



AWARENESS OF THE IMPACTS OF CHEMOTHERAPY INDUCED ALOPECIA AMONG INDIVIDUALS WITH CANCER AT THE TERTIARY HOSPITALS OF THE FEDERAL CAPITAL TERRITORY, ABUJA

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ABSTRACT: *Hair is an important aspect of human identity. Chemotherapy induced alopecia (CIA) is a common side effect of the chemotherapy treatment given to cancer patients. The purpose of this study was to determine the awareness of the impacts of chemotherapy induced alopecia among patients with cancer in the tertiary hospitals of the Federal Capital Territory. A cross-sectional research design was adopted for the study. A total of 394 cancer patients with chemotherapy induced alopecia were interviewed for the study. The instrument used for data collection was a researcher developed questionnaire. Data collected were summarized using frequencies, percentages, bar and pie charts. Results showed that 109 of the respondents were males (27.7%) while 285 (72.3%) were females, 215 (54.6%) were Christians, 139 (35.3%) were Muslims, and 26 (6.6%) and 14 (3.9%) were traditionalists and atheists respectively. Over 75% of the respondents reported that they were aware of the various side effects of chemotherapy including alopecia, and about 43% reported chemotherapy induced alopecia as their most devastating side effect of chemotherapy. The results on the impact of CIA also revealed that CIA affected the accomplishment of daily tasks in about 62.4% of the respondents; it also limited about 62.9% of the respondents from going out because of shame. It made about 82% of the respondents appear ugly, and made about 56.6% of the patients always ashamed of themselves. It made about 79.7% of the respondents unable to go out without covering their hair, and about 59.6% of the respondents had difficulty getting enough wigs that fit. The researchers concluded that a greater percentage of the respondents are aware of CIA and that CIA had a great impact on the participants. The researchers therefore recommend that more time should be devoted to creating awareness on the impacts of CIA during clinics.*

KEYWORDS: Cancer, Chemotherapy, Alopecia.



INTRODUCTION

Cancer is a disease condition in which some of the body's cells grow uncontrollably and spread to other parts of the body (National Cancer Institute (NCI), 2022). Cancer is one of the non-communicable diseases that affect individuals of all ages. It is the uncontrollable growth of abnormal cells in the body (Maurie-Markman, 2022). It is a large group of diseases that can start in almost any organ or tissue of the body when abnormal cells grow uncontrollably, go beyond their usual boundaries to invade adjoining parts of the body or spread to other organs (World Health Organization (WHO), 2022). Cancer is a genetic disease (NCI, 2022) caused by changes to the genes that control the way our body cells function, especially how they grow and divide. Genetic changes that cause cancer can happen due to errors that occur as the cells divide, due to damage to the DNA caused by harmful substances in the environment such as the chemicals in tobacco smoke and ultraviolet rays from the sun, and may also be inherited from parents (NCI, 2022).

Cancer can start anywhere in the human body, which is made up of trillions of cells. Normally, the human cells grow and multiply (through a process called cell division) to form new cells as the body needs them. When cells grow old or become damaged, they are replaced by new cells. Sometimes, this orderly process breaks down, and abnormal or damaged cells grow and multiply when they should not do so. These cells may form tumors, which are lumps of tissue. Tumors can be cancerous or non-cancerous (benign). Cancerous tumors spread into, or invade, nearby tissues and can travel to distant places in the body to form new tumors (a process called metastasis). Cancerous tumors may also be called malignant tumors (NCI, 2022). Many cancers form solid tumors, but cancers of the blood, such as leukemias, generally do not. Benign tumors do not spread into, or invade, nearby tissues. When removed, benign tumors usually do not grow back whereas cancerous tumors do.

Most types of cancer can be treated, especially when detected early enough. Many procedures and drugs are available to treat cancer, with many more being studied. Some are local treatments like surgery and radiation therapy, which are used to treat a specific tumor or area of the body. Drug treatments (such as chemotherapy, immunotherapy, or targeted therapy) are often called "systemic" treatments because they can affect the entire body. The goal of cancer treatment is to achieve a cure for the cancer, allowing the patient to live a normal life span. This may or may not be possible, depending on the type and stage of the cancer. If a cure is not possible, the treatments may be used to shrink the cancer or slow the growth of the cancer to allow the patient to live symptom-free as long as possible (Anand, 2022).

