenous residents (Weiseth & Dittmann, 1997). There were strict rules of engagement (ROE) that emphasized that the use of deadly force was a last resort, only to be used for self-defense (Weiseth & Dittmann, 1997). Even protecting the local civilians from harm did not necessarily fall within the ROE. In contrast, the NATO-led military engagement in Afghanistan was, and still is, a much more combat oriented mission. The Norwegian engagement in Afghanistan was established because the United States invoked Article 5 of the NATO treaty following the terrorist attacks on September 11, 2001. Troops were deployed with much broader ROE, as well as stated aims of defeating the Taliban through military means. It is likely that these fundamental differences in mission objectives affected both the peritraumatic perceptions of killing, and posttraumatic evaluations of such acts.

Killing in combat can be both illegitimate and legitimate. The conditions of legitimate killing are commonly predicated by the established ROE. Restrictive or unclear ROE have been

proposed as a major cause for cognitive dissonance after taking lives in combat (Litz et al., 2009; Shay, 2014; Currier, Holland, Drescher & Foy, 2015; Jinkerson, 2016). The ROE may protect soldiers against the negative impact of killing by legitimatizing such actions, and thus relieve them of a more privatized emotional burden (Moldjord & Holen, 2005). Accordingly, the restrictive ROE and the peacekeeping mission statement in the Lebanon engagement likely contributes to the negative impact of killing among Lebanon veterans in the current study. In contrast, the broader ROE and the combat oriented mission statement of the Afghanistan engagement may help explain the modest effects of taking lives among the Afghanistan veterans.

In several qualitative studies of Scandinavian Afghanistan veterans, soldiers emphasized how they aspire to cultivate a professional and level-headed mindset in combat situations (Møller, 2010; Lien, Firing, Bendixen, & Kennair, 2016; Waaler, Larsson & Nilsson, 2019). The soldiers describe taking lives during such engagements as something that may be required in order to solve the stated mission aims, not as actions that evoke strong feelings. These reports are highly congruent with the descriptions of *proactive aggression* (Babcock et al., 2014), a way of engaging in violence that humans may be particularly adapted to tolerate (Wrangham 2018/2019). In contrast, accounts of soldiers' mindsets during combat in Lebanon could be considered in keeping with *reactive aggression* (Weinshenker & Siegel, 2002). Investigations into the experiences of peacekeeping forces in general (Sareen et al, 2007; Shigemura et al., 2016), and of Scandinavian peacekeepers in Lebanon in particular (Wallenius, 1997; Weiseth & Dittmann, 1997 Wallenius, Larsson & Johansson, 2004) reveal highly emotional states among these troops during combat. Killing was not congruent with their primary mission statement. In situations where lives were taken during the mission in Lebanon, Norwegian peacekeepers have described acute fear and reluctance during the actions, as well as an uncertainty regarding the legitimacy of killing (Moldjord & Holen, 2005). If generalizable, these qualitative studies may indicate that the current findings can be partially explained by differences between our two samples in the types of

violence that was mainly employed during combat, i.e., proactive or reactive violence. Moreover, this suggests that a soldier's mindset when killing also has consequences for psychological outcomes after deployment (Bradley, 2009).

Killing in a military context commonly co-occurs with intense combat exposure and life threats due to being in close contact with the enemy (Figley & Nash, 2007). The links between experiences of personal threat and psychological distress is well established (Ozer, Best, Lipsey & Weiss, 2003; Iversen et al., 2008; Ben-Zur & Zeidner, 2009; James, Van Kampen, Miller & Engdahl, 2013) and highlights the importance of controlling for self-perceived threats when investigating the consequences of various warzone exposures (King et al., 1995; Cesur et al., 2013). Moreover, research has indicated that sensory impressions of the death, injuries, or suffering inflicted upon others may in itself cause psychological distress in exposed veterans, beyond what can be explained by any associated personal threat (Green et al., 1990; Pietrzak et al., 2011; Nordstrand et al., 2019). In short, killing in combat does not happen in a vacuum. Thus, the association between killing in combat and reports of posttraumatic distress may in part be explained by other stressors common to warzones, as shown by the current findings on Afghanistan veterans.

There is a difference in how strongly the two samples reacted to the two warzone stressors of Personal Threats and traumatic Witnessing with regard to psychological distress and QoL. In the Afghanistan veteran sample, Personal Threats was only a significant predictor of increased reports of PTS and increased alcohol use. In contrast, Witnessing the death and suffering of others was a significant predictor of increased symptoms of psychological distress on all measures, as well as a significant predictor of reduced QoL. The pattern in the Lebanon veteran sample is more in line with traditional expectations concerning traumatic stressors (Ozer et al., 2003; Ben-Zur & Zeidner, 2009): even though traumatic Witnessing was a significant predictor of adverse outcomes, exposure to Personal Threats by far accounts for most of the variance. As described

above, the differences in mission, ROE, and mindset (proactive vs. reactive aggression) between the two samples may account for these findings.

