A Brief Review of Post-stroke Employment in Singapore

Mervyn J.R. Lim1,2,*, Benjamin T.Y. Wong1, Pauline P.W. Koh4, Rebecca Raszewski3 and Miho Asano1

1 Saw Swee Hock School of Public Health, National University of Singapore, Singapore
2 Division of Neurosurgery, National University Hospital, Singapore
3 School of Economics, Singapore Management University, Singapore
4 Therapy Hub, SPD, Singapore
5 Library of the Health Sciences, University of Illinois at Chicago, Chicago, United States of America

Abstract

Post-stroke employment is of increasing importance in Singapore. We reviewed the prevalence, outlined the pathways, resources, and identified potential barriers and facilitators to post-stroke employment in Singapore. This study consisted of a systematic review of post-stroke employment research in Singapore and eight consultations with experts (healthcare professionals and representatives from the public sector and Voluntary Welfare Organisations) who were involved in the care of stroke survivors. There were four published studies that investigated post-stroke employment status in Singapore, with an average prevalence of 45.9%. We outlined three pathways (employer, independent search, and community resource), and identified barriers and facilitators (categorized as employer, healthcare system, and personal factors) to post-stroke employment. Important barriers and facilitators to post-stroke employment in Singapore included the patient’s motivation, financial incentives for or against returning to work, financial considerations of employers, and a patient’s actual disability. Overall, the Singaporean model of post-stroke employment appears to support stroke survivors through government-affiliated and Voluntary Welfare Organisations that handle job support, as well as financial support for employers and persons with disabilities. Existing programmes and the uptake of community-services should be further investigated to inform stakeholders and improve on current programmes.

Keywords: Stroke rehabilitation; Vocational rehabilitation; Return to work; Employment; Disabled persons

Introduction

Stroke is the 6th highest cause of disability in Singapore [1]. The incidence of young stroke amongst individuals who are of the working population in Singapore is increasing [2]. Post-stroke employment is a significant contributor to life satisfaction after stroke thus it is important for this group of stroke survivors. However, despite a large body of evidence on the factors preventing return to work, post-stroke employment continues to be a significant challenge that stroke survivors face today [3-8].

In this review, we reported the prevalence, pathways, resources, and identified potential barriers and facilitators to post-stroke employment in Singapore. We conducted a systematic review of post-stroke employment research in Singapore using three electronic databases, and held eight consultations with experts (healthcare professionals and representatives from the public sector and Voluntary Welfare Organisations) who were involved in the care of stroke survivors in Singapore.

Prevalence of Post-stroke Employment in Singapore

We identified 41 studies from three electronic databases, MEDLINE via OVID (1946-2017), EMBASE (1974-2017), CINAHL Plus with Full Text (1937-2017), and through a bibliography search in July 2017. Thirty-two studies were screened after duplicates were removed, and we included four studies on post-stroke employment in Singapore (published from year 1983 to 2012) [9-12]. The sample size ranged from 29 [10] to 1310 [12], and the majority of participants were male and diagnosed with ischemic stroke (Table 1). The prevalence of post-stroke employment in Singapore ranges from 37.5% to 55.0%, with an overall average of 45.9% [9,10]. Our experts estimated a post-stroke employment prevalence of 10.0% to 50.0% for all stroke survivors, and 20.0% to 69.0% for stroke survivors enrolled in employment support programmes. This was comparable to post-stroke employment rates worldwide of 35.0% to 75.0% [8,13-17].

Pathways to Post-stroke Employment in Singapore

We identified three main pathways for post-stroke employment in Singapore: (1) Employer, (2) Independent Search, and (3) Community Resources Pathway (Figure 1). After stroke, a patient experienced acute care followed by rehabilitation [18-20]. This process began in the tertiary hospital, but was subsequently transferred to subacute inpatient or community rehabilitation facilities [21]. While there seemed to be no specific guide on when to raise the question of returning to work after stroke, our experts highlighted that this discussion typically began with the first meeting between patients and their rehabilitation physicians.

