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COLLEGE OF MEDICINE AND HEALTH SCIENCES

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DEPARTMENT OF ADULT HEALTH NURSING

UNMET SUPPORTIVE CARE NEEDS AND ASSOCIATED FACTORS AMONG ADULT CANCER PATIENTS AT CANCER TREATMENT CENTERS IN NORTHWEST ETHIOPIA PUBLIC HOSPITALS, 2023

BY: TAFACH TIRUKELEM (BSc)

A THESIS SUBMITTED TO THE DEPARTMENT OF ADULT HEALTH NURSING, SCHOOL OF HEALTH SCIENCES, COLLEGE OF MEDICINE AND HEALTH SCIENCES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS IN ADULT HEALTH NURSING

JULY, 2023

BAHIR DAR, ETHIOPIA

BAHIR DAR UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCES

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Unmet supportive care needs and associated factors among adult cancer patients at cancer treatment centers in Northwest Ethiopia public hospitals, 2023

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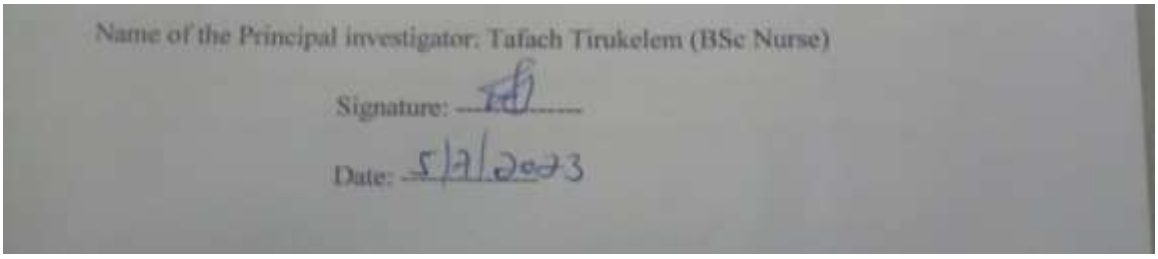
July, 2023

Bahir Dar, Ethiopia

Declaration sheet

This is to certify that the thesis entitled “Unmet supportive care needs and associated factors among adult cancer patients at cancer treatment centers in Northwest Ethiopia Public Hospitals” submitted in partial fulfillment of the requirements for the degree of Master of Science in adult health nursing, Department of Adult Health Nursing, Bahir Dar University, is prepared only by myself and it has not been submitted, in whole or in part, in any previous application for a master’s degree.



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DEPARTMENT OF ADULT HEALTH NURSING

APPROVAL SHEET

This is to certify that the thesis entitled "unmet supportive care needs and associated factors among adult cancer patients in Northwest Ethiopia public hospitals" submitted for partial fulfillment of the requirement of a Master of Science in Adult Health Nursing.

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List of Abbreviations and Acronyms

AOR----------Adjusted Odd Ratio

BSc----------Bachelor of Science

CI----------Confidence Interval

COR----------Crude Odd Ratio

ECOG PS----------Eastern Cooperative Oncology Group Performance Status

FHCSH----------Felege Hiwot Comprehensive Specialized Hospital

Km---------- Kilometer

OSS-3 ----------Oslo 3-Item Social Support Scale

SCNS ----------Supportive Care Needs Survey

TGSH----------Tibebe Ghion Specialized Hospital

UOGSH---------- University of Gondar Specialized Hospital

Abstract

Background: Unmet supportive care needs for cancer patients refer to needs that call assistance or services as an individual perceives are required to achieve the optimal level of physical, psychological, informational, patient care, and sexual well-being.

Objective: To assess unmet supportive care needs and associated factors among cancer patients at cancer treatment centers in Northwest Ethiopia public hospitals, 2023.

Methods and materials: Institution-based cross-sectional study was conducted from March 20 to April 27, 2023, on cancer patients in Northwest Ethiopia Public hospitals. A systematic random sampling technique was used to select the study participants. Data was collected by using structured interview-administered questionnaires. After the data was checked for its completeness, it was coded and entered in to Epi data version 4.6 and exported into SPSS version 27 for analysis. A binary logistic regression model was used to determine the associated factors. On bivariable regression analysis variables with a p-value <0.2 was entered into a multivariable model for further analysis and p-value <0.05 was confirmed as statistically significant.

Result: A total of 410 adult cancer patients took part in this study making a response rate of 96.9% with mean age of 49.5 ± 14.67 years. The overall prevalence of unmet supportive care needs among cancer patients was 98.3%. Psychological, physical, information, patient care, and sexuality domains had 85.1%, 81.5%, 74.6%, 68 %, and 48.3% respectively. Being a farmer, old age, higher and secondary education attainment, testicular cancer, treatment options of radiotherapy and surgery, time since diagnosis <24 months, poor performance status, and weak social support showed statistically significant associations with unmet supportive care needs in different domains.

Conclusion and recommendation: This study showed an enormous amount of unmet supportive care needs among cancer patients. Occupation, education, cancer type, social support, treatment option, performance status, age, and time since diagnosis were variables that showed statistically significant associations with unmet supportive care needs of different domains. Hence, the government and health professionals had better work together to advance the needs of cancer patients.

Keywords: Cancer, Northwest Ethiopia, supportive care, unmet need

1. Introduction

1.1. Background

Cancer is a condition that leads to uncontrolled cell division in the development of tumors and a compromised immune system. It is one of the leading causes of death in the world, and its prevalence has grown recently as a result of many factors, including population aging, social environments, economic standing, chemical, physical, unhealthy nutrition, and infection (1, 2). In 2020, it is estimated that 19.3 million new cancer cases were diagnosed worldwide. In Ethiopia, in 2019 there were 53,560 new incident cases (3). The most prevalent cancer diagnosed in women is now breast cancer, which was responsible for 6.9% of cancer deaths in 2021. Lung cancer, was expected to be the leading cause of cancer death, followed by colorectal, liver, and stomach cancers (4).

Supportive care is a person-centered approach to providing essential services for those affected by or living with cancer. It addresses their informational, spiritual, environmental, sexual, financial, cultural, psychological, social, and physical needs during diagnosis, treatment, or follow-up phases, and also issues with health promotion and prevention, survivorship, palliation, and bereavement (5-7). The Multinational Association of Supportive Care in Cancer (MASCC) defines supportive care as the prevention and management of side effects associated with cancer and its treatment. This covers every aspect of the cancer experience, from diagnosis to anticancer treatment and post-treatment care, to improving rehabilitation, secondary cancer prevention, survivorship, and end-of-life care (8, 9). The potential advantages of supportive care could include reduced morbidity, mortality, resource utilization, and results with improved quality of life (9-11). To meet a person's needs, it is crucial to maintain or improve current levels of well-being, prevent and manage deterioration, or both. The term "needs" generally refers to the services or products that individuals need from professionals to live as healthily as possible (12). Unmet supportive care needs refer to the needs that require support or services that an individual perceives as necessary to achieve optimal well-being (13).

Unmet needs are the consequence of gaps or mismatches between needed and provided care (actual services) that negatively affect health-related outcomes (such as psychosocial health and health-related quality of life) (14, 15). The patients' unmet supportive care needs are divided into five domains. These are: Psychological domain measures need relating to support in coping with cancer and feelings such as anxiety, fear, and emotional instability. The needs linked to knowledge about the disease, diagnosis, treatment, and follow-up are evaluated by the health system and information domain. The physical and daily living domain assesses physical symptoms, challenges or experiences patients have, and feelings of powerlessness when doing daily tasks and activities. The patient care and support domain focus on needs connected to clinical care, such as patients' demands for medical personnel to show respect for their physical and emotional needs, privacy, and choice.The sexuality domain measure needs of cancer patients related to change in sexual feelings, sexual relationships and sex-related information or difficulties (16-18).

Assessing unmet supportive care needs of cancer patients helps to identify patient subgroups with higher-level of needs for prevention or minimize difficulties through proper early intervention. This enables the government and the patient to decide how urgently they need the service and how to prioritize allocating resources to meet that need (19). Several organizations, including the American Cancer Society, have started to develop guidelines to aid primary care and other survivorship providers in the delivery of care for patients with a history of cancer (20-22). According to various studies, people who have a lower quality of life have more unmet needs in the five supportive care need domains (23-25).

1.2. Statement of the problem

Different studies showed that the magnitude of unmet supportive care needs varied from 27% to 78% (18, 19, 26). Psychological (27-29) and health system and information domains (30, 31) were the most frequently reported unmet need domains. In 2021 globally unmet needs for patients with rare cancers were 95%, 93%, and 80% in the health system and information, psychological, and physical need domains respectively (32). Studies have shown that unmet needs related to sexuality are typically the least prevalent (17, 29-31, 33). More than 25% of patients in the UK (34), 70% of young adult cancer patients in Japan (26), and nearly 46% of patients in Africa (35) reported having unmet supportive care needs. In Ethiopia, its prevalence in the psychological and physical domains was 81.0% and 74.6% respectively (29).

Living with cancer requires managing a broad range of supportive care needs (SCNs), resulting from either the illness or its treatment (27, 36). Over the years, quality-of-life studies have indicated that cancer patients have to deal with a broad variety of problems (37). Departures the diagnosis, the management of the disease itself leads to significant fights with the side effects of therapy, physical complications of the disease, psychological affect and social challenges (38, 39) resulting in unmet supportive care needs. Hence, the concept of unmet needs has explained the relationship between cancer diagnoses and these problems (37). Further, unmet needs are related to lower satisfaction with cancer care (27) and difficulty of doctor-patient communication in the context of cancer, as well as a lack of physician time to address non-clinical issues and inadequate hospital care services (40) which can result in poor treatment adherence (41). Based on various studies, the unmet needs of cancer patients are caused by risk factors such as educational and occupational status, cancer stage, ethnic group, time since diagnosis, and treatment options (29, 30, 33, 42). Similar to socially and economically poor populations, cancers that are identified late stage that may have been controlled have worse outcomes and prognoses in these populations (43).

In a previous study, it was shown that distress leads to increased development of unmet supportive care needs in patients with cancer (44). People with cancer experience high rates of financial disaster, which is increasing over time as cancer care becomes more

expensive(45). In South East Asia, for example, the rate of financial disaster is 70% (45, 46). Severe financial distress after a cancer diagnosis may increase the likelihood of death, even after effective treatment (47). Unmet supportive care needs result in poor tolerance, intense emotional discomfort, and a lower level of well-being (48). The Ethiopian government has created a National Cancer Control Plan for the year 2016–2020, with the goal of promoting cancer prevention, early detection, improved diagnosis and treatment and palliative care. And also establish some cancer treatment facilities. So far, the need for cancer patients' supportive care have not been emphasized (49). Consequently, it is advised that to maintain a sufficient level of health-related quality-of-life, the unmet needs of cancer patients should be addressed and a great satisfaction rate should be achieved (50). The previous studies in Ethiopia were carried out in a single institution with a small sample size and non-probability sampling techniques that are not representative and generalizable to the entire population of cancer patients in Ethiopia. Additionally, the study conducted in Gondar and Dessie was carried out when cancer treatment was not yet well developed. Thus, this study aimed to assess the unmet supportive care needs and associated factors among adult cancer patients at cancer treatment centers in Northwest Ethiopian public hospitals'.

