

The prevalence and health implications of violence in impoverished communities in Johannesburg

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The experience of violent crime can have a significant impact on the physical and psychological well-being of victims and their families. This paper looks at household experience of violence in five impoverished sites in the city of Johannesburg, South Africa. Five sites were purposefully selected to reflect the prevailing housing profiles in settings of relative impoverishment in Johannesburg. A structured questionnaire was used to obtain information on demographic profiles, socioeconomic data, environmental conditions and health status. Bivariate analyses were conducted to assess the relationship between household experience of violence, and potential risk factors and health/social outcomes. Overall, members of 28% of households had been a victim of violence in the year preceding the study. Across sites, experience of violence within households ranged from 21% to 36%. Perceptions of drug abuse ($p=0.01$) and drug peddling ($p=0.03$) as being major problems in the neighbourhood, and living in a house of poor quality ($p=0.01$), were significantly associated with household experience of crime. In households with experience of violence, fear of crime ($p=0.03$) and depression ($p<0.001$) were elevated, and levels of exercise in men were decreased ($p=0.05$). This paper highlights the high prevalence of violence in impoverished urban areas in South Africa, and contributes to existing evidence regarding the associations between experience of violent crime and psychological ill health in affected communities. The high prevalence of violent crime, and the resultant health and social effects, demand a cross-sectoral intervention to reduce violence, with the health and social sectors playing key roles.

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Introduction

Violent crime is a major social challenge worldwide, but developing countries are more severely affected than the developed world.^{1,2} Violence has been defined by the World Health Organization (WHO) as the intentional use of physical power against a person, a group of people or self inflicted.¹ Within countries, the rate of violent crime experienced by the poor is usually higher than that experienced by middle and upper socioeconomic communities.¹⁻⁵ Among the lowest socioeconomic groups, children and male youths (15-29 years) have been shown to be most vulnerable.^{1,6}

The health and psychosocial consequences of experiencing violent crime are far reaching, with direct and indirect detrimental effects on the victim, family and society. Gunshot wounds, stabbings, beatings, sexual assault or rape can lead to death, disability or physical injury, requiring treatment and rehabilitation services. Violent crime is also a major cause of mental illness.⁶⁻¹¹ Victims, including children, could develop post-traumatic stress disorder that may require long-term treatment. Their potential lifetime achievement, income and contribution to society may also be impeded.¹¹

Fear of crime, rather than the actual experience of it, may independently affect health and mental health status, especially in settings where crime is pervasive. For example, fear of crime may directly result in severe psychological illness, such as depression.^{6,12} Fear of crime may also, directly or indirectly, lead to adverse physical health and behavioural effects. Studies have shown that parents living in communities with high rates of violence may, in an effort to protect their children, adopt

practices that are physically restrictive.¹³ Restrictions in spatial freedom and physical activity provide a basis for the development of lifestyle diseases such as obesity, hypertension and diabetes, which may in turn increase the burden of care and treatment within the health and social welfare systems, and the country as a whole.

The poor are particularly vulnerable to crime, especially violent crime, as a consequence of their living environments. Settings of impoverishment usually have less developed neighbourhood infrastructure, such as inadequate street lighting and poor transport facilities. Poor infrastructure, combined with, for example, overcrowding, deficient recreational and entertainment facilities, weak physical security measures and inadequate public policing, can lead to an increased risk of experiencing crime.⁵

The reported death rate for violence in Africa in 2004 was 24.7/100,000, which was more than twice the world rate of 9.3/100,00.¹ South Africa has been described as one of the most violent societies in the world.² In 2005, the National Injury Mortality Surveillance System (NIMSS), which reports on the deaths recorded at the national mortuaries, showed that 39% of deaths were due to violence.¹⁴ Research conducted points to violence as the most common cause of all non-natural deaths in the country.¹⁵ Yet, there is a dearth of information on community or household-level experience of violence in South Africa. Instead, most of the available information related to the prevalence of violence emanates from police or mortuary statistics. In addition, there has been limited attention within the health sector, in particular, to the public health implications of pervasive community violence. In situations where resources are constrained and public services are overwhelmed, it is

important, as a basis for preventive action, to assess the environmental risk factors and the health and social consequences of the experience of violence.

