

ORIGINAL PAPERS / ARTICLES ORIGINAUX

SELF-MOTIVATION, FUNCTIONAL ABILITY AND PARTICIPATION AMONG STROKE SURVIVORS' RESIDENT IN IBADAN METROPOLIS, NIGERIA***AUTO-MOTIVATION, CAPACITE FONCTIONNELLE ET PARTICIPATION CHEZ LES SURVIVANTS D'AVC RESIDANT DANS LA METROPOLE D'IBADAN AU NIGERIA***

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ABSTRACT**Background:**

Stroke is a leading cause of death both globally, and in Africa. The attendant effect of the stroke is disability, loss of function and psychosocial issues. Studies have been carried out on different rehabilitation outcomes such as participation, self-motivation and functional ability related to stroke survivors. There is however a dearth of studies exploring the relationships among self-motivation, functional ability and participation of stroke survivors, particularly in our African community.

Objectives:

Relationship among participation, self-motivation and functional ability of stroke survivors residing in Ibadan was investigated.

Methods:

This was a cross-sectional survey which involved 44 consenting stroke survivors. Clinical and demographic information were documented. Self-motivation, functional ability and participation of the stroke survivors were assessed with the Self-Motivation Inventory, Fugl-Meyer Assessment of Motor Recovery after Stroke; and London Handicap Scale respectively. Data was analysed with descriptive statistics and inferential statistics of Spearman Rank Correlation at $p= 0.05$.

Results:

There was a statistically significant positive correlation between the time since onset of stroke scores and participation ($p= 0.02$) and between the stroke survivors' functional ability and participation scores ($p=0.001$). Conversely there was no significant relationship between the participants' functional ability and time since onset of stroke scores ($p= 0.62$), between stroke survivors' self-motivation and time since onset of stroke scores ($p= 0.41$), between self-motivation and participation ($p=0.80$) and between self-motivation and functional ability scores ($p= 0.80$)

Conclusions:

Whereas self-motivation appeared non-related to functional ability and participation, a more exploration of the subject matter is still necessary for a conclusive inference to be drawn, especially in view of the sample size involved in this present study.

BACKGROUND

Stroke is ranked the second leading cause of death globally, the fifth cause of death in Africa (35), and a major cause of activity limitation as well as participation restriction among survivors (28). It is also a leading cause of depression (27). According to the World Health Organisation (34), participation is involvement in life while participation restrictions are problems an individual may experience in involvement in life situations. A significant proportion of people with stroke reported limitations in carrying out daily activities and thus a negative effect on participation in their communities (23). In a study by Hamzat and Peters (15), participation by stroke victims was observed to have occurred progressively across six months' post-stroke and those authors noted that as the patients were regaining motor function, their participation level was also improving. Community integration is an integral part of the concept of participation, which is an important aspect of stroke rehabilitation, and yet underestimated (35).

According to Hamzat and Adebisi-Akinbile (13), functional ability is an important construct used to monitor clinical improvement after stroke. It is a determinant of a patient's quality of life which relates to the person's health status. The effect of disability in stroke survivors, leads to a likelihood of difficulty in participation, especially among those with decreased functional ability (14). In a study by Aprile et al (1), patients with higher disability perceived that they were not able to do some daily activities not only because of physical problems but also because of emotional troubles.

Dobkin (10) had observed that one of the major factors affecting rehabilitation outcome is the level of motivation of the patient towards his/her recovery. Self-motivation encompasses a person's desire to activate or persist with a particular behaviour (20). It is a personal attribute of a patient that may relate to how well he cooperates with the attending physiotherapist and physiotherapy schedule; the informal caregivers, and how well disposed she/he might be to setting and attaining goals in the course of rehabilitation (13). Since, self-motivation is also a major factor in rehabilitation, it is necessary to understand the association between this psychological construct and degree of participation among stroke survivors residing in their natural community.

The purpose of this study was to determine inter-relationship among self-motivation, functional ability and participation of stroke survivors residing in Ibadan, a cosmopolitan city in West Africa. Relationship between the time onset of stroke and each of self-motivation; participation and functional ability was explored.

METHODS

This was a descriptive study which involved 44 consenting individuals who had suffered a stroke and had been discharged from the in-patient facility for longer than one month; were non-aphasic; residing in Ibadan and were receiving physiotherapy on out-patient basis at the physiotherapy clinics of public-funded hospitals in Ibadan, Nigeria. Post-stroke individuals with evidence of cognitive impairments were excluded from this study by asking questions pertaining to time, place and person (25).

Prior to study commencement, ethical approval was sought and obtained from the appropriate Institution Research Ethics Committee. The nature, purpose and procedure for the study were explained to eligible stroke survivors and their informed consent obtained before involving them in the study.

Data collection was carried out on two different study appointments. The first assignment was for documentation and assessment of motor function. This was to prevent fatigue of the patients. During the first appointment, a special designed data entry form was used to obtain relevant clinical and socio-demographic information on the stroke survivors. The Fugl-Meyer Assessment of Motor Recovery after Stroke was also administered by requesting the participant in carrying out the various tests and scoring based on the instruction on the questionnaire. Fugl-Meyer Assessment of Motor Recovery after Stroke was proposed by Axel Fugl-Meyer and his colleagues as a standardised assessment test for post-stroke recovery in the year 1975 (11). It was designed to assess motor functioning, balance, sensation and joint functioning in patients with post-stroke hemiplegia. The scale comprises of five domains with 155 items in total; motor functioning, sensory functioning, balance, joint range of motion and joint pain. For this research, only the motor functioning (in the upper and lower extremities) and sensory functioning domains were used. Scoring is based on direct observation of performance (6). Scale items are scored on the basis of ability to complete the item using a 3-point ordinal scale where 0=cannot perform, 1= performs partially and 2=performs fully. The total possible score is 124. The higher the scores obtained, the greater the functional ability of the

patient. The scale has an excellent interrater reliability of $r=0.96$ (29) and an excellent construct validity of $r=0.63$ when compared with Functional Independence Measures (31).

On the second study appointment date, self-motivation and participation were assessed using Self-Motivation Inventory (SMI) and the London Handicap Scale (LHS) respectively. The SMI was developed to assess self-motivation in individuals (9), and for the purpose of this research, this was used to determine self-motivation. It consists of 40 items. The SMI was scored by adding the reversed scores of the 21 items and the scores of remaining 19 items with the scores ranging from 40 to 200. It has an excellent reliability of 0.86-0.92 reinforcing the conception of self-motivation as relatively enduring and trait-like (24). The construct validity was provided by the Self-Motivation Inventory's relationship with the Thomas-Zander Ego strength scale ($r=0.63$) and other more behaviourally specific attitudes (r ranged from 0.47-0.58) (33). This questionnaire has been used for previous study in our environment (13). The time interval between the first and second appointment was 48 hours.

Data collected was summarized using descriptive statistics of frequency counts, percentages, range, mean and standard deviation. Spearman Rank Correlation was employed to investigate the type of association among participation, functional ability and self-motivation in pairs at $p < 0.05$.

RESULTS

The ages of the post-stroke individuals ranged between 19 and 82 years, the mean age of the participants was 59.80 ± 14.7 years. Their socio-demographic characteristics of sex, marital status, religion, educational level and type of stroke are summarised in Table 1.

There was a statistically significant positive correlation between the time since onset of stroke scores and participation ($p=0.02$) and between the stroke survivors' functional ability and participation scores ($p=0.00$) Table 2.

Conversely there was no significant relationship between the participants' functional ability and time since onset of stroke scores ($p=0.62$), between stroke survivors' self-motivation and time since onset of stroke scores ($p=0.41$), between self-motivation and participation ($p=0.80$) and between self-motivation and functional ability scores ($p=0.80$) as shown in (Table 2).

DISCUSSION

The mean age of the stroke survivors who took part in this study was 59.8 ± 14.7 years. This is within the age range observed by previous researchers in our study environment by Hamzat and Peters (15); Gbiri and Akinpelu (12). This is a suggestion of the age at which people suffer stroke in this society. This mean age is lower than the age of stroke survivors reported in studies carried out in non-third world countries (3,18). The age disparity when compared with the reports from developed countries referenced might be due to low socio-economic status, high mortality rates, high risk factors and different causes of death seen in developing countries (5) compared to the developed countries. Furthermore, the lower life expectancy generally in Nigeria is 55.2 years compared to 78.69 years in United States and 80.96 years in the United Kingdom (36).

The gender and type of stroke distribution seen in this study showed a prevalence of males and ischemic stroke respectively, although this study did not set out to document gender and stroke sub-type pattern. This distribution pattern is similar to other studies on stroke that made reference to gender and stroke sub-types (3,13,15,17,18,32). Zotto et al (37) had also reported that ischemic stroke is more common in men than in women until advanced age, when a higher incidence is observed in women.

In this study, most of the stroke survivors have left hemiplegia which is similar to the report of earlier studies on stroke by De-Wit et al (8), and Hamzat and Adebisi-Akinbile (13). Conversely, some researchers reported equal distribution of the left and right hemiplegia in their study (3) while the study of Hamzat and Peters (15) reported predominance of right hemiplegia.

