

Perception and Attitude of Cancer Patients towards Chemotherapy Administration

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Abstract

Chemotherapy has both potential medical therapeutic benefits and deleterious side effects. Chemotherapy is an acceptable adjuvant treatment procedure for cancer patients. Hence, the study seeks to determine the perception and attitude of cancer patients towards administration of chemotherapy to in the Oncology and Palliative Care Unit in Federal Medical Centre, Makurdi which was created in 2013. Study was descriptive research design and 16 patients who consented to participate in the study completed a 23 items questionnaire. Results show that 68% of patients agreed that chemotherapy has distressful side effects, but 31.3% disagreed. 68% patients disagreed that the side effects are worse than cancer itself, yet 25.5% of the patients agreed. Invariably, 87% of the patients accepted that chemotherapy controlled their illness. There was a significant difference between male and female patients' perception and attitude to chemotherapy administration [$t[14] = -.910$ $p < 0.05$. In view of the findings obtained, it obvious that cancer treatment is physically and emotionally challenging, like the disease itself. Therefore, patients should always be educated on the expected side effect, self-care behaviors and self-management of side effects of chemotherapy in order to enhance their adjustment, coping for continuation and completion of their prescribed regimen of chemotherapy.

Keywords: Chemotherapy; Cancer patients; Perception; Attitude; Side effects

Introduction

Chemotherapy is the use of anti-cancer medicines to destroy cancer cells. The type of drug that is used will depend on the type of disease the patient has and what part of the body [1]. Today, chemotherapy has changed as important molecular abnormalities are being used to screen for potential new drugs as well as for targeted treatments [2]. Chemotherapy medicine is given through a drip, as tablets or capsules. According to DeVita and Chu, surgery and radiotherapy dominated the field of cancer therapy in the 1960s but cure rates after extra radical treatments had risen to about 33% due to the presence of heretofore-unappreciated micro metastases. As research continued, it was found that combination of chemotherapy could cure patients with various advanced cancers [1].

This observation opened up the use of adjuvant chemotherapy with surgery and/or radiation treatments to deal with the issue of micro metastases, which was common in breast cancer patients. The use of chemotherapy to treat cancer began at the start of the 20th century by Paul Ehrlich even though he was pessimistic about the success of the project [1]. In the combined efforts of Murray Shear, and NIH Laboratory of Pharmacology to become the National Cancer Institute [NCI] set up the most organized program that would become a model for cancer drug screening [3]. Shear's program was the first to test a broad array of compounds, using the murine S37 as his model system. However, only two drugs ever made it to clinical trials but were eventually dropped because of unacceptable toxicity. This failure was in part due to the antipathy toward the testing of drugs to treat cancer

plus the lack of information and experience on how to test potentially toxic chemicals in humans [1].

Several clinical and laboratory trials persisted, but with no outstanding success until the response of acute leukemia in children to methotrexate and the availability of new screening systems, led to the development of the Cancer Chemotherapy National Service Center (CCNSC) in 1955. In spite of the clinical advancement to the use of chemotherapy, skepticism surrounded the clinical usefulness of chemotherapy for cancer in the 1950s [1]. This was because there was lack of concrete evidence to prove that drugs could cure or even help cancer patients in any stage despite some impressive antitumor responses [1]. The use of methotrexate in an unusual way for the cure of gestational choriocarcinoma spearheaded by Min Chiu Li in 1958 marked the beginning of the first effective combination chemotherapy programs for metastatic testicular cancer [4].

In the 1960s, medical oncology did not exist as a clinical specialty [1]. Those who were given the task of administering chemotherapy at most medical centers were regarded as underachievers at best. However, this gap is virtually eliminated as the number of medical oncologists increase by the day even in Nigeria. The prevailing attitude toward the use of chemotherapy can only be described as hostile [1]. It took plain old courage to be a chemotherapist in the 1960s and certainly the courage of the conviction that cancer would eventually succumb to drugs and a remarkable achievement was recorded as complete remissions were occurring in about 25% of children with leukemia, but with single agents, they were brief, measured in months [1]. Finally, combinations of drugs, an anathema in medicine at the time, were superior to single agents. Essentially, the demonstration that combination of chemotherapy with other procedures could cure some types of advanced cancer gave hope that the same results could be

achieved under ideal circumstances for more common solid tumors [1].

