Educators’ Perceptions of Factors Contributing to School Violence in Alexandra
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Abstract
School violence continues to be highly prevalent in many low-income communities in South Africa. This study made use of an interpretive research paradigm to explore educators’ subjective views of school violence in Alexandra. Participants were 12 educators at selected government schools with at least 5 years teaching experience. Individual interviews were carried out to explore these educators’ experiences and subjective understandings of factors contributing to school violence. Thematic content analysis was used to report results at the individual, family, school, community and societal levels which educators perceived to play a role in school violence. At an individual and familial level, age, mental health and child rearing arose as risk factors of school violence. Educators also signalled relational concerns within the institutional and leadership structures in schools as well as tensions between staff and learners as school factors. Whereas socio-political changes in South Africa, poverty, a lack of resources and the availability of illicit substances within the community were raised as community and societal risk factors for school violence.

Keywords: ecological approach; educators, interpretive research, low-income communities; prevention; school violence

INTRODUCTION
School violence is a widespread problem in South Africa (Van der Westhuizen & Maree, 2009). Almost 1 in 4 learners, and 1 in 4 educators, have experienced violence on or near school premises (Burton, 2008). Moreover, 58.1% of educators and 85.5% of learners reported that they felt unsafe at school (Burton, 2008). With school violence becoming more commonplace, the impact on learners, educators and administrators is undoubtedly significant (Steffgren & Ewen, 2007).

Globally, there is a paucity of research on educators’ experiences of violence at schools (Burton, 2008). In South Africa, existing research suggests that educators and other school employees may be at risk of theft, verbal threats, physical injury and psychological harm (Burton, 2008). Safety concerns may even lead educators to leave the profession altogether (Nesane Nesane, 2008). However, educators are not only potential victims of school violence, but may also be perpetrators. Educators may inflict harm on learners through corporal punishment, psychological maltreatment and sexual misconduct. Interestingly, educators as a group have been relatively understudied with regard to school violence (Fisher & Kettl, 2003).

Present-day school violence in South Africa must be understood with reference to the country’s legacy of political struggle, as well as the associated economic disadvantage and social inequality (Vally, Dolombisa & Porteus, 1999). As a result, many schools still lack basic infrastructure and amenities, as well as sufficient numbers of educators (Phurutse, 2005). Schools located in low-income, violence-prone areas are particularly vulnerable to increasing rates of school violence. According to Burton (2008), a school based in a community that has “high crime rates, a neglected physical
environment and a transient population is likely to be characterised by many of the same factors, and will constantly be fighting the encroachment of these characteristics” (p. 54). Within these communities, there may be several risk factors for school violence, including the presence of gangs and drug distribution networks (Elliot, 1994). High unemployment rates, and substandard school and housing facilities may also contribute to feelings of hopelessness among youth (Miller, 2008). Violence may become an expression of the anger, frustration and alienation that young people struggle with on a daily basis (Veltkamp & Lawson, 2008). The battle for survival in environments with high levels of poverty, violence and drug abuse may also preclude parents from having an interest in school matters thus extending the roles of educators to counsellors and caregivers, and some may misuse their power in these roles (Kamper, 2008).

This article discusses educators’ views on the factors that contribute to school violence in selected secondary schools in Alexandra, near Johannesburg. Alexandra is a low-income area with poor infrastructure, overpopulation, vastly inadequate services and a multitude of social problems (Baskin, 2007). The data presented in this article are drawn from a broader study conducted by Pahad (2010) that also examined educators’ experiences of school violence, the perceived impact of school violence on educators and educators’ views on defining school violence. This study was conceptualised using ecological theory, which emphasises the role of inter-related ecological levels of influence in human development and experience (Visser, 2007). According to the World Health Organisation (WHO), there is no single causative factor for violence, and violent acts are caused by the complex interaction of differing contributing variables and experiences (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). For this reason, Krug et al.’s (2002) adaptation of the ecological model developed by Bronfenbrenner (1979) was used as the theoretical framework for this study. Bronfenbrenner (1979) identified environmental systems that frame all human transactions and influence human development: the micro-system (individual), the meso-system (familial), the exo-system (school and community), the macro-system (societal) and the chrono-system which takes into account history and time which shapes one’s development. All of these ecological levels work in an inter-related manner. Hence, “a change in one part will cause a change in other parts” (Visser, 2007, p.104).

This article focuses specifically on presenting the findings related to educators’ perceptions of factors contributing to school violence within Alexandra secondary schools, with a particular focus on learner-on-learner violence and learner-on-educator violence. The study selected a qualitative design as most existing studies on this topic have used quantitative measures (see Burton, 2008; De Wet, 2007b; Du Plessis, 2008). This has led to a gap in understanding educators’ subjective evaluations and experiences of school violence in this community. The article highlights educators’ perspectives and discusses their broader implications for violence prevention within the school environment.

METHOD
RESEARCH DESIGN
A qualitative research design was used to understand how educators make sense of their experiences of school violence. Qualitative research demands that the data collected is rich in the description of experiences (Patton, 2002). In order to focus on the “meanings that particular experiences, events and states hold for participants” (Lyons & Coyle, 2007, p. 35), an interpretive approach was used.

PARTICIPANTS
Non-probability purposive sampling was utilised to ‘handpick’ participants on the basis of predetermined characteristics determined using the judgement of the researcher (De Vos, Strydom & Delport, 2005). According to Mertens (2005) the logic and power of purposive sampling lies in the choice of information-rich cases that best represents the population for in depth study. Data was collected from educators from several government schools within Alexandra, which were designated as ‘underperforming schools’ based on their matric pass rates. Participants selected were 12 educators with at least 5 years of teaching experience, of which 5 were male and 7 were female. Participants fell within a 30-60 year age range.
DATA COLLECTION PROCEDURES
This research was conducted in accordance with the protocols and procedures specified by the University of Witwatersrand Ethics Committee, the Department of Education and the Health Professions Council of South Africa. A letter was distributed to the principals of the selected schools explaining the nature of the study and seeking their permission to approach educators to request their participation in an interview. Once permission was granted from the relevant authorities, interested individuals were given an opportunity to volunteer to participate in the study. Convenient times and places for the interviews were then arranged with the participants. Interviews were conducted on the school premises, at the participant’s home or a quiet place outdoors. One-hour individual semi-structured interviews were conducted with participants once informed consent and consent to record the interview were obtained.

Semi-structured interviewing is known for its capacity to gather a rich body of information through its flexible structure and interactive nature, which permit the interviewer to probe interesting points that arise, as well as track the participants’ interests and concerns (Lyons & Coyle, 2007). Questions were devised to tap educators’ understandings of school violence and their opinions on school violence more generally, as well as violence against educators. They also addressed the educators’ own experiences and accounts of school violence, their descriptions of incidents of school violence, their perceptions of factors associated with increasing the likelihood of school violence and their opinions about how school violence had affected them. Interview data was audio-recorded to ensure accuracy and then transcribed in preparation for the process of data analysis.

DATA ANALYSIS
This study explores salient themes that emerged from the data using the method of thematic content analysis (TCA) described by Braun and Clarke (2006) to generate a concise, coherent, logical account of the participants’ experiences through the development of themes and subthemes in the data. TCA usefully summarises key themes of a large body of data to offer a ‘thick’ description of its similarities and differences (Terre Blanche, Durrheim, & Kelly, 2006). The first phase of data analysis described by Braun and Clarke (2006) is the process of becoming familiar with the data through the process of reading and re-reading of the research transcripts. This is followed by the creation of initial codes reflecting potential patterns in the data (Braun & Clarke, 2006). Within this approach, codes are then sorted into broader themes. These themes were generated by the first author and then checked by the second author. Themes and sub-themes are then reviewed and refined, with a view to being organised and then reported according to the research questions (Braun & Clarke, 2006). In using the data to build concepts related to understanding school violence, the research undertook elements of an inductive coding process (Merriam, 2002). However, the coding was also guided by deductively using a social ecological framework to organise the data.

RESULTS AND DISCUSSION
The participants viewed school violence as a result of several points of ‘damage’ in the system, in which individual factors, familial factors, school factors, community factors and societal factors are inter-related influences. This section discusses educators’ perceptions of factors identified at each ecological level that they perceived to contribute to school violence. Educators expressed their views about factors that contributed to various types of school violence, including the perpetration of learner-on-learner and learner-on-educator violence.