1.3. Significant of the study

There are few studies on the prevalence and associated factors of unmet supportive care needs among cancer patients in Ethiopia. Therefore assessing the prevalence and factors of unmet supportive care needs will serve as a source of information for governments, nongovernmental groups, healthcare professionals, policy-makers, and the hospitals where the study will be conducted. This indirectly helps these concerned bodies to make important decisions about how to enhance the standard of cancer care and improve supportive cancer care. In addition, it will make healthcare professionals easier to identify patients who have particularly high levels of unmet needs and to initiate early interventions. Specifically for the nurses this study help in determining the priority of nursing intervention (51), nurses serving in oncology unit to conduct a holistic assessment for these patients, and be more sensitive towards them. This study also provides upcoming researchers and philosophers with a foundational set of data. For the patient, it will make it easy to find targeted solutions for particular issues, such as information on the diagnosis or therapy, symptom control, and psycho-emotional support. It will also helpful for them to be committed to health-seeking behavior and to discuss their issues with a healthcare professional.

2. Literature Review

2.1. Unmet supportive care needs

According to several studies, 27% to 60.2% of cancer patients' needs for supportive care ranging from low to high were not addressed (31, 34, 52). A systematic study including Europe, Australia/New Zealand, Asia, Canada, the United States, and Africa on unmet supportive care needs among rare cancer patients showed that the most frequently reported unmet needs in the health system and information, psychological and the physical and daily living domains were 95%, 93%, 80% respectively (32). A similar review which included 23 studies showed that the prevalence of pooled estimated unmet needs were 42%, 33% and 32% and the health system /information domain was the most frequently reported unmet needs of cancer patients (28, 34). A study done in Japan indicated that the prevalence of unmet supportive care needs among young adults' cancer patients was more than 70% and most of those were psychological needs (26). Another study in Jordan, showed that the prevalence of unmet supportive care needs in the health system and information, physical, and sexuality need domains were 48.1%, 46.3%, and 5.5% respectively (1).

A study conducted in Nigeria revealed the highest rates of unmet needs were in patient care and support (44.4%), physical (49.4%), psychological (48.5%), and health system/information (53.4%) (34). A similar study carried out in Addis Ababa, stated that physical and daily living had the highest frequency of unmet supportive care needs (79.8%), followed by the health system and information (75.7%), the psychological (64.7%), the patient care and support (50.4%), and the sexuality domains (25.1%) (33).A similar study conducted in Dessie specified that unmet supportive care needs were more prevalent among psychological (81.0%) and physical (74.6%) needs (29). Another research carried out in Gondar showed the highest unmet need was reported from the health system and information need domain (3.75) followed by patient care and support (3.61), psychological (3.57), physical (3.48), and sexual need domain (3.05) (30).

2.2. Associated factors of unmet supportive care needs

2.2.1. Socio-demographic factors

According to a global systematic study younger age patients were the most frequently identified predictors of unmet needs (53). A cross-sectional survey study conducted in Canada showed that older ages and married participants reported significantly more unmet needs. Whereas females and retired survivors reported fewer unmet needs. Concerning place of residency and language survivors in urban areas, and French-speaking Canadian respondents had lower and higher unmet needs in the physical domain respectively (54). Another study in Japan exhibited poor social support was associated with unmet psychological, health system and information, and patient care and support need domains. While Patients who had experienced changes in work after a cancer diagnosis were more likely to have unmet supportive care needs in all domains except for sexuality needs (26). A study done in the Middle East revealed age above 60 years was independently associated with more unmet needs of physical domain (1).

A study in Addis Ababa revealed that being old age, decreases the unmet needs of health system and information and patient care needs domains by 2%. Being male and having a higher income was associated with the health system and information needs domain. while unmarried and self-employed participants had unmet needs in the sexuality and physical domains (33). A similar study conducted in Dessie indicated that old age was associated with unmet physical and psychological needs domain. For every year increment in age, unmet psychological needs increased by 6%. Whereas patients who had high or household income of ≥2,700 ETB per month had 2.2 times more unmet health system and information needs (29). Another study done in Gondar stated that females and urban residences were associated with unmet supportive care needs. Living in rural areas reduced unmet needs for cancer care by 74.5% (30).

2.2.2. Clinical factors

According to a study done in Canada survivors who received chemo radiation alone had significantly higher unmet physical needs (54). A comparable study conducted in Japan displayed that perceived poorer performance status was significantly associated with all the five need domains (26).

Another study conducted in the Middle East showed that Late-stage diagnosis was associated with higher physical, psychological, and health system and information need domains. Regarding cancer site head and neck cancer survivors, reported the highest unmet need in the sexuality domain (1).

A study in Addis Ababa revealed for every 1-month increase in the time since diagnosis, the unmet needs decreased in the information and health system need domain. However, those who had a history of remission were 90% and 63% less likely to unmet needs in the psychological and patient care and support need domains. Regarding treatment options patients on hormonal therapy develops five times higher unmet need in the patient care and support domain (33). A comparable study carried out in Dessie indicated that those who undergo surgery, late stage (III, IV) cancer, and prostate, lung & cervical cancer patients were significantly associated with physical and daily living unmet needs. The unmet health information needs were reduced by 68% in patients who took analgesia. While end-stage cancer patients had 2 times more unmet needs in the psychological, physical, and information domains. Regarding primary cancer sites prostate and skin cancer patients had seven and three times greater unmet needs in the psychological and patient care domains respectively. For every one monthly increase of time since diagnosis, the unmet patient care needs to be increased by 2% (29).

2.2.3. Information status about the disease and related factor

A study conducted in Addis Ababa showed that with a one-unit increase in the total score of the informational status of the patient, the chance of an unmet need for health information decreases by 34%. Whereas increase in patients who had both sources of information in the patient care and support need domain (33). A similar study done in Dessie showed patients who had sources of information from both health professionals and self-reading had 2, 2.6, and 3 times more unmet needs in patient care, psychological, and health system and information domains respectively (29).

2.3. Conceptual Framework

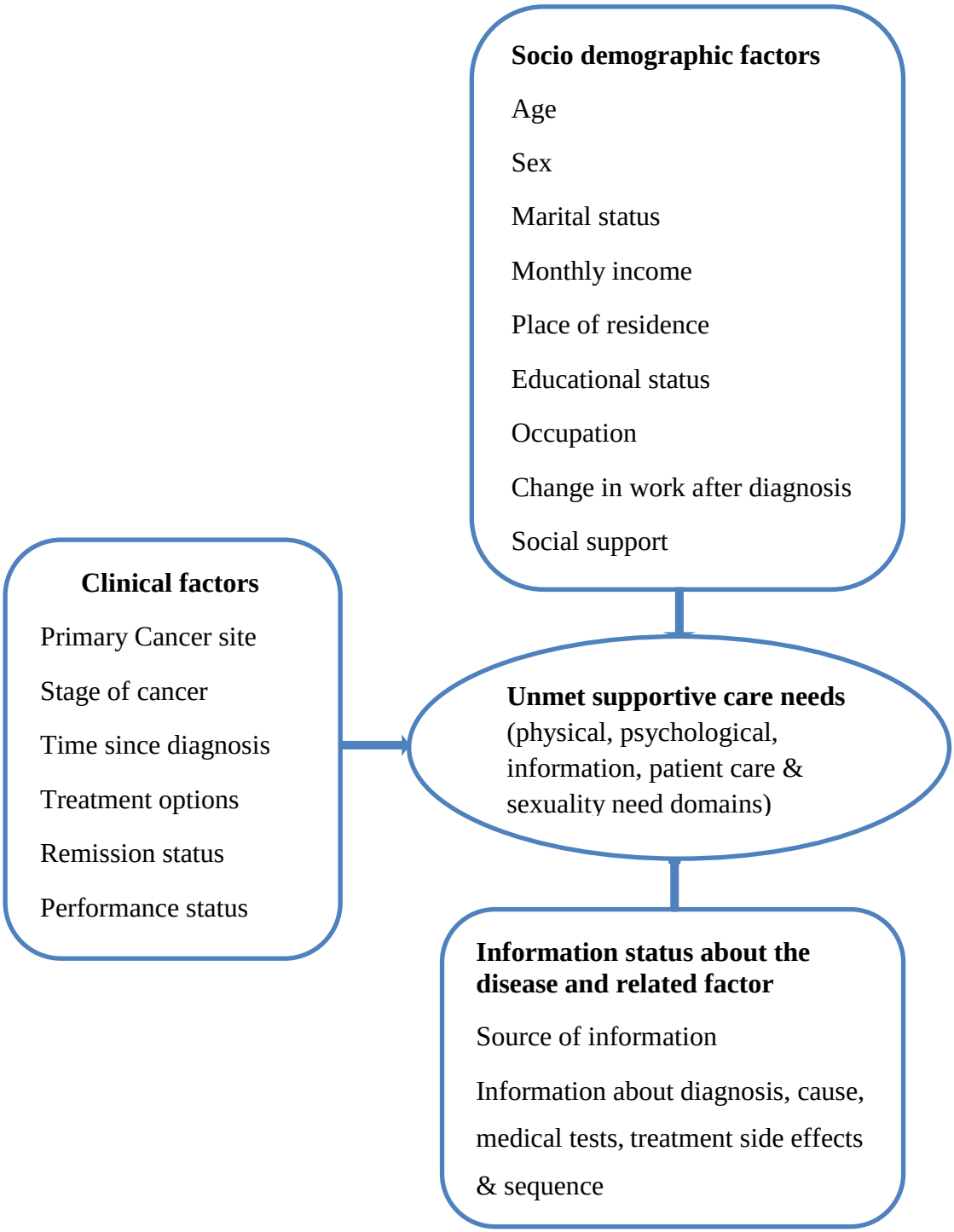

Figure 1: Conceptual frame work of unmet supportive care needs and associated factors among cancer patients adapted from different literatures (26, 29, 33, 54).

3. Objective

3.1. General Objective

To assess the magnitude of unmet supportive care needs and associated factors among adult cancer patients at cancer treatment centers in Northwest Ethiopia public hospitals, 2023.

3.2. Specific Objectives

To determine the magnitude of unmet supportive care needs among adult cancer patients at cancer treatment centers in Northwest Ethiopia, 2023.

To identify associated factors of unmet supportive care needs among adult cancer patients at cancer treatment centers in Northwest Ethiopia, 2023.

4. Methods and materials

4.1. Study area and period

The study was conducted from March 20 to April 27, 2023, at Northwest Ethiopia public hospitals cancer treatment center. Namely, Felege Hiwot Comprehensive Specialized Hospital (FHCSH), Tibebe Ghion Specialized Hospital (TGSH), and University of Gondar Specialized Hospital (UOGSH). The capital city of the Amhara regional state, Bahir Dar, which is 565 kilometers (km) Northwest of Addis Ababa, Ethiopia, is the site of both the FHCSH and the TGSH. UOGSH is found in Gondar city, one of the Metropolitan cities in the Amhara region which is located Northwest 739 km away from the capital city of Ethiopia, Addis Ababa, and 174 km from Bahir Dar, the capital city of Amhara Nation Regional State. These cancer treatment facilities started in 2015, 2019, and 2020, at UOGSH and FHCSH, and TGSH respectively. Currently, there are 15, 03, and 20 trained nurses for FHCSH, TGSH, and UOGSH respectively, as well as one oncologist for UOGSH and three oncologists working together for FHCSH and TGSH. Currently, there are 22, 32 and 08 beds in FHCSH, UOGSH, and TGSH respectively. Chemotherapy, hormonal therapy, and surgery are the current treatments offered in these hospitals, but radiotherapy has not yet been started.

