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Effectiveness of a strength-oriented psychoeducation on caregiving competence, problem-solving abilities, psychosocial outcomes and physical health among family caregiver of stroke survivors: A randomised controlled trial

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ABSTRACT

Background: Family caregivers provide the foundation for long-term home care of stroke survivors. The overwhelming stress associated with caregiving hinders the ability of family caregivers to utilise their internal and external resources to cope with this situation, thereby placing their own health at risk. We conducted a randomised controlled trial of a strength-oriented psychoeducational programme on conventional stroke rehabilitation for family caregivers.

Objectives: To evaluate the effectiveness of a strength-oriented psychoeducational programme on the caregiving competence, problem-solving coping abilities, caregiver's depressive symptoms, caregiving burden and resources (family functioning, social support) and physical health (such as caregiving-related injury), as well as potential placement of stroke survivors.

Design: A prospective multi-centre and single-blinded randomised controlled trial stratified by survivors' history of stroke.

Setting and participants: Adult stroke patients and their family caregivers were recruited from the medical wards of a regional acute and two rehabilitation hospitals in the Eastern New Territories of Hong Kong.

Methods: The design of the trial was based on the relational/problem-solving model. Family caregivers of stroke survivors who had been admitted to the study hospitals completed a set of questionnaires before randomisation, immediately, one- and three-months post-intervention. The control group received usual care, whereas the intervention group received an additional 26-week strength-oriented psychoeducational programme (two structured individual face-to-face pre-discharge education sessions on stroke and its associated caregiving skills and six biweekly post-discharge telephone-based problem-solving coping skills training sessions). Data were analysed using the generalized estimating equation and multiple regression models and chi-square tests.

Results: We recruited 128 caregiver–survivor dyads. The intervention group demonstrated significantly greater improvements throughout the study ($p < 0.01$) in terms of caregiving competence, problem-solving coping abilities and social support satisfaction. This group also displayed significantly greater improvements in terms of family functioning ($p < 0.05$) at one-month post-intervention, an increased number of social support ($p < 0.001$) and a lower level of burden at three-month post-intervention. However, there was no significant effect on enabling stroke survivors to remain in their home. Post-hoc analysis showed a significant and indirect effect of problem-solving coping abilities, which suggested its mediating effect on caregiving competence of stroke caregivers.

Conclusions: Findings suggest that incorporating a strength-oriented psychoeducational programme into the existing stroke rehabilitation protocol can foster a healthy transition to caregiving among family members of stroke survivors.

What is already known aboutthetopic?

- Family caregivers are the backbone of care for stroke survivors. The family has assumed the complex and demanding tasks of caregiving

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that once was completed in healthcare systems.
- The enormous stress associated with the newly imposed caregiving role hinders the abilities of caregivers to cope with the situation regardless of their inner strength and put caregivers' health at risk.

What this paper adds

- Strength-oriented psychoeducation aimed at improving the adaptive and creative problem-solving skills, belief in one's own abilities to cope with stressful condition, and interpersonal connectedness were effective in improving the psychosocial well-being of family caregivers of stroke survivors.
- Strength-oriented psychoeducation improved caregiving competence, which was mediated by the enhancement of problem-solving coping abilities.
- Strength-oriented psychoeducation was also applicable to family caregivers with low educational attainment because they demonstrated the ability to learn and apply problem-solving coping skills without lengthy training.

1. Introduction

Stroke is a leading cause of major disabilities that affects 32.2 million people around the world. The Chinese oppose to Caucasians has two to three times higher prevalence rates of stroke (Feigin et al., 2017). Stroke recovery is a long journey with majority of the rehabilitation taking place after survivors return home (community based stroke rehabilitation). The family assume the complex and demanding tasks of caregiving for stroke survivors. There is an overwhelming stress associated with the biographic disruption of life experienced by family caregivers. This stress could limit the caregiver's ability to utilise their internal and external resources in dealing and coping with daily problems (Greenwood and Mackenzie, 2010). Maladaptive coping could be detrimental to their physical and emotional health and increase caregiving-related injuries. These injuries may negatively impact the survivor if the caregiver needs to forego their caregiving role leaving the survivor requiring premature institutionalisation (McLennon et al., 2010; Schulz and Eden, 2016). Conversely, adaptive and creative problem-solving skills, belief in one's abilities to cope with stressful conditions, and connectedness with others are inner human strengths that promote well-being (Lundman et al., 2010). Thus, supporting family caregivers' inner strength to deal with stressful caregiving situations is fundamental for positive community-based stroke rehabilitation.

