

# The Impact of Socioeconomic and Cultural Factors on Family Caregiver Burden in Cancer Patients: A Study in Ogbomoso, Nigeria

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**Introduction:** Cancer is increasingly becoming a chronic disease, presenting significant challenges for both patients and their caregivers. This study investigated the factors influencing caregiver burden in cancer patients within selected teaching hospitals in Ogbomoso, Oyo State, Nigeria.

**Materials and Methods:** A cross-sectional study was conducted using a combination of questionnaires and interviews among 120 respondents selected through stratified sampling. Data analysis employed logit regression modeling alongside descriptive statistics.

**Results:** The logit regression model identified five statistically significant variables influencing caregiver burden: education (positive coefficient, 2.15), social support (positive coefficient, 2.76), communication (positive coefficient, 2.67), financial support (positive coefficient, 4.92), and socio-cultural beliefs (negative coefficient, -2.64). These findings suggest that higher levels of education, social support, communication, and financial support increased the likelihood of caregiver burden, while strong socio-cultural beliefs were associated with reduced caregiver burden.

**Conclusion:** This study highlights the multifaceted nature of caregiver burden in cancer patients, emphasizing the influence of socioeconomic and cultural factors. Recommendations include regular assessments of caregiver stress, promotion of shared care responsibilities within families, and culturally sensitive interventions to address the unique challenges faced by caregivers in this context.

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## Introduction

Cancer is gradually becoming a chronic disease, which brings important needs and difficulties to both patients and caregiver [1]. The World Health Organization fact sheet revealed that cancers are one of the principal cause of morbidity and mortality globally, and caused nearly 14 million new cases and 8.2 million deaths in 2012. It is expected that these new cases will increase to about 70% over the following 20 years [2]. Globally, more than 10 million new cancer cases are reported annually, according to the World Health Organization [3]. It is estimated that 9.6 million deaths were attributed to cancer in 2018, with 506 000 deaths occurring in sub-Saharan Africa 2018 [3].

Cancer is a chronic, long - term illness that affects the family as completely [4], such as serious illness causes the affected to undergo aggressive treatment regimen accompany by a magnitude of burdens to the caregivers [5]. Caring for and loved one is rewarding but is also associated with caregiver burden. ‘Burden of care’ is the reflection of the undesirable events and difficulties

brought about by the disease upon the members of the family [4]. Generally, the care of patient with cancer negatively affects the day-to-day life and job routine of caregivers, since, the prioritize on the patient's treatment [6].

Patients who are admitted to hospitals could go through discomforts in the process of recovery or management of their health, which makes caregiving an important aspect of their care. While it is acceptable that patients should be given much attention, it is worrisome that in Nigeria, family members, relatives, and friends who spend great amount of time attending to the care needs of the patients are neglected [7]. Family caregivers as technically described, get involved in meeting the daily needs of patients which could include bathing the patient and washing their belongings, feeding the patient, making meals, always staying by the bed of the patient to alert health workers in the event of patient's distress, etc. [8]. Owing to such responsibilities, they are bound to face several challenges such as poor health conditions, losing their jobs, restricted social life, emotional disturbances, financial strains, risk of being infected, to mention but a few [9]. Yet their conditions are barely considered within healthcare policies and administration, especially in countries within the global south. Little wonder they are referred to as 'invisible patients' in some studies [10]. Family caregivers tend to be invisible not just to the healthcare system but could be invisible to even the patients they help. This is because they are bound to shield their feelings from patients to prevent exacerbating their conditions, whereby they come to know that their informal caregivers are not doing fine [11].

Fred Hutchinson Cancer Research Centre (Bauer and Sousa-Poza) pointed out that in Sub-Saharan Africa, cancer claims more people's lives than HIV, Tuberculosis and Malaria combined. It is estimated that by 2030, the global burden is expected to grow to 21.7 million new cancer cases and 13 million cancer deaths simply due to the growth and aging of the population. Nevertheless, the projected future cancer burden will possibly be considerably greater due to the adoption of lifestyles that are known to increase cancer risk, such as smoking, poor diet, physical inactivity, and fewer pregnancies, in economically developing countries. Cancers related to these factors, such as lung, breast, and colorectal cancers, are already on the rise in economically transitioning countries. In economically developed countries, the three most commonly diagnosed cancers were prostate, lung, and colorectal among males, and breast, colorectal, and lung among females [12].

