


# Factors Predisposing Emergency Medical Technicians to Workplace Violence: A Cross Sectional Study

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## Abstract

Emergency medical technicians (EMT) are at high risk of workplace violence as they often care for patients in uncontrolled and often hostile emergency settings. Gauteng Province, the most populous province in South Africa, caters for 75% of the total population which is dependant on state funded health care. Public sector EMTs' have been robbed with aggravated circumstances, assaulted with intent to do grievous bodily harm, raped and even murdered whilst on duty. Despite this, comprehensive studies investigating the factors that predispose public sector EMTs' to workplace violence in Gauteng Province are lacking. Thus, the aim of this study was to investigate the factors that predispose public service EMTs' to workplace violence in Gauteng Province. Data were collected using questionnaires. A total of 413 questionnaires were returned by community members of Gauteng who met the inclusion criteria. Descriptive statistics and binomial tests were used to analyze data. The results of this study revealed that workplace violence toward public service EMTs' in Gauteng is attributed to the high rates of crime, the widening gap of inequality, economic deprivation of basic rights to previously disadvantaged communities by government, vulnerability of EMTs' when responding to the ill and injured within low- and middle-income communities and a lack of consequence for disorderly behavior within the communities. An understanding of the community factors that predispose EMTs' to workplace violence may improve the understanding of the phenomenon of workplace violence and developing prevention programs within the communities.

## Keywords

workplace violence, prehospital, paramedic, emergency medical technician, South Africa

### What do we already know about this topic?

Workplace violence toward Emergency medical technicians negatively affects the efficiency of health systems.

### How does your research contribute to the field?

The research provides a scientific understanding of the causes of workplace violence and hence may aid in the prevention workplace violence toward emergency medical technicians and other healthcare workers.

### What are your research's implications toward theory, practice, or policy?

The research may guide policy makers develop policies that will prevent workplace violence, it may also help emergency medical technicians and their managers to understand the causes and work together with affected communities to find solutions.

## Introduction

The phenomenon of workplace violence is a global concern that also negatively affects healthcare providers, mainly those that care for patients in emergency settings.<sup>1,2</sup>

Workplace violence includes any form of intimidation, harassment, threatening disruptive behavior or threats and acts of physical violence in the workplace.<sup>3</sup> According to a study by Boyle and McKenna, occupations that expose employees to the general public are more likely



to experience workplace violence.<sup>4</sup> Emergency medical technicians (EMT) have a higher occupational risk to workplace violence compared to healthcare providers in other disciplines.<sup>1,3,5</sup> This is due mainly because the provision of emergency medical care (EMC) often occurs in uncontrolled and undefined public environments with little or no access control, which at times are hostile, such as patients' homes and streets, to patients with various etiologies such as accidental trauma, substance abuse, physical abuse and illness whilst interacting with family members and bystanders.<sup>6</sup>

According to past studies, the main factors predisposing EMTs' to workplace violence in the communities they serve include a lack of formal workplace violence education, high prevalence of firearms, gang activity, poor communication, delayed response times, drug and alcohol abuse, psychological disorders, unexpected illness, injury or death, lack of on scene police presence, inadequate safety practices, EMT skills incompetence and a lack of awareness of EMT duties amongst the general population.<sup>2,6-9</sup> Another study has shown that patriarchy is also a predisposing factor to workplace violence, whereby female EMTs' were more likely to experience workplace violence in the form sexual assault and sexual abuse.<sup>10</sup> Admittedly various factors predispose EMTs' to workplace violence in the prehospital emergency setting as highlighted above, even so, it is imperative to note that these factors vary amongst countries and even cities as a result of the unique characteristics of the diverse health systems, cultural diversity, distinctive behavioral characteristics of health care providers and the localization of the occupational nature of the EMC profession.<sup>11</sup> In addition to this, an understanding of the community factors that predispose EMTs' to workplace violence may improve the understanding of the phenomenon of workplace violence.<sup>10</sup> Also, there is a need to acquire knowledge about the predisposing factors for developing prevention programs within the communities.<sup>12</sup> Nevertheless, there has been rarely comprehensive studies exploring the factors that predispose public sector EMTs' to workplace violence in communities within Gauteng Province. However, there is evidence indicating that public sector EMTs' have been robbed with aggravated circumstances, assaulted with intent to do grievous bodily harm, raped and even murdered whilst on duty within these communities.<sup>13</sup> There is an astonishing 75% of Gauteng's total population who are non-members of medical aid schemes and rely on public services for the provision of EMC.<sup>14</sup>

## Objective

This paper aimed to investigate the factors that predispose public service EMTs' to workplace violence within Gauteng communities.

