

CHAPTER 4

4. RESULTS

4.1. INTRODUCTION

Presentation of results will follow the structure of the questionnaire and will be presented in tables/figures and include demographic results. Cross tabulation results were given as score 0 (for those with a BI score less than 12) and score 1 (for those with a BI score greater than or equal to 12). Those who scored more than 12 on the BI were considered to be functionally dependent and those whose score was greater than or equal to 12 were considered to be functionally independent.

4.2. DEMOGRAPHIC RESULTS

Table 4.1 below shows the demographic results for the study sample.

Table 4.1- Demographic results (n = 68)

Source of subjects:	No. (%)
Alexandra clinic	9 (13)
Chiawelo clinic	21 (31)
Mofolo clinic	7 (10)
Chris Hani Baragwanath hospital	31 (46)
Age distribution:	No. (%)
18 – 34	9 (13)
35 – 44	11 (16)
45 – 54	20 (29)
55 – 64	17 (25)
65 – 75	11 (16)
Gender:	No. (%)
Male	27 (40)
Female	41 (60)
Marital status:	No. (%)
Single	30 (44)
Divorcee	4 (6)
Live-in-partner	1 (2)
Married	26 (38)
Widow	7 (10)
Education level:	No. (%)
Grade 12	14 (21)
Up to grade 11	22 (32)
Up to grade 7	32 (47)

The highest age group was within the age range of 45-54 years (29%), and the lowest was those within the age range of 18-34 years (13%). There were more female stroke patients (60%). Single patients (44%) were more than those who are married (38%). Those who were divorced, living with a partner or widowed, were dropped because their number was insignificant. Thus only single were compared to married. Seventy nine percent of the patients had up to grade eleven education level, and none of the patients in the study had an education level more than grade twelve.

4.3. THE LEVEL OF FUNCTIONAL INDEPENDENCE AT DISCHARGE AND POST DISCHARGE.

Table 4.2 illustrates the results of the BI at discharge and post discharge.

Table 4.2- BI scores at discharge and post discharge (n = 68)

BI Score	No. of patients at discharge		No. of patients post discharge	
	N	%	n	%
<12	36	53%	5	7%
≥12	32	47%	63	93%

Ninety three percent of the patients were functionally independent post discharge, compared to 47% at discharge.

4.4. THE INFLUENCE OF DEMOGRAPHIC FACTORS ON FUNCTIONAL INDEPENDENCE

4.4.1. Table 4.3 illustrates the results of the influence of age, gender, marital status and education level on functional independence.

Table 4.3- Influence of demographic factors on functional independence (n=68)

Factors	At Discharge			p value	Post discharge			p value
	BI <12	BI ≥12	% improved		BI <12	BI ≥12	% improved	
Age (years)				0.05				0.38
18-34	1	8	89		0	9	100	
35-44	8	3	27		1	10	91	
45-54	11	9	45		2	18	90	
55-64	9	8	47		0	17	100	
65-75	7	4	36		2	9	82	
Gender				0.88				0.99
Male	14	13	48		2	25	93	
Female	22	19	46		3	38	93	
Marital status				0.54				0.39
Single	18	12	40		1	29	97	
Divorcee	1	3	75		0	4	100	
Live-in-partner	0	1	100		0	1	100	
Married	13	13	50		4	22	85	
Widow	4	3	43		0	7	100	
Education level				0.78				0.57
Grade 12	7	7	50		2	12	86	
Up to grade 11	13	9	41		1	21	95	
Up to grade 7	16	16	50		2	30	94	

Age is the only demographic factor that was found to have a significant influence on functional independence ($p = 0.05$). However the influence is only at discharge from the hospital. The logistic regression results also showed a significant relationship between age and functional independence (18 – 34 years (Odds ratio 1); 35 – 44 years ($p = 0.0030$). Married patients recovered faster than single patients on the logistic regression ($p = 0.05$). See table 4.6.

4.5. THE INFLUENCE OF PHYSICAL FACTORS ON FUNCTIONAL INDEPENDENCE

4.5.1. Table 4.4 illustrates the results of the influence of stroke duration, side of stroke, shoulder pain, leg pain and other illnesses, on functional independence.