The treatment and care of patients with cancer is a complex, lengthy, and expensive process imposed on health systems [13]. Today, demographic changes in patients with cancer, their prolonged survival rates and requests to continue treatment at home, changes in the patterns of health service provision, and the development of outpatient care have made caring for cancer patients a community based practice; in other words, patients with cancer are one of the main groups of patients who receive informal care [14].

One of the challenges faced by the family caregivers of patients with cancer is balancing their caregiving role and their own needs [13]. The complex process of caring for patients with cancer can lead to an imbalance and stress in the life of the family caregiver, and consequently affect his or her physical, mental, and social health.

The persistence of this state over a long period can reduce the caregiver's quality of life and adversely affect his or her professional life too [15]. According to the results of previous studies, the family caregivers of patients with cancer have extensive unmet needs, including the need for information and healthcare services, as well as emotional, psychological, medical, and financial need [16].

The Institute of Medicine, the National Research Council, and the World Health Organization recommend that patients and their caregivers should be treated as one care unit [17].

## **Statement of the problem**

Various unmet needs could be tagged challenges of the family caregivers of cancer patients. They will perform the caregiving role effectively when communication is adequate. They have vast communication responsibilities tied to caregiving and these include sharing the medical history with the providers, relaying the diagnosis with other members of the family and making decisions about care with the patient. Perceived communication challenges influence caregivers quality of life [18].

Family caregivers provide important duties to their society, friends and relatives. It was documented that informal caregiving usually takes an enormous toll on them. It was revealed that family caregivers reported poorer physical health, high level of frustration and stress and higher mortality rates than non- caregivers [19]. Since the majority of studies on the unmet needs of family caregivers have been conducted in other countries and cultures, in view of this, it is therefore pertinent to examine factors militating against family caregivers on cancer patients health in selected teaching hospitals in Ogbomoso area, Oyo State, Nigeria. The results may provide guidelines for healthcare planners, managers, and nurses.

## **Objective of the study**

The purpose of this study was to examine factors militating against family caregivers on cancer patients health in selected teaching hospitals in Ogbomoso area, Oyo State, Nigeria. The specific aims were to:

1. identify socio-economic characteristics of respondents on cancer patients health
2. analyse factors militating against family caregivers on cancer patients health.

## **Application of the framework to study aim**

In this study, caregiving demands and appraisal are the challenges. Data collected qualitatively was used to discover and describe the unmet needs. Caregiving outcome will help to identify the impact of caregiving on their health, social life, cultural influence, psychological life of the family caregivers. Analysis and integration of data will help the researcher to develop relevant intervention model for family caregivers of cancer patients (Figure 1).

**Figure 1. The Caregiver Empowerment Model (Jones, Winslow, Lee, Burns and Zhang, 2011).**

## **Literature Review**

Cancer is a global issue and it is of great concern to everyone. The assessed number of cancer survivors worldwide who are within 5 years of diagnosis is approximately 28.8 million [20]. Cancer is related with high morbidity and mortality. Due to the chronic nature of cancer, its devastating features and the fact that there is some improvement in the treatment, the role of family or informal caregivers in the management is on the increase [21]. Over 100,000 of Nigerians are diagnosed with cancer yearly while 80,000 die from the disease, 24.6 million people live with cancer worldwide while about 12.5% of all death is attributable to cancer yearly [22]. This brings the consequences of the cancer epidemic to 240 Nigerians every day or 10 Nigerians every hour, dying from cancer. It noted that the country's cancer death ratio of 4 in 5 affected persons is one of the worst in the whole world.

Family members, friends and significant others such as spouses provide essential care and support to cancer patients in their critical state, all these are referred to as family caregivers or informal caregivers [23]. Family caregivers accept an important role in rendering care to their family member who is affected with cancer, the care includes delivery of practical, emotional and end of life (EOL) support especially for those with advanced cancer with direct or indirect harmful effect on their psychosocial, physical, emotional and financial wellbeing [24]. The expectations from caregivers is numerous. They are expected to make choices concerning what treatment to accept. They become the patient's supporter and make decisions. Conflicts can make this decision making cumbersome and have influence on the treatment choices negatively [21].

