ORIGINAL ARTICLE

Post-Stroke Survivors: The Relationship between Clinical Characteristics and the Levels of Depression

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ABSTRAK

Strok sering dikaitkan dengan ketidakupayaan jangka panjang. Ia memberi kesan negatif kepada pesakit strok akibat gangguan fizikal dan neuropsikologi. Ketidakupayaan dalam kalangan pesakit strok akan mendorong mereka mengalami kemurungan. Kajian ini adalah bertujuan untuk menentukan hubungan antara ciri-ciri klinikal dan tahap kemurungan dalam kalangan pesakit strok di Hospital Pengajaran di Kuala Lumpur. Kajian keratan rentas ini melibatkan 195 pesakit strok yang menghadiri rawatan susulan di Klinik Pemulihan Hospital Pengajaran bagi tempoh 4 bulan. Maklumat yang dikumpul termasuk sosio-demografi, data klinikal (tempoh pos strok, jenis strok dan keterukan strok) dan tahap kemurungan. Beck Depression Inventory (BDI) digunakan untuk menilai tahap kemurungan pesakit strok. Keputusan menunjukkan min umur pesakit adalah 61 tahun (SD = 13,86, julat: 22-87 tahun), dengan 118 dan 81 pesakit wanita yang mempunyai tempoh masa dengan median 12 bulan selepas strok (julat: 1-79 bulan). Kajian ini menunjukkan 116 (59.5 %) mengalami kemurugan. Ujian Chi-kuasa dua untuk tahap keterukan strok nyata berkaitan dengan kemurungan, χ^2 (2, n = 195) = 28,724, p <0.001, phi = 0,384. Kajian ini menunjukkan pesakit yang mengalami jenis strok ringan mempunyai kemurungan kurang (44.0%) berbanding dengan strok sederhana (81.7%) dan strok yang teruk (87.5%).

Kata kunci: kemurungan, pesakit strok, keterukan strok

ABSTRACT

Stroke is frequently associated with long-term disability. Stroke leads to high risk of physical and neuropsychological consequences. Residual disabilities among post-

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stroke survivors can lead them to depression. This study aimed to determine the relationship between clinical characteristics and the levels of depression among post-stroke survivors at a teaching hospital in Kuala Lumpur. This cross-sectional study recruited 195 post-stroke survivors who attended follow-up Rehabilitation Clinic of a teaching hospital over a study period of 4 months. Information collected included socio-demographic, clinical characteristics (post stroke duration, stroke types and stroke severities) and level of depression. Beck's Depression Inventory (BDI) was used to assess the level of depression. The mean age of participants was 61 years (SD=13.86, range: 22-87 years), with 118 male and 81 female survivors having a median duration of post-stroke of 12 months (range: 1–79 months). This study showed post stroke survivors 116 (59.5%) with depression. A Chi-square test for level of stroke severity was significantly associated with depression, χ^2 (2, n=195) = 28.724, p<0.001, phi = 0.384. The results of the present study showed that survivors with mild stroke had less depression (44.0%) compared to moderate stroke (81.7%) and severe stroke (87.5%).

Keywords: depression, post-stroke survivor, stroke severity

INTRODUCTION

Stroke represents the third most common cause of death in developed countries (Mackay & Mensah 2004). It is frequently associated with higher risk for a wide range of physical and neuropsychological consequences (Bourgeois et al. 2004). One of the post-stroke psychiatric comorbidity is mood disorders, especially depression (Lai et al. 2002). Post-stroke depression (PSD) has been reported occurred in 11% to 75% of all stroke patients (House et al. 1991). The major depression was the one most affected post stroke survivors within first few months after stroke. It is about 10% to 27% compared to minor depression 15% to 40% (House et al. 1991). A study was conducted by Glamcevski and Tan (2000) at University Malaya Medical Centre in Malaysia which involved 80 post-stroke patients. A total of 53 (66%) had depression, and of these, 51% were mild, 11% were moderate and 4% were severe. Research on depression following stroke has gained momentum but it is still uncertain with relation to depression after stroke with clinical characteristics. Therefore, the present study was carried out to observe the relationship between clinical characteristics and the levels of depression among post-stroke survivors.

