


The Burden Experience of Formal and Informal Caregivers of Older Adults With Hip Fracture in Nigeria

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Abstract

Introduction: The incidence of hip fracture among older adults in Nigeria is on the rise. As a result, there is increased frequency of hospitalization, patient suffering, family burden, and societal cost. One dimension that has not been sufficiently explored is the burden of care experienced by informal and formal caregivers.

Objectives: To describe the care burden experience of informal and formal caregivers for older adults with hip fractures in a specialized orthopedic center in Nigeria and to explore in detail how their experience differs in caregiving roles.

Method: This study was conducted in the phenomenological approach of qualitative methods. Face-to-face interviews and focus group interaction with 12 family caregivers and 5 health-care professionals were carried out until data saturation was achieved. Data were analyzed using thematic analysis.

Results: The physical, emotional, and general health of elderly hip fracture patients are issues that affect caregiving. Factors that contribute to increased caregivers' burden include system factors (lack of personnel and health-care facilities) and patient factors: comorbidity, patient's cognitive status, and challenges completing activities of daily living (ADL). Social and financial barriers to care contribute to the type of burden experienced by the participants.

Conclusions: Caregivers experience difficulty in helping patients complete their ADL because patients with hip fracture have mobility issues that are often complicated by comorbid physical and cognitive problems. Strategies to reduce caregivers' burden for older adults with hip fracture in Nigeria are needed. Greater access to health-care services and ADL aids, and training of caregivers on how to deal with cognitive and multimorbid health problems are potential solutions.

Keywords

hip fracture, burden experience, caregivers, older adults, Nigeria

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Introduction

Hip fracture in later life has been predicted to be a potential public health issue all over the world, including many developing regions like Africa (Cooper et al., 2011; Morrin & Jarrin, 2013; Sterling, 2011). In Nigeria, there is evidence of a rise in the incidence-rate of hip fractures among the older adults; for example, Adebajo, Cooper, and Evans (1991) reported an incidence of 2.1 per 100,000 men and 2.0 per 100,000 women at 50 years in Ibadan, while Jervas,

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Onwukamuche, Anyanwu, and Ugochukwu (2011) reported 10% and 17.38% incidence of hip fracture for men and women, respectively, aged more than 50 years in Owerri. This sudden rise in incidence rates is likely to come with increased hospitalization, financial burdens to family, overuse of the countries health resources, and suffering for older adults with hip fractures (Zamora, Klaber, & Urrutia, 2017). However, social factors like caregivers' burdens have been overlooked by society when compared with other factors that could affect hip fracture survivors. A study showed that a surviving 56% of older adults with hip fracture sustained disabilities that left them dependent on their caregivers for activities of daily living (ADL; Bentler, Liu, & Obrizan, 2009). It is not surprising that the caregiver's burden is currently identified as an area of priority for research (Auais, French, Beaupre, Giangregorio, & Magazine, *in press*; Canadian Institute of Health Research, 2013; Cheng, 2017).

The caregiver's burden is defined as the physical, psychological, emotional, social, and financial problems that can be experienced by individuals providing care for ill or disabled persons (Ankri, Andrieu, Beaufiles, Grand, & Henrard, 2005). Caregivers can be formal and informal. Formal caregivers are health-care professionals (HCPs) including nurses, personal support workers, rehabilitation specialists, and physicians who, according to the legislature of society, are paid for the care and support they provide to the patients or clients (Ku, Liu, & Wen, 2013). Informal caregivers are relatives, friends, or neighbors who provide unpaid practical support either on a daily basis or at least twice a week to an older adult (Gupta, 2009; Lethin et al., 2016; Savage & Bailey, 2004; Shiba, Kondo, & Kondo, 2016).

Across literature, the caregiver's burden oftentimes refers to the informal caregiver's burden; hence, there is limited literature that discusses or measures formal caregiver's burden. Moreover, the caregiver's burden has been widely studied across other chronic conditions associated with aging. Many of these chronic conditions have a progressive course which extends for many years, producing patient and caregiver changes that are often perceived as a burden in a different aspect. These patterns have contributed to producing strategies that help combat these burdens. However, little is known about the burden pattern of formal and informal caregivers that manage older adults with hip fracture in the context of a developing nation like Nigeria. Therefore, understanding the burden experiences of caregivers of older adults with hip fracture is warranted and timely in the developing contexts.

As early as the 1990s, there was evidence from studies on caregivers' burdens in older adults with hip fractures. Bundeck (1996) reported that burdens on family caregivers of hip fractures in older people are associated

with stress syndrome, depression, and some impact on their social relations. Subsequently, Lee and Wu (1998) developed a caregiver's scale that conceptualized the caregiver's burden into four main domains: physical, psychological, social, and financial characteristics. These domains provide a conceptual framework on which other researchers reported the burden experienced by those providing care to older adults with hip fractures. For instance, Morimoto, Schreiner, and Asano's (2003) findings indicate that those providing care to older adults with hip fractures reported a low level of health-related quality of life. Similarly, Eleuteri, Bellanti, and Falaschi's (2016) preliminary findings showed significant correlations between patients' psychological wellbeing and their relative caregivers, whereas Siddiqui et al. (2010) reported financial problems resulting from health problems as a major stress factor for family caregivers.

Furthermore, the Stress Process Model by Pearlin, Mullan, Semple, and Skaff (1990) conceptualizes caregivers' burdens as a dynamic process that results from a large number of factors, organized into four domains: (a) background characteristics of the caregiving context, (b) stressors, (c) mediators of stressors, and (d) outcomes or manifestations of stressors. This model provided a conceptual framework for our study.

While it seems that there is much evidence on the caregiver's burden, the majority of the findings were conducted in the context of developed countries, thereby making the applicability of these findings a challenge in the developing nations. Moreover, most of the studies seemed to explore only care burdens experienced by informal caregivers, often ignoring the fact that even though formal caregivers (social professionals and HCPs) are paid caregivers, they also experience burdens that could affect the quality of care they provide to patients. Therefore, the lack of exploration of the experiences of formal caregivers for older adults with hip fractures is important for the provision of adequate care for older adults. This study attempted to fill this gap in understanding the experiences of the informal caregivers and HCPs in the developing contexts. This is important because there are the benefits of collaborative-partnership in care provision between formal and informal caregivers (Gupta, 2009; Lethin et al., 2016; Savage & Bailey, 2004; Toscan, Mairs, Hinton, & Stolee, 2012). We believe that it is not only timely but necessary that we provide evidence that will stimulate discussion on caregiver burdens in the developing nations' context. Therefore, this phenomenological study aimed to describe the care burden experience of informal and formal caregivers for older adults with hip fractures in a specialized orthopedic center in Nigeria and to explore in detail how their experience differs in the caregiving roles.

Method

Study Design and Context

This phenomenological study aimed to describe the care burden experience of informal and formal caregivers for older adults with hip fractures in a specialized orthopedic center in Nigeria and to explore in detail how their experience differs in the caregiving roles.

This study was conducted at one of the hospitals in the southern part of Nigeria, with about 250 hospital beds that cater for upper and lower extremities surgery including, but not limited to, knee, hip shoulder, and ankle surgery. The approach to care in the hospital is patient-centered within the multidisciplinary practice of care. On average, the hospital performs over five surgeries in a day of which hip and knee replacements constitute the highest proportion. Ethical approval was obtained from the Ethics for research Governance Committee at the University of Southampton, United Kingdom, and the Hospital Research Board.

Recruitment

A purposive sampling strategy was adopted to recruit participants for this study. To recruit informal

caregivers, pamphlets containing the study aims, benefits, and the contact details of the lead author were posted on the hospital notice boards. Any informal caregiver interested in participating in this study was asked to contact the lead author. To be included in the study, the informal caregiver must have been identified by the older adults (≥ 65 years) with hip fracture as his or her primary caregiver, providing unpaid care and assistance to them for at least 6 months. Twenty-three informal caregivers indicated interest to participate; however, data saturation was reached after interviewing only 12 informal caregivers. Ten formal caregivers, referred to as health-care professionals (HCPs), were approached. However, only five HCPs gave their informed consent to participate in the focus group discussion (FGD; see Table 1). The sample size ($N=17$) was within the recommended range for a phenomenological study (Creswell, Hanson, Clark Plano, & Morales, 2007).