Cancer treatment types include: surgery, chemotherapy, radiation therapy, bone marrow transplant (stem cell transplant), immunotherapy (biological therapy), hormone therapy, cryoablation and radiofrequency ablation (Anand, 2022). All these types of cancer treatments have uncountable side effects and impacts on the general well-being of the cancer patients, ranging from physical, social, physiological, psychological as well as financial impacts on the patient (Amjad, 2023). Chemotherapy is the use of drugs to stop the growth of cancer cells, either by killing the cells or by stopping them from dividing (NCI, 2022). Because cancer cells generally grow and divide faster than normal cells, they are more susceptible to the action of these drugs. However, damage to healthy cells is unavoidable, and this damage accounts for the side effects linked to these drugs. Chemotherapy may be given by mouth, injection or infusion, or on the skin depending on the type and stage of the cancer being



treated. It may be given alone or with other treatments like surgery, radiation therapy or biologic therapy (NCI, 2022). Cancer chemotherapy's side effects affect the daily activities of cancer patients and their families on many levels confronted by changes in health status and lifestyles, leading to impaired self-care efficacy (Sae'd, 2021). Some of the side effects of cancer treatments are: Neutropenia, Lymphedema, Alopecia, Nausea and Vomiting, Problems with thinking and remembering things, Cancer pain, and Deep vein thrombosis (blood clots). Some kinds of chemotherapy cause alopecia (hair loss) which significantly affects the patient's general wellbeing. Alopecia is the absence or loss of hair in an area where it is expected to be present (Ahmad, 2023). Alopecia can be localized or diffuse, temporary or permanent, and affects both sexes and all age groups. This condition is a sign or symptom arising from heterogeneous etiologies and it is broadly classified as non-scarring, and scarring, which is the most common form of alopecia (Ahmad, 2023). Chemotherapy induced alopecia (CIA) is one of the most shocking aspects for oncological patients (Cosmet, 2018). Chemotherapy induced alopecia (CIA) is one of the most common adverse events caused by conventional cytotoxic chemotherapy, affecting approximately 65% of patients (Chung, 2013; Dua, 2017). It involves damage to the hair follicles which can cause substantial hair loss (Haslam, 2019). It negatively influences body image, sexuality and self-esteem, so that up to 8% of patients decide to refuse chemotherapy if there is the risk of hair loss (Balagula, 2021).

METHODOLOGY

A descriptive cross-sectional research design was adopted in carrying out this research study. The design was used because of its suitability in the achievement of the objective of this study.

Objectives of the Study

1. To determine the awareness of Chemotherapy Induced Alopecia among individuals with cancer at the tertiary hospitals of FCT, Abuja.
2. To ascertain the impacts of CIA on Individuals with CIA at the tertiary hospitals in FCT, Abuja

Study Setting

A multicenter study comprising tertiary hospitals in FCT, Abuja, which includes National Hospital, Abuja; Federal Medical Centre, Jabi, Abuja; and University of Abuja Teaching Hospital, Gwagwalada.

Sample Size: This comprised of 369 participants calculated from a target population of 2,054 using Taro Yamane formula, plus 10% non-response rate (36.9 approx 37), giving a total of 406. However, data was analyzed based on 394 properly filled and returned copies of questionnaire.

Research Instrument: Research instrument consisted of a questionnaire with questions that assessed awareness of impacts of CIA among persons with cancer.



Inclusion and Exclusion Criteria: The study included all the adult patients with cancer who had received or were currently receiving chemotherapy at the tertiary health institutions of the federal capital territory (FCT), Abuja within the period of data collection. Excluded from the study were individuals with cancer who were receiving chemotherapy but were not willing to participate in the study and those who were not mentally stable to answer the questions.

Ethical Approval and Consent to Participate

Ethical approval was obtained from the ethical committees of the various hospitals before commencement of the study. The consent of the subjects was obtained by the researcher after explaining the topic and purpose of the study to the respondents. The manuscript was read and approved by both authors.

