

POST TRAUMATIC STRESS DISORDER AMONG VETERANS: RISK FACTORS AND
PREVENTATIVE INTERVENTIONS

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CAPSTONE ABSTRACT

Post traumatic stress disorder among veterans: Risk factors and preventative interventions

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This paper examined the occurrence of combat-related PTSD, risk factors for it and preventative actions to combat its onset. In order to have a full understanding of this relationship, PTSD symptoms and their potential causal factors were examined. The most notable of these potential causal factors for PTSD include the experience of killing another person, the lack of training necessary to cope with trauma, the presence of trait anger prior to trauma and the lack of social support. Based on these findings, prophylactic measures were examined based on further research. This research suggests that thorough training of enlisted members and the presence of social support enables them to cope better with trauma.

The VHA Office of Public Health and Environmental Hazards (2009, as cited by the United States Department of Veterans Affairs) has stated that by the closing of 2008, 1.7 million enlisted members will have served in OIF and OEF. Furthermore, Baiocchi (2013) reports that most individual enlisted members have spent two or more cumulative years being deployed each. According to an article published in 2013 by Baiocchi, using data found in the Defense Manpower Data Center Contingency Tracking System Deployment File (September 2001 through December 2011), the US Armed Forces have contributed over 2 million troop-years to both Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) combined.

In a study by Hoge et al. (2004), members of three Army combat infantry units and one Marine Corps combat unit serving in Iraq reported that 89% to 95% of them were attacked or ambushed, 86% to 92% reported receiving incoming artillery, rocket or mortar fire. Furthermore, 77% to 87% of these individuals reported directing fire at the enemy and 48% to 65% reported being responsible for the death of an enemy combatant.

In addition to experiencing combat and having an active part in it, the soldiers and Marines serving in Iraq also experienced higher instances of trauma exposure. This includes seeing dead bodies or human remains (95% to 94%), seeing dead or seriously injured Americans (65% to 75%). According to the United States Department of Veterans Affairs article, How Common Is PTSD? (2016), approximately 11% to 20% of veterans who served in OIF or OED suffer from PTSD a year.

The statistics and findings above are concerning for the field of social work. Considering the possible mass influx of veterans with the potential to develop Post Traumatic Stress Disorder, it should be of the utmost concern to the field of social work to fully understand this disorder, potential risk factors for it and the best measures necessary to prevent its occurrence. In order to have a full understanding of combat-related PTSD, PTSD itself must be fully defined and explained.

Post-Traumatic Stress Disorder

According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5, 2003, as cited in Levin, Kleinman, & Adler, 2014), PTSD is classified as a “Trauma- and Stressor-Related Disorder” that requires initial exposure to a traumatic event(s) in order for it to manifest itself within an individual. This event(s) can come in the form of actual or threatened death, actual or threatened serious injury, or actual or threatened sexual violence. The individual’s exposure to this event can be through direct experience (the event happening directly to the individual), witnessing (the individual witnessing the event take place in person), indirect experience (the individual discovering a close family member or friend was exposed to a traumatic event), or the repeated or extreme indirect exposure to an event. In regard to indirect experience, trauma experienced by the friend or family member was actual or threatened death, the event is required to be violent or accidental.

Individuals suffering from PTSD can experience four different symptom types (DSM-5, 2013, as cited in Levin, Kleinman, & Adler, 2014). The first are grouped as intrusion symptoms, of which one or more must be present. While

suffering from this group of symptoms, the individual will repeatedly relive the original traumatic experience from which the disorder was derived.

This reliving can happen in a number of ways. The individual may experience recurring memories of the event, have nightmares of it, and/or experience psychological or physiological stress from exposure to stimuli that remind the individual of the event. Additionally, the individual may experience flashbacks of the event, in which the person acts or feels as if the original event(s) is happening again. During these flashbacks, the individual may become fully immersed and lose all sense of their current surrounds.

The second symptom type is based on avoidance, of which one or more associated symptoms must be present. The individual suffering from these symptoms will actively avoid stimuli they deem associated with the original traumatic event(s). This includes thoughts, feelings, and external reminders (e.g., people, places, conversations, activities, objects, situations).

