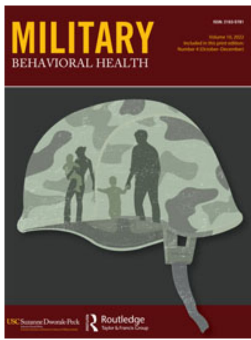

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REVIEW

Post-Deployment Difficulties and Posttraumatic Stress Disorder (PTSD) Symptoms among Married Ghanaian Army Personnel. The Moderating Role of Post-Deployment Social Support

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ABSTRACT
Transiting from deployment to live at home can have a profound influence on the psychological health of soldiers with regard to the occurrence of Posttraumatic Stress Disorder (PTSD). However, the level of social support received from family and friends upon returning can help moderate the strength of this relationship. Little is known about these concepts within the Ghanaian context; therefore, the present study assessed the relationship between post-deployment difficulties and the occurrence of PTSD symptoms among married Ghanaian army soldiers at home as well as the moderating role of social support. 92 army personnel in the Ghana Armed Forces were purposively sampled to participate in the study. A quantitative research design was employed and survey questionnaires were used to collect data. Primary analysis of data was done using hierarchical multiple regression. Findings from the study indicate that military post-deployment difficulties in Ghana have a positive correlation with personnel's PTSD symptoms. In addition, social support received from family and friends upon returning from deployment did not moderate the relationship between post-deployment difficulties and military personnel's experience of PTSD symptoms. The need to adopt and/or develop transition programs in Ghana should be considered in managing their experience of PTSD symptoms during post-deployment.

KEYWORDS
Post-deployment difficulties; PTSD symptoms; military deployment; social support

Introduction

Military work is usually accompanied by frequent separations from family as well as loved ones (Lester et al., 2016). One of the ways through which separations occur is in the form of personnel being deployed to perform duties in a foreign land. According to Lincoln et al. (2008), the cycle of deployment is in three distinct stages. Stage one of the cycle is the "pre-deployment" stage. This is usually from the day military member is notified of impending deployment until the day he or she is deployed. Deployment is the second stage, which Bog et al. (2014) define as "performing military service in an operation at a location that is outside one's home country for a limited period that is pursuant to orders" (p. 5). In other words, this stage refers to the period between actual departure from home to the time the personnel return home. The third stage is the post-deployment stage, and this refers to being at home after deployment until one is notified of another impending deployment (Knobloch & Theiss, 2012; Lincoln et al., 2008). All the stages have their challenges that soldiers and members of the family have to deal with, which include changes in family roles and routines, emotional detachment as well as reintegration of military personnel into the family (Lincoln et al.,2008).

The psychological health of service members can have an impact on future deployments as well as operation readiness (Zamorski et al., 2014). Psychological health in this study is conceptualized as military personnel's experience of PTSD symptoms. PTSD in this study refers to problems and complaints that military personnel face such as reexperiencing, avoidance/emotional numbness, and hyperarousal in response to experiencing any form of stressful military event (Weathers et al.,1993). The transformation that accompanies returning home after deployment is a social problem that may be related to the psychological health of soldiers (Lincoln et al., 2008; McNulty, 2005). Some scholars are of the view that some

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military personnel returning home develop positive psychological health of resilience and improvement of self (Knobloch & Theiss, 2012; Newby et al., 2005). However, some are of the view that PTSD symptoms like emotional numbing, hyperarousal, sleep disturbance, and impaired concentration, which reflects general distress, are associated with military personnel returning home after deployment (Erbes et al., 2011; Simms et al., 2002). Also, some military personnel become emotionally detached from family members and other relations, either due to fear of anger or the possibility of future deployments (Bowling & Sherman, 2008).

Post-deployment social support given to soldiers when they return from deployment, in the form of support from family and friends, plays a significant role in influencing their mental health (Charuvastra & Cloitre, 2008). Ozer et al. (2003, as cited in Possemato et al., 2014), argue that returning military personnel who do not receive any form of social support are at risk of developing various psychiatric symptoms. However, some of these challenges could be minimized when family and friends provide social support to returning military personnel (Laffaye et al., 2008).

