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Violent behavior among military Reservists

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Abstract

Large numbers of British and American Reservists have been deployed to operations in Iraq and Afghanistan. Little is known about the impact of deployment and combat exposure on violent behavior in Reservists. The purpose of this study was to determine the prevalence of self-reported violent behavior among a representative sample of United Kingdom Reservists, the risk factors associated with violence and the impact of deployment and combat exposure on violence. This study used data from a large cohort study of randomly selected UK military personnel and included Reservists who were in service at the time of sampling (n=1710). Data were collected by questionnaires that asked about socio-demographic and military characteristics, pre-enlistment antisocial behavior, deployment experiences, post-deployment mental health and self-reported interpersonal violent behavior. The prevalence of violence among Reservists was 3.5%. Deployment was found to be a risk factor for violent behavior even after adjustment for confounders. The association with violence was similar for those deployed in either a combat role or non-combat role. Violence was also strongly associated with mental health risk factors (PTSD, common mental disorders and alcohol misuse). This study demonstrated higher levels of self-reported post-deployment violence in UK Reservists who had served in either Iraq or Afghanistan. Deployment, irrespective of the role was associated with higher levels of violent behavior among Reservists. The results also emphasize the risk of violent behavior associated with post-deployment mental health problems.

Key Words: Reservists; deployment; violence; military

Introduction

In recent years, much media attention has been focused on violent and aggressive behavior by military personnel following return from deployment in the United States (US) and United Kingdom (UK) (Alvarez & Sontag, 2008; Associated Press, 2012; BBC News, 2010). Research in both the US and the UK has found a range of factors to be associated with violence among military personnel, such as exposure to combat (Booth-Kewley, Larson, Highfill-McRoy, Garland, & Gaskin, 2010; Gallaway, Fink, Millikan, Mitchell, & Bell, 2013; MacManus et al., 2012; MacManus et al., 2013; MacManus et al., 2015; Wright, Foran, Wood, Eckford, & McGurk, 2012) and post-deployment mental health and substance misuse problems (Booth-Kewley et al., 2010; Gallaway et al., 2013; MacManus et al., 2012; MacManus et al., 2011; MacManus et al., 2013; MacManus et al., 2015; Thomas et al., 2010; Vogt, Samper, King, King, & Martin, 2008; Wright et al., 2012) but also pre-military factors (MacManus et al., 2012; MacManus et al., 2011; Thomas et al., 2010). However, most of the studies to date have restricted their focus to Regular military personnel, i.e. full-time active members of the military. Research in the UK has found that deployment was significantly associated with risky behavior such as risky driving, smoking and physical violence among Reservists (Thandi et al., 2015) but did not explore the link with physical violence further or the deployment-related factors that may explain that link.

In both the US and UK Armed Forces Reservists have been increasingly deployed to supplement Regular personnel in operations in Iraq and Afghanistan. Since 2006, volunteer Reservists have comprised over a third (36,000 personnel) of the British Army (Browne et al., 2007; Harvey et al., 2011) and about 40% of the US Armed Forces (Segal & Segal, 2005). With cutbacks to Armed Forces personnel in recent times in both the US and UK, it is expected that

Reservists will play a more prominent role in military operations (Harvey et al., 2011; McGarry, 2015).

Deployment has been shown to have a greater impact on mental health among Reservists than among Regular military personnel (Harvey et al., 2011). The higher prevalence of post-traumatic stress disorder (PTSD), alcohol misuse and common mental disorders among deployed than non-deployed Reservists is greater than that observed in Regular personnel (Fear et al., 2010; Hotopf et al., 2006; Riviere, Kendall-Robbins, McGurk, Castro, & Hoge, 2011). Research into the impact of deployment role on violent behavior by UK military personnel has found that deployment in a combat role increases the risk of subsequent violent and offending behavior compared to those deployed in a non-combat role (MacManus et al., 2012; MacManus et al., 2013). There has yet to be a study, however, that looks specifically at deployment-related risk factors for violence among Reservist populations.

