

Students' views on the need for hostile environment awareness training for South African emergency medical care students

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Background. South Africans experience high levels of contact crime, including assault, robbery and hijacking. Emergency medical services (EMS) are frequently called to the scene of such incidents. Their presence in these potentially hostile environments increases the risk of South African (SA) paramedics and paramedic students becoming victims of crime and violence. A 2015 study showed that ~66% of SA EMS staff reported being assaulted while on duty. During a 10-month period in 2016, Western Cape Province recorded >40 incidents of physical violence against their EMS personnel. Questions are being asked about how well prepared EMS staff are to operate in potentially hostile environments.

Objectives. To explore emergency medical care (EMC) students' experiences of violence and crime and their views on the need for hostile environment awareness training (HEAT) as part of their undergraduate degree programmes.

Methods. A self-designed, non-validated, cross-sectional online survey questionnaire was used to document the experiences, views and opinions of 113 undergraduate EMC students from 4 SA universities. The questionnaire consisted of 24 closed-ended questions with pre-set Likert scale options focusing on documenting participants' experiences, views and opinions regarding hostile environments and the need for HEAT.

Results. A high percentage of participants (92%) indicated feeling unsafe while engaging in clinical learning shifts; 63% specified that they had personally witnessed violence against EMS crews, and 32% indicated that they had been assaulted while on duty. Unsurprisingly, 81% of the respondents felt that there is a need for inclusion of HEAT in the undergraduate curriculum.

Conclusions. Participation in clinical learning shifts in the current SA prehospital EMS environment increases the risk of exposure to potentially hostile environments. Consequently, students feel unsafe and support the inclusion of HEAT as part of their undergraduate degree programmes.

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South Africans live in a society predisposed to high levels of contact and violent crime. Drivers of crime include poverty, unemployment and illegal immigration, and a Gini coefficient that is currently among the highest in the world. A Gini coefficient is a measure of inequality of income distribution or inequality of wealth distribution. These factors contribute to a situation where, on average, 51 people are murdered in South Africa (SA) every day.^[1] This is ~5 times the global average. Mortality due to interpersonal violence is 46%, compared with a global average of 10%.^[2] Regrettably, the situation does not seem to be improving, with an increase in the incidence of assault with intent to cause grievous bodily harm, common assault, robbery with aggravating circumstances and car hijacking.^[1]

Emergency medical services (EMS) personnel are commonly required to respond to incidents where they assist victims of crime and violence. In some instances, when ambulance crews arrive, the police are not yet on the scene and the situation remains volatile. Operating in such potentially hostile environments places paramedics and paramedic students at increased risk of becoming victims of crime and violence. This is by no means just an SA phenomenon. A recent Australian study found that 88% of their EMS personnel were exposed to violence while at work. Verbal abuse was the most prevalent (82%), followed by intimidation (55%), physical abuse (38%), sexual harassment (17%) and sexual abuse (4%).^[3,4] A similar study on the prevalence of violence in the Swedish prehospital setting found that 66% of EMS personnel experienced threats and/or violence while at

work.^[5] A study was also performed on the exposure of Iranian EMS staff to workplace violence, which found that 75% experienced at least one form of such violence. Verbal abuse was the most prevalent (71%), followed by physical abuse (38%).^[6]

Holgate^[7] reported that in SA, physical abuse is commonly encountered by EMS personnel as a result of their interactions with patients and bystanders. Holgate's study showed that of the EMS staff surveyed, 66% reported having experienced assault while on duty.^[7]

Aside from interactions with patients and bystanders, another source of potential abuse is violent behaviour by criminals. It is thought that EMS personnel are seen as 'soft targets', as they are usually unarmed, travel into high-crime areas and often enter these areas after dark. Criminals target EMS staff to gain access to items such as valuable medical equipment, drugs, cell phones and electronic tablets. Unfortunately, there are no national statistics on the incidence of SA EMS personnel as victims of crime while on duty. Furthermore, there is no national system for EMS personnel to report crime, violence and abuse directed at them while on duty. This is concerning, given that during 10 months in 2016 Western Cape Province recorded ≥40 incidents of physical violence against their EMS personnel.^[8]