Family caregivers provide long-term care to patients with cancer and before the commencement of this care, they receive little or no preparation, information, or support to perform their vital role. Most often, family caregivers are supposed to direct any difficult and fragmented health care system the best way they can handle it to suit them and their patients [25]. Family caregivers for patients with cancer offer serious emotional and instrumental support, but this role can cause significant problem.

Caregivers for patients with cancer experienced substantial deficiencies or unmet needs and these include declining physical health, social dysfunction, psychological stress, cultural influence, lack of information, deficient health education, financial constraint, powerlessness due to lack of communication among others. These findings support the need for enhancing the understanding of the caregiving experience and developing supportive and personalized multicomponent interventions for caregivers, given their essential role in providing support for patients [26].

In recent years, the caregiving tasks of family members have increased intensely, mainly because of the use of complexity in treatments in outpatient settings, the decline in available health care resources, and the shortage of health care providers. Most intervention programs provided have always be for cancer patients to improve their outcomes based on symptoms management and their quality of life. (Such as). Less attention given toward the needs of the family caregivers who always have enormous of them [27]. A lot of patient dissatisfaction and complaints may arise due to a breakdown in the doctor- patient relationship. A lot of stress is built up for family caregivers when there is communication gap. Studies have proven that good communication has tangible benefits such as doctor communication skills and patients' satisfaction and their caregivers [28].

## Materials and Methods

The study plans adopted ethnographic approach of qualitative and quantitative design component. The qualitative method was used to collect data from various unmet needs of family caregivers of cancer patients. The qualitative methods established to have an in depth and extensive understanding of the issues by means of their textual interpretation, among which are interviewing and observation types [29]. A well-structured questionnaire was designed to obtain relevant information from 100 respondents (caregivers of cancer patients). Stratified sampling techniques was adopted. For the selection of the respondents from the study area. This is to ensure that every staff was given the opportunity to be part of the sample.

The researcher went to hospital in the study area, distributed the questionnaires in person, and retrieved the filled questionnaire. In analyzing the data, logit regression was employed in addition to conventional descriptive statistics such as tables, frequency distribution and percentages. For the logit models, we assume an individual is faced with two alternatives, whether factors militating against family caregivers has effect on cancer patients or not.

This is expressed thus:

We assume Y can be specified as follows:  $Y = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_5 X_{5i} + UI$

And that:  $X_i = 1$  if  $X > 0$   $X_i = 0$

Otherwise, Where  $X_1, X_2, X_3, X_4, \dots$

$X_n$  represent vector of random variables,

$\beta$  represent a vector of unknown parameters and

$U$  represent a random disturbance terms.

## Model Specification

The logit model specified in this study to analyze factors militating against family caregivers on cancer patients health can be expressed as follows:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + U_i$$

Where  $Y_i$  = Well being

$X_1$  = Communication (Dummy Variable, Communication (1) others (0))

$X_2$  = Socio-cultural beliefs (Dummy Variable, Social support (1) others (0))

$X_3$  = Social support (Dummy Variable, Social support (1) others (0))

$X_4$  = Education (Dummy Variable, Social support (1) others (0))

$X_5$  = Financial support (Naira)  $U_i$  = Error term

## Results

A summary of socio-economic characteristics of the respondents summarized in Table 1.

Socio-Economic characteristics	Frequency	Percentage (%)	Cumulative
Gender			
Male	30	25	25
Female	90	75	100
Age			
Less than 30	10	8	8
30 - 39	45	38	46
40 - 49	60	50	96
50 Above	5	4	100
Educational Status			
Primary	5	4	4
Post primary	70	59	63
Vocational/Technical	35	29	92
Tertiary	10	8	100
Marital Status			
Single	30	25	25
Married	90	75	100

Religion			
Christianity	75	63	63
Islam	45	37	100
Social support			
Yes	100	83	83
No	20	17	100
Income earner			
Yes	70	59	59
No	50	41	100
Earn above minimum wage			
Yes	90	75	75
No	30	25	100
Ever spent a night in the facility			
Yes	120	100	100
No	0	-	100

**Table 1. Frequency and Percentage Distribution of Respondents by their Socio-economic Characteristics N = 120.**

Source, Field Survey, 2023

The researcher is mainly interested in effect of factors militating against family caregivers on cancer patients' health in Ogbomoso area of Oyo State, Nigeria. A total of 120 questionnaires were printed and distributed to different family caregivers of cancer patients in the study area to get their opinions and all were answered. The data collected was analyzed using frequency distribution, table presentation, simple percentages and cumulative.

