The Impact of Political Violence on Health and Health Services in Cape Town, South Africa, 1986: Methodological Problems and Preliminary Results

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Abstract: Cape Town, South Africa experienced an upsurge in the level of political violence from May to July of 1986. To determine the impact of the political violence on health and health services, selected routinely available information was analyzed, a community survey was conducted of 1,540 randomly selected households in high, medium, and low impact areas (defined using police and community reports), and a survey of 162 nurses (75 per cent response rate) working in clinic and maternity services in Cape Town's townships was undertaken.

Methodological problems were encountered in relation to sampling, interviewer allocation to areas, and access to routinely available information. Nevertheless, a consistent picture emerged from the studies that:

- demonstrated the impact of political violence on attendance at routine health service facilities (for hypertension, tuberculosis, immunizations, antenatal and postnatal services);
- highlighted the disruptions caused to basic services in high impact areas (water, street lighting, sanitation and transport);
- documented the problems experienced by nurses in performing their usual services and by patients obtaining access to their services;
- showed that high impact areas had three times higher rates of gunshot wounds than low impact areas during the period. (*Am J Public Health* 1988; 78:772–776.)

Introduction

In the latter half of 1985, outbreaks of conflict and violence began in Cape Town, South Africa and continued sporadically throughout 1986. The outbreaks in Cape Town were similar to events occurring throughout South Africa and were the result of the apartheid policy of the government. For the purpose of this article, such outbreaks will be termed political violence. This article focuses on the period May to July 1986. The Group Areas Act restricts people of similar race to clearly defined geographical areas. Most Blacks in urban areas live either in areas characterized by low-cost housing (townships) or shanty homes (informal settlements). Both townships and informal settlements are predominantly residential areas, with industrial areas located adjacent to most of them. The outbreak that occurred in the period of time of this study mainly affected the Black townships of Cape Town, was characterized by the mass dislocation of about 60,000 people, and resulted in severe strains being placed on formal, informal, and voluntary health services. Only communities or sizable segments of communities which were affected will be included in this article. Black townships were polarized into supporters and opponents of the government during this period. Information about the political violence was severely restricted by the promulgation, on June 12, 1986, of a national state of emergency.

Whereas natural disasters often occur subsequent to a warning, exert a sudden definable impact on a community (flood, earthquake), and are followed in time by recovery,[1] human-induced disasters such as war or periods of political violence may be ill-defined, sporadic (in time and space) and intermittent, with several periods of non-activity interspersed with short or long high-intensity periods.[2] The end-point is often not clearly defined and the community may never return to normal if political polarization has occurred.

In natural disasters, investigations usually take place after the occurrence and investigators are able to objectively document effects, whereas, in the case of political violence, there is often a threat to the safety and security of field workers, particularly if the research is conducted during the uneasy lulls. Furthermore, researchers are often unable to remain scientifically objective and detached from events around them in communities where political polarization has been extreme.[3] In addition, epidemiologists who are known to have particular views may be unable to gain access to certain areas. Despite these problems, epidemiologists have an important role to play in documenting the health impact of political violence and developing health surveillance systems during times of political violence.

Aspects of the morbidity and mortality that resulted from the trauma created by the political violence in Cape Town have been described in several reports.[4–8] However, the impact of the political violence on residents' ability to attend routine health services; obtain outpatient treatment for tuberculosis, hypertension, or diabetes; or have access to basic services such as water, sanitation and refuse collections had not been quantified. Concern has been expressed about psychiatric sequelae resulting from the ongoing political violence.[9] Finally, the impact of the political violence on the providers of health care, particularly nurses and doctors, had not been assessed.[10,11] The aim of this study, therefore, was to quantify the overall impact of the political violence on health and health services.

Approval for the study was received from the Ethics and Research Committee of the Faculty of Medicine, University of Cape Town. Several organizations, including academic departments at the University of Cape Town and Stellenbosch, voluntary organizations, and service providers were asked to participate in the proposed study either in a collaborative or consultative role. With the exception of the two local health authorities, all organizations participated to some extent.

In Cape Town, curative and preventive services are delivered separately. Day Hospitals offer mainly curative care, and Midwife-Obstetric Units (MOUs) provide antenatal, delivery, and postnatal services. Both these services are run by the Provincial Health Authorities. Preven-

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tive services are run by State Health (central government) or the Local Authority.

Methods

Available press reports and officially published police reports clearly indicated that Old Crossroads and KTC Townships in Cape Town were most directly affected by outbreaks of violence; they were designated high impact areas. Surrounding townships, particularly Guguletu, were designated as medium impact areas. Other townships, such as Khayelitsha, Langa, and Nyanga were defined as low impact areas. All Black areas had high levels of police/defense force activity.

