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Soornarain S Naidoo, Uvistra Naidoo & Ashantha Naidoo

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Unmasking depression in persons attempting suicide

Soornarain S Naidoo^{*,} Uvistra Naidoo^a and Ashantha Naidoo^a

^a College of Health Sciences, University of KwaZulu-Natal, Durban, South Africa

*Corresponding author, email: naidoos79@ukzn.ac.za

Background: Suicidal behaviour is highly prevalent and increasing at an alarming rate among all socio-demographic groupings in South Africa. Approximately 9.5% of all unnatural deaths in young people in South Africa are due to suicide. The ratio of non-fatal suicide attempts to attempts with fatal outcomes varies between 20:1 and 40:1 depending on the geographical region and the community composition being studied. Although depression is a common co-existing finding in many studies involving patients with suicidal behaviour, current evidence suggests that it is either not detected or it is inappropriately managed in clinical practice.

Aim: This study compared self-reported perceived and objectively assessed personal physical and mental well-being of adults attempting suicide and being admitted to two local community-based public hospitals in South Africa.

Method: Validated questionnaires were used to elicit relevant data from 688 adults attempting suicide and being admitted to two community-based public hospitals in Durban which was analysed using SPSS®.

Results: The majority of participants were female, single, younger age group, unemployed, low education and low income level. Only 30.3% of participants reported long-standing illnesses lasting more than 6 months. The majority perceived their physical and mental health to be normal. However, an objective assessment revealed a large number of participants to be suffering from varying levels of depression.

Conclusion: The study population comprised mainly the younger age group in both sexes, and showed that depression is an important co-morbid risk factor in suicidal behaviour in this and other groups. This finding cannot be ignored, and the authors endorse the call for a scaling up of screening strategies to diagnose depression, and for an improved prevention and management framework.

Keywords: depression, South Africa, suicide attempts

Introduction

Suicidal behaviour is a major contributor to the burden of healthcare and disease world-wide; it is estimated that the annual number of suicides will double dramatically over the next decade to 1.5 million.¹ It has generally been felt over the years that suicides occurred mainly in older people, but it has now been shown that this trend has moved increasingly over the years towards the younger generation.^{2,3} Current available data indicates that all forms of suicidal behaviour among all socio-demographic groups in South Africa are increasing at an alarming rate.⁴ It has been estimated that 9.5% of all unnatural deaths in persons younger than 45 years of age are due to suicide; this figure closely approximates the adult suicide rate in South Africa, and has therefore become a cause for great concern.^{5–7}

Non-fatal suicide attempts generally outnumber suicides by a staggering figure ranging from 10–40 times per year,^{3,5} and it has been predicted that by 2020, suicide attempts will increase to one attempt every two seconds compared to the current statistic of one every three seconds.² The actual global burden of non-fatal suicidal behaviour has not been accurately determined, mainly due to the wide variability that exists between developed and developing countries in terms of under-reporting, data capture and national statistics systems.^{1,5,8} Up to 33% of all non-fatal suicidal behaviour in South Africa during the last decade involved young adults and children.^{9,10}

Suicidal behaviour is a complex, multifactorial phenomenon which is the end result of the interaction among a number of factors including psycho-socio-environmental and neurobiological

factors. The causes are complex and many different factors are implicated. Various models have been proposed to explain the causation of suicidal behaviour and the interplay between the different factors that have been identified. These include the biopsychosocial model,¹¹ the psychodynamic model,¹² the stress-diathesis model,¹³ escape theory, entrapment of pain theory, and the differential activation model of cognitive theory.⁵ The stress-diathesis model describes the interaction between the genetic composition of the individual and exposure to a variety of stressful circumstances such as depression which could predispose an individual to commit suicide.^{13,14} Major depression is also associated with increased activity of the hypothalamic-pituitary-target organ axis; this has also been found in patients exhibiting suicidal behaviour, thereby confirming the link with biological responses to stress. The noradrenergic system mediates the acute stress response in situations such as acute anxiety, major depression or severe suicidal ideation; over-activity of this system is associated with higher suicidal risk.¹³