The abovementioned literature supports the view that, due to the nature of their duties, EMS personnel – locally and internationally – commonly encounter situations where the environment may be considered unsafe or hostile. It is evident that there is an increase in workplace violence

experienced by SA EMS personnel. Crime, violence and unsafe working conditions are clearly undesirable. One of the negative consequences is the loss of skilled staff when qualified EMS personnel leave SA to practise abroad, where working and living conditions are believed to be safer.^[9]

In response to the abovementioned concerns, certain law enforcement agencies and EMS providers offer hostile environment awareness training (HEAT) programmes for their staff.^[10] These HEAT programmes focus on developing one's ability to assess situations, recognise specific risk factors, and where possible avoid these risks. However, despite the existence of such programmes, the literature is limited regarding their real value and benefit in the higher education context.

Throughout their 4-year degree, emergency medical care (EMC) students are registered for clinical practice modules. These modules require students to work a predetermined number of prehospital shifts under the guidance of a clinical supervisor. The aim of these clinical shifts is to ensure that students gain exposure to the real-world EMC environment. During clinical learning shifts, students are designated to ambulances and response vehicles, attending to incidents that provide an opportunity to assess and treat patients in the real prehospital environment.^[11] The exposure and experience obtained through clinical practice are important to provide students with the necessary clinical skills set to competently manage a broad spectrum of emergency situations and patients.^[11] Although anecdotal reports from EMC students include frequently experiencing and/or witnessing verbal and physical abuse against them and other EMS personnel during clinical learning shifts, we could not find literature quantifying or describing such experiences. With this in mind, we undertook this study, which aimed to formally explore and document experiences, views and opinions of SA EMC students regarding their exposure to hostile environments and the need for inclusion of HEAT as part of their undergraduate degree programmes.

Methods

This was a descriptive, quantitative, cross-sectional and exploratory study.^[12] A self-designed, non-validated, online survey questionnaire was used to document views and opinions of EMC students from 4 SA universities regarding their experiences of hostility during clinical learning and the need for HEAT. At the time of the study, there were 402 potential participants across 4 institutions who were invited to participate; we received 113 responses, giving a final response rate of 28%. The questionnaire comprised closed questions in the form of statements to which the participants were required to indicate their level of agreement, using a Likert scale. The responses to each of the questions were tallied by using frequency data analysis.^[13] These

data were captured on a Microsoft Excel (Microsoft, USA) spreadsheet and analysed using simple statistics, allowing the creation of tables that summarised responses.^[13]

Ethical approval

Ethical approval for the study was given by the Faculty of Health Sciences Academic Ethics Committee, University of Johannesburg (ref. no. REC-01-47-2017). In light of the research design, it was not necessary to identify individual students, patients, educators or supervising practitioners.

Results

Demographics

Of the 113 respondents who participated in the survey, 55.75% ($n=63$) were male and 44.25% ($n=50$) were female. The majority (68.14%; $n=77$) were white and 18 - 26 years of age. The spread of respondents by year of study was fairly even, with 21% in year 1, 26% in year 2, 33% in year 3 and 20% in the final year of study.

Experiences of violence against emergency medical services personnel

Table 1 provides the participants' responses regarding their experiences of acts of violence towards them or other EMS personnel during clinical learning shifts. Table 2 summarises their views regarding personal safety and the perceived need for and value of HEAT.

Discussion

Our study aimed to provide insight into SA undergraduate EMC students with regard to hostile environments that they experienced during their prehospital clinical learning shifts and their perceived need for HEAT. The results are discussed under three main headings, i.e. demographics, experiences of violence and the need for HEAT.

Demographics

The black African population of SA is estimated to be ~80.7% of the general population. Our sample was not demographically representative, as the majority (68.14%) of our respondents were white, while only 31.86% were of other races. The reason remains unclear, as the invitation to participate was sent to all students from all races. Possible reasons for this finding might include the racial profile of EMC students from the 4 universities not reflecting that of the general population, and/or that all students did not share an equal interest in the study and/or all students did not have equal

Table 1. Responses regarding violence witnessed or experienced during clinical learning shifts