Employer Pathway

Some stroke survivors retained their employment by previous employers. Our experts reported that employee-employer relationships, prior knowledge in hiring persons with disabilities, job expectations of stroke survivors, and the employer’s financial considerations were important factors for post-stroke employment (Table 2). Without exceptional support to communicate with employers, and an empathetic employer, stroke survivors were at significant risk of losing their pre-stroke employment. Moreover, small and medium-sized enterprises employed two-thirds of the Singapore workforce, and these organisations typically did not have sufficient resources to retain jobs for employees who had suffered from stroke. Negative perceptions amongst employers towards hiring stroke survivors were also evident in studies conducted in other developed countries and pointed towards the importance of employer education [17-23,24].
Table 1: Characteristics of included studies, prevalence, and barriers to post-stroke employment in Singapore.

<table>
<thead>
<tr>
<th>First Author (Year)</th>
<th>Study Design</th>
<th>Sample Size (N)</th>
<th>Age (Years): N (%); Mean (SD)</th>
<th>Male N (%</th>
<th>Prevalence of PSE N (%)</th>
<th>Barriers to PSE (Identified by the Authors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tan ES (1983) [12]</td>
<td>Retrospective chart review</td>
<td>1310</td>
<td>≤ 45: 162 (12.4); 46-60: 516 (39.4); &gt;60: 632 (48.2)</td>
<td>763 (58.2)</td>
<td>338 (50.6)</td>
<td>§ Delayed rehabilitation</td>
</tr>
<tr>
<td>Yap EC et al. (2002) [9]</td>
<td>Retrospective chart review</td>
<td>39</td>
<td>Mean: 50.9 (12.7)</td>
<td>21 (53.8)</td>
<td>9 (37.5)</td>
<td>§ Delayed rehabilitation</td>
</tr>
<tr>
<td>Chan ML (2008) [10]</td>
<td>Retrospective chart review</td>
<td>29</td>
<td>Not reported</td>
<td>Not reported</td>
<td>16 (55.0)</td>
<td>§ Delayed rehabilitation</td>
</tr>
<tr>
<td>Chan WY et al. (2012) [11]</td>
<td>Cross-sectional telephone survey</td>
<td>79</td>
<td>&lt;65: 15 (12.2); ≥ 65: 108 (87.8)</td>
<td>60 (75.9)</td>
<td>32 (40.5)</td>
<td>§ Delayed rehabilitation</td>
</tr>
</tbody>
</table>

Out of 668 participants who were previously employed; *Out of 24 participants who were previously employed.

Table 2: Barriers and facilitators to post-stroke employment based on consultations with experts.

Factors for PSE | Number of Experts (N) | Quotes from Consultations with Experts |
<table>
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<tbody>
<tr>
<td>Employer Factors</td>
<td></td>
<td></td>
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<tr>
<td>a) Financial Considerations for Employing Stroke Survivors</td>
<td>5</td>
<td>*&quot;Many companies may face increased financial difficulty in returning a stroke survivor back to the workplace.&quot;</td>
</tr>
<tr>
<td>b) Employer Expectations of Stroke Survivors</td>
<td>4</td>
<td>*&quot;As long as there is a visible disability and cognitive impairment, employers may have a perception that this person is not ready for employment.&quot;</td>
</tr>
<tr>
<td>c) Knowledge of Employers' Facilitating Return to Work</td>
<td>2</td>
<td>*&quot;Human resource may not understand the clinical diagnosis and may be afraid of taking unnecessary risks bringing the individual back to the workplace.&quot;</td>
</tr>
<tr>
<td>d) Employee-Employer Relationships</td>
<td>2</td>
<td>*&quot;Close relationship between employers and stroke patients prior to stroke episode is key to returning them back to the workplace.&quot;</td>
</tr>
<tr>
<td>Healthcare System Factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Medical Certification for Return to Work</td>
<td>4</td>
<td>*&quot;Whether the patient has frequent follow-up appointment with the hospital or is still on medical leave, (it is a barrier to employment).&quot;</td>
</tr>
<tr>
<td>b) Access to community-based services</td>
<td>4</td>
<td>*&quot;Assistive Technology Fund, Open Door Fun, Building and Construction Authority accessibility fund can be tapped on for job redesign/ adoption of assistive technologies.&quot;</td>
</tr>
<tr>
<td>c) Communication between Healthcare Professionals and Employers</td>
<td>3</td>
<td>*&quot;(The role of occupational health physicians is to) bridge the link between clinicians and human resource practitioners&quot;</td>
</tr>
<tr>
<td>d) Prior Educational Qualifications</td>
<td>3</td>
<td>*&quot;Person not able to adapt to new job role due to lack of skills or knowledge.&quot;</td>
</tr>
<tr>
<td>e) Perceived Disability</td>
<td>3</td>
<td>*&quot;Patients who see progress in their rehab sessions have reduced incidence of depression/ more motivation.&quot;</td>
</tr>
<tr>
<td>f) Employees’ Job Expectation</td>
<td>2</td>
<td>*&quot;Mismatched expectations of the job- unable to support their lifestyle needs.&quot;</td>
</tr>
<tr>
<td>g) Time from Stroke</td>
<td>2</td>
<td>*&quot;The longer the duration that the stroke patient has left the workplace… the more reluctant he/ she is returning to the workplace.&quot;</td>
</tr>
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</table>
Figure 1: Overview of pathways to post-stroke employment in Singapore.
Independent Search Pathway

