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Original Article

Family function and health behaviours of stroke survivors

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ARTICLE INFO

Article history:
Received 13 November 2013
Received in revised form
1 May 2014
Accepted 12 May 2014
Available online 7 August 2014

Keywords:
Cerebrovascular accident
Family function
Health behaviour

ABSTRACT

Purpose: To investigate health behaviours and family function in stroke survivors, and evaluate the relationships among them.
Methods: Patients who were diagnosed with stroke before and went back to neurology clinic between August 2011 and February 2012 in a tertiary hospital in Guangzhou, China were recruited for this study. Patients that were discharged and living at home for at least two months were asked to complete Family Assessment Device (FAD) and Health Promoting Lifestyle Profile, version II (HPLP-II) questionnaires. Individual items were scored between 1 and 4 points, and survey scores were compared and analysed using Pearson's correlations.
Results: The mean overall FAD family function score was 2.18 ± 0.25 points, with lower scores observed for problem solving and role function factors, and higher scores for communication, affection involvement, and behaviour control. The mean overall HPLP-II health behaviour score was 2.27 ± 0.36 points, with the highest score for the nutrition factor, and the lowest score for the exercise factor. The total score of family function negatively correlated with health behaviours ($r = -0.535$, $p < 0.01$).
Conclusions: Family function and health behaviours in stroke survivors are related, and need further improvement. Healthcare workers should pay close attention to patients' family function and health behaviours and find the reasons which may be influence their level.

1. Introduction

Stroke is a disease with a high morbidity, mortality, and recurrence rate, and has become a serious public health problem worldwide [1,2]. According to the National Health and Family Planning Commission, stroke is the third leading cause of death in urban residents [3] .The recurrence of stroke is closely related to unhealthy behaviours [4,5], and results in deterioration of the disease [4,6] and a doubling of the associated mortality [7].

Strokes not only threaten a patients' physical and psychological status, but also the health pattern of the entire family. Furthermore, a disordered family system can

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Peer review under responsibility of Chinese Nursing Association.
http://dx.doi.org/10.1016/j.ijnss.2014.05.024

negatively influence the patient's ability to cope with the disease and affect their rehabilitation [8]. Family function is an important factor of health behaviours, such that good family function can promote the formation of healthy behaviours [9–11]. Family function is the ability of a family to meet the various needs of its members, which is reflected in mutual love and support, emotional communication, and the ability to share life events and stress [12]. This study aimed to investigate the level of family function and healthy behaviours among patients with stroke, and also to explore the relationships among them. These interactions may be indicators for health behaviour interventions, and thus provide guidance for secondary prevention of stroke.

2. Design and methods

2.1. Subjects

Patients who were diagnosed with stroke before and went back to neurology clinic of a tertiary hospital in Guangzhou, China between August 2011 and February 2012 were recruited for this study. Patients were included in the study if they: 1) met the diagnostic standard of cerebrovascular disease (1995), [13] and were diagnosed with stroke by brain computed tomography or magnetic resonance imaging; 2) discharged and living at home for at least two months after the first stroke; 3) had an education level above primary school and the ability to communicate; 4) provided voluntary participation. Patients were excluded from the study if they had a subarachnoid haemorrhage, severe physical illness, presence of sensory aphasia, cognitive disabilities or were unconscious.

2.2. Surveys

2.2.1. General information

Patients were asked to complete a questionnaire concerning demographic information, including age, gender, education level, marital status, occupation, family income, payment methods, and living style. Medical information was also requested, including body mass index, course of the disease, presence of hypertension, diabetes, coronary artery disease, hyperlipidaemia and other complications, family history, stroke type, presence of language barrier, limb movement disorder, dysphagia, hemianopia, and daily life assessment (Barthel Index).

2.2.2. Family assessment device (FAD) survey

The FAD survey is a questionnaire designed by Epstein to measure the family function based on the McMaster family function model [14] and is used to identify possible problems in the family system. The survey has 60 items encompassing seven dimensions: problem solving, communication, role function, emotional reactions, emotional involvement, behaviour control, and overall function. Each item is scored from 1 to 4 points, with a lower score indicating better family function. Results of the questionnaire were excluded if 40% of the items were not answered. The FAD demonstrates good reliability and validity, [15,16] and testing of the Chinese version yielded a Cronbach's α between 0.78 and 0.86 [17,18].

2.2.3. Health promoting lifestyle profile, version II (HPLP-II) survey

The HPLP-II is a survey that was initially developed in 1987 by an American nursing scientist [19] and later improved in 1995, which is comprised of 52 items within six dimensions: self-realization, health responsibility, exercise, nutrition, relationships and stress management. Each item is scored from 1 to 4 points, with a higher score indicating better health behaviours. The HPLP-II demonstrates good reliability and validity, [20,21] and testing of the Chinese version by Zhang et al. revealed content validity of 0.85, and a Cronbach's α of 0.86 [22].

2.3. Data collection and statistical analysis

Data were collected when the patients completed the outpatient follow-up. After informed consent was obtained, the patients were asked to complete a three-part questionnaire that included general information and questions from the FAD and HPLP-II. For patients unable to fill out the survey, questions and possible answers were read to them, and their oral answers were recorded. Questionnaires were carefully checked by the researcher to avoid omissions or errors. Results were compiled in Excel (Microsoft Inc., Redmond, WA, USA), and descriptive analyses, Pearson correlations and multiple regression analyses were performed on SPSS 16.0 software (SPSS Inc., Chicago, IL, USA). Data are presented as mean ± the standard deviation or percentage, and a $p < 0.05$ was considered as statistically significant.

3. Results

3.1. General information

A total of 100 questionnaires were distributed, and 88 valid questionnaires were returned. Of the 88 patients with stroke, 55 were male (62.5%) and 33 were female (37.5%), aged between 33 and 85 years (65.19 ± 10.56 y). Responses concerning marital status indicated that 88.6% (78/88) of patients were married, and the remaining 11.4% (10/88) were divorced or widowed. Regarding educational level, 22.7% (20/88) of patients were educated only to the primary school level, 26.1% (23/88) to the middle school level, 21.6% (19/88) were at a high school level, and 29.5% (26/88) of patients had obtained a college degree or above. The majority of patients (83/88; 94.3%) were diagnosed with ischemic stroke, whereas the remainder (5/88; 5.7%) had suffered a haemorrhagic stroke, and the median duration of disease was 13 months (range: 2–189 mo). Results of questions concerning family history revealed that 28.4% (25/88) of patients had a family history of stroke. Of the 88 patients, 69 (78.4%) had hypertension, 43 (48.9%) had hyperlipidemia, 29 (33.0%) had diabetes, and 9 (10.2%) had coronary heart disease. Body mass index scores ranged from 18.73 to 30.82, with an average of 24.16 ± 3.07. Barthel indices ranged from 75 to 95, and 14 patients had a mild activity disorder, and only two patients suffered from moderate or severe impairment of daily living activities.