INDIVIDUAL FACTORS
Krug et al. (2002) regard individual level causes of school violence as the “biological and personal history factors that an individual brings to his or her behaviour” (p. 12). Age, gender, attitude, mental health and substance abuse emerged as
individual factors that participants in the present study perceived to increase the likelihood of being a victim or perpetrator of school violence. There was consensus that violence within the school context was most often perpetrated by males. Particularly boys. With girls I’d never, I’d never [sic] experienced any violence (Participant 8)

Many participants viewed age as a risk factor for the perpetration of school violence among learners, and this risk was mostly associated with younger learners, or learners in lower grades.

And if I may tell you, violent learners are learners from Grade 8 to Grade 9. From Grade 10, 11 and 12, yes very few learners are violent. (Participant 8)

Swart and Stevens (2002) similarly found that most reported incidents of school violence in the secondary schools they studied involved learners in Grades 8 and 9.

Age differentials between learners were another factor perceived by the participants in the present study as contributing to school violence. One educator explained that age differentials contributed to school violence because having learners of various ages in one class often made it more difficult to exercise control in the classroom. This was seen as a risk factor for both learner-on-learner violence and violence directed by learners towards educators.

You teach different levels in one class...sometimes I can’t control this [sic] older one...So the younger ones will take that [sic] advantage. I won’t have control of the class. (Participant 5)

In terms of learner-on-learner violence, educators identified the younger learners to be most often involved in incidents of violence. Younger learners were most often identified as being both victims and perpetrators of school violence. However, they were viewed as most likely to be victims, as they were more susceptible to physical attacks and robbery. Furlong and Morrison (2000) found certain types of aggressive behaviours to be higher among younger high school learners (such as fighting) while weapon use and substance abuse seemed to occur during the later high school years. This suggests that maturing in age changes the behaviour learners engage in, and therefore the types of violence they are likely to enact.

The participants in this research also viewed younger educators as being more likely to be victims or perpetrators of school violence. De Wet (2007a) similarly found that educators aged 30 years or younger had the highest incidence of verbal and physical learner-on-educator and educator-on-educator violence.

Another contributing factor to school violence perceived by the participants is the ‘angry’ attitude of the learner or educator. Participants expressed that frustrated and angry learners may develop the propensity for enacting violence towards learners or educators.

Maybe he or she may have been in the same grade for three years then he ended up being confused [sic], don’t know exactly why he was here [sic]...and sometimes the anger also comes in... not only is he angry over [sic] the other learners he may also be angry on [sic] teachers. (Participant 3)

Excessive or uncontrolled anger is a well-established risk factor for aggressive behaviour (Krug, et al., 2002). Several participants attributed violence by learners to be an expression of a negative attitude towards education. This attitude often left educators feeling frustrated and hopeless.

Most of the time those learners who are bullying the others have no interest in education and stuff. They don’t love education so they lack motivation... (Participant 10)
The attitude of learners was not only a contributing factor towards learner-on-learner violence, but was also seen by participants as a factor that contributed to learner-on-educator violence. The participants expressed the idea that educators were being victimised by learners through disrespect, rude behaviour, incomplete work or attributing blame for their problems to the educators. However, the behaviours depended on the individual’s attitude as some individuals would physically fight whereas others would verbally abuse others.

Mental illness among learners was another individual level factor that participants viewed as contributing to school violence.

A mental [sic] unhealthy learner is a danger to a society, not just a mentally unhealthy learner, an adult as well you know an an [sic] educator. We’ve seen, you know, fathers raping their kids. That is, that’s a a serious mental [sic] unhealthy state you know... (Participant 10)

Violence is a shortcut. When you hit someone, it just means that your mind has reached a wall. You can think anymore... So you, you, you [sic], but it also comes from the states of being mentally unhealthy, because if you if [sic] you are healthy mentally then you won’t look for shortcuts. (Participant 6)

Mental illness was perceived to be a risk factor for the perpetration of violence by both learners and educators towards various groups within the school environment. A link between substance abuse and the perpetration of school violence against learners and educators was also raised. Participants described how the use of marijuana among learners would often result in other learners being robbed to sustain the habit.

This learner do [sic] drugs but in most cases learners who do drugs, other ones who are problematic, yes they are very violent. I mean if you don’t have money to buy drugs, what is he [sic] going to do? He has to rob other learners. (Participant 8)

At the same time, attempts at disciplining learners involved in drug use have led to educators putting themselves at risk of victimisation.

[I] once felt unsafe here in school when I tried to prevent two boys when I found them smoking dagga [sic] (Participant 11)

Substance abuse among educators was also raised as a factor perceived as contributing to involvement in the perpetration school violence.

FAMILIAL FACTORS

The family has immense potential to shape an individual’s behaviour and range of experience (Gorski & Pilotto, 1993). Participants in this study linked school violence perpetrated by learners against other learners and educators alike to various familial influences, including child rearing practices, domestic violence and a lack of parental involvement in children’s lives. The participants emphasised that a lack of interest in parents rearing their children was contributing to a lack of respect for others. One participant explained parents’ lack of interest in rearing to the belief that rearing was the work of educators and the school.

We are frustrated with this violence because you know even this [sic] kids their moral behaviours [sic] it starts at home. This violence starts at home and if ever at home nothing is being done and we are waiting for the school to do something we won’t end it [sic]. Because you know education starts at home. (Participant 5)

According to Krug et al. (2002) there is a strong link between violence in adolescents and poor attachment between parents and children. The nature and style of the parenting model can be as significant as the child’s physical environment...
Some participants highlighted the importance of being raised with respect and discipline at home as a deterrent to violent behaviour.

It goes back to the family issue to say how are they raising the learner cause [sic] now it’s about respect, it’s about respect. (Participant 3)

The influence of parental and familial relationships in contributing to school violence perpetrated by learners was reinforced by the participants’ experiences of learners imitating the models of behaviour of their parents or family members.

The gun belongs to his uncle, he has asked him to carry the gun for him and then he must take it home (Participant 2)

Several of the participants believed that learners perpetrating violence at school were reproducing the domestic violence that they witnessed at home.

So that child he’s got he’s got anger...the father was hitting the mother yesterday. When she [sic] comes to school she [sic] doesn’t talk to us. But deep down you can see that this child is not like [sic] yesterday. (Participant 5)

Alexandra is a violent society, there’s lots of rape, there’s a lot of you know physical abuse at home... parents fighting each other. There was a learner in my class in Grade 8 who used to hit kids at the beginning of the year and I called him and I said, does you [sic], does your father hit your mother? You know he said no but then fortunately there is an educator who stays not far from the learner who knows, who knows the learner. And then the educator said the father hits the mother always you know so obviously [sic] that the learner will come to school and you know hit others (Participant 6)

Previous research has also suggested that constant exposure to violence, victimisation and criminal behaviour can predispose individuals to delinquency as well as an increased likelihood of victimisation in later life (Krug et al., 2002).

A lack of parental involvement also emerged in the participants’ views of familial factors contributing to school violence. Participants suggested that parents do not care about their child’s behaviour until their child has been involved in a serious incident.

The school violence begins at home I would say. It’s the parent...they won’t even come to school, they don’t attend parents meetings. They do not come to school when they are summoned if [sic] child does something drastically wrong. (Participant 9)

However, the unavailability of parents may be a result of work commitments or living arrangements, and many school-going children may also live in child-headed households. In contrast to the views that school violence was fuelled by a lack of parental involvement, some participants suggested that learners who were “overprotected” by their parents were more likely to carry out violence in schools as their parents were often in denial about their children.

So most of the kids... are highly protected from [sic] home. Their mothers don’t want to listen about what their kids are doing here at school [sic]...so sometimes the violence starts there because when you are here...you just say that I am going to treat you like other learners. (Participant 5)

Thus, the participants viewed both over-parenting and under-parenting as negatively impacting on learners’ development and behaviour, and exacerbating the problem of school violence.
SCHOOL FACTORS

Participants raised poor management of the school as an important factor contributing to school violence. Participants suggested that there was favouritism when principals gave credit to individuals who were perceived as being undeserving; promoted people based on their qualifications rather than their perceived ability; or promoted them on the basis of their friendships. These findings suggest a lack of trusting, mutually respectful relationships between staff at schools, and between staff and management.

Blasé and Blasé (2003) defined favouritism as a level 1 form of aggression in a model of principal mistreatment of educators, where acts are indirect and comprised of moderate aggression (such as disregarding educators' emotional and physical needs).

You find that the management favours a certain group of educators and others are not favoured. (Participant 4)

That that's when the problem comes [sic]. Maybe and then you'll find the person with totally a degree [sic]. Then he's employed because he has a degree. But now when I'm going to class, now that particular person is not able to do that. (Participant 1)

One participant recalled an incident where he was violently removed from his office without any reason by the principal, however, on enquiry, was informed that he was disliked by the principal and thus moved. As Blasé and Blasé (2003) argue, this maltreatment could be categorised as a level 2 offence, which entails direct and escalating aggression (such as sabotaging educators; making unreasonable work demands).

