

Implementation of physiotherapy health education for caregivers and stroke patients

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Abstract

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Introduction: Globally, stroke stands as a prominent cause of mortality and a significant contributor to disability. The prevalence of stroke is expected to rise by 2030, exposing affected individuals to the risk of secondary complications. Lifestyle choices can further complicate this condition, potentially leading to prolonged hospitalization, substantial medical expenses, the loss of productive working years, and disability. In the context of managing stroke, physiotherapy emerges as a crucial intervention. Notably, the stroke caseload in Zambia has been on the rise (2020), yet there is limited information available on the methodologies employed by physiotherapists for health education at the University Teaching Hospital. This study aims to investigate the delivery of physiotherapy health education to stroke patients and their caretakers at the University Teaching Hospital in 2022.

Materials and Methods: Employing a qualitative study design with a case study approach, this research engaged physiotherapists, stroke patients, and caregivers as participants. Data collection involved Focus Group Discussions, and thematic analysis was applied to interpret the gathered information. Ethical clearance was obtained from ERES, the University Teaching Hospital, and the Physiotherapy Department.

Results: The study involved a total of 27 participants, comprising 8 physiotherapists, 10 stroke patients, and 9 caregivers. A noteworthy 80% (8 out of 10) of stroke patients received health education, while only 11.1% (1 out of 9) of caregivers received similar education. All physiotherapists (8) uniformly employed a one-on-one approach to deliver health education to both patients and caregivers.

Conclusion: The findings reveal that a substantial majority, 80% (8 out of 10), of stroke patients received health education, while a smaller proportion of caregivers (1 out of 9) benefited from such education. The unanimous preference among physiotherapists (8) for the one-on-one method suggests its effectiveness, particularly when integrated into treatment sessions. This approach ensures that education is seamlessly woven into the fabric of ongoing therapeutic interventions.

Keywords: *Physiotherapy, health education, stroke patients, caregivers, disability*

INTRODUCTION

Stroke stands as a global health challenge, being a leading cause of death and a significant contributor to disability worldwide [1]. Individuals who experience a stroke face heightened risk of secondary complications, influenced by lifestyle choices [2]. The abrupt onset of a focal neurological deficit lasting over 24 hours characterizes a stroke, also known as a cerebrovascular accident (CVA) or apoplexy. This neurological event can be ischemic (87% of cases) or hemorrhagic (13% of cases), with various etiologies, such as thrombosis, embolism, and micro-artery occlusion [3].

Stroke risk factors fall into modifiable (e.g., smoking, physical inactivity) and non-modifiable categories (e.g., age, heredity). Despite being commonly associated with the elderly, strokes can affect individuals aged 15–44, posing risks of long-term disability and considerable healthcare costs [4]. Prevention and management of stroke rely heavily on patient education, aiming to identify and control risk factors for better prognoses [5].

Health education, a fundamental component of stroke prevention and management, involves conscious opportunities for learning, aiming to enhance health literacy and empower individuals to take actions that improve their health outcomes [6]. In the context of stroke, health education covers aspects like basic stroke information, preventive measures, nutritional education, and functional education. Despite its importance, limited health education remains a barrier to effective healthcare delivery, resulting in profound costs to individual and public health.

In Africa, the burden of cardiovascular disease is on the rise, with cardiovascular disease projected to surpass communicable diseases as the leading cause of death by 2030 [7]. However, integrated primary healthcare programs for cardiovascular disease prevention and early detection are often lacking in low and middle-income settings, leading to late detection and premature deaths [8]. In Zambia, stroke cases are increasing, and healthcare services are fragmented, inefficient, and unevenly distributed, particularly in rural and peri-urban areas [9]. This study focuses on methods employed by physiotherapists at the University Teaching Hospital (UTH) in Zambia to deliver health information to stroke patients, aiming to address a gap in knowledge and improve patient outcomes.

MATERIALS AND METHODS

Study Design

This study employed a case study approach, delving into the experiences of physiotherapists, stroke patients, and caregivers. Conducted at the University Teaching Hospital in Lusaka, Zambia, this study focused on the largest public tertiary hospital in the region. UTH, boasts 1,655 beds and plays a crucial role in training medical students, nurses, physiotherapists, and other health professionals.

Sample

The target population included stroke patients, caregivers, and physiotherapists. A total of 27 participants were enrolled, comprising 10 stroke patients, 9 caregivers, and 8 physiotherapists, reaching a saturation point in each category.

Stroke patients undergoing physiotherapy at UTH between May, August, and October 2022.

Stroke patients, caregivers, and physiotherapists who consented and were available during data collection.

Physiotherapists with more than five years of experience at UTH.

Purposeful and convenience sampling methods were employed. Participants were selected based on willingness and availability. Three focus group discussions were conducted for each category of participants.