## Methods

### Design

The Institutional Research Ethics Committee approved this study (IREC 096/19). A cross-sectional survey was used to collect data. The cross-sectional survey enabled information to be gathered using survey questionnaires for this study. Additionally, since the design is controlled and vigorous, it enabled the phenomenon of workplace violence to be investigated with precise measurement and quantification.<sup>15</sup>

### Participant Characteristics and Setting

The target population of this study was comprised of members of the communities in Gauteng. Gauteng Province's population size was 14 278 700.<sup>16</sup> A population size of 384 ( $\alpha = .05$ , 95% confidence level) was determined using the following formula after multi-stage cluster sampling.

$$\text{Sample size} = \frac{z^2 \times p(1-p)}{1 + \left( \frac{z^2 \times p(1-p)}{e^2 N} \right)} = 384 \quad (\alpha = .05, 95\% \text{ confidence level})$$

Confidentiality was kept by excluding personal information on the questionnaires. A total of 413 survey questionnaires were returned by community members.

### Inclusion Criteria

The inclusion criteria consisted of low to middle socio-economic status residents residing within communities in Gauteng Province who were non-members of medical aid schemes.

### Exclusion Criteria

The exclusion criteria consisted of upper middle-class residents residing within communities in Gauteng, who were members of medical aid schemes.

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## Data Collection

Data was collected using a self-constructed questionnaire accessible in a web and paper-based format amongst consenting Gauteng community members. Written informed consent was obtained from the consenting Gauteng community members. The questionnaire was offered in both the English and IsiZulu language as the majority of Gauteng's population speak IsiZulu.<sup>16</sup> Validation of the IsiZulu translated questionnaire was conducted using the back translation technique.<sup>17,18</sup> The questionnaires was pre-tested on 8 KwaZulu Natal community members. Pretesting enhances validity in qualitative data collection and interpretation of findings and enables quantitative studies to attain rigor and reliability.<sup>19</sup> The Cronbach alpha was used to measure reliability of the questionnaire. The Cronbach alpha provides a measure of reliability of a scale or test.<sup>17,20,21</sup> The Cronbach alpha ( $\alpha$ ) was employed using the following formula:

$$\alpha = \left( \frac{k}{k-1} \right) \left( \frac{S_y^2 - \sum s_i^2}{S_y^2} \right) = 0.89$$

The reliability score of the Cronbach alpha indicated that the questionnaire was reliable.<sup>17,20,21</sup>

## Data Analysis

Data analysis was conducted using IBM SPSS Version 25. Descriptive statistics, which included frequencies, percentages and central tendencies were used to describe quantitative data.<sup>22</sup> In addition, a binominal test was used to identify the risk factors of workplace violence against EMTs' in Gauteng by testing whether a significant number of participants selected on of the potential responses.<sup>23</sup> The level of significance was set at a value of  $P < .05$ .

## Results

Out of 413 Gauteng community members present in the study, 11.4% (n=47) were from Ekurhuleni district, 58.1% (n=240) were from Johannesburg district, 5.3% (n=22) were from Sedibeng district, 16.7% (n=69) were from Tshwane district and 8.5% (n=35) were from Westrand district. The majority [66.1% (n=273)] were residing in townships, 24.5% (n=101) were residing in the city, 3.6% (n=15) were residing in informal settlements, 2.9% (n=12) were residing in school accommodation or school residences whereas 2.9% (n=12) were residing in flats, complexes, rural areas, security estates, smallholdings, and suburbs. The study of ambulance response to emergencies in the community showed a significant agreement amongst participants that government ambulances in Gauteng Province always

arrive late to the scene ( $M=3.77$ ,  $SD=1.139$ ),  $t(3)=13.646$ ,  $P < .0005$ . In addition, the study also showed significant disagreement that ambulance drivers are reckless when they respond to calls ( $M=2.66$ ,  $SD=1.113$ ),  $t(3)=-6.073$ ,  $P < .0005$ . The study of awareness of prehospital emergency medical care showed that a significant number 30.8% (n=127) of participants are aware of the prehospital EMC profession and know little about it ( $P < .0005$ ) (Figure 1).

