Stroke Patients' Adherence to Nurses' Advice and Their Quality of Life After Admittance to Hospital Tengku Ampuan Afzan

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ABSTRACT

Objective: The objective of this study is to identify stroke patients' adherence toward nurses' advice and quality of life. **Methodology:** This was a cross-sectional study conducted at a medical ward in Hospital Tengku Ampuan Afzan, Kuantan, Pahang; it used the Quality of Life Index Stroke Version-III and Medical Outcome Study Measure of Patient Adherence. The data were collected using the purposive sampling method and were analysed using SPSS version 19. **Results:** A total of 54 respondents, ranging in age from 50 to 80 years old, (46.3% male and 53.7% female) with 94.4% being Malays. Returned surveys indicated that 50% of the respondents have no formal education. A total of 64.8% patients adhered to the nurss' advice and the remaining 35.2% were non-adherents. There is a positive correlation between adherence and the quality of life. Male patients demonstrated a better adherence level compared to women (p=0.019). However, there was no association between age, race and education level with adherence. **Conclusion:** Healthcare professionals, such as nurses, have substantial roles in ensuring stroke patients adhere to rehabilitation guidelines with a view to maximising quality of life.

KEYWORDS: Adherence, Stroke, Quality of Life.

INTRODUCTION

Stroke occurs when there is an interruption of oxygen-rich blood supply to the brain caused by a rupture or blockage of the blood vessel (1). Muir (2009) stated that it is characterised by neurological deficit with vascular causes (2, 3). A point to remember is that stroke can be recurrent. There is a high possibility that patients who have had a stroke will face further strokes. It has been mentioned that 200,000 of strokes are recurrent, where the risk increases after first attack (4). Hence, it is good to have knowledge on stroke.

In Malaysia, stroke is the most common cause of death, and carries a mortality rate of 8.43/100 000 population (5). The ranking is high enough to conclude that stroke is a major health problem for people. In regard to stroke and its cause of death, nurses stand out as being obvious members of the medical community to help patients gain an understanding about stroke. Besides providing care, nurses are well placed to continually provide appropriate education to individuals to make sure stroke patients able to manage themselves (6). Nurse can give advice and educate stroke patients thereby, lead them to practice a healthy lifestyle for a better quality of life. According to the theory of planned behaviour, in specific situations people behave in a rational manner and make predictable choices (3). Thus, people engage in behaviours beneficial to health, other people approval, ability to perform and an access toward resources. This theory also can be used to advise people who have already suffered from stroke to prevent recurrent attacks.

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MATERIAL AND METHODS

Study Population

The participants for the study were recruited from stroke patients admitted to the medical ward of Hospital Tengku Ampuan Afzan (HTAA), Kuantan, Pahang. The study population was 139. The sample size calculation was determined by using the Raosoft formula. With a margin of error of 5%, confidence interval of 95%, population of 139 and response distribution of 50%, the recommended sample size is 103.

Inclusion/Exclusion Criteria

The study population was defined as patients aged between 50 and 80 years old with more than one stroke attack. Patients with transient ischaemic attack (TIA), altered levels of consciousness, unstable condition, unable to understand Malay or English, unwilling to participate, or any other illness that might significantly affect their quality of life (i.e. heart failure and kidney failure) were excluded from the study.

Reliability and Validity

Reliability for the Quality of Life questionnaire was supported by Cronbach's alpha, ranging from 0.73 to 0.99. The questionnaire was adopted from Ferrans and Powers, which was developed based on results from an extensive literature review of issues related to quality of life. Cronbach's alpha was used to measure the reliability of the patient adherence questionnaires (6). In order to minimise participant misunderstandings and limit language barrier problems, the questionnaires was translated into Malay and reviewed by an expert. The reliability value of Cronbach's alpha from the pilot study was 0.94.

Data Collection and Analysis

The data was collected using the purposive sampling method and conducted between February and April 2015. The respondents were approached in the medical ward. The questionnaires were collected right after the respondents had completed it. The collected data were statistically

analysed using Statistical Package of Social Sciences (SPSS) version 19.0 for Windows. Research instruments used include the patients' socio-demographic and medical history of the disease (Part A), Ferrans & Powers Quality of Life Index, Stroke Version-III (Part B) and Medical Outcome Study, Measure of Patient Adherence (Part C). . One-way ANOVA was used to measure the extent association between socio-demographic data and Quality of Life, adherence with Quality of Life and socio-demographic and adherence. A p-value of less than 0.05 was considered statistically significant. For the mean difference between gender and adherence was analysed using the independent-samples t-test. A Pearson correlation coefficient (r) value of) indicates no linear relationship, ≤ 0.39 indicates a weak linear relationship, ≤ 0.69 indicates a moderate linear relationship, ≤ 0.9 indicates a strong linear relationship and 0.91 to 1 indicates a perfect relationship between the dependent and independent variables.