Suicide is a potentially preventable cause of death in patients with major affective disorder. A DSM-IV Axis I diagnosis is present in over 90% of individuals who commit suicide.^{2,15,16} Prevalence studies among various socio-demographic groupings in South Africa have revealed similar findings. In non-fatal suicidal behaviour, mood disorders constituted the commonest diagnosis, being present in nearly two-thirds of Black South Africans presenting with this behaviour.¹⁷ A retrospective analysis of 47 suicides by Indian South Africans in 1987 showed that while all exhibited signs and symptoms of depression, none of them were treated for depression before committing suicide.¹⁸ Studies among school pupils exhibiting suicidal behaviour in South Africa

have also shown a high prevalence of depression.^{19,20} There is sufficient consensus that suicidal behaviour is a reflection of poor problem-solving skills for inter-personal problems, especially by young people who are unable to communicate or express their distress in a conventional manner and seek appropriate assistance; they resort to more desperate actions in an impulsive manner especially when they perceive that there are no alternative solutions to their problems. Varying degrees of endogenous depression may ensue, and if not addressed medically or psychologically, could exceed the critical threshold of personal tolerance, and precipitate a suicidal attempt or fatal outcome.^{5,21,22}

This study is intended to evaluate and compare self-perceived mental and physical well-being of individuals attempting suicide, with an objective assessment of these parameters.

Method

This descriptive observational study was conducted on all adults attempting suicide and who were admitted to two community-based public hospitals in the south of Durban during the study period September 2007 to March 2010. During the last census conducted in 2001, it was reported that at least 3.3 million people lived in Durban.²³ It is now believed that this figure has grown to at least 4 million, mainly because of the increased migration of unemployed and employed people to urban areas and the increased number of people living in informal settlements. Of the total population, 69% are black, followed by 19.9% Indian, 9.0% white, and 2.8% coloured. The average household income was reported as ZAR 44 391 per annum, and the per capita income was given as ZAR 8726.²³ The catchment population of each hospital comprises mainly residents and to lesser extent employees working within the industrial belt adjacent to each hospital. Collectively, both hospitals attend to at least 3 000 ambulatory patients daily, the majority of which are of Indian and black African ethnicity, and presenting with lifestyle and/or communicable illnesses. One of the hospitals is a district regional hospital, while the other is a district hospital only. Both hospitals are supported by a strong mental health programme.

A total of 688 adult patients (over 18 years of age) were recruited voluntarily (just prior to discharge from hospital) to form the study sample following stabilisation of their medical condition. Calculation of the sample size was based on advice from a consulting biostatistician. Exclusion criteria included all those less than 18 years of age, those still physically unwell at the time of recruitment, and those requiring further treatment from other medical specialists. The study also excluded anyone using addictive substances or recreational drugs.

Socio-demographic data and information relating to the suicidal behaviour event necessitating admission to either of the two hospitals were elicited using the validated World Health Organization (WHO) SUPRE-MISS questionnaire which has previously been used in five countries (including South Africa) with similar socio-economic and developmental contexts.²⁴ All data relating to participants, place of residence and recruitment source were pooled. Exact data relating to the number of participants recruited into the study from each of the two hospitals was not analysed. Specific validated self-report questionnaires such as the Beck Depression Inventory and the WHO Well-Being Index (WHO-5) were used to evaluate aspects of each patient's mental, physical and social well-being.

The Beck Depression Inventory is widely used as a screening tool to assess depression in any person irrespective of whether psychopathology is present or not.²⁵ It consists of 21 items or

groups of statements related to symptomatology present in depression. Participants in this study were asked to rate the intensity of their symptoms on a scale of 0–3. The total score was used to categorise the participants into one of four types, namely a score of 5–8 = no or minimal covert depression, 10–18 = mild to moderate depression, and 19–29 = moderate to severe depression. This screening tool has high internal consistency (Cronbach's alpha ranging from 0.89 to 0.94), high test-retest reliability (0.93) over a 1 week period, and favourable content, concurrent and discrimination validity.²⁵ The WHO-5 was used concurrently in this study as another screening tool for the detection of depression in anyone. It has also been validated and has been used consistently by the WHO in all its SUPRE-MISS studies. Participants were asked to indicate their perceptions of their general health and well-being over a 2-week period prior to the screening assessment. The raw score was calculated by adding the self-reported figure (ranging from 1 to 5) in each of the five categories of statements on the self-reported questionnaire. This total score may range from 0 to 25 where 0 represents worst possible and 25 represents best quality of life. The WHO-5 also showed satisfactory evidence of reliability and validity.²⁶ The entire task of interviewing each participant and eliciting the information required for the study was performed by the researcher and/or the trained research assistant; this exercise took approximately 15 min for each participant.