Limitations

Importantly, the sample in Study 1 (91.7%), and in Study 2 (97.1%) were predominantly male. This bias in biological sex may have influenced the results; previous studies have found sex to be a significant predictor of posttrauma outcomes (Olf, Langeland, Draijer, & Gersons, 2007; Street, Gradus, Giasson, Vogt & Resick, 2013).

Furthermore, there was substantial variation in the length of time since the respondents were exposed to the warzone stressors when completing the two surveys, particularly in the case of the Lebanon veterans. Though we controlled for the time since deployment in analyses, length of time may still have affected the accuracy of the retrospective deployment-related reports (McNally, 2005). The cross-sectional designs of both Study 1 and Study 2 do not capture the changes over time and casual relations between stressors and the subsequent responses cannot be inferred.

The lack of a control group is another limitation, making it difficult to disentangle specific deployment factors related to psychological distress. Accordingly, there may be confounding variables which we did not control for, such as traumatic experiences after military deployment. Of note, the variances accounted for in some of the regressional equations are relatively small. This indicates that there are unknown variables, e.g., personality, resilience, social support, or postdeployment stressors, which might explain a higher proportion of the total variance. Despite this, significant associations with a low R^2 in a large sample such as in Study 1 and 2 can indicate reliable findings, particularly when studying psychological phenomena in large samples (Figueiredo Filho, Júnior, & Rocha, 2011).

In both studies, the respondents could reply either per mail or online. Differences in response modality may have affected our data. However, studies have shown that the response

modality likely does not critically influence survey data (Gosling, Vazire, Srivastava, & John, 2004).

Finally, the large sizes of both samples did not allow for collection of extensive anamnestic data or conduct diagnostic interviews. The presented findings are based on short-form self-report measures and are subject to the limitations of the participants' ability to self-evaluate adequately and retroactively.

Conclusion

The results from these two studies highlight the importance of prudence in making assumptions about what constitutes a transgressive act. Killing during deployment may constitute a pMIE. The current results show a significant and unique impact of killing on psychological distress in veterans who served as peacekeepers in Lebanon, though the impact was modest. However, taking lives did not uniquely explain any changes in the mental health and wellbeing of the veterans who served in the combat-oriented mission in Afghanistan. In trying to categorize *moral injuries*, social, normative, and contextual factors will have to be accounted for.

There are probably several contextual factors influencing which modality of aggression soldiers employ on the battlefield, such as mission statements and ROE. These may be highly relevant in understanding the mental health implications of killing during deployment. Accordingly, the hypothesis that the Afghanistan veterans and Lebanon veterans generally were of different mindsets in combat situations seem likely, and may account for some of the varying psychological effects of killing in our two samples. Overall, the results in the current study suggest that setting clear expectations via ROE, training, mission statements, and psychological support may help reduce post-deployment psychological distress associated with killing in combat.

Future directions

Moral Injury has generated much research interest in recent years. However, researchers may be biased by common societal moral perceptions when identifying pMIEs. More studies trying to account for both individual, peritraumatic, and societal influences are needed in order to clarify what constitutes moral stressors. Future studies should utilize methods that not only capture external stress exposures, such as killing, but also reports of the peritraumatic “state of mind” during combat and killing. Moreover, attempting to classify and investigate the moderating influence of individual and contextual factors such as ROE, training level, and mission specific constraints on killing is warranted. Finally, it may be that guilt and shame related to killing during deployment are mediated by the reactions and attitudes of civilians as veterans attempt to reintegrate into civilian life (Porter, 2018). Future research exploring these issues may help provide much needed insight on the impact of combat killing on the mental health of soldiers, and lend to the development of strategies for prevention and mitigation of related psychological distress.