The Health, Environment and Development (HEAD) study is a long-term indicator study that includes a focus on poverty, migration patterns, perceptions of service delivery, neighbourhood and housing conditions, food security, domestic hygiene, and experiences of violence and health status. The HEAD study, which is being conducted by the World Health Organization Collaborating Centre for Urban Health (a partnership of the South African Medical Research Council, the University of Johannesburg, the University of the Witwatersrand and the City of Johannesburg), was initiated in 2006 and will continue until at least 2010. The HEAD study is being conducted in five housing settlements in Johannesburg. This paper outlines the findings of the HEAD study in respect of household experience of violence, and associated factors and ill health outcomes.

Materials and methods

Population and sample

Five study sites were chosen purposefully on the basis of their different housing characteristics and perceived state of relative impoverishment. These sites represent the main housing options available to the urban poor in Johannesburg. The HEAD study sites are Hillbrow (a high-rise, densely populated inner city area), Bertrams (a mixed commercial/residential inner city suburb, that is also the location of one of the main stadia for the 2010 World Cup Soccer tournament), Riverlea Extension 1 (an apartheid era, low-cost housing development constructed in the early 1960s specifically for the coloured population), Braamfischerville (a low-cost housing development built more recently following the transition from apartheid to democratic government in South Africa) and Hospital Hill (an informal settlement on the south-western outskirts of Johannesburg).

In each study site, 200 households were initially randomly identified using a table of random numbers and town planning maps of the study areas. In the informal settlement of Hospital Hill, aerial photography charts were used to determine the sample, since formal town planning maps for the area were unavailable. After excluding vacant and non-residential stands/buildings from the original sample, the sample size was 805 households (132 in Bertrams, 142 in Hillbrow, 155 in Riverlea Extension 1, 188 in Hospital Hill and 188 in Braamfischerville). The study subjects are the interviewee (respondent), as well as other members of the household.

Data collection

At the selected dwellings, following written, informed consent, a pre-structured questionnaire was administered to a household member of at least 18 years of age to obtain information on sociodemographic status, migration patterns, perceptions of housing and neighbourhood conditions, quality of life and health status. Interviews were conducted by environmental health students from the University of Johannesburg, who had been trained in interviewing techniques and fieldwork processes. Households were defined as a group of people eating meals together. On sites with more than one household, only the main household was interviewed. Data collection occurred during August 2007.

Measures

Exposure to violent crime was measured by asking respondents whether anyone in the household had been a victim of different types of violent crimes (such as stabbing, beating, rape, gunshot injury and armed robbery) in the year preceding the study. Respondents were also asked about the prevalence of chronic diseases in the household, including hypertension, diabetes and stroke. The mental health status of respondents was assessed using the Self Reported Questionnaire (SRQ) 20 screening tool of the WHO. A score of ≥ 8 was considered as having a common mental health disorder. In addition, questionnaire information on self-reported depression was analysed, as were responses in relation to fear of crime.

Analyses

Data were coded as binary or categorical variables. For each study site, prevalence estimates of the variables of interest were calculated. Bivariate associations of socioeconomic, environmental and health correlates were determined. All factors with a strength of association of $p < 0.05$ were regarded as significant. All analyses were conducted using STATA 9.

Ethics

Ethical clearance for the study was obtained from the University of the Witwatersrand Human Research Ethics Committee (Medical): Reference no. M050451. Informed consent was obtained from each participant.

Results

Overall, the study response rate was 59% and ranged from 40% in Bertrams to 80% in Braamfischerville. These rates were affected by an inability to make contact with households after two visits (one of which was on a weekend), or to gain access to heavily guarded apartment blocks in inner city suburbs. In Hillbrow and Bertrams, known to accommodate substantial numbers of foreign migrants, low response rates may have been due to a rise in xenophobic incidents around the time of the study, and a consequent fear of prosecution and deportation. The power of the sample was recalculated based on the sample size of 476 households, alpha of 0.05 using the main dependent variables. The results show that the power remained adequate at 0.99.