RESULTS

Table 1: Socio-demographic Characteristics of Respondents **n = 394**

Variable	Classification	Frequency	Percentage
Sex	Male	109	27.7
	Female	285	72.3
	Total	394	100.0
Age	20–29	56	14.2
	30–39	101	25.6
	40–49	130	33.0
	50 and above	107	27.2
	Total	394	100.0
Marital Status	Single	95	24.1
	Married	207	52.5
	Widowed	60	15.2
	Divorced/Separated	32	8.1
	Total	394	100.0
Religion	Christian	215	54.6
	Islam	139	35.3
	Traditional Religion	26	6.6
	Atheist	14	3.9
	Total	394	100.0
Educational Status	No formal education	42	10.7
	Primary	45	11.4
	Secondary	125	31.7
	Tertiary	182	46.2
	Total	394	100.0
Occupation	Public Service	146	37.1
	Trading	166	42.1
	Farming	48	12.2
	Retired Civil Servant	26	6.6
	Unemployed	8	2.0
	Total	394	100.0



Duration of Disease	Below 1 year	169	42.9
	1–5 years	168	42.6
	6–10 years	43	10.9
	10 years and above	14	3.6
	Total	394	100.0

Table 1 presents the results of socio-demographic characteristics of the respondents. Out of the 394 respondents, 109 (27.7%) were males while 285 (72.3%) were females. This implies that the majority of the respondents were females. The results based on age distribution of the respondents revealed that a significant proportion, 130 (33.0%), were within the age of 40–49 years, while the least, 56 (14.2%) were aged 20–29 years. The majority, 207 (52.5%), were married whereas the least proportion (8.1%) were divorced/separated. On religion, the majority, 215 (54.6%), were Christians, followed by 139 (35.3%) who were Muslims, and the least proportion (3.9%) who were atheists.

Findings further revealed that participants were educated as the majority, 182 (46.2%) and 125 (31.7%), had tertiary and secondary education respectively. 10.7% had no formal education. Regarding occupation of participants, a good number, 166 (42.1%) and 146 (37.1%), were traders and public servants respectively. 2.0% were unemployed. Finally, on the duration of the disease, the majority, 337 (85.5%), had lived with cancer for 5 years or less, thus implying that the majority of the participants had received or were still receiving chemotherapy during the study period.