Statement	Yes, <i>n</i> (%)	No, <i>n</i> (%)
There are times when I have felt unsafe while working during a prehospital shift	104 (92.04)	9 (7.96)
I have been verbally assaulted (e.g. sworn at, ridiculed, threatened) by a patient or bystander	89 (78.76)	24 (21.24)
I have been physically manhandled (e.g. pushed, pulled, assaulted) while working during a prehospital shift	36 (31.86)	77 (68.14)
I have been threatened by a patient or bystander	67 (59.29)	46 (40.71)
I have been threatened with a weapon (e.g. gun, knife, baton) while working during a prehospital shift	26 (23.01)	87 (76.99)
I have witnessed violence against EMS personnel while working during a prehospital shift	71 (62.83)	42 (37.17)
I have been on the scene where a firearm has been discharged (including SAPS)	38 (33.63)	75 (66.37)
I am aware of a fellow student who was involved in a vehicle hijacking or attempted vehicle hijacking	85 (75.22)	28 (24.78)

EMS = emergency medical services; SAPS = South African Police Service.

Table 2. Participants' views regarding personal safety and perceived need for and value of HEAT

Statements	Responses, n (%)				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
There are circumstances where I feel that I am at a higher risk of violence compared with a 'normal student', i.e. a student in a mainstream academic programme	72 (63.72)	35 (30.97)	6 (5.31)	0	0
I often consider myself to be at a higher risk of violence owing to the irregular shift hours that I work	44 (38.94)	52 (46.02)	12 (10.62)	3 (2.65)	2 (1.77)
I often consider myself to be at a higher risk of vehicle hijacking owing to the hours I work and distances I travel to work shift hours	54 (47.79)	40 (35.4)	11 (9.73)	6 (5.31)	2 (1.77)
I believe that adequate training and HEAT (as described in the information letter) could mitigate risks, thereby creating a safer working environment	53 (46.9)	46 (40.71)	9 (7.96)	3 (2.65)	2 (1.77)
I would feel safer knowing that I had specific training on how to handle a hostile environment, should it arise	58 (51.33)	43 (38.05)	9 (7.96)	2 (1.77)	1 (0.88)
I believe that violence against EMS personnel may be avoided if they have adequate training, e.g. HEAT	31 (27.43)	49 (43.36)	14 (12.39)	11 (9.73)	8 (7.08)
I feel that there is a need for the inclusion of HEAT in the EMC curriculum	49 (43.36)	43 (38.05)	15 (13.27)	4 (3.54)	2 (1.77)

HEAT = hostile environment awareness training; EMS = emergency medical services; EMC = emergency medical care.

access to the internet to complete the online questionnaire. From a gender and age perspective, these distributions were more aligned with the norms expected for higher education in SA. The extent to which our results might have differed had our sample been different with regard to race, is currently unclear and is acknowledged as a potential limitation. Given SA's ethnic and cultural diversity, it would be valuable if future studies could explore whether or not perceptions and experiences of EMC students with regard to crime and hostile environments differ according to gender and race.

Violence against emergency medical services personnel and students

Exposure of paramedics to physical violence globally appears to vary considerably – from 2.9% to 79.5%.^[3-6,9,14] Our literature review found few published studies that specifically dealt with the incidence of violence against EMS students. Of our 113 respondents, 78.76% reported being verbally abused (sworn at, ridiculed or threatened) either by a patient or bystander. This rate is more than three times higher than that cited in an Australian study, which found that 21.2% of their participants had been verbally assaulted during their clinical practice shifts.^[4]

In the Australian study, with 133 respondents (paramedic students), only 1% had experienced assault during prehospital clinical practice shifts. This percentage is much lower than that in our study, where 32% of participants indicated that they had personal experience of assault. Assault in the context of our study included being pushed, shoved, hit or manhandled. Unsurprisingly, considering this, and as 83% had personally witnessed violence against EMS personnel, nearly all of our participants (92.04%) indicated that they felt unsafe during their clinical practice prehospital shifts.^[4] A possible reason put forward in the Australian study for the low incidence of assault against their paramedic students was that their participants were not required to work at night, when it is thought that the majority of violence against EMS personnel takes place. In our study, 84.96% of participants considered themselves to be at higher risk of violence owing to the hours that they work. Most violent crimes in SA occur at

night.^[2] Limiting SA paramedic students' exposure to night shifts might not be desirable, as these shifts are seen to be rich learning environments and many of the serious trauma cases linked to assault and motor vehicle collisions occur after dark. Furthermore, on qualifying, graduates are required to work at night, and limiting exposure to night shifts during their undergraduate training could leave students unprepared for the real working environment.