On the study of crime in the community, there was a significant disagreement amongst participants that the community members of Gauteng Province pretend as though they saw nothing when they witness a crime within their communities ( $M=2.31$ ,  $SD=1.223$ ),  $t(3)=-11.354$ ,  $P < .0005$ . There was also a significant agreement that the community members of Gauteng Province call the police ( $M=3.89$ ,  $SD=0.971$ ),  $t(3)=18.643$ ,  $P < .0005$  and help the victims when they witness a crime within their communities ( $M=3.48$ ,  $SD=1.105$ ),  $t(3)=8.703$ ,  $P < .0005$ . Conversely there was significant disagreement that the community members of Gauteng Province help the perpetrator when they witness a crime within their communities ( $M=1.47$ ,  $SD=0.870$ ),  $t(3)=-35.383$ ,  $P < .0005$  (Figure 2).

The study of bandits who reside within the community revealed a significant agreement that the community members of Gauteng Province know the bandits residing within their communities ( $M=3.37$ ,  $SD=1.108$ ),  $t(3)=6.736$ ,  $P < .0005$ . It also significant disagreement that the community members of Gauteng Province are afraid of reporting bandits to the police ( $M=2.78$ ,  $SD=1.274$ ),  $t(3)=-3.450$ ,  $P < .0005$ . The study however revealed that there is neither significant agreement nor disagreement that the community members of Gauteng Province are afraid of doing something about the crime within their communities ( $M=3.07$ ,  $SD=1.271$ ),  $t(3)=1.170$ ,  $P = .243$ . In addition, there was significant disagreement that bandits are treated like heroes within the communities in Gauteng Province ( $M=2.31$ ,  $SD=1.223$ ),  $t(3)=-11.364$ ,  $P < .0005$ . Furthermore, there was significant agreement that crime is high within the communities in Gauteng Province ( $M=3.86$ ,  $SD=0.993$ ),  $t(3)=17.506$ ,  $P < .0005$ . Additionally, there was significant agreement that bandits committing crimes within communities reside within the community ( $M=3.15$ ,  $SD=1.179$ ),  $t(3)=2.642$ ,  $P = .009$ . Lastly, there is a significant disagreement that members of Gauteng Province communities feel safe when walking or driving within their community at night ( $M=2.17$ ,  $SD=1.237$ ),  $t(3)=-13.627$ ,  $P < .0005$  (Figure 3).

In the study of experiences with austere incidents a significant 81% of participants indicated that they have experienced a strike within their community,  $P < .0005$ . In addition, a significant 88% indicated that they have seen or heard about a hijacking,  $P < .0005$  whereas a significant 70% indicated that they have not seen or heard of an ambulance being

