View towards Rehabilitation in the Home – A Survey of Patient's Mindset towards a Home Rehabilitation Programme

Dear Editor,

Due to an ageing population, the need for acute hospital beds has been increasing exponentially in the past years. Stroke rehabilitation has been traditionally carried out in the inpatient setting, day rehabilitation or hospital outpatient setting and often, there is a wait list. Rehabilitation in the home is a relatively new idea in our country. In countries like the United Kingdom,[1] Australia and some Asian countries, early supported discharge (ESD) services have been implemented to accelerate the discharge of stroke patients. Studies have shown that appropriately resourced ESD services provided for a selected group of patients can reduce long-term dependency, reduce admission to institutionalised care and reduce the hospital length of stay. There was better patient satisfaction and activities of daily living (ADL) score.[2,3] Another study demonstrated improved 5-year survival in the ESD group.[4] In Singapore, ESD is usually a bridge to outpatient or day rehabilitation services and consists of few sessions in all.

In Australia, rehabilitation in the home programme is of the same intensity, frequency and duration as inpatient rehabilitation, which is 5 days a week with input from various allied healthcare workers lasting up to 6 weeks or more. This is not available in Singapore yet. This study was done to assess if Singaporean patients are open to a home rehabilitation programme (HRP).

In this study, we aimed to describe the demographics, clinical characteristics and entry functional status of stroke patients who were recruited into this study. We assessed the patient's attitudes and acceptance towards HRP and identified potential barriers to patients choosing HRP.

Consecutive patients who were admitted to our inpatient rehabilitation ward with the rehabilitation diagnosis of stroke were screened for eligibility between March 2013 and January 2015. Patients aged 21 and above, with Mini-Mental State Examination (MMSE) score of 25 or more were recruited. Patients with dysphasia, cognitive impairment and those admitted from nursing homes were excluded. A questionnaire was administered by a nurse or doctor, covering areas including demographics, premorbid functional status, premorbid activities of daily living, perception towards HRP and the patient's expectations towards recovery. MMSE was administered and information on the type of stroke and the functional independence measure (FIM) were retrieved from the medical records. Statistical analysis was performed with SPSS statistical software, version 19.0. This study was approved by the SingHealth Centralised Institutional Review Board.

The average age of the 100 recruited patients was 58.9 years. Majority of the patients were male and of Chinese ethnicity (Table 1). A quarter suffered intracerebral bleed and the rest cerebral infarct. Sixty-five of the 80 married patients stayed with their children. Only 14% of all patients stayed alone. There was lift access to the homes in 97 of the patients. Ninety-three of the patients could identify a caregiver at the time of the interview. All patients were ADL-independent prior to stroke except one. Ninety-three of patients were in the community for social activities at least weekly. More than 93 did some form of instrumental ADLs. The mean admission FIM was 72.6 and the median was 72. Majority of the stroke patients were of moderate disability and minority in the mild or severe disability category (Table 2).

Majority of the patients were keen for a HRP (Table 1). Of those who were not keen, reasons cited included cost, unsupportive family members, privacy issues and preferring a hospital-based rehabilitation. Currently, home physiotherapy or occupational therapy would require cash payment. Eighty-nine patients expressed that they would be more likely to opt for a HRP if it is Medisave deductible. Most patients (81) were willing to pay up to $30 per therapy session. There were higher perceived needs for physiotherapy and occupational therapy than nursing, speech therapist or the physician.

All but 2 patients desired to be as independent as possible. Ninety-nine patients felt strongly that they do take charge of their own health. The chief concern of 59 patients was in getting well, whereas 23 and 16 were most concerned about their finances and inconvenience to the family. From the results, it seems that being female, Malay, 60 years or younger, married, having moderate stroke, not having a family car, and being a worker not in the professional field would be factors leaning towards a HRP. However, these factors are not statistically significant, except for younger age (Table 1).

Cobley et al demonstrated in a small qualitative study exploring patients' and carers' experiences of ESD that there was a consensus of preference among participants

Table 1. Patients' Demographics

Demographic	Number of Patients (n = 100)
Gender	
Male	71
Female	29
Race	
Chinese	69
Malay	27
Indians	4
Mean age (range)	58.9 (25-90) years
Type of stroke	
Ischaemic	75
Haemorrhagic	25
Mean admission FIM (range)	72.6 (26 –126)
Stroke severity	
Severe (FIM = 18 to 53)	15
Moderate (FIM = 54 to 90)	66
Mild (FIM >90)	19
Marital status	
Single	9
Married	80
Separated/divorced	8
Widowed	3
Domestic helper at home	
Yes	16
No	84
Has a family car	
Yes	32
No	68
Proposed caregiver after discharge	
Nil	3
Domestic helper	13
Children	18
Spouse	43
Other relatives	20
Friend	3
Employment status	
Unemployed/retired	34
Non-professional	40
Professional	26
Education	(1 missing)
Less than 10 years	79
10 years or more	20