4.2. Study Design

An institutional based cross-sectional study

4.3. Source population and Study population

4.3.1. Source population

All adult cancer patients attending public hospitals in Northwest Ethiopia's oncology units

4.3.2 Study Population

All adult cancer patients attending at public hospitals in Northwest Ethiopia's oncology units during the study period

4.4. Inclusion and exclusion criteria

4.3.1 Inclusion criteria

All adult cancer patients who have follow-up at oncology clinics in Northwest Ethiopia at least for three months

4.3.2 Exclusion criteria

All adult cancer patients who were critically ill during the time of data collection

4.5. Sample Size Determination and sampling procedure

4.5.1. Sample Size Determination

The sample size determination for the first objective was calculated using a single population proportions formula from previous recent study a large sample size was taken from the patient care and support need domain (50.4%) (33). By considering the following assumptions into account sample size was calculated as:

P=0.50 q=0.50 Zα/2=1.96 d=0.05

$N= (Z\alpha/2)^2 . (P\ q)/ (d)^2$

$N= (1.96)^2 (0.50\times0.50)/ (0.05)^2$

N=384

Where, N = sample size, Z = the standard score (critical value) corresponding to 95% confidence level = 1.96, d = the proportion of sampling error between the sample and the population = 5%, p = the sample size estimated proportion of similar previous study, and q = 1-p. By adding a 10% non-response rate, the final sample size was approximately 423. The sample size for the second objective was calculated using the double population proportion formula using EPI-info version 7, by taking factors from previous studies.

Table 1: Sample size calculations by using the second objective in Northwest Ethiopia public hospitals, 2023

S. No	Factors	Power	Ratio	CI	Outcome (%)		AOR	Sample size	Reference
					Unexposed	Exposed			
1	Source of information	80%	1:1	95%	58.2	25.9	2.6	91	(33)
2	Cancer stage	80%	1:1	95%	21.3	78.7	2.4	34	(29)
3	Monthly income	80%	1:1	95%	34.8	16.9	2.95	206	(29)
4	Treatment option	80%	1:1	95%	54.6	24.8	6.92	107	(29)

The sample size calculated by second objective was less than the sample size calculated by the first objective. Hence, the largest sample size was taken from the first objective (423).

4.5.2. Sampling procedure

According to the register in the oncology units' follow-up, on average, 1,011 cancer patients were treated per month at the selected hospitals. These patients were drawn by taking the average of three consecutive treatment months' at each hospital. To choose the final sample of actual participants from each institution, a systematic random sampling technique was used. In the systematic random sampling technique, the Kth value was derived by dividing the source population by the entire sample size, which results in a value of 2. As a result, every second cancer patient who visited the oncology unit for treatment and follow-up throughout the data-collection period and met the inclusion criteria was chosen to participate in the study for all hospitals. The first participant was chosen by lottery method, and then continued every K value until the required sample size was obtained in each hospital. Data was collected after the patients have been seen by the doctor in outpatient follow-up. Each institution's share of the sample size was allocated proportionally using the following formula:

$n_i = n_o . n_j/N$

Where n_i= number of cancer patients needed from each hospital, n_j=total cancer patients from each hospital, n_o=calculated sample size, and N=total cancer patients treated in Northwest Ethiopia cancer center hospitals.

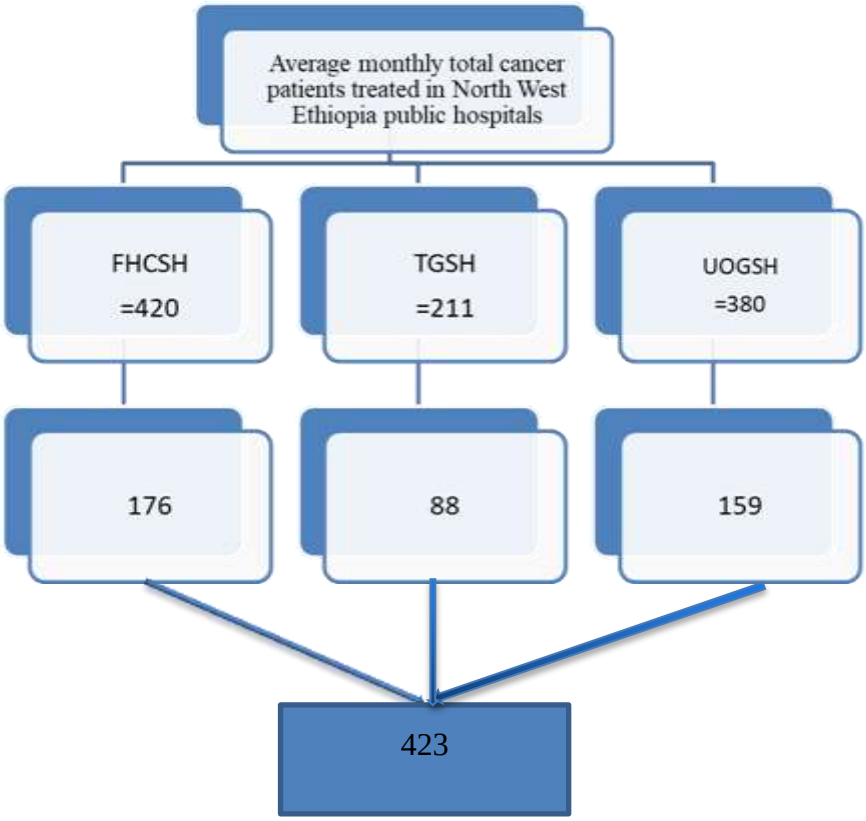

Figure 2: Diagrammatic illustration of sample allocation for each hospital in northwest Ethiopian public hospitals, 2023

4.6. Data Collection Tools and Procedures

Data on the socio-demographic and information status-related factors of the patient were collected using an interview-administered structured questionnaire, also validated tools for unmet supportive care needs, social support, and performance status. The patient's card and an interview-administered questionnaire were used to collect information about the patient's clinical cancer-related factors. Data collection was conducted by one BSc nurse from each hospital who works in a department other than oncology, and one MSc nurse supervised data collection across all hospitals.

To measure unmet supportive care needs currently developed 26-Item short-forms Supportive Care Needs Survey (SCNS-SF26) questionnaire was used. The SCNS-SF26 measures the perceived degree of needs of cancer patients in five domains in the previous month. psychological (10 items), health system and information (5 items), physical and daily living (5 items), patient care and support (3 items) and sexuality (3 items) (55). This tool was validated in Hawassa, Ethiopia in 2019, and the tool's overall Cronbach's alpha was 0.932 (56). To measure social support among cancer patents the reliability and validity tool Amharic versioned Oslo 3-item Social Support Scale (OSS-3) was used. The 3 items cover a different field of social support and the raw sum score range from 3 to 14 (57). To measure cancer patient's level of performance status the Eastern Cooperative Oncology Group Performance Status (ECOG PS) was used. This tool was accepted and recognized by World Health Organization (WHO) and used by nurses and physicians in every day practice to assess the functional status of patients with a range from 0 (fully active) to 5 (dead) (58). But in this study 5 (dead) was excluded and a range from 0 (fully active) to 4 (completely disabled) was used.

4.7. Data quality control measures

Before data collection the questionnaire was translated into the patients' local language (Amharic) and then back retranslated into English to ensure the quality of the translation and maintain the consistency of the questionnaire. Data quality was assured before data collection. One week before data collection, a pretest of 5% of the total sample size was conducted at Dessie Referral Hospital to assess the clarity and appropriateness of the questionnaire to volunteer cancer patients. After the pretest the Amharic version SCNS-SF26 questionnaire was modified to make it appropriate for the participants. One day of training was given to the supervisor and the data collectors. After data collection, the collected data were checked daily for completeness and accuracy before proceeding to the next data collection.

4.8 Study variables

4.8.1. Dependent variable

Unmet supportive care needs (physical, psychological, health system and information, patient care and support, and sexuality need domains)

4.8.2. Independent variables

Socio-demographic factors

Sex, Age, Marital status, place of residenc, monthly income, educational status occupational status, change in work after cancer diagnosis, and Social support

Clinical factors

Primary Cancer site, cancer stage, remission status, time since diagnosis, treatment options, and performance status

Information status about the disease and related factors

Basic details concerning the disease's diagnosis, spread, causes, purpose and procedures of medical tests, treatment modalities, sequence, benefit, duration, and possible side-effects, and source of information for the diagnosis.

4.9. Operational definition

Unmet Supportive Care Needs: It is a subjective complaint made by patient's that they did not receive the necessary care in physical and daily-living activities, psychological, health system and information, patient care and support, and sexuality needs. According to a 5-point Likert scale if a patient reports having at least one low to high need (selected one of 3 = low need, 4 = moderate need, or 5 = high need)) in a given domain it was considered an unmet need in that specific domain. On the other hand if a patient reports no need (selected 1 = not applicable or 2 =satisfied) in all items of a single domain, it was considered as having "no needs"/met needs (56). Subscale scores were obtained by summing the individual items and the total score was obtained by summing all the subscales (range from 26–130). A rating ≥3 was regarded as an unmet need (55).

Social support: Refers to a network of family members, friends, neighbors, and community members who were willing to provide psychological, physical, and financial assistance whenever needed. A score of 3–8, 9–11, and 12–14 on OSS-3 are interpreted as poor, moderate, and strong social support, respectively (57).

Performance status: It is a measure of the overall health and efficiency of cancer patients' ability to carry out daily tasks. Patients with grades of 0 and 1 on the ECOG PS indicator scale are believed to have high-performance status, and grades of 2, 3, and 4 are thought to have poor performance status (58).

Change in work after cancer diagnosis: It refers to an alteration in a cancer patient's ability to work due to the physical and emotional impacts of the disease, causing them to feel uneasy in their jobs (59).

Remission status: Refers to the reduction, elimination, or control of cancer's signs and symptoms from the time of starting (60).

Stage of cancer at the time of diagnosis: Indicates the location, size, and extent of cancer, and how far it has spread to adjacent lymph nodes or other parts of the body at the time of diagnosis (61).

4.10. Data processing and analysis

After the data was checked for its completeness, it was coded and entered into Epi data version 4.6 and exported into SPSS version 27 for analysis. Frequencies, cross-tabulations, tables and graphs were used to summarize and demonstrate descriptive statistics of the data. Bivariable analysis was used to check the association between the independent and dependent variables individually. P-value < 0.2 in the bivariable analysis was entered into multivariable analysis to remove confounding and identify significant variables. In a multivariable logistic regression analysis variable with p-value < 0.05 was considered as statistically significant variable and stated by odd ratio (OR) and 95% CI. The physical, psychological, information, patient care, and sexuality domain each had a Cronbach's alpha of 0.92, 0.94, 0.90, 0.81, and 0.97 respectively.

Model fitness was checked by Hosmer and Lemeshow and the values were 0.88, 0.59, 0.11, 0.64, and 0.599 for physical, psychological, information, patient care, and sexuality domains respectively. Existence of multicollinearity between the independent variables was checked by using the variance inflation factor (VIF= 4) and educational status had this higher score, and Spearman's rank correlation < 0.7 for each domain.