In relation to the deployment cycle, namely, pre-deployment, deployment, and post-deployment, there are arguments with regard to which aspect of the deployment cycle affects PTSD symptoms. While some studies are in favor of post-deployment stressors, others emphasize deployment stressors with regard to predicting PTSD symptoms among military personnel. In a study conducted in Ghana, Afful (2017) found a significant relationship between combat experience and mental health as well as post-deployment experiences and mental health, indicating the role of the deployment cycle on mental health. However, in this study, the focus is solely on post-deployment difficulties and this refers to events or stressors that service personnel encounter after returning from deployment and being at home for a while. Some studies are of the view that post-deployment rather than deployment itself influence the occurrence of PTSD symptoms among military personnel. For instance, Michel et al. (2003) observed that, among all the four phases, personnel who encountered a stressful post-deployment reported the poorest mental health. Logistic regression analysis on life events before deployment, traumatic events during deployment and post-deployment showed that post-deployment was the significant contributor to poor mental health when compared to all the other phases of the deployment cycle. Life after returning home from deployment duties can be a challenging one and maybe more challenging than deployment itself (Morse, 2006; Sareen et al., 2010). In that, most noncommissioned officers are likely to return from deployment with hyperarousal symptoms like anger and might lead to emotional withdrawal or alienation from the family, which can pose a challenge when transiting from deployment to being at home (Yosick et al., 2012).

However, the severity of PTSD could be managed by the level of social support given to returning military personnel (Charuvastra & Cloitre, 2008). In an attempt to investigate the role of social support in managing post-deployment PTSD, Possemato et al. (2014) in their study found a significant relationship between current post-deployment stressors and PTSD severity. However, the severity of PTSD symptoms was minimized as family and friends provided support to returning military personnel. Also, Griffith and West (2010) observed that a sizeable number of soldiers returning from deployment reported challenges like post-deployment negative emotions and post-deployment loss of personal relationships, which were all related to risky behaviors like aggression and alcohol use. However, social support played a significant role in lessening the adverse effects of these transition stressors on military personnel. In addition, Smith et al. (2013) reported that, at higher levels of stress-related to post-deployment, social support from the unit and members of the family was significant in reducing the occurrence of depression symptoms as well as PTSD symptoms among service personnel.

The current study contributes to knowledge on the relationship between post-deployment difficulties and PTSD symptoms occurrence among married military personnel in Ghana. Presently, the focus of most studies on the deployment cycle and PTSD symptoms has been on deployment stressors and experiences. The current study is one of the few pieces of research that focus solely on post-deployment among married Ghanaian soldiers. In addition, most studies conducted on post-deployment and PTSD symptoms have involved military personnel from combat operations, with little attention given to active-duty soldiers who embark on peacekeeping operations or non-combat operations. The experiences of these groups of soldiers might differ when they return home from deployment duties. Therefore, the present study adds to knowledge on post-deployment and PTSD symptoms of active duty soldiers returning from peacekeeping operations. Also, the present study adds to the idea that non-traumatic events can influence the occurrence of PTSD symptoms. In other words, the

mental health of a soldier is not only affected by experiencing traumatic events during deployment like injuries, death, or being held hostage but can also be influenced by the experiences they have when they return home from deployment. Generally, the study was undertaken for its potential implications for psychologists, counselors, policymakers, researchers, health workers as well as all other stakeholders who work with military personnel, especially in Ghana. It is hypothesized that,

1. Post-deployment difficulties will have a significant positive relationship with PTSD symptoms.
2. Post-deployment social support will moderate the relationship between post-deployment difficulties and PTSD symptoms among soldiers.

Method

Participants

Married active-duty army personnel of the Ghana Armed Forces who had returned from deployment were contacted in five different barracks (Flagstaff house barracks, 37 barracks, El-Wak barracks, Burma Camp barracks, and Tema barracks) within the Greater Accra Region of the Republic of Ghana. A total of 92 were willing and available to participate in the study.

Procedures

Clearance for this study was obtained from the Ethics Committee for Humanities, University of Ghana. The Department of Psychology, University of Ghana provided a letter of introduction which the researcher presented to the Personnel Administration Unit of the Ghana Armed Forces in Burma Camp. After receiving approval from Ghanaian Armed Forces authorities, a pilot study was undertaken two weeks before the actual collection of data as a means of refining and standardizing the collection process.

The actual data collection occurred between February 2019 and April 2019, using on-site pen and paper questionnaires administered by the researcher and/or his two research assistants. At each data collection, participants were informed of the purpose of the study, the fact that the study was purely academic in nature, and any long-term benefits associated with the study. Participants were assured confidentiality of their responses, and each consented to participate. Participants were given instructions on how to complete the questionnaire and were encouraged to ask for assistance from the researcher or the research assistants if/when needed. Some participants did need some questionnaire items explained in Twi (local language) for them to be able to respond appropriately.

Some questionnaires were completed on the spot; others were given to participants and retrieved later. The average amount of time taken by participants to complete a questionnaire was fifteen minutes (Table 1).

Variables

Demographics

Binary variable used in the study was gender. Age, years of military service, and religion were coded as ordinal variables with three levels. Educational status, number of children, and length of time at home after the last deployment were also coded as ordinal variables with four levels. Military status was coded as an ordinal variable with six levels.

Post-deployment difficulties

Homecoming Attitudes, which is a subscale of the Human Issues Scale, was used to address issues that are of relevance to homecoming experiences of military personnel such as readjustment problems, positive attitudes/engagement, and negative attitudes/disengagement (Murphy & Farley, 2000). It is a five-point Likert scale ranging from 1 (Never) to 5 (Very frequently) with a higher score indicating greater post-deployment difficulties. It is a 23 item scale with both positive and negative statements and as a result, some items had to be reversed coded. Scores obtained were summed up. The mean score and standard deviation recorded were 67.60 and 15.48 respectively, with a minimum and maximum score ranging from 35 to 104 respectively (see Table 2). Sample items on this scale are: "*You felt proud having served overseas*", "*You experienced a period of adjustment getting back to your old self*", and "*You felt like dropping out of family life*". In the current study, the scale's Cronbach alpha was .90.

Posttraumatic stress disorder (PTSD)

The PTSD Checklist - Military Version (PCL-M) (Weathers et al., 1993) was used to measure PTSD symptoms among participants. This scale, which addresses problems and complaints that military personnel face in response to a stressful military experience, was used to measure PTSD symptoms among military personnel with regard to reexperiencing,

Table 1. Summary of participants' demographic characteristics ($N=92$).

Demographics	Frequency	Percentage
Age		
21 – 30	2	2.2%
31 – 40	58	63.0%
41 – 50	32	34.8%
Gender		
Male	61	66.3%
Female	31	33.7%
Military Status		
Lance-Corporal	1	1.1%
Corporal	6	6.5%
Sergeant	19	20.7%
Staff Sergeant	31	33.7%
Warrant Officer II	24	26.1%
Warrant Officer I 11	12.0%	
Educational Status		
Degree	8	8.7%
Diploma	30	32.6%
WASSCE	32	34.8%
Other	22	23.9%
Years in Service		
1 to 10 years	9	9.8%
11 to 20 years	50	54.3%
21 to 30 years	33	35.9%
Number of Children		
1	10	10.9%
2	30	32.6%
3	29	31.5%
More than 3	23	25%
Religion		
Christianity	69	75.0%
Islam	23	25.0%
Length of time at home after last deployment		
1 to 3 months	13	14.1%
3 to 6 months	17	18.5%
6 to 9 months	37	40.2%
9 to 12 months	25	27.2%

Table 2. Descriptive statistics and reliability indices of variables ($N=92$).

Variable	Mean	SD	Min	Max	Skewness	Kurtosis	Alpha
Post-deployment difficulties	67.33	15.48	35.00	104.00	−.004	−.66	.90
PTSD symptoms	49.88	14.55	20.00	79.00	−.42	−.83	.92
Post-deployment social support	51.59	10.88	21.00	74.00	−.15	−.21	.80

avoidance/numbness, and hyperarousal. It has seventeen items which are measured on a five-point Likert scale ranging from 1 (Not at all) to 5 (Extremely) with a higher score indicating higher PTSD symptoms. Scores obtained were summed up. The scale recorded a minimum and maximum score of 19 and 79 respectively, as well as a mean and standard deviation of 47.96 and 14.71 respectively (see Table 2). Sample items from the scale include *"Loss of interest in things you used to enjoy?"*, *"Feeling emotionally numb or being unable to have loving feelings for those close to you?"*, and *"Being super alert or watchful on guard?"*. Cronbach alpha in the present study was .92.

Post-deployment social support

Developed by King et al. (2006), the post-deployment social support scale was used to identify emotional and instrumental support received by soldiers upon their return home after deployment. It has 15 items; negatively worded items were reversed coded. The scale was measured on a five-point Likert scale from 1 (Strongly agree) to 5 (Disagree). Scores obtained were summed up. The mean score and standard deviation of the participants were 51.65 and 10.88 respectively, with a minimum and maximum score ranging from 21 to 74 respectively (see Table 2). The current study's Cronbach alpha was .80. *"Family members and friends made me feel at home when I returned"*, and *"People at home just don't understand what I have been through overseas*" are sample items on the scale.

Data analysis

Statistical Package for Social Sciences (SPSS) version 22 was used to analyze the data collected. Preliminary analysis was conducted to test for normality (skewness and kurtosis). According to Tabachnick and Fidell

(2007), a variable with its skewness and kurtosis value ranging from 2 to −2 has a normal distribution. In the present study, the skewness and kurtosis of the variables ranged from −.27 to −.004 and −1.00 and −.21 respectively (see Table 2). The outcome of this analysis showed that the data had a normal distribution and therefore an appropriate parametric test can be used for further analysis.

Results

Hypothesis 1: post-deployment difficulties will have a significant positive relationship with PTSD symptoms

This hypothesis was examined using the Pearson Correlation Coefficient (Pearson's r). The results from the Pearson correlation coefficient indicated a significant positive relationship between post-deployment difficulties and PTSD symptoms ($r = .695$, $p < .01$). Therefore, the hypothesis was supported.

Hypothesis 2: post-deployment social support will moderate the relationship between post-deployment difficulties and PTSD symptoms

To test for significance, hierarchical multiple regression was used. This is because the required significant correlation between post-deployment difficulties and PTSD symptoms has been established in the Pearson correlation analysis (hypothesis 1). The outcome of the analysis is in Table 3.

The analysis from the table indicate in step one that post-deployment difficulties significantly predicted PTSD symptoms ($\beta = .695$, $p < .01$) as well as accounted for a 48.3% variance in explaining PTSD symptoms (F (1,90) = 83.20, $p < .01$, $R^2 = .483$). The second step indicated that post deployment social support explained 6.8% variance in PTSD symptoms and this contribution was significant (F (1,90) = 54.01, $p < .01$, $R^2 = .551$). In other words, post-deployment social support had a significant negative relationship with PTSD symptoms ($\beta = -.306$, $p < .01$). At step three, interaction between post-deployment difficulties and post-deployment social support did not significantly predict PTSD symptoms even though it accounted for 0.6% variance in explaining PTSD symptoms (F (1,90) = 36.54, $p > .01$, $R^2 = .558$). In other words, the interaction was not statistically significant ($\beta = .083$, $p > .01$). Therefore, the hypothesis was not supported.

Discussion

The present study examined the relationship between post-deployment difficulties and PTSD symptoms among married soldiers of the Ghana Armed Forces. The moderating role of post-deployment social support on the relationship between post-deployment difficulties and PTSD symptoms was also analyzed.

For hypothesis 1, the Pearson r correlation revealed a significant positive relationship between post-deployment difficulties and PTSD symptoms. This means that an increase or decline in the level of post-deployment difficulties could respectively result in an increase or decline in psychological challenges associated with PTSD among military personnel. Also, a decline or increase in the occurrence of PTSD symptoms could respectively lead to a decline or increase in post-deployment difficulties that service personnel experienced. For instance, military personnel who are faced with more transition stressors such as, problems in adjusting to family and work-life or not given adequate reception upon returning, were more likely to experience PTSD symptoms such as losing interest in things one used to enjoy or having feelings of emotional numbness as opposed to those who were able to have a smooth transition. Also, those who experienced psychological challenges associated with PTSD like reexperiencing were more likely

Table 3. Hierarchical multiple regression for post deployment social support on the relationship between post-deployment difficulties and PTSD symptoms ($N = 92$).

Model	*B*	Std. Error	*β*	*F*	*p*
Step 1: Constant	6.266	4.928			.207
PDD	.651	.71	.69**	83.20**	<.001
Step 2: Constant	37.363	9.694			<.001
PDD	.500	.079	.53**	<.001	
PDSS	−.406	.111	−.306**	54.01**	<.001
Step 3: Constant	37.163	9.681			<.001
PDD	.494	.079	.53**	<.001	
PDSS	−.384	.113	−.290**	<.001	
PDD*PDSS	.006	.005	.083	36.54	.264

R^2 = .483, .551 and .558 for steps 1, 2 and 3, respectively. Δ R^2 = .483, .068 and .006 for steps 1, 2 and 3, respectively $^{**}p < .01$.
PDD = Post-Deployment Difficulties.
PDSS = Post-Deployment Social Support.

to experience post-deployment difficulties like communication problems and adjustment challenges than those who experienced little or no PTSD symptoms.

Some studies have argued that deployment-related psychological challenges are mainly due to experiencing trauma during deployment (Adler et al., 2005; Zamorski et al., 2014). However, consistent with the outcome of this study, other studies suggest that the influence of stressors that occur after returning from deployment play a role in service members' experiencing deployment-related psychological challenges (Blevins et al., 2011; Marek et al., 2012; Meis et al., 2010).

