ANIL AGGRAWAL'S
Internet Journal of Forensic Medicine and Toxicology
The world's first online journal devoted entirely to forensic medicine and toxicology · Published 1 January and 1 July

VOL. 4, NO. 1 · JANUARY – JUNE 2003
Downloaded from www.anilaggrawal.com · ISSN 0972-8074 (Online) · https://www.anilaggrawal.com/ij/vol_004_no_001/papers/paper001.html

Suicide and HIV/AIDS in Transkei, South Africa

BL Meel

Head, Department of Forensic Medicine, Faculty of Health Sciences, University of Transkei P/bag X1 UNITRA, Umtata 5100, South Africa

Contact: the corresponding author BL Meel · meel@getafix.utr.ac.za

CITE THIS ARTICLE

Meel BL. Suicide and HIV/AIDS in Transkei, South Africa. *Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology* [serial online], 2003; Vol. 4, No. 1 (January – June 2003): []. Available from: https://www.anilaggrawal.com/ij/vol_004_no_001/papers/paper001.html

ABSTRACT

Background

HIV/AIDS has devastating effects in terms of personal and family suffering. The disease is highly stigmatised and there are many instances of discrimination against sufferers and their families. This could lead to suicide, both in infected as well as affected individuals. The literature lacks clarity and the subject is traditionally problematic to research as it is attached with ethical issues. This study has tried to correlate between the growing number of suicidal deaths and HIV infection in the region.

Objective

To establish the relationship between HIV/AIDS and suicide in the Transkei.

Method

The mortality statistics for 1996-2000 (inclusive) were obtained from the office of the Medical Superintendent, Umtata General Hospital. Suicide statistics were collected from the medico-legal laboratory at UGH.

Results

Over the past five years, there has been an almost two-fold increase in mortality at Umtata General Hospital. There has been a one and half times increase in suicidal deaths (e.g. by hanging), and in deaths from gunshot injuries (which may or may not be suicidal). Fatal poisoning, possibly suicidal,

has increased five-fold. The natural deaths were doubled at Umtata General Hospital and at the same time, two-fold increase in HIV/AIDS prevalence.

Conclusion

All these circumstantial evidences suggest that suicide rates have risen in parallel to the rise in mortality due to HIV/AIDS.

Keywords: HIV/AIDS, Suicide, Hanging, Poisoning, Gunshot

Introduction

In the last 45 years suicide rates have increased by 60% worldwide. Suicide is now among the three leading causes of death among those aged 15-44 years. Suicide attempts are up to 20 times more frequent than completed suicide. Mental disorders are associated with more than 90% of all cases of suicide.[1] Depression affects approximately 25% of those with chronic illness including HIV/AIDS.[2] A survey carried out by National Injury Mortality Surveillance System (NIMSS) in 1999 indicated that suicide accounted for almost 8% of all non-natural deaths. Firearm and hanging each were accounted for one third of all suicides. Most suicide victims were between 20 and 30 years of age.[3] A study carried out in New York City (1997) found that 9% of suicide victims were HIV positive.[4] The HIV seroconversion among the victims of suicide was found to be twice that of the general population.[5] The suicide rate in young people increased dramatically over the last few decades. In 1997, suicide was the 3rd leading cause of death among 15 to 24 years olds.[6] In South Africa, suicidal tendency in teens and young adults is emerging as an important mental health issue that needs to be addressed.[7]

Psychiatric disorders represent 10% of all diseases worldwide. It is thus estimated that about 5 million people in South Africa suffer from psychiatric disorders. In South Africa about 10,000 people commit suicide yearly.[8] There is an increase in suicide rates, and suicidal behavior among black South Africans as reported in 1992.[9] Depressed patients with a personality disorder attempted significantly more suicidal attempts.[10] In all depressed patients, a careful history and physical examination are needed to identify any drugs or concurrent illnesses (HIV), which might cause or exacerbate the depression.[11] Depressive symptoms are common among patients with HIV infection.[12,13] The lifetime prevalence of depression in patients infected with HIV has been estimated at 22-45%. Depression may alter the course of HIV infection by impairing immune function or influencing behaviour.[14]Many people with HIV suffer from depression and suicidal ideation, which responds to antidepressants, counselling, education, and cognitive strategies.[15] There was a significant rise in all measures of depression, which reached a plateau within 6 months before AIDS developed. There is a dramatic, sustained rise in depressive symptoms as AIDS develops, beginning as early as 18 months before clinical AIDS is diagnosed.[17]

