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Australia, Finland and South Africa – Delving into Data to Investigate Differences in Stroke Rehabilitation

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Summary

Clinical and demographic information on rehabilitation for stroke patients in Australia, Finland and South Africa were compared on length of stay, functional status on admission and discharge, functional improvement throughout the episode of care and the age distribution of the patients treated. Differences in the data have been linked to the differences in rehabilitation services provided by each country.

Introduction

With continual improvements in technology and the consequent ageing of populations world-wide, there will be a corresponding increase in the proportion of people affected by stroke amongst patients presenting to hospitals. Effective rehabilitation care after the acute phase of the illness is crucial in ensuring that patients return home with as a high level of functional independence as possible, thereby minimizing the social and financial costs to the patient, the health care system and the broader community. International differences in the treatment and management of stroke patients may result in differences in patient outcomes. In this study, data relating to the rehabilitation of stroke patients in South Africa, Finland and Australia have been compared, with a view to identifying links between methods of service delivery and patient outcomes.

Method

Data on episodes of rehabilitation for stroke patients conducted between 1998 and 2004 were used. The data comprised 995 episodes from 23 private hospitals in South Africa, 4,691 episodes from 30 public hospitals in Finland and 10,687 episodes from 43 public hospitals in Australia. Comparisons were made between the three countries on age distribution, length of stay, functional status on admission and discharge and functional improvement throughout the episode of care. Most analyses were performed at the level of impairment within stroke, namely left body involvement (right brain), right body involvement (left brain), bilateral involvement, no paresis and other stroke. The organisation of rehabilitation services within each of the countries was also compared.

Results

The pathology in all three countries was similar with either right body or left body involvement accounting for more than 80% of impairments. However, there were differences in the age distribution of the stroke patients undergoing rehabilitation in each country as displayed in Figure 1. The South African patients tended to be younger, the Australian patients tended to be older.

One outcome measure of a rehabilitation program is the gain in functional independence achieved during the episode. In these three data sets, functional status was measured by the 18-item FIM™[1], in which higher scores indicate a higher level of functional independence. Functional improvement was similar in all three countries, with a gain of 16-22 points during the episode of care for those patients with both left and right body involvement. For these episodes, the average length of stay was 30-34 days.

On closer inspection, however, there are some other marked differences in the data. Figure 2 displays FIM™ scores on admission and discharge for each of the three countries. It is clear that in South Africa, patients are admitted and discharged with much lower functional status. In fact, they are often discharged with poorer functional status than Finnish and Australian patients have on admission.

Another important outcome of rehabilitation is the destination of the

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[1]The use of the FIM™ Data Set, the FIM™ instrument and the related impairment codes to collect data was authorised and conducted in accordance with the terms of an agreement with Uniform Data System for Medical Rehabilitation, a division of U B Foundation Activities, Inc ("UDSMR"). The patient data collected has not been submitted to or processed by UDSMR. No implication is intended that such data has been or will be subjected to UDSMR's standard data processing procedures or that is otherwise comparable to data processed by UDSMR.
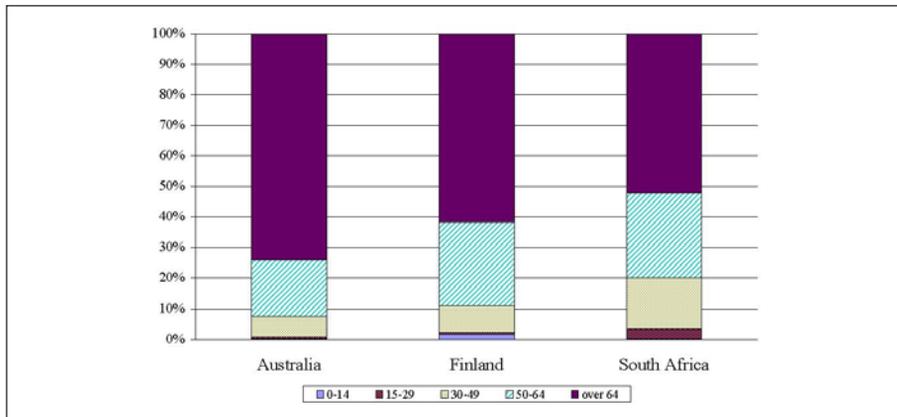
Figure 1: Age distribution by country

patient on discharge. The options available are different in each of the countries, but they have been grouped into a few broad categories in Figure 3. Similar proportions of patients are discharged home, although in South Africa, most of these patients will have to live with family or friends. In South Africa, far more stroke patients die during their rehabilitation episode.

Rehabilitation services are provided in both public and private sector facilities in both Finland and Australia. Care is provided by staff from a range of clinical specialities – physicians, allied health professionals and rehabilitation nurses. In Australia, care can be provided in a stand-alone rehabilitation facility, a dedicated ward in an acute hospital or in a stroke unit where the rehabilitation and acute care are more integrated.
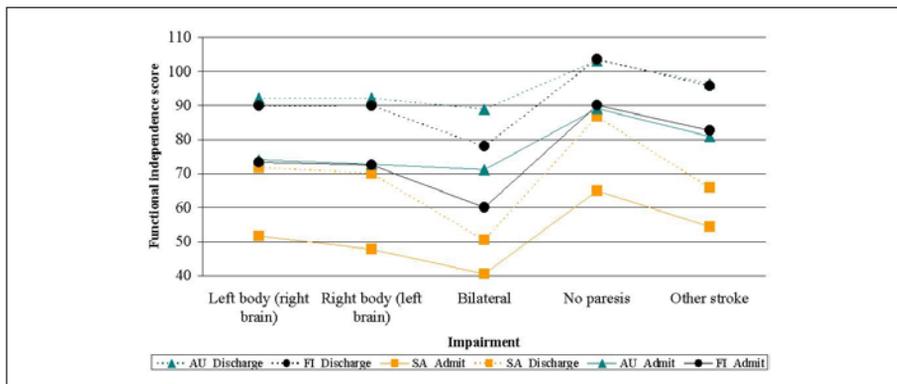

Figure 2: Functional scores on admission and discharge

Discharge Destination	Australia	Finland	South Africa
Home	68%	62%	77%
Long term care	13%	6%	9%
Continuing in hosp/other	18%	31%	4%
Died	1%	1%	10%

Figure 3: Discharge destination

Finnish patients are more likely to have several episodes, often in different facilities, although recent developments have seen the establishment of more wards dedicated to rehabilitation care in hospitals. For many patients in both countries, the inpatient rehabilitation will often be followed by more treatment in an outpatient setting. However, in both countries, for patients who need it, rehabilitation care is generally started immediately after the acute medical episode.

In South Africa, on the other hand, the focus is not on early intervention and early rehabilitation. Stroke patients are not provided with rehabilitation care as a matter of course. Rather, only the very worst cases and younger patients receive rehabilitation and that can sometimes occur quite a long time after their initial acute episode. Most rehabilitation care is provided to privately insured patients.

Conclusion

Our study highlights international differences in rehabilitation service provision and outcomes. This study arose from the establishment of IRON, the International Rehabilitation Outcomes Network, in connection with the ISPRM Congress in 2003. A goal for this international benchmarking co-operation is to provide useful world-wide guidelines and standards for best-practice stroke rehabilitation. As the rate of elderly people suffering from stroke continues to rise, this is a matter of international importance.

References

Guide for the Uniform Data Set for Medical Rehabilitation (including the FIM instrument) Version 5.0 (Finland) Buffalo NY 14214: State University of New York at Buffalo; 1996