I was forcefully removed by the principal without any apparent reason because when I questioned her, why are you taking me out of the office? She felt that she doesn't [sic] like me therefore I was moved out of my office. (Participant 4)

Other participants also revealed that educators often fought to gain positions of power or promotions by sabotaging them, destroying their reputation or making them really unpopular. Blasé and Blasé (2003) referred to this as a level 3 mistreatment resulting in direct and severe aggression (such as lying, threatening, unfair dismissals, harassment and racism).

I think among teachers you might find that it is caused by the positions and staff, maybe if somebody feels that the principal favours the other person [sic] than me and therefore when they [sic] are interviews or there are provisional posts teacher X is preferred than [sic] teacher so and so [sic]. (Participant 2)

Contrary to this belief, a few participants felt that the school leadership structures provided educators with support when needed. This suggests possible polarisation in the relationships among staff and between staff and management.

Several participants felt there is nothing to protect the educators from school violence. Similarly other research has found that learners and educators felt alienated in schools with high levels of violence (Warner, Weist & Krulak, 1999). Participants also felt that the policies which advocate ‘condoning’ learners to the next grade, even when they are unable to cope, and the lack of involvement from the Department of Education, contributed to school violence.

Not a single one does pass [sic] they they were been [sic] pushed by the department all the time when the analysis is done the rest of the results done [sic], they say you are underachieving forgetting the other ones who we been [sic] pushing these kids through. (Participant 12)
Support, support in in the terms of um having those policies, but we talk about physical support (Participant 12)

All of the participants raised dismal earnings as a primary reason for leaving the profession. Some participants even suggested that the meagre salary was a form of violence towards educators as it made them struggle to survive. reduced their worth as educators and generally was a marker of disrespect towards them; which led to disrespect from learners.

If you could go to any teacher and ask if I were to offer you a job now, even if I can give you R8 000 or R10 000 or whatever you are paid now would you quit...he'll [sic] say yes I can quit immediately because it’s not safe, it’s not nice anymore, the monies that we are paid it’s not really enough.(Participant 2)

We need to earn and get that respect that we deserve as people that are working for people. As people that are contributing to the ethos or the community. But of late we do not really get that much. (Participant 2)

A shortage of school resources had led learners to fight over chairs in the past, a participant recalls, creating feelings of disappointment, frustration and decreased motivation in learners and educators. Many educators have chosen to leave the profession due to the lack of resources and the dramatic decrease in the performance of learners and schools (Kivilu, 2004).

Another cause for school violence is the lack of consequences for learners’ criminal behaviour when they commit acts of violence at school.

You see these kids they do things big things, just like that one that happened... these weapons they do such things it um only ends here amongst us [sic]. (Participant 12)

This lack of consequences was often a result of a misconstrued understanding of ‘ubuntu’ that led to acts of violence not being reported to the police or dealt with internally within the school or education department.

...but I take it was um, it was solved internally, never went out [sic]. (Participant 12)

We were disappointed that the learner was not expelled from the system, he was not expelled from school. He was moved from that school to the other [sic] school. (Participant 8)

However, educators were required to report the violent behaviour of learners to the police; which they felt put them at great risk of victimisation for revenge attacks.

COMMUNITY AND SOCIETAL FACTORS

Participants criticised the community for not supporting the school in its efforts against school violence. One participant accused the community of contributing to the school violence directed against educators by overlooking learners’ violent behaviour and not enforcing consequences for their actions. For example, one participant mentioned an incident where three learners had fired bullets at an educator and none of them received punishment for their behaviour.

The community tends they all turns [sic] a blind eye to those things...incident of the educator that was shot at I was very much [sic] shocked when I discovered that the parents when at the police station they wanted us to ensure that those learners are not locked in [sic]...[despite] the seriousness of the nature of the offence. (Participant 12)

One could then hypothesise that the lack of consequences or punishment would amplify school violence against educators. Inaction by the community was also found when learners bunked school and participated in substance abuse in full view of the community. This implied that the community was tacitly condoning their improper behaviour by assuming no responsibility.
You see like when a kid jumps the wall we expect those adults to help us to bring them in, when these kids do some dagga smoking we expecting [sic] the community to help us to push them to [attend] school, or to report them. (Participant 12)

The issue of poverty within the community was also raised as a contributing factor to school violence when the inaccessibility of food was presented in the views of the participants as a source for violent behaviour to occur.

Some other ones it's because of poverty. She never [sic] ate in the evening. She's not eating now. You know she is hungry. So when she sees other kids eating it affects her. (Participant 5)

De Wet’s (2007b) study corroborated the findings of the participants above with the most frequently cited community causes of school violence.

Participants also highlighted the influence of the media, the outlook of the new generation, and the history of apartheid as societal factors that play a role in school violence. They felt that the learners’ violent behaviours were often an attempt to replicate what they had seen on television. The participants viewed the media’s portrayal of violent behaviour as a way to solve problems and encouraged young people to carry weapons and utilise violence as a means of protection.

You see some other things are these movies that they see in [sic] TV. They also contribute because they want to be those people...but when they [sic] are at school sometimes she can act as if she’s in the movie hitting other learners [sic]. You see... That violence then it erupts. (Participant 5)

Most evidence to date implicates exposure to violence on television in the increased likelihood of immediate aggressive behaviour, and longer-term serious violence (Krug et al., 2002). However, in recent years local media have attempted to empower victims by exposing perpetrators of violence. However, educators perceived that this has sometimes led to the persecution of and disrespect for ordinary, innocent educators.

If a teacher has abused or touched or whatever a child at school, you know it’s so exposed...[sic] teachers we used to be well respected...but of late you know the community has the audacity of coming to chant against the teacher. (Participant 2)

Participants felt there has been a drastic ‘attitudinal’ change in learners and that this change has led to disrespect for educators and education, thereby increasing risk of school violence to educators. The negative attitude towards educators also extends to the broader community.

It has changed drastically. The kind of learners we have now, they just don’t [sic] and there’s very little learning going on in our schools. (Participant 9)

In the olden days when I still [sic] when I started teaching there was no violence...but these years it has become worse and worse and worse every day and it is not a good thing. It puts educators’ lives at risk. (Participant 8)

It was further alleged by the participants that learners were exploiting their newly gained rights to disempower educators which resulted in more educators leaving the profession.

Their respect it’s like...in this generation so [sic] they don’t differentiate between them [sic] and the educators. it’s like we are at [sic] the same age... we used to respect educators so [sic] these days it’s no more... he’ll say “educator I’ve got a right”, you’ll find out that he doesn’t understand what that right means. (Participant 3)

...these children they’ve got all the rights even if they are wrong. They’ve got all the rights. At the moment the child can...abuse me...verbally abuse. There’s no way I can go and report the child and the child cannot be chased
away from school because she [sic] has verbal [sic] abused me. But if a [sic] educator has a [sic] verbal abuse I can even be taken to court, I can even be chased [sic] away from teaching that is why it’s one of the things that make [sic] educators to [sic] go away from teaching because they are not protected. (Participant 5)

Many participants felt that the violent history of apartheid and more recent societal changes affected levels of school violence in Alexandra. Vally et al. (1999) similarly argue that the high level of violence in schools reflects a complicated combination of past history and recent stresses at an individual, school, and community level in a society.

DISCUSSION

Research over the years has shown that violence is often a result of multiple factors that are interconnected (Astor et al., 1996; Benbenishty & Astor, 2005; Krug et al., 2002). This study similarly found that several inter-related factors which were located at the different levels identified within an ecological framework contributed to the risk of school violence in Alexandra. Socio-political changes in South Africa have brought benefits in education and have presented new challenges within the education sector. The present and historical social circumstances of Alexandra present this community with many challenges that contribute to greater risk of school violence. Widespread poverty, a lack of resources and the availability of illicit substances within the community place schools in a difficult position as many of these issues filter into risk factors for school violence. Educators signalled relational concerns within the institutional and leadership structures in schools. They also highlighted tensions in the relationships between staff and learners, as well as difficulty in the management of school-parent and school-community relationships. Moreover, a lack of human and material resources to effectively manage these challenges was raised. The perspectives of educators in the study also foreground the idea of how power and power imbalances within society and communities are interconnected with power relations within schools, and manifest in the relationships between different role players in the familial, educational and community spheres. Institutions, laws and ideologies are structures or mechanisms through which power is exercised in individuals who are able to exercise power over others (Foucault, 1982). Thus, the findings highlight the ways in which power inequalities in societies more broadly manifest in power struggles within different groups in communities, which in turn affect and are exercised within schools, and in turn affect families and individuals. The findings also point to the uses and abuses of power within relationships located at different levels of an ecological perspective on school violence and the role of the school as an institution through which power relations operate. They also highlight how frustrated power relations set the scene for the exacerbation of factors that may create conditions of risk for school violence. Disparities in power may expand or constrain the real-life choices and opportunities available to individuals, schools or communities in Alexandra, which may place them at risk for violence to be used as a means of expression of frustration, as a mechanism for trying to assert dominance or as a way to act on the actions of others.

