



**Sexual Dysfunction and Stroke Duration Among Stroke Survivors Attending Murtala Mohammed Specialist Hospital, Kano State.**

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**Abstract**

*Sexual dysfunction is common among stroke survivors in Nigeria as it is with other stroke survivors in the western world with marked decline sexual functioning after stroke. However, this is not often given consideration in the overall management of stroke. This study investigates the relationship between stroke duration on sexual dysfunction. The methodology used involve: A descriptive cross sectional survey in which sixty (60) male and female stroke survivors patients attending the Physiotherapy departments of Murtala Muhammad Specialists Hospital Kano were studied. International Index of Erectile Function Questionnaire (IIEF) and Female Sexual Function Index Questionnaire (FSFIQ) were used to assess sexual function of male and female Sexual stroke survivors respectively. Descriptive and inferential statistics were used to summarise and analyse the data. Alpha level was significant at 0.05. The results obtained were: The mean age of the participants is 51.07±9.18. There is no significant difference in sexual dysfunction across gender ( $u=418.50$ ,  $p=0.61$ ). Orgasm and intercourse satisfaction are found to be more affected among males in all the domains. In female, sexual satisfaction and vaginal lubrication is the most affected. There is significant difference in sexual dysfunction across different categories of duration (acute, sub-acute and chronic) after stroke with acute stage more affected in both sexes. Positive relationship exists between stroke and overall "sexual dysfunction" in all domains of sexual dysfunction in male and some domains in female stroke survivors. In conclusion, relationship exists between stroke and sexual dysfunction. Sexual dysfunctions do not differ across gender and duration of stroke, particularly the acute phase is more affected.*

**Keywords:** *Stroke Duration, Sexual Dysfunction, Stroke Survivors, Kano State*

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### **Introduction**

Stroke is a major cause of mortality and morbidity in the productive age (Wolfe, 2000). The physical and emotional sequelae of stroke survivors have been researched intensively with patients experiencing depression, loss of control, cognitive impairments and sexual dysfunction (Kimura et al, 2001; Kim & Kim, 2008; Schmitz & Finkelstein, 2010). More so, they experience a significant change in role identity in society, family and in their intimate relationships (Kim & Kim 2008).

Stroke has been shown to have an impact on the sexual function (Kim & Kim, 2008, Schmitz & Finkelstein, 2010; Akinpelu et al, 2013). Sexuality is one of the integral parts of people's life across gender of all ages (Akinpelu et al, 2013). Sexual dysfunction is common among stroke survivors in Nigeria as it is with other stroke survivors in the western world, and there is marked decline in sexual functioning after stroke and as many as one-fourth of stroke survivors experience disruption of sexual functioning (Akinpelu et al, 2013). Many of the stroke patients struggle with sexual dysfunction, it is important to know that sexual functioning comprises not just sexual intercourse, it is a complex phenomenon that encompasses psychological, biological, behavioural and interpersonal dimensions and the ability to create and sustain intimate relationship is a key part of human life, this can be affected by stroke (Shah, 2009).

Sexual functioning is not given due attention as part of the rehabilitation process by the health care professionals (Schmitz & Finkelstein, 2010; McLaughlin & Cregan, 2005; Dyer & Das, 2012). Sometimes in the past, health care professionals had the tendency of considering stroke patients as asexual simply because they are mostly older and disabled; thereby ignoring the fact that sexual functioning is important and possible for post-stroke patients though hampered by dysfunction (Lemieux et al, 2002). Focusing on the assessment of sexual dysfunction is useful for documenting a patients' perceived burden and tracking changes in health over time.

There is decrease in level of some domains of sexual function such as libido, erection, coital frequency as shown in some studies (Kim 2008; Akinpelu et al. 2013; Schmitz & Finklestein, 2010). More so, attention was given to single domain (Lamina et al, 2007) or selected domains and gender comparison was not taken into consideration (Akinpelu et al. 2013; Kimura et al, 2001). In view of the above, this study addressed all domains of sexual dysfunction for both male and female stroke survivors with respect to the various durations (acute, sub-acute and chronic) and gender difference. However, it is not known if there is deterioration or improvement of sexual function with an increase in the duration of stroke. Hence, this study

determine the relationship between sexual dysfunction and duration of stroke in both male and female stroke survivors.