4.11. Ethical considerations

Ethical clearance was obtained from institutional review board (IRB) of Bahir Dar University College of Medicine and Health Sciences' by protocol No. 770/2023. For each study area, a written official letter was provided after being received by the quality and research coordinator offices. All eligible participants of the study were informed about the purpose of the study. After obtaining verbal agreement from interested participants data was collected. The code number was used to safeguard the privacy of the study participants'.

4.12. Dissemination of results

The result of this study will be submitted to the Bahir Dar University College of Medicine and Health Sciences, school of health science, department of adult health nursing for the partial fulfillment of the degree of master in adult health nursing. Then, the findings will be disseminated to concerned organizations and stakeholders; including UOGSH, TGSH, and FHCSH. The research paper will be presented in annual meetings, professional conferences, workshops, and training. Finally, attempts will be made to publish the results by well-known journals.

5. Results

5.1. Socio-demographic factors

A total of 410 cancer patients participated in this study making a response rate of 96.9%. Of the total participants, 264 (64.4%) were females. One hundred fifty-seven (38.3%) of the respondents were in the age range of 41-59 years with a mean age of 49.5 ±14.67 and 226 (55.1%) were Urban dwellers. One hundred ninety-two (46.8%) of the respondents were farmers and 145 (35.4%) were unable to read and write. Most of (80.2%) the respondents were married. Two-fifth (43.4%) faced a decrease in their work hours and around two-thirds (61.0 %) had monthly income >2,000 ETB **(Table 2)**.

Table 2: Socio-demographic characteristic of the study participants in public hospitals of Northwest Ethiopia cancer treatment centers, 2023 (n=410).

Variables	Category	Frequency	Percent
Sex	Male	146	35.6%
	Female	264	64.4%
Age	18-40	128	31.2%
	41-59	157	38.3%
	≥60	125	35.3%
Marital status	Single	29	7.1%
	Married	329	80.2%
	Divorced	25	6.1%
	Widowed	27	6.6%
Residence	Urban	226	55.1%
	Rural	184	44.9%
Educational status	Unable to read & write	145	35.4%
	Able to read & write	57	13.9%
	Primary education	45	11%
	Secondary education	37	9%
	Higher education	126	30.7%
Occupational status	Unemployed	15	3.7%
	Employed	91	22.2%
	Farmer	192	46.8%
	Merchant	25	6.1%

	House wife	55	13.4%
	Others	32	7.8%
Income (ETB)	<1000	86	21%
	1000-2000	74	18%
	>2000	250	61%
Work status or	No change	19	4.6%
Change in work	Work hour decreased	178	43.4%
	Absence from work	157	38.3%
	Left work	34	8.3%
	Changed jobs	13	3.2%
	Firing	9	2.2%

5.1.1. Social support

From 410 participants, 181 (44.1%) of them were easy get help from neighbors and two-fifth (39.5%) of participants had 3-5 people close to them when facing major problems. Around one-third (34.1%) of the respondents were getting little concern from people in what they do **(Table 3)**.

Table 3: Social support of the study participants in public hospitals of Northwest Ethiopia cancer treatment centers, 2023 (n=410).

Variables	**Category**	**Frequency**	**Percent**
Get help from neighbors	Very difficult	6	1.5
	Difficult	117	28.5
	Possible	94	22.9
	Easy	181	44.1
	Very easy	12	2.9
People close during serious problems	None	39	9.5
	1-2	127	31.0
	3-5	162	39.5
	>5	82	20.0
Concern people show in what they do	No	46	11.2
	Little	140	34.1
	Uncertain	44	10.7
	Some	87	21.2
	A lot	93	22.7

5.2. Clinical Factors

Out of 410 participants, one-fourth (26.1%) of them had breast cancer, and seven out of ten (71.0%) had advanced stages (III and IV) of cancer. Nearly two-third (65.1%) of the patients received chemotherapy, more than half (57.1%) was diagnosed with cancer within the past 12 months, and three-fourth (75.9%) of the participants had remission from their disease. More than one-third (35.6%) of them had other types of cancers but each type of cancer in it has less than 5% prevalence. Less than half (46.8%) of the participants were restricted by physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature **(Table 4)**.

Table 4: Clinical factors of the study participants in public hospitals of Northwest Ethiopia cancer treatment centers, 2023 (n=410).

Variables	Category	Fre	Percen
Primary cancer site	Breast	107	26.1%
	Colon	34	8.3%
	Testicular	14	3.4%
	Lung	21	5.1%
	Cervical	58	14.1%
	Non-Hodgkin lymphoma	30	7.3%
	Others	146	35.6%
Time since diagnosis (month)	0-12	234	57.1%
	13-24	108	26.3%
	>24	68	16.6%
Stage of cancer	Early stage (I & II)	119	29%
	Late stage (III & IV)	291	71%
Remission	No	99	24.1%
	Yes	311	75.9%
Treatment option	Chemotherapy	267	65.1%
	Radiotherapy	7	1.7%
	Surgery	21	5.1%
	Hormonal therapy	21	5.1%
	Others	94	22.9%
Performance status	Fully active, no restirictions in activity	88	21.5%
	Restricted in strenuous activity	192	46.8%

	Unable to carry out any work activity	80	19.5%
	Limited self-care and confined to bed/chair >50%	32	7.8%
	Completely disabled	18	4.4%

5.3. Information status about the disease

Of the 410 participants, almost all (90.5%) received information about their disease's diagnosis, whereas more than two-thirds (65.4%) got it from healthcare professionals **(Table 5)**.

Table 5: Information-related factors about the disease of the study participants in public hospitals of Northwest Ethiopia cancer treatment centers, 2023 (n=410).

Variables	Category	Frequenc	Percent
Information about the diagnosis	Yes	371	90.5%
	No	39	9.5%
The extent of the disease	Yes	71	17.3%
	No	339	82.7%
The possible causes of the disease	Yes	61	14.9%
	No	349	85.1%
The purpose of any medical tests	Yes	161	39.3%
	No	249	60.7%
The procedures of the medical tests	Yes	268	65.4%
	No	142	34.6%
The medical treatments	Yes	354	86.3%
	No	56	13.7%
The sequence of medical treatments	Yes	155	37.8%
	No	255	62.2
The benefit of the treatment	Yes	238	58%
	No	172	42%
The possible side-effects	Yes	278	67.8%
	No	132	32.2%
The duration of treatments?	Yes	219	53.4%
	No	191%	46.6%
The source of information	Health professionals	268	65.4%
	Reading	21	5.1%
	*Both	47	11.5%
	Other patients	29	7.1%
	Mixed source[a]	38	9.3%

*Both = (health professionals & reading), [a] (source from experience, other patients and health professionals)

5.4. The magnitude of unmet supportive care needs

In this study, the overall unmet supportive care needs were 98.3% (95% CI=97.0-99.0). The psychological domain had the highest 85.1% (95% CI= 81.5- 88.5) unmet needs among the domains followed by the physical and daily living domain at 81.5% (95% CI=77.6- 85.1), health system and information domain at 74.6% (95% CI=70.73-79.27), patient care and support domain 68.0% (95% CI=63.48-71.95), and sexuality domain 48.3% (95% CI=43.0-53.0) (Figure 3 & 4).

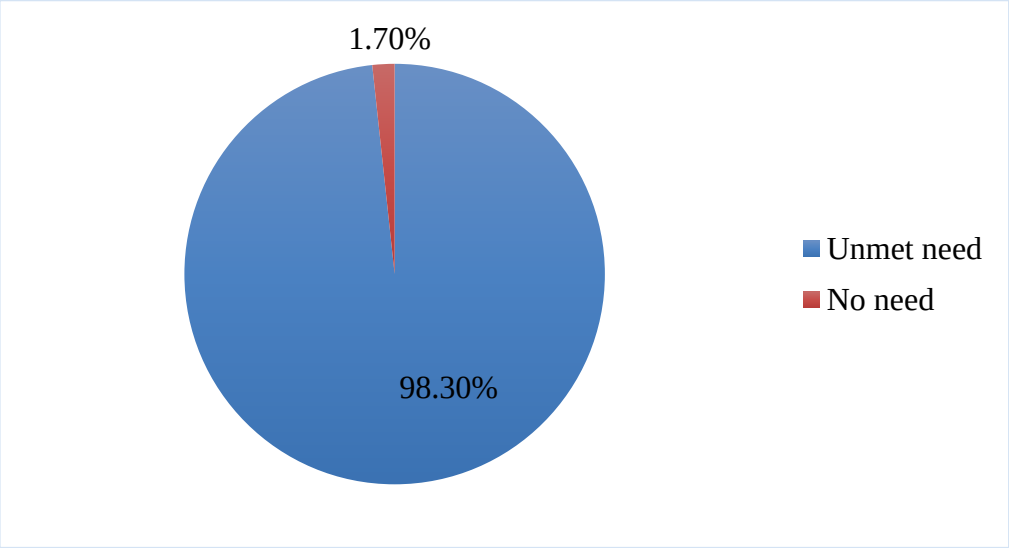

Figure 3: Overall prevalence of unmet supportive care needs among cancer patients in public hospitals of Northwest Ethiopia cancer treatment centers, 2023(n= 410).

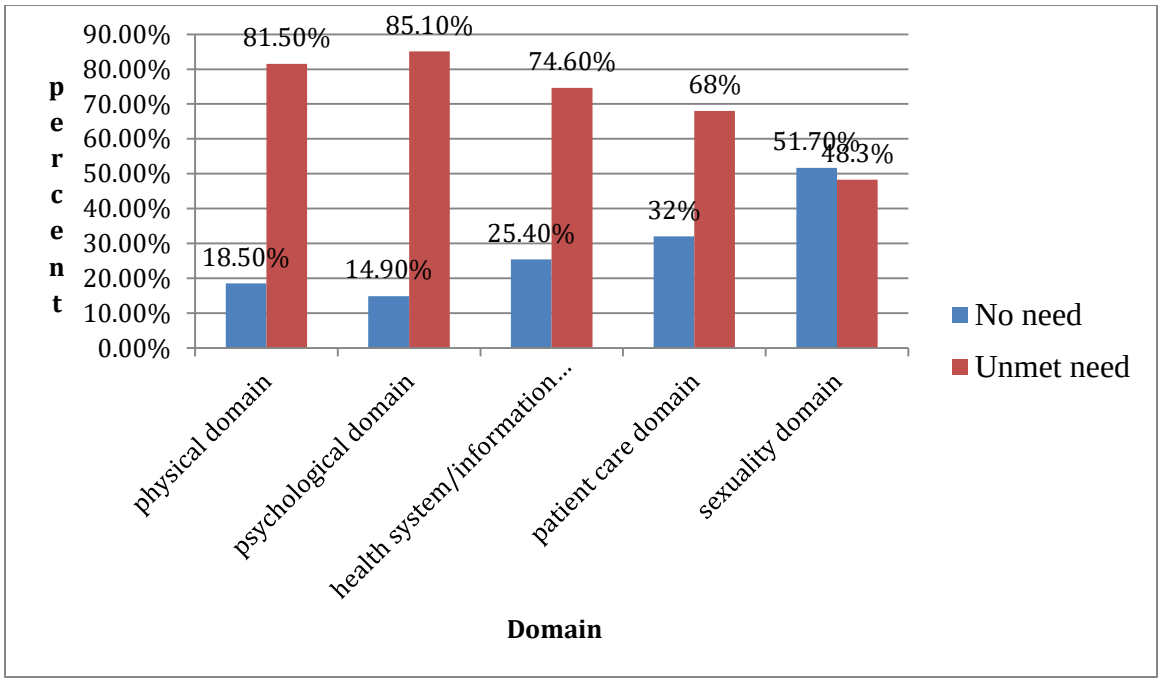

Figure 4: Magnitude of unmet supportive care need for each domain among cancer patients in public hospitals of Northwest Ethiopia cancer treatment centers, 2023 (n= 410).

