

# Community assault and non-community assault among adults in Khayelitsha: A case count and comparison of injury severity

Sheron Forgus<sup>1</sup>, Wim Delva<sup>2,3</sup>, Christine Hauptfleisch<sup>1</sup>, Sriniv Govender<sup>1</sup>, Julia Blitz<sup>1</sup>

1: Division of Family Medicine and Primary Care, Faculty of Medicine and Health Sciences, Stellenbosch University, Francie van Zijl Dr, Parow, 7500, South Africa

2: The South African Department of Science and Technology / National Research Foundation (DST/NRF) Centre of Excellence in Epidemiological Modelling and Analysis (SACEMA), Stellenbosch University, 19 Jonkershoek Road, Stellenbosch 7600, South Africa

3: International Centre for Reproductive Health, Ghent University, De Pintelaan 185, 9000 Gent, Belgium

Correspondence: [sforgus@gmail.com](mailto:sforgus@gmail.com)

Key words: community assault, injury severity score, South Africa

## **ABSTRACT**

**Background:** Community Assault (CA) or vigilantism is rife in the township of Khayelitsha. Anecdotal evidence suggests that victims of CA are worse off than other assault cases. However, scientific data on the rate and severity of CA cases is lacking for South Africa.

**Aims and Objectives:** To contribute to CA prevention and management strategies, by estimating the rate of CA among adults in Khayelitsha and comparing the injury severity and survival probability between cases of CA and other assault (non-CA) cases.

**Methods:** We studied 4 health centres in Khayelitsha during July - December 2012. A consecutive case-series was conducted to capture all CA cases during this period and a retrospective folder review was performed on all cases of CA as well as on a control group of non-CA cases to compare injury severity and estimate survival probability.

**Results:** One hundred and forty-eight adult cases of CA occurred (case rate 1.1/1000 person-years) over the study period. The Injury Severity Scores (ISS) in the CA group were significantly higher than in the non-CA group ( $P < 0.001$ ), with a median (Inter Quartile Range) ISS of 3 in CA cases (2-6) and 1 in non-CA cases (1-2). Comparison between the two groups showed that a GCS < 15 (20.1% versus 5.4%), referral to the tertiary hospital (33.8% versus 22.6%), and crush syndrome (25.7% versus 0%) were all more common in CA cases. Survival probabilities were similar in both groups: 99.2% in the CA group versus 99.3% in the non-CA group.

**Conclusion:** The rate of CA among adults in Khayelitsha is high, and the severity of injuries sustained by CA victims is substantially higher than in other assault cases.

## **INTRODUCTION**

The rapid and uncontrolled urbanisation in the black population of South Africa in the mid 1990s was associated with deteriorating conditions in urban and peri-urban slums and increasing levels of violence.<sup>[1]</sup> Although the crime rates have since been decreasing steadily, South Africa still has among the highest burdens of interpersonal violence injury in the world.<sup>[2]</sup> Since many of the poorer, black, rural or urban informal settlements within South Africa are poorly designed without proper roads, streetlights or maintained pathways, state police are often loathe or afraid to patrol such areas.<sup>[3]</sup> The legacy of apartheid has also left a deep mistrust of the police as public order policing under this regime was often associated with the use of force.<sup>[4]</sup> As a result, communities have sought out alternative means of establishing law and order and implementing justice by taking the law into their own hands and meting out punishment using violence. This phenomenon, globally referred to as vigilantism, is not unique to developing countries.<sup>[5]</sup> In South Africa, the terms community assault, community justice, people's courts and kangaroo courts are used.<sup>[6]</sup> These appear to have its origins in traditional African principles of restorative justice or 'lekgotla'.<sup>[7]</sup> In this paper, the term community assault will be used, as this is the name most often used in emergency units in South Africa.

Media reports seem to imply that this form of community initiated policing is rife within the townships of South Africa.<sup>[8]</sup> Community assault has often been observed to involve the use of 'sjamboks' - a robust whip traditionally made from hippopotamus or rhinoceros hide.<sup>[9]</sup> The blunt forces produced by these sjamboks inflict extensive soft tissue trauma and crush syndrome.<sup>[10]</sup> Anecdotal evidence suggests that victims of community assault are more severely injured than their non-community assault counterparts.

Due to the lack of any formal evaluation of the frequency and severity of community assaults, the burden of this phenomenon on the South African health care system is unknown. To this end, we conducted a consecutive case-series of community assault and non-community assault cases at four state health facilities in Khayelitsha, a partially informal township in the Western Cape, to estimate the rate of community assault cases and compare their severity with non-community assaults.