This is a valuable finding as it not only provides some clarity on the factors that contribute to school violence, but also offers insights from educators about how they experience this violence first hand. Educators’ views on the factors that contribute to school violence seem to be consistent with Bronfenbrenner (1979) who acknowledges the influence of the wider environment, societal ideologies and structures on human behaviour. Likewise, an inability to manage individual factors or intervene in family challenges often contributes to situations, which spill over into the school context and create strained relationships and power stand-offs between learners, parents, educators and the broader community.

Based on this study, it is recommended that more research on school violence in South Africa be conducted with particular focus on a community, school or issue. An important relationship that should be explored is the interpersonal relationship between educators and learners. As indicated by the ecological model, this relationship is crucial in the prevention of school violence and warrants further research, especially in South Africa. A better understanding of the
The educator-learner relationship can have a tremendous impact on both learners and educators. In addition, regular studies on the effectiveness of interventions, policies and administration of schools and the education system should be addressed so as to ascertain what is working and modify that which is not.

**PREVENTION IMPLICATIONS**

This study highlights that school violence needs to be addressed holistically, through interventions to target risk factors at different ecological levels. At an individual level, the gender of learners, learners in the lower grades and age differentials in classes were found to contribute to violent incidents in schools. In fact, the lower grade learners were reported as frequently involved in school violence. As a result, early intervention at younger levels for learners is suggested, preferably, by means of screening for learning difficulties and mental disorders (such as depression), and providing extra support for lower grades. Younger, more inexperienced educators also need support in managing difficult situations that could escalate into incidents of school violence. The problem of substance abuse also needs to be addressed at the level of the individual, but also in terms of the home, school and community influences.

The importance of healthy parenting styles and parental involvement were found to be crucial, at the familial level, in preventing acts of violence perpetrated by learners. Thus, by identifying at-risk individuals (learners and parents), support can be provided through after school programmes, parent support groups and new parenting workshops. These interventions should be targeted at strengthening the relationships between parents and schools to ensure that these are mutually supportive and not adversarial.

At the school level, there were several difficulties related to school management, as well as the relationships between schools and the Department of Education and between school principals and staff that have emerged as areas where intervention is required. Stable management structures need to be developed with education contexts, as well as the development of forums to create better communication between schools and the Department of Education on policy implementation, monitoring and evaluation. However, before this can happen, more research on effective violence prevention and reporting processes need to begin.

At a community level, the lack of support and social circumstances of the community (poverty and crime) were found to increase school violence. To address this, school activities (such as a food gardens, job creation efforts and skills development) are needed to enrich the community while building a connection between the community and the school. With regard to the societal influence, this study found that educators felt that disrespect from the new generation of learners due to their misunderstanding of their newly gained rights along with constant exposure to violence through the media definitely played a role in the risk of violent behaviour at school. Alongside this the violent history of Apartheid has implied that the use of violence as a means to find solutions is an acceptable practice. Consequently, there needs to be a re-examining of existing policies; the areas not being addressed or difficulties in policy implementation. A shift in thinking also needs to occur through consciousness raising campaigns, projects and programmes around violence, rights and education.
REFERENCES


Young Black Men’s Risk to Firearm Homicide in Night Time
Johannesburg, South Africa: a Retrospective Analysis based on the
National Injury Mortality Surveillance System

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Abstract

Based on data from the South African National Injury Mortality Surveillance System (NIMSS), an epidemiological surveillance system of fatal injuries, this article reports on a retrospective analysis of the data on homicide in Johannesburg, South Africa. In South Africa, as is the case in other African countries, the collection of comprehensive, quality injury data, on which inferential analyses can be conducted, remains a challenge. As such, the analysis here was drawn from the NIMSS for homicides in Johannesburg for the years 2001 to 2005, as this period offered one the most complete datasets for homicide for the city. Focusing on the 5153 night time homicide victims, a binary logistic regression model was utilised to identify the likelihood of specific risk factors occurring in certain groups of people and contexts. The results illustrate that sex, race and time at night are particularly important risk factors for night time firearm homicide and the most at-risk population for night time homicide is urbanised young black men. The article concludes with a discussion of implications the results might have for preventative efforts, calling for programming targeted at young black men. Limitations of the investigation are noted.

Keywords: firearm, homicide, Johannesburg, interpersonal violence, night time, South Africa, young black males

INTRODUCTION

Reports indicate that acts of violence claims more than 1.6 million lives globally every year (Matzopoulos, Bowman, Butchart & Mercy, 2008a). Violence here is taken to refer to “the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal-development or deprivation” (World Health Organisation (WHO), 1996, p.2-3). This definition covers a broad range of possible circumstances of which homicide or murder is only one. In addition to the latter, there are different types of fatal and nonfatal violence including self-directed, interpersonal and collective violence. Over 90% of these reported violent deaths occur in low- and middle-income countries (LMICs) such as South Africa. Global burden of disease estimates indicate that 31% of violent deaths in 2000 and 34% of violent deaths in 2001 were a result of homicide. Homicide rates were highest in developing countries which included those in sub-Saharan African (Rosenberg et al., 2006). Homicide is defined as “injuries inflicted by another person with intent to injure or kill by any means” (International Classification of Disease Manual, 1980, p.1042), and accordingly, culpable homicide is excluded from this definition.

Seedat and colleagues indicate that South Africa had an estimated 59 935 injury-related deaths in 2000 (157.8/100 000 population), with approximately half of these fatalities caused by interpersonal violence, “four and a half times the proportion worldwide” (2009, p.68). Estimates are that around 1.75 million South Africans every year seek medical attention for non-fatal injuries associated with violence (Seedat et al., 2009). Currently, “violence is the second leading cause of premature death” in South Africa (Doolan, Ehrlich & Myer, 2007, p.1) with firearms having been estimated to account for 54% of homicides in the year 2000 and these homicides tended to increase substantially at night time.

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In view of such figures, Norman, Matzopoulos, Groenewald and Bradshaw (2007, p697) argue that South Africa’s homicide rate places the country “among the most violent countries in the world” despite reported decreases in recent years. These figures call for a strengthening in both research and prevention interventions as they relate to violence, particularly homicidal violence, and its tendency to be linked to both firearms and night time.

Researchers have indicated that the costs of violence are high, affecting the law enforcement and health care systems as well as the economy and social capital (Rosenberg et al., 2006). These costs, be they financial, political or emotional, severely impact all levels of the ecological system. Over and above the impact on families and relationships, violence undercuts a nation, community or neighbourhood’s socioeconomic development and cohesion. Even then, “international recognition of and assistance for injury control efforts are well below the levels directed at other health problems, particularly in developing countries” (Norman et al., 2007, p.695). It is therefore crucial that effective and contextually appropriate interventions are developed to reduce levels of violence in these countries. Yet there are very few studies concerning violence that have been conducted in LMICs despite the fact that these countries experience more violence than higher income countries. In fact, as Rosenberg et al. (2006) have suggested, the lack of available data is a result of the same factors that lead to a violent culture. Such factors include economic disparities, fragile social, political and judicial systems and social instability. The knowledge gaps concerning violence need to be addressed so that adequate prevention strategies can be developed. This development is imperative as prevention has shown to be less costly than dealing with the consequences of violence (Dahlberg & Krug, 2002).

Attempts to understand violence in South Africa have noted that the country’s past was, up until the achievement of democracy in 1994, characterised by apartheid state repression, national liberation struggle, arbitrary detentions, political unrest and violence. Additionally, rapid urbanisation, glaring racial and gender socioeconomic inequalities, widespread poverty, high unemployment, high levels of alcohol and drug abuse, patriarchal views of manhood, and a weak uneven police enforcement of laws are part of an ensemble of factors that characterise post-apartheid South Africa. Thus studies analysing homicide in South Africa cannot but keep this context in mind and regard homicide as an incident that occurs at the nexus of multiple and interacting social factors (Ratele & Suffla, 2010; Seedat et al., 2009).