The undesirable consequences of working in hostile environments and the resultant concerns regarding physical security are numerous; school leavers consequently do not choose to study EMC, as it is seen as 'dangerous'. Crime affects all citizens of a country – not only members of EMS. Therefore, is it true that one's chances of being hijacked, assaulted or involved in a hostile environment are greater if one is studying EMC? It would appear that both the literature and the results of this study lend support to this notion, with 94.69% of respondents indicating that they feel at higher risk of crime and violence compared with other students. Reasons might be linked to the areas where EMC students are sent to work and irregular shift hours.

Concerns regarding hijacking came across strongly, with 83.19% of participants indicating that they consider themselves to be at higher risk of vehicle hijacking, mainly due to the hours they work and distances they have to travel to shift work. Data from the SA Police Service (SAPS) indicate that from March 2015 to April 2016 there were 14 602 reported cases of vehicle hijackings in SA.^[11] This roughly equates to 40 vehicles being hijacked daily. The majority of these hijackings take place at night, which is when the majority of violent crimes occur.^[2] Local data suggest that increased travel times, distances travelled and travelling at night, all of which are expected of SA EMC students, might increase the probability of being hijacked. Further studies are needed to empirically demonstrate if this is indeed the case and also to quantify the increased risk.

Hostile environment awareness training

There are specific HEAT programmes in many regions of the world for law enforcement, EMS and security and related personnel.^[10] These courses

focus on developing one's ability to assess situations, recognise specific risk factors, and where possible avoid these risks. In SA, ER24 (a private ambulance service) offers a similar course, i.e. Emergency Medical Support in Hostile Environments (EMSHE). It is designed to address concerns related to violent crimes committed against their EMS personnel. The aim of EMSHE is to teach staff various skills, such as identifying hostile environments, how to deal with dangerous situations and how to mitigate the risks involved.^[10,15]

We could not find literature on EMC students' perceptions of the need for HEAT. There is also debate regarding the value of HEAT. In our study, 87.61% of respondents felt that HEAT would be valuable and might mitigate the risks associated with operating in a hostile environment. Also of interest to the researcher, was that 89.38% of respondents indicated that they would feel safer knowing that they had specific training on how to handle hostile environments.

In summary, citizens of any country are exposed to varying levels of violence and crime by virtue of socioeconomic factors that influence where they live and work. The extent to which SA higher education students are to a greater or lesser degree vulnerable compared with the general population is a source of ongoing debate. Nonetheless, the mobility, age and timing of related social interactions of a typical SA higher education student are such that they have more exposure to crime and violence than the school-going population. SA higher education institutions consequently allocate significant resources towards endeavours that seek to provide safe learning and living environments on their campuses. The extent to which this responsibility covers safety for their students engaging in off-campus experiential learning placements is unclear. Additional studies need to be conducted to establish and quantify the risk profile, including the cost and feasibility of institutional initiatives and measures that seek to limit such risks.

Conclusion

This exploratory study delivers evidence suggesting that participation in clinical learning shifts in the current SA prehospital EMS environment comes with a significant risk of exposure to potentially hostile environments. Consequently, EMC students feel unsafe and support the inclusion of HEAT as part of their undergraduate degree programmes. Consideration needs to be given to include HEAT in the first year of study, before students are placed according to a roster for prehospital clinical learning shifts. Further studies are recommended that better quantify the incidence of violence toward EMC students and the impact of HEAT on their ability to manage such situations.

Study limitations

There are a number of limitations to our study. These include that the racial profile of respondents did not accurately represent that of the

general population of the country. Furthermore, while we provided our participants with an overview of HEAT, we did not provide them with a detailed curriculum or suggestions about how it may be implemented in their EMC programmes. We did not focus on comparisons of responses per participating institution. We acknowledged that, as participating universities were in different provinces and cities, it is possible that responses might have differed per institution. We therefore recommend that further studies are conducted with larger stratified samples to determine the extent to which race and geography impacts on EMC students' perceptions and experiences of hostile environments and the perceived need for HEAT.

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