Sociodemographic profile

Thirty-nine percent of the study subjects (the household members) were between the ages of 21 and 40 years. Most of the elderly (> 60 years) and the very young (< 5 years) were found in Braamfischerville, Riverlea and Hospital Hill. Hillbrow had the highest percentage of households that resided in the dwellings for less than a year. Riverlea, Braamfischerville and Hospital Hill were the most settled in terms of staying in the same dwelling for longer than five years.

Despite the perception of all the study sites as impoverished, there were large differences in household income within the study. For example, 65% of Hospital Hill households had a joint monthly income of R1,000.00 or less, whereas in Hillbrow only 6% of households had a low ($< R1,000.00$ monthly), or no income. The extent of impoverishment is also seen in the high rates of unemployment in the poorer Hospital Hill (47%) and Riverlea (37%) communities. On average, households

owned between 2.3 and 5.3 units of a selection of entertainment or communication commodities and major appliances. (see Table 1). Ownership of luxury items such as a car, satellite television, washing machines and microwave oven are low due to the lower socioeconomic status of the population in the study.

Environmental conditions

Except for the informal settlement of Hospital Hill, the majority of households were living in formal, stand alone houses or flats, and had good access to basic environmental health services such as water, sanitation and waste removal. In Hospital Hill, only communal water supplies and sanitation services were available, and paraffin was the main fuel used for daily cooking. In all areas, even in the relatively

recently constructed Braamfischerville site, there was evidence of housing degradation, for example cracks in walls, leaking water pipes, dampness and mould on interior walls. Sixty percent of Hospital Hill respondents reported more than five problems with their dwellings, compared to only 24% in Hillbrow. Respondents from all the study sites held policing services in low regard, ranging from 3.7 (Braamfischerville) to 5.9 (Hillbrow) out of a Lickert scale of 0 (very poor) to 10 (excellent).

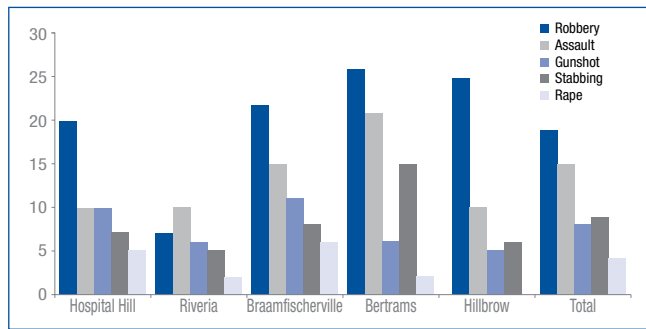
Exposure to violence

Overall, 28% of households had members who had been victims of violent crime in the year preceding the study (Table 2). By study site, the proportion of households affected by violence ranged from 21% in Riverlea to 36% in Bertrams (Figure 1). As can be seen from Table 2,

Table 1: Sociodemographic profile per site (2007) (%)