Fig 1: Showing Distribution of Participants by Gender

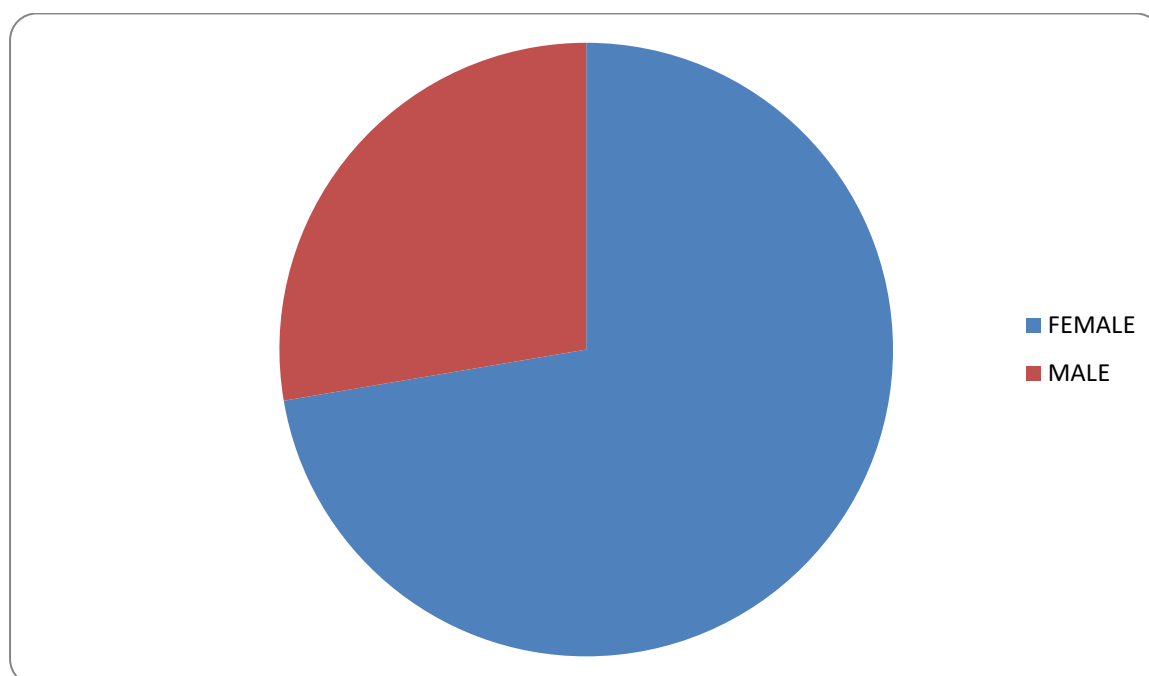


Fig 2: Showing Participants' Age

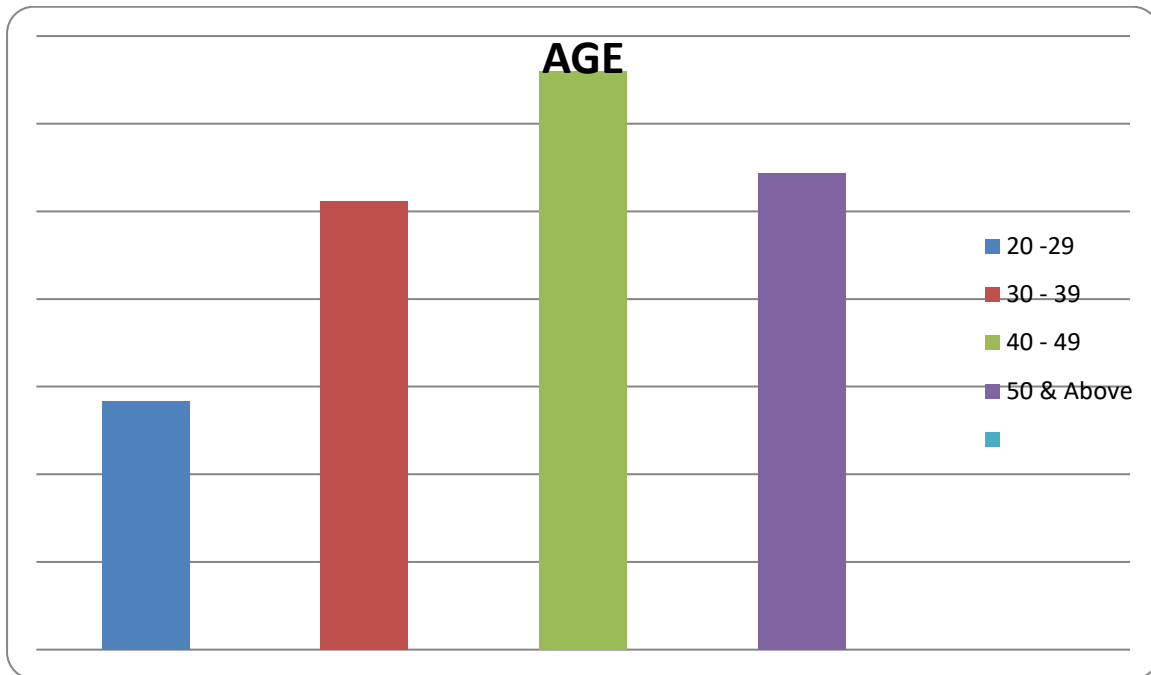