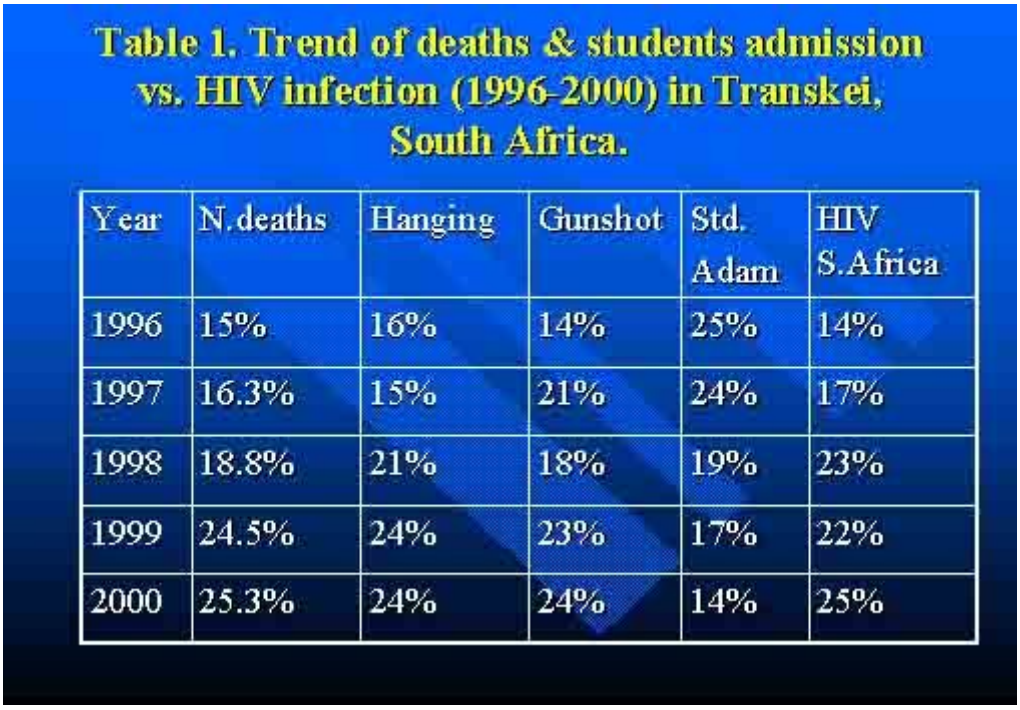

Table 1. Trend of deaths & students admission vs. HIV infection (1996-2000) in Transkei, South Africa.

Year	N.deaths	Hanging	Gunshot	Std. Adam	HIV S.Africa
1996	15%	16%	14%	25%	14%
1997	16.3%	15%	21%	24%	17%
1998	18.8%	21%	18%	19%	23%
1999	24.5%	24%	23%	17%	22%
2000	25.3%	24%	24%	14%	25%

Table 1.

The purpose of this circumstantial report is to suggest for further study so that if this hypothesis found true, could target for an early intervention in HIV/AIDS individuals to prevent suicide.

METHODOLOGY

The mortality statistics for 1996-2000 (inclusive) were obtained from the office of the Medical Superintendent, Umtata General Hospital. Suicide statistics were collected from the medico-legal laboratory at UGH. Deaths due to hanging, poisoning, and gunshot injuries were manually extracted from medico-legal register. Student enrolment records were obtained from the Academic Support section of the University of Transkei. The data was analysed qualitatively and quantitatively, and is presented in tabular and graphic forms.

The setting of the present study was Umtata General Hospital (UGH), a tertiary hospital attached to the University of Transkei medical school. UGH is the only centre in the region for tertiary medical training, and serves a population of nearly five million. Permission to extract, analyse and report the data was duly obtained from the Superintendent, Umtata General Hospital.

RESULTS

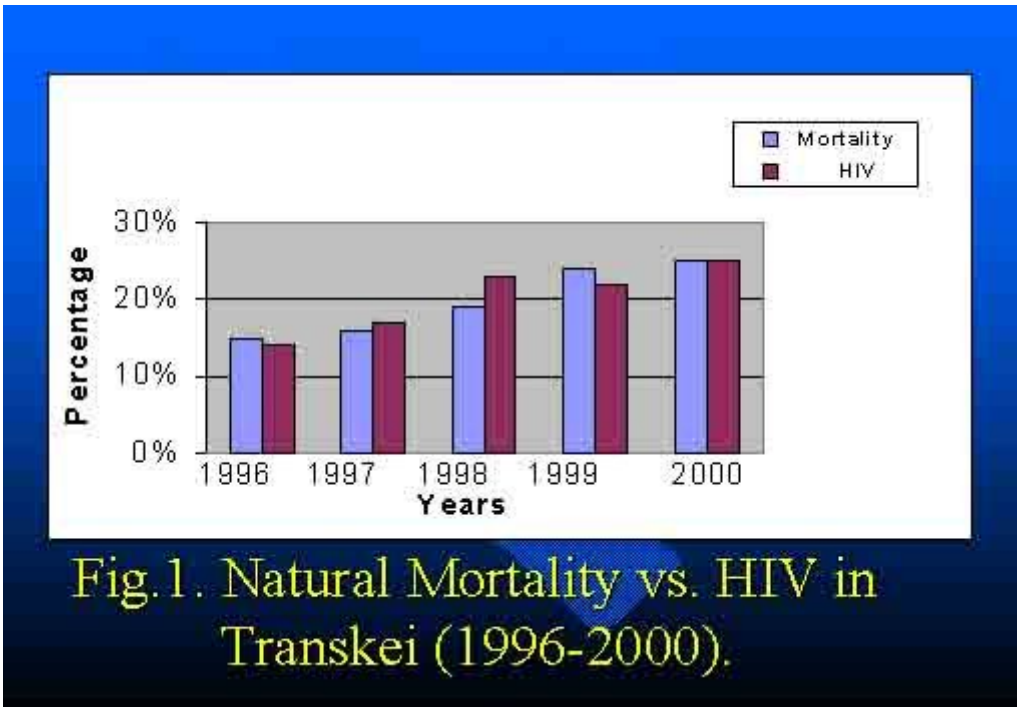

Figure 1.