A total of 27 participants were interviewed using a convenience sampling method.

Data Collection

Data was collected through focus group discussions over three weeks. Six focus groups, two for each category of participants, were conducted and the minimum time taken to conduct a focus group discussion was at 15 minutes. Stroke patients/caregivers who had attended physiotherapy sessions for at least five times were selected to take part in the study. A question guide was used to collect data and participants' responses were recorded using a cell phone for subsequent analysis.

To ensure credibility, the researcher meticulously identified participants, framed relevant questions, and conducted peer reviews of transcribed information. Continuous checks and edits were performed during and after data collection, involving participants in confirming interpretations during familiarization.

Data Analysis

Firstly, all audio interviews were transcribed verbatim, capturing the nuances, emotions, and nuances expressed by the

participants. This transcription phase served as the foundation for subsequent analysis, providing a textual representation of the spoken words and allowing for a closer examination of the content. The next step involved the generation of descriptive categories and themes that corresponded to the specific research objectives. Through an in-depth review of the transcriptions, recurring patterns, concepts, and topics were identified and organized into meaningful categories. This process facilitated the extraction of key information relevant to the study's focus on the methods employed by physiotherapists in delivering health education to caregivers and stroke patients.

The identification of these categories laid the groundwork for the coding phase, where each category was systematically assigned a code to represent its essence. Coding, in this context, involved labeling and categorizing segments of data, allowing for the systematic organization of information. This step was crucial for simplifying the complexity of the data and facilitating the recognition of overarching patterns and connections.

Once the coding process was complete, the subsequent step was to describe these coded themes in a narrative form. This narrative approach involved providing a comprehensive and coherent account of the identified themes, elucidating their significance and relevance to the research questions. The narrative not only synthesized the findings but also offered a contextual understanding of the methods utilized by physiotherapists in delivering health education. The concurrent nature of data collection and analysis was advantageous as it allowed for an iterative and dynamic process. Insights gained from the initial analyses informed subsequent data collection, creating a continuous feedback loop that enriched the depth and breadth of the study. This methodological approach contributed to the credibility and trustworthiness of the findings, ensuring that the interpretation and representation of data were grounded in the participants' voices and experiences.

RESULTS

Participant's demographic characteristics

A total of 27 participants engaged in the study, comprising 10 stroke patients, 9 caregivers, and 8 physiotherapists. This section delineates the demographic features concerning age and gender, with females constituting 77.78% (n=21) and males 22.22% (n=6) of the total participants. The age spectrum ranged from 27 to 65 years, encompassing a diverse group. All

participants willingly contributed to the study through focus group discussions, and their responses were meticulously recorded for subsequent analysis.

Emerging Themes

Narrative Overview of Main Themes and Sub-Themes

In the exploration of the experiences of patients and caregivers regarding stroke, two main themes emerged, shedding light on their understanding of the condition and their knowledge about health education in relation to stroke.

Understanding of Stroke by Patients and Caregivers:

Definition:

Within this theme, participants delved into their comprehension of stroke, articulating what the term meant to them. Definitions ranged from medical interpretations to personal insights, reflecting the diverse ways individuals conceptualized this health condition.

Causes:

The sub-theme of causes elucidated participants' awareness of the factors contributing to stroke. Insights into the origins of stroke, encompassing aspects such as lifestyle choices, medical conditions, and external factors, provided a comprehensive understanding of the perceived causative elements.

Knowledge about Health Education in Relation to Stroke:

Physiotherapy Role:

Under this theme, participants shared perspectives on the role of physiotherapy in the context of stroke management. Physiotherapists were acknowledged as instrumental in the rehabilitation process, guiding patients through exercises, offering support, and playing a crucial role in the overall recovery journey.

Methods of Delivery:

The sub-theme of methods of delivery explored the various ways health education was conveyed to stroke patients and caregivers. Whether through personalized interactions, group sessions, or digital means, participants discussed the diverse methods employed by healthcare professionals to impart essential information about stroke and its management. As shown in Table 2, in essence, these main themes and sub-themes provide a nuanced

understanding of the perceptions and insights held by patients and caregivers regarding stroke. The multifaceted nature of their comprehension, coupled with the acknowledgment of healthcare

roles and educational methodologies, underscores the complexity and importance of effective communication in the realm of stroke care.

Table 1: showing the emerging themes and sub-themes that were relevant to the study.

Main Themes	Sub-Themes
Understanding of Stroke by Patients and Caregivers	- Definition – Causes
Knowledge about Health Education in Relation to Stroke	- Physiotherapy Role - Methods of Delivery

Understanding of stroke by caregivers and stroke patients

A total of 63.2% (n = 12) out of 19 were able to define stroke and its causes as a recognized medical condition. The majority of respondents (73.68%, n = 14) admitted to learning more about stroke from doctors, social media, and physiotherapists; 21.05% (n = 4) had no idea what stroke was or what causes it.