Fig 3: Showing Participants' Marital Status

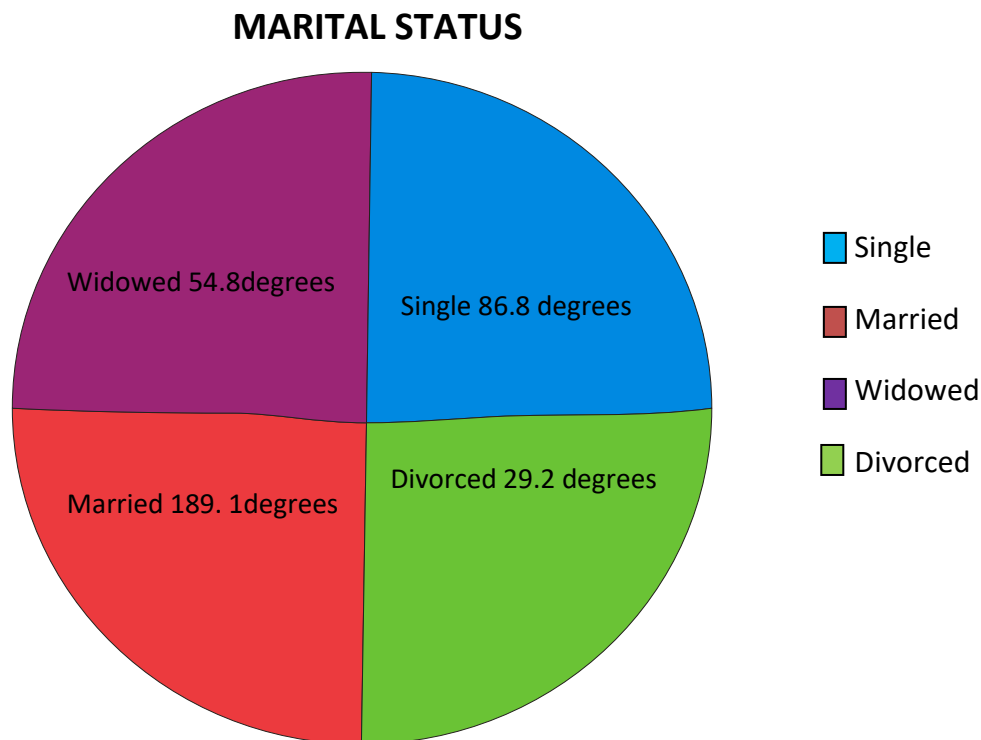


Fig 4: Showing Participants' Religion