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Table 1

Means, Standard Deviations and the Intercorrelation Matrix (Pearson) of Predictor Variables and Covariates (Continuous and Dummy Variables) in Veterans Deployed to Afghanistan (N = 4,053)

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	30.25	9.14	-	-	-	-	-	-	-	-	-	-	-	-
2. Education	3.24	1.16	.27*	-	-	-	-	-	-	-	-	-	-	-
3. Cohabitation	.70	.46	.18*	.12*	-	-	-	-	-	-	-	-	-	-
4. Time	5.15	2.46	-.08*	.10*	.15*	-	-	-	-	-	-	-	-	-
5. Killing	.13	.34	-.20*	-.16*	-.07*	-.06*	-	-	-	-	-	-	-	-
6. Personal Threat	1.31	1.87	-.27*	-.21*	-.12*	-.08*	.66*	-	-	-	-	-	-	-
7. Witnessing	2.60	2.38	-.06*	-.01	-.02	.08*	.27*	.45*	-	-	-	-	-	-
8. PTS	20.92	6.05	-.11*	-.11*	-.07*	.00	.14*	.22*	.25*	-	-	-	-	-
9. Depression	1.78	2.43	-.05*	-.06*	-.07*	.02	.07*	.10*	.15*	.70*	-	-	-	-
10. Anxiety	2.93	2.78	-.13*	-.05*	-.03*	.02	.05*	.11*	.14*	.69*	.60*	-	-	-
11. Insomnia	3.68	3.99	.01	-.04*	-.07*	.00	.01	.07*	.11*	.62*	.51*	.56*	-	-
12. Alcohol Use	6.34	3.64	-.29*	-.18*	-.21*	.18*	.12*	.18*	.28*	.28*	.19*	.28*	.21*	-
13. Quality of Life	19.66	3.71	.00	.12*	.23*	.06*	-.00	-.02*	-.06*	-.43*	-.52*	-.40*	-.39*	-.18*

Note. PTS = posttraumatic stress; Pearson correlations significant (two-tailed) at * $p < .001$. Inverse correlation score indicates negative associations.

Table 2

Stepwise Linear Regression Models of Age, Education, Cohabitation and Time Since Deployment as well as War-Zone Exposures and Killing (Independent Variables) as Predictors of Psychological Distress, Alcohol Use, and Quality of Life (Dependents) in Afghanistan Veterans (N = 4,053)

		Posttraumatic Stress Symptoms				Depression			
<i>Predictors</i>		β (Step 1)	β (Step 2)	β (Final model)	R^2 (ΔR^2)	β (Step 1)	β (Step 2)	β (Final model)	R^2 (ΔR^2)
1	Age	-.078*	-.058*	-.044*	.021*	-.024	-.015	-.012	.009*
	Education	-.081*	-.070*	-.068*		-.050*	-.045*	-.047*	
	Cohabitation	-.051*	-.049*	-.042*		-.064*	-.063*	-.059*	
	Time Since Deployment	.014	.021	.005		.032	.035	.024	
2	Killing		.114*	-.005	.033*(.012)		.054*	.005	.011*(.003)
3	Personal Threat			.101*	.087*(.053)			.022	.028*(.016)
	Witnessing			.201*				.126*	
		Anxiety				Insomnia			
<i>Predictors</i>		β (Step 1)	β (Step 2)	β (Final model)	R^2 (ΔR^2)	β (Step 1)	β (Step 2)	β (Final model)	R^2 (ΔR^2)
1	Age	-.127*	-.123*	-.118*	.019*	.041	.042	.042	.008*
	Education	-.019	-.016	-.017		-.045*	-.044*	-.047*	
	Cohabitation	-.015	-.014	-.011		-.077*	-.077*	-.074*	
	Time Since deployment	.019	.020	.009		.024	.024	.013	
2	Killing		.027	.31	.020 (.001)		.010	-.020	.008 (.000)
3	Personal Threat			.037	.038*(.018)			-.003	.020*(.012)
	Witnessing			.126*				.116*	
		Alcohol Use				Quality of Life			
<i>Predictors</i>		β (Step 1)	β (Step 2)	β (Final model)	R^2 (ΔR^2)	β (Step 1)	β (Step 2)	β (Final model)	R^2 (ΔR^2)
1	Age	-.243*	-.236*	-.229*	.123**	-.070*	-.067*	-.062*	.065*
	Education	-.099*	-.094*	-.091*		.112*	-.115*	.119*	
	Cohabitation	-.148*	-.147*	-.144*		.223*	.223*	.223*	
	Time Since Deployment	-.042*	-.039	-.040		.011	.012	.021	
2	Killing		.042**	-.004	.124 (.001)		.021	.024	.065 (.000)
3	Personal Threat			.062*	.128*(.004)			.032	.070*(.005)
	Witnessing			.030				-.079*	

Note. Sig. ** $p < .001$. Negative β values indicate inverse correlations.

