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Department of Nursing
University of Ibadan
Ibadan, Nigeria.
E-mail: *uninursingjournal1965@yahoo.com*

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PERCEIVED INFLUENCE OF CHEMOTHERAPY ON THE QUALITY OF LIFE OF PATIENTS LIVING WITH CANCER UNDERGOING PALLIATIVE CARE IN THE UNIVERSITY COLLEGE HOSPITAL, IBADAN, NIGERIA.

Wisdom Aderibigbe-Simeon[1], RN, RM, BNSc.
Beatrice M. Ohaeri[1], RN, PhD, FWACN
[*]Ifeoluwapo, Oluwafunke Kolawole[1], RN, BNSc., MSc., N&PSC.
Modupe Kester[2], RN, RM, BNSc.
[1]Department of Nursing, Faculty of Clinical Sciences, College of Medicine, University of Ibadan, Nigeria
[2]Department of Midwifery, Oyo State College of Nursing and Midwifery, Eleyele, Ibadan
[*]Corresponding Author:

ABSTRACT

Introduction: Cancer regardless of its type and onset do reduce the quality of life of those living with it. Palliative is instituted to improve the quality of life of patients living with cancer. The side-effects of chemotherapy have been affecting the outcome of palliative care.

Aim: The study was carried out to determine the perceived influence of chemotherapy on the quality of life of patients living with cancer under palliative care.

Design: A cross sectional descriptive design was used in assessing 119 patients living with cancer under palliative care undergoing chemotherapy in different wards and clinics in the University College Hospital, Ibadan. A standard and well-designed questionnaire was used, the European Organization for Research and Treatment of Cancer Quality of life questionnaire, the EORTC QLQ-C30 version 3.0. Data were analyzed using SPSS version 23.

Results: The mean age was 50±16.051 years. Many (59.8%) of the respondents were females. and (63.8%) predominantly practiced Christianity. About one-third(36%) of the respondents had up to University degree certificate. Most of the respondents had low healthy level of functioning. A large percentage of them had a very low emotional functioning because of chemotherapy. The most perceived influence of chemotherapy on their quality of life was financial difficulties, pain and fatigue. Religion was found to have affected their perceived effect of chemotherapy on their quality of life especially the cognitive functioning (χ^2 = 7.882, p = 0.019) while gender and educational levels did not.

Conclusion: However, from this study, it has been shown that chemotherapy have no effect on improving the quality of life of patients. Therefore, nurses to pay special cognizance to patients' quality of life and how such can be improved especially for those under palliative care.

***Key* words**: Perceived, influence, chemotherapy, cancer, palliative care, quality of life.

Introduction

Cancer remains one of the leading diseases with new incidence every year[1]. The continuing global demographic and epidemiologic transition signals an ever-increasing cancer burden over the next few decades. Cancer greatly affects the quality of life of those living with it, a factor reflecting the individual perception of his/her life at any time relative to his/her previous state and prior experience. Compared with the general population, the quality of life of cancer patients is worst in most dimensions[2]. Cancer now causes more death than coronary diseases or stroke. Cancer regardless of its type and onset do reduces the quality of life of those living with it. Nowadays, the term "Quality of Life (QOL)" is used to evaluate the general wellbeing of individuals. Compared with the general population, Quality of life of cancer patients is worse in most dimensions[2].

Cancer is one of such diseases that do not only affect the individual biologically/physically but also emotionally, socially, mentally and even spiritually. Biologically, cancer is simply the uncontrolled growth and spread of cells[1]. The growth often invades surrounding tissues and can metastasize to distant sites. Metastases are the major causes of death from cancer. Cancer cells differ from normal cells in many ways that allow them grow out of control and become invasive. Cancer cells are less specialized than normal cells, able to ignore cell signaling, evade immune system or make use of the immune system to stay alive. They may be able to also influence the normal cells, molecules and blood vessels[3].

Cancer is a genetic disease. It is caused by changes to genes that control the way our cells function, especially how they grow and divide[3]. The genetic changes can be inherited from parents or arise during a person's lifetime. The majority of cancer, 90-95% of cases are due to environmental factors and life style. The remaining 5-10% are due to inherited genes[4]. The genetic changes tend to affect three types of genes-proto-oncogenes, tumor suppressor genes and DNA repair gene.