N= No. of households	Braam N=151	Riverlea N=102	Hospital Hill N=101	Bertrams N=53	Hillbrow N=69	Overall N=476
Total number of people per site	618	520	389	225	245	1997
Age range*						
0.1-5 years	91 (15%)	55 (11%)	48 (12%)	16 (7%)	25 (10%)	235 (12%)
5.1-10 years	47 (8%)	46 (9%)	29 (7%)	14 (6%)	13 (5%)	149 (7%)
10-20 years	134 (22%)	102 (20%)	66 (17%)	27 (12%)	31 (13%)	360 (18%)
21-40 years	202 (33%)	168 (32%)	163 (42%)	101 (45%)	145 (59%)	779 (39%)
41-60 years	104 (17%)	102 (20%)	63 (16%)	30 (13%)	10 (4%)	309 (15%)
>60 years	14 (2%)	31 (6%)	8 (2%)	10 (4%)	0	63 (3%)
Length of stay in dwelling*						
0-1 year	15 (10 %)	4 (4 %)	5 (5%)	11 (21%)	16 (23%)	51 (11%)
2-5 years	26 (17%)	3 (3%)	27 (27%)	17 (32%)	39 (57%)	112 (24%)
>5 years	109 (72 %)	92 (91%)	65 (64%)	25 (47%)	13 (19%)	304 (64%)
Educational levels*						
No education	155 (25%)	121 (23%)	104 (27%)	40 (18%)	33 (13%)	453 (23%)
Some primary and secondary	357 (58%)	320 (62%)	209 (54%)	131 (58%)	142 (58%)	1159 (58%)
Tertiary	23 (4%)	4 (1%)	0	14 (6%)	22 (9%)	63 (3%)
Occupation*						
Full time employed	121 (20%)	94 (18%)	60 (15%)	70 (31%)	92 (36%)	437 (22%)
Unemployed or part time employed	183 (30%)	193 (37%)	181 (47%)	62 (28%)	83 (34%)	707 (35%)
Financial status/ security						
Income <R1,000/month	50%	49%	65%	11%	6%	43%
Money saved	67 (44 %)	29 (28%)	34 (34%)	28 (53%)	40 (58%)	198 (42%)
Home ownership	97 (64%)	77 (75%)	50 (50%)	15 (28%)	12 (17%)	251 (53%)
Average asset ownership (mean)	4.3	4.9	2.3	5.3	4.5	4.3
a. Radio	116 (76%)	77 (75%)	69 (68%)	39 (74%)	51 (74%)	352 (74%)
b. Television	119 (79%)	90 (88%)	50 (50%)	42 (79%)	56 (81%)	357 (75%)
c. DVD/video player	78 (52%)	57 (56%)	12 (12%)	33 (62%)	49 (71%)	229 (48%)
d. Satellite television	3 (2%)	3 (3%)	0	4 (8%)	4 (6%)	14 (3%)
e. Refrigerator	124 (82%)	80 (78%)	12 (12%)	40 (75%)	47 (68%)	303 (64%)
f. Washing machine	28 (19%)	53 (52%)	2 (2%)	22 (42%)	2 (3%)	107 (22%)
g. Microwave oven	46 (30%)	47 (46%)	0	25 (47%)	24 (35%)	142 (30%)
h. Car	7 (5%)	14 (14%)	10 (10%)	18 (34%)	9 (13%)	58 (12%)
i. Computer	5 (3%)	10 (10%)	0	11 (21%)	11 (16%)	37 (8%)
j. Telephone or cell phone	124 (82%)	66 (65%)	76 (75%)	49 (92%)	60 (87%)	375 (79%)

* Items not totalling 100% indicate missing information. Missing information was due to refusal to answer or the respondent not knowing the answer.

Figure 1: Prevalence of experience of selected forms of violence in the HEAD study

some households had experienced more than one type of violence over a period of one year (for example a household member had been stabbed and another shot). In this regard too, Bertrams was worst affected with 17% of households reporting multiple experiences of violence, while on the other end of the range, 7% of Riverlea households had experienced multiple forms of violence.

Overall, and within individual sites, the most frequently reported crime was house robbery with a weapon (see Figure 1 and Table 2). In Bertrams and Hillbrow, at least one quarter of households surveyed had been robbed in this way. Assault was the second most frequently reported form of violence experienced, while stabbing and gunshot injuries ranked third and fourth, respectively. While having one of the highest levels of robbery with a weapon, the level of assault in Hillbrow was amongst the lowest of all the study sites. Also, Hillbrow was the only study site in which no incidents of gunshot wounds or rape were reported using the one-year recall period. The highest levels of rape were reported in Braamfischerville (6%) and Hospital Hill (5%). Braamfischerville also recorded the highest level of gunshot victims (11%). The level of stabbing did not vary significantly across the five study sites, but was highest in Bertrams.