Given its status as one of the most unsafe countries across the globe (see Institute for Economics and Peace, 2010), post-apartheid South Africa requires research that elucidates the nature, magnitude, distribution and patterns of the different forms of violence confronting it so as to inform effective policy-making and programming. In view of international studies which have shown homicide to be unevenly distributed across groups and locations (e.g., O’Flaherty, & Sethi, 2010; Ratele, 2010), some important research questions in the context of South Africa include: Which groups are least and which are most vulnerable for homicide in South Africa? Where and when are people most at risk? What weapons are used to kill?

In light of the substantial burden of fatal and non-fatal injuries caused by firearms in the country, this article reports on homicide risk factors in night time Johannesburg, South Africa. Situated in Gauteng Province (which is one of nine provinces of South Africa), Johannesburg is considered as “the economic capital of South Africa, generating some 17 percent of SA’s wealth” (Official Website of the City of Johannesburg, 2011). Even though South Africa and Johannesburg face high levels of violence and socioeconomic inequality, the city prides itself with the fact that it is “ranked No. 1 in Africa and No. 11 globally as best emerging market centre of commerce” (MasterCard 2008 Survey). Johannesburg’s rapidly emerging economy is said to be due to the city’s “visionary leadership, diversification to globally fast growing sectors, its socio-economic development and a conducive climate for foreign direct investment (FDI)” (Official Website of the City of Johannesburg, 2011).
The ultimate goal underlying this work is violence prevention, and given the clear ineffectiveness of current initiatives directed at violence prevention in South Africa, novel, and possibly interdisciplinary, frameworks are called for. While a public health approach involves identifying the scope of the problem, pinpointing risk factors that increase the likelihood of homicide and consequently developing interventions based on this (Rosenberg et al., 2006), it tends to be silent on factors such as the history of racial inequality, gender power, and constructions of masculinity. In contrast, critical social psychological approaches demonstrate the importance of understanding homicide risk as embedded in the history and contemporary dynamics of a society and social groups (Stevens, Seedat and van Niekerk, 2004). A public health approach is important in that it stresses that violence can be both countered and prevented (Mercy, Rosenberg, Powell, Broome & Roper, 1993), which is significant as homicide as a health and social concern is often relatively ignored despite its impact on families, neighbourhoods, communities, nations, and the world (Murray & Lopez, 1997). At the same time, critical social psychological approaches to violence situate it in its societal context, specifically the historical web of political, economic, gender and racial contexts that shape what people do in relation to other people and the external world (Laubscher, 2005; Mkhize, 2004), including the conditions that makes them vulnerable to early death. Such a framework allows for the demonstration of how understandings of particular behaviours become framed by social processes, history, space and social practices.

In line with these questions and goals, this study analysed data originating from the National Injury Mortality Surveillance System (NIMSS). A binary logistic regression analysis was conducted on data arising from Johannesburg across the period of 2001 to 2005 with the aim of identifying major risk factors for homicide by firearm discharge in the context of a nighttime Johannesburg in the post-apartheid South African landscape. One of the few epidemiological surveillance systems of fatal injuries in Africa, the NIMSS, alongside difficult to access and problematic South African police data, offers the best available data on homicide in Johannesburg. While the authors recognise that data arising from 2001 to 2005 may not be entirely applicable in 2012 Johannesburg, it must be noted that this was the largest dataset available at the time of analysis as NIMSS datasets only become available two to three years after data capturing. Furthermore, it is hoped that the analysis of this dataset will inform future analyses of more recent data with the objective of identifying both persistent and changing trends across time.

FIREARM HOMICIDE

The presence of a firearm in an altercation massively increases the likelihood of mortality (Mercy et al., 1993). Firearms are central to interpersonal violence and their lethality results in both nonfatal and fatal injuries that have enormous human and economic costs. Additionally, global increases in homicide are almost always correlated with increased homicides by firearm discharge. Furthermore, access and availability of firearms places the firearm owners and their families at risk.

In the United States of America firearms are the second leading cause for mortality across the age groups of 10 to 34 (Mercy et al., 1993). This parallels South African data which has revealed that most firearm homicide occurs in the age groups of 15 to 34 (Prinsloo et al., 2003). A study conducted by Norman et al. (2007) showed that 54% of all homicides in South Africa in the year 2000 were firearm related. Another study by Prinsloo and colleagues (2003) demonstrated that 46% of homicides in Cape Town in 2001 were firearm related. Homicide by firearm discharge is clearly an enormous problem in South Africa.

RISK FACTORS FOR HOMICIDE BY FIREARM DISCHARGE

There is no single risk factor for violent interactions but instead a range of complex interacting factors that can be understood by way of the ecological model (Rosenberg et al., 2006). Risk factors at the individual, relationship, community and societal levels and their relationships need to be taken into account in trying to understand violent interactions and programming.
for violence prevention. Here, critical social psychologists can play an important role by disentangling the intricate web and histories that produce homicide risk and the underlying meanings of the lives of those vulnerable to violence, as well as paying attention to factors that have the potential to prevent violence. Stevens, Seedat and van Niekerk (2004, p.13-14) have said that contemporary South Africa “has undoubtedly been influenced and shaped by its violent history of racism and oppression”, and psychologists should assist in “locating current manifestations of violence within ideological, historical and material context if comprehensive understandings of such manifestations are to be generated alongside appropriate forms of social action aimed at preventing them.”

For Mercy et al. (1993) violence risk cannot be understood outside of fundamental societal issues such as economic problems, unemployment, racism and social inequalities. Additionally, large differences exist across different cultural, racial, ethnic and social economic groups in any one country in terms of risk, employment opportunity and resource access (Dahlberg & Krug, 2002). In South Africa there are a range of contributions to violence including poverty, inequality, corruption, gender inequalities, widespread patriarchal notions of manhood, and social change (Seedat et al, 2009; Ratele & Suffla, 2010). Furthermore, “the underlying determinants of violence, many of which are a legacy of the apartheid past, are intertwined with the disintegration of the social fabric” (Norman et al., 2007, p.697).

DEMOGRAPHICS
Demographics account for individual characteristics that increase the likelihood of susceptibility to homicidal violence. Global burden of disease estimates have demonstrated that homicide rates differ according to gender and age. For example, global burden of disease estimates in 2000 revealed that 77% of homicide victims were males with the highest rates occurring in the age range of 15 to 29 (Dahlberg & Krug, 2002). Estimates in 2001 displayed that male homicide rates were six times greater than female rates in the age group spanning 15 to 24. In other age groups this ratio showed a slight decrease but continued to display much higher rates for males (Rosenberg et al., 2006). With regards to the intersection of race, gender and age, Hammond and Yung (1993) have indicated that black male youths are most often the victims of firearm homicide in America.

Global estimates in 1990 portrayed that 40% of world homicides occurred in sub-Saharan Africa. Furthermore, interpersonal violence accounted for one in six male deaths in this region (Murray & Lopez, 1997). A study conducted by Bradshaw and colleagues (2005) a decade later found that the male mortality rates from injury deaths were three times higher than for those of females and that homicide was the leading cause of fatal injury for males. In another study it was shown that while South African females have a much lower risk for homicidal violence than their male counterparts, they are still seven times more likely to be a victim than other females across the world. Similarly, children in South Africa had homicide rates that were double the global average. Such results have led to the conclusion that gender inequality, intimate partner violence, and child abuse are serious problems in South Africa (Norman et al., 2007) that are directly related to the substantial homicide rate. In the most recent study regarding homicide demographics in the 2001 to 2005 cohort, Prinsloo and colleagues (2003) have reported that males account for firearm homicide nine times more than females and that firearm homicide is most pronounced in the 15 to 24 year age group.

LOCATION
Income inequality and poverty are global risk factors for all forms of violence (Rosenberg et al., 2006). For instance, Mercy et al. (1993, p.10) found that homicide victimisation rates are consistently highest in those parts of cities characterised by impoverishment. Violence is also more common in areas where there is little social and institutional support as well as in physically deteriorating areas (Dahlberg and Krug, 2002).
In South Africa, the highest rates of injury death occur in Gauteng and the Western Cape which are the most developed provinces with the largest metropolitan areas (Bradshaw et al., 2005). Additionally, urbanised areas with increased population density have been found to have higher homicide rates in South Africa (Matzopoulos, Bowman & Mathews, 2008b).

**BLOOD ALCOHOL CONCENTRATION AND POINT IN TIME**

While there are differences across countries, over half of the victims and perpetrators of global violence have been found to be under the influence of alcohol at the time of a violent interaction (Odero, 2003). This is particularly the case with males (Rossow, 2001). Alcohol plays a role in increased aggression and impaired judgement amongst victims and perpetrators. It also seems to be related to night time violence which is significant as between 65% and 80% of violent incidences occur between 6pm and 6am (Odero, 2003).