The aims of this study were to first explore the socio-demographic factors associated with post-deployment violent offending among Reservists; second to explore the impact of deployment, and combat exposure on subsequent violence among Reservists; and lastly to explore the association between post-deployment mental health problems and violence. We also examined how the level of reported violence changes with time since return from deployment. We predicted that, given the observed vulnerability of Reservists to the effects of deployment on their mental health, they may be more vulnerable to the impact of deployment and its related risk factors on violent behavior.

Method

Study Design and Participants

The study population was a randomly selected representative sample of personnel who were serving in the UK Armed Forces at the time of sample selection. Participants were identified by the UK Ministry of Defence's department of Defence Analytical Services and Advice (DASA). Special Forces and high-security personnel were excluded.

The data was collected by questionnaire in two phases: from 2003-2005 (phase one) and 2007-2009 (phase two). During phase one, 17,000 members of the UK Armed Forces were randomly selected and sent a questionnaire, of which, 61% responded (Hotopf et al., 2006). Non-response was mainly due to the inability to contact the participants (Iversen et al., 2007). Phase one consisted of personnel who had been deployed to Iraq (TELIC 1, between Jan 28, 2003, and April 28, 2003) and those who were trained, but not deployed at that time (ERA). These participants were then followed up during phase two of the study. Two further randomly selected samples were added during phase two. The first sample consisted of randomly selected personnel who had been deployed to Afghanistan between April 2006 and April 2007 (HERRICK). The second sample (replenishment group) consisted of newly randomly selected personnel who had joined the military since the cohort was first recruited in 2003. In phase two, 17812 personnel had been sent a questionnaire and the response rate was 56% (Hotopf et al., 2006). The final sample consisted of 8276 Regulars and 1710 Reservists. We excluded Regular personnel and so our final sample consisted of 1710 Reservists.

Data Collection

Data collection was carried out using a self-completion questionnaire which collected a range of information on socio-demographic characteristics, pre-military antisocial behavior (ASB), service history, experiences on deployment, as well as measures of post-deployment physical and mental health.

Variables**Violence outcome measures.**

The main outcome measure was violence in the month prior to questionnaire completion. This was measured using a question taken from a validated questionnaire that assessed aggressive behavior in the past month in US military personnel (Bliese, 2004). Questions about aggressive behavior, which were asked of both deployed and non-deployed personnel, followed the stem statement “In the past month, how often did you...” and included: “Get into a fight with someone and hit the person”. Participants were categorized as having been violent if they reported one or more incidents in the past month. Violence in the weeks following return from deployment was also measured. Those who had been deployed to Iraq or Afghanistan were asked if they had either been involved in physical fights outside of their family or been physically violent towards a family member in the weeks after returning home. They were categorized as having been violent if they endorsed either question. We used this measure of violence along with our main measure of violence in secondary analyses to explore how self-reported violence changed over time among the deployed group.

Pre-enlistment antisocial behavior (ASB).

Pre-enlistment ASB was measured using questions selected from a questionnaire on childhood adversity that has been previously used (Iversen et al., 2007). Participants were asked

to respond to sixteen true or false questions beginning with “When I was growing up...”.

Participants were categorized as having pre-enlistment ASB if they answered ‘true’ to “I used to get into physical fights at school” and any of the following statements: “I often used to play truant at school”, “I was suspended or expelled from school”, or “I did things that should have got me (or did get me) into trouble with the police” (Iversen et al., 2007; MacManus et al., 2012). Although these questions are not matched to the diagnostic criteria for conduct disorder, the endorsement of fighting along with another conduct problem has been used as a marker of pre-enlistment ASB at a similar threshold to that of a formal diagnosis of conduct disorder (MacManus et al., 2011).

Deployment variables.

Personnel were classified as deployed if they reported having been deployed to Iraq and/or Afghanistan. They were also asked about their main role on deployment. Personnel were classified as being deployed in a combat role if they had been in direct combat with the enemy, or non-combat role if they were either in a combat support role (operation support such as engineering and providing medical care) or in combat support services (logistical support such as administration).

Mental health variables.