Table 1 (above) shows that the percentage of UGH mortality from natural causes has increased from 15% in 1996 to 25% in 2000 (Fig 1). Similarly, deaths from hanging have increased from 16 to 24% (Fig. 2 - below left). Most of these (suicide) deaths were males in the 20-30 years age group. Deaths due to poisoning have increased from 4% to 28% over the past 8 years (Table I & Fig. 3), with males predominating over females (66% cf. 34%). Gunshot related deaths have also increased from 14% in 1996 to 25% in 2000 (Fig.4). All these increases correspond to the increase in the estimated prevalence of HIV infection in South Africa from 14% in 1996 to 25% in 2000 (Table 1 - See above). Over the same period student enrolment at the University of Transkei has decreased from 7 038 in 1996 to 3 783 in 2000, a drop of nearly 50% as shown in Fig. 5.

DISCUSSION

South Africa is experiencing an HIV/AIDS epidemic of shattering dimensions.[17]To-date, up to 200 000 have died of AIDS-related illness in South Africa, and more than four million are infected with HIV or have AIDS. The inevitable disruption of HIV/AIDS on all aspects of society will be so profound that it is virtually impossible to contemplate its dimensions.[18] In 1991, the national survey of women attending antenatal clinics found that only 0.8 % was infected in South Africa. In 1994, when the ANC government took power, the figure was still comparatively low at 7.6 %. In 2001 it was 25%.[19]

South Africa has one of the worst epidemic of HIV require a multi-dimensional approach to curb the tide. There is a prediction that approximately 500 000 AIDS-related deaths in the year 2010.[20] South Africa's largest city was looking at burying it's dead in disused mines as death rate here increased due to factors including AIDS. There is currently burying 20 000 people a year, with the figure expected to rise to 70 000 in 2010.[21] The equal number of HIV/AIDS infected, who remains uncounted could be died as a result of non-natural deaths like homicide, suicide and accidents. It is

difficult to know that how many deaths could be associated with non-natural. The risk of suicide among people with psychiatric disorders is well documented.[22]HIV/AIDS often generates related psychiatric and neuropsychiatric sequelae, including depression and anxiety; the cumulative effects of extreme and chronic stress; and CNS manifestations from changes in affect, behaviour and cognition.[23] HIV/AIDS changes human behaviour and could lead to unnatural deaths like suicide.[24] Marzuk et al (1988) reported that such CNS problems increased suicide rates.[25] Feelings of helplessness and hopelessness are two signs of depression that occur in people with HIV/AIDS.[26]

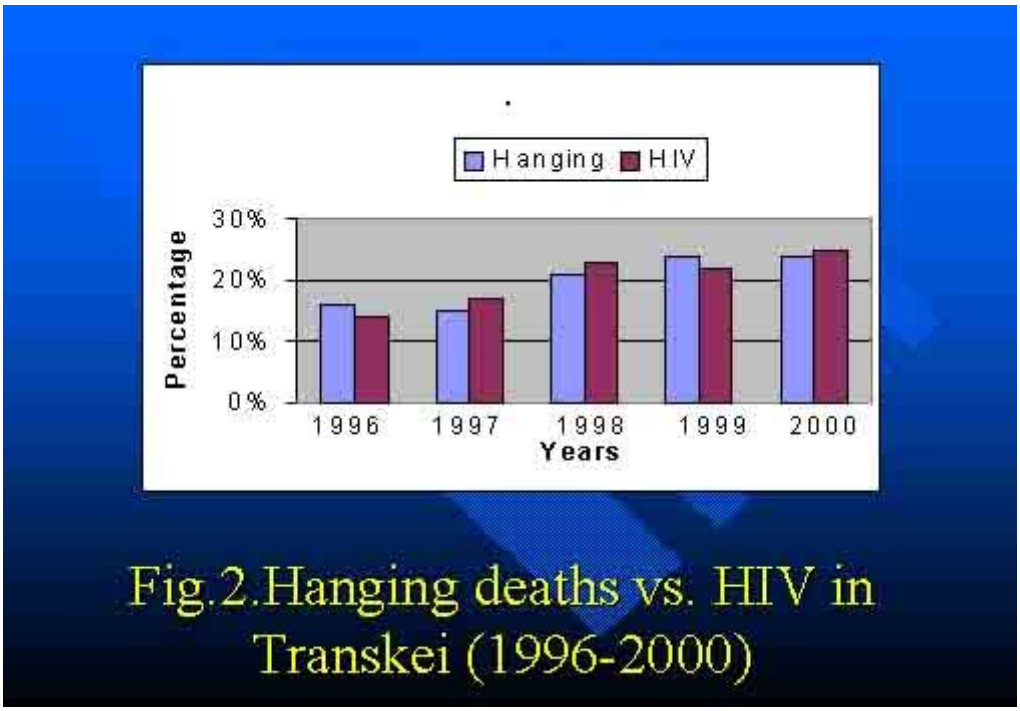

Figure 2.