All data were captured and analysed using the Statistical Software Package for the Social Sciences – IBM SPSS® Version 19. Simple descriptive and inferential statistics were used to assess the relationship between variables. Pearson's chi square was used to perform univariate analyses. A *p*-value less than 0.05 was considered statistically significant.

This epidemiological cross-sectional study received ethical approval from the University of KwaZulu-Natal (Reference HSS/0181/06D) and written permission from both state hospitals. Voluntary informed consent was obtained from each participant.

Results

The socio-demographic profile of the study cohort is presented in Table 1.

The majority of participants were female, of younger age, unemployed, of lower level education, and low income level. There were no statistically significant differences between the sexes for any of the variables studied (*p* > 0.05; not shown in table).

Long-standing illnesses (> 6 months) were present in a minority of participants (30.3%), the majority of these being medical compared to psychiatric illnesses (Table 2). The majority of participants did not report any illnesses for a period up to 3 months prior to the current admission at the time of the study; 70% of all participants (*n* = 480) considered their health in the last 3 months to be either good or excellent.

An objective assessment of the mental and physical health of each participant immediately prior to discharge was done using the Beck Depression Scale and the WHO Well-Being Scale. This analysis is presented in Table 3. The majority of participants reported absence of mental and physical illnesses in the past or in the period prior to the admission following the suicidal attempt. Of those who reported such illnesses, more women than men reported poor well-being (mental and physical), but this difference was not found to be statistically significant (*p* = 0.175, not shown in table).

Table 1: Socio-demographic characteristics of participants (N=688) –(data reproduced from Naidoo SS, Schlebusch L. Sociodemographic and Clinical profiles of suicidal patients requiring admission to hospitals south of Durban. S Afr Fam Pract 2013; 55(4):373–379.)

Variable	Male		Female		Total	
	n	%	n	%	N	%
Race/ethnicity:						
Black	33	4.8	127	18.5	160	23.3
Coloured	25	3.6	81	11.8	106	15.4
Indian	101	14.7	275	40.0	376	54.7
White	13	1.9	32	4.6	45	6.5
Non-disclosure	0	0	1	0.1	1	0.1
Age (years):						
<20	26	3.8	170	24.7	196	28.5
20–29	85	12.3	172	25.0	257	37.3
30–39	38	5.5	87	12.7	125	18.2
40–49	17	2.5	58	8.4	75	10.9
50–59	5	0.7	24	3.5	29	4.2
>59	1	0.1	4	0.6	5	0.7
Non-disclosure	0	0	1	0.1	1	0.1
Marital status:						
Single	113	16.4	337	49.0	450	65.4
Married	42	6.1	135	19.6	177	25.7
Widowed	4	0.6	8	1.2	12	1.7
Divorced/Separated	13	1.9	36	5.2	49	7.1
Family type:						
Nuclear	134	19.5	412	59.9	546	79.4
Extended	21	3.1	60	8.7	81	11.8
Living alone	11	1.6	16	2.3	27	3.9
Other	6	0.9	27	3.9	33	4.8
Non-disclosure	0	0	1	0.2	1	0.2
Occupation:						
Student	27	3.9	157	22.8	184	26.7
Unemployed	48	7.0	152	22.1	200	29.1
Professional	57	8.3	135	19.6	192	27.9
Labourer	31	4.5	48	7.0	79	11.5
Other	9	1.3	24	3.5	33	4.8
Income p.a. (rand):						
<30 000	127	18.5	471	68.5	598	86.9
30 000–70 000	31	4.5	36	5.2	67	9.7
>70 000	12	1.7	7	1.0	19	2.8
Non-disclosure	2	0.3	2	0.3	4	0.6
Education:						
Nil	4	0.6	16	2.3	20	2.9
Primary	107	15.5	330	48.0	437	63.5
Secondary	30	4.4	103	15.0	133	19.3
University	5	0.7	10	1.4	15	2.2
Other tertiary	25	3.6	56	8.1	81	11.8
Other	1	0.1	1	0.1	2	0.3
Religion:						
Christianity	102	14.8	368	53.5	470	68.3
Hinduism	49	7.1	98	14.2	147	21.3
Islam	11	1.6	32	4.6	43	6.2
Other	10	1.4	16	2.3	26	3.8
Non-disclosure	0	0	2	0.3	2	0.3