## **Method**

### ***Subjects and clinical characteristics:***

This study was a descriptive cross sectional survey. The sample of this study consisted sixty stroke survivors drawn from a population of male and female stroke patients attending Murtala Mohammed Specialist Hospital (MMSH), in Kano State, Nigeria. Sample size was based on previous studies (Akinpelu et al, 2013). Participants were recruited using consecutive sampling as they become available. They were only recruited if they are married male and female stroke survivors and after they gave a written consent. Those with stroke patients that had sexual dysfunction before the stroke, aphasia and major psychiatric problems were excluded.

### **Procedure**

Ethical approval for this study was sought and obtained from the research and ethics committee of Hospitals Management Board of MMSH and from the Kano State Ministry of Health. Thereafter, the participants who fulfilled the research inclusion criteria were issued a self-administered questionnaire. All questionnaires were collected after they were filled by the participants. Demographic parameters (age gender, weight & height) were taken and recorded respectively.

Female Sexual function Index Questionnaire (FSFIQ) was used to assess sexual function in females, its reliability and validity are 0.82 and 0.86 respectively (Rosen et al, 2000). It consists of six domains (pain, desire, lubrication, arousal, orgasm and satisfaction) with 19 items that provide the real sexual status for females. All domains were summed up to give the total score of sexual function and the scores were summarised and categorised. The minimum score was 2 and maximum 95. Score 2 implies no sexual activity, 3-76 implies Sexual dysfunction, while 77-95 means no dysfunction

The International Index Erectile Function Questionnaire was used to assess male sexual dysfunction. Its reliability and validity are 0.64 to 0.84 (Rosen et al, 2002). It consists six domains (Erectile function, Orgasmic function, sexual desire, ejaculation, intercourse and overall satisfactions) with 15 items. All domains were summed up to give the total score of sexual function. Scores were summarised and categorised as minimum score was 6 and maximum score was 75. A score of 6 means no sexual activity, 7-59 implies sexual dysfunction and 60-75 implies no sexual dysfunction. Duration of stroke was classified as acute if less than 3 months, sub-acute between 3-6 months and chronic if more than 6months after stroke.

### Data Analysis

Data was analysed using statistical package for the social sciences (SPSS)16.0 IBM®. Descriptive statistics of mean, standard deviation, frequencies and percentages were used to summarise the demographic and other clinical characteristics such as stroke duration, gender distribution and so on. Mann-Whitney U test was used to determine the difference in sexual dysfunction between male and female stroke survivors. Inferential statistics of Kruskal-Wallis was computed to determine the difference in sexual dysfunction across the various categories of duration and Spearman's correlation was computed to determine the relationship between sexual dysfunction and stroke in both male and female stroke survivors.

### Results

Sixty questionnaires were administered and retrieved from the participants. The demographic and characteristics summary as shown in Table 1 revealed that the mean age, height, weight and BMI of the participants were 51.07±9.18 years, 1.61±0.07m, 59.00±7.26 kg and 22.81±1.98kg/m<sup>2</sup> respectively. The result also showed that a higher proportion of females suffer more sexual dysfunction after stroke compared to their male counterpart. However, higher proportions of males did not engage in sexual activity after stroke compared to the females (table 1).