Human immunodeficiency virus (HIV) infection of the nervous system is unique when compared with other viral encephalitides. Neuronal cell loss occurs in the absence of neuronal infection result in neuronal dysfunction and cell loss.[27] Compared to a serostatus conversion, AIDS is more closely linked to psychiatric illnesses that are themselves risk factors for suicide, such as depression and psychosis.[28] The brain, including its serotonergic pathways that have been linked to a propensity for impulsive suicidal behaviours, is likely to be much more involved in AIDS through HIV encephalitis and opportunistic infections.[29]

There is still much to be learned about suicide in the context of HIV illness. True, low-grade depressive mental symptoms are frequent among HIV positive individuals.[30] Mental disorders are associated with more than 90% of all cases of suicide.[1] Depression affects approximately 25% of those with chronic illness.[2] Depressive symptoms in the HIV positive individuals are significantly higher. Although depressive symptoms may not be strong enough to warrant a psychiatric diagnosis, but a careful evaluation of risks were required.[31] Depressive symptoms and suicidal ideation are common amongst HIV positive patients, occurring at comparable or greater rates than those found in a variety of other medically ill populations.[32] The prevalence of HIV/AIDS and suicide is difficult to determine specifically. There has been increasing death in parallel with HIV/AIDS (Table 1 - See above). The percentage of UGH mortality from natural causes has increased from 15% in 1996 to 25% in 2000 (Fig. 1). Majority of these suicides were asymptomatic on autopsy.

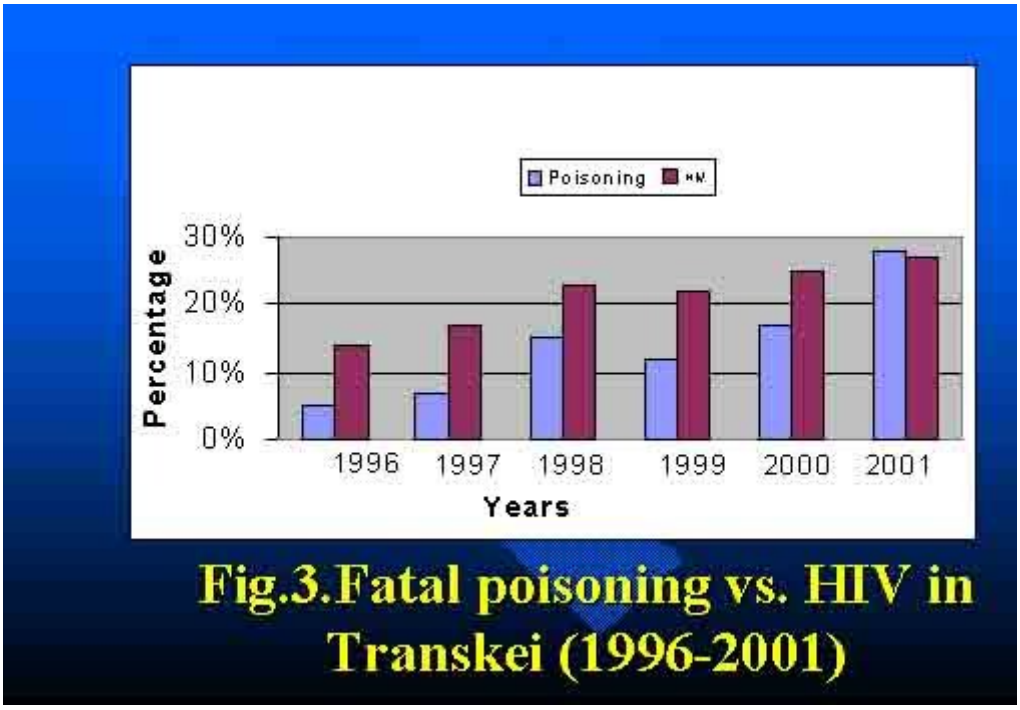

Figure 3.

There has been an increase in mortality at Umtata General Hospital since the HIV/AIDS epidemic started its steep rise (1996-2000) as shown in Fig. 1. Statistics South Africa is conducting a study into "secondary causes of death" in an attempt to assess the true impact of HIV/AIDS. These secondary causes as suggested an alternative trauma surveillance approach would provide empirical information about the behaviour of some of the HIV positive population, [33] who prefer to die in motor vehicle accident than to long-standing-stigmatise-sickness. That could be reason of uncontrollable state of South African road carnage, and drying downs the motor vehicle accident funds. Preliminary indications are that there has been a marked rise in the number of natural deaths (Table 1 - See above), but non-natural causes -which includes trauma has not been accounted for. It is expected co-relation between HIV and mortality due to natural causes at Umtata General Hospital (Fig. 1).