Table 1, has about 75% of the respondents were female, while the remaining 25% were male. 8% of the respondents were between the ages between 20 - 29 years, 38% of the respondents were between ages 30-39, 50% were 40-49 years and 4% fall between ages 50years and above. In terms of education, 4% of the respondents had primary certificate, 59% of the respondents were with post primary certificate, 29% of them had certificates in vocational / technical and the remaining 8% of them were with tertiary certificates.

The result of marital status, about 75% were married while 25% were single. Also, the study shows that 63% of the respondents were Christians while the remaining 37% were Muslim. Social support has it that 83% of the respondents agreed that they had social support, and the remaining 17% disagreed with the idea that respondents had social support. In terms of income earner 59% accepted that they were income earners while 41% were not income earners. Of those that earn an income, 75% earned above the minimum wage of Nigeria (N18, 000 or \$50) monthly and the remaining 25% earned below the minimum wage of Nigeria (N18, 000 or \$50) monthly. 100% of respondents agreed with view that they had spent a night in the facility.

Table 2 shows regression of effect of factors militating against family caregivers on cancer patients' health.

Explanatory variable	Coefficient	Std. Err.	Z	p> z	(95% conf.)	Interval
Ln (education)	0.415989	0.1934192	2.15**	0.034	0.6101653	0.0322974
Socio-cultural	1.637681	-0.619518	-2.64**	0.009	-2865674	0.4096884
Social support	0.3494987	0.1265453	2.76**	0.007	0.0984669	0.6005306
Communication	0.4606409	0.1726033	2.67**	0.009	0.1182424	0.803039
Financial support	0.6135395	0.1247929	4.92***	0	0.3659839	0.8610951

Constant	-1.687904	0.9167132	-1.84	0.069	-3.506416	0.1306084
Number of Obs.	120					
F (12, 107)	19.54					
Prob. > F	0					
Pseudo R2	0.6352					

**Table 2. Regression for Factors Militating Against Family Caregivers on Cancer Patients' Dependable Variable, Well-being.**

Source, Field Survey, 2023; \*\* Significant at 5%; \*\*\* Significant at 1%

The results show that Table 2 has coefficient of variables that were statistically significant at 1%, and 5% probability levels. The variables are education, socio-cultural beliefs, social support, communication, and financial support. Education (2.15) positively affects family caregivers on cancer patients health and significant at 5% level of probability. The result in Table 2 shows that socio-cultural beliefs (-2.64) is negative and significant at 5% level of probability. The results also show that social support (2.76) are also positive, communication (2.67) and financial support (4.92) were positively affect family caregivers on cancer patients health and significant at 1% and 5% level of probability.

## Discussion

A summary of socio-economic characteristics of the respondents summarized in Table 1. The researcher is mainly interested in effect of factors militating against family caregivers on cancer patients' health in Ogbomoso area of Oyo State, Nigeria. A total of 120 questionnaires were printed and distributed to different family caregivers of cancer patients in the study area to get their opinions and all were answered. The data collected was analyzed using frequency distribution, table presentation, simple percentages and cumulative.

Table 1, has about 75% of the respondents were female, while the remaining 25% were male. This implies that majority of the caregivers were females. Mostly women are the caregivers in Nigeria. They could be the spouse of the sick person or the daughter. As revealed in literature [30] females comprised the bulk of informal caregivers in our study and their gender roles in home keeping exceptionally played out either in providing succour for the patients or severely affected by taking care of the patients. Additionally, since all informal caregivers experienced one form of burden or the other, and in most contexts, they experienced common burden e.g. health implications.

In Nigeria culture, it is the eldest daughter or the eldest son's wife who is supposed to take care of the aged or sick parent or relative [31]. Similar to the findings in some previous studies [32]. In most African cultures females take up caregiving roles more than males, this is borne out of societal normative expectation that women have more patience and motherly tendencies as such possess more caring capability than men do.

Eight percent (8%) of the respondents were between the ages between 20 - 29 years, 38% of the respondents were between ages 30-39, 50% were 40-49 years and 4% fall between ages 50years and above. The ages of the caregivers showed that they are within the productive age group and much younger compared to caregivers in the developed countries [33]. The implication of this finding is that the lost productive man-hours to caregiving likely affected their ability to work at a job. All the caregivers lived in a multigenerational setting with majority of them having a large family with young children. This should be an advantage for both the patients and the caregivers in terms of potential caregivers to provide respite for the primary caregiver [34].

In terms of education, 4% of the respondents had primary certificate, 59% of the respondents were with post primary certificate, 29% of them had certificates in vocational / technical and the



remaining 8% of them were with tertiary certificates. The distribution clearly reveals that, all the respondents (100%) had acquired one level of education or the other. This shows that caregivers were educated and at active age with positive attitude to health-promoting behaviours. The result of this study is in agreement with the finding of [35] who observed that one of the main reasons for the rise in cancer as a cause of death is patients' lack of knowledge of the risk factors involved.

The result of marital status, about 75% were married while 25% were single. This implies that, the married are more likely to be relatively stable, making communities to view them as more reliable and makes them more likely to be an advantage for both the patients and the caregivers in terms of potential caregivers to provide respite for the primary caregiver compared to the unmarried [34].

In addition, the study shows that 63% of the respondents were Christians while the remaining 37% were Muslim. The distribution clearly reveals that, all the respondents (100%) had acquired one level of religion or the other. This implies that caregiving cuts across religions in which members of religious groups have prayed on behalf of the sick and the family caregivers, and knowing that someone is praying seems to give hope and courage for family caregivers [36].

Globally, religion and spirituality are two sources of support that family caregivers can utilize to manage caregiver burden. Religion can provide the platform for family caregivers to connect with God, receive comfort, cope with and accept difficult caregiving situations. Nurses must recognize this need and permit religious leaders to visit family caregivers regularly while their sick relative is hospitalized. Family caregivers could be permitted to engage in spiritual activities as allowed for by policies guiding the hospital [37].

Social support has it that 83% of the respondents agreed that they had social support, and the remaining 17% disagreed with the idea that respondents had social support. This implies that support should be provided for family caregivers who experience a burden associated with caregiving, as might negatively affect the outcome for both family caregiver and the patient (Hannon, Zimmermann, Knaul, Powell, MwangiPowell, and Rodin, 2015). Owing to such responsibilities, they are bound to face several challenges such as poor health conditions, losing their jobs, restricted social life, emotional disturbances, financial strains, risk of being infected, to mention but a few [9].

In terms of income earner 59% accepted that they were income earners while 41% were not income earners. Of those that earn an income, 75% earned above the minimum wage of Nigeria (N18, 000 or \$50) monthly and the remaining 25% earned below the minimum wage of Nigeria (N18, 000 or \$50) monthly. Previous quotes show that family caregivers mobilise financial assistance from support networks. However, there is need to consider an institutional system of identifying those who are poor and might be lacking viable support systems because money (income) could influence the severity of the ordeals faced by the family caregivers. Income level of family caregivers were exceptionally mentioned as influential factors, as those who are economically weak and poorly tend to suffer more [7].

About 100% of respondents agreed with view that they had spent a night in the facility. Our study has clearly shown the importance of family caregivers in scaling up the efficiency of health services' delivery through paying attention to the concerns of cancer patients' health in Nigeria. Our findings show that family caregivers, although neglected, form a crucial part of the health system by playing significant and indispensable roles in aiding the recovery of patients' health.

Table 2 shows regression of effect of factors militating against family caregivers on cancer patients' health. The results show that Table 2 has coefficient of variables that were statistically significant at 1%, and 5% probability levels. The variables are education, socio-cultural beliefs, social support, communication, and financial support. Education (2.15) positively affects family caregivers on cancer patients health and significant at 5% level of probability. This shows that an increase in the level of the health education of the respondents the greater the ability of family caregivers to



ensure cancer patients well-being. This implies that caregivers were educated and at active age with positive attitude to health-promoting behaviours. The result of this study is in agreement with the finding of [35] who observed that one of the main reasons for the rise in cancer as a cause of death is patients' lack of health knowledge of the risk factors involved.

