



Perception of Factors Influencing Adherence to Home-Based Exercise Programmes by Stroke Survivors Attending Aminu Kano Teaching Hospital: A Qualitative Study

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Abstract

Background: Adherence to home-based exercise is important in rehabilitation, it is the extent to which patients fully do the exercises prescribed to them by physiotherapists for home sessions. Patients who adhere to their prescribed home-based exercises are likely to experience better recovery than those who do not. **Objective:** This study aimed to determine the perception of factors influencing adherence to home-based exercise programmes by stroke survivors attending Aminu Kano Teaching Hospital. **Methodology:** The qualitative study recruited thirteen stroke survivors were recruited through an in-depth interview using a purposive sampling technique. Three participants were interviewed weekly for a period of (5) five weeks. The interview was recorded using an audio recorder and transcribed. Thematic analysis was used to analyze the transcribed data. **Result:** The participants were six (6) females and (seven) 7males. The age of the participants ranges from 28-80 years. Only 6 out of 13 patients fully adhered to the home-based exercises. The results revealed that the facilitators of adherence to home-based exercises were motivated by physiotherapists and family support. The barriers to home-based exercise programmes were time constraints, lack of family support, exercise difficulty, unwillingness to exercise and financial constraints. Physiotherapists are to educate informal caregivers on their roles in helping stroke survivors to achieve better home-based exercise adherence.

Keywords: Adherence, Home-Based, Stroke Survivors, Exercise.

Background

Stroke is the leading cause of morbidity and mortality especially in developing countries (Abubakar and Sabir 201; Badaru et al, 2020). Among the goals of rehabilitation after a stroke is the improvement of mobility and activities of daily living (Shaughnessy et al, 2004) and the promotion of community reintegration (Badaru et al, 2017). Rehabilitation practices include home-based exercises which reduce treatment costs and increase the recovery rate of patients with stroke (Sluijs *et*

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al., 1993). Home-based exercise programs are usually prescribed to stroke survivors after being discharged from the hospital (Shaughnessy *et al*, 2004). Patients' adherence to prescribed home-based exercises is considered very important for successful rehabilitation (Brewer 2000 & Al-Eisa 2010). According to Ogwumuke *et al* (2014), the Achievement of rehabilitation goals for stroke survivors is dependent on the efficiency of the rehabilitation itself and the level of the patient's adherence to rehabilitation measures.

Adherence is defined as an 'active voluntary collaborative involvement of the patient in a mutually acceptable behaviour to produce a desired preventive and therapeutic result' (Meichenbaum & Turk, 2012). It is the extent to which patients follow the recommendation by giving their physiotherapists for doing home-based programmes (Bassett, 2003). It has unfortunately been shown patients have poor adherence to their home-based exercise (Miller, 2009). Stroke survivors could become dependent on their family members and this may limit their overall performance (Gadanya *et al*, 2017). The dependency of stroke survivors on caregivers is not only for activities of daily living but also for assistance in home-based exercises (Mudzi *et al* 2012). Factors that prevent home-based exercise adherence could include physical factors such as muscle weakness and pain, psychological factors such as poor self-efficacy, and fear of falls (Medina-Mirapeix, 2009; Ogwumike *et al*, 2014) and physiotherapy program characteristics such as a large number of exercises, (Medina-Mirapeix; Beirnert, 2009). According to Victor, *et al*, (2011), fatigue and depression, have greatly contributed to non-adherence among stroke survivors.

The few studies on the adherence of stroke survivors to their home-based exercises were extremely quantitative (Miller, 2009, Ogwumike *et al*, 2014), this may limit the exploration of personal views and experiences about the beliefs and perception of the respondents on facilitators and barriers that influence their level at which they carried out their home-based exercises resulting in diminutive information due to its closed-ended questions. The qualitative research design allows patients to state fully the issues that prevent them from performing their home-based exercises without any restriction by closed-ended questions. This study aimed to assess the perception of factors influencing adherence to home-based exercise programmes by Stroke survivors attending Aminu Kano Teaching Hospital.

Material and Method

A qualitative exploratory research design was used in this study. Participants were recruited using a purposive sampling technique, they were considered appropriate if they were stroke survivors at any stage of recovery, could understand instructions and remembered experience about their home-based exercises. Participants were excluded if they had cognitive impairment, aphasia, and could not speak Hausa or English.

Sample Size

Samples were obtained through an in-depth interview and saturation was reached at the 13th patient.