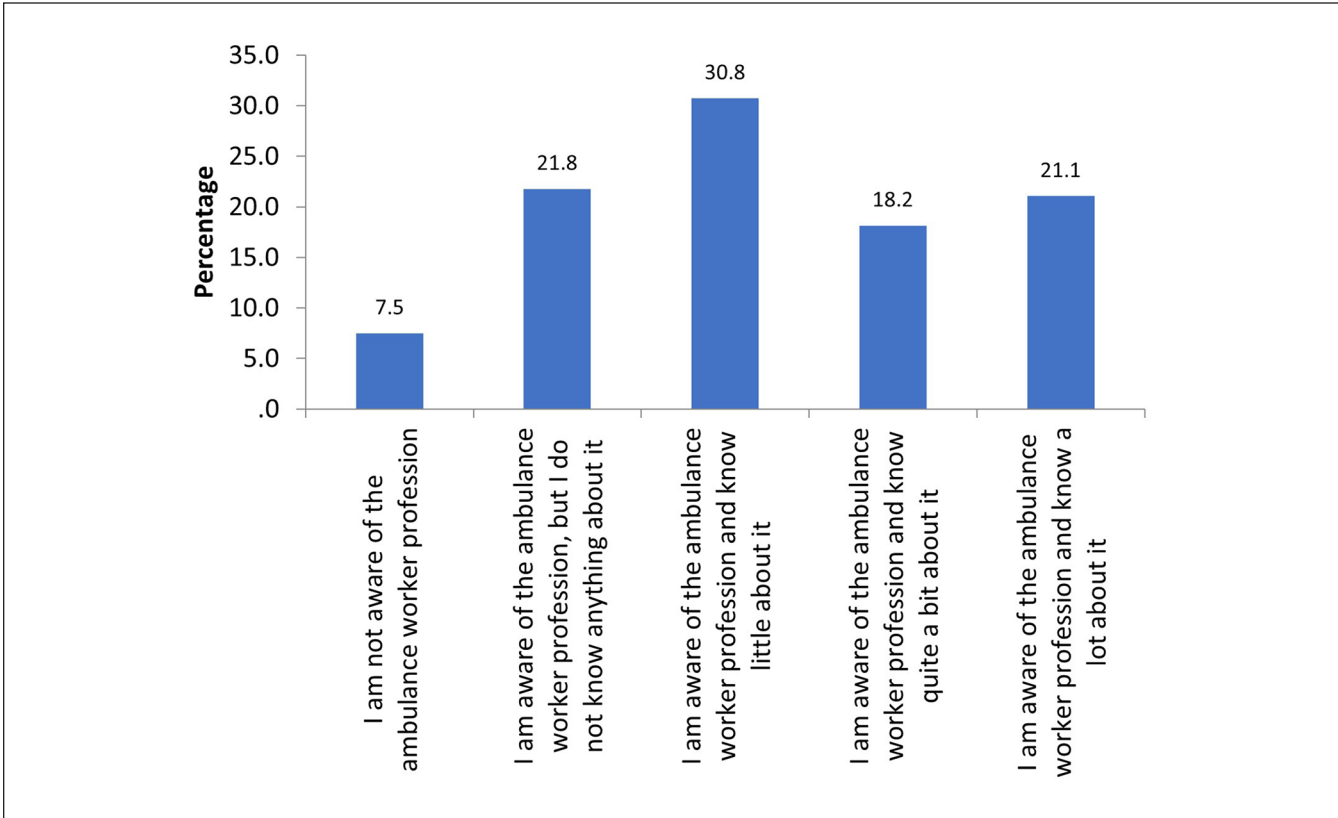


Figure 1. Awareness of the prehospital emergency medical care profession.