Cancer can start anywhere in the human body, which is made up of trillions of cells. This is why there are different types of cancer based on location. There are more than 100 types of cancer. Types of cancer are usually named for the organs or tissue where the cancer forms. The most common types of cancer in males are lung cancer, prostate cancer, colorectal cancer, and stomach cancer[5].

Carcinogens are substances, radionuclides or radiation that causes cancer due to their ability to damage the genome of a cell or ability to disrupt cellular metabolic process. Some carcinogens however do not affect DNA directly, but lead to cancer in other ways. For example, they may cause cells to divide at a faster than normal rate, which could increase the chances that DNA changes will occur[6]. The risk of developing cancer during exposure to carcinogens include:

- How they are exposed to a carcinogen
- The length and intensity of the exposure
- The person's genetic makeup

Cancer is a genetic disease. It is caused by certain changes to genes that control the way cell's function, especially how they grow and divide. These changes include mutations in the DNA[3]. There needs to be a number of genetic mutations within a cell before it become cancerous. The longer one lives, the more time there is for genetic mistakes to happen in the cells.[7]Mutation happens often, and the human body is normally able to correct most of them. One mutation alone is unlikely to lead to cancer. Usually, it takes multiple mutations over a lifetime to cause cancer; this is why cancer occurs most often in older adults who have had opportunities for mutation to build up.

[8]Hormones are important agents in sex-related cancers such as breast, endometrium, testis, ovary and prostate cancer, for example, daughters of women who have breast cancer have significantly higher level of oestrogen and progesterone than the daughters of women without breast cancer. These higher hormone levels may explain while these women may have higher risk of breast cancer even in the absence of breast cancer gene.

A good immune system has the ability to know and recognize tumour cells hence, can stop or control their development through a process known as immune- surveillance. In many cancers, however, malignant progression is accompanied by profound immune suppression that interferes with an effective antitumor response and tumor elimination[9].

Cancer is a group of disease that can cause almost any sign or symptom. The signs and symptoms will depend on where the cancer is, how big it is, and how much it affects organs or tissue[6]. Cancer surfaces with some unexplained changes in the body. These symptoms sometimes can be caused by other non-cancerous illnesses; hence, it is important when one sights some of the symptoms, one sees a physician[10]. However, some cancer usually may not cause definitive symptoms until survival is compromised e.g., pancreatic cancer. By the time a pancreatic cancer causes signs and symptoms, it is usually in advanced stage. This means it has grown and spread beyond the place it started[11,6.]

Sometimes, cancer cells release substances into the bloodstream that cause symptoms that are usually not linked to cancer. For example, some cancers of the pancreas release substances that cause blood clots in veins of the leg. Some lung cancers make hormone like substances that raise blood calcium levels[6].

Palliative care is care given to improve the quality of life of patients living with life threatening diseases (such as cancer) and also their family. Palliative care is an approach to care that addresses the person as a whole not just their disease. The goal is to prevent or treat as early as possible the symptoms and side effects of the disease and its treatment, in addition to any related psychological, social and spiritual problems[3].

Chemotherapy in palliative care is used to ease symptoms. When the cancer is at advanced stage, that is, it had spread from where it started to other parts of the body, the goal of chemotherapy may be to improve quality of life or help the person feel better. For instance, chemotherapy may be used to shrink a tumour causing pain or pressure[6].Though chemotherapy in palliative care is used to control symptoms and perhaps, buy a patient a bit more time, once it's clear the person will die from the cancer. However, [12] It was found in a study that chemotherapy in palliative care may be interfering with other important aspects of care. Palliative care thus commences at any point (either at the diagnosis or at treatment). This aims to improve the quality of life of patients and even the family members of those living with it. In recent times, quality of life is used to measure the effectiveness of cancer treatment.

The term quality of life (QOL) is an increasingly important issue in oncology. Cancer specific quality of life is related to all types and stages of cancer. It is used to evaluate the general wellbeing of individuals and societies. [1]Quality of life is defined as individual's perception of life, values, objectives, standards and interests in the framework of culture.[13] When researchers evaluated the performance of chemotherapy use in palliative care and quality of life, it was discovered the relationship has not been well studied. Result showed that not only did chemotherapy fail to extend survival time or improve performance status as measured by Karnofsky Score or Lansky Score, it actually made patients feel worse.