Among possible outcomes of HIV/AIDS infection are increases in suicide. Hanging as shown in Table I, is a definitive method of committing suicide. The increase in hanging deaths from 16% in 1996 to 24% in 2000. HIV/AIDS could be one of the reasons of this high incidence (Fig. 2), as there were several studies available indicating that there is increased risk of suicide in people with HIV/AIDS. Mazruk et al (1988) found that 36% increase[25] and Kazer and colleagues a 21% increase among people with HIV/AIDS.[34] Cote et al (1992) found a 7.4-fold increase among people with HIV/AIDS as compared to demographically similar men in the general population.[22] Previously, suicide among South African Blacks was relatively uncommon, but the picture has changed in recent years. [6] Deaths by self-hanging and by gunshot injuries (which may or may not be suicidal) have each increased by one and half times as shown in Fig. 2 & 4, while fatal poisonings have shot up by an alarming five-fold increase (Fig. 3). In 1993, poisoning was observed 1% female suicide, have climbed up to 9% in 2001. The poisoning in males also has increased from 3% to 19% in the similar period. The HIV seropositivity was 0.8 % in National Survey of women attending antenatal clinics in 1993. This has increased to 25% in 2001 (Table II - Far below). Young African women are the poorest, most economically marginalized and least educated sector of the South African population

thus placing them at the bottom the health pile in this country, and rendering vulnerable to HIV/AID.[35]

This nine-fold increase in female fatal poisoning, and twenty-two times increase in the spread of HIV/AIDS. This could be possible as in recent years; several right-to-die groups have advocated that individuals with AIDS use poisoning as a means of self-inflicted death. However, more than two-thirds of HIV-positive suicide victims continue to use more violent means such as hanging, firearms, and other violent methods.[4] In a recent autopsy-based study (under-publication) by the author found that 82% of the victims died as a result of trauma in this region. Homicide accounted for 50%. Among the homicides gunshot injuries were responsible for 24%, stab wounds 17%, and blunt trauma 9%. There is drastic increase in deaths related to gunshot.[36] There is recent increase in death toll on South Africa's roads due to motor vehicle accidents has brought the Government's Arrive Alive campaign in disrepute. The death toll was at least one quarter higher than the December 2001.[37] This rapid change in empirical death rates could be indicative of the profound impact of HIV/AIDS, and the startling trends ought to galvanise efforts to confront the devastation due to the epidemic.[17]

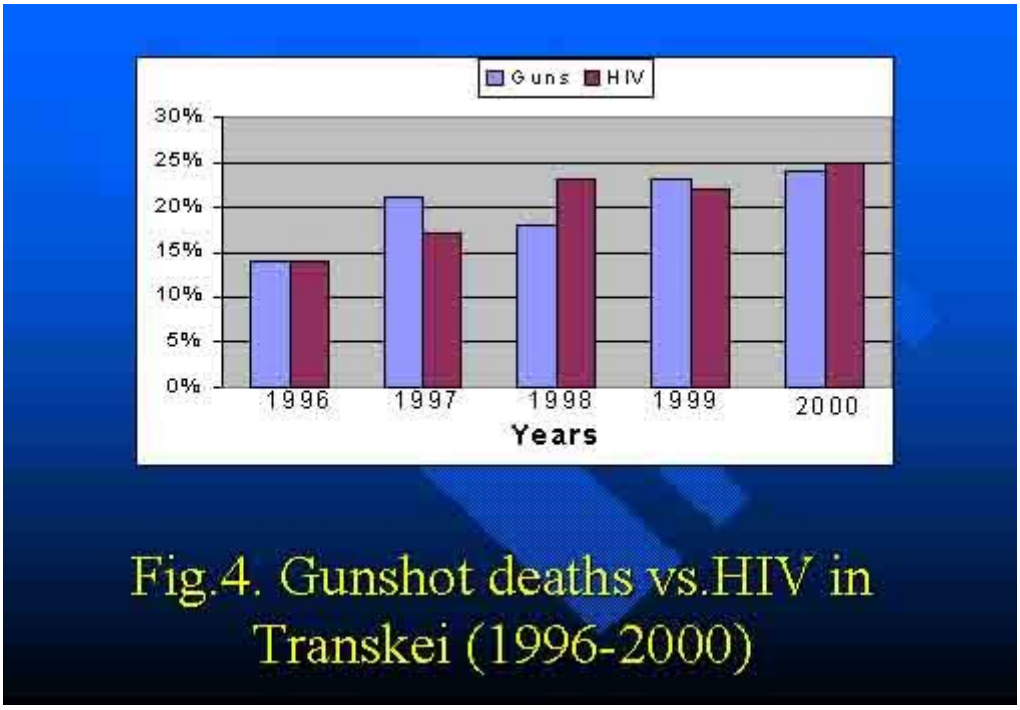

Figure 4.

Deaths due to firearm injuries have increased one and half time in last 5 years (1996-2000) as shown in Table I. In 1996 gunshot related deaths were14%, which has gone up24% in 2000. It could be a co-incidence that the figures resemble with HIV/AIDS epidemic (Fig. 4). It is difficult to estimate the exact number of firearm suicide, but we are reasonably confident that suicide has been increasing among HIV positive individuals, and most of these (suicide) deaths were males in the 20-30 years age group

In the early stage of HIV infection, HIV patients without AIDS may be prone to depressive symptoms.[38]In a study carried out (1995) in UGH mortuary found that 15.5% of the trauma victims were HIV-seropositive. This was higher than general population.[23] Since the HIV screening in this study was not done at autopsy, some individuals who committed suicide may not have even been

aware that they were seropositive. In addition, many individuals who were HIV seropositive undoubtedly had other risks for suicide such as substance abuse and alcoholism. HIV serostatus, in itself, could associate, at most, with a modest elevation in suicide risk.[4]

