Community stroke rehabilitation nursing and its relevance to Brunei: a review of literature

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Abstract

Stroke is the second common cause of morbidity and mortality worldwide. The WHO estimated 15 million people suffer a stroke annually and of these 5 million die and another 5 million are left permanently disabled. In Brunei, stroke is the fourth leading causes of death amongst Bruneian after cancer, heart disease and diabetes for the past decade. The establishment of the Brunei Neuroscience Stroke and Rehabilitation Centre (BNSRC) has improved stroke survival rate, but the residual impacts may remain devastating. Evidence suggested community-based stroke rehabilitation can reduce stroke-related disabilities. Thus, recognising nurses' role in community stroke rehabilitation may complement the allied health professionals' rehabilitation services and provide continuity in post-stroke care support. However, little is known about rehabilitation role of nurses in Brunei. Hence, the review aims to explore nurses' roles in community stroke rehabilitation identified from previous research and examine the relevance of them in Brunei context. The review suggested that Brunei nurses may have attributes to embrace this advanced role. Further study in this area is needed to provide evidence regarding potential merit of community stroke rehabilitation nursing services in Brunei Darussalam.

Key words: *stroke, nursing, community, rehabilitation, Brunei*

Introduction

Stroke, known as 'angin ahmar' in Brunei Malay's terms, is the second most common cause of death and major disabilities worldwide [1]. The World Health Organisation (WHO) estimated 15 million people suffer a stroke annually and of these 5 million die and another 5 million are left permanently disabled[2]. The international collaborative 'WHO Monitoring of Trends and Determinants in Cardiovascular Disease'(WHO MONICA) Project' found that the vast majority of people suffer a stroke at the age of 35 to 64 years, with gender attributed mainly in man[3]. However, systematic reviews of population-based stroke studies observed a significant decrease in the number of stroke

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incidences among high income countries from 2000 - 2008 but remain higher in low and middle-income countries[4]

In Brunei, data cited by Dinita et al. from the South East Asian Medical Information Centre (SEAMIC) reported that Brunei has the fourth highest stroke mortality rate after Indonesia, the Philippines and Singapore and is followed by Malaysia and Thailand[5]. Statistics from the Ministry of Health Brunei shows stroke remains one of the top four leading causes of death for the past decade amongst Bruneians after cancer, heart disease and diabetes, with an average death rate of approximately 85 per year. A published epidemiological study of stroke in Brunei is not yet available. However, it was reported that Bruneian stroke patients are on average 10 years younger than in other European countries[6]. Initial demographic studies showed stroke affects more men than women in Brunei, particularly in the age group between 31 and 50 years[7]. This trend illustrates that large numbers of stroke patients are within the working age population, which yet can be a valuable asset to the country's development.

However, the number of stroke mortalities has steadily declined since 2010 from 99 (8.2%) in 2010, 86 (7.0%) in 2011 to 70 (5.8%) in 2012[8]. This gradual decrease can be attributed to the establishment of the Brunei Neuroscience Stroke and Rehabilitation Centre (BNSRC), the public awareness campaign and the improvement of stroke interventions such as thrombolysis since 2010. Given the enhancement of stroke management, more stroke patients are likely to survive. However, some of these individuals may have to live with residual psychological, social and functional impairments because of their stroke. Evidence suggests that stroke rehabilitation initiated during hospitalisation and sustained across community-based settings significantly reduce the likelihood of stroke-related disabilities within the first year[9, 10]. Therefore, providing rehabilitative support beyond the acute phase of stroke and continuing throughout the community-based setting can be vital in the long-term management of people who have had a stroke. Community stroke rehabilitation nursing services complement other existing allied health professionals care support, and therefore can have the potential to embrace this advance specialist roles[11]. This review will therefore explore the aspect of nurses' roles in stroke rehabilitation as this may help to form the integral part of the overall management of stroke patients who have been discharged home to the community in Brunei Darussalam.

Search strategy

The process of searching for literature was executed through electronic databases including CINAHL, Cochrane Library, EMBASE and MEDLINE (PubMed). The following search terms were applied: stroke; cerebrovascular accident; community nurse; nurse's role; rehabilitation, community rehabilitation and stroke Brunei. The individual terms have been searched with

thesaurus terms; e.g. Medical Subject Heading (MeSH), or free text terms. The search terms were exploded or combined using Boolean search operator. Articles written in English and Malaysian covering the period 1995 to 2013 were included in the search. The initial search found 1123 articles. After screening for relevancy a total number of 393 citations were identified. Following the reading of the abstract, 50 eligible articles remained. Of these, 10 articles concerning nurses' role in stroke rehabilitation, nurses' rehabilitation intervention on stroke patients and community stroke nursing have been used to form the basis of discussion. No relevant stroke publication from Brunei was identified. Given this, local reports were cited to support the discussion related to Brunei.