Respondents from 46% of the households surveyed perceived that violent crime had increased over the past 12 months (2006-2007), and 23% thought that crime levels had decreased. The remainder thought the situation had not changed. Bertrams and Braamfischerville, the areas worst affected by violent crime, also had the highest proportions of respondents (43% and 57%, respectively) who thought violent

crime had increased. While most households reported housebreaking and robbery as the most frequently occurring crimes, the majority of respondents (34%) were most fearful of murder.

Association between experience of violence and selected environment and health factors

Household experience of violent crime was not significantly associated with wealth (in terms of both income and commodity ownership). Experience of crime was also not associated with perception of alcohol abuse as a major neighbourhood problem. However, respondents from households with experience of crime also tended to believe that the neighbourhood had high rates of drug abuse ($p=0.01$) and drug peddling ($p=0.03$). Households with experience of crime were also more likely to

Table 3: Associations with the experience of violent crime

	%	OR	p value	95% CI
Province of origin				
Gauteng	51%	1		
Other	49%	1.02	0.92	0.66-1.56
Area				
Riverlea	21%	1		
Braamfischerville	29%	1.54	0.16	0.84-2.79
Hospital Hill	31%	1.71	0.10	0.89-3.26
Bertrams	36%	2.16	0.04	1.02-4.57
Hillbrow	29%	1.57	0.21	0.77-3.21
Type of housing				
Formal	85%	1		
Informal	15%	1.17	0.52	0.72-1.89
Housing quality				
<5 problems	51%	1		
>5 problems	49%	1.59	0.02	1.06-2.38
Street lighting				
Good	56%	1		
Poor	44%	1.28	0.23	0.85-1.93
Alcohol abuse	84%	1.16	0.59	0.67-1.99
Drug abuse	83%	1.80	0.02	1.06-1.74
Drug peddling	78%	1.66	0.04	1.02-2.69

Table 2: Experiences of violent crime by study site (%)

Type of crime	Total N=476	Braam (n=151)	Riverlea (n=102)	Hospital Hill (n=101)	Bertrams (n=53)	Hillbrow (n=69)
Robbery under aggravated circumstances (e.g. with knife or gun)	91 (19%)	33 (22%)	7 (7%)	20 (20%)	14 (26%)	17 (25%)
Assault or beating	70 (15%)	23 (15%)	10 (10%)	19 (19%)	11 (21%)	7 (10%)
Gunshot injury	36 (8%)	17 (11%)	6 (6%)	10 (10%)	4 (6%)	0
Stabbing	45 (9%)	12 (8%)	8 (8%)	13 (13%)	8 (15%)	4 (6%)
Rape	17 (4%)	9 (6%)	2 (2%)	5 (5%)	1 (2%)	0
No. of households that experienced one or more types of violent crime in the past year						
1 type of violence	74 (15%)	22 (15%)	14 (14%)	15 (15%)	10 (19%)	13 (19%)
2 or more episodes	60 (13%)	21 (14%)	7 (7%)	16 (16%)	9 (17%)	7 (10%)
Total	134 (28%)	43(29%)	21 (21%)	31 (31%)	19 (36%)	20 (29%)

be living in degraded housing (Table 3). Household size did not affect the level of crime experienced in each site, as household sizes were similar across all sites.

Fear of crime was 1.75 times higher (95% CI 1.04-2.92) in households with experience of crime compared to those without ($p=0.03$) (see Table 4). Among those with experience of crime, 58% had changed their behaviour in some way ($p=0.04$). The majority (31%) had adopted passive protective measures, such as the installation of alarm systems and fencing. Others had tried to be more vigilant (25%) or spent more time indoors (24%). Weapons, such as guns, had been procured by only 1% of all households. Using the WHO SRQ20 tool, it was shown that, in households with experience of violence, there was a higher individual prevalence of common mental disorders ($p=0.001$). Self-reported depression was also higher in respondents from households with experience of violence. Experience of violence was not significantly associated with the prevalence of chronic diseases ($p=0.18$). However, men from households with experience of crime were less likely to be participating in exercise ($p=0.02$). Participation in various community groups (religious groups, political parties, unions and so forth) was not associated with experience of crime (See Table 4).

