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ARTICLE

Do police experience trauma during routine work? An analysis of work-related potentially traumatic events and expressed trauma in a sample of Ghanaian police officers

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ABSTRACT
Existing research associates police work with stress and mental health challenges due to routine exposure to potentially traumatic incidents. Low- and middle-income countries (LMICs) are under-represented in this literature. In this study, we explored the relationship between work-related potentially traumatic events and expressed trauma symptoms in a sample of 121 Ghanaian police officers. Ninety-seven (97) male and 24 female police officers participated in a semi-structured interview about on-the-job potentially traumatic events and completed a self-report measure of trauma symptoms. Overall, 71.9% of officers were exposed to at least one work-related PTE and 61.2% of officers endorsed at least one trauma. We found that dealing with traffic accidents, assaults and observing autopsy are the top critical incidents. We also found that observing autopsy and officer rank were predictive of expressed trauma. We discuss the findings within the context of a need to examine effects of potentially traumatic events on work and implications for mental health.

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Ghana; trauma; potentially traumatic events; critical incidents; police; ptsd

Introduction

The police force is an institution designed to enforce the law, uphold civil order, promote public safety and health, and reduce crime at local and national levels. Hence, police are the main arbiters of law enforcement. The nature and requirements of police work mean police officers are often exposed to stressful incidents related to their daily duties. There is documented evidence that shows that repeated exposure to events that officers perceive as stressful and/or traumatic have negative mental health implications (Regehr et al., 2019; Soomro & Yanos, 2019). For example, work-related stress experienced by police officers is associated with suicidal ideation, alcohol dependence, depression, anxiety, and other psychosomatic symptoms (Chokpo, Palmieri, & Adams, 2013; Hartley, Sarkisian, Violanti, Andrew, & Burchfiel, 2013; Lawson et al., 2012; Stanley et al., 2016). Similarly, continual exposure to potentially traumatic events (PTEs) is a risk factor for experiencing traumatic stress and potentially developing Posttraumatic Stress Disorder (PTSD) (Stevelink et al., 2020; Syed et al., 2020; Vasterling et al., 2010). In the US, it is reported that about 15% of police officers have been diagnosed with PTSD (Covey et al., 2013; Marmar et al., 2006). In Ghana, police perform similar duties and therefore face similar risks. However, the literature on the prevalence of PTSD among the Ghana police is limited. As a result, there is a lack of literature about what constitutes work-related PTEs for Ghanaian police. Similarly, the relationship between these work-

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related PTEs and mental health or expressed trauma symptoms are yet to be explored in this population.

Work-related potentially traumatic events

Police officers tend to experience more stress related to their career than the general population (Chopko et al., 2015; Potard et al., 2018; Weiss et al., 2010). There is some evidence that work environmental factors predict PTSD symptoms (Carlier et al., 1997; Liberman et al., 2002) in police personnel. Such work-environment concerns have included poor communication, lack of autonomy, lack of support, and heavy workload (Collins & Gibbs, 2003). Maguen et al. (2009) found that work environment had the strongest association with PTSD symptoms over and above work-related critical incidents, and negative life events that were distinct from one’s job as an officer. Husain (2020) also found in Pakistan that police officers in urban areas have higher levels of anxiety and depression than their colleagues working in rural areas (Husain, 2020). Work-environment factors in their study included broken equipment, operational hassles, lack of expectations and delineated roles, negative interpersonal relationships with colleagues, and feelings of discrimination. Maguen et al. (2009) also found that these work environment factors mediated the relationship between critical incidents and PTSD symptoms, speaking to the importance that a cohesive and supportive work environment plays on mental health.

The literature on work-related PTEs tends to spotlight the impact of violent experiences that officers contend with in routine work. These types of experiences have been operationalized as critical incidents, and are typified by the injury or killing of a fellow officer, sexual assault of minors, traffic accidents, and exposure to a dead body (Chopko et al., 2015). The unexpected nature of these critical incidents can overwhelm police officers making them emotionally vulnerable (Potard et al., 2018). The frequency and severity of exposure to critical incidents have a strong correlation to PTSD diagnoses for police officers (Chopko et al., 2015; Violanti et al., 2017).