1.1. Relational/problem-solving model of stress

The relational/problem-solving model of stress is an integration of the transactional theory of stress (Lazarus and Folkman, 1984) and social problem-solving theory (D'Zurilla and Nezu, 1982). In this model, individual well-being is influenced by stress. Stress is the reciprocal relationship among demanding life events, the emotional stress response to the event, and the ability for problem-solving coping (D'Zurilla and Nezu, 2007). Stroke caregiving is a stressful life event for family caregivers. It requires a broad readjustment in their lives, but also creates numerous daily situations (**problems**) that require adaptive functioning for problems where there may be no immediate solutions (D'Zurilla and Nezu, 2010). Problem-solving coping is posited to be an inner resource to protect caregivers' well-being. It is a cognitive–affective–behavioural process with dual effects, that is, (i) it changes caregiving situation (mastery of situation) and (ii) it changes one's negative emotional stress responses to the stressful situation to positive responses. The resulting positive **emotional stress responses** facilitate caregivers to appraise situations as challenges, find confidence in their ability to deal with the situation effectively, choose coping actions and implement the solutions to produce an outcome (Lazarus, 1999). Enhancing the problem-solving coping of stroke caregivers reduces their vulnerability to stress associated with caregiving (D'Zurilla and Nezu, 2007).

Empirical studies on stroke caregivers have shown that high self-appraised problem-solving coping abilities are associated with low psychological distress, good general health and significant perceived social support (Grant et al., 2006; Lui et al., 2012). Moreover, studies on problem-solving skill trainings, which aim to improve cognitive and behavioural skills in solving problems, have shown a significant reduction in stroke caregivers' depressive symptoms and caregiving burden (Grant et al., 2002; King et al., 2012). However, the effect of positive responses of caregiving, that is caregiving competence, is lacking.

1.2. Caregiving stress process model

According to the caregiving stress process model, caregiving competence is a positive response of caregiving that reflects personal growth and is influenced by caregiving related stressors and role strain (Pearlin et al., 1990). This role-specific component of self-concept was found to be associated with less depressive symptoms and caregiving burden. In addition, it moderated between lifestyle and emotional well-being of family caregivers (Schreiner and Morimoto, 2003; Singh and Cameron, 2005). Caregiving competence emphasises the personal capacity for interpersonal relationships and social interaction (McNew, 1987), which might explain the notion that providing problem-solving training without supporting the connectedness of caregivers might not be sufficient to enhance the inner strength of caregivers (Cheng et al., 2014).

Family caregivers are important resources in the community-based rehabilitation of stroke survivors. In light of evidence on the buffering effects of problem-solving coping and caregiving competence on the impact of caregiving from theoretical and empirical perspectives, developing a psychoeducational intervention to enhance problem-solving coping and caregiving competence is supported along with providing practical strategies for caregivers in the community. This paper reports the testing of the following hypotheses: compared with the participants in the control group, caregivers who receive the psychoeducational programme will possess significantly higher caregiving competence and problem-solving coping abilities, lower caregiver's depressive symptoms and caregiving burden and better caregiving resources (family functioning, social support) and physical health (including caregiving-related injury) at immediate (T1), one- (T2) and three-months post-intervention (T3). In addition, fewer stroke survivors of the intervention group will have placement in care homes compared to those of the control group.

2. Methods

This trial was a prospective 26-week, parallel, single-blinded, stratified randomised controlled trial (ClinicalTrials.gov NCT02080910) conducted within the medical wards of a regional acute and two rehabilitation hospitals in Hong Kong Eastern New Territories. An acute stroke unit and on-call stroke team was available in the regional acute hospital to provide multidisciplinary acute stroke care. Once the stroke patients were medically stable, they were transferred from the acute hospital to one of the rehabilitation hospital which provided extended multidisciplinary care to the stroke patients. The multidisciplinary team is composed of a physician, nurse, physiotherapist, occupational therapist, speech therapist and medical social workers. The patients received standardised stroke care from these hospitals in accordance with the guidelines of the Hong Kong Hospital Authority (Hospital Authority, 2010).

2.1. Participants and allocation

The inclusion criteria of participants (caregiver–survivor dyads)