Data Collection

Prior to being interviewed, the study aims, risk, and benefits of participation as well as confidentiality, anonymity, and participants' rights to withdraw at any time

Table 1. Demographic Information of the Participants.

Sex	Age (years)	Occupation or profession ^a	Relationship to the patient or years of experience
Informal caregiver			
Female	48	Business woman	Spouse
Female	35	Civil servant	Daughter
Female	58	Business woman	Spouse
Female	42	Teacher	Daughter
Male	34	Self-employed	Son
Female	27	Unemployed	Friend
Female	57	Trader	Spouse
Female	67	Retired teacher	Spouse
Male	63	Pastor	Spouse
Female	60	Retired nurse	Spouse
Male	34	Self-employed	Son
Female	57	Trader	Spouse
Formal caregivers (health-care professionals)			
Female	25	Registered nurse	4
Female	25	Registered nurse	5
Male	34	Physiotherapist	8
Male	33	Orthopedic surgeon	5
Female	36	Orthopedic nurse	7

^aOccupation and profession for informal and formal caregivers, respectively. Informal and formal caregivers who provide unpaid and paid care or assistance to the patients, respectively.

were explained to the participants. In addition, informed consent was obtained from all participants prior to interviews. All participants were interviewed face-to-face using an open-ended semistructured interview guide developed by the researchers (see Appendix for formal and informal caregivers). A pilot interview session was conducted to determine the approximate time of the interviews, reflect on the wording of the questions, and develop strategies to deal with sensitive areas. However, the data obtained during the pilot study were not included in the analysis. Informal caregivers were interviewed individually at their chosen location. Interviews were audio-recorded and lasted between 45 min and 60 min. Formal caregivers (HCPs) were interviewed at the hospital premises using a FGD format that lasted for 90 min.

Data Analysis

Data were analyzed inductively using thematic analysis (Braun & Clarke, 2006). Interviews from both the individual interviews and FGD were transcribed verbatim. The transcripts from the individual interviews and the FGD were coded separately by multiple coders. Each of the coders independently developed the initial code, categories, and themes. At each phase, the coders met to discuss the codes and themes generated. Any disagreement was resolved at the group research meeting building on the clinical and research experiences of the researchers. Audit trails were maintained using reflexive notes and codebooks during interviews. Data analyses software NVivo™ 11 was used to manage data and identify coding patterns and themes.

Results

The codes, categories, and themes were generated from the individual interview process of 12 informal caregivers and a focus group of 5 HCPs giving a combined total of 17 participants (see Table 1).

Two major themes with corresponding sub-themes and categories emerged from the data (see Table 2). The major themes and subthemes with selected support quotes (from either the focus group or individual interviews) are presented in this result section. Presented are both the diverging and converging theme from both the individual interviews (IP) and focus group discussion (FGD-P).

Theme 1: Burden Types

Burden types are the different categories of stress that emerged from the transcripts. There were lots of overlapping themes from informal caregivers and HCPs. The subthemes include health and emotional stress.

Table 2. Categories, Subtheme, and Theme Generated.

Theme	Subtheme	Categories
Type of burden	Health stress	<ul style="list-style-type: none"> • Musculoskeletal injuries (e.g., low back pain) • Physical exhaustion
	Emotional stress	<ul style="list-style-type: none"> • Mental exhaustion • Depression • Anxiety
Factors influencing burden	Patient-related factors	<ul style="list-style-type: none"> • Patient's comorbidity • Patient's awareness status • Patient's ADL needs • Patient's cognitive status • Patient's care stage
	System-related factors	<ul style="list-style-type: none"> • Low number of specialized HCPs • Inadequate facility
	Context-related factors	<ul style="list-style-type: none"> • Social-related factor • Financial relates factor

Note. HCPs = health-care professionals; ADL = activities of daily living.

Health stress. Informal caregivers stated that caring for older adults after hip fracture affected their health conditions. They felt their health status had deteriorated because they spent sleepless nights caring for their relatives. Similarly, various physical stressors presenting as a musculoskeletal injury (e.g., low back pain) and physical exhaustion were described by the participants. Participants described that manually lifting heavy patients often involved constant bending and twisting during procedures that contributed to the musculoskeletal injury. The health-related stress was described by both HCPs and informal caregivers; however, the informal caregivers related it more when helping patient's ADL as described in the following two quotes:

I have back pain. I think it started because of the awkward positions I took most of the time while in the hospital looking after her. I am on physiotherapy twice a week because my back aches also, body pains. (Male, 34 years, IP)

One of the most difficult aspects is the bed bath; this is because I remain in a bending position for up to 30 min cleaning the patients. The worst is that I do that for many patients I mean up to 8 or more, after that you still have to lift your patients during transfer, from bed to sit, the lifting causes a lot of problems to our lower back. (Participant 1, FGD-P)

Emotional stress. Experiences of mental exhaustion, depression, and anxiety were examples of the emotional stress reported by the HCPs and informal caregivers. The participants expressed these experiences as unpleasant

and very detrimental to their own health as a caregiver. This theme emerged more from the informal caregivers; however, the HCPs expressed that informal caregivers' emotional stress appeal to the empathy they have as health-care providers.

It is really a very difficult situation for us health workers, even though we are not directly affected emotionally, but seeing how some of the relatives feel about their loved ones, always make me think excessively on how to help, oftentimes, we are overtaken by this emotions that it incautiously affects our duty as nurses. This is even worst, when the patient's condition is not improving as expected. (Participant 2, FGD-P)

Theme 2: Factors Influencing Burden

This theme explained the factors that cause or trigger the health and emotional burdens. The factors were subdivided into three: patient-related, system-related, and context-related factors. Each of these subdivisions has its specific examples as outlined in Table 2.

Patients-related factors. Aside from the already existing condition that often leads to hip fracture, some older adults have other medical conditions that coexist within the health spectrum. HCPs reported that comorbidity often increases the stress associated with managing hip fracture. Specifically, the formal caregivers expressed frustration and physical exhaustion when caring for patients with hip fracture and other conditions like high blood pressure, diabetes, and obesity. Participants stated that it is more frustrating when medical teams realize that older adults have some conditions that hinder the healing process. One of the participants clearly articulated this in the following statement:

Most older adults or their relatives do not report all the medical conditions they have when asked at the initial assessment because they [older adults or relatives] believe that telling a health-care professional all the medical condition will attract more medical bills...so they [patient or older adults] keep all these conditions away from us. Oftentimes, we found out these comorbidities very late...it could be frustrating you know... (Participant 3, FGD-P)

Both HCPs and informal caregivers described that the state of the patient (conscious or unconscious) influenced the amount and level of stress experienced. Participants believed that compared with someone who is unconscious, taking care of fully conscious older adults after hip fracture was much easier. HCPs expressed that the state of awareness—time and space—of the patients have

effects on their general health and practice. For instance, the physiotherapists and nurses were concerned about the hourly repositioning of the unconscious patients, which required more energy, caution, and time. On the other hand, the informal caregivers were more concerned about the emotional stress they suffer when their relatives (patients) are lying unconscious.

Immediately after she had the accident, I was afraid and was very worried because she was unconscious, after that, I spend sleepless nights in the hospital for close to 2 weeks watching over her... At this time, I don't mind lifting her or repositioning her as often as possible... But I am so much interested in seeing her open her eyes and talking to us. (Female, 57 years, IP)

Similarly, patients' cognitive status influences the level of stress associated with caregiving. Participants unanimously described that a care recipient's cognitive status hinders communication either in following instructions, during a therapy session or nursing care. This is worse when a client develops delirium after surgery. Patients developing delirium after surgery do not only require care but also create emotional stress for relatives, who are oftentimes informal caregivers. As one participant (HCPs) noted "Delirium has been a major issue in this hospital and we have followed evidence-based measures to counter the effect of these conditions on both the health-care professionals and relatives." This quote supports the statements about communication barrier as a result of patient's poor cognition:

We really struggle to communicate with some clients because they developed delirium after surgery. Most of the time, the physiotherapist assessment shows that the clients can walk with support. However, we can't initiate that because the patients can't even follow instructions... I particularly observe how this delirium affect the relatives [often the informal caregiver], the relatives feel emotionally depressed seeing that their loved ones were "okay" before surgery but can't even communicate well after surgery... (Participant 5, FGD-P)