Stroke survivors who had lost their previous job could attempt to regain employment through the enlistment of private employment agencies to aid in job-search and job matching. Our experts highlighted that these stroke survivors may be unaware of the availability of community-based services to support employment or believed that they did not need such assistance. Our experts further explained that having a smooth transition from the acute care setting to community-based services was important to facilitate the success of post-stroke employment [25,26]. Coole et al. [27] added that a delay of vocational rehabilitation due to the narrow emphasis in getting survivors home from the hospital meant that stroke survivors may lose their jobs [27].

Community Resources Pathway

Stroke survivors may be referred to community-based services from the healthcare setting or through their own efforts. Singapore employed a centralised model for post-stroke employment support in the community, whereby SG Enable, an agency set up by the Ministry of Social and Family Development, was one of the primary organizations that handled requests for job support. SG Enable referred people with residual physical or intellectual disabilities resulting from stroke to various Voluntary Welfare Organisations, including SPD, for job placement and job support initiatives.

Upon receiving a referral, SPD performed an initial client assessment to determine suitability for various job positions. This included an evaluation of the client's need for assistive technology, vocational rehabilitation, training courses, or job-hardening programmes to improve an individual's potential for employment. After a successful job match, SPD provided three-months to one year of job support to help their client integrate with his or her new work environment. SPD also managed the Transition to Employment programme that specialised in providing employment support for patients with stroke and spinal cord injury.

In addition to community services, Singapore provided financial support for both employers and stroke survivors through subsidies administered by government-affiliated agencies (Table 3) [28-36]. Moreover, access to job-matching services by employment support specialists from SPD is free for Singaporean citizens.

Barriers and Facilitators to Post-stroke Employment in Singapore

Our experts highlighted barriers and facilitators to post-stroke employment in Singapore, which were classified into employer, healthcare system, and personal factors (Table 2). These were similar to those reported in the literature [17,24,37-39]. The factors most frequently mentioned by our experts included (1) the patient's motivation, (2) financial incentives for or against returning to work, (3) financial considerations of employers when hiring stroke survivors, and (4) the severity of a survivor's disability. These findings were supplemented by our systematic review, which highlighted that barriers to employment in Singapore included delayed rehabilitation, lower modified Barthel Index score on discharge, and depression [9,11]. These indicated key areas for further research and intervention targets by stakeholders involved in post-stroke employment [12].

Conclusion

The Singaporean model of post-stroke employment appears to support stroke survivors through government-affiliated and Voluntary Welfare Organisations that handle job support and financial support. More in-depth research on existing programmes and the uptake of community-services for post-stroke employment in Singapore is warranted to further inform practitioners and stakeholders involved in the success of post-stroke employment.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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