5.5. Factors associated with unmet supportive care need domains

5.5.1. Factors associated with the physical and daily living need domain

Age, sex, place of residence, occupation, treatment option, primary cancer site, time since diagnosis, information received about the duration of treatments, social support, and performance status were candidate variables that were significantly associated with the physical need domain in bivariable logistic regression analysisat at p value <0.2. But in the multivariable logistic regression analysis age, treatment option, primary cancer site, and performance status were predictors that showed statistically significant association with the unmet needs of the physical domain at p value <0.05. Older individuals (those over 60 years) had 2.22 times higher unmet needs in the physical need domain than younger individuals (18–40 years) (AOR=2.22; 95% CI=1.10-4.50). In contrast, respondents who had received radiotherapy reported 92% less likely unmet physical needs than those who had received chemotherapy (AOR= 0.08; 95% CI= 0.01- 0.47). Similarly, patients with testicular cancer were 81% less likely to have unmet physical needs than those with breast cancer (AOR= 0.19; 95% CI = 0.06-0.66).

Additionally, respondents with low-performance status had 2.6 times more unmet needs in the physical domain than those with high-performance status (AOR=2.6; 95% CI=1.30-5.20) **(Table 6)**.

Table 6: Bivariable and multivariable logistic regression analysis for factors associated with unmet needs in the physical domain in public hospitals of Northwest Ethiopia cancer treatment centers, 2023 (n=410).

Variables	**Physical domain**				
	Unmet need	**No need**	**COR (95%CI)**	**AOR (CI 95%)**	**P-**
Sex					
Femle	221(83.7%)	43(16.3%	1.5(0.9-2.5)	1.32(0.65-2.69)	0.44
Male	113(77.4)	33(22.6%)	1	1	
Age					
18-40	96(75%)	32(25%)	1	1	
41-59	130(82.8%)	27(17.2%)	1.61(0.9-2.86)	1.63(0.88-3.01)	0.12
≥60	108(86.4%)	17(13.6%)	2.12(1.11-4.05)	2.22(1.10-4.5)	**0.026***
Residence					
Rural	156(84.8%)	28(15.2%)	1.5(0.9-2.51)	1.33(0.22-8.06)	0.76
Urban	178(78.8%)	48(21.2%)	1	1	
Occupational status					
Employed	74(81.3%)	17(18.7%)	1	1	
Unemployed	12(80%)	3(20.0%)	0.92(0.23-3.62)	1.13(0.24-5.31)	0.88
Farmer	163(84.9%)	29(15.1%)	1.29(0.67-2.49)	1.21(0.56-2.61)	0.63
Merchant	19(76.0%)	6(24.0%)	0.73(0.25-2.10)	1.26(0.36-4.38)	0.72
House wife	45(81.8%)	10(18.2%)	1.0(0.44-2.45)	0.97(0.38-2.52)	0.96
Others	21(65.6%)	11(34.4%)	0.44(0.18-1.08)	0.39(0.14-1.07)	0.07
Primary cancer site					
Breast	88(82.2%)	19(17.8%)	1	1	
Colon	30(88.2%)	4(11.8%)	1.62(0.51-5.14)	1.21(0.36-4.10)	0.76
Testicular	7(50.0%)	7(50.0%)	0.22(0.07-0.69)	0.19(0.06-0.66)	**0.009***
Lung	19(90.5%)	2(9.5%)	2.05(0.44-9.56)	1.76(0.36-8.71)	0.49
Cervical	52(89.7%)	6(10.3%)	1.87(0.70-4.98)	1.41(0.50-3.98)	0.52
Non-Hodgkin lymphoma	21(70.0%)	9(30.0%)	0.50(0.20-1.27)	0.44(0.16-1.18)	0.10
Others	117(80.1%	29(19.9%)	0.87(0.46-1.65)	0.76(0.36-1.60)	0.47
Time since diagnosis					
0-12	195(83.3%	39(16.7%)	1.67(0.87-3.18)	2.04(0.85-4.88)	0.11
13-24	88(81.5%)	20(18.5%)	1.47(0.70-3.05)	1.43(0.59-3.47)	0.43

>24	51(75.0%)	17(25.0%)	1	1	
Treatment option					
Chemotherapy	219(82%)	48(18%)	1	1	
Radiotherapy	2(28.6%)	5(71.4%)	0.09(0.02-0.46)	0.08(0.01-0.47)	**0.005***
Surgery	17(81.0%)	4(19%)	0.93(0.3-2.89)	0.64(0.19-2.11)	0.46
Hormonal	17(81.0%)	4(19%)	0.93(0.30-2.89)	0.83(0.23-2.97)	0.77
Others	79(84.0%)	15(16%)	1.15(0.61-2.18)	1.12(0.57-2.19)	0.74
Information received about the duration of treatments					
Yes	172(78.5%)	47(21.5%)	0.66(0.39-1.09)	0.68(0.38-1.20)	0.18
No	162(84.8%)	29(15.2%)	1	1	
Social support					
Weak	138(83.1%	28(16.9%)	1.67(0.9-3.08)	1.77(0.90-3.50)	0.10
Moderate	125(83.9%	24(16.1%)	1.76(0.93-3.33)	1.84(0.93-3.63)	0.08
Strong	71(74.7%)	24(25.3%)	1	1	
Performance status/ps					
Poor ps	116(90.6%)	12(9.4%)	2.84(1.47-5.47)	2.60(1.3-5.20)	**0.007***
High ps	218(77.3%)	64(22.7%)	1	1	

Key: * = variables significant associated with p-value < 0.05, at 95% CI, COR- Crude odds ratio; AOR- Adjusted odds ratio; CI- Confidence interval

5.5.2. Factors associated with the psychological need domain

Binary logistic regression analysis showed age, educational status, marital status, change in work after a cancer diagnosis, treatment options, primary cancer site, time since diagnosis, and information about the duration of treatment met the requirement to pass to multivariable logistic regression analysis at p value <0.2. But time since diagnosis, and treatment options were variables that depict statistically significant associations with unmet needs in the multivariable logistic regression analysis at p value <0.05. Patients who had taken radiotherapy treatment had 98% less likely unmet psychological needs compared to respondents who had taken chemotherapy (AOR=0.02; 95% CI: 0.02 (.002-0.16). Whereas the odds of unmet psychological need were 2.79 and 2.62 times higher for those times since diagnosis was 0-12 and 13-24 months compared to the time since diagnosis of greater than 24 months (AOR= 2.79; 95% CI: 1.2-6.46) and (AOR= 2.62; 95% CI: 1.10-6.2) respectively **(Table 7)**.

Table 7: Bivariable and multivariable logistic regression analysis for the factors associated with unmet needs in the psychological domain in public hospitals of Northwest Ethiopia cancer treatment centers, 2023 (n=410).

Variable	Psychological domain				
	Unmet need	**No need**	**COR(95% CI)**	**AOR(95% CI)**	**P-value**
Age					
18-40	104(81.3%)	24(18.8%)	1	1	
41-59	139(88.5%)	18(11.5%)	1.78(0.92-3.45)	1.87(0.90-3.87)	0.09
≥60	106(84.8%)	19(15.2%)	1.29(0.67-2.49)	0.97(0.47-2.03)	0.94
Marital					
Widowed	21(77.8%)	6(22.2%)	0.55(0.21-1.45)	0.47(0.15-1.48)	0.19
Divorced	22(88.0%)	3(12.0%)	1.16(0.33-4.04)	1.15(0.29-4.54)	0.84
Single	22(75.9%)	7(24.1%)	0.13(0.2-1.23)	0.94(0.31-2.85)	0.92
Married	284(86.3%)	45(13.7%)	1	1	1
Educational status					
Higher	106(84.1%)	20(15.9%)	1.25(0.64-2.47)	0.88(0.38-2.03)	0.76
Secondary	29(78.4%)	8(21.6%)	1.96(0.7-5.52)	0.56(0.18-1.72)	0.31
Primary	36(80.0%)	9(20.0%)	0.76(0.32-1.8)	0.64(0.22-1.82)	0.39
Able to read and write	52(91.2%)	5(8.8%)	0.68(0.27-1.71)	1.98(0.62-6.35)	0.25
Unable to read and write	126(86.9%)	19(13.1%)	1	1	
Change in work					
Firing	8(88.9%)	1(11.1%)	1.19(0.14-9.93)	0.72(0.07-7.34)	0.78
Change in job	11(84.6%)	2(15.4%)	0.82(0.17-3.92)	0.74(0.12-4.67)	0.74
Left work	26(76.5%)	8(23.5%)	0.48(0.2-1.19)	0.49(0.16-1.5)	0.21
Absence from work	133(84.7%)	24(15.3%)	0.82(0.44-1.52)	0.74(0.37-1.47)	0.39
No change	16(84.2%)	3(15.8%)	0.79(0.21-2.93)	0.57(0.14-2.43)	0.45
Work hour decreased	155(87.1%)	23(12.9%)	1	1	
Time since diagnosis					
0-12	205(87.6%)	29(12.4%)	2.54(1.31-4.94)	2.79(1.2-6.46)	**0.017***
13-24	94(87.0%)	14(13.0%)	2.42(1.11-5.26)	2.62(1.10-6.2)	**0.029***
>24	50(73.5%)	18(26.5%)	1	1	
Primary cancer site					
Breast	87(81.3%)	20(18.7%)	1	1	
Colon	29(85.3%)	5(14.7%)	1.33(0.46-3.87)	0.99(0.32-3.12)	0.99

Testicular	10(71.4%)	4(28.6%)	0.58(0.16-2.0)	0.45(0.12-1.75)	0.25
Lung	19(90.5%)	2(9.5%)	2.18(0.47-	1.45(0.29-7.27)	0.65
Cervical	54(93.1%)	4(6.9%)	3.1(1.0-9.57)	2.88(0.88-9.44)	0.08
Non-Hodgkin lymphoma	23(76.7%)	7(23.3%)	0.76(0.28-2.0)	0.63(0.22-1.80)	0.38
Others	127(87%)	19(13.0%)	1.54(0.78-3.05)	1.83(0.80-4.17)	0.15
Treatment option					
Chemotherapy	235(88%)	32(12%)	1	1	
Radiotherapy	1(14.3%)	6(85.7%)	0.02(0.003-0.2)	0.02 (.002-0.16)	**<0.001***
Surgery	17(81.0%)	4(19.0%)	0.58(0.18-1.83)	0.52(0.16-1.67)	0.27
Hormonal	15(71.4%)	6(28.6%)	0.34(0.12-.94)	0.67(0.21-2.17)	0.50
Others	81(86.2%)	13(13.8%	0.85(0.42-1.70)	1.2(0.55-2.64)	0.64
Information received about the duration of treatments					
Yes	179(81.7%)	40(18.3%)	0.55(0.31-0.98)	0.61(0.32-1.16)	0.13
No	170 (89.0%)	21(11.0%)	1	1	

Key: * = variables significant associated with p-value < 0.05, at 95% CI, COR-Crude odds ratio; AOR-Adjusted odds ratio; CI-Confidence interval

5.5.3. Factors associated with the health systems and information need domain

In the binary logistic regression analysis, the candidate variables that met the criteria to proceed on to the multivariable logistic regression analysis at p value <0.2 were sex, marital status, occupation, education, changes in work, treatment option, information received about the treatment (chemotherapy, surgery, radiotherapy, etc.), social support, and performance status. But in multivariable logistic regression analysis, education and treatment options were the predictors that revealed a statistically significant association with the unmet need of the health system and information domain at p value <0.05. Higher and secondary education attained respondents had 62% and 67% less likely unmet needs in the health system and information domain compared to respondents who couldn't able to read and write. Whereas respondents who undergo surgery had 68% less likely unmet needs compared to those who were treated by chemotherapy (AOR= 0.32; 95% CI= 0.12-0.83) **(Table 8)**.