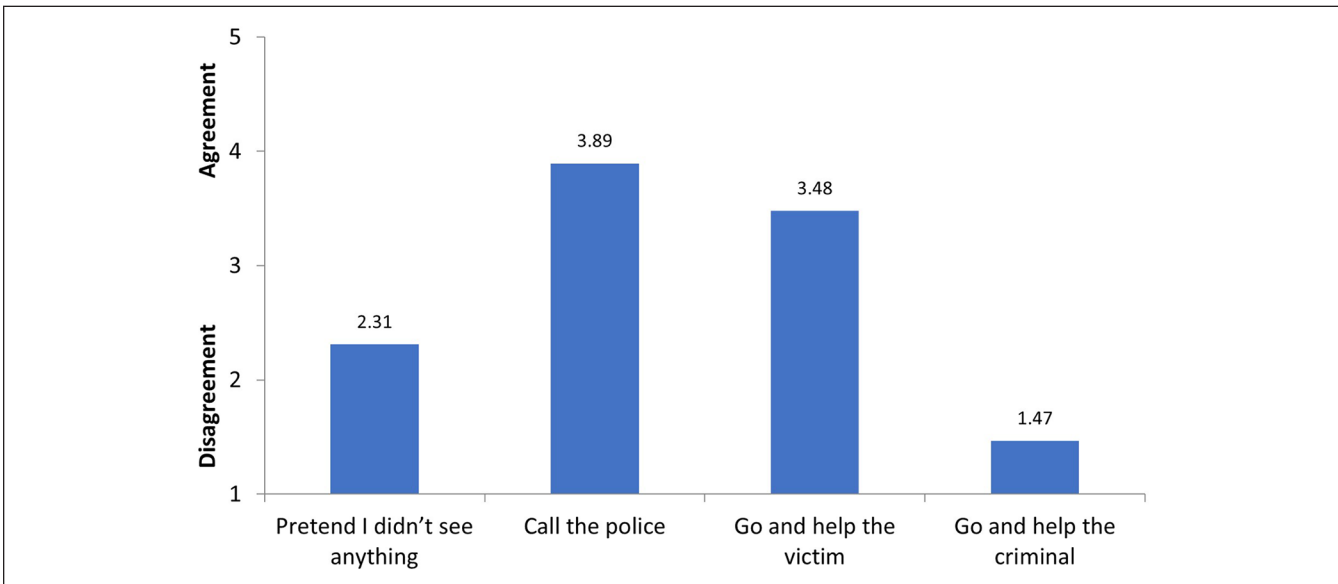
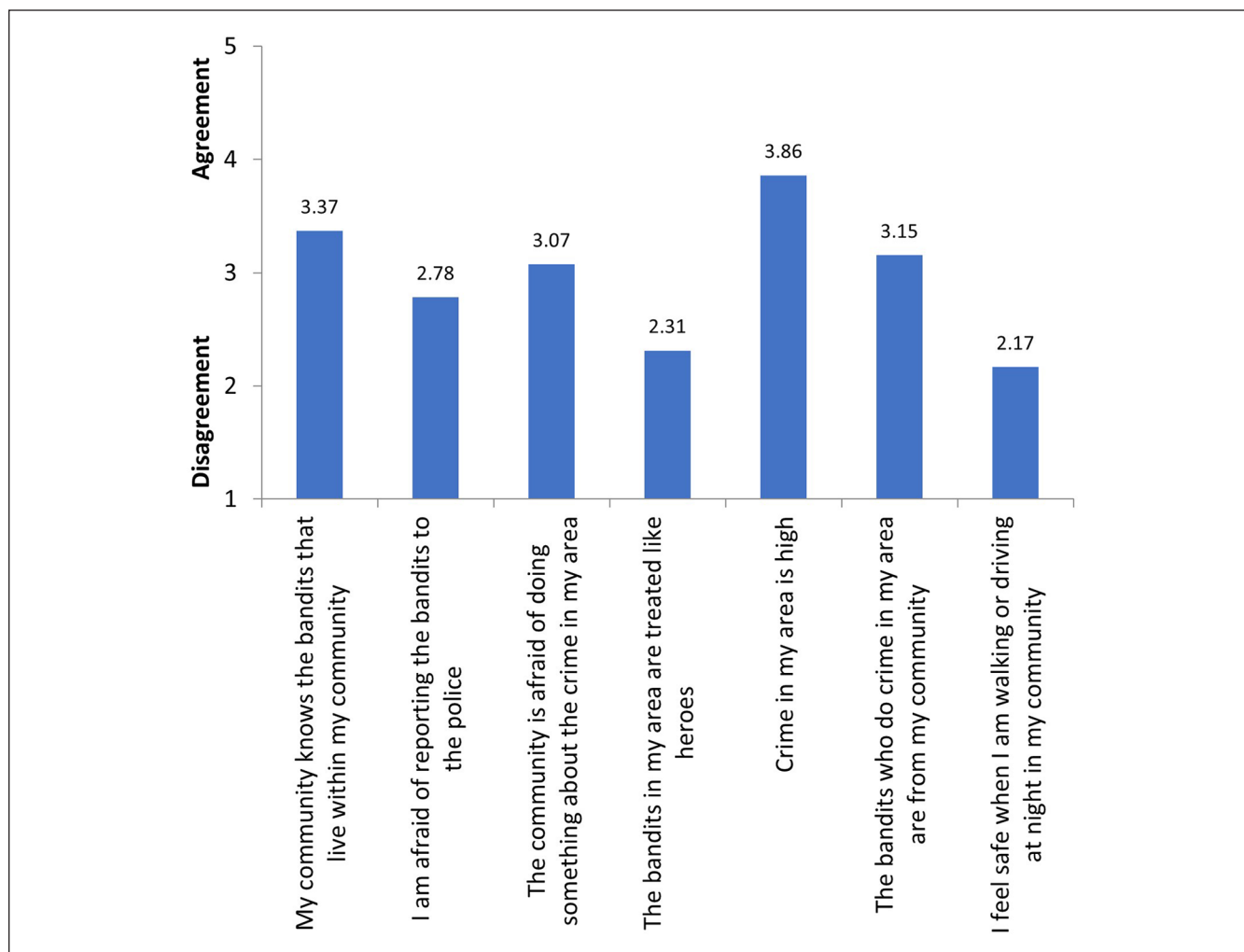


Figure 2. Actions taken when a crime is witnessed in the community.



**Figure 3.** Bandits who reside within the community: Mean total responses.

vandalized in their area,  $P < .0005$ . A significant 67% of participants indicated that they have not seen or heard of EMTs' being robbed in their area,  $P < .0005$ . Lastly a significant 86% indicated that they have seen or heard of someone who was robbed or killed in their area,  $P < .0005$ .