MATERIALS AND METHODS

SUBJECTS

This study was conducted among consecutive stroke survivors who visited a Rehabilitation Clinic at one of

the teaching hospitals in Kuala Lumpur, Malaysia. The participants were recruited from October 2009 till January 2010. Only patients with first-time stroke whose CT scan showed lesions compatible with their neurological symptoms, were included. Prior to the data collection, the researcher performed a screening of the patients using the Mini Mental State Examination (MMSE) to assess their cognitive ability. Patients who were severely impaired of cognitive function (MMSE<24), severe aphasia, language problems (unable to understand the Malay, English or others) even after being assisted by researcher or the patient's proxy, children with stroke, stroke patients with other neurological problems, and those with less than one month post-stroke duration, were excluded from this study.

INSTRUMENTS

All patients and their proxy were thoroughly informed about the study and written consent was obtained. The study was approved by the Medical Research Ethics Committee of Universiti Putra Malaysia. Those who met study criteria were interviewed to assess their level of depression by using Beck's Depression Inventory (BDI). The BDI has been used for 35 years to identify and assess depressive symptoms, and it has been reported by Beck et al. (1961) to be highly reliable regardless of the population. It has a high coefficient alpha (.80), its construct validity has been established, and it has an ability to differentiate the depressed from non-depressed patients. In Malaysia, the BDI Malay version was tested and the internal consistency (Cronbach's alpha)

ranged from = .71 to .91 (Mukhtar & Oei 2007). Each item was evaluated on a severity scale ranging from 0-3, with a total score ranging from 0-63. The data on patients' demographic and clinical characteristics were retrieved from the patient's medical record.

DATA ANALYSIS

All the data collected for this study was analyzed by using the Statistical Package for Social Sciences (SPSS) version 16.0 for Windows®. Descriptive statistics was used to determine the socio-demographic characteristics (age and gender) and clinical characteristics (stroke types, post-stroke duration ,stroke severity, and levels of depression). A two-tailed probability value of $p<0.05$ was used to identify the criterion for statistical significance.

RESULTS

CLINICAL CHARACTERISTICS

Table 1: Clinical Characteristics of post stroke survivors (n=195)

Clinical Characteristics	Frequency	Percentage
Post Stroke Duration		
12 month	119	61.0 %
13-24 month	48	24.6 %
> 24 month	28	14.4 %
Stroke type		
Infarct	126	64.6 %
Hemorrhagic	61	31.3 %
Both	8	4.1 %
Stroke Severity		
Mild	116	59.5 %
Moderate	71	36.4 %
Severe	8	4.1 %

LEVELS OF DEPRESSION

Table 2: Levels of Depression and
Percentages (n=195)

Level of Depression	Frequency	Percentage
Minimal/no depression	79	40.5 %
Mild depression	38	19.5 %
Moderate depression	46	23.6 %
Severe depression	32	16.4 %

THE RELATIONSHIP BETWEEN CLINICAL CHARACTERISTICS AND THE LEVELS OF DEPRESSION

A Chi-square test for independence was performed to determine the relationship between clinical characteristics (post stroke duration, stroke type and stroke severity) and the levels of depression. The test indicated that there was significant association between stroke severity with levels of depression, χ^2 (2, n=195) = 28.724, p<0.001, phi = 0.384. Stroke survivors with mild stroke had less depression (44.0%) compared to those with moderate stroke (81.7%) and severe stroke (87.5%).

DISCUSSION

The BDI scores in this study indicated 59.5% of post stroke survivors had depression. The severe depression represented 16.4% of the total participants. According to Glamcevski and Tan (2000) depression is common among post-stroke survivors. This is because of stroke attributed to the deterioration of physical functioning among post-stroke survivors (Bendz 2003). The finding of study was also similar to the study reported by Glamcevski and Tan (2000) who

also found that 66.0% of post-stroke survivors had depression. Furthermore, recent stroke literature also reported depression among post-stroke survivors was 30%-35% (Williams 2005). Therefore, it is not too surprising to find a 59.5% depression rate in this subject population.

In this study, there was a significant relationship between stroke severities with depression. Whereby, the post-stroke survivors with severe stroke had severe depression compared to the moderate and mild. This was because those post-stroke survivors with severe stroke had more physical inability which resulted in inability to function normally. They were more independent to others for their daily activities which resulted in affection of their mood changes especially psychological. Thus, this increased their depression level. Therefore, beside rehabilitation therapy, treatment after stroke should included for assessment of depression and treatment, accordingly. The family members should also be counselled and provided with necessary information on their post-stroke status.

CONCLUSION

In conclusion, this study found most the stroke survivors were depressed and the stroke severity had relationship with depression. Those with severe stroke were more depressed.

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