Monthly totals of patients seen in trauma units of the two major local hospitals serving the townships as well as information about total ambulance call-outs per month for 1985 and 1986 were obtained for all Black townships.

Requests for monthly township-specific disease notifications (mainly infectious diseases) were refused by the two local authorities. Therefore similar information about totals of measles and tuberculosis notifications, grouped within race categories for these two local authorities separately, were obtained from the Regional Directorate of Health for the Western Cape. This information lacked specificity since it included all Black townships within each of the two local authorities and was not available at individual township level.

The Community-based Survey

Cluster sampling was used because there were no readily available lists of houses or recent maps. October 1986 population estimates for all Black townships in Cape Town and the most recent housing maps (dated 1986) were obtained from the Cape Provincial Administration. Individual households were numbered on the maps. It was calculated that a sample of approximately 1,700 households, selected from townships proportional to township size, would be required to yield estimates with a suitable level of precision. For smaller townships the number of households was increased so as to obtain reliable estimates. On this basis, a total of 85 clusters of 20 households each was selected.

Houses which would act as starting points were randomly selected from a list of all stands in townships for which maps were available. For informal settlement areas, rough maps were drawn and starting houses were randomly selected using a grid system. Clusters of 20 households in the vicinity of the randomly selected households were identified.

Twenty-five male and female health workers from the Black townships, who had previously worked in a jointly church-State funded curative clinic in Old Crossroads (Empelisweni), were employed as interviewers. They participated in the development of the questionnaire and thereafter in a three-day training workshop during which general interview skills were supplemented with role playing and pilot studies. The importance of obtaining objective information was emphasized.

The questionnaire (available on request from the author) was developed and translated into the vernacular (Xhosa) by the interviewers and researchers. Information was obtained regarding: crowding; employment status; number of children under the age of 5 years; problems in receiving treatment for hypertension, diabetes, tuberculosis, mental disorder, or physical disability including the month/s and type of problem; problems in attending routine services during 1986; injuries sustained by household members during 1986; and, psychosomatic symptoms reported by the respondent during 1986. The interviewer did not directly question whether respondents had experienced problems during periods of political violence. Instead, the month and reason for specific problems were documented.

As a result of the political polarization that occurred, several of the interviewers, who had been forced to abandon their homes during the political violence of May to July 1986, were not able to interview safely in Old Crossroads township. Similarly, several current residents in the high impact area were reluctant to interview in certain other townships. For these reasons, interviewers could not be randomly allocated to clusters and most interviewers worked in areas in which they felt most secure. Despite these attempts to ensure their personal safety, one of the supervisors was assaulted when he entered his previous township to collect questionnaires and investigate the progress of the study.

At each household, interviewers informed the respondent that they were involved in a health survey of the townships, and assured him/her of the anonymity of the responses. Furthermore, they indicated that each person had the right to refuse to participate in the study.

A supervisor was appointed for each group of six to eight interviewers to check completed questionnaires. The main study was conducted between November 26 and December 22, 1986, four to five months after the major violence and five to six months after the state of emergency had been declared and information restricted. Interviewers worked mainly during the late afternoon during weekdays and during the mornings on weekends.

Notwithstanding many problems, refusals to answer questionnaires occurred in less than 5 per cent of households approached.

Midwife/Obstetric Units and Day Hospitals

All nurses working during November 1986 in five day hospitals, three Midwife/Obstetric Units (MOUs), and voluntary organizations that served the Black areas previously defined were included in the survey. In November 1986 there were three MOUs in the Peninsula. The MOUs served a high, a medium, and a low impact area. Two day hospitals served low impact areas, a second served a high impact area, while the other two day hospitals were in areas subject to sporadic outbreaks of violence.

Data were collected by a questionnaire covering: access to work, school attendance of nurses' children, presence/absence of intimidation/violence, continuity/curtailment of services, and nurses' assessments of the standard of care during the unrest. The questionnaires were distributed over a period of four days in early December 1986.

Results

Routinely Available Information

Information from the two hospitals' trauma units for Blacks indicated very little fluctuation in total cases seen over the 24-month period surveyed. Examination of the Metro Emergency Services data for the same period showed no clear trend with respect to either an increase or decrease in ambulance call-outs during the months May-July of 1986.