**Table 1:** Physical and anthropometric characteristics sexual function of participants

Variables	Combined M±SD	Males M±SD	Females M±SD	t	p
Age (Years)	51.07±9.178	51.53±9.18	50.60±9.33	-0.53	0.60
Stature(M)	1.61±0.067	1.65±0.04	53.40±3.05	-7.55	0.000
Body Mass(kg)	59.00±7.256	64.60±5.74	1.56±0.05	-9.26	0.000
BMI (Kg/m <sup>2</sup> )	22.81±1.976	23.628±1.905	22.00±1.71	-3.49	0.001
Stroke duration	2.00±0.823	1.97±0.81	2.03±0.85	0.31	0.76
	No sexual activity n (%)	Sexual dysfunction n (%)	No sexual dysfunction n(%)		
Males	9 (30.0)	12(40.0)	9 (30.0)		
Females	6 (19.4)	21 (67.7)	3 (9.7)		

In Table 2, Mann-Whitney U test was used to determine the difference in sexual dysfunction between male and female stroke survivors.

**Table 2.** Mann-Whitney U test for difference in sexual dysfunction across gender (n=60)

Variables	Gender	N	Mean Rank	Sum of Ranks	U	p-value
Sexual Dysfunction						
	Males	30	31.55	946.50	418.500	0.605
	Females	30	29.45	883.50		

In table 3, the study indicates that there is no significant difference in the sexual dysfunction after stroke between male and female stroke survivors. Sexual function domain revealed that orgasm and intercourse satisfaction are more affected among males in all the domains of sexual dysfunction followed by overall sexual satisfaction. Erectile dysfunction and desire are the least affected. In female, sexual satisfaction and vaginal lubrication are the most affected and next is the female orgasm while the least affected is libido and dyspareunia (table 3).

**Table 3.** Sexual dysfunction domains of the participants n= frequency; %= percentage

Gender	Sexual Dysfunction Domains	Dysfunction n (%)	Normal n (%)
<b>Males</b>	Erectile dysfunction	16(53.3)	14(45.2)
	Overall satisfaction	18(60.0)	12(40.0)
	Orgasm	19(63.3)	11(36.7)
	Desire	16(53.3)	14(45.2)
	Intercourse Satisfaction	19(63.3)	11(36.7)
<b>Females</b>	Libido	12(40)	18(60)
	Vaginal lubrication	20(66.7)	10(33.3)
	Female orgasm	19(63.3)	11(36.7)
	Sexual satisfaction	23(76.7)	7(23.3)
	Dyspareunia	16(53.3)	14(46.7)

From table 4, significant difference was observed in sexual dysfunction across different categories of duration (acute, sub-acute and chronic). The acute stage is more affected after stroke compared to sub-acute and chronic stage in both male and female stroke survivors.

**Table 4.** Summary of Kruskal-Wallis across different stroke duration categories for both males and females (n=60)

Gender	Stroke Duration	N	Mean Rank	H	P-value
Males	Acute	10	10.25	6.225*	0.044
	Sub-acute	11	17.41		
	Chronic	9	19.00		
Females	Acute	10	8.90	13.067*	0.001
	Sub-acute	9	18.33		
	Chronic	11	19.18		

\*p≤0.05

Table 5 shows that there is a significant relationship between stroke duration and overall domains (Erectile dysfunction, overall satisfaction, desire, orgasm and intercourse satisfaction) in male stroke survivors. Table 5 indicates that there is a significant relationship between stroke and some domains such as (Sexual arousal, vaginal lubrication, orgasm, and pain) of sexual dysfunction in female stroke survivors.

**Table 5.** Relationship between sexual dysfunction and stroke in male and female stroke survivors

Domains of Sexual Dysfunction in male	R	P-value
Erectile dysfunction	0.381*	0.04
Overall satisfaction	0.551*	0.00
Desire	0.467*	0.01
Orgasm	0.467*	0.01
Intercourse satisfaction	0.556*	0.00
Sexual dysfunction	0.435*	0.00
Domains of Sexual Dysfunction in female		
Libido	0.36	0.06
Sexual arousal	0.43*	0.02
Vaginal lubrication	0.39*	0.03
Orgasm	0.38*	0.04
Sexual satisfaction	0.35	0.06
Dyspareunia	0.52*	0.00
Sexual dysfunction	0.61*	0.00

### **Discussion**

This study assessed the relationship between stroke duration on sexual dysfunction in male and female stroke survivors. Also the difference that exists in sexual dysfunction across gender and various categories of duration post-stroke was assessed. Participants were recruited from Murtala Muhammad Specialist Hospital, Kano. The participants of this study had a mean age of 51 years, which is similar to age studied in the past (Akinpelu et al, 2013; Jung et al, 2008). All other demographic parameters are within normal and acceptable limits.