Table 8: Bivariable and multivariable logistic regression analysis for the factors associated with unmet needs in the health system and information domain in public hospitals of Northwest Ethiopia cancer treatment centers, 2023 (n=410).

Variables	Health system and information domain				
	Unmet need	**No need**	**COR(95% CI)**	**AOR(95%**	**P-value**
Sex					
Female	191(72.3%)	73(27.7%)	0.7(0.44-1.14)	0.69(0.42-1.15)	0.16
Male	115(78.8%)	31(21.2%)	1		
Marital status					
Widowed	21(77.8%)	6(22.2%)	1.28(0.5-3.27)	0.96(0.34-2.69)	0.93
Divorced	22(88.0%)	3(12.0%)	2.68(0.78-9.17)	2.55(0.69-9.36)	0.16
Single	22(75.9%)	7(24.1%)	1.15(0.47-2.78)	1.78(0.64-5.0)	0.27
Married	241(73.3%)	88(26.7%)	1	1	
Educational status					
Higher	83(65.9%)	43(34.1%)	0.4(0.23-0.71)	0.38(0.21-0.68)	**0.001***
Secondary	22(59.5%	15(40.5%)	0.31(0.14-0.67)	0.33(0.15-0.74)	**0.007***
Primary	37(82.2%)	8(17.8%)	0.96(0.4-2.32)	1.13(0.46-2.79)	0.79
Able to read and write	44(77.2%)	13(22.8%)	0.7(0.33-1.5)	0.7(0.32-1.5)	0.36
Unable to read and write	120(82.8%)	25(17.2%)	1	1	
Occupation					
Employed	62(68.1%)	29(31.9%)	1	1	
Unemployed	13(86.7%)	2(13.3%)	3.0(0.64-14.36)	2.82(.56-14.23)	0.21
Farmer	155(80.7%	37(19.3%)	1.96(1.11-3.46)	0.57(0.16-1.99)	0.38
Merchant	15(60.0%)	10(40.0%)	0.70(0.28-1.75)	0.55(0.18-1.63)	0.28
House wife	42(76.4%)	13(23.6%)	1.51(0.70-3.24)	0.93(.31-2.8)	0.90
Others	19(59.4%)	13(40.6%)	0.68(0.291.57)	0.46(0.17-1.25)	0.13
Change in work					
Firing	6(66.7%)	3(33.3%)	0.56(0.13-2.35)	0.5(0.11-2.29)	0.37
Change in job	10(76.9%)	3(23.1%)	0.94(0.24-3.56)	1.19(0.26-5.55)	0.82
Left work	27(79.4%)	7(20.6%)	1.08(0.44-2.67)	0.94(0.34-2.59)	0.90
Absence from work	108(68.8%)	49(31.2%)	0.62(0.38-1.01)	0.61(.36-1.05)	0.07
No change	16(84.2%)	3(15.8%)	1.50(0.42-5.40)	1.52(.38-6.08)	0.56
Work hour decreased	139(78.1%)	39(21.9%)	1	1	
Treatment option					
Chemotherapy	202(75.7%	65(24.3%)	1	1	
Radiotherapy	3(42.9%)	4(57.1%)	0.24(0.05-1.11)	0.23(0.05-1.10)	0.07

Surgery	12(57.1%)	9(42.9%)	0.43(0.17-1.06)	0.32(0.12-0.83)	**0.02***
Hormonal	16(76.2%)	5(23.8%)	1.03(0.36-2.92)	1.11(0.38-3.25)	0.85
Others	73(77.7%)	21(22.3%)	1.12(0.64-1.96)	1.16(0.65-2.10)	0.61
Social support					
Weak	134(80.7%)	32(19.3%)	1.84(1.03-3.29)	1.55(0.81-2.98)	0.19
Moderate	106(71.1%)	43(28.9%)	1.08(0.62-1.90)	1.06(0.58-1.94)	0.84
Strong	66(69.5%)	29(30.5%)	1	1	
Performance status/PS					
Poor PS	103(80.5%)	25(19.5%)	1.6(0.96-2.67)	1.61(0.95-2.73)	0.08
High PS	203(72.0%)	79(28.0%)	1	1	
Information received about the treatment (chemotherapy, surgery, radiotherapy)					
Yes	260(73.4%)	94(26.6%)	0.6(0.29-1.24)	0.87(0.39-1.9)	0.72
No	46(82.1%)	10(17.9%)	1	1	

Key: * = variables significant associated with p-value < 0.05, at 95% CI, COR-Crude odds ratio; AOR-Adjusted odds ratio; CI-Confidence interval

5.5.4. Factors associated with the patient care and support need domain

In the binary logistic regression analysis age, residence, marital status, educational status, occupation, cancer stage, treatment option, time since diagnosis, source of information, and social support were candidate variables for the final model at p value <0.2. In the multivariable logistic regression analysis, occupation and time since diagnosis were predictors that showed statistically significant association with unmet needs at p value <0.05. The odds of unmet need in farmer respondents were 2.45 times higher than those in employed respondents (AOD=2.45; 95% CI=1.42-4.22), and the odds of unmet need in respondents with a time since diagnosis of <12 months were 1.92 times higher than those with time since diagnosis of longer than 12 months in the patient care and support domain **(Table 9)**.

Table 9: Bivariable and multivariable logistic regression analysis for the factors associated with unmet needs in the patient care and support domain in public hospitals of North West Ethiopia cancer treatment centers, 2023 (n=410).

Variables	**Patient care and support need domain**				
	Unmet need	**No need**	**COR (95% CI)**	**AOR (95%**	**P-value**
Age					
18-40	82(64.1%)	46(35.9%)	1	1	
41-59	112(71.3%)	45(28.7%)	1.4(0.85-2.30)	1.11(0.63-1.94)	0.73
≥60	85(68.0%)	40(32.0%)	1.19(0.71-2.01)	0.75(0.40-1.40)	0.37
Marital status					

Widowed	20(74%.1)	7(25.9%)	1.32(0.54-3.22)	1.3(0.48-3.56)	0.61
Divorced	20(80.0%)	5(20.0%)	1.85(0.68-5.06)	1.66(0.59-4.64)	0.34
Single	14(48.3%)	15(51.7%)	0.43(0.20-0.93)	0.44(0.18-1.10)	.079
Married	225(68.4%)	104(31.6	1	1	
Residence					
Rural	142(77.2%)	42(22.8%)	2.20(1.42-3.40)	0.76(0.15-3.95)	0.74
Urban	137(60.6%)	89(39.4%)		1	
Educational status					
Higher educated	72(57.1%)	54(42.9%)	0.39(0.23-0.66)	0.63(0.19-2.07)	0.44
Secondary	21(56.8%)	16(43.2%)	0.39(0.18-0.82)	0.58(0.18-1.90)	0.37
Primary	30(66.7%)	15(33.3%)	0.59(0.28-1.22)	0.78(0.28-2.17)	0.64
Able to read	44(77.2%)	13(22.8%)	0.997(0.48-2.07)	1.41(0.61-3.27)	0.42
Unable to read	112(77.2	33(22.8%)	1	1	
Occupation					
Employed	52(57.1%)	39(42.9%)	1	1	
Unemployed	13(86.7%	2(13.3%)	4.88(1.04-22.86)	4.11(0.86-	0.08
Farmer	149(77.6	43(22.4%)	2.6(1.52-4.44)	2.45(1.42-4.22)	**0.001***
Merchant	15(60.0%)	10(40.0%)	1.12(0.46-2.77)	0.83(0.33-2.13)	0.70
House wife	37(67.3%)	18(32.7%)	1.54(0.77-3.10)	1.55(0.76-3.16)	0.22
Others	13(40.6%)	19(59.4%)	0.51(0.23-1.16)	0.45(0.2-1.04)	0.06
Cancer stage					
Late stage	188(64.6%)	103(35.4%	0.56(0.34-0.91)	0.59(0.35-1.0)	0.05
Early stage	91(76.5%)	28(23.5%)	1	1	
Treatment option					
Chemotherapy	186(69.7	81(30.3%)	1	1	
Radiotherapy	5(71.4%)	2(28.6%)	1.09(0.21-5.73)	1.12(0.19-6.58)	0.90
Surgery	13(61.9%)	8(38.1%)	0.71(0.28-1.77)	1.61(0.22-1.67)	0.34
Hormonal	11(52.4%)	10(47.6%)	0.48(0.20-1.17)	0.79(0.27-2.37)	0.68
Other	64(68.1%)	30(31.9%)	0.93(0.56-1.54)	1.21(0.65-2.25)	0.54
Time since diagnosis					
0-12	166(70.9	68(29.1%)	1.71(0.98-2.99)	1.92(1.06-3.49)	**0.03***
13-24	73(67.6%)	35(32.4%)	1.46(0.78-2.74)	1.75(0.90-3.39)	0.10
>24	40(58.8%)	28(41.2%)	1	1	
Social support					
Weak	125(75.3%	41(24.7%)	2.0(1.18-3.49)	1.64(0.91-2.94)	0.10
Moderate	97(65.1%)	52(34.9%)	1.24(0.73-2.12)	1.28(0.72-2.27)	0.39
Strong	57(60.0%)	38(40.0%)	1	1	
Source of information					
Health	187(69.8%)	81(30.2%)	1	1	
Reading	12(57.1%)	9(42.9%)	0.58(0.23-1.42)	0.92(0.31-2.74)	0.88
Both*	26(55.3%)	21(44.7%)	0.54(0.28-1.0)	0.79(0.36-1.73)	0.56
Other	23(79.3%)	6(20.7%)	1.66(0.65-4.23)	2.01(0.74-5.51)	0.17
Mixed	24(63.2%)	14(36.8%)	0.74(0.37-1.51)	95(0.44-2.1)	0.91

Key: * = variables significant associated with p-value < 0.05, at 95% CI Both* = (health professionals & reading), Mixed source = (from experience, other patients and health professionals)

5.5.5. Factors associated with the sexuality need domain

Variables significantly associated with binary logistic regression analysis at p value <0.2 were age, residence, educational status, cancer stage, and primary cancer site, treatment options, information received about the possible side effects of the treatment, social support, and performance status. While in the multivariable logistic regression analysis age, social support and performance status were variables statistically significant with unmet sexuality needs. Patients whose age was greater than 60 years had 70% less likely unmet sexuality needs compared to those of age 18-40 years (AOR= 0.3; 95% CI= 0.17-0.52). Similarly, unmet sexuality needs were 51% less likely in those who had weak social support compared to those who had strong social support (AOR= 0.49; 95% CI= 0.29-0.85). In addition, the odds of unmet sexuality need was 1.8 times higher in those who had poor performance status compared to those who had high-performance status (AOR=1.8; 95% CI=1.14-2.8) **(Table 10)**.