FIM: Functional independence measure

Table 2. Univariate Analysis of Patients' Factors and Their Keenness towards a HRP

	Very Keen to Keen for HRP n = 72	Neutral to Against for HRP n = 28	Unadjusted	
			OR (95% CI)	*P* Value
Gender				
Male	53 (74.6%)	18 (25.4%)	1.0	
Female	19 (65.6%)	10 (34.5%)	1.2 (0.393 – 4.106)	0.689
Race				
Chinese	48 (69.6%)	21 (30.4%)	1.0	
Malay	21 (77.8%)	6 (22.2%)	2.9 (0.609 – 13.831)	0.181
Age				
>60 years	26 (56.5%)	20 (43.5%)	1.0	
≤60 years	46 (85.2%)	8 (14.8%)	4.4 (1.7 – 11.4)	0.001
Stroke severity				
Severe (FIM = 18 to 53)	11 (73.3%)	4 (26.7%)	1.0	
Moderate (FIM = 54 to 90)	46 (69.7%)	20 (30.3%)	1.2 (0.3 – 4.2)	0.781
Mild (FIM >90)	15 (78.9%)	4 (21.1%)	0.7 (0.2 – 3.6)	0.702
Marital status				
Single	7 (77.8%)	2 (22.2%)	1.0	
Married	56 (70%)	24 (30%)	1.6 (0.179 – 13.487)	0.690
Separated/ divorced	6 (75%)	2 (25%)	1.1 (0.060 – 21.870)	0.929
Has domestic helper				
Yes	12 (75%)	4 (25%)	1.0	
No	60 (71.4%)	24 (28.6%)	1.3 (0.260 – 6.318)	0.760
Has a car in the family				
Yes	27 (84.4%)	5 (15.6%)	1.0	
No	45 (66.2%)	23 (33.8%)	1.35 (0.395 – 4.624)	0.632
Years of education				
<10 years	53 (67.1%)	26 (32.9%)	1.0	
≥10 years	19 (95%)	1 (5%)	0.3 (0.033 – 2.175)	0.217
Occupation				
Unemployed/ retired	24 (70.6%)	10 (29.4%)	1.0	
Non-professional	26 (65%)	14 (35%)	1.9 (0.51-6.876)	0.527
Professional	22 (84.6%)	4 (15.4%)	0.9 (0.199 – 4.809)	0.978

FIM: Functional independence measure; HRP: Home rehabilitation programme

for returning to their home soonest possible and almost all reported satisfaction with the rehabilitation exercises.[5] Some problems encountered in Cobley's study were disjointed transition between ESD and future services, limited support in dealing with carer strain, lack of education and training of carers and inadequate provision and delivery of information.

In our study, the majority of patients were keen for a HRP with the same intensity that an inpatient rehabilitation programme would provide, lasting up to 6 weeks. Cost could be a major barrier to the uptake of HRP in our study population. Given the evidence of its benefits,[2-4] a HRP is worth implementing. It appears that younger patients would prefer to be at home than in an institution. The therapy is in the real world setting when performed at home. We also perceive that the patient would be challenged more in the home environment than in the hospital environment. As for avoiding the issues faced by Cobley's population as well as addressing the obstacle of unsupportive family members, we have much more carer support than in the western world.[5] In Singapore, one can hire a domestic helper to relieve long-term carer stress. As for the acute to subacute period, interim carer service is available, especially when there is no carer available in the day. Such services provide carers who are trained to do transfers and look after the disabled in the short term, for up to 3 months. They can also check on the family member's caregiving skills. Stroke coordinators in our institution educate stroke patients in the ward and also call them to follow-up. This is a way to provide education and support. It is recommended that the teams providing care are acute hospital-based to facilitate collaborative decision-making between HRPs and acute services. It should be overseen by a rehabilitation physician who would then seamlessly transit the patient to outpatient rehabilitation or a day rehabilitation programme, if required. This would also provide confidence in patients that they are looked after by the acute hospital teams and the only difference is in the location of treatment. That may overcome the barrier of wanting a hospital-based treatment, especially when patients are medically stable to be discharged. In conclusion, HRP is worth implementing in Singapore, given its benefits and patients' enthusiasm. Making it Medisave deductible and having staff that is hospital-based and led by a rehabilitation physician would ensure its success.

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