

# PROFILE OF STROKE PATIENTS TREATED AT A COMMUNITY-BASED REHABILITATION CENTRE IN A CAPE TOWN HEALTH DISTRICT

**ABSTRACT:** *Stroke is a leading cause of death and disability in both developed and developing countries. Limited information is available, in South Africa, on the epidemiological profile of stroke survivors requiring rehabilitation. A descriptive study was therefore undertaken to compile, amongst others the demographic and medical profile of stroke patients attending rehabilitation at a primary health care facility (Bishop Lavis Rehabilitation Centre). Both medical- and rehabilitation records were reviewed to ensure completeness of information and to minimize missing clinical data bias. Relevant data was captured on a data capture sheet. The latter was based on key findings from the literature and developed by the researcher. The mean age of the population of stroke patients studied was 59 years, which is markedly younger than what has been reported globally in the literature. As was expected, hypertension was found to be the most prevalent risk factor. The presence of a combination of risk factors in the majority of the group (on average, 2.4 risk factors per person) warrants the introduction of aggressive health education and stroke prevention programmes at this primary health care centre.*

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**KEY WORDS:** STROKE, DEMOGRAPHIC PROFILE, AGE, EMPLOYMENT STATUS, RISK FACTORS.

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## INTRODUCTION

Stroke is the third leading cause of death and a major cause of disability in most societies (Duncan 1994; Bonita 1992). A stroke or cerebrovascular accident is defined as "rapidly developing clinical signs of focal (or global) disturbance of cerebral function, with symptoms lasting 24 hours or longer or leading to death with no apparent cause other than of vascular origin" (WHO 1989). The South African society has not been spared from being affected by this condition. Fritz (1995) indicates that in South Africa, stroke contributes to 7.2% of all deaths and 7.9% of deaths in persons

between the ages of 35 and 64 years. Stroke has also been found to be a major cause of disability amongst communities in the Western Cape. Futter (1996) found that, among a group of individuals who were bed-bound, almost half were stroke survivors. In an earlier study (Disler et al. 1986) stroke was identified as the most common cause of physical disability in the Bishop Lavis Community.

As in many other developing countries, South Africa has adopted a primary health care approach as the most appropriate strategy to meet its health care needs (Department of Health, 1995). Primary health care, as described at Alma Ata by the World Health Organization, is "essential health care made universally accessible to individuals and families in the community by means acceptable to them, through their full participation and at a cost the community and the country can afford" (World Health Organization 1978). A district health system, based on the principles of primary health care, is envisaged to ensure the effective delivery

of health care in the different provinces. The provinces are divided into districts on the basis of functional and geographical coherence (ANC 1994). At least one Community Health Centre, which is seen as the foundation of the National Health Service, will be present in each district (ANC 1994).

Community Health Centres provide comprehensive services encompassing preventative, promotive, rehabilitative and curative care. The Cape Metropole Region is divided into 8 health districts. The Bishop Lavis Community Health Centre is found in the Tygerberg East District of this region. In the Cape Metropole Region patients primarily access the health system via the Community Health Centre. Medical staff at secondary and tertiary health facilities only attend to them if they have a referral letter from a primary source. The Community Health Centre is therefore, in most cases, the first medical facility the post-stroke client living in these health districts would access for care.

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The Bishop Lavis Rehabilitation Centre, which forms part of the Bishop Lavis Community Health Centre, has been in operation since 1994, and stroke is the most common neurological condition treated at the Centre. The centre provides physiotherapy and occupational therapy services, while students from the University of Stellenbosch provide speech therapy services on a part-time basis. Bishop Lavis is a suburban community on the Cape Flats. It has a population of 25,966 persons, the majority of whom are in the lower economic sector of the population earning R1500 or less, per month. The unemployment rate in Bishop Lavis is quite high at 21% (1996 Census). In a household survey conducted in Bishop Lavis in 1995, airway infection was the most common acute condition reported and hypertension, arthritis and diabetes were the most common chronic diseases reported (De Villiers et al 1999). In a 2001 HIV antenatal survey, the prevalence of HIV/AIDS in the Tygerberg East district was found to be 6.1%

The overall aim of this study was to compile a profile of the stroke patients treated over a 5-year period at the Bishop Lavis Rehabilitation Centre, thereby providing relevant information about the stroke patients accessing this primary health care setting.