Table 10: Bivariable and multivariable logistic regression analysis for the factors associated with unmet needs in the sexuality domain in public hospitals of Northwest Ethiopia cancer treatment centers, 2023 (n=410).

Variables	**Sexuality domain**				
	Unmet need	**No need**	**COR (95% CI)**	**AOR (95% CI)**	**P-value**
Age					
18-40	70(54.7%)	58(45.3%)	1	1	
41-59	94(59.9%)	63(40.1%)	1.24(0.77-1.98)	1.27(0.79-2.06)	0.33
≥60	34(27.2%)	91(72.8%)	0.31(0.18-.52)	0.3(0.17-0.52)	**<0.001***
Residence					
Rular	80(43.5%)	104(56.5%)	0.70(0.48-1.04)	1.6(0.78-3.28)	0.20
Urban	118(52.2%)	108(47.8%)	1	1	
Educational status					
Higher educated	71(56.3%)	55(43.7%)	2.379 (1.46-3.88)	1.62(0.93-2.83)	0.09
Secondary	18(48.6%)	19(51.4%)	1.746 (0.84-3.62)	1.41(0.63-3.19)	0.40
Primary	27(60.0%)	18(40.0%)	2.765(1.39 -5.50)	2.0(0.97-4.33)	0.06
Able to read and write	31(54.4)	26(45.6)	2.198(1.18-4.10)	1.93(0.98-3.8)	0.06

Unable to read and write	51(35.2%	94(64.8%)	1	1	
Primary cancer site					
Breast	50(46.7%)	57(53.3%)	1	1	
Colon	23(67.6%)	11(32.4%)	2.38(1.06-5.37)	2.25(0.89-5.68)	0.09
Testicular	5(35.7%)	9(64.3%)	0.63(0.2-2.02)	1.9(0.32-4.46)	0.79
Lung	12(57.1%)	9(42.9%)	1.52(0.59-3.91)	1.94(0.65-5.81)	0.24
Cervical	25(43.1%)	33(56.9%)	0.86(0.45-1.64)	1.23(0.59-2.57)	0.58
Non-Hodgkin lymphoma	11(36.7%)	19(63.3%)	0.66(0.29-1.52)	0.97(0.38-2.49)	0.95
Others	72(49.3%)	74(50.7%)	1.1(0.67-1.83)	1.27(0.7-2.31)	0.43
Cancer stage					
Late stage	134(46%)	157(54%)	0.73(0.48-1.12)	0.76(0.47-1.24)	0.27
Early stage	64(53.8%)	55(46.2%)	1	1	
Treatment option					
Chemotherapy	135(50.6%)	132(49.4%)	1	1	
Radiotherapy	3(42.9%)	4(57.1%)	0.73(0.16-3.34)	0.7(0.14-3.45)	0.66
Surgery	12(57.1%)	9(42.9%)	1.3(0.53-3.8)	1.2(0.45-3.32)	0.69
Hormonal	9(42.9%)	55(58.5%)	0.73(0.3-1.8)	0.52(0.20-1.35)	0.18
Others	39(41.5%)	12(57.1%)	0.69(0.43-1.12)	0.62(0.37-1.05)	0.08
Social support					
Weak	63(38.0%)	103(62%)	0.53(0.32-0.88)	0.49(0.29-0.85)	**0.011***
Moderate	84(56.4%)	65(43.6%)	1.12(0.66-1.87)	1.0(0.59-1.74)	0.97
Strong	51(53.7%)	44(46.3%)	1	1	
Performance status					
Poor ps	69(53.9%)	59(46.1%)	1.39(0.91-2.11)	1.8(1.14-2.84)	**0.012***
High ps	129(45.7%)	153(54.3%	1	1	
Information received about the possible side effects of the treatment					
Yes	144(51.8%)	134(48.2%)	1.55(1.02-2.36)	1.37(0.86-2.18)	0.19
No	54(40.9%)	78(59.1%)	1	1	

Key: * = variables significant associated with p-value < 0.05, at 95% CI

6. Discussion

This study aimed to assess the magnitude of unmet supportive care needs and associated factors among cancer patients at cancer treatment centers in Northwest Ethiopia public hospitals. The over all unmet supportive care needs in this study was 98.3%. But each domain's unmet need was below this value. This happens due to the tools' operational definition if an individual's at least one domain was unmet the over all need for that individual should be unmet. This finding is higher than a study conducted in Japan (76.7%) (26) and in England a study done among lung cancer patients (78%) (18). The possible reason may be socioeconomic status, culture, living conditions, clinical setup, technology and knowledge differences between these populations and Ethiopians.

The result of this study indicated the highest (85.1%) and (81.5%) unmet supportive care need has occurred in the psychological and physical domains respectively. This result is higher than a systematic review conducted in Western countries (53). This discrepancy might be related to barriers to the availability, affordability, and acceptability of services. Additionally due to the increased incidence or burden of cancer in Ethiopia from 2010-2019 (3) addressing such needs was so challenging with a limited number of physicians (4 oncologists only). In contrast, this result is lower than a global systematic study (32). The reason may be due to this systematic study being conducted only on young adults and adolescents with rare (uncommon) cancer who were under the age of 18 years. Due to the rarity of these cancers, patients encountered challenges throughout their illness, including delayed and/or inaccurate diagnosis, a lack of information special to the disease, and limited access to clinical expertise and treatment options (62).

The third most unmet supportive care need was noted down in the information and health system domain 74.6% which is higher than findings from studies in Nigeria, Iran, Jordan, and Dessie (1, 29, 34, 63). This discrepancy may be due to the increased incidence of cancer patients,' health professionals didn't deliver the required health information such as treatment options and its side effects, stage of cancer, and the progress, the sequence of the treatment, and the importance of the investigations to the individual patients raises the information need of the participants. But this result is lower than a systematic study conducted globally (32). This might be due to this systematic study was conducted on

rare cancer patients so had a lack of information special to their disease (62). It is also lower than specifically a study conducted in Gondar and Addis Ababa (30, 33) in Ethiopia.

The fourth unmet supportive care need was recorded in the patient care domain 68% which is higher than a study done in Addis Ababa, and Nigeria (33, 34). This might be due to a limited number of cancer treatment centers, inaccessibility of anti-cancer drugs and radiotherapy treatment options in the public hospitals of the region, cost inflation for treatment, and the current political instability of the country. Similar to the previous studies, the sexuality domain showed the least unmet supportive care need. This might be because most patients were reluctant to disclose information related to sexual behavior, and may consider their sexual needs not as important as other needs. Physicians also might not advise about this need (17, 30). While this study is higher than a study conducted in Dessie (29), Addis Ababa (33), Iran (63) Nigeria (34), and Jordan (1). This might be due to the majority of the participants in the current study were gynecological, breast, testicular, prostate, and advanced-stage cancer patients who have a direct impact on their sexuality as a result would like to stop childbearing. On the other hand, this finding showed patients' improvement in disclosing such delicate issues when compared to the aforementioned studies (34).

The current study depicted being older ages (age > 60 years) increases the odds of unmet needs in the physical domain by 2.22 compared to being younger ages. This was similar to a study conducted in the Middle East and Iran (1, 63) in the physical domain, Dessie in the physical and psychological domains (29). This might be due to older ages having poor exposure to modern technologies like the internet, Facebook, etc., and doesn't take the prescribed medications appropriately. These individuals may also have comorbid diseases, decreased functioning, and less physical tolerance for treatments (64). But in the sexuality domain older ages had 70% less likely unmet sexuality needs than younger ages. This was similar to a study in Japan unmet sexual needs are remarkable among younger survivors (26). This might be due to older ages doesn't have a desire for sexual needs. Reproductive need was higher among participants' ≤45 years of age (1).

Regarding educational status higher and secondary education attained individuals had 62% and 67% less likely unmet needs in the health system and information domain compared to uneducated (couldn't able to read and write) individuals. However a study in Singapore contrasts the current study that higher educational attainment was associated with greater level of unmet needs (65). This might be due to secondary and higher educated individuals having good awareness and access to information related to their treatment benefits and side effects, the investigation and results, the disease progress and/or the general nature of the disease. In line with this, their needs in this domain were less likely unmet. Concerning occupational status the current study revealed being a farmer increases the odds of unmet need in the patient care and support domain by 2.45 compared to employed individuals. Almost all farmers in this study reside in rural areas which had poor transport access and were far from the cancer treatment centers. As a result, most farmer patients seek help when they become critical or reached an advanced stage while others discontinue their follow-up and take herbal medicine.

Respondents who had been treated by radiotherapy had 92% & 98% less likely unmet needs in the physical and psychological domains respectively, compared to those treated by chemotherapy. However, a study conducted in Canada contrasts the current study due to radiotherapy side effects, fatigue and lack of transport access (54). Patients believe they will be entirely cured of cancer after receiving radiation treatment, although accessing radiotherapy is difficult and expensive. As a result of radiotherapy's suppression of cancer's symptoms and size, patients' feelings of anxiety and despair decreased. Similarly, those who had been treated by surgery had 68% less likely to unmet supportive care needs in the health system and information domain than those treated by chemotherapy. Contrarily, a study done in Dessie referral hospital showed that individuals treated by surgery had 6.92 times more unmet need in the physical/daily living need domain compared to those treated by chemotherapy (29). This might be because before surgery, patients were advised about their disease and related issues. Besides, surgery was done for individuals who had been diagnosed with early-stage (I & II) cancer after informed consent was taken. As well, the current availability of many specialist and subspecialist surgeons in the area contributed to this decreased unmet need.

The unmet psychological need was high for those who had shorter times since diagnosis (<24 months) compared to longer times since diagnosis (>24 months) patients. Similarly, in the patient care domain shorter time since diagnosis (<12 months) patients had higher unmet needs compared to time since diagnosis >12 months patients. On the contrary a study conducted in Dessie stated for every increase of time since diagnosis by 01 month, the odds of unmet patient care and supportive needs increased by 2% (29). The possible reason might be feelings of anxiety, disappointment, and giving up surviving after knows being a cancer patient in the early time of diagnosis. Besides, in the early time since diagnosis, the management of the disease leads to significant fights with unanticipated side effects of therapy, physical complications of the disease, psychological affect, and social challenges.

In this study, testicular cancer patients had less unmet physical needs compared to breast cancer patients. This is due to testicular cancer may cause no symptoms, and the most common symptom is a painless swelling, lump, or change in the size or shape of a testis, and the majority of cases respond well to treatment (66). As a result, these patients might not experience many challenges during their routine activities. This study also showed individuals who had poor performance status had higher unmet needs in the physical and sexuality domains compared to patients who had high-performance status. Similarly, a study in Japan showed participants with poor performance status were associated with unmet needs in all domains (26). This might be because participants with poor performance status couldn't take care of themselves and perform routine daily activities without assistance. These individuals are complicated advanced-stage cancer patients and had experienced pain or discomfort that interferes with their usual activities. Also, those who were unwell and didn't have energy experienced a change in sexual needs (26). This study found individuals with poor social support were 51% less likely to have unmet sexual needs than those who had strong social support. According to a Japanese study, patients with poor social support had higher levels of unmet psychological, informational, and patient care needs. This may be the result of inadequate disclosure and communication of such a delicate issue (26).