The result of analysis which showed positive statistically significant relationship between time since onset of stroke and participation implies that the longer the duration of stroke onset, the better the participation level. This could mean that the longer the people have suffered a stroke, the better their adjustment to

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reintegration in their community with attendant better participation. This finding is in agreement with the submissions of Lo et al (22) and Hamzat and Peters (15). On the other hand, Desrosiers et al (7) reported that participation varies over time among the older population. This incongruence may be due to the fact that the stroke studied in this report were younger and with mean that could not be as being of older population.

Results revealed no statistically significant relationship between self-motivation and time since onset of stroke. It suggests that other factors rather than stroke duration are determinants of self-motivation after stroke. Oldridge and Stoedefalke (26) reported variation in patients' self-motivation mainly along age and gender pattern. While there were more males than females and all the studied patients were of around middle age, Shaw (30) had noted that females and older adults are more self-motivated than males over time. Duration of onset of stroke had no significant relationship with functional ability in this study. This is contrary to studies carried out by De Wit et al (8) and Kugler et al (21) which reported that the longer the duration of stroke onset, the better the functional ability of the stroke survivor. The variation in results between this present study and those earlier studies could be due to the fact that the patients in their study were assessed over a course of time unlike this present where the stroke survivors were assessed one time only. Another possible cause for the difference in results from this and earlier studies could lie in the fact that while Fugl-Meyer Assessment of Motor Recovery after stroke was used in this study, the other researcher used Barthel Index Scale to assess the functional ability. The relatively smaller sample size in this study and the stage of recovery wherein those who took part in this study were already community-dwelling may also have contributed to the dissimilarities with the report of earlier researchers cited.

Although this was statistically insignificant, a negative relationship was observed between self-motivation and each of functional ability scores and participation among the stroke survivors. King and Barrowclough (19), Hamzat and Adebisi-Akinbile (13) had also reported no significant relationship with functional ability. Conversely, Holmquist and Von Koch (16) reported that there was a consensus among rehabilitation professionals that the patient's degree of motivation will influence the outcome of his or her intervention. Many factors could have accounted for the findings in this study. The socio-cultural and profound religious belief systems in this Nigerian African society promote the practice of "professing" and "thinking of only positive" things in the face of obvious or glaring difficulties including ill-health.

A statistically significant relationship was observed between functional ability and participation in this study which translates to mean that the better the functional ability of the patient the better the participation and vice versa. This result is similar to the findings of Lo et al (22), Hamzat and Peters (15), and Chau et al (4) who reported that functional ability was one of the determinants of a stroke survivor's participation. Avlund et al (2) had earlier stated that functional ability and participation are important determinants of a person's quality of life and that an active life was significantly associated with life satisfaction. The underpin of this trend is that a post stroke individual with improved functional ability will find it easier to perform activities of daily living and get around more easily than an individual with poor functional ability. Being able to perform better at activities of daily living and get around better would encourage better participation. However, it is often observed that among stroke survivors, better participation may compensate for a poor functional ability, and vice versa (2).

CONCLUSION

The findings of this study showed that self-motivation of stroke survivors residing in their community was not related to their participation and functional ability. However, the longer the duration of stroke onset, and the better their functional ability, the better the participation level. Nevertheless, we submitted that the three constructs of self-motivation, functional ability and participation should be routinely assessed for possible appropriate intervention among stroke survivors.

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Table I: Socio-Demographic Characteristics and Clinical Information of the Stroke survivors (N= 44)

Characteristics		n	%
Gender	Female	18	40.9
	Male	26	59.1
Marital status	Married	32	72.7
	Single	03	6.8
	Widowed	09	20.5
Religion	Christian	35	79.5
	Islam	9	20.5
Educational Level	None/Primary/ Secondary	23	52.3
	Non-University degree	11	25.0
	First degree	4	9.1
	PG degree	6	13.6
Type of Stroke	Haemorrhagic	4	9.1
	Ischaemic	40	90.9
Side of Hemiplegia	Right	19	43.2
	Left	25	56.8

Table II: Relationships among functional ability, participation, self-motivation and time since onset of stroke using Spearman Rank Correlation (N=44)

Characteristics		Correlation Co-efficient(r)	p-value
Age of Participants	SMI	-0.11	0.47
	FMA	0.15	0.33
	LHS	-0.01	0.97
Onset of Stroke	SMI	-0.13	0.41
	FMA	0.08	0.62
	LHS	0.36	0.02*
SMI	FMA	-0.04	0.80
	LHS	-0.04	0.80
FMA	LHS	0.57	0.001*

KEY : *: Significant p value ;

r: Spearman Rank Order Correlation Coefficient;

SMI: Self-Motivation Inventory Score;

FMA: Fugl-Meyer Assessment of Motor Recovery after stroke Score;

LHS: London Handicap Scale Score.

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