The third symptom group involves negative alterations to cognitions or mood that began or became worse after the original event(s), of which two or more must be present. This includes forgetting important aspects of the event(s), constant negative beliefs about oneself and the outside world, blaming oneself or others for the cause or consequence of the original event(s), a constant negative emotional state, a decreased interest in activities, detachment from others, and the inability to experience positive feelings.

Finally, the fourth symptom type involves a change in the individual's arousal and reactivity responses related to the original event(s), of which two or more of the

associated symptoms must be present. This includes irritable and aggressive behavior, angry outbursts, recklessness, hypervigilance, an exaggerated startle response, concentration difficulties, and difficulty sleeping.

After taking into account the occurrence of the original event(s) and the resulting symptoms, the individual must also experience the symptoms for more than one month and they must cause significant impairment to the individual's ability to function in the outside world in order to be diagnosed as PTSD. The symptoms experienced however, may not meet the full diagnostic criteria for PTSD until six months after the initial event(s) or more. Some symptoms may be present before this time, but not enough to meet the full criteria. This is commonly referred to as PTSD with delayed expression by the DSM-5.

Moreover, these symptoms must not be the result of any substance or medical condition. Those with PTSD may also exhibit dissociative symptoms in which they detach themselves from the trauma experienced or detach the trauma from the realm of possibility. Based on the symptoms related to PTSD, it becomes apparent how the disorder can negatively affect an individual's ability to function within interpersonal relationships, social settings, and society in general. In regard to interpersonal relationships, the advent of PTSD in an individual has been found to be detrimental and often devastating.

Contributing Factors for the Onset of Combat-Related PTSD

Killing

According to the findings of Van Winkle & Safer (2011), veterans who have actually killed enemy Soldiers were more likely to witness American Soldiers subjected to trauma. Furthermore, they found that killing was also a significant predictor of future instances of Post-Traumatic Stress Disorder (PTSD). In a study conducted by Ferrajao & Oliveira (2015) it was found that when individuals are exposed to combat, the performance of abusive violence and the observation of abusive violence during the course of war, they are also more likely to develop PTSD.

In a study conducted by Maguen et al. (2009) the researchers used data from the National Vietnam Veterans Readjustment Study (NVVRS). The NVVRS was conducted in order to assess PTSD and other psychological issues faced by Vietnam veterans who served between August 5, 1964 and May 7, 1975. Within the study, the veterans were assessed using multiple methods including interviews conducted with them and surveying them (Kulka et al., 1988).

Maguen et al. used data already compiled within the NVVRS, including interviews and survey results, to measure the circumstances of killing within the Vietnam theater, its frequency, and its psychological impact upon those who partook. Based on the information derived from this data, Maguen et al. composed four variables for which to measure the veterans' killing experiences. These four variables are:

- Frequency of being in a combat situation where you were sure that you personally had killed enemy personnel
- Personally responsible for death of Vietnamese civilian
- Directly involved in situation where women, children, or old people were injured or killed
- Personally responsible for death of prisoner

Furthermore, the study used two PTSD scales, the Mississippi Combat-Related PTSD Scale and the Minnesota Multiphasic Personality Inventory-2 PTSD Keane Scale, to measure symptoms and occurrence of the disorder in the veterans. Additional indexes were used to assess the veterans' levels of function (employment, family problems, finances, physical health, etc.) and their tendencies of violent behavior towards other people.

Based in the measures above, Maguen et al. (2009) found that while combat exposure was initially viewed as a predictor of future PTSD onset, functional impairment, violent behavior and peritraumatic dissociation, once the experience of killing was taken into account with these issues, general combat was found to be insignificant. As such, Maguen et al. postulated that the experience of killing could be a causal factor in the development of combat-related PTSD, as opposed to simply being exposed to combat.