Considerable fluctuation in tuberculosis notifications was apparent for both Cape Town City Council and the Cape Divisional Council (DivCo). In Figure 1, it can be seen that despite the wide fluctuations that occur from month to month, a sharp decrease in the number of notifications occurred between May and July of 1986 among Blacks. This was not apparent for "Coloreds", the government designa-

TABLE 1—Problems Encountered in Receiving Basic Services in Townships Affected by Varying Degrees of Political Violence, Cape Town, South Africa, 1986

Service	High Impact Area	Medium Impact Area	Low Impact Area
Number of households	317	295	928
Percentage of households with problems of:			
Regular transport	21.8	18.6	6.1
Clean/sufficient water	32.2	0	0.4
Regular removal of toilet buckets	33.4	3.4	0.1
Street lighting	4.4	15.6	5.4

tion for people of mixed descent. ("Coloreds" are used as a comparison group since notification data were available only by race, not township.) No clear trends emerged when studying the information from measles notifications.

Community-based Survey

A total of 1,545 households were visited. Five questionnaires did not include information about the area and were excluded from further analyses. The remaining 1,540 households represent 91 per cent of the target number. One of the interviewers absconded, together with his questionnaire, after having interviewed approximately 80 households.

Overall, 82.8 per cent of households in the townships had access to regular transport, 87.0 per cent had clean and sufficient water available, 83.2 per cent of households appeared to have regular removal of bucket toilets, and 67.0 per cent reported adequate street lighting.

Problems with these services in the high impact area emerged in the peak months of the violence, between May and July. Over 80 per cent of the disruptions reported in these areas occurred during the peak month. Table 1 shows clearly that households in the high impact area experienced the highest levels of disruption to services.

Table 2 presents similar information for utilization of selected medical services. The percentage of houses with people reporting problems with obtaining blood pressure treatment was similar in high and medium impact areas; however, this information needs to be interpreted with caution since the at-risk groups may differ between townships both in terms of their access to services during "normal" times and in terms of their age/sex profile.

Overall and cause-specific reported injury rates were calculated using the total number of people resident in the household and are presented in Table 3. The questionnaire made provision for recording any injuries in up to four household members during 1986. The overall reported injury rate was 44.7 per 1,000 population for 1986. The highest rates were reported in high and medium impact areas. The overall annual incidence of gunshot injuries was 11.5 per 1,000, being approximately one-fourth of the overall injury rate (44.7 per 1,000). The highest rates for gunshots and burns were recorded in the high impact areas. These causes are more likely to be attributable to political violence than stabs and motor vehicle accidents which occurred at comparable rates in high and medium impact areas.

Survey of Nurses

The overall response rate for the nurses was 75.7 percent with 171 nurses returning their questionnaires. Of these, nine were unable to complete the forms because they were newly employed in the areas. The analysis is therefore based on a total of 162 respondents. Since the questionnaire was anonymous it was impossible to establish which individual nurses were non-responders. The response rate for the MOU nurses (95.7 per cent) was higher than that obtained in the day hospitals (66.4 per cent).

The median age of the nurses was 40 years. Most of them live in or near the Black townships. Ninety-nine nurses had school-age children, of whom 22 had a total of 35 children who were unable to get to school during 1986. Twenty-six of these 35 children did not attend school because their mothers perceived that there was a danger due to unrest, while four children were at schools that closed as a protest against apartheid.

Eighteen nurses needed to make alternative transport arrangements between May and July to get to work. All of these nurses were from either the MOU or day hospital serving the high impact area.

Twenty-two nurses were discouraged from going to work during 1986. Seventeen of these stated that this occurred during June. Twenty-eight nurses (17 per cent) reported some aspect of their nursing services having been stopped during 1986, with home visiting being the most affected service.

Nurses from high impact areas reported that preventive clinics, postnatal services in maternity antenatal services, and sexually transmitted diseases clinic services had been curtailed during the height of the violence.

The extent of disruption to certain essential ancillary clinic services is summarized in Table 4. The day hospital and MOU in the high impact area experienced considerable disruption to a range of services.

TABLE 2—Problems Encountered in Receiving Health Services in Townships Affected by Varying Degrees of Political Violence, Cape Town, South Africa, 1986

Service	High Impact Area	Medium Impact Area	Low Impact Area
Number of households	317	295	928
Percentage of households with problems of:			
Blood pressure treatment	8.5	9.8	1.7
Family planning	10.1	2.0	1.3
Day Hospital/Empelisweni clinic	21.1	3.4	1.0

TABLE 3—Injury Rates Experienced in Townships Affected by Varying Degrees of Political Violence, Cape Town, South Africa, 1986

Injuries	High Impact Area	Medium Impact Area	Low Impact Area
Number of household members	1377	2476	5971
Overall injury rate/1000 people	88.6	88.9	34.5
Injury rate/1000 people for:			
gunshots	35.6	15.3	5.4
MVA/fractures	29.8	31.9	11.6
burns	18.2	14.1	7.7
stabs	8.7	13.3	3.0

MVA = Motor vehicle accident

With curtailment of certain essential services, difficulties relating to their home situations, personal danger en route to and while at work, and an unexpectedly increased workload, it was important to determine whether the nurses were able to maintain their usual standard of care. Of the 162 respondents, 115 said that they were able to do so. Of the 47 respondents who felt unable to maintain their usual standard of care, 25 (53 per cent) were from the MOUs. This was probably due to the fact that these nurses in particular were unable to maintain home visits to mothers and their newborns, duties perceived by the midwives to be a vital service.