There are several risks associated with HIV/AIDS, but the most important immediate risk, soon after an individual aware of his/her HIV status, is committing suicide. This is as a result of sudden unexpected, unprepared disclosure of HIV test result, lead to mental breakdown i.e. severe acute depression. HIV/AIDS is a major concern to the health care community and the world around them. Preventive efforts and education have been the focus of the fight against AIDS. Regular counselling by physicians are expected, so that risk of suicide could be minimized. It is essential to screen, identify, and treat depression among patients entering care for HIV disease. Encouragement in joining support groups is a reasonable component of a addressing this common condition.[39]

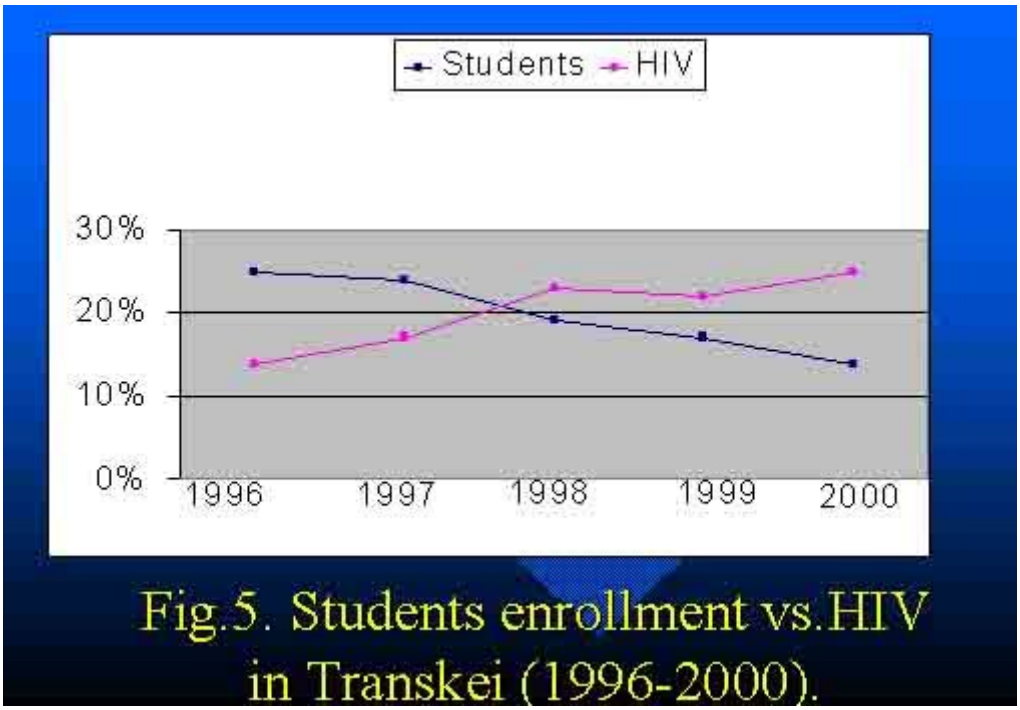

Figure 5.

Critical psychosocial stressors of HIV/AIDS including social stigma, discrimination, isolation, lack of support from family and friends, and social devaluation, enhance suicide risk. Substantial number of primary care physicians is not trained enough in the area of psychosocial aspects of health care, and therefore missing important opportunities to prevent HIV transmission not adequately assessing patients' risks and not providing necessary risk reduction counselling during their physician-patient encounters.[40] In a study carried out in Uganda (1997) reported that 29% of health workers never discussed HIV prevention with patients, 26% had never referred patients for HIV counselling and 31% had never advised patients suspected of HIV infection to be tested. Hospital based health workers are missing important opportunities for AIDS prevention education with their patients.[41]

More than one third of physicians reported feeling uncomfortable talking about patients' sexual preferences and practices. To identify patients at risk and to help prevent AIDS, methods must be found to make physicians more comfortable discussing sexual issues with their patients.[42] Primary care physicians play an increasingly important role in the care of persons with HIV/AIDS due to the

rising number and changing geographic distribution of persons infected with HIV/AIDS.[43] Family physicians are caring for an increasing number of those with human deficiency virus (HIV) infection, those at risk, and those concerned about HIV disease. They need to take a more active role in educating and counselling patients about HIV disease.[44] There are 50% patients visits to General Practitioners are usually due to some sort of mental problem. The WHO predicts that by the year 2020 depression as a single disease, causing disability and death in the world. The World Bank has also predicted, depression to be number one disease by 2020.[8]

Table II. Incidence of fatal poisoning: Males vs. Females in Transkei (1993-2001).

Years	Males	Females	Total poisoning
1993	3 (3%)	1 (1%)	4 (4%)
1994	1(1%)	3 (3%)	4 (4%)
1995	2 (2%)	4 (4%)	6 (6%)
1996	2 (2%)	3 (3%)	5 (5%)
1997	6 (6%)	1 (1%0	7 (7%)
1998	11 (11%)	3 (3%)	14(15%)
1999	9 (9%)	2 (2%)	11 (12%)
2000	10 (10%)	6 (6%)	16 (17%)
2001	17(19%)	9 (9%)	26 (28%)
Total	61 (66%)	32 (34%)	93 (100%)

Table II.