Table 3

Means, Standard Deviations and the Intercorrelation Matrix (Pearson) of Predictor Variables and Covariates (Continuous and Dummy Variables) in Veterans

Deployed to Lebanon (N = 10,605)

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	54.92	8.59	-	-	-	-	-	-	-	-	-	-	-	-
2. Education	3.08	1.12	-.07*	-	-	-	-	-	-	-	-	-	-	-
3. Cohabitation	.77	.42	-.04*	.07*	-	-	-	-	-	-	-	-	-	-
4. Time	28.36	5.95	.06*	-.13*	-.03*	-	-	-	-	-	-	-	-	-
5. Killing	.01	.12	.04*	-.02	-.02	.09*	-	-	-	-	-	-	-	-
6. Personal Threat	8.82	2.28	.06*	-.04*	-.02	.16*	.23*	-	-	-	-	-	-	-
7. Witnessing	6.36	1.96	-.05*	.07*	-.00	-.02	.14*	.52*	-	-	-	-	-	-
8. PTS	23.17	10.68	.00	-.11*	-.14*	.06*	.16*	.40*	.30*	-	-	-	-	-
9. Depression	2.44	3.32	-.02	-.08*	-.17*	.02	.09*	.25*	.18*	.74*	-	-	-	-
10. Anxiety	3.49	3.79	-.08*	-.05*	-.12*	.04*	.10*	.29*	.22*	.78*	.75*	-	-	-
11. Insomnia	5.57	5.80	.00	-.07*	-.12*	.04*	.08*	.25*	.19*	.68*	.60*	.66*	-	-
12. Alcohol Use	5.38	4.30	-.06*	-.04*	-.09*	.03*	.05*	.13*	.10*	.28*	.25*	.30*	.29*	-
13. Quality of Life	19.71	4.52	.05*	.11*	.30*	.00	-.07*	-.17*	-.12*	-.57*	-.65*	.59*	-.51*	-.22*

Note. PTS = posttraumatic stress. Pearson correlations Significant (Two-tailed) at * $p < .001$. Inverse correlation score indicates negative associations.

Table 4

Stepwise Linear Regression Models of Age, Education, Cohabitation and Time Since Deployment as well as War-Zone Exposures and Killing (Independent Variables) as Predictors of Psychological Distress, Alcohol Use, and Quality of Life (Dependents) in Lebanon Veterans (N = 10,605)

		Posttraumatic Stress Symptoms				Depression			
<i>Predictors</i>		β (Step 1)	β (Step 2)	β (Final model)	R^2 (ΔR^2)	β (Step 1)	β (Step 2)	β (Final model)	R^2 (ΔR^2)
1	Age	-.060*	-.057*	-.039*	.035*	-.059*	-.058*	-.047*	.037*
	Education	-.095*	-.093*	-.096*		-.075*	-.074*	-.075*	
	Cohabitation	-.137*	-.135*	-.132*		-.165*	-.164*	-.162*	
	Time Since Deployment	.076*	.063*	.016		.038	.030	.000	
2	Killing		.138*	.058*	.054* (.019)		.078*	.027*	.042* (.006)
3	Personal Threats			.303*	.194* (.141)			.194*	.096* (.053)
	Witnessing			.131*				.070*	
		Anxiety				Insomnia			
<i>Predictors</i>		β (Step 1)	β (Step 2)	β (Final model)	R^2 (ΔR^2)	β (Step 1)	β (Step 2)	β (Final model)	R^2 (ΔR^2)
1	Age	-.131*	-.129*	-.116*	.028*	-.047*	-.46*	-.034*	.021*
	Education	-.049*	-.048*	-.050*		-.064*	-.063*	-.065*	
	Cohabitation	-.119*	-.118*	-.116*		-.115*	-.114*	-.113*	
	Time Since Deployment	-.066*	-.058*	.023		.053*	.046*	.017	
2	Killing		.087*	.028*	.035* (.008)		.072*	.021	.026* (.005)
3	Personal Threats			.222*	.110* (.076)			.186*	.082* (.056)
	Witnessing			.096*				.090*	
		Alcohol Use				Quality of Life			
<i>Predictors</i>		β (Step 1)	β (Step 2)	β (Final model)	R^2 (ΔR^2)	β (Step 1)	β (Step 2)	β (Final model)	R^2 (ΔR^2)
1	Age	-.123*	-.122*	-.116*	.020*	.092*	.090*	.083*	.100*
	Education	-.027*	-.027*	-.029*		.093*	.092*	.093*	
	Cohabitation	-.093*	-.092*	-.091*		.290*	.289*	.288*	
	Time Since Deployment	.098*	.094*	.080*		-.031*	-.025	-.005	
2	Killing		.043*	.018	.022* (.002)		-.055*	-.022	.103* (.003)
3	Personal Threats			.089*	.036* (.014)			-.129*	.126* (.024)
	Witnessing			.051*				-.048*	

Note. Sig. * $p < .001$. Negative β values indicate inverse correlations.