Informal caregivers reported that immediately after being discharged from the hospital, the level of assistance their care recipient needed to carry out ADL made them care bound. A couple of respondents said that because they were care bound, they suspended their business temporarily, which invariably caused more stress and a burden on the family. However, the level of assistance the patients needed to carry out ADL reduces after hospital discharge, as stated by one participant:

Immediately my father was discharged home, I had to take a month-compassionate leave without pay... this

decision reduces my income, thereby affecting my ability to pay some of my father's medical bills owned... That 1 month was very difficult for me, I even hurt my back, because I was doing everything for him... transferring him to bed, out of bed, bathing him... However, it became easier as the physiotherapist advice for him to start bearing partial weight. (Female, 35 years, IP)

System-related factors. System-related factors including inadequate facilities and specialized manpower (HCPs) for hip fracture management in Nigeria were identified as a contributor to the stress associated with hip fracture care. There are few HCPs that specialized in the care of hip fracture patients and this is the only facility that has the capacity to perform hip or knee surgery in this area of southern part of Nigeria, said one of the HCPs. Most of the HCPs expressed that the dependency of the populace on them makes them work overtime, with less pay and increase musculoskeletal injury. The following excerpts explain more:

When there are only two physiotherapists serving a 250-bed hospital, it is a big issue, we try our best to meet up, but we can't always meet up because, apart from our physiotherapy role, we also alternate the administrative responsibility of the department, meaning that most times, only one physiotherapist take care of the patients... this is contributing to fatigue... and stress. This is a huge factor that other professionals also noticed and complained. (Participant 3, FGD-P)

The fact that clients from every part of southern Nigeria are received here makes the work very demanding. we are just two orthopedic doctors here in this hospital and most times we carry out more than five surgeries in a single day, some surgeries last up to 10 hr... and I often stay in a particular position for a long time... The working condition is not as favorable as it should be, but we have to care for our patient... (Participant 5, FGD-P)

Context-related factors. We defined the context-related factors as factors that relate to social and financial issues. All the informal caregivers expressed their concern about how societies perceive caring for loved ones. For instance, the provision of care is socially perceived a feminine role. As such, females are expected to adopt the care giving role in the family which often encourages male irresponsiveness as it relates to the provision of care. As one male participant noted "It is the role of a woman to do the nursing care at home and not a man." Also, contracting the care to professionals like social workers was seen as both disrespectful to the care recipient and family members. As a result, females are

expected to care for their loved ones, especially if it is a spouse with conditions like hip fracture.

Everyone expect me to care for my husband because it is my duty and even though it is stressing me out, nobody really cares and even if I can afford to pay a social worker to come in and help, my in-laws will not be happy with me. My in-laws believe that is my job to do it, so in order to avoid problems, I have to manage even with my age. (Female, 60 years, IP)

The financial-related factor was viewed differently by the HCPs and formal caregivers. HCPs complained that working long hours impacts their health. The most troubling part was the absence of financial compensation for working these long hours. HCPs compassionate approach to caring for older adults with hip fracture often makes it difficult for them to quit their job. This compassionate care is often informed by the financial complaints of relatives (informal caregivers) of the older adults with hip fracture. These financial complaints were a central theme among all informal caregivers as medical bills were paid out of their pocket with no insurance either from the government and or employer:

We don't have any help from anywhere [from the government], we pay everything out of pocket... Most importantly, my father's condition was sudden and you know things are in this country, we didn't plan it and there is no insurance... So, this out of pocket pay has strained everyone in my family... this is even more of a financial burden than physical burden... we can share caring responsibility, but we must buy some stuff (pampers, drugs) for him and this requires money and we don't have any more... (Male 34 years, IP)

Discussion

This study sought to describe the burdens experienced by caregivers of elderly hip fracture patients in Southern Nigeria. Although there is literature that has explored the burden experienced by caregivers providing care to older adults with hip fracture, our findings bring a different perspective from the developing nation's context. Our study concurrently explored the experiences of both HCPs and informal caregivers and provides a rich understanding of how their experiences differ. Even though two common themes emerged as the major categories of burden experienced by HCPs and informal caregivers, it was interesting to know that some distinct factors influenced each group's perception of burden in their role of providing care for elderly hip fracture patients.