Moreover, Maguen et al. believed that due to the relationship found between killing and peritraumatic dissociation, individuals may use dissociation to numb themselves after killing another and to cope with it. As such this in turn may interfere with the individuals' ability to properly process the experience(s) and open the door to PTSD development. The act of killing was also found to be a predictor of relationship problems and hostility/rage. These results were

additionally found in of 2,797 U.S. veterans of OIF in a study conducted by Maguen et al. (2010).

A study by Van Winkle and Safer (2011) found similar results. In their study, 376 male veterans from the NVVRS family interview section were used. The levels at which killing was observed and/or participated in during the Vietnam war were measured in each of the veterans. The participants were also measured for PTSD using the Mississippi Scale of Combat-Related Posttraumatic Stress Disorder. The participants' spouses were questioned regarding the veterans' levels of physical violence in the prior year.

Using this data, Van Winkle and Safer (2011) found that the experience of killing an enemy Soldier was a significant predictor of the development of PTSD. This was found even after removing the experience of witnessing the deaths of others from the equation.

Lack of Training

In a study conducted by Osorio et. al. (2013), 113 Portuguese Army Special Operation Force (SOFs) Soldiers who had been deployed at least once in Afghanistan between 2005 and 2010 were sampled. Each of the participants was given a questionnaire inquiring about their combat experiences. These experiences included active combat situations, adverse physical conditions and unit-related problems. The Soldiers were also assessed for PTSD using the Response to Traumatic Event Scale.

According to the study, the Solders reported having been exposed to many various combat experiences including wounding enemies, killing enemies, being

injured themselves, risking their own death and helping other injured soldiers. The participants additionally reported being exposed to adverse weather, lack of food and lack of sleep. Despite these conditions, the Soldiers also reported high levels of unit satisfaction, pride and quality of military training (Osorio et. al., 2013).

Additionally, the occurrence of PTSD within this group was found to be low at 2.7%. An explanation presented for this is the level at which these type of units train. During their training, these groups rigorously train for the physical and psychological trauma they may face while deployed. Therefore, while these individuals may see many deployments, they have been thoroughly prepared through training to cope (Osorio et. al., 2013).

In a similar study conducted by Hanwella and de Silva (2012), a group of 259 Sri Lankan Navy Special Forces and a group of 412 regular forces were both questioned regarding potential traumatic experiences during deployment including being involved in active combat, firing a weapon during combat and engaging with enemy vessels. The two groups were also questioned other experiences during deployment that may affect mental health such as unit cohesiveness and familial support.

The two groups were also tested for PTSD using the National Centre for PTSD Checklist, civilian version (PCL-C). In order to qualify for this study, all personnel involve must have served for one full year in a combat area between the dates of May 2008 to May 2009. Any members of these units who had not served the full year were excluded from the study.

Special Forces members were found to have experienced more potentially traumatic events than regular forces members. Special forces members reported discharging their weapons during combat at a rate of 86.9%, engaging in combat with an enemy vessel at a rate of 81.5%, and coming under small arms fire at a rate of 60.2%. These experiences are far more prevalent than those regular forces were exposed to (discharge weapon: 26.7%, combat with enemy: 29.4%, under fire: 24.5%).

In addition to greater combat exposure, the Special Forces members reported far more unit cohesion than the regular forces. In regard to a sense of comradeship within the unit, Special Forces agreed at a 92.8% rate while regular forces reported a 78.2%. Similarly, 65.5% of the Special Forces reported they felt they could go to others within their unit with personal problems and 93.6% felt their training was compatible with their experience. This is compared to the 50.9% and 85.4% rates reported by the regular forces. (Hanwella & de Silva, 2012).

PTSD rates were also found to be lower in the Special Forces group (1.9%) compared to the regular group (2.7%). The difference in these rates was found not to have been statistically significant. The Special Forces group, however, was exposed to higher amounts of combat exposure and active combat participation than the regular group. Based on the higher rates at which the Special Forces members experienced trauma when compared to the regular forces, PTSD rates in the Special Forces members should be far higher than they are (Hanwella & de Silva, 2012).