Probable PTSD in the month prior to questionnaire completion was established using a cut off score of 50 on the National Centre for PTSD Checklist (PCL-C) (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996). Alcohol misuse in the year prior to questionnaire completion was established using a cut off score of 15 on the World Health Organization’s Alcohol Use Disorders Identification Test (AUDIT) (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001; Fear et al., 2007). Finally, the presence of common mental disorders in the

month prior to questionnaire completion was established using a cut off score of 4 on the General Health Questionnaire -12 (GHQ-12) (Goldberg et al., 1997; Goldberg & Williams, 1988).

Statistical Analyses

Univariable analyses were used to examine the association between a range of variables and violence in the month prior to questionnaire completion among Reservists, including socio-demographic, pre-enlistment and military factors. Variables that were significantly associated with violence were included as covariates in further multivariable logistic regression analyses to explore the associations between violence and deployment, combat experience and post-deployment mental health problems. Multiple logistic regression analyses were then used to examine the association with violence and deployment, combat experience and post-deployment mental health problems, adjusting for the variables that were found to be associated with violence. The results have been weighted to account for sampling and response weights. In a secondary analysis, violence in the weeks following return from deployment was used in conjunction with then main outcome measure to explore how self-reported violence changed over time. Analyses used the statistical software program STATA, version 11.0.

Results

The sample consisted of 1710 Reservists (Table 1). The majority of the sample was male and in a relationship, with a median age of 39.6 years (standard deviation = 10.4 years). More than half of the sample had continued in their education to A-level (or equivalent) or higher, i.e. a degree or a post-graduate degree (68.3%, n=1113). Of the 1710 Reservists, over two thirds were in the Army. More than half of the sample had not been deployed to Iraq or Afghanistan

(60.1%). Of those who had been deployed, a fifth reported having served in a combat role. Of the Reservists who were of officer rank, only one reported violent behavior.

The prevalence of violence in the month prior to questionnaire completion among Reservists was 3.5% (n=60). This was associated with a range of socio-demographic, pre-military and military factors including age, pre-enlistment ASB, behavior and service (Table 1). Violence was most strongly associated with pre-enlistment ASB [aOR=5.47 (2.80-10.61) $p<0.001$].

*** INSERT TABLE 1 ***

Of the Reservists who were deployed, 5.9% reported being violent compared to 1.9% of those who were not deployed. After adjusting for socio-demographic, pre-enlistment and military factors, deployment to Iraq or Afghanistan was significantly associated with a greater than three-fold increase in violent behavior [aOR=3.15 (1.58-6.30) $p=0.001$]. Self-reported violence was associated with being deployed irrespective of the role they carried out, i.e. a combat role or a non-combat role (Table 2). Being deployed in a combat role or a non-combat were both associated with a greater than three-fold increase risk of violent behavior over those who were not deployed (reported results). Violent behavior was also statistically significantly associated with all three mental health/behavior problems (PTSD, alcohol misuse and common mental disorders) (Table 3). There was a greater than ten-fold increase risk of violent behavior in personnel who had symptoms of PTSD over to those without. The presence of alcohol misuse and symptoms of common mental disorders were also associated with a greater than four-fold increase risk of violent behavior over those who had not reported alcohol misuse or symptoms of common mental disorders (reported results).

*** INSERT TABLE 2 ***

*** INSERT TABLE 3 ***

Of the 970 Reservists who were deployed to Iraq and/or Afghanistan, 11.2% ($n=96$) of Reservists reported having been physically violent towards a family member and or to someone outside of the family in the weeks following return from deployment. This question was only asked of personnel who had been deployed. It was found that 30.5% ($n=26$) of those who reported having been violent in the weeks following return from deployment also reported violence in the month prior to questionnaire completion. Indeed, among those who reported having been violent immediately following return from deployment, the reporting of violence in the month prior to questionnaire completion decreased with increasing time (in 12 month intervals) from return from deployment [OR per month = 0.97 (0.94-0.99) $p=0.020$] (Figure 1).

*** INSERT FIGURE 1 ***

Discussion

This study found that, among a representative sample of UK military personnel, 3.5% of Reservists reported engaging in violent behavior in the month prior to completing the questionnaire. Pre-military ASB was found to be most strongly associated with violent behavior post-deployment, as would be expected based on research in the general population (Reef, Diamantopoulou, van Meurs, Verhulst, & van der Ende, 2011; Smirnov et al., 2004). The prevalence of violence was 5.9% among deployed Reservists compared to 1.9% among those who were not deployed and deployment was found to be significantly associated with self-reported violence, irrespective of role on deployment (i.e. combat vs non-combat). Mental

health problems (PTSD, alcohol misuse and common mental disorders) were also found to be independent risk factors for violence among reservists.

A recent study, which examined a comparable sample of UK military Regular personnel (MacManus et al., 2016), found that the prevalence of self-reported violence in the month prior to questionnaire completion was 6.2%, which is higher than found among Reservists in this study (3.5%). This may be explained by the fact that Reservists may have pre-existing protective factors against violent behavior. Reservists are generally older, with higher levels of education and may hold higher ranks than their Regular counterparts (Browne et al, 2007). In the current study, consistent with findings among Regulars (MacManus et al., 2012; MacManus et al., 2011; MacManus et al., 2016), age and pre-enlistment antisocial behavior were found to be significantly associated with violence, as was being of lower rank. Other factors that have previously been found to be associated with violence among Regulars, such as gender, marital status and educational attainment (MacManus et al., 2012), were not found to be associated with violence among Reservists in this sample. Further, we found that deployment in any role (combat and non-combat) compared to non-deployment was associated with violence among reservists. However, MacManus et al (2016) found that, among Regular personnel, being deployed in a non-combat role was not significantly associated with increased reporting of violence, but being deployed in a combat role was. This may be explained by demographic factors, unit characteristics as well as expectations of military experience and preparedness. It has been found in previous research that Reservists may be more vulnerable to the negative effects of deployment than Regulars (Browne et al., 2007; Harvey et al., 2011) and therefore, each of these factors has the potential to exacerbate the negative impacts of deployment particularly among Reservists.

The 5.9% prevalence of violence among UK Reservists who have been deployed to Iraq or Afghanistan (median of 2.6 years post-deployment) can be compared to 17.5% of the US National Guard who reported violence twelve months post-deployment (Thomas et al., 2010). The greater prevalence of violence among deployed US Reservist troops may be explained by a number of factors, such as the difference in length of deployment (on average 12-15 months in the US compared to 6 months in the UK), increased exposure to combat and greater use of Reservists in the US military (Fear et al., 2010). That 11.2% of deployed UK Reservists reported having been violent in the weeks following return from deployment and the decline in reporting of violent behavior with increased time since return from deployment suggests that the violent behavior during initial reintegration back home may attenuate over time. However, the interpretation of the result is limited by the potential for recall bias.

Although US and UK research, using data from mostly Regular personnel deployed to the Iraq/Afghanistan conflicts, does not consistently find an association between deployment and violence (Calvert & Hutchinson, 1990; Hilley-Young, Blake, Abueg, Rozynko, & Gusman, 1995), a link between combat exposure and subsequent violence has more consistently been demonstrated (Booth-Kewley et al., 2010; Gallaway et al., 2013; Killgore et al., 2008; MacManus et al., 2015; Taft, Vogt, Marshall, Panuzio, & Niles, 2007; Thandi et al., 2015; Wright et al., 2012). Indeed in a recent UK study, using official offending records as an objective measure of violent offending, combat exposure and traumatic experiences were found to be associated with subsequent violent offending (MacManus et al., 2013). In the current study of Reservists, those who had been deployed were over three times more likely to have been violent than personnel who had not been deployed. Both being deployed in a combat role or a non-combat role during deployment were strongly associated with subsequent violence, which

suggests that the experience of deployment in itself is associated with increased risk of subsequent violence among Reservists, irrespective of the role. This is in contrast to the pattern observed among Regulars, where been deployed specifically in a combat role was associated with violence (MacManus et al., 2012).