In developing countries like Nigeria, kin attention has not been given to the issue identified above and how nurses can help improve patients' quality of life while receiving chemotherapy. Hence the need for this study to investigate the perceived influence of chemotherapy on the quality of life of patients living with cancer under palliative care.

METHODS

Research design

The research design used for the study was cross-sectional descriptive design.

Setting

The study setting is University College Hospital (UCH), Ibadan, a tertiary institution, the premier teaching hospital in Nigeria established in 1954. It is located in Queen Elizabeth Road in Ibadan North Local Government area. In the University College Hospital, patients living with cancer who are on palliative care are being treated/or managed on outpatient basis in the clinics, palliative care center, and oncology units in other separate wards.

Population

The target population are people living with cancer undergoing palliative care and are being treated/or managed with chemotherapy. They are ones who attend Hospice and palliative care, or are admitted on the oncology wards at the University College Hospital, Ibadan. There were 180 people available at the period of data collection, 124 were targeted but only 119 participated.

Inclusion criteria

Patients living with cancer undergoing palliative care and are being treated/or managed with chemotherapy who attend Hospice and palliative care, or are admitted on the oncology wards at the University College Hospital, Ibadan.

Exclusion criteria

This includes patients living with cancer who were not willing to participate in the study.

Sampling technique

A convenience sampling method was used to select participants for the study.

Instrument

Data were collected using a standardized questionnaire, the European Organization for Research and Treatment of Cancer Quality of life questionnaire, the EORTC QLQ-C30 version 3.0. It is a 30 questions questionnaire for assessing the health-related quality of life of patients living with cancer. An email was written to request for the use of the EORTC QLQ-C30 questionnaire for the conduct of this research. The researchers got a reply granting the permission to use it for the research work. The questionnaire has five functional scales, three symptom scales, a global health status/QOL scale and six single items. For each scale including Physical, Role, Emotional, Cognitive and Social functioning, the respondents who scored ≥60% were categorized to have high level of functioning and those who scored <60% were categorized to have low level of functioning**.** For the symptom scales, the respondents who scored ≥60% were categorized to have high level of symptomatology while respondents who scored below <60% were categorized to have low level of symptomatology.

Validity

The instrument had been tested in EORTC field studies and its validity assessed and ascertained. The questionnaire was also presented for experts' review.

Reliability

The questionnaire is a product of more than a decade collaborative research. It had also been used in wide range clinical trials by a large number of research groups and has proven to be consistent. Cronbach's alpha reliability score of the instrument was ≥0.70.

Data collection

Institutional permission was obtained. Full and in-depth explanation about the study was given to the participants and their consents were gained before administering the questionnaire. This took place in the Surgical out-patient clinic, East 1 ward, radiotherapy clinic and the palliative care center.

Ethical considerations

Approval to conduct the study was obtained from the UI/UCH ethical review committee. Letter of introduction was presented to the hospital and research proposal presented to the Institutional Review Board in the University College Hospital for ethical approval. Consent was obtained

from the Head of Department of each clinic, unit/ward at the hospital. The identity of the respondents and their responses were not be exposed or discussed with anyone. Following the detailed explanation of the purpose of the study, participants' informed consent was taken before partaking in the study. None of the participants was exposed to any form of harm or mishap during the course of this study. Participants were informed that their participation was voluntary and were also assured of their freedom to withdraw from the study at any point if they wish to without being coerced into continuing the study.

Data analysis

The data collected were cleaned and were analyzed using SPSS version 23. Descriptive variables were presented in tables and figures while the chi-square test was used to ascertain the association among variables.

RESULTS

A total number of one hundred and nineteen (119) respondents with the mean ageof 50±16.051 years participated in this study. Table 1 shows further that (59.8%) of the respondents were females.

Table 1: Socio-demographic characteristics of respondents (n =119)

Variables	Frequency	Percentage
Age (Mean±SD = 50±16.051)		
≤50 years	68	57.1
≥51 years	51	42.9
Gender		
Male	49	41.2
Female	70	58.8
Religion		
Christianity	74	63.8
Islam	40	34.5
Others	2	1.7
Highest level of Education		
Primary	7	6.1
Secondary	36	31.3
First degree	41	35.7
MSc.	20	17.4
PhD	3	2.6
None	6	5.0

Figure 1 was computed using the EORTC QLQ-C30 Scoring Manual for functioning scales with 57.5% recorded for cognitive functioning and 96.6% for emotional functioning respectively.

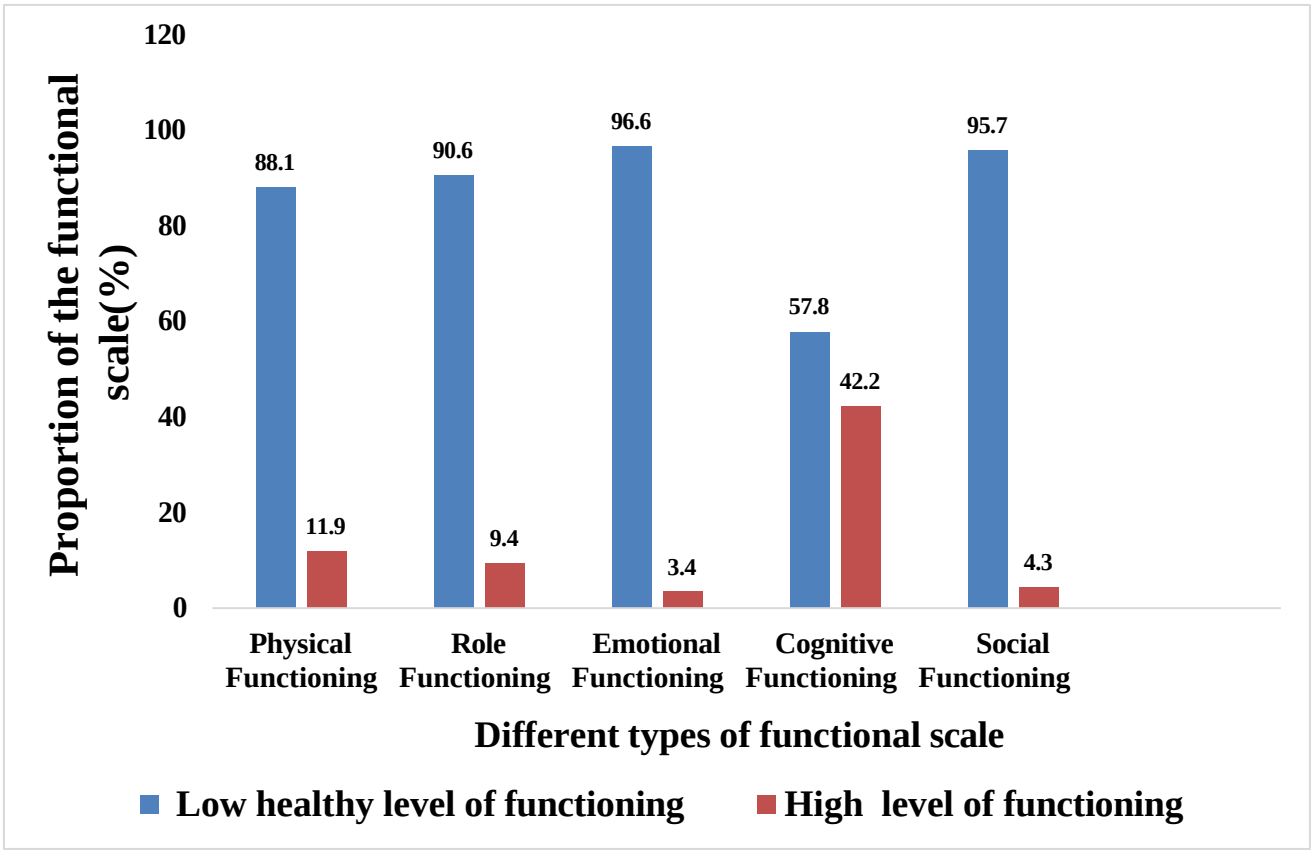

Fig 1: Perception of chemotherapy effects on different types of functioning

Figure 2was also computed using the EORTC QLQ-C30 Scoring Manual. The figure shows further that most of the respondents had High level of symptomatology ranging from 70.1% for dyspnea to 98.3% for difficulties respectively.

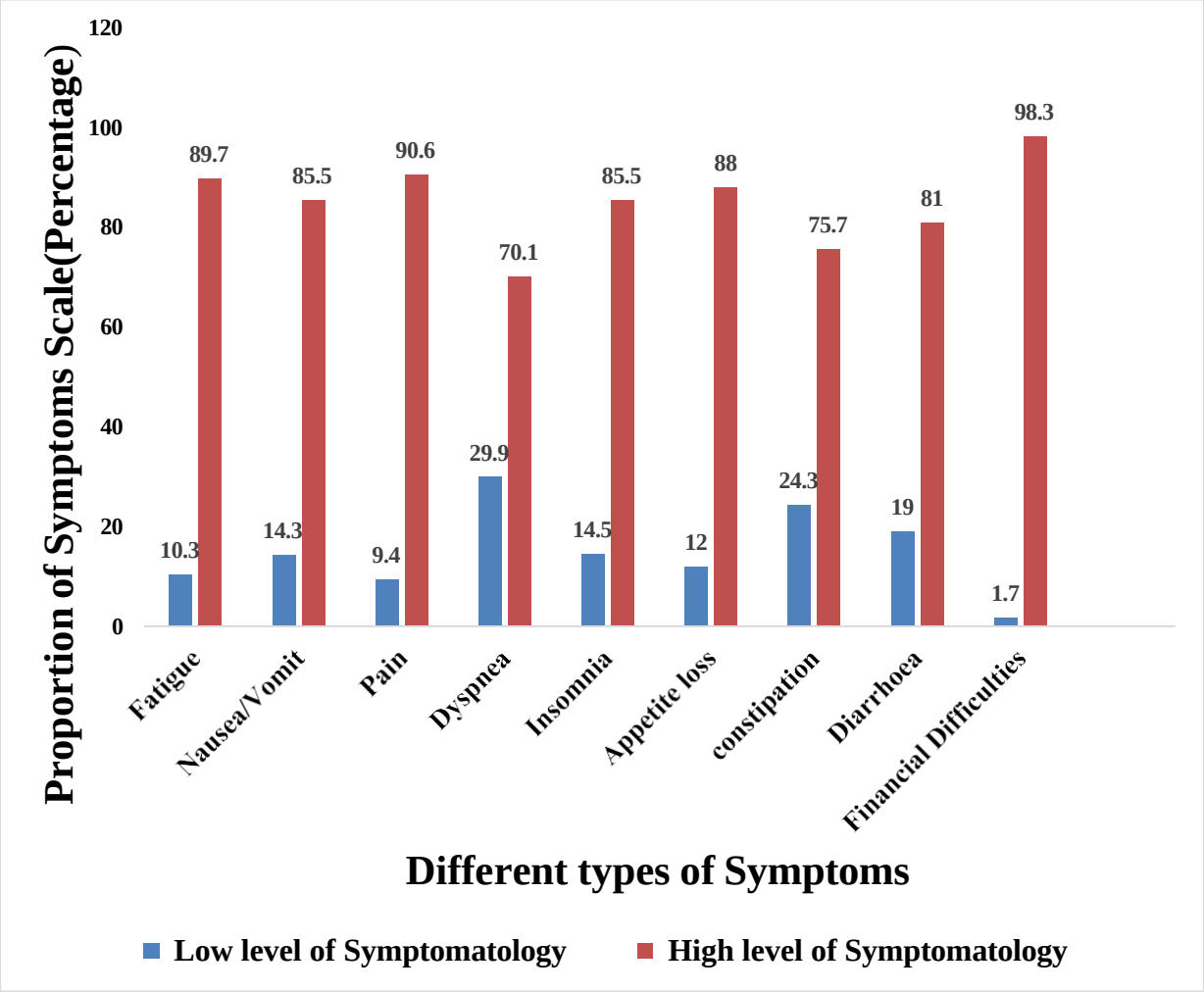

Fig 2: Respondents perception of chemotherapy effects on cancer symptoms

Null Hypothesis 1: There is no significant relationship between perceived influence of chemotherapy and level of education among patients living with cancer under palliative care.