Data Collection Instrument

The data collection instruments were an audio recorder and an interview guide that contained open-ended questions. The audio recorder recorded the information obtained from the participant during the interview. The interview guide was used to direct the interview. Participants were encouraged to talk about their ability to carry out home-based exercises and the factors influencing it. The interview guide consist of the following questions:

1. Questions one asked about participants gender, age, level of education, marital status and occupation
2. Question two asked whether they adhere to home-based exercises prescribed to them.
Probe: to what extent did you adhere to the home-based exercises prescribed to you?
3. Question three asked about facilitators of Adherence
Probe: please tell me what you think is required for you to fully adhere to the home-based exercises prescribed to you?
Probe: please tell me what you think encourages you to carry out the home-based exercises prescribed to you?
4. Question four asked about barriers to adherence
Probe: please describe the factors preventing you from carrying out the home-based exercises prescribed to you?

Data Collection Procedure

Ethical approval was obtained from the ethics committee of Aminu Kano Teaching Hospital (NHREC/21/08/2008AKTH/EC/2345). Participants were screened for inclusion criteria. The study procedure was explained to the participants and their consent was obtained. Three participants were interviewed weekly for a period of (5) five weeks. The interview was conducted for an average duration of one hour per participant and the proceedings were recorded with an audio recorder. The interview was conducted in the Hausa Language. The recorded data was transcribed in Hausa and later translated into English except for one patient who was able to speak in English. The interview generated six major themes which include the following:

- ✧ Motivation from the physiotherapist
- ✧ Family support
- ✧ Time constraint
- ✧ Difficulty of exercises
- ✧ Financial constraints
- ✧ Unwillingness to perform the home-based exercises

Data Analysis Procedure

The recorded audio was transcribed and then coded to reveal the important points. Thematic analysis was used to analyze the transcribed data. The questioning and thematic analysis were guided by the more experienced researchers (second and fourth authors). Questioning was done by the first author, transcription was done by the first author, and analysis was done by the first and third authors. All the data was collected into groups and identified by codes, themes were then generated by combining several codes into to single theme, themes were reviewed and compared with the data sets to see if they represented the data appropriately, and all the themes and codes were listed. The major themes were named and defined.

Result

A total number of 13 stroke survivors, 6 females and 7 males participated in this study. The participants' age ranges from 28-80 years. The socio-demographic characteristics are further described in the table below.

Table 1. Characteristics of Study Participant

Participants	Sex	Age	Marital status	occupation	Educational level	The side of the body affected
Participant one	Female	60 years	Widow	Housewife	Nil	Right side
Participant two	Female	32 years	Married	Housewife	Bachelor degree	Left side
Participant three	Female	45 years	Married	Teacher	N.C.E	Right side
Participant four	Male	53 years	Married	Retired civil servant	Diploma	Left side
Participant five	Male	63 years	Married	Lecturer	Masters	Left side
Participant six	Male	80 years	Married	Retired civil servant	Elementary	Right side
Participant seven	Male	40 years	Married	Business	Islamic scholar	Left side
Participant eight	Female	47 years	Married	Teacher	N.C.E	Left side
Participant nine	Female	60 years	Widow	Business	Primary school	Left side
Participant ten	Male	65 years	Married	Business	Islamic scholar	Left side
Participant eleven	Female	47 years	Married	Lawyer	Bachelor degree	Right side
Participant twelve	Male	28 years	Married	Trader	Secondary school	Right side
Participant thirteen	Male	45 years	Married	Pharmacist	Bachelor degree	Left side

NCE = National Certificate of Education

Only 6 out of 13 patients fully adhered to the home-based exercises. The results obtained from this study were summarized in themes. Six themes present the perception of stroke survivors about the factors influencing their home-based exercise adherence. The first two themes described the factors motivating the stroke survivors toward better adherence to their home-based exercise program, while the four other themes described the barriers to adherence to home-based exercises.