## METHOD

The Ethical Clearance number for this study is 99/040. The study design was descriptive, utilizing a retrospective survey of patient documentation. All available records i.e. medical as well as the rehabilitation records (physiotherapy, occupational and speech therapy clinical notes) of all the stroke clients treated at the centre between 1/11/995 to 31/12/1999 were reviewed and the relevant information retrieved (N = 168). In some instances, data were missing from the available records, and this was taken into account in the calculation and presentation of the results. After reviewing the literature relating to the epidemiology and rehabilitation of stroke, (Bonita 1992, Tegos et al 2000, Kaste 1997, Kalache 1995), a data capture sheet was developed by the researcher to collate the relevant information. A pilot study was then conducted to ensure the avail-

ability of the relevant data in patient records.

The final data capture sheet comprised six sections to capture information for the following variables: demographic data, documented medical information, risk factors relating to the stroke, the referral process, treatment interventions, functional status on admission as well as at time of last attendance. Data was analyzed using the statistical package of Social Sciences (SPSS) as well as the Statistical Analysis System (SAS) and summary results are presented in the form of frequency tables.

## RESULTS

### Age and Gender

The population consisted of 54% females (91/168) and 46% males (77/168). The mean age of the group was 59 years (SD 11 years) with ages ranging widely from 33 to 83 years. There were no major age differences between male and female subjects in the group, with the female subjects being only slightly older than the males.

Table 1 compares the male and female subjects in respect of marital status and mean age, at the time of their stroke.

### Marital Status

Fifty six percent (56% or 93/166) of the subjects were living with a partner, the majority cohabiting in a formal traditional marital relationship. The remaining 44% (73/166) of subjects were single.

There were more married males than females (68% or 52/76 vs 42% or 38/90). Of those who were single, (64% or 47/73) were widowed. This finding was

to be expected as the age range of the population exceeded eighty years of age. (See Table1). It was notable that 40% (36/90) of the females compared to 16% (12/76) of males were widowed. It has been found that women have a higher mean age at stroke onset and they also have a greater life expectancy (Bonita 1992). One could therefore expect more of the female stroke survivors to be widows.

### Employment Status

Figure 1 illustrates the employment status of the population (N=163) at the time of entry to rehabilitation at the Bishop Lavis Rehabilitation Centre as well as at the time of last attendance. Of those clients who received a pension, most of them received a government pension (60 persons or 37%) while only 7 (4%) were receiving a private pension. Fewer clients were listed as being unemployed at the time of discharge compared to the time of admission. An explanation for this could be that at discharge more clients were waiting for their disability grants to be processed. (See Figure 1: Status: Category 6)

Of the 31% (26/84) of stroke clients who were 60 years and younger and employed at the time of their stroke, only 7% (6/84) could return to work. Most of the clients in the present study who could not return to work had applied for disability grants. The application had been processed but the grant had not yet been received by the time they were last treated at the centre. The rehabilitation period of the clients lasted for an average of three months.

Table 1: Age and marital status versus gender

	Men	Women
	(N=77)	(N=91)
Age (yrs) mean ± SD	58 ± 11.2	60 ± 10.8
<b>Marital Status</b>		
Married	52	38
Widowed	12	36
Living together	2	1
Single	9	10
Divorced	2	6

## MEDICAL STATUS

Hypertension was the most prevalent documented risk factor in the population studied (73% of cases or 123/168) followed by smoking (29% or 48/168) and then diabetes (27% or 46/168). Combinations of risk factors were present in the majority of the population. A mean of 2.4 risk factors per person were documented. Hypertension and diabetes were the most common combination, being recorded in just more than a fifth of the population (21% of

cases or 35/168). The combinations of risk factors were slightly different between those 60 years and younger and those older than 60 years, with risk factors such as smoking and alcohol use being more commonly documented for the younger group. Figure 2 illustrates the different risk factors as documented for the two age categories of patients.

## FACTORS RELATING TO THE STROKE:

### Episode of Stroke

Of those individuals referred in the

period under review, the majority (77% or 126/163) had experienced only one stroke with 10% (16/163) having experienced a second stroke and 13% (21/163) had had more than two stroke episodes. In the sub-group of the population who had suffered two or more strokes, 88% (14/16) had hypertension as one of the documented risk factors, while in 13% (2/16) of cases, other risk factors had been documented. While it may be interpreted that hypertension appeared to be strongly associated with the individuals who had had more than one stroke (RR:0.937; 95%CI:0.4-2.0), there is no definite evidence available to substantiate this finding.