This is especially true regarding the engaging in combat with an enemy rates shown (81.5% vs. 29.4%). While it was not measured in this study, this is the experience in which a participant was most likely to kill another. As stated above, killing is potentially a causal factor in the development of PTSD (Van Winkle & Safer, 2011, Maguen et al., 2009). The rates of PTSD however, were found to be lower in the Special Forces group.

Comparably to Osorio et. al. (2013), Hanwella and de Silva speculate that due to the high unit cohesion rates and better training received, the members are left better prepared to handle the traumatic situations they are exposed to. Furthermore, they also state that due to the higher intensity of the mental training received by the Special Forces group, those who are psychologically unfit for the unit drop out. Therefore, even though they experience more combat exposure and all that goes with it, the Special Forces members remaining can withstand it and are still able to function.

Similarly, it was found by Novaco, Swanson, Gonzalez, Gahm, and Reger (2012) that combat exposure does not decrease an individual's ability to function, nor does it increase their likelihood to harm others. Gonzalez, Novaco, Reger, and Gahm (2016) found that while combat does have a correlation to anger, it is a weak one. According to the findings of Novaco, Swanson, Gonzalez, Gahm, and Reger (2012), there is a strong correlation between the anger of an individual and the occurrence of PTSD. While the existence of irritable behavior and angry outbursts are stated to be symptoms of PTSD within the DSM-V, the presence of anger in an

individual prior to a traumatic event may make them more vulnerable to the future development of PTSD.

Anger

In a study conducted by Lommen, Engelhard, van de Schoot, and van den Hout (2014), 249 Dutch soldiers were tested for trait anger and PTSD 2 months prior to deployment a deployment to Afghanistan. The soldiers were then retested 2 months after returning home and again 9 months after returning home. Based on the assessments of the soldiers, it was found that the presence of higher trait anger prior to deployment was predictive of the development of more severe PTSD symptoms 2 months after returning home.

Similar findings were also discovered by Meffert et. al. (2008). Within their study, data from 180 police academy recruits within the New York Police Department, Oakland Police Department, San Francisco Police Department and San Jose Police Department academies was collected. This data included the presence of anger and occurrence of PTSD.

After a year active police work, the participants were contacted and measured again. Based on the data collected, it was found that the presence of trait anger duty their academies predicted the development of PTSD symptoms subsequent to a year of active service. Additionally, it was found that the presence of these symptoms was also predictive of further increases in the participants' anger levels on a symptomatic level.

Moreover, the studies of van Zuiden et. al. (2010) and Heinrichs et. al. (2005) found that higher levels of hostility were predictive of the future development of

PTSD symptoms in Dutch soldiers and professional firefighters. Based on these findings it can be determined that while PTSD has a causal effect on the development of aggressive behavior, pre-existing trait anger is also likely accountable for the development of PTSD symptoms. While current research is limited on the topic of anger and its causal relationship to PTSD, such hostility may be explained by a lack of social support (Heinrichs et. al., 2005).

According to Heinrichs (2005), individuals who experience higher levels of hostility are possibly those who lack social support and are in turn isolated. Without the proper support they would then be unable to develop proper social coping skills. According to Gimbel and Booth (1994), veterans without proper coping skills would be unable to handle the extremities of war. As such, they would then be more likely to develop PTSD.

Lack of Social Support

According to Cohen (2004), social support is defined as a “social network’s provisions of psychological and material resources intended to benefit an individual’s ability to cope with stress.” Social support was stated to come in several forms including instrumental, informational, and emotional. According to Sippel, Pietzak, Charney, Mayes and Southwick (2015), these forms can be provided to an individual by their significant other, family, community, as well as state, national and international systems.

The presence of weak social support systems has been well documented to have an impact on the mental well being of individuals (Sippel, Pietzak, Charney, Mayes and Southwick, 2015; Cohen, 2004). A weak social support system makes an

individual vulnerable to a number of different issues. This includes mental stress and trauma.