For the study of safety of ambulance workers, there was neither significant agreement nor disagreement that EMTs' are safe when working within the Gauteng Province communities at night ( $M=2.96$ ,  $SD=1.243$ ),  $t(3)=-0.680$ ,  $P=.497$ . There was also significant disagreement that EMTs' are safe when working within the Gauteng Province communities during protests ( $M=2.47$ ,  $SD=1.195$ ),  $t(3)=-8.857$ ,  $P < .0005$ . Furthermore, there was significant agreement that Gauteng Province community members respect EMTs' ( $M=3.52$ ,  $SD=1.097$ ),  $t(3)=9.571$ ,  $P < .0005$  and protect them when necessary ( $M=3.26$ ,  $SD=1.060$ ),  $t(3)=4.967$ ,  $P < .0005$ . However, there is significant agreement that bandits see EMTs' as easy targets ( $M=3.26$ ,  $SD=1.249$ ),  $t(3)=4.224$ ,  $P < .0005$ .

## Discussion

South African EMTs' experience workplace violence in the form of verbal and physical assault, sexual assault, robbery with aggravated circumstance, shootings and stabbings. In Gauteng, most of the incidents of workplace violence occurred in low- and middle-income communities such as townships and informal settlements.<sup>24,25</sup> Predictably, according to the results of this study, residents of these low- and middle-income communities experience high crime rates and have witnessed or heard of incidents of serious and violent crimes such as murder, aggravated robbery and high jacking occurring within their very communities. These low- and middle-income areas have a high prevalence of low medical scheme membership, high rates of unemployment, with many households redistributing household income to sustain basic household needs as a result of increasing inflation.<sup>13</sup>

Furthermore, the results show that low to middle income communities in Gauteng are plagued with service delivery protests. Since the dawn of democracy in 1994, South Africa

has been experiencing a surge in service delivery protests. The results also show that ambulances responding to communities with service delivery protests are not safe. In addition, there has been a notable increase in the intensity of violence and destruction of service delivery protests.<sup>26</sup> The service delivery protests are attributed to governments inability to deliver basic services, access to services, rising unemployment, poverty, growing corruption and marginalization of low-income communities such as informal settlements and townships. Furthermore, the destruction of government infrastructure such as ambulances during protests is seen as a means to get authorities' attention, however it only increases the backlogs in existing infrastructure and has a negative impact on service delivery thereby creating a vicious cycle of service delivery protests.<sup>26,27</sup> It is also important to note that Gauteng Province as South Africa's financial hub has an ever-increasing total population and this contributes to service delivery constraints at a local government level and this is further corroborated by persistent service delivery protests.<sup>28,29</sup> The results showed that ambulances are always late. Similarly, Alharthy et al's study also found that delayed response time is a risk factor for workplace violence.<sup>30</sup> However, it is also an indication that there are inadequate public service ambulances to meet the needs of an ever-increasing population in Gauteng, which therefore results in frequent delayed response times which contributes to the vicious cycle of service delivery protests.

The results of this study also show that low to middle income communities are aware of the EMC profession however they have limited knowledge. A study by Pariona-Cabrera, Cavanagh and Bartram indicates that the lack of knowledge about healthcare services and healthcare professions amongst patients and their relatives aggravates the risk of workplace violence toward healthcare providers in instances where they feel that the level of care provided by healthcare providers does not meet their expectations.<sup>31</sup>

Although majority of reported incidents of workplace violence occurs in these communities, results show that community members have not seen or heard of ambulances being robbed or vandalized within their communities.<sup>26</sup> This may also be attributed to a lack of knowledge about the EMC profession within these communities and a lack of interest about phenomenon of workplace violence toward public service EMTs' and how it affects them. Interestingly, the results show that community members respect EMTs' and protect them where necessary. This may be due to community members generally intervening when they witness crime within the communities by calling the police and assisting victims. This may be an indication that workplace violence toward public service EMTs' occurs in areas where there are little or no witnesses such secluded areas, in the dark of night or during poor visibility. Furthermore, it may therefore be concluded that EMTs' are not safe when working at night, although results showed uncertainty to whether EMTs' were safe at night in the communities.