More than half of South African victims of intentional injuries test positive for alcohol consumption (Matzopoulos et al., 2008b). In a study conducted by Norman and colleagues (2007), 53% of individuals with fatal injuries in South Africa in 2001 tested positive for alcohol. In another study conducted in Cape Town in 2001 by Prinsloo et al. (2003), victims of firearm homicide were less impaired than victims of non-firearm homicides. There was also an increase in firearm homicides at night time. Further, while non-firearm homicides tended to occur on the weekends, firearm homicides were more evenly distributed across the week.

For Rosenberg et al. (2006, p.761) “an understanding of the epidemiology and aetiology of violence and prevention provides important insights into the spectrum of policies and interventions that can be drawn on to prevent violence in LMICs.” South African communities are characterised by limited resources resultant from the uneven distribution of wealth in the country and as such prevention is a more cost-effective approach than one that might deal with the consequences of current or past violent interactions. In line with the general goals of the NIMSS, this study thus aims to provide information about the risks associated with firearm homicides in night time Johannesburg and recommend primary prevention strategies to policy makers, service providers and key stakeholders such as the forensic medico-legal services, the national crime prevention strategy and violence and injury prevention agencies (Donson, 2008). Such information is based on the following research questions. Who is at risk for firearm homicide in night time Johannesburg? In what areas of Johannesburg is night time firearm homicide most likely to occur? Do certain days of the week and certain times of the night increase the likelihood of firearm homicide in night time Johannesburg? Does alcohol consumption increase the risk of being a victim of firearm homicide in night time Johannesburg?

**METHODS**

In South Africa, as is the case in other African countries, the collection of comprehensive, quality injury data remains a challenge. Without such data, definitive analyses of injury generally and homicide specifically, but also what works for violence prevention, are rendered difficult. The data used here was drawn from the NIMSS database for homicides in Johannesburg for the years 2001 to 2005. This period offered one of the most complete datasets for homicide for the entire city. The limitation of utilising data for the period 2001–2005 is plain as the situation may have changed since then, but this can only be known when new data is available on which further analyses can be performed.

The NIMSS is an epidemiological surveillance system that is captured by South African mortuaries to detail natural and non-natural deaths in terms of the individual’s demographics, scene and time of death and causes of death. The Johannesburg database for 2001 to 2005 consists of 9484 subjects of which 5153 were victims of night time homicide.
As there have been previous descriptive analyses of the NIMSS database, this study performed a secondary analysis on the NIMSS with the intention of focusing on those of the 5153 subjects that were subjected to night time homicide. Specifically, the study utilised a binary logistic regression model in order to identify the likelihood of particular risk factors occurring in certain groups of people and contexts. Logistic regression models “assume that a person’s risk of disease is a specified mathematical function of his exposure to different risk factors” (Coggon et al., 1993, p.19). That is, the model predicts the probability of an outcome according to a set of predictors or independent variables (Peng, Lee & Ingersoll, 2002). In this particular case, the binary variable representing the outcome was presence (outcome=1) or absence (outcome=0) of firearm homicide. The NIMSS profiles each deceased subject according to 21 variables (Donson, 2008). This particular study utilised the town of injury, blood alcohol concentration levels, time of death, day of death as well as demographic variables such as racial group, gender and age as binary predictors in the model. In view of the fact that the large number of towns across Johannesburg make analysis difficult, towns were organised into 12 areas according to the socio-economic status of each town as well as in terms of the proximity between various towns. Additionally, because times and days of injuries are often missing from the NIMSS database, times and days were calculated according to the times and days of deaths. It must therefore be noted that these results may not be entirely accurate as injury and death do not always occur simultaneously. This may lead to slightly biased results which may, in turn, have implications for recommended primary prevention.

ANALYSIS AND RESULTS

The data was initially subjected to a range of descriptive techniques in accordance with the identified risk factors. These indicated that 67% of all homicides in Johannesburg across the years 2001 to 2005 involved firearms. Additionally, 54% of homicides occurred at night time and, more importantly, of these night time homicides, 71% were firearm related. These figures confirm that night time firearm homicide is significantly concerning in the South African context and warrants the further analyses taken up by this study. With regards to sex, 89% of all firearm homicides resulted in male deaths while only 9% resulted in female deaths. The age group spanning 25 to 34 had the highest rate, consisting of 35% of all firearm homicides. This was followed by the 15 to 24 age group which was composed of 17% of all firearm homicides. The highest rate of firearm homicides was amongst blacks, making up 88% of all firearm homicides. The NIMSS indicates location by the variable ‘town of injury’. Towns were grouped according to proximity and social economic characteristics. Frequency graphs demonstrated that 50% of firearm homicides occurred in central Johannesburg and surrounding areas. This was followed by Soweto and surrounding areas with 28% of firearm homicides. The majority of firearm homicide victims tested negative for alcohol consumption. Most of these firearm homicides occurred between 9pm and 11pm followed closely by homicides occurring between 6pm and 8pm. Furthermore, 21% of these deaths occurred on a Saturday and this was followed closely with 18% occurring on a Sunday.

A series of binary logistic regressions were performed on the 5153 night time homicide cases. The outcome variable was the presence or absence of firearm homicide. The independent variables were re-coded into binary variables in accordance with the above descriptive results. As such, the age groups of 15 to 34 were collapsed into one category. Likewise, blacks were retained as a single separate category while the other racial groups were collapsed into a single category. Locations were divided into central Johannesburg and other and night time was divided into 6pm to 11pm and 12am to 6am. Finally, days of the week were categorised according to weekends and weekdays. Groups that the literature and the descriptive statistics imply increase risk (black, males, weekend, central Johannesburg, 15-34 years, 18h00-23h00pm) were coded as one. As victims of firearm homicide tend to be less impaired by alcohol than those of non-firearm homicides (Prinsloo et al., 2003), zero blood alcohol concentration was coded as one. Groups that the literature and the descriptive
statistics imply increase protection or are not associated with firearm homicide were coded as zero. Missing values were also coded as zero. These imputations decrease bias as well as increase confidence in the meaning of significant results for risk factors by assuming that missing values only represent protective factors and not risk factors (Paik & Sacco, 2000).

Initially a two-way table with measures of association was run for each predictor variable as a function of the outcome variable in order to ascertain the degree of association between the two variables (Whitley, 2002). Binary logistic regressions reporting odds ratios were then run for each predictor paired with the outcome variable. Finally, a multivariate binary logistic regression was run for all the predictors in order to cross-check the adjusted odds ratios with the unadjusted odds ratios, ascertain the total percentage of outcome variance explained by the predictors and to check for any interactions amongst the predictors. Multivariate binary analyses conduct separate models for the relationship between the outcome variable and the predictor variables as well as for the association between pairs of predictors (Carey, Zeger & Diggle, 1993).