Caregivers understanding of stroke

Caregiver 6

"Yes, I have come to learn about stroke because of mum, the morning she got ill we to her to the

clinic and I was told she had stroke. So, I decided to google more about stroke. With what the doctor said it all made sense to me"

Caregiver 8

"I don't know what stroke is, I remember once my aunt saying it's a disease for rich people, it was when my uncle was sick in the city and aunt had to travel to come and take care of him"

Stroke patients understanding of stroke

"Yes, physiotherapists from UTH sat me down, on the first day they asked me if I knew the problem I had, I told them what the doctors told me and the little information I knew about stroke" one of the patients explained.

"It is caused by a number of factors, poor diet, lack of exercises, high blood pressure all those can cause one to have stroke, we need to eat health cooked food not food with a lot of salt and fat"

Education of stroke patients and caregivers by physiotherapists

One of the goals of this study was to see if physiotherapists provide health education to stroke patients and caregivers. During the focus group discussion, 10 out of 19 participants (52.6 percent) were stroke patients, while 9 participants (47.4 percent) were caregivers. Only 9 of the 19 participants received some form of health education, while 10 did not receive any form of health education on stroke while visiting the physiotherapy department, either for treatment or caregivers accompanying relatives for treatment. It was noted that the majority of the participants who received education were stroke patients: 8 out of 10 stroke patients, while only 1 out of 9 caregivers had received health education about stroke.

"At first, I had no idea what a stroke was or how it happened, but since my husband's illness, I've learned a lot from doctors and here at physio, including the importance of coming to physio and changing your diet."

one of the caregivers 1 explained.

Another stroke patient added during the focus group and explained *"Sometimes they force us to do group exercise; during such sessions, they also teach us about stroke and how we can take care of ourselves; since I started coming here, I have reduced my salt and sugar intake; and the things I learned here have helped stabilize my blood pressure."*

It is important that stroke patients are educated on their actual condition so that they are able to make

healthy decisions regarding their health.

Caregiver 2

"No, the physiotherapist here has never taught me or educated me on the condition my sister has; I don't remember receiving any lessons." Most of the time we just bring her for treatment; they don't even allow us to see; we sit by the bunches.

Caregiver 3

"No, I have never received any lesson of any kind; they chase us from the treatment room, and we sit by the bunches...No one told us what to do at home; we just do it on our own by watching YouTube videos."

Methods used to educate caregivers and stroke patients

The majority of participants (physiotherapists) had some similarities in their answers concerning the methods of delivery of health education to stroke patients and caregivers. Out of the eight respondents, 7 said they used one-on-one method of education during treatment sessions. However, 1 out of the 8 stated that sometimes he uses his phone for the education of his clients (caregivers and stroke patients).

"Sometimes you get so attached to the patient, you end up calling them just to find out how they are recovering, and before you know it, you are giving advice on how to maintain BP." One of the physiotherapists.

Another physiotherapist added,

"We use face-to-face education. After getting the information about the patients from the file, it's easy to give advice to patients on what they can be doing at home, precautions to take, diet, and so on, depending on the cause of the stroke... We also encourage them to check their BP before coming for treatment and make sure they take BP drugs at the right time."

"Yes, I do educate my clients. Most of the time, patients ask questions like, "Will I be able to walk normally again?" In the process, you end up telling them the negative effects of the condition they have and the positive side of coming for physio." The other participants added, "Who is going to buy talk time to call patients?" The department does not provide talk time, so we use one-on-one, which can easily be administered to patients during treatment sessions.

DISCUSSION

The findings of this study reveal a nuanced landscape of knowledge and education regarding stroke among participants at the University Teaching Hospital (UTH). While a majority demonstrated a commendable understanding of the condition, disparities in the provision of health education were evident, particularly between stroke patients and caregivers. The participants' awareness of stroke and its causes resonates with existing literature, highlighting the influential role of healthcare professionals in disseminating information. This aligns with a study by Saywell et al. (2020) [10], emphasizing the impact of healthcare providers on caregivers' knowledge of cerebrovascular accidents. However, it's crucial to recognize the global disparity in stroke knowledge, as indicated by Day et al. (2018) [11], where stroke/TIA patients in Hunan Province, China, exhibited poor knowledge.

The study brings to light a critical gap in health education at UTH, with only a portion of participants, especially stroke patients, receiving information during their visits. The active involvement of physiotherapists in managing stroke patients at UTH presents a unique opportunity for education. Patients, keen on understanding their health, actively seek information, creating a conducive environment for knowledge exchange. This finding aligns with studies by Faiz et al. (2018) and Eames et al. (2013) [12,13], highlighting the positive impact of tailored education and support packages on stroke patients' self-efficacy and satisfaction.