Results obtained from the hierarchical multiple regression analysis showed that social support received after returning from deployment duties did not moderate the relationship between post-deployment difficulties and PTSD symptoms. The impact of post-deployment difficulties on PTSD symptoms was neither strengthened nor weakened by the social support received from family and friends. In other words, in this instance where military personnel received social support from family and friends upon returning from the deployment, stressors related to their post-deployment had an influence on their mental health. This outcome is similar to that of Martin et al. (2016). In their study, they observed that social support received after returning from deployment duties did not moderate the relationship between the length of being at home after last deployment and a psychological problem like suicidal ideation. Nonetheless, the outcome is somewhat surprising since in most previous studies, post-deployment social support significantly moderated the association between post-deployment experiences and psychological health (Charuvastra & Cloitre, 2008; DeBeer et al., 2014; Griffith & West, 2010; Monteith et al., 2018; Possemato et al., 2014; Smith et al., 2013, Welsh et al., 2015). Even though post-deployment social support did not have a moderation effect in this study, it independently predicted PTSD symptoms and this outcome is consistent with other studies on post-deployment social support (Han et al., 2014; James et al., 2013; Pietrzak et al., 2009; Shea et al., 2013). In other words, though post-deployment social support did not enhance or reduce the relationship that exists between post-deployment difficulties and PTSD symptoms, its relevance in predicting the occurrence of PTSD symptoms among military personnel cannot be overlooked.

The outcome of this study adds to literature on post-deployment difficulties in Ghana. The focus of most literature has been on traumatic events and PTSD. Findings from the present study add to the relatively few studies that advocate or argue that individuals or soldiers can also develop PTSD symptoms from experiencing a non-traumatic event, which is, in this case, post-deployment difficulties. In other words, returning soldiers from deployment are not only affected by what they encounter during deployment with regard to their mental health, but also what happens to them when they return home. This aids in serving as a form of guide to future research on soldiers returning from deployment duties. In addition, the study's quantitative and cross-sectional nature serve as a foundation for longitudinal research in this area, as it gives a preview of the relationship between post-deployment difficulties and PTSD symptoms. Furthermore, findings from the study highlight the need to provide psychological assistance to returning Ghanaian military personnel from deployment duties. For instance, the Battlemind training in the USA and the Transition program in Canada are some interventions put in place to aid returning soldiers deal with psychological distress associated with post-deployment as well as help them relate well with family members after deployment. Such programs can be adopted and used to help Ghanaian soldiers.

The study however has some limitations. Most of the soldiers were not at home during data collection as most of them had gone to work. Therefore, the researcher was limited to collecting data in the evening and on weekends, as during these periods, soldiers reported being tired and not willing to partake in the study. Also, some soldiers were hesitant to complete the questionnaire because they thought the questions were too many. This affected the researcher's targeted sample size, as a greater sample size would have been more representative of the population as well as make the findings generalizable. In addition, the research method used in the study had some limitations. The quantitative nature of the study prevented the researcher from acquiring detailed and subjective views on the post-deployment experiences of participants. Also, findings from the study are not devoid of bias, therefore, cannot be generalized to all soldiers because the instruments used to examine the constructs were self-reported. Nonetheless, the findings from the study are not different from previous studies that used self-reported measures. Even though an association between variables was observed, the study could not establish a direct cause-effect relationship between post-deployment difficulties and PTSD symptoms. Due to time constraints, it was impossible to study the long-term effects of post-deployment difficulties, as this can be achieved through longitudinal research.

A multidimensional approach could be adopted in future studies to assess this concept of post-deployment difficulties. Psychologists, physical therapists as well as other stakeholders should join hands together to come up with a more holistic approach in dealing with post-deployment stressors. This can help identify appropriate strategies and interventions that can be of help to military personnel when transiting from deployment to being at home. Also, there should be future research on the influence of post-deployment difficulties on female soldiers, make a comparison between female soldiers and male soldiers as well as LGBTQIA military personnel with regard to the difference in post-deployment experience. In addition, future research should include spouses as well as children. Last but not least, there should be a longitudinal study on the effects of post-deployment difficulties on PTSD in the Ghanaian context as well as a comparative study between commissioned and noncommissioned officers in Ghana across the deployment cycle.

In conclusion, the present study employed a cross-sectional survey to examine the relationship between post-deployment difficulties and PTSD symptoms. Similar to other studies, it was observed that post-deployment difficulties had a significant positive relationship with PTSD symptoms among soldiers. However, contrary to other findings, social support from friends and family members received by military personnel upon their return from deployment duties did not have a moderating effect on the relationship between post-deployment difficulties and PTSD symptoms. The outcome of this study indicates the psychological health needs that service personnel require upon returning from deployment. Therefore, there is the need for the development of policies and initiatives that target such needs to aid a smooth post-deployment among Ghanaian military personnel.

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Nathanael Nartey Agah (MPhil, University of Ghana, 2019) is a Social Psychology graduate of the University of Ghana.

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