Consequently, many new drugs and new classes of anticancer drugs have been introduced since the 1980s, too many to discuss here, and are now available to clinicians. Chemotherapy method for the treatment of cancer, in fact, transited through series of clinical trial and associated criticisms for some decades before it was accepted to be used as adjuvant therapy in the treatment of cancer. Chemotherapy may be given to try to cure cancer, to reduce the probability of cancer coming back or to shrink it and prolong life if a cure is not possible. Despite the success that was later achieved with the use of chemotherapy in the treatment of cancer, chemotherapy has physical and emotional unpleasant side effects to the extent that some patients purposely abscond from treatment. Cancer treatment is terrible to experience than its illness [5]. Notwithstanding the adverse side effects, the use of chemotherapy for patients in Nigeria is the most available and immediate treatment option for cancer patients. In view of this, cancer patients' positive attitude is essential and necessary for the successful management of their cancer with these drugs.

Invariably, there appears to be a shift in attitudes towards health and cancer in many aspects; such as attitudes towards risks of cancer and diagnosis, attitudes towards treatment, attitudes towards health professionals, attitudes towards independence, attitudes towards health services and attitudes towards friends and families [6]. Specifically, chemotherapy for the treatment of cancer is expected to bring an overall benefit and associated significant side effects [7]. The adverse effects of chemotherapy affect the individual's physical, psychological and social competence and it could equally decrease his or her cooperation concerning their treatment. This has made the perception and attitude of patients towards chemotherapy to be indistinct and unpredictable.

Cancer is an outrageous disease that nobody will desire or expect to fall ill of it. Yet, this disease has surprisingly become a public health concern as it is nowadays common in the young and old; males and females in Benue state and Nigeria. People diagnosed with cancer in our society do feel that cancer is a death sentence and they are at risk of dying sooner than would expect. Besides, the recognition of the growing incidence of cancer in the population, the constant late reporting and diagnosis inspired the need for a palliative care facility. As a result, in 2013, an Oncology and Palliative Care Unit was created in Federal Medical Centre, Makurdi. It functions to provide treatment and palliative care services to patients with cancer and other life threatening illnesses. The staff of the unit comprise of a multidisciplinary team of health professionals, headed by a consultant oncologist. Of course, as it is expected from its inception, patients that access the services in this unit mostly are those diagnosed with one type of cancer or the other. Primarily, the services of the team include assessment and treatment of patients whom for the most part are outpatients diagnosed to have cancer within the hospital and others that are referred from other hospitals for chemotherapy and morphine.

Precisely, on every Wednesday in a week, a minimum of three-to-five patients are treated with a chemotherapy regimen over a period of hours in the Palliative Care Unit. The picture of the palliative care unit provided herein is to demonstrate that chemotherapy is so far the predominant method of treating patients that are eligible for it, all things being equal. Unfortunately, apart from the absence of a cancer treatment center added to the existing poor standard of health facilities Nigeria, an inclination to atavistic beliefs, denial and poverty; the greatest challenge faced in the management of cancer patients to

improve their quality of life has been the late diagnosis of the disease. Delayed diagnosis implies late commencement of treatment. In most cases, there is poor cooperation and patients exhibit inconsistent attitude to treatment directives due to the high cost of the anti-cancer medicine and some patient's inability to afford them.

Besides the challenges mentioned, chemotherapy in particular presents a challenge for patients, families, and healthcare professionals [3]. The administration of chemotherapy differs with the type of cancer and different patients also react differently to the side effects. Chemotherapy has deleterious chemical properties and its side effects make most patients to become psychologically distressed. Obviously, patients who receive chemotherapy experience some side effects within the first 48 hours of its administration when they are at home [3]. Besides, there are some abrupt physiologically induced side effects of chemotherapy such as nausea and vomiting which may possibly occur within minutes after the drugs are given [3]. In addition, another observed physiological response is the increased patient's urinary frequency which is common when receiving chemotherapy.

It is apparent that the patient's frequent urination is due to the effect of premedication (e.g., anti-diuretics) that are administered to help the kidney excrete the toxic effects of cytotoxics. There are also some psychosocial associated side effects that patients receiving chemotherapy usually experience. These may include; depression, fear and anxiety, sadness, worry and loss of interest in social activities due to change in bodily appearance caused by chemotherapy [5]. The negative aspects of anticancer therapy are not limited to the physical and psychological and social side effects for individual patients, but also include the costs of therapy. The cost of treating cancer illness is very high in Nigeria. Apart from the few medical personnel (doctors and nurses) who specialize in oncology; there are less than 10 radiotherapy treatment facilities with little and weak functioning treatment equipment. This means that the growing population of cancer patients are underserved. By extension, this is adding to the experience of poor or low quality of life and the frequency of death of cancer patients. Yet, there is so far no workable government health policy in view to change the situation and give this dreadful health problem a proactive priority attention.