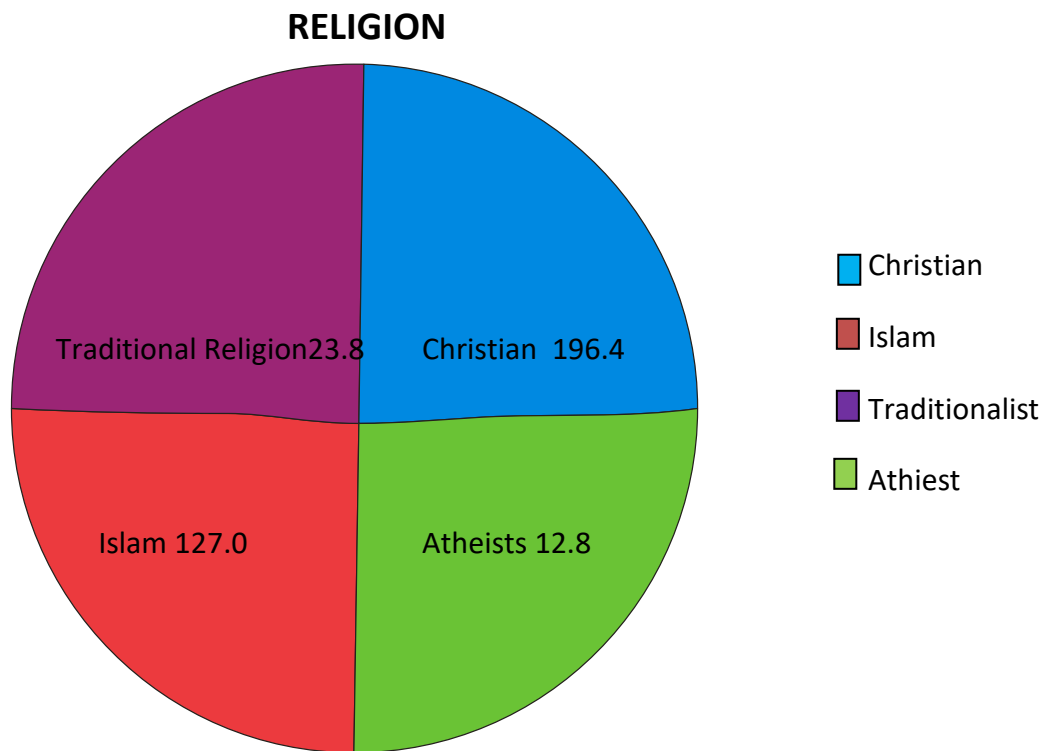


Fig 5: Showing Participant’s Educational Status

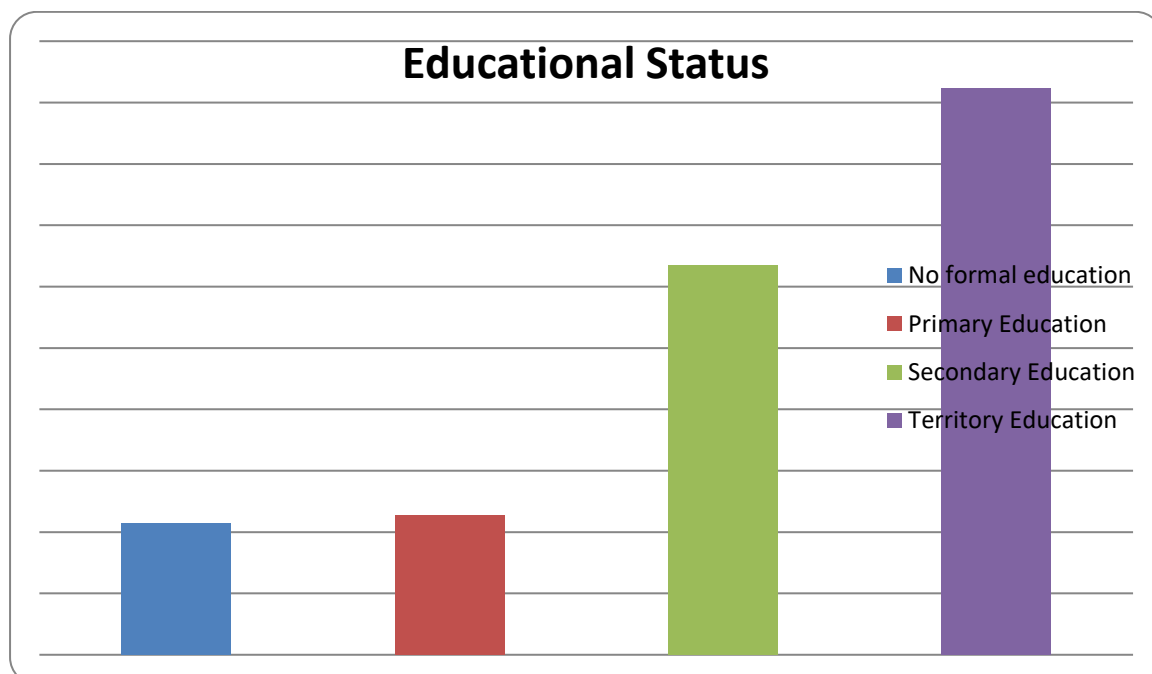
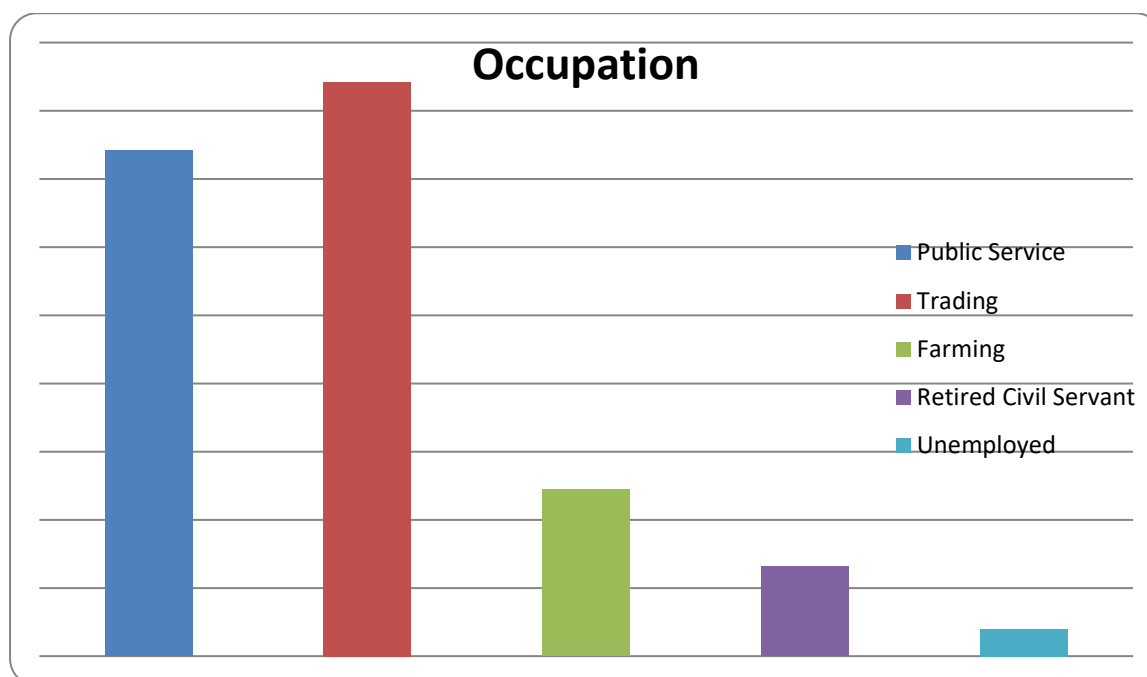