## **METHODS**

### **Study Sites and Study Population**

Study sites comprised all state health facilities in Khayelitsha with emergency care (three provincial government clinics and one district hospital). The study population consisted of adult victims of community assault and a comparator group. The victims of community assault were either self-identified or identified as such by their escorts (family members, police officers or ambulance personnel). The comparator group was non-community assaults, defined as any other victim of assault where the patient neither identified themselves nor were identified by any other person as being victims of community assault.

### **Data collection**

Emergency unit registries were used to identify cases and data were collected retrospectively by folder review for both study groups. Based on informed guesses of the incidence of community assault and non-community assault, it was decided that data for the community assault group would be collected over a period of six months, from 1 July to 31 December

2012 while data for the non-community assault group would be collected over a period of 8 days from 1 to 8 July 2012.

### **Variables**

A number of binary indicators were used to assess injury severity. These included the Glasgow Coma Scale (GCS), presence of crush syndrome, whether or not cases required intubation, and the necessity for referral to a higher level of care. Crush syndrome was defined as rhabdomyolysis (evidence of skeletal muscle injury) with documented elevated creatine kinase level more than three times the upper limit of normal (>1000 U/l).<sup>[11]</sup> Referral occurred either from the clinics to the district hospital for admission or imaging (x-rays after hours) or from district to tertiary level for advanced imaging, specialist opinion, surgery or intensive care if intubated and ventilated.

Each case was also given an Injury Severity Score (ISS). The ISS, though not commonly used in South Africa, is widely used internationally and has become an integral part of all trauma registry-based severity assessment tools. The ISS is based on an anatomical scoring system (the Abbreviated Injury Score or AIS 2005), which codes the body into nine different body regions and assigns each injury one of six severity scores (AIS scores).<sup>[12]</sup> The ISS (ranging from 1 to 75) is then calculated by taking the sum of the squares of the highest AIS scores in each of the three most severely affected body regions. Lastly, the probability of survival (Ps) was calculated using the TARN Outcome Prediction Model, based on the ISS, age, gender and GCS of the patient and whether or not the patient was intubated.<sup>[13]</sup>

### **Data management and statistical analysis**

Data were entered into Epi Info 7 by a research assistant and systematically checked by the principal investigator. To estimate the rate of community assault and non community assault, the number of cases was divided by the product of the estimated adult population aged 18 or older in Khayelitsha,<sup>[14]</sup> and the period over which the cases were observed. To compare severity of injuries, the frequencies and percentages of the binary severity indicators were tabulated and visualised, and risk ratios (RR) with surrounding confidence intervals (CI) and associated P-values were computed. Further, the median and interquartile range (IQR) of the ISS and the average survival probability were calculated for both groups. Formal comparison of the distribution of the ISS was done using a Mann–Whitney U test, while the average survival probabilities were compared in a Student t-test. All statistical analyses were performed using R.<sup>[15]</sup>

### **Ethical approval**

This study received ethical approval of the Stellenbosch University Health Research Ethics Committee (N11/07/212).

## **RESULTS**

In the first eight days of July 2012, 115 cases of non-community assault were recorded, and over the entire second half of 2012, data from a total of 148 community assault cases were extracted. The age of community assault cases ranged from 18 to 61 (median 24; IQR 21-30). In the non-community assault group, ages ranged from 18 to 57 (median 25.5; IQR 22-33.5).