In a study by Woodward et. al. (2015), 170 female intimate partner violence victims and 208 female motor vehicle accident victims were measured for negative posttraumatic cognitions, social support and PTSD. Based on the data gathered by the study, it was found that lack of social support after the experienced trauma may have caused the individuals to blame themselves, to feel unsafe in the world and to distrust others. It was noted in the study that these thoughts are all comparable to symptoms of PTSD. Therefore, lack of support after experience trauma likely make the individuals more vulnerable to the later onset of PTSD.

Based on the concept of homecoming stress, similar results were found by Johnson et al. Johnson et. al. (1997) defines homecoming stress as, “the trauma victim’s belief and feelings that they have not been welcomed back home, and not accepted or helped in their readjustment by family or society.” The factors that made up homecoming stress include the veteran’s immediate reception by their family and society after returning home, instances of humiliation and privilege while being home for six months, and the amount of emotional and material support the veteran experiences from their family and society.

Within the study, 247 Vietnam veterans suffering from PTSD were tested. The individuals were measured for PTSD symptoms and characteristics, combat exposure, general life events after the war and the factors of homecoming stress mentioned above. Based on the results of the data gathered, it was found that veterans reported receiving little to no social support after returning home from

Vietnam. Individuals reported being insulted for being a Vietnam veteran, being told by another that they did not want to hear about Vietnam and getting in to physical altercations over the topic of Vietnam. As a result, the veterans reported feelings of anger, resentment and alienation when back home.

These experiences reported by the veterans were subsequently found to be strong predictors for PTSD symptom frequency and intensity. Furthermore, Gonzalez, Novaco, Reger, and Gahm (2016) found that receiving social support while being deployed has a negative correlation with the occurrence of PTSD symptoms as well. These findings lend further credibility to the concept that a lack of social support after trauma is a risk factor for the future development of PTSD.

Prophylactic Measures and Treatment Methods

Early Screening

Based on the information presented above, the primary action that should be taken to prevent combat-related PTSD is screening those individuals that enlist. In their 2014 study, Gimbel and Booth discuss the potential of premilitary problems (early emotional issues and antisocial problems in school) affecting how an individual is emotionally and behaviorally molded by combat. In this scenario, an individual with early emotional problems will be unable to cope with the psychological trauma of war because they were unable to cope with their prior issues. Furthermore, the individual reporting early antisocial behavior will only have those behaviors reinforced by combat. The combination of these factors creates an emotionally unstable individual with the potential to develop PTSD and who is prone to anger and violence.

In order to diminish the potential occurrence of such issues in enlisted personnel, psychological examinations and surveys could be given prior to enlistment that specifically target the individual's pre-military problems. Individuals flagged for these problems could then be precluded from entry into the military or could be provided treatment/training to address these problems, lowering the potential of any future mental breakdown or violent outburst.

Members should also be screened for the presence of trait anger prior to enlistment. According to Meffert et al. (2008), van Zuiden et al. (2011), Heinrichs et al. (2005), and Lommen, Engelhart, van de Schoot, and van den Hout (2014), individuals who display trait anger prior to traumatic experiences are more

vulnerable to the development of PTSD symptoms than those who do not. As such, identifying these individuals would allow for them to receive treatment prior to combat or outright elimination from the recruitment process. This in turn would potentially reduce the occurrence of combat-related PTSD.

Better Training

According to Osorio et al. (2013), the benefit of such training is clear. In their study, a group of 113 Portuguese SOFs were shown to have a PTSD occurrence rate of 2.7% within their ranks. This is despite self-reports of active participation in combat scenarios, including confirmed killing and witnessing killing. Lower levels of PTSD were also found in the Special Forces members studied by Hanwella and de Silva (2012).

It both studies it was found that these specialized units received far more training based on their potential combat exposure and participation. As such, the members of these units were able to withstand greater amounts of potentially traumatizing experiences. According the Hanwella and de Silva (2012), increased specific training works for two reasons.

First, due to the higher intensity of their training, the specialized units become better mentally prepared to handle trauma. They can therefore withstand more than an enlisted member with inferior training. In a study by King et al. (1998) this is called hardiness. Hardiness was stated to have a direct negative relationship with PTSD in male and female veterans. Therefore, the harder the individual was, the less likely to occur.