Nurses' roles in rehabilitation

Rehabilitation has been traditionally considered as the roles of therapists. However, the role of nurses in rehabilitation should not be undervalued. The Royal College of Nursing (RCN) United Kingdom defined rehabilitation as a person-centred, active and creative process that involves adaptation to changes in life circumstances. It is a shared activity between the person, people close to them and multi-professional teams who recognise the contribution of all concerned[12]. The ideology of nursing rehabilitation has existed since the 1980's. One nursing theorist, Henderson, considers nurses as "*rehabilitator par excellence" [13]* highlighting the central features of nurses' roles in stroke rehabilitation. However, several researchers in stroke nursing have debated the explicit roles of nurses in rehabilitation. In numerous literatures, various descriptions of nurses' roles in stroke rehabilitation are apparent. The difference concepts and terms used to describe nurses' roles in rehabilitation are often influenced by the context of the study, the sample groups, the study setting and the country where the research is undertaken. However, seen together the descriptions seem to correspond closely to the therapeutic functions of nurses within rehabilitation. This implies nurses' role in stroke rehabilitation is feasible and considered important in patients' recovery.

Various studies have proposed nurses' role in stroke rehabilitation. Kirkevold identified the therapeutic functions of nurses as appearing to be, at its simplest, *conserving*; actions to protect patient from deterioration, *interpretive*; assisting patients to understand the complexities of strokes, *consoling*; measuring to relieve emotional suffering and *integrative*; supporting functional recovery, particularly in Activity of Daily Living[14]. O'Connor sought to extend Kirkevold's framework by illustrating how nurses facilitate stroke rehabilitation using two mode of cares; *facilitative interventions*, including supervising, encouraging, helping and boosting morale, and *non-intervention,* which limit nurses intervention unless necessary[15]. Further, Burton found that the nurses perceived their roles as *care provider;* including doing, providing,

educating, *facilitator of personal recovery;* helping, comforting, teaching, working with risk taking, and *manager of multidisciplinary provision;* liaising, organizing and mediating[16]. Long et al. identified six interlinked roles of nurses within the multi-professionals rehabilitation team that include assessment, co-ordination and communication, technical and physical care, therapy integration and therapy carry-on, emotional support, and involving the family [17]. Essentially, nurses' roles in stroke rehabilitation can generally be described as technical, managerial and therapeutic.

In the Nursing Board for Brunei, the role of nurses in rehabilitation is not explicitly defined. However, the therapeutic elements of nurses, according to the Standard of Practices for Registered Nurses and Midwives in Brunei[18], appeared to capture the essence of rehabilitative roles as illustrated by literature. This is evident from my observation whilst being a nurse in the neuro-medical wards of our local hospital. The nurses are seen embracing active roles in helping the patients to optimise their function in meeting basic daily activity needs. These roles include providing education and the relearning of tasks such as eating, drinking, dressing, mobility and self-care. Arguably, the Activities of Livings' (ALs) model of nursing[19] and concept of the nursing process; assessing, planning, implementing and evaluating[20] which guide the Brunei nurses' daily practices may have helped shape these rehabilitative interventions. However, these activities are often viewed by patients, family or allied health professionals as 'non-therapeutic'. This is largely because nurses are traditionally seen as a 'caring' profession. Activities designated as 'therapeutic' and 'treatment' usually refer to structured therapy such as that undertaken by occupational therapists[21]. For this reason the contribution of nurses in rehabilitation may be considered as an invisible and underappreciated therapy[22].

Community-based Rehabilitation (CBR) services

The WHO describes CBR as a strategy within community development for rehabilitation, equalization of opportunities and social inclusion of all children and adults with disabilities[23]. In the UK it was recommended that all patients with residual stroke disabilities are followed up by stroke rehabilitation professionals within 72 hours following discharge[24]. Various CBR models, including multidisciplinary stroke teams such as Early Supported Discharge, single discipline therapy-based rehabilitations, day hospital or residential care rehabilitations have been advocated[25]. The benefits of CBR, by comparing hospital-based and home-base rehabilitation services, have been studied in several randomised control trials (RCT)[26 27 28 29]. Findings from these trials suggested that the effectiveness and benefits of CBR between discharge to six months, for people who have had a stroke, appeared to be contentious, and even remains inconclusive after one year[30].