### Site of lesion

There was no significant difference between the number of clients who had suffered a right- compared to a left cerebrovascular accident (CVA) (48% or 75/157 vs 52% or 82/157). While perceptual impairments occur more frequently in right CVA than in left CVA (Reddy & Reddy 1997; Joungbloed 1986), clients with a left CVA are most likely to have speech impairments, requiring the intervention of a speech therapist. Although not all patients with left CVA in the present study had speech impairments, speech therapy services at primary level would benefit those who might need it. At present, speech therapists in the Western Cape are only employed at the tertiary and secondary hospitals and not at primary level community health centres.

## DISCUSSION

The overall aim of the above study was to develop a profile of stroke patients treated at a community-based rehabilitation centre. It was alarming to note that 50% of the population was 60 years and younger, i.e. people who fall into the economically active group of the population. This is in contrast to findings in other studies where higher incidence rates were found in persons older than sixty years of age (Bonita et al 1997; Bonita 1992; Rosman 1986). Issues such as anxiety about and difficulty in returning to work as well as family responsibilities and dependence on others are greater in younger stroke patients i.e.

Figure 1: Employment Status of Clients (N=163).

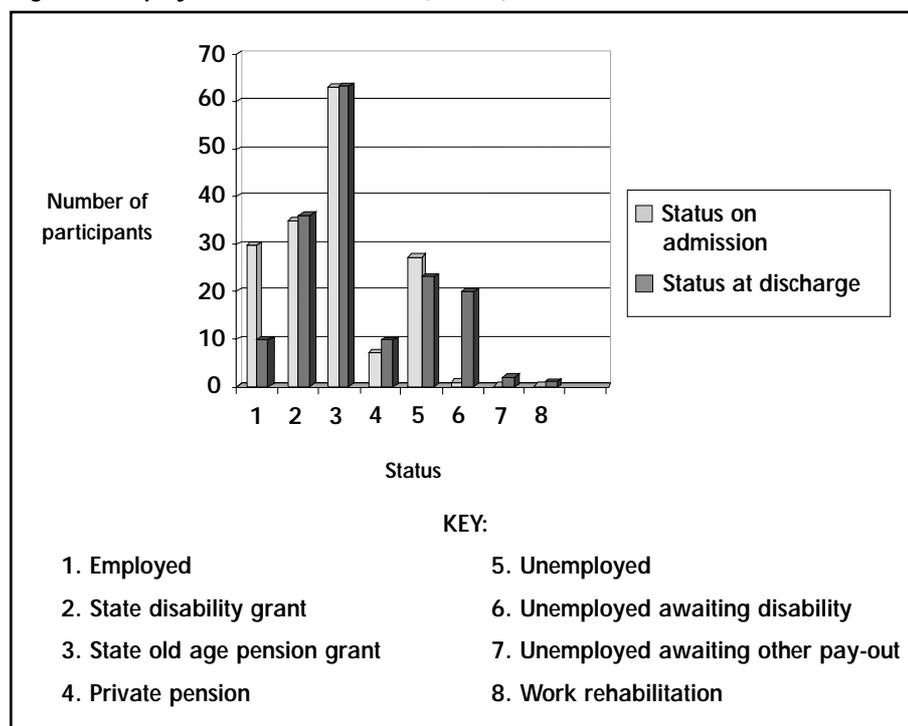
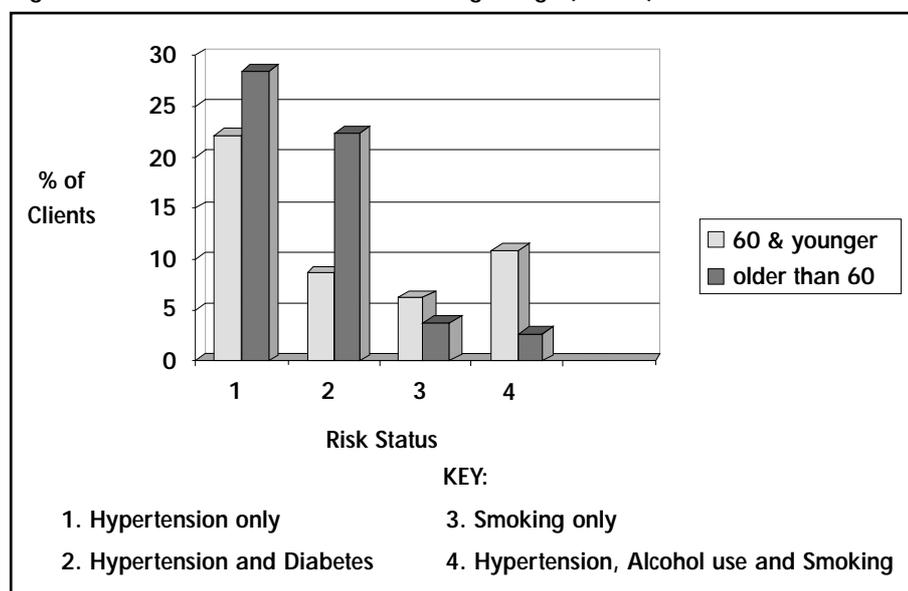