Second, the nature of this training can potentially weed out those who are mentally and physically unfit. By weeding out the weaker individuals, the unit as a whole becomes stronger. Moreover, Osorio et al. (2013) suggested that repeated exposure to stressful tasks allows those performing them to practice and develop proper coping techniques that may continue to be used in the future.

A potential third reason for this type of training enabling strong coping abilities is the creation of social bonds. This superior training also leads to the strengthening of social relationships and support within the individuals who take part in it (Osorio et al., 2013; Hanwella & de Silva, 2012). According to Woodward et al. (2015), social support is negatively correlated with posttraumatic cognitions. Moreover, King et al. (1998) found that hardy individuals have an easy time seeking others support when experiencing stress and are more able to create better social networks.

In regard to the onset of PTSD, the above findings should be considered when training all military personnel. With an increase in training and a potential fall in the occurrence of PTSD in military veterans, more would be better mentally prepared to handle the stressors of civilian life. As such, they would be less prone to the mental breakdowns and violent outbursts that often accompany combat-related PTSD.

In these studies, the Special Forces members reported high levels of unit cohesion and support as well. According to Hanwella and de Silva (2012), increased rates of unit cohesion and camaraderie act as protection from members developing

PTSD. Therefore, the role of increased social support should be strongly considered when attempting to deter the occurrence of PTSD.

Social Support Prior to PTSD Onset

As dictated by the DSM-5 (2013, as cited in Levin, Kleinman, & Adler, 2014), the formal onset of PTSD only takes place at least one month after experiencing the corresponding symptoms, as well as the frequency and intensity of them. Moreover, while these symptoms may be present, their frequency and intensity may not fulfill the full criteria necessary to be diagnosed as PTSD until six months or more subsequent to the initial trauma experienced. This gives the individual who experienced the traumatic event at least one month to take preventative measures before being diagnosed with PTSD. This is where social support comes in.

Based on the above findings of Woodward et. al. (2015) and Johnson et al. (1997), lack of social support has been found to have a positive effect on the development of PTSD and its symptoms. However, according to Woodward et al. (2015) when positive social support is present, individuals who have experienced trauma may be more likely to discount negative thoughts and confront the trauma, as opposed to disassociating from it. As such, the individual would be able to improve their symptoms prior to the onset of full-blown PTSD. Therefore, if an individual were to seek treatment prior to the onset of PTSD, they may be able to prevent it before it officially begins.

In a study by Balderrama-Durbin et al. (2013), 76 U.S. Air Force service members were assessed to determine the relationship between intimate partner support and PTSD severity. Within the study, the service members were measured

for PTSD, combat exposure, relationship satisfaction, and willingness to disclose combat-related experiences. Based on these measures, it was found that high amounts of partner support promoted higher amounts of combat-related disclosure. This disclosure in turn reduced the negative effects of combat exposure after a member's return (i.e.: symptoms of PTSD). Furthermore, it was found that a lack in disclosure was linked to higher relationship distress.

Hoyt and Renshaw (2014), however, found that veterans were more likely to disclose emotions with those who shared experiences with them (i.e.: combat) than those who did not. Moreover, it was found that veterans would also be more likely to share negative experiences with those who also experienced them. As stated above, disclosure not only relates to positive relationships, but also mitigates the negative effects of combat exposure. As such, disclosure appears to be a viable preemptive option for PTSD and the reinforcement of a supportive intimate relationship. However, if a veteran is only willing to disclose to those who have shared experiences, a significant other may not be a viable option initially.

According to Hoyt and Renshaw (2014), there is a remedy for this through repeated disclosure. In doing this, the veteran would disclose their combat and trauma exposure to someone with shared experiences. This would occur several times until the veteran became comfortable with the disclosures in general. This would in turn allow the veteran to then disclose their exposures to those without shared experiences.