Table 2: Past medical illnesses

		Total Participants (N=688)			
		Male (n = 172)		Female (n = 516)	
		n	%	n	%
Longstanding physical illness/disability*	No	115	16.7	359	52.2
	Yes	56	8.1	153	22.2
	No answer	1	0.2	4	0.6
Type of long standing illness/disability	Psychiatric	13	1.9	23	3.3
	Medical	43	6.3	130	18.9
Physical illness/injury during the two weeks before*	No	149	21.7	453	65.8
	Yes	22	3.2	62	9.0
	No answer	1	0.2	1	0.2
Type of illness 2 weeks before	Psychiatric	7	1.0	23	3.3
	Medical	11	1.6	34	4.9
Physical health over last three months	Excellent	31	4.5	146	21.2
	Good	85	12.4	218	31.7
	Fair	33	4.8	100	14.5
	Poor	20	2.9	49	7.1
	No answer	3	0.4	3	0.4

Table 3: Objective assessment of mental and physical health

		Male (n = 172)		Female (n = 516)	
		n	%	n	%
WHO Well-Being category	Normal	58	8.4	198	28.8
	Poor well-being (<13)	110	16.0	316	45.9
	No answer	4	0.6	2	0.3
Beck Depression category	None to mild	71	10.3	175	25.4
	Borderline clinical depression	19	2.8	59	8.6
	Moderate depression	43	6.2	144	20.9
	Severe depression	37	5.4	136	19.8
	No answer	2	0.3	2	0.3

A large number of participants ($n = 438$, representing 63.8% of the cohort) were found to have varying levels of depression ranging from borderline to severe clinical depression (Table 3). This finding was prevalent more in women than men in all categories, but these gender differences were not found to be statistically significant (not shown in the table).

Discussion

This study is the first in South Africa in the last decade to report on a comparative analysis of perceived versus actual assessment of mental and physical health in a cohort of individuals attempting suicide. Several interesting findings have emerged from this study, many of which are similar to those found in other studies elsewhere.

The majority of suicide attempters participating in this study were of younger age (< 40 years), unemployed, single marital status, and living with families. Female attempters outnumbered men in all race groups in the ratio 3:1. Similar socio-demographic characteristics were found in other community-based studies.^{5,10,27–29}

A minority of participants reported chronic illnesses such as lifestyle diseases. This may be due to the fact that the majority of our study

participants were in the younger age group and not in the risk category for non-communicable or lifestyle illnesses. A large number of participants self-reported a normal mental well-being. However, an objective assessment of depression in all participants dispelled this perception, and revealed a significant number experiencing different levels of depression. This finding has clinical implications, and may be used by primary care givers during clinical assessments of all persons presenting with any form of suicidal behaviour. There were no statistically significant differences between the sexes for this parameter. The majority of participants were also found objectively to have a poor sense of personal well-being. These findings could explain the extent and type of suicidal behaviour in this study. Other studies have identified various psychopathological factors as co-morbid factors in the pathogenesis of suicidal behaviour.^{2,16,30} Mood disorders and schizophrenia have been cited as the strongest psycho-pathological predictors for completed suicide.³¹ Several studies have also shown that many depressed patients who attempted or committed suicide had prior consultations with their doctors and notwithstanding this, the diagnosis of depression was missed or the patients were diagnosed correctly but were treated inappropriately.^{32,33}

The findings in our study therefore have clinical implications and should alert all primary care physicians to the need for impeccable

objective screening and effective early management of depression in all patients presenting with any form of suicidal behaviour. This must include patient advocacy and support, especially when the at-risk patient has been identified and the strategy has the potential to make the desired difference in helping patients overcome their sense of hopelessness at critical times.