Fig 6: Showing Participant’s Occupation



Objective One: To determine the awareness of Chemotherapy Induced Alopecia among individuals with cancer at the tertiary health institutions in FCT, Abuja.

Table 2: Awareness of Chemotherapy Induced Alopecia on Individuals with Cancer at the

Tertiary Health Institutions in FCT

(n = 394)

Variable	Responses	Freq.	Percentage
Meaning of alopecia (hair loss)	Falling off of hair from the scalp, armpit, pubic area	202	51.3
	Falling off of hair from the head only	149	37.8
	Falling off of Hair from the eyebrows	38	9.6
	No idea	5	1.3
	Total	394	100
Source of information	From health professionals	198	50.3
	From the internet	102	25.9
	From Friends	59	15.0
	From mass media	35	8.9
	Total	394	100
Aware of side effects of chemotherapy	Yes	296	75.1
	No	98	24.9
	Total	394	100
Experience of side effects of chemotherapy by the respondents	Anemia	81	20.6
	Loss of memory	90	22.8
	Alopecia	114	28.9



	All of the above	97	24.6
	Loss of appetite	6	1.5
	Skin discoloration	2	0.5
	Nausea and vomiting	4	1.0
	Total	394	100
	Anemia	69	17.5
	Alopecia	168	42.6
<hr/>			
Chemotherapy with major effects as reported by the respondents			
	Loss of memory	71	18.0
	Nausea and Vomiting	80	20.3
	Loss of appetite	4	1.0
	Skin discoloration	2	0.5
	Total	394	100

Table 2 presents the results of data analysis on the awareness of the effects of chemotherapy induced alopecia on individuals with cancer at the tertiary health institutions in FCT. The majority, 202 (51.3%), of the respondents viewed alopecia as the falling off of hair from the scalp, armpit and pubic area; 149 (37.8%) viewed it as the falling off of hair from the head only; 38 (9.6%) viewed it as the falling off of hair from the eyebrows; and 5 (1.3%) had no idea. This shows that a greater percentage of the respondents had good knowledge of the concept of alopecia.

When the respondents were asked about how they got to know about alopecia, 198 (50.3%) reported that they got to know about it from health professionals, 102 (25.9%) indicated the internet, 59 (15.05) indicated friends and 35 (8.9%) indicated mass media. As such the greatest percentage of the respondents got their knowledge of alopecia from health professionals. Furthermore, 296 (75.1%) of the respondents reported being aware of the side effects of chemotherapy while 98 (24.9%) were not aware, thus implying that a greater percentage of the respondents were aware of the side effects of chemotherapy.