Ethical Considerations
This research was approved by Kulliyyah of Nursing Research Committee (KNRC), International Islamic University Malaysia Research Ethics Committee (IREC) and National Medical Research Register (NMRR). A letter of approval was sent to HTAA. In addition, before the questionnaires were distributed, informed consent was obtained from the patients. Prior to obtaining the informed consent, the purpose of the study, privacy, confidentiality and anonymity of the respondent were explained.

RESULTS

Socio-demographic Characteristics
Among the 54 respondents, most respondents were in the range of 71 to 79 years old (Table 1). Most of the respondents were women (29) and the number of male respondents was 25. However, the difference was not vital. A total of 27 of the respondents did not received any formal education, whereas 15 respondents went to primary school and 6 to secondary school and tertiary level of education respectively.

Quality of Life of Stroke Patients
The first objective of this study is to assess the quality of life of stroke patients. The total quality of life can be determined by a questionnaire score, where the range is from 0 to 30. The highest score obtained was 27 and the lowest score was 6. Based on the result obtained, the mean of total quality of life of stroke patients was 18.22 ± 4.16, thus showed that the quality of life of stroke patients is poor. This study was also focused on assessment of the quality of life subcategories. This was done to observe the most affected part of the subcategories of quality of life. From the health and functioning subcategory, the lowest score obtained was 5 and the highest was 24, with a mean of 12.99 ± 4.10. The next subcategory analysed was social; the mean value was 21.17 ± 4.11 with the lowest score being 11 and the highest being 30. In the psychological and spiritual subcategory, the mean value is 21.51 ± 6.21; the scores obtained from the lowest and the highest is 3 and 30 respectively. The last subcategory, which is the family subcategory, obtained a mean of 26.26 ± 4.66, and the lowest score was 10 and the highest score was 30.

Adherence of Stroke Patients
The adherence of patients toward nurses' advice that may relate to medication or treatment plans or any other health education related to stroke was assessed. This study found that a total of 35 patients (a mean of 25.67 ± 5.11) were adhering to the advice and the remaining 19 patients were non-adherent.

Socio-Demographic Factor and Quality of Life
The study was also focused on the identification of association between quality of life of stroke patients with the socio-demographic factor. Based on the Pearson correlation between age and quality of life, a weak negative relationship was shown (r = -0.38), with a significance difference, since the p-value was 0.004. This indicates that as the age of patients increased their quality of life decreased. The result shows the higher quality of life in males compared to females, with means of 20.14 ± 0.67 and 16.57 ± 0.77 respectively. The association of gender with quality of life were supported by the p-value of 0.001, indicating men have a better quality of life compared to women. However, in term of race and quality of life association, the p-value was 0.122, indicating there is no significance difference.

Adherence and Quality of Life
There was a significance difference in the association of patients' adherence with quality of life, where the p-value was 0.001. As shown in Table 2, the adherence of patients has a positive correlation with quality of life, where high adherence resulted in better quality of life.

Socio-Demographic Factor and Adherence
The result indicates there is no significance association between socio-demographic factors and adherence of patients, with patient age, race and education level having p-values of 0.258, 0.646 and 0.296 respectively. However, this study shows that men adhere to advice better than women (Table 3).

Table 1: Socio-demographic Data of Respondents

VARIABLE	FREQUENCY (n)	PERCENTAGE (%)
Age		
50-55	6	11.2
56-60	4	7.5
61-65	11	20.5
66-70	11	20.5
71-75	11	20.5
76-80	11	20.5
Gender		
Male	25	46.3
Female	29	53.7
Race		
Malay	51	94.4
Non-Malay	3	5.6
Educational Level		
Primary	15	27.8
Secondary	6	11.1
Tertiary	6	11.1
Others	27	50

Table 2: Association between socio-demographic and quality of life. An asterisk (*) indicates 2-tiled, a indicates Pearson Correlation, and double asterisk (**) indicates t-test.

VARIABLE	n	MEAN	SD	STATISTICAL VALUE	*p*-VALUE
Age	54			-0.38[a]	0.04*
Gender				3.45**	0.001*
Male	25	20.14	0.67		
Female	29	16.57	0.77		
Race				1.57**	0.122*
Malay	51	18.44	4.12		
Non-Malay	3	14.61	3.67		

Table 3: Association between socio-demographic and adherence. An asterisk (*) indicates 2-tiled, a indicates Pearson Correlation, double asterisk (**) indicates T-test and c indicates one-way ANOVA.

VARIABLE	n	MEAN	SD	STATISTICAL VALUE	*p*-VALUE
Age	54			-0.16[a]	0.258*
Gender				2.42**	0.019*
Male	25	27.40			
Female	29	24.17			
Race				0.34**	0.646*
Malay	51	25.99	5.22		
Non-Malay	3	27.00	2.65		
Education				1.27[c]	0.296
Primary	15	24.13	3.64		
Secondary	6	26.83	2.86		
Tertiary	6	28.67	1.51		
Others	27	25.59	6.34		

DISCUSSION

Socio-demographic Characteristics

Appelros, Stagmayr & Terént (2009) reported that men compared to women have higher incidence and prevalence rate of 33% and 41% respectively with wide differences between age band and population. This was also stated in Ministry of Health Clinical Practice Guidelines (2012) that stroke is more frequent in men than women, with higher incidence for age-specific stroke but higher for women aged between 35-44 years old and over 85 years. This statement was also supported by a 2015 study that found men have a slightly higher proportion (55%) of strokes compared to women (45%) (7). However, the findings of the current study do not support the previous research where women have a slightly higher proportion of 53.7% compared to men.