Table 4: No exercise by children in the household

	%	OR	p value	95% CI
Fear of crime in the respondent	84%	1.82	0.02	1.07-3.09
Change in behaviour by respondent due to household experiences of crime	58%	1.97	0.04	1.01-3.83
Mental health of the respondent				
SRQ 20 >8	29%	2.55	<0.001	1.55-4.17
Self-reported depression	25%	0.79	0.50	0.41-1.56
On antidepressants	3%	1.14	0.8	0.34-3.78
Chronic illness in the household	62%	1.32	0.18	0.87-1.98
No exercise by men in the household	60%	1.63	0.02	1.06-2.49
No exercise by women in the household	79%	1.34	0.29	0.77-2.31
No exercise by child in the household	74%	1.54	0.13	0.87-2.72
Community participation by the household members	83%	1.13	0.64	0.67-1.91

Discussion

In this study we investigated household experience of violence in the five relatively impoverished sites. Nearly one-third of all households (28%) reported having experienced one or more forms of violence in the year preceding the study. Robberies with a weapon and assault were the most frequently experienced types of violence. The HEAD study shows an overall perceived increase. For example, 46% of respondents thought violent crime had increased over the past year, while only 23% thought it had decreased. A widespread and sustained focus on crime in the media may have influenced the perceptions of respondents, but the household-based format of the HEAD study may also have ensured the development of a relatively detailed and accurate data set.

Environmental factors significantly associated with experience of violent crime were housing quality and the high perceived prevalence of drug abuse and drug peddling in the neighbourhood. Drug abuse and drug

peddling can involve violence and other criminal acts, such as prostitution and property crime, in order to gain money to purchase drugs.^{6,15}

Although there was no significant difference in the experience of crime between the five areas, households in Bertrams had a significant 2.16 times higher risk compared to Riverlea. Bertrams is undergoing structural and development changes, where old housing is being demolished and renovated, and a number of evictions are occurring. There is a degree of instability in that community, compared to the other sites. This type of social instability has been linked to increased rates of violent crime.^{16,17} This can be further aggravated by the lack of adequate policing mechanisms.¹⁷ In Hillbrow, there were no incidences of rape or gunshots. This may be due to under-reporting and the sample may not have included the most destitute and crime ridden parts of Hillbrow, as the interviewers were refused access to some of these buildings. Hillbrow is also the wealthiest site compared to the other sites and thus robbery was the main type of violent crime experienced (25%).

In this study, mental health was significantly affected by the experience of violent crime. The SRQ 20 WHO tool and self-reported depression were both significantly associated with the experience of violent crime. The link between violent crime and mental well-being has been demonstrated in the literature.^{6,18,19} The experience of crime and living in high crime areas has an influence on one's mental well-being. The effects on children have been demonstrated by Suliman *et al.* who showed that, in South Africa, children exposed to violent crime are more likely to suffer from post-traumatic stress disorder.¹¹ This could have long-term consequences, affecting the overall potential of the child. Domestic violence and child abuse are important contributors to violent crime and its effects on physical and mental health of the individual and society.^{1,6} However, these types of violent crimes were not assessed in this study.

Fear of crime is another significant consequence of exposure to crime ($p=0.02$). Fear of crime can lead to elevated levels of depression and anxiety. It can be severely debilitating, by limiting mobility and social interaction.^{19,20} One of the findings of this study was that 24% of all households stayed indoors more often following the experience of crime, thus leading to decreased physical activity. The experience of crime decreased the participation in exercise by a factor of 1.5 to 1.9 times in affected households. This lack of physical activity is related to a more sedentary lifestyle and an increased risk of obesity and chronic diseases such as diabetes and hypertension, as well as certain types of cancer. Taking part in physical activity increases opportunities for socialisation, networking and cultural identity.²¹ The withdrawal from social interaction due to fear of crime can further negatively impact on mental and physical well-being. Security is, thus, necessary to create an environment that will support adequate levels of physical activity in children²² and adults. Experience of crime has also led to an overall decrease in life satisfaction in the communities studied here ($p=0.04$).