When the respondents were asked about the side effects of chemotherapy they had experienced, 81 (20.6%) reported anemia, 90 (22.8%) reported loss of memory, 114 (28.9%) reported alopecia, 97 (24.6%) reported all of the above, 6 (1.5%) reported loss of appetite, 2 (0.5%) reported skin discoloration and 4 (1.0%) reported nausea and vomiting. Out of these side effects of chemotherapy, the majority 168 (42.6%) reported that alopecia had a major side effect on them, 80 (20.3%) reported nausea and vomiting, 69 (17.5%) reported anemia, 4 (1.0%) reported loss of appetite, and 2 (0.5%) reported skin discoloration.



Objective 2: To ascertain the impacts of chemotherapy induced alopecia on individuals with cancer in the tertiary health institutions in FCT, Abuja.

Table 3: Impacts of Chemotherapy Induced Alopecia

Impact	Responses		
	Yes (%)	No(%)	Total (%)
Accomplishment of daily Tasks	246 (62.4)	148 (37.6)	394(100%)
Affects/limits your going out because of shame (100%)	248 (62.9)	146 (37.1)	394
Makes you appear ugly	323 (82)	71 (18.0)	394 (100%)
Makes you ashamed of yourself always (100%)	223 (56.6)	171 (43.4)	394
Not being able to go out without covering your hair (100%)	314 (79.7)	80 (20.3)	394
Having difficulty getting enough wigs that fits (100%)	235 (59.6)	159 (40.4)	394
Spouse complains of your physical looks because of alopecia (100%)	178 (47.2)	216 (54.8)	394
Affects your mode of dressing (100%)	309 (78.4)	85 (21.6)	394
Affects sexual life because you don't look appealing to your husband (100%)	165 (41.9)	229 (58.1)	394

The results from Table 3 reveal that CIA affected the accomplishment of daily tasks in about 62.4% of the respondents; it also limited about 62.9% of the respondents from going out because of shame. It made about 82% of the respondents appear ugly, and made about 56.6% of the patients always ashamed of themselves. It made about 79.7% of the respondents unable to go out without covering their hair; about 59.6% of the respondents had difficulty getting enough wigs that fit. The spouses of about 47.2% of the patients complained of their physical looks because of alopecia. It also affected the mode of dressing of about 78.4% of the respondents and affected the sexual life of about 41.9% of them.



DISCUSSION

A good number (about 51% of the respondents) viewed alopecia as the falling off of hair from the scalp, armpit and pubic area. This finding is in line with the findings of Shaikh (2022) whose participants reported anticipating hair loss. About half (50%) of the respondents reported that they got to know about alopecia from health professionals. This finding is similar with a previous study by Katabalo *et al.* (2018) whose study also found that about 77.3% of the respondents heard about alopecia from medical doctors. Over 75% of the respondents reported that they were aware of the various side effects of chemotherapy including alopecia, where more than 24% reported that they had experienced anemia, loss of memory and alopecia. Approximately 43% of the respondents reported that alopecia was a major side effect they experienced. This finding is in line with the findings of Heiland (2021) whose study revealed alopecia as a common side effect of cancer treatments. McGarvey *et al.* (2012) also opined that 58% of the patients rated alopecia as the most traumatic side effect of chemotherapy. Gunawan *et al.* (2016) also reported hair loss as a painful and traumatic experience. Also, findings by Saraswat *et al.* (2019) showed that more than half (56.4%) of the patients felt that hair loss was the worst side effect of chemotherapy. Furthermore, the findings of this study on awareness implies that about 25% of the respondents were not aware of chemotherapy induced alopecia which means that more work is needed to be done in creating awareness on the various side effects of chemotherapy, especially on chemotherapy induced alopecia, so as to prepare their minds to cope with the condition, thereby reducing the morbidity and mortality associated with cancer treatment to the barest minimum.

Availability of Data and Materials

The data is with the corresponding author and will be made available at a reasonable request.

Conflict of Interest

The researchers declare no conflict of interest.

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