The result in Table 2 shows that socio-cultural beliefs (-2.64) is negative and significant at 5% level of probability. This revealed that the greater the socio-cultural beliefs of the respondents the lesser the cancer patients well-being received from the caregivers in the study area. The belief system of most Africans encourage communion with the Supreme Being during difficult moments of life, such as caregiving of chronically sick relatives [38]. Africans often also wish to connect with their ancestors during difficult moments of life to assist with healing their loved one's illness and help them cope with challenges of caregiving [39]. Family caregivers seeking help may offer sacrifices for the atonement of the sins of their sick relatives, offer prayers, and engage in rituals on behalf of themselves and their sick relatives [38][39], argue that attention to spiritual needs improves the quality of life or well-being of family caregivers. However, caregivers experiencing spiritual pain had higher levels of anxiety, depression, denial, disengagement that is more behavioural, dysfunctional coping strategies, and worse quality of life. It is important for nurses to assess potential spiritual issues and institute spiritual intervention to decrease spiritual pain by referring family caregivers to chaplains or spiritual leader of their choice [40]. Family caregivers in LMICs are likely to use modelling in seeking information regarding the needs of their sick loved ones to increase their well - being [41].

The results also show that social support (2.76) are also positive, .and significant at 5% level of, probability. This shows that an increase in the level of social support by the family caregivers lead to an increase in the level of cancer patients well-being. This implies that support should be provided for family caregivers who experience a burden associated with caregiving, as might negatively affect the outcome for both family caregiver and the patient [42].

A number of authors have documented several forms of social support, including emotional, informational, spiritual and instrumental [43]. In developed countries such as the United States of America, Australia and the United Kingdom, support for patients can take the form of Medicare, Medicaid / medical insurance and insurance policies covering pension, disability and death [44].

Communication (2.67) positively affects family caregivers of cancer patients well-being and significant at 5% level of probability. This revealed that perceived communication challenges influence caregivers quality of life [18]. Family caregivers provide important duties to their society, friends and relatives. Unfortunately, while there is a paucity of literature in this regard, we discovered that available studies within the clime of Nigeria report poor consideration of family caregivers within the healthcare framework because of lack communication with respect to patients' well-being [7].

Furthermore, family caregivers' role will be perform effectively when communication is adequate. In other words, they have vast communication responsibilities tied to caregiving and these include sharing the medical history with the providers, relaying the diagnosis with other members of the family and making decisions about care with the patient. Perceived communication challenges influence caregivers quality of life [18].

Finally, financial support (4.92) was positively affect family caregivers on cancer patients health and significant at 1% and 5% level of probability. This revealed that an increase in the level of financial support the greater the well-being to be recorded by the cancer patients in the study area. Nevertheless, in a situation whereby such financial support is not forth coming it becomes difficult for caregivers to perform effectively and efficiently. Previous quotes show that family caregivers mobilise financial assistance from support networks. However, there is need to consider an institutional system of identifying those who are poor and might be lacking viable support systems because money (income) could influence the severity of the ordeals faced by the family caregivers.

Income level of family caregivers were exceptionally mentioned as influential factors, as those who are economically weak and poorly tend to suffer more [7].

In conclusion, the family caregivers of cancer patients experienced severe burden, physical, psychological and social forms of burden in selected University Teaching Hospital, Ogbomoso, Nigeria. Generally, caregiving by family cancer caregivers was highly burdensome because care receivers had low ability for activities of daily living. The burden of care increased with the length of time (months) spent in caregiving. The family caregivers desired to continue role despite their perceived burden. It is therefore pertinent to expedient and embark on early assessment, nursing diagnosis and potential interventions to reduce cancer family caregivers' burden. Caregiving role can be enhanced by provision of interventions such as formal education programme on cancer caregiving, oncology home services alongside with transmural care consisting of communication and continuity of care.

### *Ethical Consideration*

#### *Compliance with ethical guidelines*

Ethical approval was obtained from the Research Ethics Committee of School of Nursing, College of Health Sciences, University of KwaZulu-Natal, (Protol Reference: HSS /0689 /0180).

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#### *Authors Contribution*

Conceptualization, methodology, Data collection, Data analysis: Busisiwe Ncama, and Amoo Patience; Writing the original draft: Busisiwe Ncama and Amoo Patience; Final draft writing, reviewing and editing, and final approval: All authors.

#### *Conflicts of interest*

The authors declare that there are no conflicts of interest.

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