Limitations

This study was conducted within a diverse population in a community-based setting. Indian and black people constitute the majority of the resident population, hence their dominance in the cohort studied. Additionally, those younger than 18 years of age were excluded from the study because of ethical issues. Others that were excluded were those that were medically unstable and those with a history of substance abuse. This study did not examine the impact of the methodology used during the attempt, the influence of substance abuse and the impact of assault or sexual abuse, and did not correlate any of these factors with the degree of depression found in the study cohort. The findings of the study cannot therefore be generalised to other groupings and populations, and must therefore be interpreted with caution.

Conclusion

This innovative study showed comparable differences between reported and assessed mental health parameters in many participants. Underlying depression is an important co-existent risk factor in the pathogenesis of all forms of suicidal behaviour and must be taken seriously in all patients presenting with any suicidal behaviour irrespective of whether the suicidal intention is low or high. Impeccable screening for depression and other risk factors should help the caring physician to triage each patient in terms of severity of intent and the underlying mental and physical health status. The call for a cost-effective synergy between primary healthcare teams and mental health specialists in South Africa is repeated, and may contribute to a significant reduction in suicidal behaviour if implemented on a wide scale in resource-constrained settings and countries such as South Africa.

Conflict of interest — The author declares that there were no financial or personal relationships which might have inappropriately influenced them when writing this paper.