Discussion

In the case of TB and measles, it was not possible to determine whether the decrease in TB notifications during May to July 1986 occurred mainly in the areas that experienced the highest impact of political violence during 1986, since township-specific data were not available. Additional problems have been documented previously with respect to the quality of TB notifications in the Cape.[13] Underdiagnosis and underreporting could be exacerbated during periods of political violence.

Township-specific call-out figures for ambulances and trauma admissions were not available, and it is likely that many trauma cases that did occur were unable or reluctant to use the formal health services for fear of being detained, as police have often detained people who report to health services with gunshot injuries.

TABLE 4—Disruption of Services Reported by Nurses in Midwife Obstetric Units (MOU) and Day Hospitals in Townships Affected by Varying Degrees of Political Violence, Cape Town, South Africa, 1986

	MOU		Day Hospital		
Disrupted Services	Low Impact Area	High Impact Area	Low Impact Area	Medium Impact Area	High Impact Area
Total number of nurses	15	43	20	73	11
Number of nurses reporting disruption to:					
Water	0	2	0	3	0
Electricity	4	5	0	1	5
Telephone	0	4	0	5	3
Refuse removal	0	7	1	6	7
Sanitation	0	3	0	2	1
Ambulance	0	14	1	11	6

In the community-based survey, different sampling frames had to be used in different areas. Although cluster sampling was used to save time and to ensure that interviewer pairs were able to work together, this seems unlikely to have affected the representativeness of the sample.

Ideally, interviewers should have been allocated randomly, but, as mentioned previously, the risk to the interviewers' safety prevented such random allocation. Since interviewers largely interviewed in areas which they themselves selected, it is possible that results could reflect interviewer biases. However, several points militate against this. During training, the role playing and the emphasis placed on non-directive, objective questioning should have reduced the interviewer bias. Questions were never directly asked about "unrest". The consistency of answers to "non-unrest" related questions in similar townships using different interviewers further suggests that interviewers did not introduce personal interpretations into answers. Questions particularly relating to children and housing were within expected bounds. In one township, the per cent of children under 5 years of age reported to have a "road-to-health" card (60 per cent) was identical to that obtained in an earlier nutrition survey.[14]

The overall 91 per cent response rate, despite one interviewer absconding, testifies to the dedication of the interviewers despite the problems. Interviewee suspicion was generally not encountered.

An omission of this study was that information was not obtained about where household members lived in January 1986. The May to July upsurge of political violence resulted in about 60,000 people being displaced from their homes. They were housed initially in numerous halls of churches and schools and later were either resettled in the new dormitory township of Khayelitsha or taken in by other township households. This group of displaced people is likely to have been most affected by the political violence and were not included in our survey.

Non-response of nurses was probably related to a feeling that participating in this survey might have been viewed as "informing" against the community and so, in a real sense, some nurses might have felt vulnerable. The day hospital serving the high impact area was the most seriously affected center for prolonged periods in 1986, and the poorest response was obtained from that area.

For reasons of confidentiality, the study could not include a repeat survey to assess reliability or validity. In the community-based survey, after each cluster had been surveyed, it was checked (independently) for coverage and then the address card was destroyed thus eliminating any possibility of security forces identifying individual respondents.

Despite several methodological problems, the consistency of the results across areas in relation to the time of occurrence of unrest-related events as well as the consistency of responses with respect to a number of different questions asked suggest that there was a considerable and widespread impact on the health of the community and the delivery of health services, particularly affecting the high impact communities.

This cross-sectional study should be regarded as preliminary in the sense that it was limited to a description of the relatively short-term effects of political violence. Further studies are required to determine the long-term effects (including psychological and mental aspects) of the political violence and to aid health planners in their decisions regard-

ing adaptations required to routine health services during or following outbreaks of political violence.[15]

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*SHAWCO = Students' Health and Welfare Centers Organisation.

Brevity, the Soul of Wit

Have you had a thought that's happy?
Boil it down.
Make it short and crisp and snappy—
Boil it down.
When your mind its gold has minted
Down the page your pen has sprinted,
If you want your effort printed,
Boil it down.

—*American Journal of Public Health* 1918; 8:236.