Currently, HIV/AIDS is the commonest cause of acute depression. Primary care physicians with little experience treating HIV infection are providing care for large number of HIV-infected persons.[45] Individuals with HIV /AIDS are subject to disease specific stressors and to a greater number of general suicide risk factors.[46] A quality counselling to the HIV-positive patients could avoid acute depression, therefore, an attempt of committing suicide. There is a need for increased training and education of primary care physicians about AIDS related suicide prevention.[47] HIV infection is associated with an increased risk of suicidal behaviour.[48] Suicidal acts seem to be more frequent in AIDS patients than in the general population.[49] Health care professional must be aware of the potential for suicidal thoughts and suicidal behaviours in HIV-positive patients to enable them to provide the necessary support.[50] Ironically, it is difficult to provide support as many areas in the former Transkei can best be described as deep-rural with poor roads, poor water supply, limited electricity, few telephone connections and very limited access to transport and health services.

CONCLUSION

This study suggests that suicide rates have risen in parallel to the rise in mortality due to HIV/AIDS over the same period. Accurate estimation of suicide in relation to HIV/AIDS is necessary in measuring the costs of the epidemic and for effective strategic planning. A more careful follow up study is needed to understand the non-natural deaths in association with HIV/AIDS.

LIMITATIONS

Evidence underlying conclusions made in the present study may be circumstantial, but its credibility is enhanced by the fact that the observed mortality trends are similar to data for the whole country recently reported by the Medical Research Council.[17]

ACKNOWLEDGEMENTS

My special thanks to the HIV/AIDS victims, who have died in the discriminatory, and stigmatised environment of the community. I would like to thank 'South African Anxiety and Depression Support group' and to Professor Antoon Leenaar for their encouragement to write this work.

References

1. WHO. International suicide statistics. Internet, 2000.
2. AAGP. Patients & caregivers-Late life Depression Fact Sheet. Internet, 2003).
3. Butchart A. A profile of fatal injuries in South Africa 1999. First annual report of the National Injury Mortality Surveillance System (NIMSS). Executive summary 2000.
4. Mazruk PM, Tardiff K, Leon AC, Hirsch CS, Hartwell N, Portera L, Iqbal MI. HIV seroprevalence among suicide victims in New York City, 1991-93. Am J Psychiatry 1997; 154 (12): 1720-1725.
5. Dannenberg AL, McNeil JG, Brundage JF, Brookmeyer R. Suicide and HIV infection: mortality follow-up of 4147 HIV sero-positive military service applicants. JAMA 1996; 276:1743-1746.
6. Hoyert DL, Kochanek KD, and Murphy SL. Deaths: final data for 1997. National Vital Statistics Report, 47(19). DHHS publication No. 99-1120. Hyattsville, MD: National Center for Health Statistics, 1999.
7. News front Modern Medicine, September 1999.
8. South African Society of Psychiatrists (SASOP). Press release- mental health day, 9th October 2001.
9. Schlebusch L, Naseema BM. Department of Medically applied psychology, faculty of Medicine, University of Natal, South Africa, 1998.
10. Van Gastel A, Schotte C, Maes M. The prediction of suicidal intent in depressed patients. Acta Psychiatr Scand 1997; 96(4): 254-9.
11. Hofman DP, Dubovsky SL. Depression and suicide assessment. Emerg Med Clin North Am 1991; 9(1): 107-21.
12. Judd F, Mijch A, McCausland J, Cockram A. Depressive symptoms in patients with HIV infection: a further exploration. Aust N Z J Psychiatry 1997; 31(6): 862-8.
13. Kalichman SC, Rompa D, Cage M. Distinguishing between overlapping somatic symptoms of depression and HIV disease in people living with HIV/AIDS. J Nerv Ment Dis 2000; 188(10): 662-70.
14. Penzak SR, Reddy YS, Grimsley SR. Depression in patients with HIV infection. Am J Health Syst Pharm 2000; 57(4): 376-86.
15. Valente SM, Saunders JM. Managing depression among people with HIV disease. J assoc Nurses AIDS care 1997; 8(1): 51-67
16. Lyketsos CG, Hoover DR, Guccione M, Dew MA, Wesch JE, Bing EG, Treisman GJ. Changes in depressive symptoms as AIDS develops. The multicenter AIDS cohort study. Am J Psychiatry 1996; 153(11): 1430-7.
17. Dorrington R, Bourne D, Bradshaw D, Laubscher R, Timaeus.Technical report on the impact of HIV/AIDS on adult mortality in South Africa, 2001: 5.