Table 4.4 – The influence of physical factors on functional independence (n = 68)

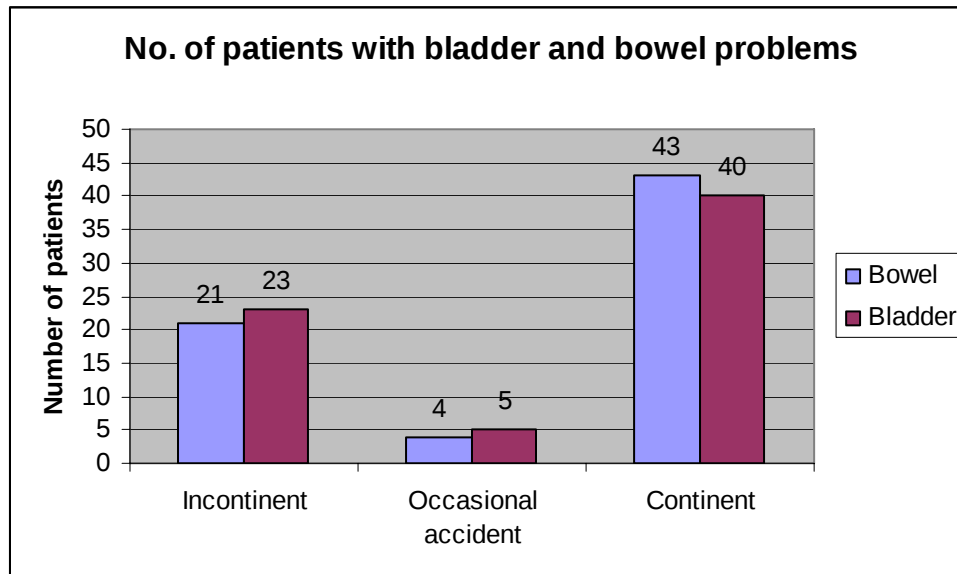
Factors	Post discharge		% improved	p value
	BI <12	BI ≥12		
Stroke duration				0.58
6 weeks - 6 months	3	26	90	
>6 months – 12 months	1	10	91	
>12 months – 24 months	1	27	96	
Side of stroke				0.12
Left (n: 23 = 34%)	15	8	35	
Right (n: 45 = 66%)	21	24	53	
Shoulder pain				0.74
Yes (n: 46 = 68%)	25	21	46	
No (n: 22 = 32%)	11	11	50	
Leg pain				0.22
Yes (n: 35 = 52%)	16	19	54	
No (n: 33 = 48%)	20	13	39	
The presence of other illnesses				
Diabetes	1	12	92	0.96
Hypertension	3	36	92	0.90
Arthritis	0	1	100	0.78

None of the factors in table 4.4 had a significant influence on functional independence.

4.5.2. The influence of bladder and bowel continence on functional independence

Figure 4.1 illustrates the results of the frequency distribution of the number of people with bowel and bladder problems.

Figure 4.1-The number of patients with bladder and bowel problems



Sixty two percent (43) of the patients were bowel continent while 58% (40) were bladder continent. The logistic regression results showed a significant influence of bowel function on functional independence ($p = 0.003$ - see table 4.6).

4.6. THE INFLUENCE OF ENVIRONMENTAL FACTORS ON FUNCTIONAL INDEPENDENCE

4.6.1. Table 4.5 (a) illustrates the results of the influence of duration of hospital stay, rehabilitation services received in hospital, rehabilitation services post discharge, financial role before stroke, current financial role, and current monthly income on functional independence.

Table 4.5 (a) – Influence of environmental factors on functional independence (n = 68)

Factors	Post discharge		p value
	BI <12	BI ≥12	
Duration of hospital stay			0.86
One day – two weeks	2	33	
>Two weeks – six weeks	2	19	
>Six weeks – twelve weeks	1	11	
Rehab services received in hospital			
Physiotherapy (n = 43)	9	34	0.26
Occupational therapy (n = 27)	6	21	0.88
Speech therapy (n = 18)	6	12	0.81
Psychologist/Social worker (n =9)	2	7	0.37
Another hospital post discharge			0.23
No	32	25	
Yes	4	7	
Rehabilitation services received post discharge			0.74
No (n: 5 = 7%)	3	2	
Yes (n: 63 = 93%)	33	30	
Financial role before stroke			0.97
Dependent (n: 15 = 22%)	1	14	
Breadwinner (n: 42 = 62%)	3	39	
Contributing to family income (n: 11 = 16%)	1	10	
Current financial role			0.87
Dependent (n: 17 = 25%)	1	16	
Breadwinner (n: 31 = 46%)	2	29	
Contributing to family income (n: 20 = 29%)	2	18	
Current monthly income			0.56
R0 – R800 (n: 34 = 50%)	3	31	
R801 – R2000 (n: 22 = 32%)	2	20	
>R2000 (n: 12 = 18%)	0	12	

None of the factors in table 4.5 (a) had a significant influence on functional independence post stroke, however the logistic regression results showed that duration of hospital stay had an influence on functional independence

(see table 4.6). A frequency distribution of the source of income showed that they got their income from: disability grants (52%); salary and business (35%); business and disability grants (10%) and 3% had no income.

4.6.2. Table 4.5 (b) illustrates the results of the influence of access to transport to a health facility, home features, having a caregiver, having a trained vs. untrained caregiver, time of availability of the caregiver, presence of other people with a disability, participating in family and community activities, having someone to give emotional support, and participating in household activities on functional independence.