The result of this study showed that a higher proportion of female suffer sexual dysfunction after stroke compared to their male counterpart. This is contrary to the result of a study carried out which reported that more males suffer sexual dysfunction after stroke than males (Kimura et al, 2001). However, higher proportions of males do not engage in sexual activity after stroke despite the fact that they suffer less sexual dysfunction. This could be ascribed to the cultural belief of this population where sex is seen as a prerequisite to reproduction especially among males. In addition, the populations of our study are not young individuals; this may further explain why more males cease sexual activity after stroke than females. The difference between the results of the present study and Kimura et al (2001) may be as a result of the different type of questionnaires used; Social Functioning Examination Questionnaire and patient characteristics (mean age of  $58.8 \pm 13.5$ ), which is slightly higher than the participants in this study.

Gender comparison shows no significant difference in the sexual dysfunction of males and females after stroke and this is in tandem with the result of a study which reported no significant difference in the sexual dysfunction of males and females post-stroke after evaluating 110 stroke patients using interviews (Sjogren & Fugl-Meyer, 1982). However, this result is contrary to the finding of study conducted that reported a significant difference in the sexual dysfunction between males and females after stroke, with frequency of sexual activity been higher among male than female stroke survivors (Taman et al, 2008). The small sample size in our study could be attributed to this outcome.

In this study, sexual satisfaction and orgasm in the domains of sexual dysfunction are more affected in males and females and the least affected is erectile dysfunction and libido respectively. Other studies reported a decreased in sexual satisfaction in males than in females (Kimura et al, 2001; Korpelainen et al, 1998; Monga et al, 1986). Contrary to the findings of this study conducted in Nigeria, the above studies found no significant difference in the sexual satisfaction between males and females (Akinpelu, 2013). It is however pertinent to note that many factors need to be taken into

consideration because sexual satisfaction is difficult to assess objectively and different studies consider different questionnaire in assessing sexual satisfaction. Gender differences, context of the studies, meaning of sexual activity in different populations and data collection biases are also other factors to be considered.

The study observed that overall duration of stroke on sexual dysfunction is pronounced across the various categories of duration post-stroke (acute, sub-acute and chronic) in both male and female stroke survivors. It is more pronounced in acute phase as compared to other phases. This is similar to the results of Kim (2008), Korpelainen et al. (1998), Giaquinto et al (2003) and Kimura et al (2001). Collectively, they found out that 14-50% of stroke survivors ceased sexual activity for 3 months after stroke, while sexual activity in this population commences 3-6 months post-stroke.

There is a significant relationship between stroke and overall “sexual dysfunction” and also all domains of sexual dysfunction (Erectile dysfunction, overall satisfaction, desire, orgasm and intercourse satisfaction) in male stroke survivors. Also, there is a significant relationship between stroke and overall sexual dysfunction and also some domains (Sexual arousal, vaginal lubrication, orgasm and pain) of sexual dysfunction in female stroke survivors, with no significant relationship between stroke and some domains (Libido, sexual satisfaction) of sexual dysfunction in female stroke survivors.

### **Conclusion**

There is no difference in the sexual dysfunction of males and females after stroke. Sexual dysfunction is more pronounced in acute stroke survivors and less in sub-acute and chronic in both males and females.

### **Limitation**

The use of English version of the questionnaire used rather than the translated version of the native Hausa language; the predominant language of the Northern State.

### **Recommendations**

Assessment of Sexual dysfunction needs to be included in stroke rehabilitation. Further study should use interpreted and validated versions of these questionnaires so as to inquire information from the patients with the language they are familiar with.



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