7. Strengths and limitations

Strength

This research was carried out at three cancer treatment centers in Northwest Ethiopia. Hence, its representativeness to the region is high.

Limitations

Due to social desirability bias, participants have been reluctant to express their true feelings about sexual characteristics. As well, excluding patients who were critically ill during the data collection could understate the needs.

8. Conclusion

This study showed that the overall prevalence of unmet supportive care needs among cancer patients was enormous. The psychological and physical domains of unmet supportive care needs were the most frequent. Treatment option, performance status, time since diagnosis, and age were variables that showed statistically significant association with more than one unmet supportive care need domains while occupational status, educational status, cancer type, and social support each showed significant association with only one unmet need domain. As a result, interventions will be essential to decrease the unmet supportive care needs of cancer patients.

9. Recommendation

Residents in rural area, especially farmers, had poor transport access and were far from the cancer treatment centers. In order to address unmet needs specifically in the patient care and support domain and indirectly to the other domains, the regional government should have increased the number of cancer treatment sites. Due to lack of access at the local public hospitals as well in the region, patients were exposed to extra cost and torment for radiotherapy, anticancer medication, and investigational seeking. Hence, it would be better the respective hospital collaborated with the government to fulfill these supplies. Many patients return back to their homes without receiving care due to a lack of beds. So as to solve such types of suffering adequate beds and rooms should be present or built for emergency and palliative care and chemotherapy infusion. Besides, giving priority and concern to such patients in every aspect of care in the hospital starting from the card room, laboratory, and pharmacy will reduce their suffering.

Training will be important for health professionals about supportive care needs in addition to routine medical treatment. Health professionals should give adequate explanations and health education for the patients and attendants regarding the prescribed medications (such as the common side effects of chemotherapy, and benefits), routine investigations, follow-up, and the condition of the disease during hospital visits. The prevalence of such open communication with medical experts enhances patients' health-seeking behavior, which reduces unmet needs, particularly in the information and health system domain. In general, the influence of one domain affected the other all-need domains both directly and indirectly. It will be better for future researchers to address the qualitative part to get a deep insight into participants’ beliefs, especially their sexual needs. Additionally, it would be advisable to carry out longitudinal study to follow the effect of interventions provided for the patient's needs.

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11. Annexes

Annex I: Information sheet

Name of the principal investigator: Tafach Tirukelem (BSc nurse)

Organization: Bahirdar University

Purpose of the research: The main aim of the research project is to determine unmet supportive care needs and associated factors among cancer patients at cancer treatment centers of North West Ethiopia public hospitals. This research is conducted for partial fulfillment of the degree of Master's by adult health nursing.

Benefits: The study's findings and recommendations will help the concerned organization and policy-makers to have a policy consideration, direction, and formulation of a guideline, and protocol in the long run. However, the study does not have immediate financial, health care, or capacity-building benefits for the research participant as an individual.

Risk: There was no physical harm, social discrimination, psychological pain, or financial loss caused to research participants in the planned study.

Confidentiality: Codes were used during the data collection period rather than names to ensure the confidentiality of research data. All data were stored in a locked filing cabinet accessible only to the researcher and advisor. The questionnaire will be securely destroyed after the research defense and final work are approved by the academic commission of the School of health sciences and the university committee.

Results Dissemination: The researcher will be entirely responsible for sharing each study hospital's findings. The findings will be published in scholarly journals with a good reputation. The researcher will be completely liable for communicating findings to hospitals.

Freedom to withdraw: You have the full right to withdraw from the study whenever you choose if you do not want to participate in it. Nobody will compel you to explain your

withdrawal, and this won't have any bearing on the health benefits or other administrative benefits you receive from your refusal.

Person to contact: If you have any concerns about this study endeavor you can contact the principal investigator Tafach Tirukelem by the following addresses.

Phone: 0963099234 E-mail: tafachtiru@gmail.com

Annex II: Informed consent form

Dear participants my name is_____. I am collaborating with Tafach Tirukelem, who is conducting research as a partial fulfillment of the adult health nursing master's degree requirement. Use the phone number 0963099234 to contact us if you have any questions. The inquiry might take a few minutes, and I guarantee that I will keep whatever information you provide private. Please, I want to know your interest to let me proceed with the data collection.

Code number _____

Annex III: English version questionnaires

The questionnaire has six parts mentioned below. If you oversee any item without response, it will affect the study. So, please give your corret response to each item.

Part1: Socio-demographic characteristics of the study participants

Please provide an appropriate answer in front of each question

S.No	Questionnaires	Answers
101	Sex	1. Male 2. Female
102	Age in year	----------
103	Marital status	1. Single 2. Married 3. Divorced 4. Widowed
104	Educational status	1. Unable to read and write 2. Able to read and write 3. Primary educated 4. Secondar educated 5. Higher educated/ above college
105	Occupational status	1. Government employed 2. Unemployed 3. None government employed 4. Farmer 5. Merchant 6. Others
106	Place of Residence	1. Urban 2. Rural
107	Monthly income	----------
108	Change in work after cancer diagnosis	1. No change 2. Work hour decreased 3. Absence from work 4. Left work 5. Changed jobs 6. Firing

Part II Clinical Characteristics

109	Primary Cancer site	1. Breast 2. Colon 3. Testicular 4. Lung 5. Cervical 6. Non-Hodgkin lymphoma 7. Others
110	Time since diagnosis	----------
111	Stage of cancer at time of diagnosis	1. I 2. II 3. III 4. IV 5. Unknown
112	Remission of the disease	1. Yes 2. No

113	Treatment option in last month	1. Chemotherapy 3. Surgery 5. Other	2. Radiotherapy 4. Hormonal therapy

Part III: Information status about the disease

During your current disease or treatment, have you received information on?

S.No	Questions	Coding categories
201	The diagnosis of your disease?	1. Yes 2. No
202	The extent (spread) of your disease?	1. Yes 2. No
203	The possible causes of your disease?	1. Yes 2. No
204	The purpose of any medical tests you have had or may undergo	1. Yes 2. No
205	The procedures of the medical tests?	1. Yes 2. No
206	The medical treatment (chemotherapy, radiotherapy, surgery or other treatment modality)?	1. Yes 2. No
207	The sequence of the medical treatments?	1. Yes 2. No
208	The expected benefit of the treatment?	1. Yes 2. No
209	The possible side-effects of your treatment?	1. Yes 2. No
210	Did you inform about the duration of your treatments?	1. Yes 2. No
211	From whom did you get information for the above questions (if you get)?	1. Health professionals 2. Reading 3. Both 4. Other patients 5. mixed sources

Part IV: Osslo 3 Items Social Support Scale

Direction: These questions concentrate on the respondents' social support. Give your agreement for each question with the corresponding rating.

401	How easy can you get help from neighbors if you should need it?				
	1. Very difficult	2. Difficult	3. Possible	4. Easy	5. Very
402	How many people are so close to you that you can count on them if you have serious problems?				
	1. None	2. 1-2		3. 3-5	4. More than 5
403	How much concern do people show in what you are doing?				
	1. No	2. Little	3. Uncertain	4. Some	5. A lot

Part V: ECOG Performance status

Instruction: These scales are used by researchers to assess the course of a patient's illness and how it affects their capacity for everyday functioning. Please mark the corresponding number in the box.

Grade	**Explanation of activity**
0	Fully active, able to carry on all pre-disease performance without restriction
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work
2	Ambulatory and capable of all self-care but unable to carry out any work activities. Up and about more than 50% of waking hours
3	Capable of only limited self-care, confined to bed or chair more than 50% of waking hours
4	Completely disabled. Cannot carry on any self-care. Totally confined to bed or chair

Part VI supportive care need tool

This section of the questioner will assess supportive care needs in the last month, please circle the numbers or record on the space provided under the coding categories

	Physical need domain	**Coding category**				
S.No		**Not applicable**	**Satisfied**	**Low need**	**Moderate need**	**High need**
301	Looking for help with pain relief	1	2	3	4	5
302	Seeking help after experiencing weakness/ fatigue after being sick	1	2	3	4	5
303	Feeling unwell and seek help	1	2	3	4	5
304	Need help with homework	1	2	3	4	5
305	Seeking help because you were unable to do the work you used to do	1	2	3	4	5
II	**Psychological domain**					
301	Feeling of anxiety after being diagnosed with this disease and sought psychological help	1	2	3	4	5
302	Feeling of depression after being diagnosed with this disease and sought psychological help	1	2	3	4	5
303	Feeling of sadness after being diagnosed with this disease and sought psychological help	1	2	3	4	5
304	Seeking psychological help after being sick with this disease for fear that it will get worse	1	2	3	4	5
305	Feeling like it might be too much for you to seek psychological help when you heard the medical results	1	2	3	4	5

306	Feeling anxious about the future and sought psychological help	1	2	3	4	5
307	Want to know how to get out of your situation and seek psychological help	1	2	3	4	5
308	Seeking psychological help to hopefully move with the situation	1	2	3	4	5
309	Seeking psychological help if you feel like you are not going to survive	1	2	3	4	5
310	Worried about your family and friends and need psychological help	1	2	3	4	5
III	**Patient care/supportive need**					
301	Want to be treated by a specialist doctor of your choice	1	2	3	4	5
302	Getting the treatment at the hospital of your choice	1	2	3	4	5
303	Getting reassurance from a health professional that your feelings are similar to the other patients in a	1	2	3	4	5
IV	**Health system or information**					
301	Getting information about the benefit and harm of the treatment before receiving the treatment	1	2	3	4	5
302	Want to know your test results right	1	2	3	4	5
303	Want to know if you are recovering from the disease	1	2	3	4	5
304	Want to get information on what to do to recover from the disease	1	2	3	4	5
305	Want to be treated like any other person, not as a patient	1	2	3	4	5
V	**Sexual domain**					
301	Change in sex drive and need help	1	2	3	4	5
302	Experiencing a change in sexual intercourse and want help	1	2	3	4	5
303	Want to know about sexual intercourse after illness	1	2	3	4	5

Thank you for your cooperativeness!!!

የመረጃ ቅፅ

የጥናት ፕሮጀክቱ ርዕስ፡- በሰሜን ምዕራብ ኢትዮጵያ በሚገኙ የካንሰር ህክምና ማዕከላት የሚታከሙ የካንሰር ታማሚዎች ያልተሟሉ የድጋፍ ፍላጎቶች እና ተያያዥ ችግሮች

ጥናቱን የሚያጠናዉ ስም፦ ጣፋጭ ጥሩቀለም (ቢኤስሲ ነርስ)

የተቆሙ ስም፦ ባህርዳር ዩኒቨርሲቲ

የጥናቱም ዋና አላማ፦ የዚህ ጥናት ዋና ዓላማ በሰሜን ምዕራብ ኢትዮጵያ በሚገኙ የመንግስት ሆስፒታሎች የካንሰር ