



THE EFFECT OF HIV STATUS ON POST-STROKE OUTCOMES IN ACTIVITIES OF DAILY LIVING

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Introduction

The study explored the impact of HIV status on the outcome of stroke survivors.

The ability to perform activities of daily living (ADLs) was assessed to determine the rate and nature of recovery of the HIV-positive and HIV-negative stroke survivors.

It is important for OTs to have a good understanding of the nature of recovery of stroke



Background

- Stroke is the leading cause of disability among adults, and it is expected that the prevalence of stroke will increase further ⁽¹⁾ ⁽²⁾
- There is a decrease in stroke mortality, while the number of stroke survivors are increasing ⁽³⁾. Middle-income countries have the largest burden of stroke and account for the highest mortality of stroke world wide ⁽⁴⁾.
- In South Africa the prevalence of stroke is 300 hundred people out of every 100 000 ⁽⁵⁾.
- Stroke is considered a older person's disease but a study conducted in 2010 reported an increase in the incidence of stroke in adults aged 20-64 ⁽³⁾ ⁽⁶⁾.

Background

- Stroke recovery is heterogeneous and depends on the nature and severity of the stroke ⁽⁷⁾ ⁽⁸⁾ .
- The rate of recovery can be characterised by the largest improvements occurring during the first week after stroke, decreasing in the post-acute phase to three months after the stroke. The improvement starts to plateau at six months after the stroke ⁽⁸⁾ .
- Motor, cognitive and perceptual impairments after stroke results in significant restrictions ⁽⁷⁾ . After rehabilitation 28% of stroke survivors are moderately to severely impaired, 26% have mild impairments, and only 46% are independent ⁽⁹⁾ .

Background

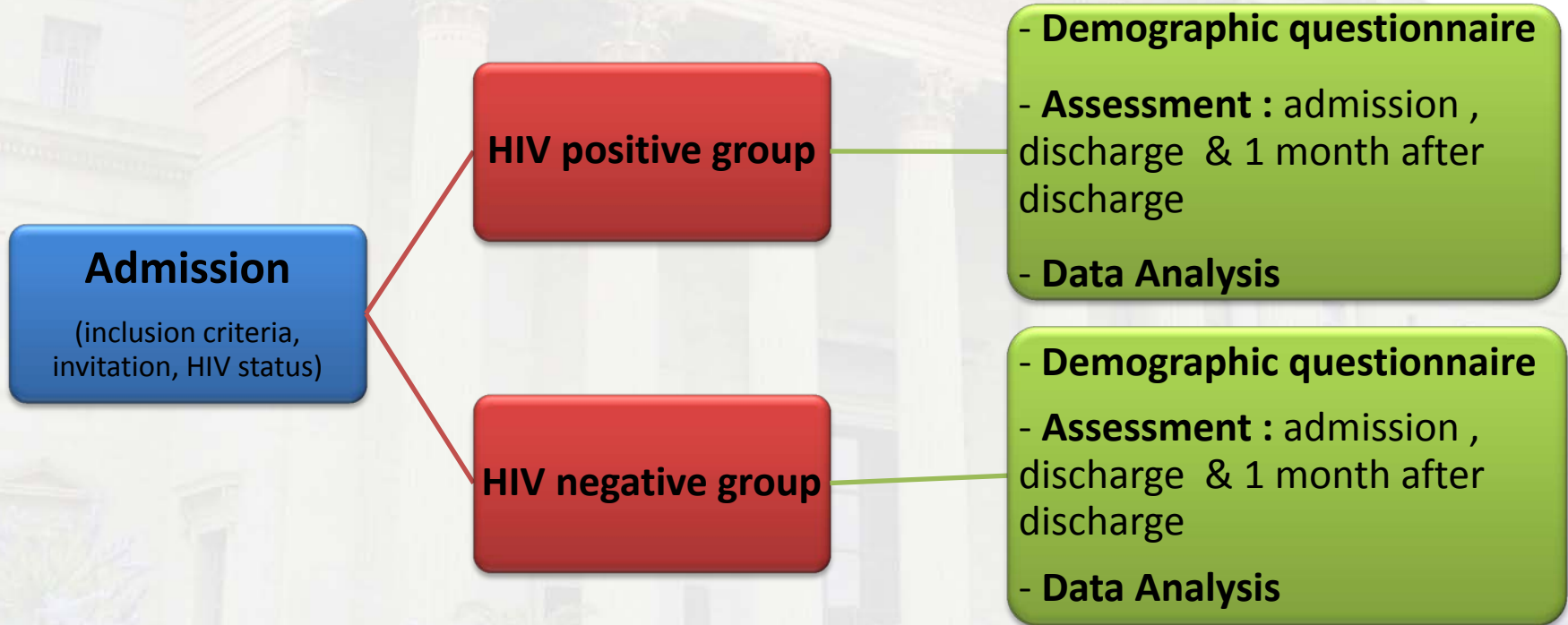
- HIV is an independent predictor for stroke. People living with HIV has a increased risk for stroke ⁽¹⁰⁾ . ARV's cause vascular damage which lead to an increased risk. There is a high incidence of stroke in young HIV+ adults without the classic risk factors ⁽¹⁰⁾ .
- The neurological deficits of HIV+ stroke survivors are similar than that of HIV- stroke survivors. Ischemic strokes are more common in HIV+ population ⁽¹¹⁾ .
- There is a lot of literature available on the rate and nature of recovery of stroke, but very little information are available on the impact of HIV on the recovery of stroke survivors.
- Identifying the impact of HIV on the rate and nature of stroke recovery can assist OT's with goal setting and the rehabilitation process.



Methodology

- **Research Design:**
Quantitative, descriptive, comparative
- **Study Population:**
Witrand Hospital
- **Study Sample:**
Total sampling
32 stroke survivors - 20 HIV negative
 - 12 HIV positive
(9 one month after d/c)

Methodology



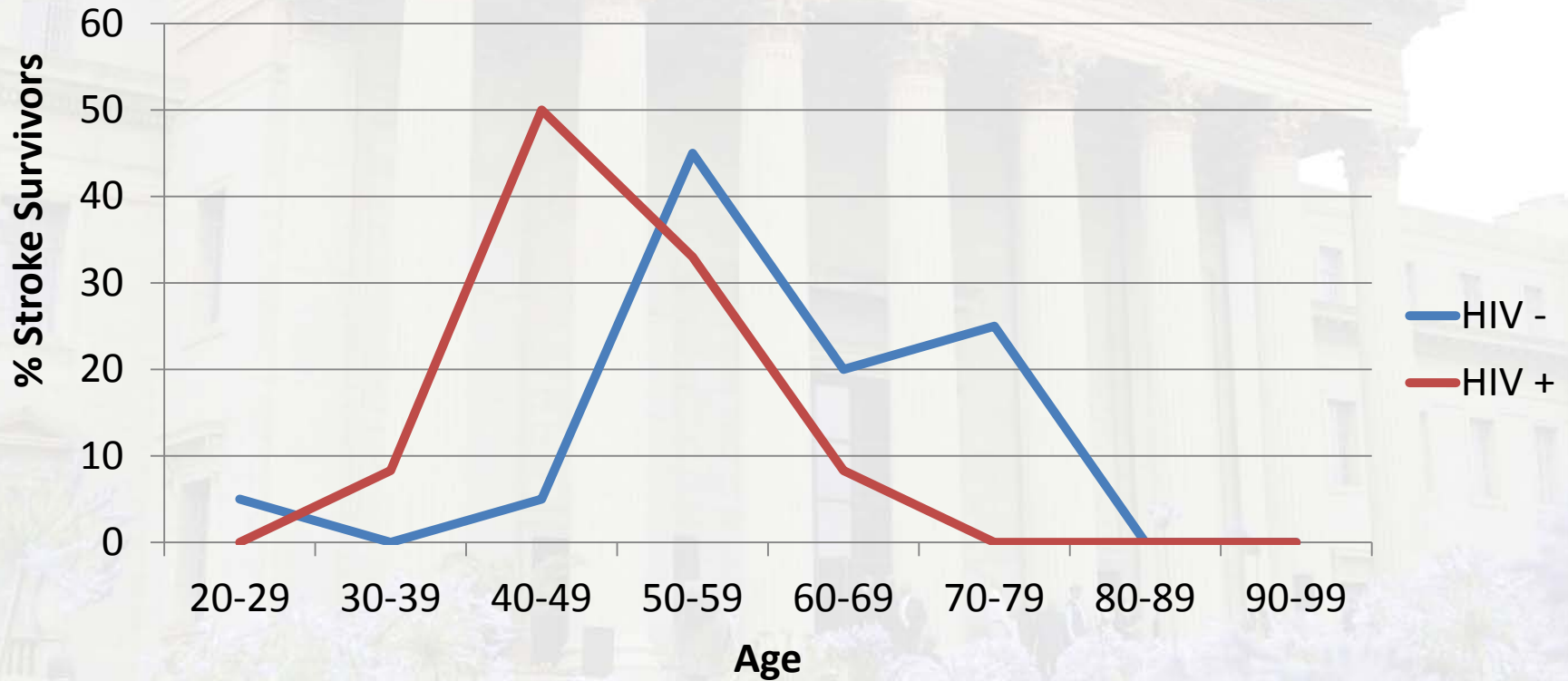
Methodology

South African Database of Functional Medicine (SADFM)

Score	Description
1	Does not assist at all. They are completely dependent
2	Tries to assist, but provides less than half of the effort (25%-49%).
3	Performs 50%-75% of the task, but still requires the help form one therapist.
4	Requires incidental hands-on help only. They perform >75% of the task.
5	Requires supervision, cuing and/or setting up to complete the task.
6	Requires extra time or uses an assistive device.
7	Fully independent.

Results: Demographic

Age Distribution



Results: Demographic

Gender

HIV - : 15 male (75%), 5 female (25%)

HIV + : 6 male (50%), 6 female (50%)

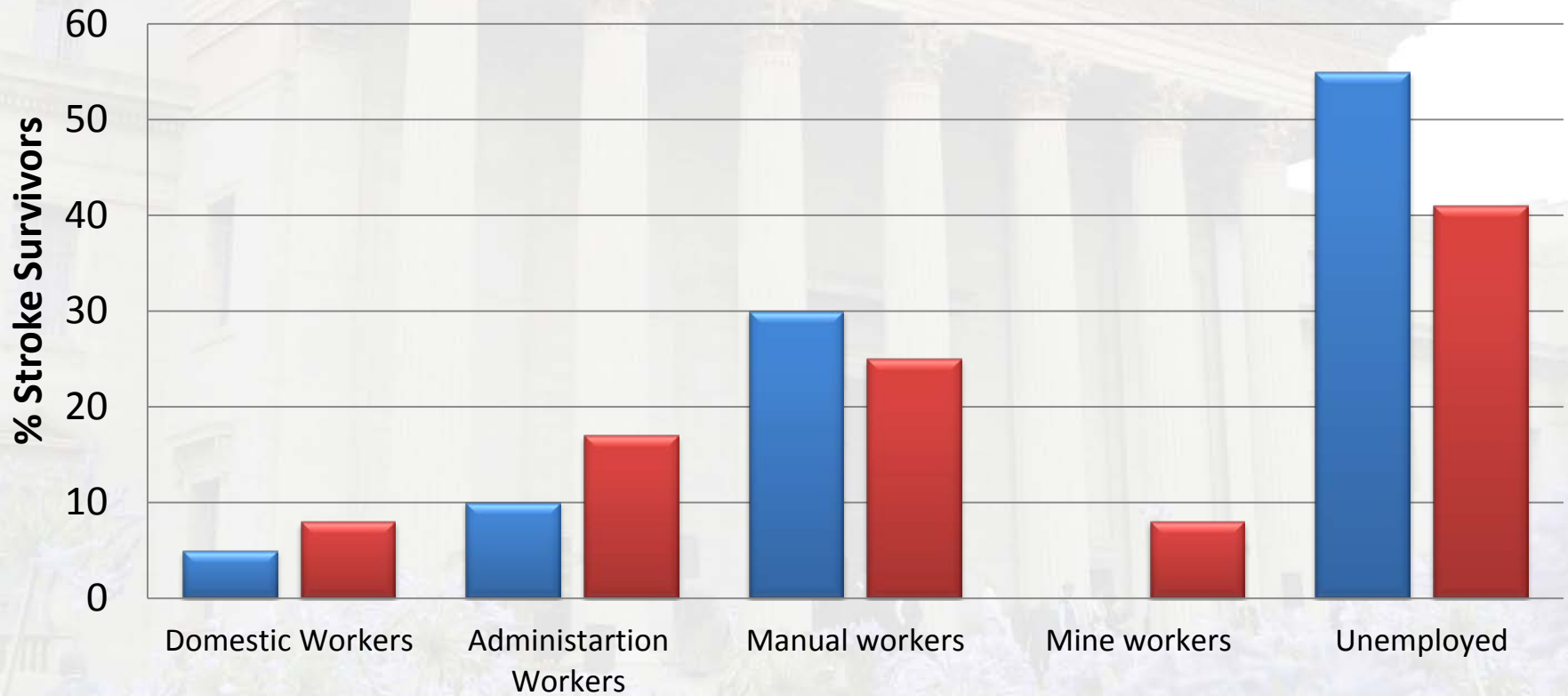
Race

HIV - : 13 black (65%), 5 white (25%), 2 coloured (10%)

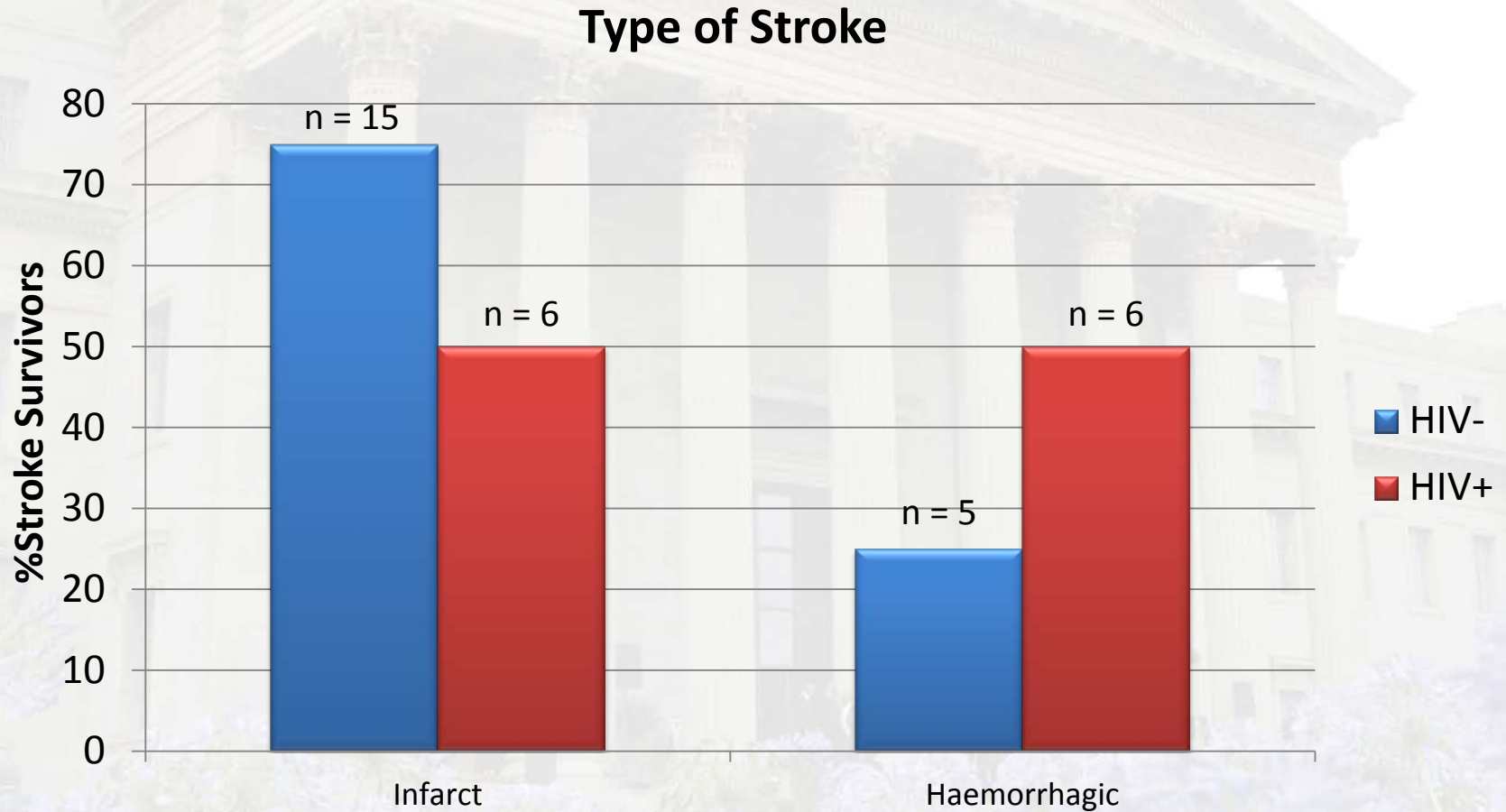
HIV + : 6 black (50%), 6 white (50%)

Results: Demographics

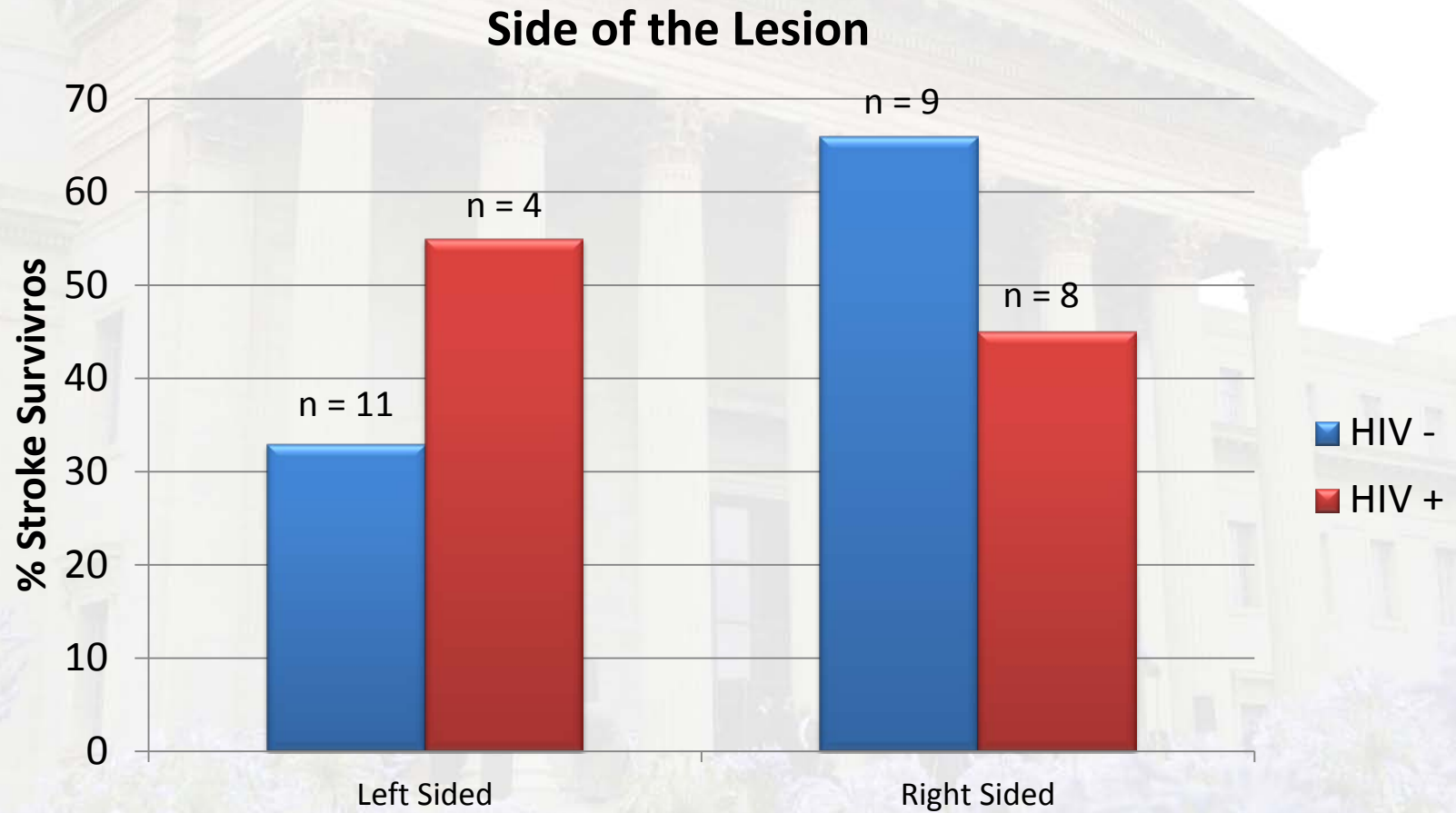
Work Status of Participants



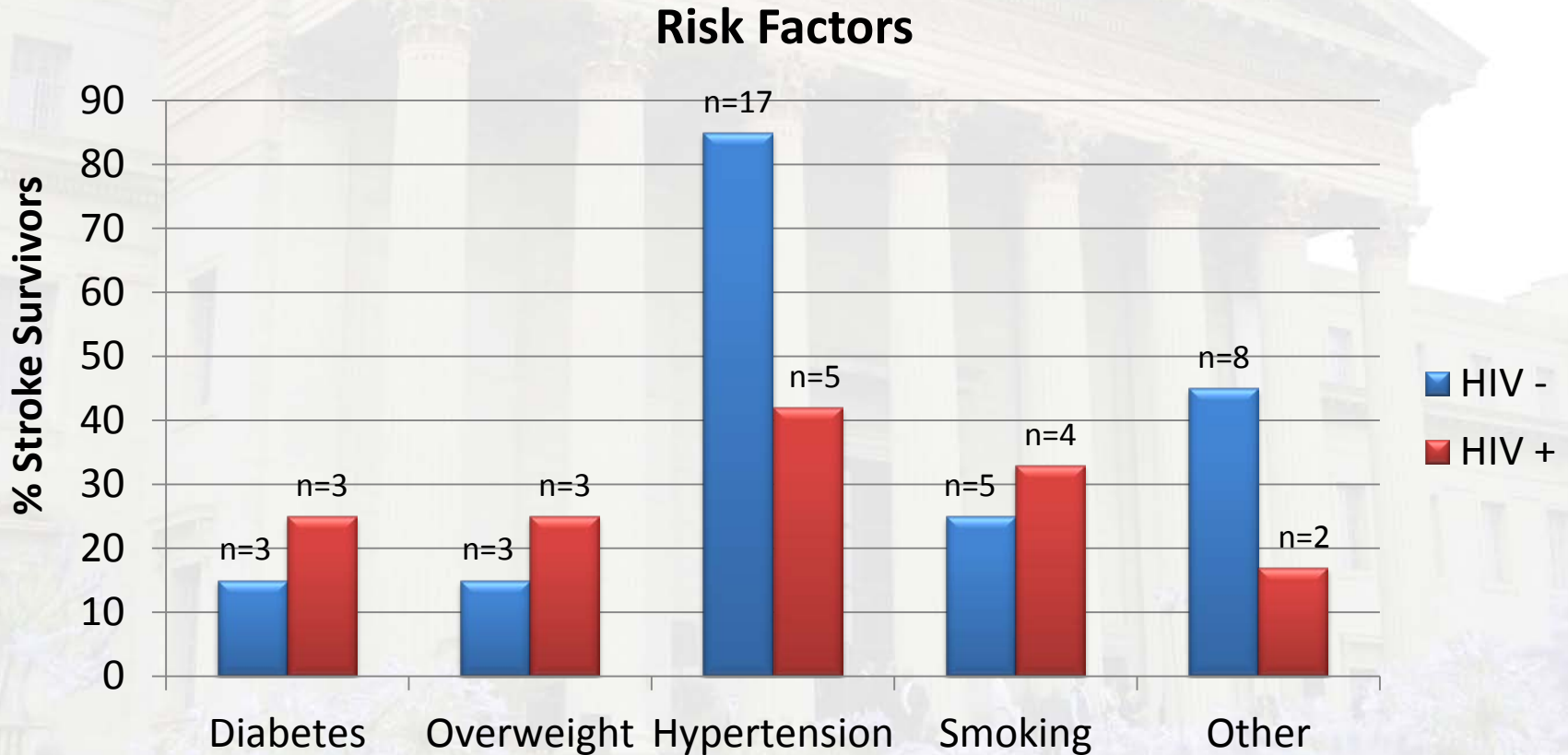
Results: Demographics



Results: Demographics

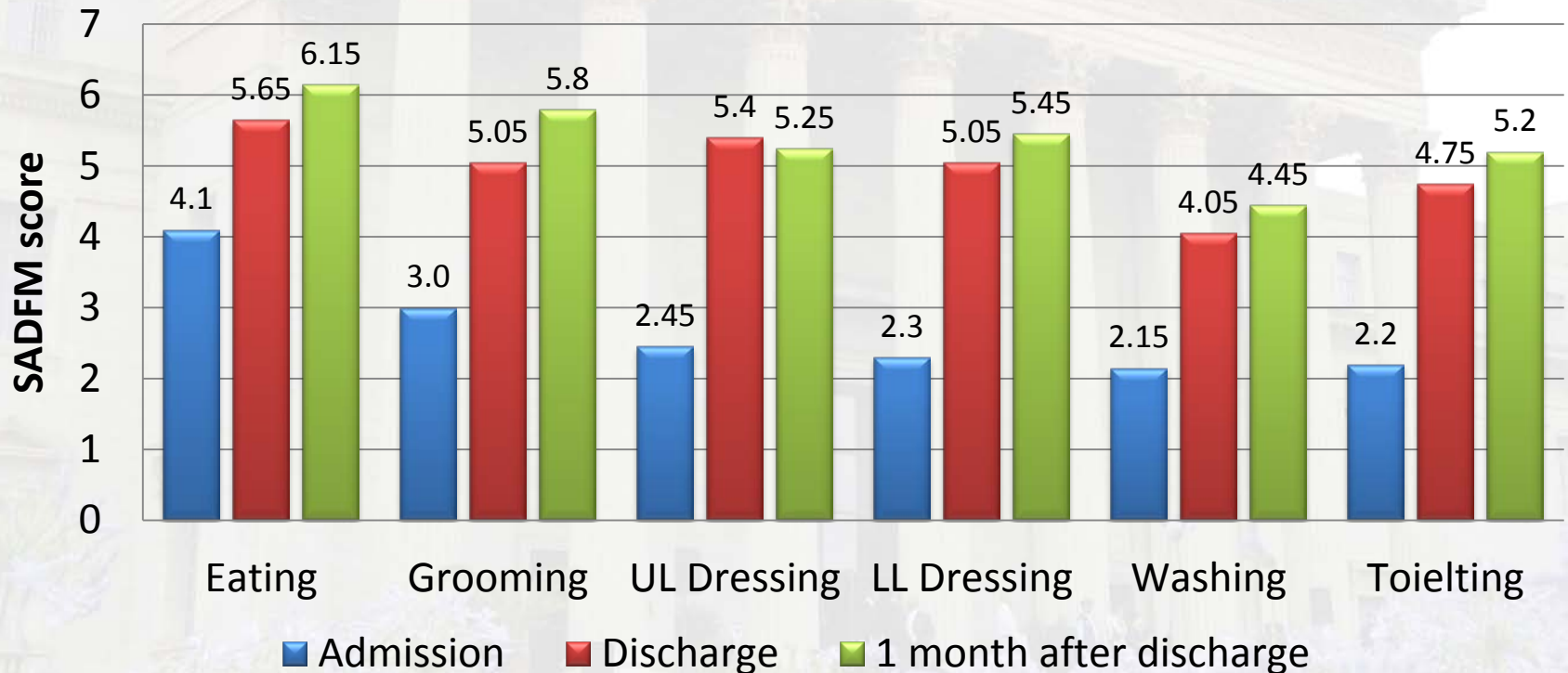


Results: Risk Factors



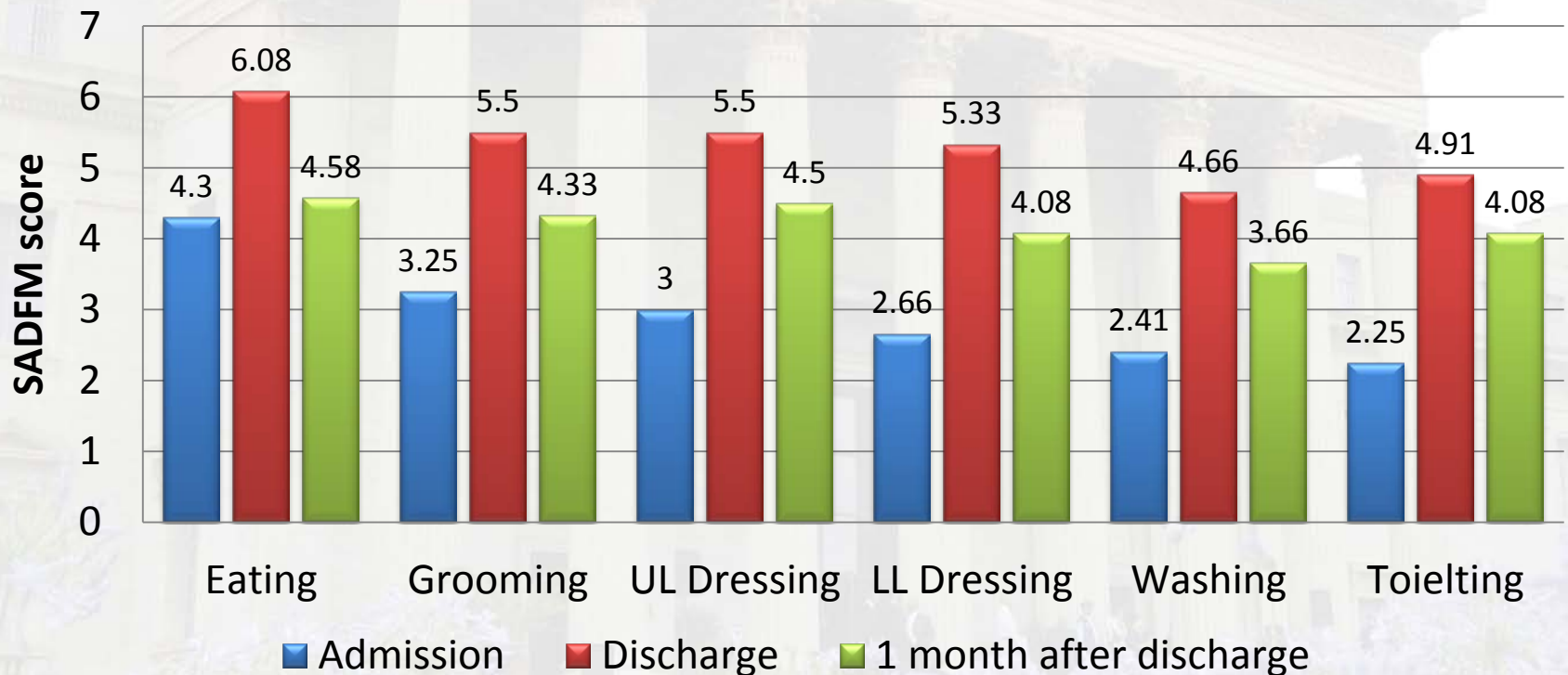
Results: HIV Negative Group

Scores of the HIV - group over the three periods



Results: HIV Positive Group

Scores of the HIV + group over the three periods



Results: Comparison

Comparison of the Admission scores between the two groups

	HIV positive (n=12)	HIV negative (n=20)	<i>p</i> value (Mann-Whitney U test)
	Mean score (minimum and maximum score)	Mean score (minimum and maximum score)	
Eating	4.33 (2.00 – 5.00)	4.10 (2.00 – 7.00)	0.27
Grooming	3.25 (2.00 – 5.00)	3.00 (1.00 – 5.00)	0.57
UL dressing	3.00 (1.00 – 6.00)	2.45 (1.00 – 5.00)	0.29
LL dressing	2.66 (1.00 – 6.00)	2.30 (1.00 – 5.00)	0.75
Washing	2.41 (1.00 – 5.00)	2.15 (1.00 – 5.00)	0.53
Toileting	2.25 (1.00 – 5.00)	2.20 (1.00 – 5.00)	0.86

Results: Comparison

Comparison of the Discharge scores between the two groups

	HIV positive (n=12)	HIV negative (n=20)	p value (Mann-Whitney U test)
	Mean score (minimum and maximum score)	Mean score (minimum and maximum score)	
Eating	6.08 (3.00 – 7.00)	5.65 (3.00 – 7.00)	0.27
Grooming	5.50 (3.00 – 7.00)	5.05 (2.00 – 7.00)	0.57
UL dressing	5.50 (3.00 – 7.00)	5.40 (2.00 – 7.00)	0.29
LL dressing	5.33 (2.00 – 7.00)	5.05 (1.00 – 7.00)	0.75
Washing	4.66 (2.00 – 7.00)	4.05 (2.00 – 7.00)	0.53
Toileting	4.91 (1.00 – 7.00)	4.75 (1.00 – 7.00)	0.86

Results: Comparison

Comparison of the scores 1 month after discharge between the two groups

	HIV positive (n=9)	HIV negative (n=20)	p value (Mann-Whitney U test)
	Mean score (minimum and maximum score)	Mean score (minimum and maximum score)	
Eating	6.15 (3.00 – 7.00)	4.58 (0.00 – 7.00)	0.23
Grooming	5.80 (2.00 – 7.00)	4.33 (0.00 – 7.00)	0.22
UL dressing	5.25 (1.00 – 7.00)	4.50 (0.00 – 7.00)	0.73
LL dressing	5.45 (1.00 – 7.00)	4.08 (0.00 – 7.00)	0.28
Washing	4.45 (1.00 – 7.00)	3.66 (0.00 – 7.00)	0.47
Toileting	5.20 (1.00 – 7.00)	4.08 (0.00 – 7.00)	0.33

Results: Comparison

	Admission to one month after discharge		Admission to discharge		Discharge to one month after discharge	
	Effect size (Cohen's d)	Confidence intervals	Effect size (Cohen's d)	Confidence intervals	Effect size (Cohen's d)	Confidence intervals
Eating	1.72	0.26 – 3.18	-0.2	-0.93 – 0.53	1.83	0.28 – 3.38
Grooming	1.69	0.32 – 3.06	-0.2	-1.03 – 0.63	1.75	0.21 – 3.29
UL dressing	1.25	-0.44 – 2.94	0.45	-0.64 – 1.54	2.25	0.75 – 3.75
LL dressing	1.71	0.02 – 3.40	0.09	-1.14 – 1.32	1.40	-0.18 – 2.98
Washing	1.19	-0.36 – 2.74	- 0.35	-1.31 – 0.61	1.25	-1.10 – 3.60
Toileting	1.34	-0.27 - 2.95	-0.11	-1.29 – 1.07	1.00	-0.68 – 2.68

Conclusion

- There is no difference in the rate and nature of recovery between the two groups of stroke survivors – during admission
- Biggest difference is noticeable after discharge
- Clinical implications:
 - treatment during admission
 - regular follow-ups
 - Out-patient treatment
 - Family training/discharge planning



Recommendations

- Larger sample size
- Investigate the reason for functional decline (CD4 count, HAD)
- Post discharge assessment extended to 3 to a year after discharge.



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