18. Harber R. We need to structure our environment to combat AIDS. The Mail and Guardian, 17th May 2002.
19. Whiteside A, Sunter C. AIDS: The challenge for South Africa, 2001.
20. HIV/AIDS in South Africa. The response of science to the epidemic. South African Journal of Science 2000; 96:259-261.
21. United Nations. Statistics: Johannesburg looks at disused mines to bury dead. Daily dispatch, Monday, December 2, 2002.
22. Cote R, Biggar R, Dannenberg A. Risk of suicide among persons with AIDS: A national assessment. Journal of American Medical Association 1992; 268:2066-2068.
23. Levenson A. Psychiatric aspects of AIDS. Psychiatric hospital 1988; 19:109-113.
24. Meel BL. Prevalence of seropositivity in subjects of unnatural deaths and its health implications in Transkei, South Africa. Poster presented in XIII International conference on HIV/AIDS, Durban in 2000.
25. Mazruk P, Tierney H, Tardiff K, Gross E, Morgan E, Hsu M, MannJ. Increased risk of suicide in persons with AIDS. Journal of American Medical Association 1988; 260:1333-1337.
26. Sauders J, Buckingham S. When the depression turns deadly. Nursing 1988; 18:59-64.
27. Nath A. Human immunodeficiency virus (HIV) proteins in neuropathogenesis of HIV dementia. J infect Dis 2002; 186(Suppl 2): S 193-8.
28. Perry SW. Organic mental disorders caused by HIV: update on early diagnosis and treatment. Am J Psychiatry 1990; 147:696-710.
29. Mann JJ, Stanley M (eds). Psychobiology of suicidal behaviour. Ann NY Acad Sci 1986; 486(Suppl).
30. Perry SW. HIV-related depression. Res Publ Assoc Res Nerv ment Dis 1994; 72:223-38.
31. Fukunishi I, Matsumoto T, Negishi M, Hayashi M, Hosaka T, Moriya J. Somatic complaints associated with depressive symptoms in HIV-positive patients. Psychother Psychosom 1997; 66(5): 248-51.
32. Judd FK, Mijch AM. Depressive symptoms in patients with HIV infection. Aust N Z Psychiatry 1996; 30(1): 104-9.
33. Shell R, Mckenzie A, Vaidya A, Meidany F, Rama P. A second generation HIV/AIDS surveillance protocol based on unlinked anonymized testing of trauma patients at Southern Africa. Approved by Department health for pilot project in satellite centers in Eastern cape, 2002.
34. Kizer KW, Green M, Perkins CI, Doebbert G, Hughes MJ. AIDS and suicide in California (letter). JAMA 1988; 260:1881.
35. Susser I, Stein Z. Culture, Sexuality, and Women's Agency in the prevention of HIV/AIDS in Southern Africa. American Journal of Public Health 2000; 90:1042-1048.
36. Meel BL. Prevalence of Traumatic deaths in the Transkei, South Africa. Submitted for publication in the Journal of trauma.
37. Editorial. Daily Dispatch, Monday, January 6, 2003.
38. Hayashi M, Fukunishi I. Lack of medical support in HIV infection and unstable mood states. Psychol Rep 1997; 81(2): 635-9.
39. Savetsky JB, Sullivan LM, Clarke J, Stein MD, Samet JH. Evolution of depressive symptoms in human immunodeficiency virus-infected patients entering primary care. J Nerv Ment Dis 2001; 189(2): 76-83.
40. Kerr SH, Valdiserri RO, Loft J, Bresolin L, Holtgrave D, Moore M, MacGowan R, Marder W, Rinaldi R. Primary care physicians and their HIV prevention practices. AIDS Patient Care STDS 1996; 10(4): 227-35.

41. Mungherera M, van der Straten A, Hall TL, Faigeles B, fowler G, Mandel JS. HIV/AIDS-related attitudes and practices of hospital-based health workers in Kampala, Uganda. AIDS 1997; 11(suppl l): S79-85.
42. Coverdale JH, Aruffo JF, Laux LF, Vallbona C, Thornby JI. AIDS, minority patients, and doctors: what's the risk? Who's talking? South Med J 1990; 83(12): 1380-3.
43. Shi L, Samuels ME. Richter DL, Stoskopf CH, Baker SL, Sy F. Primary care physicians and barriers to providing care to persons with HIV/AIDS. Eva Health Prof 1997; 20(2): 164-87.
44. Epstein R. Patient attitudes and knowledge about HIV infection and AIDS. J Fam Pract 1991; 32(4): 373-7.
45. Wenrich MD, Ramsey PG. Patterns of primary care patients infected with human immunodeficiency virus. West J Med 1991; 155(4): 380-3.
46. Beckett A, Shenson D. Suicide risk in patients with human immunodeficiency virus infection and acquired immunodeficiency syndrome. Harv Rev Psychiatry 1993 may-Jun; 1(1): 27-35.
47. Gemson DH, Colombotos J, Elinson J, Fordyce EJ, Hynes M, Stoneburner R. Acquired immunodeficiency syndrome prevention. Knowledge, attitudes, and practices of primary care physicians. Arch Intern Med 1991; 151(6): 1102-8.
48. Pugh K, O'Donnell I, Catalan J. Suicide and HIV disease AIDS care 1993; 5 (4): 391-400.
49. Starace F. Suicidal behaviour in people infected with human immunodeficiency virus: a literature review. Int J Soc Psychiatry Spring; 39(1): 64-70.
50. Carvajal MJ, Vicioso C, Santamaria JM, Bosco A. AIDS and Suicide issues in Spain. AIDS Care 1995; 7 Suppl 2:S135-8.