Exposure to dead bodies is a well-documented critical incident for combat-related careers and police personnel alike. It is the strongest predictor of seeking help in a military personnel population (Morgan et al., 2017). These researchers found that soldiers who had been exposed to a dead body were seven times more likely to seek services from a military chaplain (Morgan et al., 2017). Chopko (2010) explained that exposure to dead bodies on the job is a psychological stressor for officers, particularly if the exposure is unexpected. In other research, it has been suggested that the sensory components related to the exposure, the incident and/or injury responsible for the cause of death, and the age of the deceased can trigger a trauma response (Karlsson & Christianson, 2003). Some studies have noted gender differences. In a large sample of Air Force personnel for instance, men reported more exposure to dead bodies than their female counterparts, yet overall endorsed fewer symptoms of PTSD than women (Welsh et al., 2019). Thus, the relationship between such exposure and mental health, its prevalence, and its correlates to PTSD symptomatology are worthy of further exploration.

Policing in Ghana

According to Aning (2006) there is little documented information about the Ghana Police Service which makes the history sketchy. Historical accounts of the Ghana Police Service suggest that policing started in 1831 by the British colonial government, set up as a unit to enforce the ‘Treaty of Peace’ between the British government and the traditional rulers in the Gold Coast (Aning, 2006). A formally structured police service started in 1873 after the enactment of an ordinance to regulate the activities of an armed police service. Respective governments made different changes to the structure of the police service to meet the exigencies of the society and governance. The most significant changes expectedly occurred when Ghana gained independence from the British in 1957.

In addition to the creation of new units, key offices in the Ghana Police Service previously held by Europeans were given to Ghanaians. (Please see Aning, 2006 for a detailed history).

While public perception of the police in Ghana varies, generally the Ghanaian public has an unfavorable perception of the police due to institutional challenges and corruption. Literature about policing in Ghana tends to describe the interrelated domains of police legitimacy and organization. Boateng and Darko (2016) argue that the Ghanaian police lack legitimacy in the public's eyes. Police legitimacy is defined as public approval, effectiveness, adherence to procedure, and accountability among other related factors (Frazier, 2007). Boateng and Darko (2016) argue that systemic issues in the Ghana Police Service (GPS) preclude police legitimacy. They argue that the GPS as an institution is not efficacious at preventing or controlling crime. They also report endemic corruption, such that kinship ties between officers and members of the public hinder investigations and prosecutions. Finally, the authors argue that unnecessary violence perpetrated by Ghanaian officers – inherited from prior British colonial officers – is repressive and exacerbates lack of compliance (Boateng & Darko, 2016).

Beek (2012) argues that police officers adapt procedures and organizational practices to the local context due to their limited resources. To move cases forward, civilians and police try to use social connections, status, and money to their own advantages. Still, within a cultural framework, this acceptance of money by officers is not seen as corruption, but as part of creating social networks necessary to do their jobs. Thus, police do not view money they receive from civilians to do their jobs as incentives or coercive, but rather upholding friendship norms. While civilians seem to be aware of this blurring of boundaries many feel that the police in Ghana do not serve the people (Adu-Mireku, 2002). A widely used phrase, 'you can never be a friend to a policeman,' emphasizes this distrust (Beek, 2012).

Despite such a complicated social and organizational infrastructure, the impact of work environment and critical incidents on mental health has been understudied in a Ghanaian population. Only one published study described the impact of work-environment stress. Work-environment factors impacting GPS officers' stress levels included role overload and ambiguity, physical environment, and lack of coworker and supervisor support (Gyamfi, 2104). An officer's rank has also shown to be related to well-being. In a study of UK officers, it was found that lower ranking officers showed less commitment to organizational goals, less willingness to exert effort, and less of a desire to retain their jobs, than higher ranking officers (Metcalfe & Dick, 2001). The authors cite lack of support, desire for performance feedback, and poor management systems as the cause (Metcalfe & Dick, 2001). Low commitment among lower ranking officers may speak to a stressful work environment. In Ghana, the 2010 Accra North Divisional Orderly Room Annual Report captured the impact of stress on officers' health and attendance. The report noted that 63 officers were excused from duties for 220 days due to illness. Gyamfi (2014) argued that the accumulative work-environment stressors impacted officers' health to the extent that they either could not perform their duties or did not want to. Gyamfi (2014) noted that there are also limited and inadequate resources for addressing officers' stress and trauma. In Ghana, the subordinate or Junior Officers include the positions of Constable, Corporal, Sergeant, and Inspector, and are most likely to interface with the public and respond to crisis compared to Senior Officers. The role of rank on wellbeing in Ghana has not yet been established.