However, a significant concern arises regarding the limited education provided to caregivers, echoing Day et al.'s study (2018) [11]. Insufficient information about stroke leaves caregivers unprepared, impacting their ability to manage challenges and diminishing their overall quality of life, as indicated in previous research [14, 15]. Due to lack of proper health education of caregivers, majority of patients with stroke may not improve and their quality of life may be reduced, this is possible because caregivers spend most of the time with stroke patient and should have basic knowledge on how care for their relatives. Further studies are needed in the area of health education and should focus on the negative impact of poor knowledge among caregiver of stroke patients.

The methods employed in educating stroke patients and caregivers at UTH primarily involve face-to-face interactions and, to a lesser extent, phone calls. The efficacy of face-to-face communication aligns with studies like Eames et

al. (2013) [13], emphasizing its effectiveness in delivering education. However, the constraint of phone call education due to insufficient airtime suggests potential barriers that need addressing.

In contrast, the study's findings deviate from Chan et al. (2015) [16], where a combination of video, brochures, and one-on-one teaching was considered effective. These disparities highlight the need for context-specific approaches in stroke education, considering the unique challenges and resources of the healthcare setting. Chuni et al.'s investigation is particularly relevant as it provides insights into the broader landscape of caregiving in a community setting. While their study focuses on aging-related health conditions, the implications and parallels with stroke care are evident. In both instances, caregivers play a pivotal role in providing support, navigating healthcare systems, and enhancing the overall well-being of individuals facing health challenges [17].

An essential intersection of our findings with Mpemba et al.'s work lies in the recognition of the diverse nature of stroke disabilities. As caregivers play a pivotal role in assisting stroke survivors, understanding the nuances of physiotherapy outcomes becomes paramount. The quantitative assessment offered by Mpemba et al. helps quantify the varying degrees of disability and provides caregivers with a more comprehensive understanding of the potential outcomes of different physiotherapeutic interventions [18].

This study illuminates the intricate dynamics of stroke knowledge and education at UTH. While the majority of participants exhibited commendable awareness, the disparities in education provision, particularly to caregivers, underscore the importance of targeted

Our study illuminates the landscape of stroke knowledge and health education practices at the UTH in Lusaka. Given the global significance of stroke as a health concern, effective education strategies for patients and caregivers are paramount for optimizing outcomes. The results indicate a commendable level of understanding among participants, largely attributed to the active involvement of healthcare professionals, particularly physiotherapists, in disseminating information.

interventions. The study advocates for comprehensive education methods, tailored to the needs of both patients and caregivers, ensuring a continuum of care beyond the hospital setting. Addressing barriers to education, such as airtime constraints, is crucial for enhancing the effectiveness of health education initiatives. Our study complements Chiluba and Mwansa's work by providing qualitative insights into the lived experiences of stroke survivors and their caregivers. While their research contributes to the technical understanding of gait disabilities, our exploration adds a humanistic dimension by unraveling the psychosocial and caregiving aspects associated with gait impairments post-stroke [20].

This is the first study whose aim was to explore the integration of health education in physiotherapy stroke management at the University Teaching Hospital, the greatest barrier faced was the fact that this type of a study is time consuming, secondly the nature of the study was equally a limitation, in that this meant stroke patients and caregivers had to remember what they had learnt. Apart from that, during data analysis, language barrier was a major challenge faced, some patients and caregivers could not understand English, this made it difficult translate the data accurately. Furthermore, lack of money to finance the research was a big constraint.

CONCLUSION

Understanding postnatal care is crucial for maternal and newborn outcomes, especially for younger, more vulnerable mothers. Raising awareness of postnatal care is likely to boost understanding among this delicate group and is highly likely to enhance good attitudes and practices about the topic.

However, a significant gap emerged in caregiver education, revealing a potential oversight in the continuum of care. While stroke patients benefit from engaged interactions with physiotherapists during treatment, essential post-hospitalization caregivers receive limited information. This echoes global concerns about the unpreparedness of caregivers, impacting their ability to navigate the challenges of stroke management at home.

While face-to-face interactions remain effective in educating stroke patients, our study

highlights challenges in phone call education due to airtime constraints. This underscores the necessity for tailored approaches within the healthcare setting.

Advocating for a holistic education approach at UTH, it is imperative to address the caregiver education gap. Tailoring comprehensive and context-specific education methods, while overcoming barriers like airtime constraints, will contribute significantly to improved stroke management outcomes. Our findings emphasize the ongoing need for refined health education strategies, ensuring that both stroke patients and caregivers are equipped with the knowledge and skills necessary for optimal recovery and long-term well-being. Sustained efforts in this regard will not only strengthen healthcare delivery but also enhance overall stroke care at UTH, fostering a comprehensive and supportive environment for those affected by stroke

DECLARATION

Competing interests There were no competing interests from all authors in this study.

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