The current study found that the stroke patients in HTAA have a low quality of life. This was supported by Dayapoglu & Tan (2010) where the lowest score of quality of life in stroke patients were those aged between 61-71 years old (8). This might be affected by age-related functional decline. The result of health and functioning subcategory from quality of life shows that the current finding is consistent with Baumann et al. (2012), who found activity daily living such as mobility and self-care were limited and are main causes of dissatisfaction in stroke patients (9). Based on the social subcategory, the current finding further supports the idea of Franzén-Dahlin & Laska (2012), which showed the negative effect in social domain is more toward stroke patients compared to TIA patients (10).

Poor level of social interaction because of an interaction of patients' social factor and physical environment. There is a limitation of social interaction among stroke survivors; poor social interaction may be caused by cognitive dysfunction and post-stroke depression (PSD) (11, 12). In the psychological and spiritual subcategory, stroke patients in this study are mostly Muslims and show high belief in God and show intermediate satisfaction in themselves; the overall result of the family subcategory shows that stroke patients had overall satisfaction toward their family health, spouse and family support. This accords with a previous study, which showed that social support from family is positively correlated in all aspects of quality of life (8).
This study found that 64.8% of the patients adhered to nurse advice, thus supported the findings of the family support subcategory. Social support has been related with adherence as indicated in a study. It was suggested that adherence increase alongside perceived social support (12). Another study investigated compliance between early-onset and late onset of stroke patients. It has been identified that there is less compliance in early-onset stroke that might be related to mild follow up modified Rankin Scale while the previous study reported greater compliance in severe stroke patients (13).

The result of this study shows that the quality of life decreased prior to increasing age. The poor quality of life in patients aged between 61-71 years old might be related to age-related functional decline (8). A study using SF-36 questionnaire found age as one of the factors contributing to poor physical state (14). Overall, men have a higher quality of life compared to women, which is consistent with previous study that women are significantly more negatively affected (10). This result may be explained by a study in 2009, where female stroke survivors were found to have a poorer outcome, less likely to be discharged, prone to physical impairment and experience limitations in their activities of daily living (14). The association of quality of life between Malay and non-Malay, however, was not significant. Based on education levels, the relationship between quality of life with educated patients was particularly pronounced. The high score obtained by patients with a higher level of education may be associated with better coping mechanism, financial security and having a good social status (8).

The current study shows that patients' adherence is associated with quality of life. Inadequate control of hypertension is caused by noncompliance (13); therefore, compliance is key in linking medical care processes with outcomes (15).

This study also shown men have a better adherence compared to women, and there was no significance association between adherence with age, race and education. In contrast, demographic causes of poor compliance of include age, gender and disease factors as an inadequate indication of compliance. In contrast to the result, compliance toward behavioural modification related to quitting smoking, exercising and reduced salt intake in food, men showed greater noncompliance (13). The result of the Medical Outcome Survey (MOS) found the relationship between socio-demographic factors and adherence was not significant between genders [10]. Strict adherence showed by women toward doctor's recommendation than men. Yet, this result was only based on patients from Poland (16).

CONCLUSION

This study was designed to determine the effect of adherence of stroke patients toward nurses' advice. Patients from the study were recruited from Hospital Tengku Ampuan Afzan, Kuantan, Pahang. The overall results obtained showed that the patients adhere to nurses' advice. The quality of life of stroke patients was also assessed and correlated with adherence. The result shows a positive correlation between adherence and quality of life.

The conclusion that can be drawn from this study is that adherence is a key factor in maximising the quality of life. From socio-demographic data, it seems that the older the patient, the quality of life

was decreased; yet, it was not proportional to adherence. The results also show that men are better at adhering to the advice and have a higher quality of life compared to women. Higher quality of life is associated with higher education; nevertheless, no association between adherence and education level was detected.

However, this conclusion is only based on 54 respondents instead of 103 respondents, due to time constrains and not enough numbers of stroke patient in the ward. Thus, the result and conclusion of this study stand on the sample size with margin of error 10.5% and confidence level of 95%.

LIMITATIONS

There are several limitations in this study. There is a time restriction for collecting data related to waiting for approval from several ethical committees and related authorities. In the wards, it is hard to obtain data for stroke patients as there were too few stroke patients in the ward, and it requires extensive time to reach even half of the required number of respondents. Some of patients or relatives of the patients did not want to participate in the study, which caused difficulty in collecting data.

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CONFLICT OF INTEREST

The authors have no conflict of interest to declare with regard to this work.

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