Table 2: Association between perceived influence of chemotherapy and the highest level of education among patients living with cancer under palliative care

Variables	**Physical Function**				
Education	**Low**	**High**	**Total**	χ^2	**p-value**
Primary	6(85.7)	1(14.3)	7	2.566	0.766
Secondary	32(88.9)	4(11.1)	36		
First degree	32(84.2)	6(15.8)	38		
MSc	14(93.3)	1(6.7)	15		
PhD	3(100.0)	0(0.0)	3		
None	8(100.0)	0(0.0)	8		
	Role Functioning				
Primary	5(71.4)	2(28.6)	7	6.182	0.289
Secondary	32(88.9)	4(11.1)	36		
First degree	38(92.7)	3(7.3)	41		
MSc	20(100.0)	1(0.0)	20		
PhD	3(100.0)	0(0.0)	3		
None	7(87.5)	1(12.5)	8		
	Emotional Functioning				
Primary	7(100.0)	0(0.0)	7	1.841	0.871
Secondary	34(97.1)	1(2.9)	35		
First degree	39(95.1)	2(4.9)	41		
MSc	20(100.0)	0(0.0)	20		
PhD.	3(100.0)	0(0.0)	3		
None	8(100.0)	0(0.0)	8		
	Cognitive Functioning				
Primary	6(85.7)	1(14.3)	7	4.909	0.427
Secondary	21(60.0)	14(40.0)	35		
First degree	20(48.8)	21(51.2)	41		
MSc	13(65.0)	7(35.0)	20		
Ph.D.	1(33.3)	2(66.7)	3		
None	5(62.5)	3(37.5)	8		
	Social Functioning				
Primary	7(100.0)	0(0.0)	7	2.730	0.741
Secondary	33(94.3)	2(5.7)	35		
First degree	38(92.7)	3(7.3)	41		
MSc	20(100.0)	0(0.0)	20		
PhD	3(100.0)	0(0.0)	3		
None	8(100.0)	0(0.0)	8		

Table 2 shows that there is no significant relationship between highest level of education and perceived influence of chemotherapy among patients living with cancer under palliative care at p-value greater than (0.05). Therefore, the null hypothesis stated above is accepted.

Null Hypothesis 2: There is no significant difference between religion and perceived influence of chemotherapy among patients living with cancer under palliative care

Table 3: Association between perceived influence of chemotherapy and religion of patients living with cancer under palliative care

Variables	**Physical Function**				
Religion	**Low**	**High**	**Total**	χ^2	**p-value**
Christianity	58(86.6)	9(13.4)	67	3.541	0.170
Islam	36(92.3)	3(7.7)	39		
Others	1(50.0)	1(50.0)	2		
	Role Functioning				
Christianity	66(89.2)	8(10.8)	74	0.545	0.762
Islam	37(92.5)	3(7.5)	40		
Others	2(100.0)	0((0.0)	2		
	Emotional Functioning				
Christianity	70(95.9)	3(4.1)	73	0.273	0.873
Islam	39(97.5)	1(2.5)	40		
Others	2(100.0)	0(0.0)	2		
	Cognitive Functioning				
Christianity	35(47.9)	38(52.1)	73	7.882	0.019*
Islam	29(72.5)	11(27.5)	40		
Others	2(100.0)	0(0.0)	2		
	Social Functioning				
Christianity	68(93.2)	5(6.8)	73	3.007	0.222
Islam	40(100.0)	0(0.0)	40		
Others	2(100.0)	0(0.0)	2		

Parenthesis-%, *=significant at p value <0.05

The table 3 shows that there is a significant relationship between religion and cognitive functioning ($p<0.05$).

Null Hypothesis 3: There is no significant difference between gender and perceived influence of chemotherapy among patients living with cancer under palliative care.