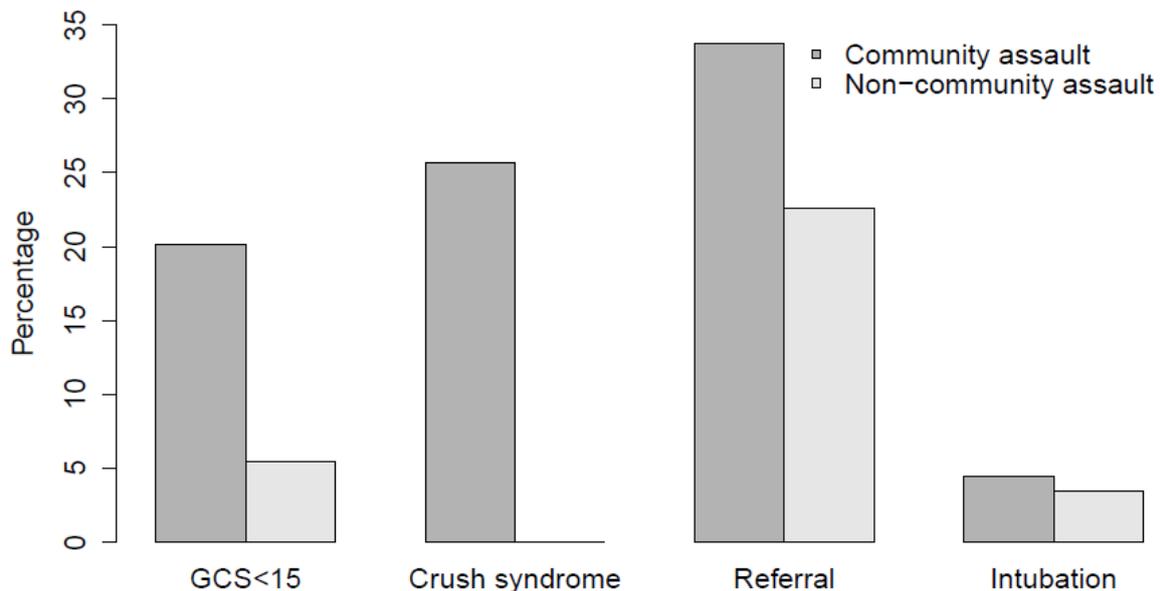
A minority of all assault cases were female: 27/115 in the non-community assault group (23.5%) and 2/148 in the community assault group (1.4%);  $P < 0.001$  (Fisher's exact test).

### **Rate of assault cases**

Based on an estimate population of 275 300 adults of 18 years or older in Khayelitsha, the rate of adult cases of community assault that received health care in Khayelitsha was 1.1/1000 person-years. For non-community assault, the estimated rate was 19/1000 person-years.

### **Injury Severity Indicators**

All binary injury severity indicators were more prevalent among community assault cases compared to their non-community assault counterparts (Figure 1).



**Figure 1. Binary injury severity indicators in Community Assault (CA) and non-Community Assault (Non-CA) cases.**

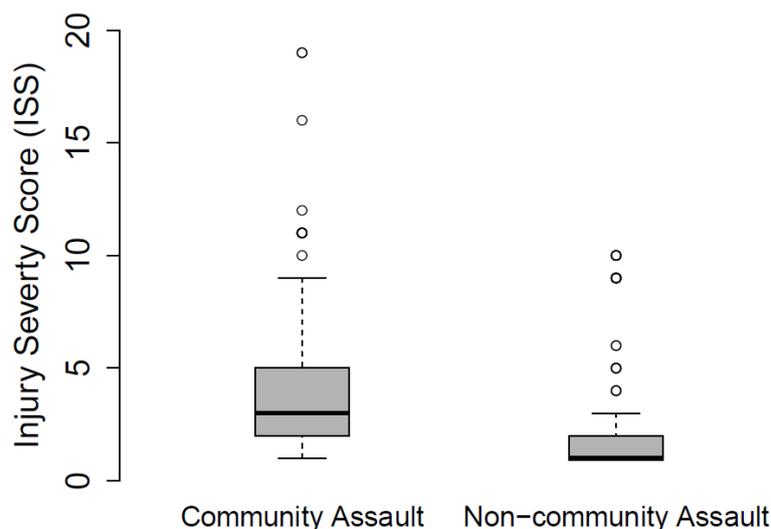
The majority of cases in both groups had a GCS of 15. However, in the community assault group, 20.1% (29/144) had a GCS below 15, while this was true for only 5.4% (6/111) of the non-community assault group (RR: 3.73; 95% CI: 1.60 – 8.66;  $P < 0.001$ ). In the community assault group, 25.7% (38/148) had crush syndrome while in the non-community assault group, nobody had crush syndrome. One third of cases (50/148) in the community assault group were referred for further investigations and management, while 22.6% of cases (26/115) in the non-community assault group were referred (RR: 1.49; 95% CI: 1.00 – 2.24;  $P = 0.055$ ). In the community assault group, 4.7% of cases (7/148) were intubated, compared to 3.5% (4/115) in the non-community assault group (RR: 1.36; 95% CI: 0.41 – 4.53;  $P = 0.76$ ). This information is also tabulated below (Table 1).