These disclosures should be based on the specific trauma that caused their mental distress/PTSD symptoms. According to Amir, Kaplan, and Kotler (1996),

different types of trauma are accountable for the type and severity of PTSD symptoms experienced. Their findings further conclude that war veterans are far more severely affected by PTSD than civilian groups. Graham et al. (2016) found that, as opposed to being one all encompassing disorder; PTSD has several sub-types that correspond to the types of trauma that caused them. Each of these sub-types would then have specific symptoms that are associated with it. As such, disclosures should be specific to the types of trauma experienced by the individual and the symptoms exhibited while recounting them.

In regard to veterans, they found that those who experienced combat trauma were more likely to exhibit diminished interest and detachment from others. The study however, did not specifically account for the act of killing in addition to combat trauma. As seen above, veterans who personally experienced killing another person are prone to anger and violent outbursts. As such, it is believed that the trauma of killing is associated with the Alterations in Arousal and Reactivity set of PTSD symptoms.

In this set, individuals are more prone to aggressive behavior and angry outbursts (DSM-5, 2013, as cited in Levin, Kleinman, & Adler, 2014). Therefore, a veteran with combat and killing exposure may experience diminished interest, detachment, and instances of aggressive outbursts. Meffert et al. (2008) found that pre-trauma trait anger made individuals vulnerable to PTSD, which in turn increased trait anger. Due to this potential relationship, enlisted members should be screened for trait anger prior to combat to assess the possibility of further expressions of anger.

Based on the research presented above, preemptive options should take into account based the individuals experience with active combat participation and killing.

In the 2010 study by Maguen et al, the act of killing was found to be a predictor of relationship difficulties and the occurrence of PTSD in the participants. In regard to treatment methods of veterans, Maguen et al. suggest the incorporation of an assessment of their participation in killing and their reactions to it. Furthermore, Maguen et al. (2009) suggest veterans should have access to a judgment-free environment in which they are free to speak about their potential experiences of killing another.

Both of these suggestions from Maguen et al. (2009, 2010) fall well within the disclosure method of preventative treatment. In this case, veterans would be asked about their combat experiences and if any killing took place. If the answer were yes, the veteran would then be free to disclose these experiences without fear of judgment or repercussion. In order to stay in line with the findings of Hoyt and Renshaw (2014), the clinician should be a combat veteran/enlisted military member to more easily facilitate disclosure from the individual. Furthermore, in order to adhere to preventative means of dealing with PTSD, enlisted members should be screened for PTSD symptoms after potential traumatic experiences. As such, the symptoms can be swiftly dealt with and the onset of PTSD may be potentially prevented.

Along with the disclosure of killing, individuals should be encouraged to also disclose the occurrence of anger prior to combat. According to Forbes, Creamer,

Hawthorne, Allen, and McHugh (2003), anger may interfere with an individual's ability to engage with a clinician, as well family and social supports. Therefore, if the anger of the individual is not dealt with, they may be likely to drive away potential social supports (Heinrichs, 2005) and disclosure may never happen.

In a study conducted by Sharpless and Barber (2011), several PTSD treatment types were assessed and compared to one another. According to this review, exposure therapies were found to be among the effective and most practical. While this should not cast doubt of the efficacy of the other options, exposure therapy was found to incorporate disclosure into their methods. As such, it is believed that these therapies will have a better chance of helping those with the potential symptoms of PTSD. There are two types of exposure therapy covered within the study: prolonged exposure and cognitive processing therapy.

Within prolonged exposure, individuals partake in eight to fifteen 90 minute sessions per week. In these sessions, individuals imagine living traumatic memories, vocally detailing them, and then subsequently discussing the memories. Individuals are also safely exposed to experiences perceived as traumatic that they would normally avoid.

Within cognitive processing therapy, individual write about their traumatic experiences, daily read them to themselves, and read them to clinicians during therapy sessions. The clinicians will then provide feedback and support to the clients, if need be. Both of these therapy types have proven to be effective with clients and are widely used by the United States Department of Veterans Affairs and the military in general. In regard to the treatment of combat-related PTSD, both of

these therapies have the potential to address the potential causes stated above. This goes back to repeated disclosure (Hoyt and Renshaw, 2014) within safe environments (Maguen et al., 2009).