Although evidences from the trials showed varying outcomes they indicated that CBR can

be, at the very least, as effective as inpatient rehabilitation and can be safely implemented as well as giving patients choices between hospital or home-based therapy. However, there are considerations to be made regarding possible issues of attrition bias, performance bias and Hawthorne effects of the studies. Thus the results will be interpreted with caution.

Community Stroke Rehabilitation Nurses

In some countries, community-based stroke rehabilitation therapy led by nurses has been well established. However, evidences suggesting that the services can improve stroke patients' physical and emotional functions are still unconvincing. In a Mexican study, Torres-Arreola and colleagues undertook a RCT to evaluate the effectiveness of two stroke rehabilitation strategies provided by nurses; physiotherapy plus caregiver education (strategy 1), and providing education only (strategy 2)[31]. The outcomes of the study demonstrated a relevant improvement on the participants' functional abilities (Barthel Index scales) and social ADL (Frenchay Index) in favour of the strategy 1 group over a six-month period. However, Torres-Arreola et al. observed this finding was not statistically significant and no substantial difference in strategy performances for both groups were found. Similar results were also illustrated in another RCT[32]. The intervention group were visited for over 12 months by specialist nurses and were given support, information and advice about strokes. The patients' outcomes were measured at 3, 6 and 12 months based on the Barthel Index, the Frenchay activities index and the Nottingham health profile (perceived stress) scales. Findings showed no significant differences among any of the scales between the control and the intervention groups. However, the visits appeared to give benefits in social integration among mildly disabled stroke patients. Neither RCTs described the exact nature of the rehabilitative therapy on the patients' physical impairments, thus the findings can be misleading. Equally, small samples within specific geographical recruitment areas limited the generalisation of the findings. Therefore, these results may not be applicable to the Brunei context.

What is the relevance to Brunei?

The establishment of the BNSRC in 2010 resulted in a steady decline of stroke mortality in Brunei. With more people surviving and living longer after acute strokes, residual impairments and disabilities can become other major health problems in the community after those non-communicable diseases such as hypertension or diabetes. To minimise the disability-adjusted life-years lost among people who have had a stroke, the provision of sustainable multidisciplinary community stroke rehabilitation can be crucial. Essentially, this service will aspire to achieve the nation's Health Vision 2035 in providing healthcare excellence that focuses on promotive, curative and rehabilitative services.

In most developed countries, community-based rehabilitation has been strongly advocated. In Brunei, the provision of community nursing services to support stroke people, and other dependent disabilities such as those with head injury, is largely assumed by nurses at the Home-Based Nursing Unit. The nursing care activities are often concerned with bedsore dressing, assessment of parenteral tubing, catheter care, tracheostomy care and vital signs monitoring. Given the variety of disabilities cases and the nature of care activities, the emphasis in stroke rehabilitation is questionable. Arguably, this lack of focus of stroke care can be due to issues surrounding the clarity of the nurses' roles, staffing levels, collaboration with multidisciplinary teams, guidelines in post-stroke care or lack of stroke rehabilitation knowledge. Few studies have suggested considerable gaps in nurses' education of stroke[33, 34]. Therefore, for my project in my doctoral study at the University of Southampton United Kingdom, I am researching and exploring the potential role, and education of nurses, in the community stroke rehabilitation in Brunei. The future finding of this study may help identify any gaps in the knowledge and practice of community stroke rehabilitation in Brunei. Essentially, the healthcare organisation, and the higher educational institution in improving and planning future post-stroke care support, can use this information.

Conclusion

This review seeks to explore the relevance of community stoke rehabilitation nursing in the Brunei context. The roles of rehabilitation for Brunei nurses seem to have been embedded in their daily care activities. This suggests a potential merit of advancing this 'hidden' role forward. I have no doubt that these nurses have the capacity to expand upon their practices from 'traditional' nurse carer to more specialist-oriented professions. Consequently, a study in exploring the nurses' potential roles in stroke care is timely. The findings of this study can be essential in identifying educational gaps and, therefore, help to improve stroke care particularly for patients who have been discharged home to the community in Brunei Darussalam.

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