**Table 1. Comparison of binary injury severity indicators in Community Assault (CA) and non-Community Assault (Non-CA) cases.**

	Community assault % (n=148)	Non-community assault % (n= 115)	RR	CI	p
<b>GCS &lt; 15</b>	20.1	5.4	3.73	1.60 – 8.66	<0.001
<b>Crush syndrome</b>	25.7	0	NA	NA	NA
<b>Referral</b>	33.7	22.6	1.49	1.00 – 2.24	0.055
<b>Intubation</b>	4.7	3.5	1.36	0.41 – 4.53	0.76

**Injury Severity Score (ISS) and survival probability**

The ISS ranged from 1 to 19 in community assault group and from 1 to 10 in the non-community assault group. The median and inter quartile range ISS was 3 (2-5) and 1 (1-2) for the respective groups (Figure 2). This difference in the ISS distribution between the groups was highly significant ( $P < 0.001$ ); Mann–Whitney U test). The average survival probabilities were very similar in both groups: 99.2% in the community assault group versus 99.3% in non-community assault group ( $P = 0.66$ ; Student t- test).



**Figure 2. Injury severity scores in CA and non-CA cases.**

## **DISCUSSION**

A significantly higher proportion of community assault patients had a GCS<15, developed crush syndrome and were referred (borderline significant) while there was no significant difference in the proportion of patients that were intubated between the community assault and non-community assault groups. Significantly higher injury severity scores were observed in the community assault group than in the non-community assault group, but survival probabilities were similar between the two groups.

This study had a few limitations. Most importantly, the severity of at least some of the referred cases was underestimated. The AIS coding rules and guidelines require that injuries be substantiated by some form of diagnostic or radiographic procedure, surgery or autopsy in order to be assigned an AIS code.<sup>[12]</sup> This resulted in conservative coding of the injuries of those referred to another facility for these procedures, as the researchers did not have access to clinical data after referral. As a result, a lower ISS was calculated for these cases which in turn also influenced the survival probability estimates. Furthermore, 9 cases in the community assault group had sustained head injuries severe enough to render them unconscious or of a sufficiently low enough GCS that they were unable to identify themselves or provide a date of birth. Consequently, these cases were excluded from the study, based on the inability to classify them as being over the age of 18 years. Victims of community assault often hide in the bush for hours after the assault and lack the community support necessary to seek medical attention.<sup>[9]</sup> As a result, this study did not include those cases of community assault who die prior to or do not seek medical attention in the incidence calculations.

Despite these limitations, we believe our study is an important contribution to research on violence induced injuries in South Africa. To our knowledge, our study is the first ever to provide objective estimates of the incidence and severity of community assault cases. While the Cape Town Trauma Registry Pilot study and the National Injury Mortality Surveillance System offer insight into the magnitude and characteristics of violence with regards to homicide, violence against women and children, traffic-related and other unintentional injuries,<sup>[16]</sup> they do not allow for the sub categorization of community assaults as a form of interpersonal violence in South Africa.

Vigilantism is a complex phenomenon for which there is no quick fix solution. Emergency medical care only addresses the symptoms, but not the root causes of this social disease. This does not mean, however, that health care providers do not have a crucial, pro-active role to play in the development and implementation of strategies to improve prevention and management of community assault. Just as for other victims of trauma, the presentation for victims of community assault within these informal settlements is to the local clinic or district hospital. This, combined with the traditional African approach to problem solving, makes community assault a foremost primary and district level health care issue.

Intersectoral collaborations between family physicians, community elders, community forums, the police and policy makers are required to develop and implement various solutions. Strategies include promoting community cohesion and equity, and improving community-police relations.<sup>[4]</sup> The former strategy can reduce the threshold for everyday violent behaviour.<sup>[2]</sup> Healthy community-police relations are essential to reach a balance where the law is protected, while simultaneously allowing the community to organise and protect themselves. This will mean disbanding those vigilante groups who violate human rights while allowing the police to supervise those activities which operate within the law.<sup>[4]</sup>

This allows a niche for the African tradition in the form of restorative justice to co-exist with the current criminal justice system.<sup>[1]</sup>

Further research is required to assess the problem of community assaults at other facilities and over longer periods of time. This will provide local data to inform resource distribution within the district health system and to focus prevention efforts on community assault hot spots. Social science research may help to improve our understanding of the psychology and sociology behind community assaults and to develop evidence led prevention strategies, the feasibility and effectiveness of which would also require study.

## **CONCLUSION**

Through systematic, multi-site recording of community assault cases, we were able to obtain objective measures of the rate and injury severity of community assault cases in a large peri-urban area near Cape Town. Our findings beg for multi-sectoral action to curb the medical and social consequences of violent crime in South Africa.