Theme one: Motivation from Physiotherapist

About Exercise Importance

Participant 2 said *"I am more motivated when a Physiotherapist tells me about the importance of doing exercise"*

Patient 3 said *"I am motivated by the physiotherapist, I was doing the exercises before I came here, when I came here they taught me how to do it correctly and my husband also supported me in doing the exercises"*

Theme two: Family Support

About Concern and Happiness of the Family

Participant 11 said, *"I am motivated by my family, just seeing them gives me the will to do the exercises because I know they will be happy when I get better."*

The participant added that *"sometimes I walk around the house with my walking frame and my family are very happy to see me doing that and sometimes I stand up for about 30 minutes with my walking frame"*

About the Need for Physical Assistance from Family

Participant 3 said *"I do all my exercises when I have somebody to help me in doing my house cleaning and cooking"*

Participant 8 said *"I am motivated by the physiotherapist and when my children are around to help me with the exercises"*

Participant 5 said *"I do all my exercise when my children are around to help me with the exercise"*

Theme three: Time Constraint

Participant 12 said, *"lack of time is my major problem because I am hardly at home and I need to go out and find money to feed my family."*

Participant 5 said that *"one of the things that prevents me from doing my exercise is lack of time, because my children were the people that help me with the exercise and they are always in school".*

Theme four: Difficulty of Exercise

Participant 2 said *"The only thing that stops me from doing the exercise sometimes is tiredness"*

Participant 4 said *"I used to forget some of the exercises and sometimes I don't do the exercises because of the shoulder and finger pain that I felt most of the time"*

Participant 8 said *"more often I used to forget the exercises, pain also discourages me from doing the exercises (like fingers pain, shoulder pain and knee pain)"*

Theme five: Financial Constraints

Participant 12 said *"I can't do my exercises every day because I don't have anybody to support my family's needs so I have to go to the market and meet friends and see if they can help me with something to eat for me and my family"*

Theme six: Unwillingness to perform the home-based exercise

Patient 10 said that *"sometimes tiredness prevents me, from time to time I just don't want to do the exercise for no reason"* and *"occasionally I just don't feel like doing the exercise"*

Discussion

This study explored the factors influencing the adherence of stroke survivors to their home-based exercise from an in-depth interview. The level of patient adherence discovered in this study was low. A recent study conducted by Ogwumike et al, (2014) revealed that adherence was high, the authors found that 55.8% of stroke survivors were adherent and 44.2% were non-adherent. Other studies also reported higher adherence (Miller, 2009; Sluijs et al, 1993). The earlier studies were on low back pain, higher adherence might be related to the magnitude of recovery in musculoskeletal conditions, which is higher compared to stroke which takes longer recovery time due to its chronic nature.

Nine patients out of the 13 participants were motivated by the therapists. Patients were found to be motivated by the Physiotherapist to partake in their home-based program because they felt that the Physiotherapist had the right qualifications and would administer the desired exercises correctly (Laura et al, 2017). Some of the patients were motivated by their family. One patient reported that she was motivated by her family members. The appearance of her children was a motivating factor for adherence. A previous study has opined that adequate family support may improve the level of adherence by stroke survivors (Ogwumike et al, 2015). This is usually the case if such friends and family members were educated on the significance of the home program (Laura et al, 2017). The implication of family members is even more important, because patients perceived doing the exercises every day as a disruptor of daily life organization, this is the reason why sometimes patients give up on doing their home-based exercise (Laura, et al, 2017).

Patients' level of adherence to home-based exercises may be affected by pain. The pain most of the patients had during the exercises was thought to be due to

inappropriate mobilization of the body parts by the informal caregivers during the home-based exercise. Pain hampers physical function following a stroke (Badaru and Aminu 2020) and is a contributor to reduced physical activity (Kirstan et al, 2010).

According to the current study, some of the patients also reported that they easily got tired or experienced easy fatigability during the performance of the exercises which can impact willingness to do the exercises. It has been opined that feeling of fatigue during physical activities could be associated with residual muscle weakness and spasticity in stroke survivors (Ogwumike *et' al* 2014).

Lack of time is also a factor that leads to reduced patients' adherence to home-based exercises. Some of the patients in the present study reported that they had responsibilities usually paid jobs, which took a large chunk of their time. For example in the interview, two patients reported that lack of time affected their level of exercise adherence. One of the patients stated that if she would get someone to do the domestic chores for her, she would have the time to fully adhere to prescribed home-based exercises. It is worthy of note that some of the factors cited above (pain, tiredness, unwillingness, lack of time and lack of family support) may also arise when patients are not educated about the importance of therapeutic exercises to stroke recovery. Hence therapists are encouraged to educate patients about the importance of their home-based exercises so that they create time out of their schedules and carry them out.

Conclusion

In this study factors that influence adherence to home-based exercises in stroke survivors, were difficulty in performing exercise at home, financial constraints, lack of time, inadequate family support and lack of will. The higher the magnitude of some of these factors the higher the adherence. Motivating factors were Physiotherapists' encouragement and family support. Physiotherapists are to educate informal caregivers on their roles in helping stroke survivors achieve better home-based exercise adherence.

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