Table 1 presents the results from the above-mentioned analyses. For both the two-way tables and the odds ratios, all the predictors had significant p-values. However, these p-values may be biased by the large sample size and thus confidence intervals are more meaningful descriptions of significance in this case (Whitley, 2002). For the race predictor, 90.5% of firearm homicides occurred among blacks. Additionally, blacks are 27% more likely to be affected by night time firearm homicide than other racial groups (OR 1.27, 95% CI 1.04-1.55). While race is clearly a risk factor, it does only explain 0.08% of the variance in the outcome variable (Pseudo $R^2=0.0008$). For the gender predictor, 90.2% of firearm homicides resulted in male deaths. The male population is 79% more likely to be affected by firearm homicide at night than the female population (OR 1.79, 95% CI 1.49-2.16). However, once again, only 0.5% of the variance in firearm homicides can be explained by this predictor (Pseudo $R^2=0.005$). With regards to the day of death, 41.6% of firearm homicides occurred on the weekend. Moreover, the odds ratios (OR .86 95% CI .76-.98) imply that the weekend seems to be a protective factor for firearm homicides at night. Only 0.4% of the outcome variance is explained by this predictor (Pseudo $R^2=0.004$). For the town of injury, 53% of night time firearm homicides occurred in central Johannesburg. Firearm homicides are 16% more likely to occur in central Johannesburg than in other areas (OR 1.16 95% CI 1.03-1.32). Again, only 0.2% of the outcome variance can be explained by this predictor (Pseudo $R^2=0.002$). With regards to alcohol, only 37.8% of the subjects had zero blood alcohol concentration. The odds ratio for this predictor was extremely high (OR 2.62 95% CI 2.25-3.05) and this predictor seems to be explaining much more of the outcome variance than the other predictors (Pseudo $R^2=0.03$). However, it must be acknowledged that 1686 of the cases were missing data concerning blood alcohol concentration and such a large set of missing data may bias the results (Paik & Sacco, 2000). For the age predictor, 54.7% of firearm homicides occurred in the 15 to 34 age group. This age group is 31% more likely to be subjected to night time firearm homicide than other age groups (OR 1.31 95% CI 1.16-1.49). The age predictor only explains 0.3% of the outcome variance (Pseudo $R^2=0.003$). In terms of the time of death, 60.1% of all night time firearm homicides occur between 6pm and 11pm. Firearm homicide is 51% more likely to occur in this time range than at any other times of the night (OR 1.51 95% CI 1.33-1.71). The time of death explains 1% of the variance in night time firearm homicide and thus has a higher explanatory power than most of the other predictors (Pseudo $R^2=0.01$). More importantly, only 5.1% of the outcome variance is explained by all of the predictors together (Pseudo $R^2=0.05$). The unadjusted and adjusted odds ratios are only slightly different and so there are no concerns about possible interactions amongst the predictors.
Table 1. Odds ratios for predictor variables as functions of the outcome variable (absence or presence of homicide)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Column Percentage n/N (%)</th>
<th>Unadjusted OR (95% CI)</th>
<th>Adjusted OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>3292/4630 (90.5)</td>
<td>1.25 (1.03-1.51)</td>
<td>1.27 (1.04-1.55)</td>
<td>0.02</td>
</tr>
<tr>
<td>Other</td>
<td>347/523 (9.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3282/4564 (90.2)</td>
<td>1.66 (1.39-1.99)</td>
<td>1.79 (1.49-2.16)</td>
<td>0.00</td>
</tr>
<tr>
<td>Female</td>
<td>357/589 (9.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day of Death</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekend</td>
<td>1514/2264 (41.6)</td>
<td>.73 (.64-.82)</td>
<td>.86 (.76-.98)</td>
<td>0.02</td>
</tr>
<tr>
<td>Weekday</td>
<td>2125/2889 (58.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Town of Injury</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JHB Central</td>
<td>1929/2654 (53)</td>
<td>1.26 (1.11-1.42)</td>
<td>1.16 (1.03-1.32)</td>
<td>0.02</td>
</tr>
<tr>
<td>Other</td>
<td>1710/2508 (47)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood Alcohol Concentration (BAC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero</td>
<td>1376/1653 (37.8)</td>
<td>2.72 (2.35-3.14)</td>
<td>2.62 (2.25-3.05)</td>
<td>0.00</td>
</tr>
<tr>
<td>Positive</td>
<td>2263/3500 (62.2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>15-34 years</td>
<td>1992/2723 (54.7)</td>
<td>1.3 (1.15-1.46)</td>
<td>1.31 (1.16-1.49)</td>
<td>0.00</td>
</tr>
<tr>
<td>Other</td>
<td>1647/2430 (45.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time at Night</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18h00-23h00</td>
<td>2186/2914 (60.1)</td>
<td>1.62 (1.44-1.83)</td>
<td>1.51 (1.33-1.71)</td>
<td>0.00</td>
</tr>
<tr>
<td>00h00-06h00</td>
<td>1453/2239 (39.9)</td>
<td></td>
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</tbody>
</table>
The possible bias generated by missing data concerning blood alcohol concentration supported the need to conduct a second set of analyses. The missing data for this variable was excluded from this analysis, leaving 3467 cases. The results demonstrated that 54.8% of the cases had zero blood alcohol concentration. However, the odds ratios continued to be extremely high (OR 2.9 95% CI 2.46-3.46). Additionally, blood alcohol concentration explains 4.7% of the outcome variance (Pseudo $R^2=0.047$). A multivariate binary logistic regression model demonstrated that 6.5% of the outcome variance can be explained by all the predictors together (Pseudo $R^2=0.065$). Again, there seems to be no interacting effects amongst the predictors.

DISCUSSION
Given the lethality of firearms and their ability to cause injuries across long distances as compared to other weapons such as knives or blunt objects, the presence of a firearm during a violent interaction considerably increases the likelihood of mortality (Mercy et al., 1993). This study supports previous studies which demonstrated that a large percentage of South African homicides are firearm related (Norman et al., 2007; Prinsloo et al., 2003). Furthermore, the results of the initial descriptive analysis clearly demonstrated that while homicide by sharp or blunt objects may occur in the South African context, these make up only a small percentage of mortalities resulting from violence as compared to firearm related incidents. The figure representing firearm-related deaths also increases at night time, suggesting that risks increase with time associated with leisure, darkness and after work hours. More concerning is that despite the attempts made by the amended South African Firearms Control Act (Act 60 of 2000) to decrease access to firearms (Gun Control Alliance, 2001), firearm-related homicides still rank highest with regard to violence-related mortality. This may be an indication of the easy availability of firearms in South Africa, but also other factors that increase young black males’ risk to homicide.

A number of risk factors for night time firearm homicide were identified. Firstly, blacks are more at risk for firearm homicides than other racial groups in Johannesburg. However, as other research has cautioned, statistics based on race should be interpreted with caution as this may be indicative of other risks linked to violence such as inequality, unemployment, poverty, constructions of masculinity, and concentration of alcohol outlets (Mercy et al., 1993; Ratele, Smith, van Niekerk & Seedat, 2011). In accordance with global burden of disease estimates this study reported that males are 79% more likely to be at risk for night time firearm homicide than females (Dahlberg & Krug, 2002). In fact, sex seems to be the strongest risk factor for firearm homicide. In line with Cape Town data from a study conducted by Prinsloo et al. (2003), this study demonstrated that the age group ranging from 15 to 34 is most at risk for firearm homicide in Johannesburg. However, the difference between this age group and other age groups is not as pronounced as expected. Nonetheless, overall, the data seems to suggest that young black males are the most at risk population in urban South Africa. This finding is disconcerting as this is the group that is said to be, alongside young women and men from other races, the generation that will be responsible for the prospective economic, political and social future of Johannesburg and South Africa. Their risk to premature death from homicide, and what this vulnerability suggests about South African society, is disquieting.

Studies have reported that densely populated urbanised areas, such as central Johannesburg, have higher homicide rates (Matzopoulos et al., 2008b). As expected, the present study showed that the firearm homicides increase in central Johannesburg and the surrounding areas. However, the difference between Johannesburg and other locations is also not as striking as expected. An even more unexpected result is that the weekend appears to be a protective factor rather than a risk factor for firearm homicide, most usually as a result of increased alcohol consumption during this period. This is, however, in accordance with Prinsloo and associates’ (2003) finding that while non-firearm homicides tend to occur on the weekends, firearm homicides are more evenly distributed across the week. Regardless, the finding of that study does not
coincide with the descriptive statistics in the present study which show that more firearm homicides occur on the weekend. Accordingly, a second binary logistic regression was run which included Friday as part of the weekend. However, this made little difference to the results. This is most likely due to the week/weekend being a difficult binomial variable as each component cannot be evenly split. For this reason, the descriptive statistics may be more useful in this instance although further work should still be conducted as a means to explain this discrepancy.

A major risk factor for firearm homicide seems to be the time of night. Specifically, risk increases between 6pm and 11pm at night. This is a significant result as it implies that crime prevention strategies need to be intensified during early and late evening rather than after midnight. A possible suggestion for this peak at this particular time of night is that crime-related firearm homicides may occur during post-work hours associated with family gatherings and leisure when people are relaxed and least expect a violent incident to occur. The peak also coincides with hours during which alcohol consumption takes place. However, blood alcohol concentration levels were ambiguous in this study. While the two-way tables suggested that fewer subjects were intoxicated at the time of death, the odds ratios still remained very high, even when accounting for missing data. Moreover, of all the predictors, blood alcohol concentration seems to be explaining most of the overall variance in firearm homicides. While other studies suggest that victims of firearm homicide are generally less intoxicated with alcohol than victims of non-firearm homicides (Prinsloo et al., 2003), alcohol clearly plays an important role in firearm homicides. The overall variance in this data suggests that alcohol is a risk factor however definitive conclusions based on blood alcohol concentration should be interpreted cautiously given that very few bodies are tested for alcohol use on admission to South African mortuaries. This variance may therefore not reflect the true proportion of intoxicated victims during a homicide incident.

Collectively, the predictors only explain a very small amount of the outcome variance. It may thus be that there are additional factors that have not been measured in this study that could account for more of the outcome variance. Even then, age, sex, neighbourhood densities and characteristics, time of night, race and alcohol are clearly important risk factors to take into account in violence prevention programming. In view of the adopted public health model that purports violence to be preventable, these risk factors should be central to policy-making decisions and prevention strategies. In particular, these risk factors point to the need for primary prevention models that target densely populated and urbanised areas of Johannesburg. Additionally, alcohol needs tighter regulation and young black males need to be integrated into prevention programmes to equip them with measures should they encounter a violent situation.