In view of chemotherapy administration, studies have shown that there is variation in the perceptions and attitudes of cancer patients towards cancer treatment which involves chemotherapy. There are evidences which suggests that people sometimes perceive the consequences of cancer treatment, both clinical and non-clinical, to be worse than the disease itself [6,8]. Regarding gender, Women 56% are more likely than men 31% to agree that the side effects of treatment are often worse than the disease [6]. Researched evidence has revealed that attitudes towards treatment do not become more negative as age increases. That means older people are less likely to receive active anti-cancer treatment, be it surgery, radiotherapy or chemotherapy [9]. Very few people reported that they declined treatment 2% or even opted out of some treatment 14%, and this does not increase with age [4].

Clinical observation of patients suggest that the impact of treatment appear to be more negative amongst those older people who have not had cancer than amongst those who have actually received cancer treatment, with 46% of those with cancer agreeing with the statement that the side effects of treatment may be worse than cancer itself, compared with 53% in the non-cancer group 3. Another finding has shown that across all age groups, few people opt-out of treatment altogether. Besides, one hypothesis reveals that poorer clinical

outcomes for older people with cancer are that they are less likely to receive appropriate treatments than younger people [10]. This possibly could be due to fear of side effects and the ability to cope with it (emphasis added).

In addition, reports from international published literature showed that the treatment benefit that patient's desire is small; however, the variance in preferences within studies [11]. Relatively, a study reveals that breast cancer patients, who were about to start with and without chemotherapy, were asked to indicate the minimal benefit to make adjuvant chemotherapy acceptable. Patients with chemotherapy accepted therapy for significantly less benefit than their counterparts without chemotherapy.

Aim and objectives of the study

The study seeks to examine cancer patients' perception and attitude to chemotherapy administration. This understanding will help healthcare service providers to always provide patients with specific information on self-care and behavior management of its side effects to encourage their cooperation to treatment. Other objectives are to:

- Determine the extent to which cancer patients perceive chemotherapy with its toxic side effects.
- Examine the reaction of patients towards chemotherapy administration.
- Measure the significant difference between male and female cancer patients attitude to chemotherapy administration.

Research questions

- What is the patients' perception of chemotherapy administration?
- What is the attitude of the patients towards chemotherapy administration?
- Is there a significant difference between male and female perception and attitude to chemotherapy administration?
- To what extent does chemotherapy benefit cancer patients?

Methods

Research design

The study was a descriptive research design. Descriptive research studies attempt to provide an accurate picture of a situation or event. Relatively chemotherapy a situation whereby anticancer drugs are administered to patients from time to time with the aim to cure or shrink the progression of a cancerous tumor. Anticancer drugs have potential side effects which are unendurable and psychologically distressing. The descriptive design was chosen as a path to describe accurately the perception and attitudes of these people diagnosed with cancer and are on chemotherapy. In view of this, this study provides a narrative of the facts and concerns of these cancer patients that have formed their opinion and attitude to chemotherapy.

Setting/participants

This study was conducted at the Palliative Care Unit in Federal Medical Centre Makurdi, Benue state in the North-Central Nigeria. FMC, Makurdi is a tertiary institution and the only hospital in Benue state that has a Palliative Care unit to provide palliative care services to patients with a terminal illness such as cancer. Palliative care services are delivered to both inpatients on admission in the hospital and outpatients, but chemotherapy in particular, is administered only to

the outpatients in the Palliative Care Unit observation rooms. The participants for the study consisted of all male and female patients that are considered to be clinically and emotionally stable. Informed consent was obtained from each patient that accepted to take part in this study to provide information regarding their experience, perception and attitude towards chemotherapy drugs. The patients' demographic variables include marital status, education, occupation/profession and ethnicity. The participants were patients who were mostly in the age range of 18 to 65 years old as depicted in Table 1.

Years	Palliative patients	Oncology patients	Number of deaths recorded
2013	3	-	1
2014	9	10	9
2015	15	11	11
2016	10	20	9
2017	1	38	3
Jan/June 2018	5	12	2
Total	43	91	35

Table 1: Summary of patients that have assessed treatment from 2013-2018.

Sample and sampling technique

A total 16 patients that have received chemotherapy out of 50 diagnosed patients from 2017-2018 were participants for the study. Total population sampling is a type of purposive sampling technique where you choose to examine the entire population that has exact set of characteristics (e.g., specific experience, knowledge, skills, exposure to an event). In such cases, the entire population is often chosen because the size of the population that has the particular set of characteristics that you are interest in is very small. In research, the findings obtained from a non-probability sample frequently lack the scientific power of generalization. However, they are helpful in making logical generalizations. That is such a logical generalization is made bearing in mind that the result is limited only to a population elsewhere that has the similar characteristics with the sample involved in the study. Only patients who met the following criteria were included in the study. Patients who have a diagnosis of cancer disease,

- Patients age 18 years and above,
- Patients who had two or more circles of chemotherapy,
- Patients who were psychologically and physically stable.
- Patients that consented to take part in the study.

Instrument

A self-reported questionnaire which comprised of 23 items including information about the demographic variables of the patients was developed for the study. The patients were asked to provide information concerning their understanding and thoughts towards chemotherapy. A Likert format of (Agree, Disagree, or neither agrees nor disagrees) was provided to guide the patient's choice of response to the questionnaire items.

Procedure for administration

The questionnaire was administered to each participant but the researchers were offering interpretation of the questions to patients who are uneducated and cannot read or understand what is written in English but speak only their dialect such as Tiv, Idoma and Igede, Hausa. Interestingly, the authors are from some of these ethnic groups. Further, the setting for the Study was Federal Medical Centre, Makurdi, Benue state in North-Central Nigeria. Besides, majority of the cancer patients are predominantly Tiv, Idoma, Igede, while others are Hausa/Fulani and Igbo. The exercise was carried out in the Palliative Care clinic consultation rooms to ensure privacy. Ethically, permission to get access to the patients was sought and obtained from the Ethical Research Committee (ERC) in the hospital. Furthermore, the informed consent of each patient was first asked and obtained before administering the questionnaire on him or her. Confidentiality of management of the information provided by the patients was explained and guaranteed to allay their fears of such information being disclosed to any person other than for the purpose it is designated.

Ethical considerations

Confidentiality and anonymity of participants was carefully maintained by non-inclusion of names and analyses of data were done

as group data and manage only for the purpose of the study. A verbally informed consent was sought and obtained from each subject prior to enrolment in the study. The written informed consent forms were only given to participants that accept to sign them as evidence for their consent to be involved in the study after the aim and objectives of the study were explained. The reason for this decision is to avoid some respondents' persisting suspicion or doubt on the implication of signing the consent form.

Statistical analysis

The statistical analysis used to answer the research questions for the purpose of achieving the objectives of the study were (percentages, and t test of independent). The collected data were entered into and analyzed by the statistical Software Program for the Social Sciences (SPSS) Statistics version 20 to save not only time but also the accuracy of the results for good interpretation.

Results

Table 2 shows the demographic characteristics of cancer patients.

Variables	Frequency	Percentage %
Males	2	12.5
Females	14	87.5
Age		
20-40	5	31.3
41-60	10	62.5
61-80	1	6.3
Marital status		
Married	1	68.8
Intact family	1	6.3
Widows	3	18.8
Single	1	6.3
Occupation		
Student	1	6.3
Trade/business	4	24.1
Farming	6	37.5
Nursing	3	18.8
House wives	2	12.5
Ethnicity		
Igala	1	6.3
Igede	2	12.5
Idoma	1	6.3

Tiv	12	75
Religion		
Christianity	15	93
Islam	1	6.3
Educational Qualification		
No education	5	31.3
Diploma	5	31.3
Secondary school cert.	3	18.8
Primary school cert.	3	18.8

Table 2: Summary of demographic variables of the (N=16) participants.

There were 16 (14 females and 2 males) selected patients that consented to their involvement in the study. Their age ranged from 18 to 65 years.

The outcome of the findings on Table 3 represents the variation in cancer patients' responses regarding their perception and attitudes toward chemotherapy administration.

Items	Frequency	Percentage %
Cancer treatment type		
Radiotherapy and chemotherapy	1	6.3
Surgery and chemotherapy	9	56.3
Chemotherapy	6	37.3
Prefer chemotherapy than radiotherapy		
Neither agree nor disagree	7	43.8
Disagreed	4	25
Agreed	4	25
Side effect experience		
Hair loss	5	31.3
Shocking feelings	2	12.5
Fatigue	1	6.3
Nausea	3	18.8
Vomiting	4	25.5
Unusual feelings around inside the body	2	12.5
Others	3	18.8
Side effects is worse than the disease		
Neither agree nor disagree	2	12.5
Disagreed	10	62.5

Agreed	4	25.5
Side effects of Chemotherapy are harmful or damaging		
Disagree	5	31.3
Agree	11	68.8
I will not stand to receive chemotherapy treatment due its harmful side effects		
Disagree	4	25
Agree	12	75
Chemotherapy is helping to control my illness		
Neither agree nor disagree	1	6.3
Disagree	1	6.3
Agree	14	87.5
I prefer chemotherapy for it is safe and affordable		
Neither agree nor disagree	2	12.5
Disagree	8	50
Agree	6	37.5

Table 3: Descriptive summary of patient's perception and attitude to chemotherapy administration.

The response variations based on the percentages obtained on each question item demonstrate that patients experience chemotherapy differently and their attitude to chemo is determined by the degree of their experience of the side effects, benefits and its purchasing cost.

The result on Table 4 shows that there is a significant difference between males and females perception and attitude towards chemotherapy administration.

Variables	N	Mean	SD	df	t	Sig	Mean difference
Male	2	14.5	2.12	14	-0.91	0.378	-1.7142
Female	14	16.21	2.51				

Note: N: No. of participants; SD: Standard Difference; df: Degree of freedom; t: t-test static
The mean=14.50 and SD 2.12 while [t(14)=-.910 p<0.05].

Table 4: Analysis of t-test independent of male and female perception and attitude toward chemotherapy administration.

Discussion

Chemotherapy is known to have greater benefit in cancer treatment; it is also recognized to have significant disturbing side effects in the patients. Therefore, this study investigated the perception and attitude of cancer patients towards chemotherapy administration in Oncology and Palliative Care Unit, Federal Medical Centre Makurdi. In view of the statistical analysis, the following was the discussion of the findings. Actually, the results indicate that chemotherapy is most often used in combination with radiotherapy and perhaps, surgery. However some patients tend to have preference for chemotherapy than radiotherapy. For example; 25.0% favored chemotherapy, 25.0% did not like it and 43.8% of patients did not disclose opinion on whether they are in favor of or against chemotherapy or radiotherapy. This perhaps implies that the two treatment procedures have disturbing side effects that most patients cannot tolerate.

Regarding the experience of side effects, it was found that patients have common experiences of certain side effects of chemotherapy. However, some patients experienced different side effects, and in different magnitude as shown in Table 2. These findings corresponded with earlier observations reported in the literature [3,11]. Perceiving the side effects of chemotherapy treatment as worse than the disease itself was another question item the patients differed on. Estape reported in his study that 28.8% of patients view cancer treatment to be worse than cancer illness itself [5]. Of course, 25.5% of cancer patients slightly agreed with this but 62.5% disagreed while 25.5% did not submit to either side. This probably indicates that the meaning of cancer with its bodily and emotional health challenges to affected person is depended on his/her personality, cognitive definition of the experiences that resulted from the having the disease, socio-cultural belief and orientation that shaped his or her perception and interpretation of the meaning and purpose of being a victim of the illness.

There is no doubt that the side effects of chemotherapy are harmful as originally reported. Similarly, the result of this investigation also shows that chemotherapy indeed has damaging physical and emotional side effects and this was demonstrated from the statistics of 68.8% patients that acceded to the fact. Although 31.3% disagreed and this is not far from the knowledge that some people are not likely to, or may experience little of the side effects as others do which could not disturbing to them [11]. Based on this harmful effect of chemotherapy, 75.0% of the patients demonstrated a negative attitude to chemotherapy as they expressed their agreement to discontinue with treatment. However, 25.0% showed no preference to avoid it. Chemotherapy clinically kills or controls the growth of the cancer cells [1,11]. This was further supported in the finding from our study because 87.5% of cancer patient unanimously agreed with the beneficial potency of chemotherapy treatment. Observation of patients that had received chemotherapy in our Oncology and PC unit showed

remarkable improvement of recovery and wellness against the deteriorating condition seen at diagnosis from late presentation before this treatment.

Unfortunately, the cost of chemotherapy is actually not affordable for many patients and they did not hide their feeling about it. When asked whether "I prefer chemotherapy for it is safe and affordable", 50% of the patients disagreed; 37.5% agreed while 12.5% were unable to make up their mind. Attitudes towards cancer costs varied between the patients, as expected, some participants perceived the costs as affordable. Obviously, these are patients with considerable socioeconomic background or they have adequate family support and a good performance state that result from the treatment. Some patients are absolutely poor others are low income earners and worse of all; even those that are employed are faced with multiple family challenges in an environment that workers are not well paid and the salary too is erratic. Therefore, indicating that cancer costs are affordable is a difficult response. Besides, costs of cancer care are not covered by National Health Insurance Scheme (NHIS) in Nigeria. Generally, treatment cost is high for most cancer patients, for example a cycle of chemotherapy is between 40,000 and one million naira depending on the treatment regimen. With this cost a lot of patients end up living a short life instead of the prolonged life or even cure that would have been achieved if they had the wherewithal. Sadly, Non-governmental Organizations (NGOs) in this Nigeria equally do not help matters. This is because when they obtain grants from foreign-based organizations or even from the Nigerian government, the monies are diverted to private projects such as building of houses, purchasing exotic cars and other businesses. Practically, this uncharitable corrupt behavior has diminished and nullified their humanitarian conscience and objectives reflected in their popular slogan that NGOs are not profit making organizations. Invariably, this is rather an unfair attitude to the grantors and to the targeted end users of the funds to support cancer education campaign and management of the underprivileged patients.

Attitudes towards cancer costs

Despite a wide variation in desired benefit, the cost of chemotherapy is sadly very high and realistically beyond affordability for patients with low socio-economic status. This was clearly shown in the patients' responses on the question item I prefer chemo for it is safe and affordable. Despite that 25.5% patients neither agreed nor disagreed, 37.5% agreed and 50% disagreed. Absolutely, there is extreme poverty among the people in Nigeria and the most hit of all kind of illness including cancer in this country with an estimated population of 180 million is the large class of poor people who are living on less than £2 per day. This is evidently in what we see of patients that are receiving treatment in the palliative care clinic. As previously stated, the average the price of chemotherapy per a cycle is about ₦40,000 and this is often very difficult for many of these patients

to buy. This means that the patient's inability to purchase the drugs to complete the recommended six or eight cycles of treatment leads to inconsistency in its administration, which may in most cases predict failure of the treatment.

Unfortunately, due to the government disregard about improvement of the healthcare system for effective service delivery, cancer treatment facilities are unavailable and not to mention of subsidizing chemotherapy when it is by the way not even captured in the National Health Insurance Scheme (NHIS). Besides, the mushroom NGOs owned and operated by persons whose husbands or relatives are in top government position such as governors, minister, senators etc. exist only as havens for embezzlement and misappropriation of the public funds and grants from international organizations. As a result, it is only a smoke assistance that is intermittently offered to few patients who have connections with political jobbers. Consequent upon this, cancer patients' quality of life which is the primary goal of its treatment is not guaranteed and by extension there is deterioration of the disease leading to increase death rate by the day.

Conclusion

Indeed, chemotherapy has very distressing side effects but it still benefits many patients for the sustainability of their Quality of Life (QOL). Nevertheless, the cost of chemotherapy, for a large number of cancer patients in Nigeria, is beyond their level to purchase due to poverty and lack of subsidization of its price by the government or coverage of cancer treatment in NHIS to reduce the burden on at least the government workers. These put together have made cancer treatment to represent a significant challenge for patients, families, and even the health care team. Despite these, for all cancer patients seeking treatment, it is important to encourage them to surmount the distress experience of chemotherapy. Actually, positive attitude is crucial in cancer treatment and recovery and improved QOL. Therefore, patients and families need to become more familiar with their disease, treatment regimens, and side effects.

Cancer patients should be provided with specific information on self-care behaviors and self-management of side effects of chemotherapy. Importantly, education of patients about the drug they are receiving and what side effects they are to experience after administration should be a routine practice of oncology and palliative care staff. Cancer patients need constant psychological support.

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Competing Interests

The authors did not have any conflict of interest and even with any organization about the study. This study was a project that was proposed and sponsored by the author's out-of-pocket cost. Therefore, the authors have no financial relationships with anybody or organizations that might have an interest for its usage and submission for publication anywhere in the world. The authors collectively collected the data; RM Labe and S Otene reviewed the literature, and interpreted the findings which were analyzed by Fanen Upwa a paid statistician.

Ethical Approval

The authorization to carry out this research using cancer patients on chemotherapy in the Oncology and Palliative Care unit in the Federal Medical Centre was obtained from the Ethical Research Committee (ERC).

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