Ill health outcomes, associated with the experience or fear of crime, require escalated attention within the health services sector in South Africa. For example, local clinic services are currently poorly equipped to effectively manage the negative mental health consequences of violent crime. Focus is placed on emergency treatment of physical injuries due to the violent crime, while other direct or indirect health consequences of violent crime are relatively neglected or absent. An integrated approach,

such as that advocated by the WHO, is necessary to combat crime and its effects, including health effects. In the WHO report on violence and health, the important role of prevention is promoted unequivocally. Whilst acknowledging the complexity of the relationship between violence and health, the authors argue that more can be achieved by regarding violence as a problem of public health, rather than only one of the crime sector, and that politicians and decision makers in all countries and at all levels of society have a responsibility to make changes that will prevent violence and protect health.¹

Because of the detrimental effects of crime, public health action on violence is key. Even modest reductions of violence in dangerous neighbourhoods are associated with considerable benefit to society, especially children.¹

The South African Department of Health must extend its role beyond dealing with the consequences of violence, for example, treating physical injuries and mental ill health. It needs to proceed in line with the foundations of public health, and prevent violence where it exists in South Africa. The current reactive approach places an avoidably high burden on health departments in terms of emergency room and psychiatric treatment. Instead, action should be based on a deeper understanding of the root causes of violence and ill health. In this regard, a multidisciplinary, intersectoral public health approach to violence prevention is needed, which is currently lacking in many countries. Prevention at an individual, community and societal level is needed and different sectors of government, such as health, education, criminal justice, social development, planning and development, need to participate.

Limitations

A limitation of the study is its cross-sectional design. Thus the direction of associations cannot be assessed. The outcome factors such as poor mental health could have led to increases in experiences of crime, as well as be a result of experience of crime. The study relies on participants' self-reporting on a number of measures. Thus there may be a degree of under-reporting because the respondent is not aware or is not willing to disclose the information. Therefore, information for some questions was missing. Decreased access by field workers to certain buildings in Hillbrow resulted in decreased response rates and this may have also had an impact on the results.

The measures of violent crime should differentiate domestic incidences of violent crime and those perpetrated by strangers. This was, unfortunately, not done. Subsequent waves of the study will include measures of domestic and child abuse.

The issue of ecological fallacy may be a concern. However, in this study the experience of violent crime, either by the interviewed individual (respondent) or another household member, does have an effect on the respondent as well as the entire household. The respondent is affected by an event within a small family group which has been referred to as the household. Thus the exposure to the respondent would be crime in his/her close proximity. There have been studies that have shown that the experience of crime can have effects on individuals that have not themselves experienced violence.^{20,22} The resultant fear of crime due to either crime experienced in the household or community can affect the mental health status, the physical health and the quality of life of that

individual. In this study, the authors report on the effect of the household experience of crime on the respondent (the individual): fear of crime, change in behaviour and mental health, as well as their perceptions of the state of the environment, e.g. perceptions of drug or alcohol abuse and street lighting. The effect of the experience of crime is also looked at in the household (group level) with the following variables: exercise levels, chronic disease and community participation.

Conclusion

The Johannesburg HEAD study has shown that an unacceptably high proportion of households in the five study sites reported direct experience of violence, and that violence is more common in the poorest communities studied. A growing body of global evidence on violence and public health points to the likelihood that the high levels of violence in the HEAD study (and similar) communities are increasing their risk of mental health conditions, social and economic deprivation, poor quality of life and also have an overall impact on their ability to reach their full potential in life. In light of this and of the WHO's statements that "violence is a major and growing public health issue around the world", and that "health cannot thrive in situations of violence",¹ the issue of violence should be placed high on the public health agenda in South Africa.

For an issue as complex as violence and public health, an evidence base for action (such as that provided through the HEAD study), the development of a consultative action plan, intersectoral planning and action, the formation of strategic partnerships, meaningful community participation and a focus on prevention (especially through closer ties with planning departments) and equity are likely to be particularly important.

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