The results also demonstrated a strong association between post-deployment mental health problems (including PTSD, alcohol misuse and common mental disorders) and violence among Reservists. This further confirms previous research among Regulars that demonstrate a strong link between mental health issues and subsequent violence (Fear et al., 2007; Killgore et al., 2008; MacManus et al., 2012; MacManus et al., 2013; Sundin, Fear, Iversen, Rona, & Wessely, 2010; Thandi et al., 2015). Violence was most strongly associated with PTSD among this study population. This is particularly important because the prevalence of PTSD in the US military is particularly high (between 9% and 31%: Thomas et al., 2010). Although PTSD has been found to be the least prevalent of the post-deployment mental health problems among UK military population, alcohol misuse and common mental disorders have the highest prevalence (Fear et al., 2010). This is an important finding to note when considering the public health implications of violence associated with different mental health problems in both the US and the UK.

It has been suggested that Reservists are less well prepared for deployment than Regulars and may be more vulnerable to the negative effects of deployment than Regulars (Browne et al., 2007; Harvey et al., 2011). It has been observed that until recently Reservists may have received less rigorous training than Regulars and may have been unable to attend all scheduled training sessions due to civilian employment commitment (Hotopf et al., 2006; St Laurent, 2004). Although Reservists are generally placed in combat support or combat service support roles

(MacManus et al., 2013), it is possible that Reservists' perception of threat is greater and, therefore, the experience is more traumatic than it may be for many Regulars (Browne et al., 2007). This may partly explain the apparently greater impact of deployment on the mental health and violent behavior among Reservists. It is important to note that when Reservists are deployed, they may not be deployed with people with whom they have trained. Greater unit cohesion has been associated with lower levels of mental health issue (Du Preez, Sundin, Wessely, & Fear, 2012; Jones et al., 2012). Browne and colleagues found that only 21% of Reservists were deployed with their parent unit, compared to 65% of Regulars. This may cause Reservists to feel less supported and be more vulnerable to mental health issues and violence (MacManus et al., 2013). Dandeker et al. (2010) also found that Reservists were likely to be dissatisfied with their treatment by Regulars and felt as though they were not respected because of their Reservist status.

It is possible that the higher levels of violent behavior among deployed Reservists may be influenced by a lack of preparation for homecoming. Reservists have greater difficulty with the transition back to family and civilian life following return from deployment than Regular personnel (Harvey et al., 2011). After deployment, Regulars have an opportunity to decompress from deployment and prepare for their return home (Hughes et al., 2008). In contrast, Reservists, who usually return directly to civilian life and employment, are expected to adjust. Reservists have expressed that they often feel as though no one understands what they have been through and have difficulty confiding in their family or friends about their experiences (Harvey et al., 2011). This lack of support and the greater transitional difficulties are thought to increase the risk of developing post-deployment mental health issues and alcohol misuse among Reservists (Harvey et al., 2011), which are shown to be risk factors for violence (MacManus et al., 2012).

Strengths and Limitations

A main strength of this study was that it was part of a large study that used a randomly selected, representative sample of UK military personnel. Another strength was the ability to study violence among Reservists separately from Regulars. This had not been done previously. A limitation was the reliance on self-report measures, which are susceptible to recall bias (Donaldson & Grant-Vallone, 2002; Spector, 1994). However, the benefit of using a self-report measure of violent behavior over official criminal records is the ability to detect violence that did not come to the attention of the police.

Implications

The impact of deployment on violent behavior among Reservists is an issue of concern in both the US and the UK. These findings suggest that Reservists are more vulnerable to the impact of deployment on violent behavior than Regular personnel. Given that Reservists are more likely to return to the family home rather than a military base, the target of violent behavior may be more likely to be a family member or partner. Army 2020, published by the UK Government in October 2010, which laid out the future commitments expected of the UK Armed Forces, introduced greater reliance on Reservists within the UK military (Defence Committee, 2014). This places an urgent imperative on developing a better understanding of the training and support needs of Reservists, in order to reduce the negative impact of stresses such as deployment and transitions back into civilian life, and to reduce the risk of violent behavior. Since the period of greater risk of violence is immediately following return from deployment, there is the need for early intervention to help with the transition from deployment to homecoming to reduce aggression and violence.

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Declaration of Interest

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