The findings also reveal that EMTs' are seen as easy targets. EMTs' are at high risk of workplace violence due to having high-value items such as expensive medical equipment and having to work in isolated environments.<sup>5</sup> The current laws do not permit the use of weapons by EMTs' for protection therefore their employer is not legally liable for employees' actions including training and unintended consequences as a result thereof.<sup>5,32</sup> Furthermore, unlike law enforcement officials who are seen as having the authority to maintain law and order, wear a uniform and carry a badge, while their actions and decisions are protected by the law and their organization, EMTs' are seen as humanitarian within the communities.<sup>32</sup>

The results were indecisive on whether community members are afraid of doing something about crime within their communities. They also revealed that perpetrators of crime are known by their communities, however, communities turn a blind eye. These findings show a broken window in the communities of Gauteng Province and assert the Broken Windows Theory of Criminal Behaviour. Besides, the results demonstrate the fact that crime flourishes in communities where disorderly behavior is ignored.<sup>33</sup> Undoubtedly, they show a broken window according to the Broken Windows Theory of Criminal Behaviour, which indicates that workplace violence thrives in Gauteng Province because disorderly behaviors such as service delivery protests are ignored and therefore tolerated, and also shows that the community turns a blind eye to crime. Consequently, this has created conditions where perpetrators continue criminal activities because they know that they encounter minimal resistance and there are minimal chances of being arrested.<sup>34</sup>

Unquestionably, the results of this study amplify the vast literature which attributes widespread violence in post-democratic South Africa to poverty, unemployment, a patriarchal societal ideology that includes alcohol abuse, increasing competition for resources as a result of high inflow of migrants, substance abuse, ethnic and social classing, high rate of human immune deficiency syndrome orphans, single parenting, ease of access to firearms and income inequality.<sup>29,35-38</sup>

The limitation of this study is that it only investigated the factors that predispose public service EMTs' to workplace violence within Gauteng communities. South Africa currently has a 2-tier health system which consists of public and private funded healthcare, with private sector EMTs' also experiencing workplace violence.

## Conclusion

According to the results, workplace violence toward public service EMTs' in Gauteng is attributed to the high rates of crime in Gauteng, poverty, unemployment, the widening gap of inequality, social exclusion, peer pressure, economic deprivation of basic rights to previously disadvantaged communities by government, EMTs' seen as easy targets who are

in possession of high value items and a lack of consequence for disorderly behavior within the communities. Incidents of workplace violence toward EMTs' in Gauteng are more likely to occur in low to middle income, previously disadvantaged and marginalized communities such as townships and informal settlements.

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### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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### Ethics and Consent

The ethical considerations in this study were addressed using the following four principles, namely autonomy, beneficence and maleficence and justice (Beauchamp and Childress 1979):

a. *Autonomy*: Every individual has the right to make their own choice and decision. This principle forms the foundation of informed consent (Beauchamp and Childress 1979; Levitt 2014). To adopt the principle of autonomy in this study, all participants were given a letter of information beforehand to obtain informed consent. An isiZulu translated letter of information and consent was provided for participants (Community cohort) who cannot read or write in English. IsiZulu was selected according to census data, which suggests that the majority of Gauteng Province residents speak isiZulu (Stats SA 2017a). All participants were informed about the nature, conduct, risks and benefits of this study. Participation was voluntary, and participants could withdraw at any time (World Medical Association 2001).

b. *Beneficence and maleficence*: The principle of beneficence obligates the researcher to act with the best interest of others in mind, be of benefit and take steps to prevent harm to the participants. Maleficence is related to beneficence and means minimizing or avoiding risk or harm (Beauchamp and Childress 1979; Levitt 2014). To address beneficence and maleficence ethical approval was sought and granted by the Durban University of Technology (DUT) Institutional Research Ethics Committee (IREC) (IREC 096/19). No gatekeeper permission was sought from members of the community as the research was conducted in public spaces, therefore exempted from gatekeeper permission (Singh and Wassenaar 2016). In addition, all participants were given a letter of information and were informed about the nature, conduct, risks and benefits of this study before they could participate in this study. Furthermore, the data collecting questionnaires were kept confidential by the researcher and locked in a safe box. The information contained was only used for this study and to add value and insight

on preventing workplace violence toward public service PECPs working at GEMS.

c. *Justice*: This principle alludes to the right to fairness and equality of participants (Polit and Beck 2012; Beauchamp and Childress 1979; Levitt 2014). To address the principle of justice, all participants were selected based on the study's inclusion and exclusion criteria. In addition, participation was voluntary, participants were treated the same, asked the same questions and their contributions were regarded as being of equal significance within their respective cohorts.

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### Supplemental Material

Supplemental material for this article is available online.

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