Our study findings indicate that HCPs were constantly exposed to health-related stressors that resulted

in musculoskeletal dysfunctions, often from physical exhaustion. This finding agrees with other findings in the literature that have identified the prevalence of work-related musculoskeletal injuries among similar HCPs in Nigeria: nurses (Tinubu, Mbada, Oyeyemi, & Fabunmi, 2010), physiotherapist (Adegoke, Akodu, & Oyeyemi, 2008), and among surgeons in other parts of the world (Szeto et al., 2009). The inherent factors that predisposed HCPs to health-related stress slightly differed from those identified by informal caregivers in our study. For example, all HCPs indicated that treating older adults with hip fractures immediately after surgery (postsurgery rehabilitation) was physically burdensome. They noted that patients' levels of awareness and the presence of secondary comorbidities immensely influenced the amount of effort they needed to cater for them. This fact should not come as a surprise as it can be related with the evolving-structure health system in Nigeria, which often is characterized by poor health-care facilities, and lack of adequate and specialized HCPs. The World Health Organization reports a 0.376 per 1,000 population doctor-to-patient ratio in Nigeria for general practitioners; therefore, it is likely that geriatric orthopedic consultant or surgeon ratio to patient is poor (Akanji, Ogunniyi, & Baiyewu, 2002). The patient-clinician ratio is even lower for other HCPs like physiotherapists and occupational therapists (0.047 per 1,000 of the population) that play vital roles in the rehabilitation of older adults with hip fractures (World Health Organization, 2017). This poor patient-clinician ratio makes clinicians work beyond their capacity, thereby predisposing them to health-rated challenges. The poor patient-clinician ratio also contributes to the burden experienced by informal caregivers because they are often involved in hourly positioning (manually) of patients, because a HCP would not be able to do it alone. This practice has literally become normal in the Nigerian health-care system. In addition, health-care facilities in Nigeria are not well equipped; the most common equipment—patient lifts and slings—are often not available in most orthopedic hospitals. Therefore, HCPs manually lift patients during care and this has an adverse effect on their health (Adeloye et al., 2017). As already suggested by a few, the health-care system in Nigeria needs urgent attention, and emphasis should be placed on addressing the lack of equipment and long-term strategies to trained specialized HCPs who will be providing care for older adults with hip fractures (Adeloye et al., 2017; Tinubu et al., 2010).

Similarly, informal caregivers described their burden experience as physically exhausting. Most participants indicated that their health problems worsened in this role of care giving. Based on the experience of researchers, there is a huge gap in educating the caregivers on their roles. This may be due to HCPs having limited

specialized skills to educate caregivers in Nigeria. A recent systematic review on informal caregivers' role in hip fracture management highlights that untrained family caregivers lack the necessary coping skills needed to cater for themselves and their wards; the review further reported that informal caregivers who had a caregiving training had a better ability to cope in a caregiving role than those who did not have any prior training (Saletti-Cuesta, Tutton, Langstaff, & Willett, 2016). Emotional and mental burdens were also associated more with informal caregivers. While HCPs only empathized with family members caring for older adults with hip fractures, informal caregivers bore the direct financial cost of treatment. These emotional burdens by the informal caregivers were expressed in their inability to attend social functions due to care provision. Furthermore, the comatose state of their parents or relatives contributed immensely to their expression of anxiety, worry, and state of helplessness or depression. This finding resonates with similar studies in the literature which showed that informal caregivers' psychological health was affected due to the caregiving task (Beach, Schulz, Yee, & Jackson, 2000; Jones, Jaceldo, Lee, Zhang, & Meleis, 2001; Nahm, Resnick, Orwig, Magaziner, & Degrazia, 2010).

Another important trend we identified was the role of sociocultural belief as a factor that amplified health stress among informal caregivers. Participants felt obliged to care for their parents, even to the detriment of their own health. This finding is similar to that of Liu et al. (2015) who report that informal caregivers felt that it is the right of the older adults to receive care from them, even though the informal caregivers may have serious health issues. The strong cultural norm existing in Nigeria obliges most family members, especially women, to be sole care providers for their wards (Oppong, 2006). It is often frowned on when informal caregivers employ the services of a hired help to provide care to their parents. This is in striking contrast to some of the culture around caregiving in developed nations. For example, there are social supports either as volunteers or paid positions that are accessible and culturally acceptable for elderly hip fracture patients in developed nations. In Nigeria, the culture of social support systems is still evolving. Therefore, it is important that resources are pulled toward educating informal caregivers on their caregiving role before, during, and after the hip fracture surgery of older adults.

It is notable that the cultural perception of social support as it relates to caregiving provides different perspectives to this body of literature. In as much as the provision of social support is ideal in developing nations such as Nigeria, it is important that we educate caregivers on their roles, which we believe would help to reduce the associated care burden. More so, different

strategies to alleviate the caregiver's burden should be specific to HCPs and formal caregivers, as the inherent factors seem different. The findings in this study would serve as evidence for developing strategies to help reduce the caregiver's burden in a similar cultural context. Also, there are huge opportunities for researchers to explore how these burdens influence care transition in a similar cultural setting. This is quite important because it would provide helpful evidence on creating holistic educational strategies for caregivers.

Study Strengths and Limitations

Even though this study seems to be the first that is published about the burden experience of caregivers for hip fracture survivors in the older adult population in sub-Saharan Africa, there are associated limitations. The major limitation was the sampling procedure which accommodated only a small pool of subjects in the same hospital. This could be one of the reasons our data were saturated with only 17 participants as participants may have similar experiences. This might give room to the issue of generalization. However, evidence has shown that while generalization is not entirely impossible in qualitative research, it is not the main objective of qualitative study (Myers, 2000). Another limitation is that we framed our interview questions to focus more on care in the hospital which might have influenced the generated themes. It is possible that participants and especially informal caregivers would have responded differently if our interview questions were flexible to encourage more discussion of burden after hospital discharge. In addition, the setting of the study was in an urban area. Therefore, the experiences of caregivers of older adults who are in rural areas and do not have access to designated orthopedic centers might be different from the findings in our study. However, we ensured that the methodology of our study allowed for replication which we have taken into consideration by providing a detailed process of our recruitment strategy, data collection, and analysis. Specifically, the credibility of the study was maintained by involving two coders at all stages of the data analysis. Reflexive notes were kept throughout the research process. Data were triangulated using our reflexive and audit trail notes that guide the interpretation of the study findings. Member checking was conducted to ensure that we captured participants' perspectives and experiences on care giving. Finally, exploring the gender roles in shaping the burden experience of care giving for older adults with hip fractures would have strengthened our study. This is because, it would have provided more specific information for developing strategies to reduce the caregiver's burden. This seems important because the caregiving role is often considered a female role in developing countries.

Appendix

Interview Guide for Informal Caregivers

1. Can you please tell me a little bit about yourself?
2. How can you describe your relationship to Mr or Mrs (name of the patient)?
Probe: How long have you been taking care of him or her?
3. Can you describe the kind of task you do for him or her?
Probe: Can you describe your experience when you are providing the tasks you describe above?
4. Can you describe a typical day or week of providing care and support to him or her?
Probe: Can you think of specific examples that seems challenging to you when you provide care to him or her?
5. I want you to think about a time you provided help when he was in the admitted newly and when he was in the ward. Tell me about the experiences in this instances. Can you provide specific examples if possible?
6. Can you describe how you feel about caring for him or her?
Probe: Can you give me instances of challenges or benefits of providing care to him or her?
7. Is there anything related to taking care of Mr or Mrs (name of the patient) that we have not yet talked about you would like to share with me today?

Thank you so much for your time.

Interview Guide for Formal Caregivers (Health-Care Professionals)

1. Can each person describe his or her role in this hospital? Can you describe a typical working day in ward clinic?
Probe: Can you tell me the kind of services you provide to these older adults with hip fracture?
2. Can you describe some scenarios where you provided services to older adults with hip fractures?
3. Can you please describe your experience with working with older adults with hip fracture: (a) before admission, (b) during admission, and (c) after discharge?
Probe: Can you provide instances with details on these experiences?
4. Can you think of scenarios that poses a great challenge to you, when you are taking care of the older adults with hip fracture?
Probe: Can you think of how these challenges informed your experience during caregiving?

5. Are there any other thoughts you would like to share as you experience when providing care to older adults with hip fracture?

Thank you so much for your time.

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