Figure 2: Documented Risk Factors according to Age (N=168).



those who are fifty years and younger (Teasall 2000).

A disconcerting finding was that of 30 (18%) subjects who were employed at the time of assessment, only 10 (6%) had returned to work by the time they were discharged or last attended. This low post-stroke return to work rate, is similar to what has been found in other studies (Teasall 2000; Flick 1999).

The results of the present study, which identified hypertension followed by diabetes as the most frequently documented risk factors for stroke, is in agreement with the household survey on self-reported illness also conducted in the Bishop Lavis area. (De Villiers et al 2000) Hypertension has been identified as the most prevalent modifiable risk factor for stroke, which, when treated, substantially reduces the risk of stroke (Tegos et al 2000; Gorelick et al 1999; Warlow 1998; Helgason et al 1997). Despite this fact however, many people have a very poor understanding of hypertension and stroke. (Hale et al 1998; Kothari et al 1997).

Educational programmes that inform communities about the risk factors as well as the signs and symptoms of stroke are therefore strongly recommended. (Hale et al 1998, Kothari et al 1997, Helgason et al 1997, Steyn 1995). Smoking, high cholesterol and alcohol consumption (all related to behaviours of lifestyle) are reported as risk factors more commonly found in younger stroke patients. (Hale et al 1998; Pohjasvaara 1997; You et al 1997). Health promotion programmes aimed at altering life-style behaviours should therefore be specifically targeted at the population 60 years and younger.

The finding in the present study, that 13% of persons (21/163) had experienced a second stroke and 10% (16/163) had had more than two episodes, is in keeping with international trends. According to Rosenberg & Popelka (2000), 14% of stroke survivors will experience a second stroke in the first year following the initial event. This is an important consideration for rehabilitation therapists, as a previous stroke is reported to be associated with a poor functional outcome. (Kwakkel et al 1999; Reddy & Reddy 1997; Jongbloed 1986).

## CONCLUSION

It is evident from this descriptive survey that stroke is affecting a markedly younger population in Bishop Lavis, than what is generally recorded in the literature. These clients present with risk factors that are largely lifestyle-related (behavioural), and which can be modified. The HIV/AIDS prevalence rate of 8.6%, in the Western Cape (Department of Health 2001), could also be considered as a factor in this younger age group. Many authors have recommended the introduction of both preventative and health promotion programmes, which focus primarily on stroke risk factors and a recognition of the early warning signs and symptoms of stroke (Joseph et al 1999, V.U. Fritz 1997, Kothari et al 1997). Following the use of a slide/audio programme, improved knowledge of stroke risk factors was found by Stern et al (1999), irrespective of the demographic status or levels of education of the target population. A strong recommendation from this study to the District Management Team of the Tygerberg East District, would therefore be the implementation of aggressive health education programmes with a similar focus

At present, there is limited data available (particularly in the Western Cape) regarding stroke patients that are managed at community health centers. The information gained in this descriptive survey can assist in the development of hypotheses for future analytical studies regarding this important population. Future studies could certainly investigate reasons for the younger age profile of the stroke patients found in the present study and whether this is any way related to, or influenced by, the HIV/Aids pandemic.

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