Table 4: Association between gender and perceived influence of chemotherapy among patients living with cancer under palliative care

Variables	**Physical Function**				
Gender	**Low**	**High**	**Total**	χ^2	**p-value**
Male	40(87.0)	6(13.0)	46	0.095	0.759
Female	56(88.9)	7(11.1)	63		
	Role Functioning				
Male	45(93.8)	3(6.3)	48	0.949	0.330
Female	61(88.4)	8(11.6)	69		
	Emotional Functioning				
Male	47(97.9)	1(2.1)	48	0.458	0.498
Female	65(95.6)	3(4.4)	68		
	Cognitive Functioning				
Male	30(62.5)	18(37.5)	48	0.754	0.385
Female	37(54.4)	**31(45.6)**	**68**		
	Social Functioning				
Male	46(95.8)	2(4.2)	48	0.004	0.949
Female	65(95.6)	3(4.4)	68		

Table 4 above shows that there is no significant relationship between gender and perceived influence of chemotherapy among patients living with cancer under palliative care at p-value greater than (0.05). Therefore, the null hypothesis stated above is accepted.

Discussion

From the result it was found out that the average age was 50±16.051 years. Participants were more of women than men. Generally, chemotherapy administration for patients living with cancer under palliative care greatly affected their quality of life negatively especially in the area of cognitive functioning. That is, chemotherapy to really have a huge unhealthy effect on their quality of life. This implies that they experienced serious adverse effects of the cancer treatments. This is similar with what was found in a study that chemotherapy use was

not associated with patient survival controlling for clinical setting and patients' performance status[13], and in another study where it was mentioned that such treatment prevents the patient from engaging in meaningful life review and preparing for death, and preclude entry into hospice[14]. Meanwhile, some of the effects the symptoms have on their quality of life include financial difficulties, pain. This is contrary to the findings in a study which indicated that with supportive care, third-line treatment may improve survival or symptoms, especially the nontoxic oral agents such as erlotinib, such could also improve pain, dyspnea, and physical functioning[15].

The result showed that all participants living with cancer under palliative care perceived the influence of chemotherapy the same way, regardless of their highest level of education attained. On the quality-of-life scale, the patients' levels of functioning were low across educational attainment, this could be attributed to the equal effects of chemotherapy on them. This is just in line with the studies which stated none of the demographic variables (age, education, marital status, income) were significantly related to patients' QoL[16, 18].

Religion of the study participants was also found to significantly affect their perceived effects of chemotherapy on cognitive functioning as Muslims perceived chemotherapy to lower their cognitive functioning twice than Christians. This finding contradicts what a study reported that patients were not affected by blessings/prays, vow/sacrifice and consulting local herbalists" ($P > 0.05$)[18].

Furthermore, the result showed that there was really no significant relationship between gender and perceived influence of chemotherapy among patients living with cancer under palliative care. Both male and female had low physical, role, emotional, cognitive, social functioning respectively. The result from this study is similar to the findings where there was no correlation between quality of life of patients on chemotherapy and gender[17]. Also, in a study where Women experienced worse physical and social well-being than men[18].

IMPLICATIONS FOR NURSING

1. It is assumed by most health professional that chemotherapy help improve the quality of life of patients living with cancer. However, it is not completely so as chemotherapy has no significant effect and sometimes even mar the quality of life of patients living with cancer under palliative care. This study will therefore encourage nurses to pay special cognizance to patients' quality of life and perform their professional roles and responsibilities to improve the quality of lives of their patients when under palliative care
2. Financial difficulties, pain, fatigue and other perceived influence of chemotherapy will be identified and managed well by nurses to improve patients' quality of life.

CONCLUSION

Cancer is a devastating condition that affects both young and old which greatly reduces the quality of life of those living with it. Palliative care thus can commence at any point of treatment to basically help improve the quality of life of the patients living with cancer. One of the major management/treatments of cancer is chemotherapy. However, from this study, it has been shown that the perceived influence of this chemotherapy on patients living with cancer do end up having no effect or reducing their quality of life.

Recommendations

Based on the study, the following recommendations were made:

- In Nigeria, Palliative care should be encouraged early so as to manage and improve patients' quality of life as cancer is one of the major diseases that greatly affect patients' quality of life
- Nurses should perform a daily assessment of their quality of life and intervene promptly where necessary
- Government should subsidize treatment for cancer as financial difficulties was the most stated perceived influence of chemotherapy.
- Similar study should be carried out in other institutions in Nigeria.

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Conflict of Interest

- There is no conflict of interest as the work is self-sponsored and has not been published anywhere.

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