Table 4.5 (b) – Influence of other environmental factors on functional independence (n = 68)

Factors	Post discharge		p value
	BI <12	BI ≥12	
Access to transport to health facility			0.73
Yes	1	17	
No	4	46	
Home features			0.18
Toilet inside house	12	16	
Toilet outside house	25	15	
			0.68
Stairs	22	18	
No stairs	14	14	
			0.73
Water inside house	21	20	
Water outside house	15	12	
			0.64
Big space inside house	24	23	
Small space inside house	12	9	
Having a caregiver			0.02
Yes (85%)	34	24	
No (25%)	2	8	
Having a trained vs. untrained caregiver			0.07
No caregiver	2	8	
Trained caregiver	3	2	
Untrained caregiver	31	22	
Time of availability of the caregiver		No. (% improved)	0.04
No caregiver	2	8 (80%)	
Day	5	2 (29%)	
Night	4	7 (64%)	
Day and night	25	15 (30%)	
Depression			0.30
Yes (n: 40 = 59%)	4	36	
No (n: 28 = 41%)	1	27	
Participating in family activities			0.06
Yes (n: 40 = 59%)	1	39	
No (n: 28 = 41%)	4	24	
Participating in community activities			0.02
Yes (n: 46 = 68%)	1	45	
No (n: 22 = 32%)	4	18	
Having emotional support			0.91
Yes (n: 53 = 78%)	4	49	
No (n: 15 = 22%)	1	14	
Participating in household activities			0.01
Yes (n: 36 = 53%)	0	36	
No (n: 32 = 47%)	5	27	

Not having a caregiver had a significant influence on functional independence (0.02). A logistic regression to establish the relationship between having a helper and functional independence yielded a p value of 0.04. Patients without a caregiver are more likely to be functionally independent. Time of availability of the caregiver was also found to have a significant influence on functional independence. Patients who did not have a caregiver had better functional independence than those who had a caregiver day and night.

Patients who participated in community activities were more likely to have functional independence ($p = 0.02$). Participating in household activities was also found to increase the likelihood of having functional independence ($p = 0.01$).

4.7. LOGISTIC REGRESSION AND ODDS RATIOS

Table 4.6 illustrates the results of the logistic regression and odds ratios of the influence of age, marital status, shoulder pain, bladder and bowel function, duration of hospital stay, and having a helper (caregiver) on functional independence post stroke.

Table 4.6 – Logistic regression and odds ratios results

Score	Odds ratio	Std. Err.	z	P> z	95% Confidence interval	
Age						
Age 18 – 34	1.0000					
Age 35 – 44	0.0074	0.0124	-2.94	0.003	0.0002	0.1953
Age 45 – 54	0.0148	0.0220	-2.84	0.004	0.0008	0.2707
Age 55 – 64	0.0165	0.0249	-2.72	0.007	0.0008	0.3182
Age 65 – 75	0.0055	0.0101	-2.83	0.005	0.0001	0.2005
Marital status						
Single	1.0000					
Married	6.1763	5.7472	1.96	0.050	0.9969	38.2645
Bowel function						
	19.0512	19.2190	2.92	0.003	2.6376	137.6018
Duration of hospital stay						
1 day – 2 wks	1.0000					
>2wks – 6wks	0.6313	0.6304	-0.46	0.645	0.0891	4.4697
>6wks – 12wks	8.1651	9.2287	1.86	0.063	0.8909	74.8263
With helper						
No helper	23.1739	34.5353	2.11	0.035	1.2487	430.0473

Younger patients (18 – 44 years) had a higher relative recovery than older patients (18-34 years: odds ratio = 1; 35 – 44 years: $p = 0.003$). Married patients were more likely to have functional independence than single patients (married: odds ratio = 6.18; single: odds ratio = 1.00). Having bowel function increased the likelihood of having functional independence ($p = 0.003$). Patients who stayed in hospital for two to six weeks had recovery rates that are slower than those that stayed between one day to 2 weeks and those that stayed six to twelve weeks. Patients who had no caregiver had higher recovery than those with a caregiver. Shoulder pain and bowel function were found to have no influence on functional independence.

4.8. Conclusion

Ninety three percent of the patients were functionally independent post discharge. Younger patients had the highest likelihood of improved functional independence than the older age group; however the influence is only at discharge from the hospital. Married patients recovered functional independence faster than those who were single. The following factors also improved chances of being functionally independent: having bowel function, staying in hospital for less than two weeks and more than six weeks, time of availability of caregiver, participating in community and household activities. Factors which were found to have no influence on functional independence post stroke were: gender, education level, duration of stroke, side of stroke, shoulder pain, leg pain, urinary incontinence, financial role, monthly income and depression.