In addition to the risk factors emerging from the analysis, other underlying factors such as legacy of apartheid struggles typified by armed struggles, racialised economic inequality and unemployment, sex/gender power and patriarchal masculinity, neighbourhood living conditions, social capital and connectedness, the uses of leisure, alcohol use/abuse and a sense of hope for the future need to be understood as playing significant roles in homicide (Ratele et al, 2011; Ratele & Suffla, 2010; Seedat et al, 2009). These socio-historical features of the South African landscape contribute to the levels of firearm-associated homicide. Future research on the firearm homicide vulnerability of urban young black men in night time Johannesburg should take cognisance of these issues.

CONCLUSION
Research has suggested that certain prevention strategies targeting firearms can decrease mortality rates. For example, positive effects have been demonstrated by laws that prohibit being armed in public spaces (Mercy et al., 1993) as well as laws that restrict access to guns (Dahlberg & Butchart, 2005). Other strategies have included safe storage of firearms,
waiting periods before the purchase of firearms and the requirement that all firearms be registered. There are, however, few studies to demonstrate the effectiveness of such procedures (Rosenberg et al., 2006). Additionally, the South African Firearms Control Act (Act 60 of 2000) does attempt to draw on such prevention strategies and laws albeit, as demonstrated by this study, with minimal effect (Gun Control Alliance, 2001). It is therefore important to identify actual risk factors that contribute to firearm homicide in order to guide effective and empirically-driven prevention strategies. These may include better policing of firearm access and ownership as well as implementing laws that illegalise the carrying of firearms in contexts where alcohol consumption occurs.

Prevention is more cost-effective than dealing with the consequences of violence (Dahlberg & Krug, 2002). Primary prevention strategies are thus imperative for a South African context characterised by limited resources. Based on the evidence generated by this study, prevention strategies in Johannesburg should focus more on central Johannesburg and, while avoiding racial profiling, pay increased attention to violence prevention in respect of young black men. Interventions should be attentive to temporality, with night time between 6pm and 11pm shown to increase vulnerability to fatal violence. Furthermore, alcohol intake needs to be regulated more closely. Importantly, any intervention to take place in South Africa needs to take into account other factors that contribute to violence such as unemployment, racism, social inequality, poverty, unemployment, income inequality, masculinity constructions and gender inequality (Dahlberg & Krug, 2002; Norman et al., 2007). In short, night time firearm homicide of young black men cannot be understood outside of the wider South African context and future preventative strategies need to work across all levels of the ecological model in order to have a long-term impact.

REFERENCES


SHORT COMMUNICATION

Book Review

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Injury remains a leading cause of the global burden of disease amongst children. When considering the current figures on child injury mortality in South Africa, it is clear that child safety is under threat. Child injuries are predictable, preventable and often occur in or within close proximity to the home or school – places that should be safe for children. Crime, Violence and Injury in South Africa: 21st Century Solutions for Child Safety provides a concise yet comprehensive discussion of intentional and unintentional child injury in South Africa. The Review’s sixteen chapters flow in a logical order from unintentional injury to intentional injury in the home and school, alcohol-related injury and, finally the psycho-social impact of trauma and violence. The chapters are authored by noted experts in the fields of, amongst others, psychology, sociology, education and public health.

The first four chapters explore unintentional injury, specifically pedestrian safety, burns, lead poisoning and falls. The epidemiology, as well as individual and contextual risk factors associated with each type of injury is discussed in the light of current research. The authors critically discuss current social, psychological, environmental and technological interventions as well as policy and other regulatory interventions that pertain to each type of injury. The authors provide insightful suggestions for how these policies and interventions can be strengthened and made more effective. Regrettably, key additional sources of child injury, namely drowning, suffocation and other forms of poisoning are not discussed. These forms of injury are highly relevant in South Africa and should have been included in the Review.

The discussion on intentional injury is subdivided into child maltreatment, sexual violence, bullying, violence in schools, gang involvement, children deprived of their liberty by the state as well as suicidal behaviour. The chapter on child maltreatment examines the limitations of current child maltreatment interventions as well as legislative and institutional frameworks that are aimed at children. The authors present a highly insightful discussion of the ethic of care as the ideal framework for child maltreatment prevention programmes. By strengthening caring relationships amongst adults and amongst caregivers and children, the well-being of children and families can be enhanced leading to healthier communities.

Sexual violence is discussed over two chapters. The authors describe the social context and psychological consequences of child sexual abuse and present a critical discussion of the programmes and policies that address child sexual abuse. In particular, the lack of integrated services at health facilities, stigmatisation and insensitive caregiver responses are highlighted as key obstacles to effective treatment. Moreover, despite the numerous interventions, policies and legislation

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that serve to protect children against sexual violence, there is still a great need to improve the implementation thereof. The link between sexual violence and HIV infection is also discussed.

The discussion on intentional injury continues with two chapters on intentional injury in schools. Bullying is discussed, with a particular emphasis on the nature and effectiveness of anti-bullying programmes. The authors highlight the need for theory-driven, data-driven and thoroughly evaluated anti-bulling programmes. The extent and nature of school violence in South Africa in general are discussed, with the emphasis being laid on the need to develop safe schools. A critical discussion is presented of violence prevention initiatives in schools as well as legislation and policies that address school violence. The authors conclude with a number of practical recommendations for further research and interventions.

Child gang involvement is also discussed. The authors juxtapose gang involvement prevention, disengagement and suppression. The reader is reminded that prevention remains the ideal way to address child gang involvement. An extensive range of anti-gang initiatives are discussed. Ultimately, the authors recommend inter-agency cooperation, the rigorous evaluation of interventions as well as more initiatives that are aimed at girls.

The chapter on children deprived of their liberty by the state provides an insightful look at the extent and nature of rights violations against children in places of detention. This is a unique chapter, as it deals with a topical issue that receives limited research attention. The author uses legislation and case studies to explore the issue. Figures on child deaths in custody is presented and critically discussed, serving as an eye opener of the true extent of the issue in South Africa.

The chapter on suicide provides a comprehensive look at suicidal behaviour amongst children and adolescents. Comparative epidemiological trends in suicidal behaviour are discussed with the aim to elucidate how develop effective prevention initiatives and policy priorities. An in-depth discussion is also presented of suicide risk factors, emphasising the multidimensional and multifactorial nature thereof. Ultimately, a nationwide prevention programme is argued to be the ideal way to facilitate preventative action at all levels of society.

The discussion on alcohol-related injury focuses on alcohol and drug use amongst children and adolescents as well as Fetal Alcohol Spectrum Disorders (FASD). The extent and nature of substance use is discussed, with particular emphasis on the role of substance use as a major contributor to intentional and unintentional injury, violence and crime. An in-depth discussion is presented of the numerous risk factors associated with substance use, as well as universal, selected and indicated prevention strategies. The chapter on FASD presents an interesting discussion on the topic. The extent, nature and social context of FASD is explored. A critical discussion is presented of current FASD interventions and policy as well as the influential role government can play in addressing FASD.

The Review aptly concludes with a discussion on the psycho-social effects of trauma and violence. Child traumatisation is explored, with the focus mainly on documented psycho-social impacts. The risk and protective factors associated with adverse psycho-social reactions to trauma and violence is also explored. An extensive discussion is presented of intervention approaches, highlighting the lack of local data regarding the developmental aspects of trauma, risk and protective factors, as well as effective intervention approaches.

Ultimately, Crime, Violence and Injury in South Africa: 21st Century Solutions for Child Safety, emphasises the importance of the prevention of child injury. The book succeeds in achieving its objectives, namely: describing the extent and consequences of priority child injury problems; identifying significant downstream and upstream risk and protective factors; highlighting injury prevention contributions that may result from environmental, social and technological strategies and interventions; as well as proposing prevention priorities and consequent research and policy imperatives.
Crime, Violence and Injury in South Africa: 21st Century Solutions for Child Safety is the only publication that is currently available that presents an in-depth discussion of the existing literature on child injury and safety. The Review successfully captures, not only the causes and risk factors of child injury, but also provides practical recommendations regarding prevention and treatment. Consequently, it provides an excellent foundation for future action in the form of intervention, policy and research. The intended audience for this book is anyone that is involved in the public health sector or who works with children, including students, educators and policy makers. The content of the Review is very recent and topical and it is therefore expected to remain relevant for some time.