## **CONFLICTS OF INTEREST**

The authors have no conflicts of interest.

## **ACKNOWLEDGEMENTS**

We wish to acknowledge the clerical staff at Khayelitsha District Hospital (KDH), Site B, Nolungile and Michael Mapongwane Clinics in Khayelitsha. In particular we would like to thank Cwengisa Magayana for her assistance in obtaining access to the folders and electronic folder system at KDH. We are indebted to the Stellenbosch University Rural Medical Education Partnership Initiative (SURMEPI) for their support from the US President's Emergency Plan for AIDS Relief (PEPFAR) through HRSA under the terms of T84HA21652.

## **REFERENCES**

1. Gilbert L. Urban violence and health-South Africa 1995. *Soc Sci Med.* 1996;43(5):873-886. [[http://dx.doi.org/10.1016/0277-9536\(96\)00131-1](http://dx.doi.org/10.1016/0277-9536(96)00131-1)] [PMID: 8870151]
2. Norman R, Matzopoulos R, Groenewald P, Bradshaw D. The high burden of injuries in South Africa. *Bull World Health Organ.* 2007 Sep;85(9):695-702. [<http://dx.doi.org/10.2471/BLT.06.037184>] [PMID: 18026626]
3. Singh D. Resorting to community justice when state policing fails: South Africa. *Acta Criminologica.* 2005;18(3):43-50. [<https://www.ncjrs.gov/App/Publications/abstract.aspx?ID=234787>]

4. Ward C, Artz L, Berg J, et al. Violence, violence prevention, and safety: A research agenda for South Africa. *S Afr Med J* 2012 Apr;102(4):215-218. [PMID: 22464496]
5. Huggins M. *Vigilantism and the State in Modern Latin America-Essays on Extra-legal Violence*. New York: Praeger; 1991.
6. Masiloane DT. Proactive policing for the rich and reactive policing for the poor: hypocrisy in policing in a stratified society. *South African Journal of Criminal Justice* 2007;20(3):328-40.
7. Monaghan R. Community-Based Justice in Northern Ireland and South Africa. *International Criminal Justice Review* 2008;18(1):83-105. [http://dx.doi.org/10.1177/1057567708316639]
8. NBC News. 'Out of control': Vigilante justice grips impoverished South African slum, 2013. <http://worldnews.nbcnews.com/news/2013/06/30/19073793-out-of-control-vigilante-justice-grips-impoverished-south-african-slum?lite> (accessed 2 September 2013).
9. Proctor M, Carter N, Barker P. Community assault--the cost of rough justice. *S Afr Med J* 2009;99(3):160-1. [PMID: 19563091]
10. Erek E, Sever M, Serdengeçti K, et al. An overview of morbidity and mortality in patients with acute renal failure due to crush syndrome: the Marmara earthquake experience. *Nephrol Dial Transplant* 2002 Jan;17(1):33-40. [http://dx.doi.org/10.1093/ndt/17.1.33] [PMID: 11773459]
11. Rosedale K, Wood D. Traumatic Rhabdomyolysis (crush syndrome) in the rural setting. *SA Afr Med J* 2012 Jan;102(1):37-39. [PMID: 22273136]
12. Gennarelli TA, Wodzin E. AIS 2005: a contemporary injury scale. *Injury* 2006 Dec;37(12):1083-1091. [PMID: 17092503] [http://dx.doi.org/10.1016/j.injury.2006.07.009]
13. De Jongh M, Verhofstad M, Leenen L. Accuracy of different survival prediction models in a trauma population. *Br J Surg* 2010 Dec;97(12):1805-13. [http://dx.doi.org/10.1002/bjs.7216] [PMID: 20726014]
14. Statistics South Africa. *Census 2011*. Pretoria: Statistics South Africa, 2012. <https://www.statssa.gov.za/census2011/default.asp> (accessed 2 September 2013).
15. R Development Core Team. *R: A language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing, 2011. <http://www.R-project.org/> (accessed 2 September 2013).
16. Schuurman N, Cinnamon J, Matzopoulos R, Fawcett V, Nicol A, Hameed M. Collecting injury surveillance data in low- and middle-income countries: The Cape Town Trauma Registry pilot. *Global Public Health* 2011 Dec;6(8):874-889. [http://dx.doi.org/10.1080/17441692.2010.516268] [PMID: 20938854]