Current study

It can be assumed from the literature that work-related PTE exists for officers in the Ghana Police Service. This study is aimed at examining the association between PTEs and mental health of police and providing basis for mental health intervention for security services. Therefore, it is imperative to be able to understand what these experiences are and how they impact mental health. The present study aims to:

(1) Index the types of work-related PTE that a subpopulation of police officers in Ghana have experienced.
(2) Index the frequency of work-related PTE experienced by police officers.
(3) Catalogue the frequency, variety, and severity of expressed trauma symptoms.
(4) Explore the extent that demographic characteristics are associated with expressed trauma.
    (a) We hypothesize that population means of expressed trauma will differ across particular demographic characteristics when controlling for other demographic characteristics.
(5) Explore the extent that the number of endorsed trauma symptoms are associated with the trauma severity.
    (a) We hypothesize that population means of expressed trauma will differ across the frequency of endorsed trauma symptoms when controlling for other demographic characteristics.
(6) Explore the relation between work-related PTE and expressed trauma.
    (a) We hypothesize that population means of expressed trauma will differ across frequency of work-related PTE experiences when controlling for demographic characteristics.
    (b) We hypothesize that population means of expressed trauma will differ across work-related PTE experiences when controlling for demographic characteristics.

Method

Participants

To determine sample size, an a priori power analysis was conducted to determine the number of participants needed to detect a small effect size (Faul et al., 2009). A sample size of 179 participants was needed to detect an effect assuming an alpha level of at .05, and a power of .80 of the anticipated ANCOVAS. We used purposive sampling to select 121 respondents from the Motor Transport and Traffic Directorate (MTTD) for the Ghana Police Services in Greater Accra. Police officers of subordinate rank who served for a minimum of one year were targeted.

Demographic characteristics can be found in (Table 1). The average age of participants was 34.35 years. A majority of the sample identified as married (65.3%), Christian (84.3%), and male (80.2%). The significantly low representation of females is consistent with the proportion of females in the Ghana Police Service. A news reported indicated that there were 8,613 policewomen in a police population of about 33,000, making female representation less than 30% (Abbey, 2018). A majority of officers (65.3%) completed a secondary level education, indicating the completion of high school. A majority of officers in our sample (43.8%) held the rank of Corporal.

Measures

PTSD symptom scale-interview

The PTSD Symptom Scale-Interview Version (PSS-I; Foa et al., 1993) assesses the presence and severity of PTSD symptoms in individuals with a known trauma history. The PSS-I is a 17-item semi-structured interview that can be administered by lay interviewers who are trained to recognize the clinical picture presented by traumatized individuals. Each item corresponds to one of the 17 DSM-III-R diagnostic criteria for PTSD. The severity over the last 2 weeks of each item on the PSS-I was rated by the interviewer using a 4-point scale: 0 = not at all, 1 = once per week or less/a little, 2 = 2–4 times per week/somewhat, and 3 = 5 or more times per week/very much. An example item is, ‘Having upsetting thoughts or images about the traumatic event that came into your head when you didn’t want them to?’ The total severity score is calculated as the sum of the severity ratings for the 17 items. Cluster severity scores can be computed as the sum of the severity ratings for the symptoms in each of the three PTSD symptom clusters. Similar to the DSM 5 criteria of PTSD–e.g. intrusions, avoidance, cognitions/mood, arousal, etc.–the items of the PSS-I were clustered into re-

Table 1. Demographic characteristics.

Variables		N = 121
Age, years, mean (SD)		34.35 (7.38)
Gender (%)		
	Men	97 (80.2%)
	Women	24 (19.8%)
Rank		
	Inspector	17 (14.9%)
	Constable	27 (22.3%)
	Corporal	53 (43.8%)
	Sergeant	23 (19%)
Years of Service		
	1–5 years	26 (21.5%)
	5–10 years	41 (33.9%)
	10+ years	54 (44.6%)
Highest Education Level		
	Basic	1 (0.8%)
	Secondary	79 (65.3%)
	Tertiary	41 (33.9%)
Marital Status		
	Married	79 (65.3%)
	Single	42 (34.7%)
Religious Affiliation		
	Christian	102 (84.3%)
	Muslim	15 (12.4%)
	Traditional	2 (1.7%)
	Missing	2 (1.7%)

Table 2. PTSD Symptom Scale thresholds.

Score	Severity
0–10	Below threshold
11–15	Subclinical
16–20	Mild
21–25	Moderate
26–30	Moderately-Severe
31–40	Severe
41–51	Extremely Severe

experiencing (four items), avoidance (seven), and arousal (six items) symptoms (see Table 2). This scale produced a Cronbach's alpha .91 for this sample.

Exposure to traumatic events/critical incidents

We adapted the questionnaire by Prati and Pietrantoni (2010) for measuring exposure to potentially traumatic events. In the original measure, respondents were asked to state how many times they were exposed to a list of typical critical incidents in police work which included arrest of dangerous people, involvement in a brawl, ascertainment of road accidents causing death or bodily injury, and being seriously injured. With no such list for Ghana Police, we asked respondents to list the traumatic events that they have encountered in the course of work or outside work in the last two years. We defined traumatic events to the respondents as 'An unusual event which you personally experienced or witnessed which is terrifying and keeps troubling you at the thought of it. It is an accidental happening that occurred to you unexpectedly, which may occasionally intrude your consciousness'. We selected for analysis only the events that were experienced during police work for analysis in the study.

Procedure

We obtained permission from the Motor Transport and Traffic Directorate (MTTD), a GPS agency, for the study. The study was conducted in accordance with ethical guidelines in Ghana endorsed by the Ghana Psychological Association. Each respondent provided verbal informed consent before the data collection. Researchers assured respondents that their responses would be anonymous, and that data would be kept confidential. The study consisted of a self-report questionnaire and semi-structured interview. The questionnaire was administered in English, Ghana's official language.

Data screening

Before the analysis data screening was performed. The data were first inspected to make sure the values were within range for each of the designated variables. Next, missing data were addressed. Little's MCAR test was run to determine if data were missing at random. All quantitative and qualitative variables were selected for this analysis. Little's MCAR test suggested that data were missing completely at random, $\chi^2 = 1.89$, df = 5, p = .86.0.41% of values were missing indicating that listwise deletion of missing items is justified (Schafer & Graham, 2002).

Next, the data were checked for univariate outliers. Variables were converted to z-scores and those z-scores that exceeded ± 3.0 were deleted (Hair et al., 2010). Z-scores identified two outlier cases (1.65% of selected cases), however because the outliers were less than 2%, and were not very extreme, they were kept in the dataset (Cohen, 1988). Skewness and kurtosis tests indicated that all scales were normally distributed. Skewness values ranged from .096 to .701, and kurtosis values ranged from −.618 to .375. These values, which fall between ± 1, are acceptable indicators of normality (George & Mallery, 2016). Q-Q plots were also examined and showed that all plotted points fell well on the line, indicating normality for each variable.

Results

Types of potentially traumatic events

The first research aim was to index the types of work-related PTE that this population of police officers experienced (Table 3). Road accidents comprised the majority of potentially traumatic events (PTEs) that officers reported (57%). Being assaulted and being in situations pertaining to dead bodies were the second most prevalent potentially traumatic experiences (28% each). Of those officers who reported experiencing potentially traumatic events, many reported experiencing more than one type of potentially traumatic event, and also more than one occurrence of that type of event.

Frequency of potentially traumatic events

The second aim of this research was to index the frequency of work-related PTE experienced by police officers (Table 4). The median number of work-related PTEs that officers experienced was three. A majority of officers experienced only one work-related PTE (19%). Results indicate that 87 (71.9%) officers experienced one or more potentially traumatic events on the job. 54.5% of officers experienced five or fewer work-related PTEs, while 17.4% of officers experienced six to ten work-related PTE experiences. 28.1% of officers did not endorse experiencing a work-related PTE at all. The number of respondents who have not experienced any PTE is surprisingly high.

Frequency, variety, and severity of expressed trauma

The third aim of this research was to catalog the frequency, variety, and severity of trauma symptoms experienced as assessed by the ***PTSD Symptom Scale-Interview***. Overall, 61.2% of

Table 3. Work-related Potentially Traumatic Events.

Potentially Traumatic Events	Frequency	N	%
Accidents		69	57.0%
	1	41	33.9%
	2	3	2.5%
	3	5	4.1%
	4	5	4.1%
	5	6	5.0%
	6	1	0.8%
	7	2	1.7%
	8	1	0.8%
	9	1	0.8%
	10	2	1.7%
	12	1	08%
	13	1	0.8%
Assault		34	28.1%
	1	22	18.2%
	2	9	7.4%
	3	2	1.7%
	4	1	0.8%
Observing Autopsy		34	28.1%
	1	25	20.7%
	2	8	6.6%
	3	1	0.8%
Fire		15	12.4%
	1	13	10.7%
	2	2	13.3%
Flood		8	6.6%
	1	7	5.8%
	3	1	0.8%

Table 4. Frequency of work-related Potentially Traumatic Events.

No. of Potentially Traumatic Events Experienced	N	%
1	23	19.0%
2	19	15.7%
3	13	10.7%
4	7	5.8%
5	4	3.3%
6	1	0.8%
7	3	2.5%
8	3	2.5%
9	5	4.1%
10	9	7.4%

surveyed officers endorsed at least one trauma symptom (Table 5). The largest subset of officers endorsed experiencing ten symptoms, while 11 and 13 symptoms were the second and third most endorsed number of symptoms experienced by Ghanaian officers. 15.8% of officers endorsed between one and six trauma symptoms. 28.9% of officers endorsed between seven and 12 trauma symptoms. 16.5% of officers endorsed 13 to 17 trauma symptoms. 38.8% of officers did not endorse any trauma symptoms.

In (Table 6), we have highlighted the prevalence and variety of symptoms endorsed for three components of trauma – re-experiencing, avoidance, and hyperarousal. The table also shows the prevalence of all assessed trauma symptoms. Results indicate that more than half of police officers in the study endorsed the trauma indicators of re-experiencing and avoidance (57.1%). The hyperarousal indicator of trauma was the least endorsed (52.9%). The most endorsed symptoms included, 'being intensely emotionally upset when reminded of the trauma (includes anniversary reactions)' (48.4%); 'persistently making efforts to avoid activities, situations, or places that remind you of the trauma' (45.5%); and 'persistently making efforts to avoid thoughts or feelings associated with the

Table 5. Frequency of trauma symptoms.

No. of Trauma Symptoms Endorsed	N	%
0	47	38.8%
1	3	2.5%
2	1	0.8%
3	4	3.3%
4	3	2.5%
5	6	5%
6	2	1.7%
7	7	5.8%
8	2	1.7%
9	5	4.1%
10	9	7.4%
11	8	6.6%
12	4	3.3%
13	7	5.8%
14	4	3.3%
15	2	1.7%
16	2	1.7%
17	5	4.1%

Table 6. Mean, standard deviation, and % endorsing each item on the PTSD Symptom Scale.

Symptom		% Endorsing	Mean (SD)
Re-experiencing		57.1%	2.64 (3.08)
	Intrusive thoughts	40.5%	.58 (.84)
	Nightmares	26.5%	.38 (.72)
	Flashbacks	35.6%	.49 (.79)
	Emotionally upset	48.8%	.75 (.93)
	Physical reactivity	34.7%	.45 (.73)
Avoidance		57.1%	3.44 (3.75)
	Thought avoidance	43%	.74 (1.02)
	Avoiding activities	45.5%	.82 (1.08)
	Cannot remember	25.6%	.39 (.78)
	Loss of interest	35.6%	.53 (.83)
	Emotional distance	29%	.36 (.65)
	Restricted affect	20.7%	.29 (.65)
	Future plans	24.8%	.32 (.61)
Hyperarousal		52.9%	2.36 (2.72)
	Trouble sleeping	29%	.37 (.65)
	Irritable	38%	.48 (.69)
	Trouble concentrating	30.6%	.35 (.57)
	Overly careful	38.9%	.70 (1.09)
	Jumpy	33.9%	.47 (.73)
PTSD Symptom Scale		61.2%	8.57 (9.03)

trauma' (43%). The least endorsed symptoms include, 'not being able to recall important aspects of about the trauma' (25.6%); 'feeling like future plans or hopes have changed because of this trauma' (24. 8%); and 'feeling one's ability to experience the whole range of emotions is impaired' (20.7%). The most endorsed symptoms and the least endorsed symptoms pertained to the avoidance indicator of trauma.

Next, we assessed symptom severity by taking the cumulative score of the PSS-I and using the clinical guidelines for PTSD symptom severity as the measure designates (Table 7). Results indicate that a majority of officers' experienced subthreshold trauma symptoms (61.7%). Still, 22.4% of officers endorsed mild trauma symptoms. A subgroup of officers endorsed moderate to severe trauma symptoms (9.1%) symptoms.

(Table 8) shows expressed trauma severity by the frequency of endorsed trauma symptoms and by the frequency of PTEs in our sample. Seventy-four respondents endorsed experiencing at least

Table 7. PTSD symptom severity.

Severity	N	%
Below threshold	74	61.7%
Subclinical	8	6.7%
Mild	27	22.4%
Moderate	7	5.9%
Moderately-Severe	2	1.6%
Severe	2	1.6%
Extremely severe	–	–

Table 8. PTSD symptom severity by frequency of trauma symptoms and work-related Potentially Traumatic Events.

No. of Trauma Symptoms Endorsed	No. of Potentially Traumatic Events experienced	N	Mean	SD
1 to 6	1	1	8.00	.
	2	4	3.25	1.71
	4	5	5.40	3.78
	5	2	3.00	2.83
	7	1	5.00	.
	9	1	7.00	.
	10	5	5.20	2.28
	Total	19	4.84	2.67
7 to 12	1	8	12.75	4.46
	2	6	15.33	6.56
	3	4	12.00	4.24
	4	1	16.00	.
	5	2	19.50	3.54
	6	1	18.00	.
	7	2	15.00	4.24
	8	3	23.33	2.89
	9	4	14.25	5.50
	10	4	14.50	5.57
	Total	35	15.14	5.36
13 to 17	1	10	21.50	7.44
	2	4	18.75	4.27
	3	6	19.33	4.46
	Total	20	20.30	5.99

one trauma symptom and work-related PTE experience. On average, PTSD symptom severity for the 19 respondents who endorsed one to six trauma symptoms was subclinical (4.84), even with a majority of these respondents (five respondents) experiencing 10 potentially traumatic events. On average, PTSD symptom severity for the 35 respondents who endorsed seven to 12 trauma symptoms was subthreshold (15.14), with a majority of these respondents (eight respondents) experiencing only one potentially traumatic event. On average, PTSD symptom severity for the 20 respondents who endorsed 13 to 17 trauma symptoms was mild (20.30), with a majority of these respondents (10 respondents) experiencing only one potentially traumatic event.

Relationship between predictors and expressed trauma

The final aims of our study were to explore the relation between aforementioned demographic characteristics (e.g. age, gender, rank, years of service, education level, marital status, and religious affiliation), frequency of endorsed trauma symptoms, as well as work-related PTE on expressed trauma. We hypothesized that means of expressed trauma would differ across demographic characteristics. There was a significant main effect for rank on expressed trauma $F(3, 116) = 2.70$, $p = .049$, partial $\eta^2 = .065$. This implies that officers of different ranks endorsed trauma symptoms differently: Corporal (M = 11.09, SD = 9.53); Inspector (M = 6.88, SD = 8.67); Sergeant (M = 7.22, SD = 8.09); and Constable (M = 5.81, SD = 8.06). Corporals on average endorsed subclinical trauma

symptoms, while the other ranks endorsed trauma symptoms that were below threshold. Pairwise comparisons indicated a statistically significant difference between Constable's and Corporal's expressed trauma symptoms: Constable (M = 5.81, SD = 8.06), Corporal (M = 11.09, SD = 9.53). Corporals endorsed more acute trauma than Constables.

We also hypothesized that means of expressed trauma would differ across the frequency of endorsed trauma symptoms when controlling for demographic characteristics. We conducted a one-way analysis of covariance (ANCOVA) to explore the impact of the frequency of trauma symptoms endorsed on trauma symptom severity. There was a significant main effect of the frequency of trauma symptoms (see Table 5) endorsed on trauma severity when controlling for rank $F(2, 70) = 47.504$, $p< .001$, partial $\eta^2 = .576$ Thus, a large effect was identified. Post hoc comparisons using Bonferroni correction revealed that officers endorsing six or fewer symptoms (M = 4.84, SD = 2.67) statistically significantly differed on trauma severity than officers who endorsed seven to 12 symptoms (M = 15.14, SD = 5.36), and statistically significantly differed from officers who endorsed 13 to 17 symptoms (M = 20.3, SD = 5.99). Officers who endorsed six or fewer symptoms' trauma severity was below threshold, while officers who endorsed seven or more symptoms' trauma severity was in the mild range. However, these results should be interpreted with precaution, as the assumption of homogeneity test was violated.

Next, we hypothesized that population means of expressed trauma symptoms would differ across the number of work-related PTEs experienced, when controlling for demographic characteristics. A one-way analysis of covariance was conducted. There was no evidence to suggest that population means of expressed trauma symptoms differed across the number of work-related PTEs experienced. Finally, we hypothesized that population means of expressed trauma would differ across they type of work-related PTE when controlling for demographic characteristics. A one-way analysis of covariance (ANCOVAs) was conducted to explore the impact of the type of work-related PTE on trauma symptom expression when controlling for rank. There was a significant main effect of exposure to a dead body on expressed trauma when controlling for rank, $F(2, 30) = 3.552$, $p = .041$, partial $\eta^2 = .191$.Thus, a medium effect was identified. Pairwise comparisons indicated a statistically significant difference of officers' expressed trauma symptoms dependent on their exposure to one or two dead bodies (one (M = 14.08, SD = 9.56); two (M = 4.00, SD = 5.61)). Thus, officers who were exposed to one dead body endorsed significantly more acute trauma than those who had been exposed to two dead bodies.

Discussion

This paper explored how work-related potentially traumatic events impacted trauma symptoms in a sample of Ghanaian police officers. Our intentions were to index the types of work-related PTEs that this population of officers have experienced; index the frequency of work-related PTE experiences; catalog the variety, severity, and frequency of trauma symptoms officers endorsed; and explore the extent that demographic characteristics, the frequency of trauma symptoms endorsed, and the types of work-related PTE experienced impacted expressed trauma.

Our results indicated that police officers were exposed to a variety of work-related PTE including road accidents, assault, exposure to dead bodies, fire, and flood. We also found that while the majority of respondents (71.9%) were exposed to at least one work-related PTEs, the number of PTEs experienced did not predict expressed trauma. Still, Ghanaian police officers endorsed trauma symptoms. Overall, majority of respondents (61.2%) experienced at least one trauma symptom with majority of respondents endorsing the trauma indicators of re-experiencing the trauma and actively avoiding the trauma(s) and/or the trauma trigger(s). While road accidents were the most prevalent work-related PTE encountered, they were not predictive of expressed trauma, but exposure to one or two dead bodies did. Finally, our results showed that officer rank was predictive of expressed trauma.

These results provide a more nuanced understanding of the impact of policing on Ghanaian police officers' mental health. Given that our sample comprised officers from the Motor Transport and Traffic Directorate (MTTD), our results about the prevalence of officers' exposure to road accidents fits the context of the job. Similarly, exposure to postmortems is more likely to be a common experience among traffic police because of investigations associated with traffic accidents. Traffic accidents are a significant cause of injury and death in Ghana (Konlan et al., 2020). We are unable to make comparisons with other categories of police because our data only reflects an MTTD sample. While the frequency of exposure to work-related PTE was not predictive of trauma symptoms, the type of work-related PTE did make a difference. It was indeed surprising that the reported symptoms of PTSD were mostly subclinical and that even more than one experience with potentially traumatic events (PTEs) did not seem to make a difference in reported level and severity of PTSD symptoms. This finding could suggest that the training provided to the officers included coping mechanisms that enhanced their officer's resiliency. Or it could be an indication of trauma defenses such as dissociation, repression, and suppression. Regardless, these results highlight the novelty of this research and are indicative of further study. Despite this, our results support existing data about the mental health implications of being exposed to a dead body (Cesur Sabia, & Tekin, 2013; Chopko, 2010; Evans et al., 2013; Kamijo et al., 2020; Maguen et al., 2010; Vogt et al., 2011). Given that officers in our sample tended to endorse fewer trauma symptoms with subsequent exposures, our results may speak to desensitization over time. Henry (2004) attributes this to a phenomenon known as survivor psychology, which is crucial for police work. Desensitization to death is seen as a means of coping with more significant losses to come, and can decrease death anxiety over time. However, Henry (2004) argues that while this can be an adaptive process, when it becomes maladaptive, officers may experience chronic depersonalization and callousness.

Finally, in our sample, we found an unexpected effect of rank on expressed trauma. Officers with a rank of Corporal endorsed more acute trauma symptoms than officers of lower (Constable) and higher ranks (Sergeant and Inspector). This finding does not lend itself to the most obvious explanation, which is, desensitization occurs as officers acquire and accumulate experience at work. There are a couple of explanations for this finding. We may assume that Constables may have had limited exposure because of fewer years in the service. Officers in the Inspector and Sergeant ranks may have had repeated exposure and therefore applied survivor psychology to cope with the traumatic effects. Perhaps new responsibilities for officers at the Corporal rank, such as supervising and training Constables account for more acuity in expressed trauma. As they move up in the ranks, additional leadership responsibilities and repeated exposures may feel less burdensome and thus result in coping via desensitization. It is possible that police officers tend to apply different coping mechanisms as they gain experience on the job. To understand this fully, in future we may need to examine coping mechanisms among the police in response to stress and traumatic events. We think that this has implications for police training and the need to develop a system that monitors exposure to trauma and its effect on the mental health of police officers.

Limitations

Our study has two key limitations that affect generalization of the findings and for which reason we interpret the findings cautiously. First, we studied police officers from the MTTD, the unit of the Ghana Police Service that deals primarily with motor vehicle and traffic regulation. While police officers from the MTTD undergo the same training and perform similar functions as other police units, such as crime investigation and prosecutions in the law courts, their specific duties may over-expose them to particular traumatic events that include road accidents and postmortems. Secondly, our sample was selected using a purposive technique and was relatively small. Research based on large and more representative selection methods invariably provide findings that are more generalizable. Similarly, the small sub-sample of females did not allow us to explore gender differences for work-related PTE, trauma symptom presence, and trauma symptom severity. The measure used to assess trauma symptom presence and

severity while psychometrically sound, is an earlier version which has been updated to reflect the DSM-5's diagnosis of PTSD. In a future study, we recommend using a version that is aligned with the DSM-5. Finally, Police officers in Ghana are deemed corrupt, the effect of which is a lack of public trust. This likely can affect the well-being and mental health of police officers. Police corruption was not a focus in this study and therefore we did not directly examine the relation between perception of corruption and the well-being of the police in this study. We, therefore, recommend that in future research, this relationship be directly examined to provide a more complete picture of the mental health of the police.

Despite these limitations, our study does adequately present novel information about what potentially traumatic events Ghanaian police officers encounter and how these events, as well as demographic characteristics, impact expressed trauma. Overall, our results indicate that this population of officers tends to endorse trauma symptoms that are below clinical threshold despite repeated exposure to potentially traumatic events while in the line of duty. Future research should explore this further. It would be helpful to understand the protective factors and adaptive coping mechanisms – both systemic (provided via the GPS) and personal – that maintain these officers' resilience. Being able to identify these factors would also help in creating and/or maintaining policies and practices that ensure the officers' mental well-being on the job, particularly for officers who endorse more critical trauma symptoms due to rank, or due to exposure to traumatic events on the job. Future research that uses the qualitative approach can also explore Future studies should also examine the nature and extent of mental health challenges caused by trauma exposure in a larger scale study that would be more inclusive of a variety of police agencies and officer ranks.

Conclusion

In conclusion, we found that there is a risk of exposure to PTEs among the MTTD. In general, 31.5% of officers in our sample endorsed expressed trauma of mild to severe acuity. Holding the rank of Corporal was predictive of expressed trauma, as was exposure to at least one dead body. While a majority of MTTD officers expressed subclinical (6.7%) and below-threshold (61.7%) trauma acuity, our results corroborate the association between work-related PTE and mental health reported copiously in the psychological literature. This is an exploratory study that depicts snap-shots of potentially trauma triggering events and the mental health of Ghanaian police officers in a contemporary context. The findings should be a springboard to develop a comprehensive mental health program in the police service.

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