Within the various preventative interventions for PTSD, many are based on the concept of social support from others. According to Heinrichs (2005), individuals with high levels of hostility are likely to be subject to social isolation and/or low amounts of social support from others. As stated by Woodward et al. (2015), the lack of support subsequent to a traumatic experience can cause negative thought processes that may eventually give way to PTSD onset.

Preventative measures should be taken in order to identify anger in enlisted members prior to combat and treat them for it. By doing this the individual will not only have a potentially new source of support, but will have lowered hostility rates. According to Heinrichs (2005), individuals with low hostility levels were shown to prevent the onset of psychopathological symptoms in the face of experienced trauma.

Future Research

The studies above and the comparison of them to each other paint an interesting picture regarding the occurrence of combat-related PTSD in relation to anger and killing. While many studies were found analyzing the three and comparing them to one another, more should be conducted. The one study that attempted to tie the three together in a causal relationship is over twenty years old (Gimbel & Booth, 1994). Twenty years ago, PTSD was diagnosed differently.

In the DSM-IV (1994), PTSD was classified as an anxiety disorder, as opposed to now being classified as a trauma- and stress-related disorder. The reason this was changed in the DSM is because a better understanding of the disorder was achieved. While this may not necessarily affect the findings of Gimbel and Booth, the study should at least be replicated in modern times using modern soldiers and the updated definition of the disorder.

Furthermore, within the study of Gimbel and Booth (1994), anger is not adequately addressed as a risk factor for PTSD. While the study does speak of antisocial behavior, it never speaks of anger outright. Moreover, the study states that antisocial behavior is worsened by combat-exposure, alluding to the onset of PTSD.

Based on the research above, anger has only recently been identified as a likely risk factor for PTSD and not just a symptom. Furthermore, at the time of this paper, only four such studies have been found. As such, more research should be conducted into the role of anger as a risk factor for PTSD. Within the available

studies, anger has only been identified as a factor, but has not been fully measured to determine how its presence makes an individual vulnerable.

While it has been assumed that angry individuals lack social support, which in turn prevents them from properly coping with trauma (Heinrichs, 2005), the relationship should be studied further. Additionally, the relationship between childhood trauma and anger should be studied as well. According to van Zuiden et al. (2011) childhood trauma was associated with higher hostility in his participants. Van Zuiden assumes that this is due to the development of insecure attachment styles, which later on influence the onset of PTSD.

Much of the research conducted above was also done using combat experiences from Vietnam veterans. While this does not invalidate their experiences, modern day warfare is different from what they were exposed to. As such, more studies should be conducted to record modern day combat experiences. Therefore, these experiences can be taken into account when attempting to devise treatments for modern day veterans.

The presence of social support contributing to PTSD onset should also be studied further. The above studies do a good job of addressing how strong social support after trauma can prevent the development of PTSD. However, no studies were found regarding strong social support prior to trauma and how it relates to PTSD specifically. While the studies of Osorio et al. (2013) and Hanwella and de Silva (2012) speak of social support within elite military units, there was no specific mention of if its presence before trauma allowed more resilience. Further research should be conducted into this.

Additionally, very few of the studies reviewed accounted for combat-related PTSD in female veterans. It is understandable that older studies did not have such data available. Enlisted females did not experience the level of combat-related trauma enlisted males were exposed to then. However, with enlisted females taking a more active role in modern combat, data regarding their experiences must be compiled as well.

Further research should also be done on the PTSD, its causes, and the potential for it to be composed of several sub-types as opposed to one disorder. As such, various trauma types and individuals who have experienced them should be studied in order to ascertain the occurrence of PTSD and through which symptoms it is expressed. By doing this, treatments can be specified to the individual.

Finally, based on the combined research of this paper, a study examining the causal relationship between killing/active combat participation, trait anger, lack of training, social support and the occurrence of PTSD should be conducted. To the writer's knowledge, no research has been conducted on these subjects separately. As such, further data should be gathered to determine the potential relationships between them and how they affect the onset of PTSD.

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