References

- Bertolote JM, Fleischmann A. Suicidal behavior prevention: WHO perspectives on research. *Am J Med Genet C Semin Med Genet*. 2005;133C:8–12. [http://dx.doi.org/10.1002/\(ISSN\)1552-4876](http://dx.doi.org/10.1002/(ISSN)1552-4876)
- Bertolote JM. Suicide in the world: an epidemiological overview 1959–2000. London: Martin Dunitz; 2001.
- World Health Organization. Figures and facts about suicide. Geneva: Department of Mental Health, WHO; 1999.
- Schlebusch L. Current perspectives on suicidal behaviour in South Africa. In: Suffla S, Van Niekerk A, Duncan D, editors. *Crime, violence and injury prevention in South Africa: developments and challenges*. Tygerberg: Medical Research Council - UNISA Crime, Violence and Injury Lead Programme; 2004. p. 9–21.
- Schlebusch L. *Suicidal behaviour in South Africa*. 1st ed. Pietermaritzburg: University of KwaZulu-Natal Press; 2005.
- Matzopoulos R, Norman R, Bradshaw D. The burden of injury in South Africa: fatal injury trends and international comparisons. Tygerberg: Medical Research Council—University of South Africa, Crime Violence and Injury Lead Programme; 2004.
- Burrows S, Laflamme L. Suicide among urban South African adolescents. *Int J Adolesc Med Health*. 2008;20:519–28.
- Schmidtke A, Bille-Brahe U, De Leo D, et al., editors. *Suicidal behaviour in Europe: results from the WHO/EURO multicentre study on suicidal behaviour*. Gottingen: Hogrefe & Huber; 2001.
- Deonrain M, Pillay BJ. A study of parasuicide behaviour at the Chris Hani Baragwanath Hospital. In: Schlebusch L, Bosch BA, editors. *Suicidal behaviour 4: proceedings of the fourth Southern African conference on suicidology*. Durban: University of Natal; 2000. p. 112–27.
- Bosch BA, McGill VR, Noor Mahomed SB. Current trends in suicidal behaviour at a general hospital. In: Schlebusch L, editors. *Suicidal behaviour 3: proceedings of the third Southern African conference on suicidology*. Durban; 1995. p. 71–94.
- Weiss RJ. The biopsychosocial model and primary care. *Psychosom Med*. 1980;42:123–30. <http://dx.doi.org/10.1097/00006842-198001001-00005>
- Draper E, Margolis P. A psychodynamic approach to suicide prevention. *Community Ment Health J*. 1976;12:376–82. <http://dx.doi.org/10.1007/BF01411076>
- Mann JJ, Currier DM. Stress, genetics and epigenetic effects on the neurobiology of suicidal behavior and depression. *Eur Psychiatry*. 2010;25:268–71. <http://dx.doi.org/10.1016/j.eurpsy.2010.01.009>
- Voros V. *The stress diathesis model of suicidal behaviour*. Pecs: University of Pecs; 2010.
- Krug EG, Mercy JA, Zwi AB, Lozano R. *World report on violence and health*. Geneva: World Health Organization; 2002.
- Hawton K, Van Heeringen K. *The international handbook of suicide and attempted suicide*. Chichester: Wiley; 2000. <http://dx.doi.org/10.1002/9780470698976>
- Schlebusch L, Vawda NB, Bosch BA. Suicidal behavior in black South Africans. *Crisis*. 2003;24:24–8.
- Gangat AE, Naidoo LR, Wessels WH. Suicide in South African Indians. *S Afr Med J*. 1987;71:169–71.
- Mayekiso TV. Attitudes of black adolescents towards suicide. In: Schlebusch L, editor. *Suicidal behaviour 3: proceedings of the third Southern African conference on suicidology*. Durban: University of Natal; 1995. p. 46–53.
- Wild LG, Flisher AJ. Suicidal ideation and attempts in adolescents: associations with depression and six domains of self-esteem. *J Adolesc*. 2004;27(6):611–24. <http://dx.doi.org/10.1016/j.adolescence.2004.03.001>
- Schlebusch L. An overview of suicidal behaviour in South Africa at the dawn of the new millennium. In: Schlebusch L, Bosch BA, editors. *Suicidal behaviour 4: proceedings of the fourth Southern African conference on suicidology*. Durban; 2000.
- Williams JMG, Pollock LR. Factors mediating suicidal behaviour. *J Ment Health*. 1993;2:3–26. <http://dx.doi.org/10.3109/09638239309016951>
- Statistics South Africa. *South African population statistics in*. Pretoria: Government Gazette; 2001.
- World Health Organization. WHO. Multi-site intervention study on suicidal behaviours-SUPRE-MISS. In: <http://www.int.mentalhealth/PDFdocuments/SUPRE-MISSpdf2005>. Geneva: WHO; 2005.
- Groth-Marnat G. *Handbook of psychological assessment*. New York: Wiley; 2003.
- Henkel V, Mergl R, Kohnen R. Identifying depression in primary care: a comparison of different methods in a prospective cohort study. *BMJ*. 2003;326:200–201. <http://dx.doi.org/10.1136/bmj.326.7382.200>
- Flisher AJ, Ziervogel CF, Chalton DO, Leger PH, Robertson BA. Risk-taking behaviour of Cape Peninsula high-school students. Part II. Suicidal behaviour. *S Afr Med J*. 1993;83:474–6.
- Masocco M, Pompili M, Vanacore N, et al. Completed suicide and marital status according to the Italian region of origin. *Psychiatr Q*. 2010;81:57–71. <http://dx.doi.org/10.1007/s11266-009-9118-2>
- Centers for Disease Control and Prevention. *Suicide: definitions*. Atlanta, GA: Division of Violence Prevention, National Centre for Injury Prevention and Control, Centers for Disease Control and Prevention; 2010.
- Krug EG, Mercy JA, Dahlberg LL, Zwi AB. The world report on violence and health. *Lancet*. 2002;360:1083–8. [http://dx.doi.org/10.1016/S0140-6736\(02\)11133-0](http://dx.doi.org/10.1016/S0140-6736(02)11133-0)
- Tidmalm D, Langstrom N, Lichtenstein P, et al. Risk of suicide after suicide attempt according to co-existing psychiatric disorder: Swedish cohort study with long-term follow-up. *BMJ*. 2008;18:1–16.
- Cassimjee MH, Pillay BJ. Suicidal behaviour in family practice: a pilot study. In: Schlebusch L, Bosch BA, editors. *Suicidal behaviour 4: fourth Southern African conference on suicidology*. Durban; 2000. p. 49–55.
- Pearson A, Saini P, Da Cruz D, et al. Primary care contact prior to suicide in individuals with mental illness. *Br J Gen Pract*. 2009;59:825–32. <http://dx.doi.org/10.3399/bjgp09X472881>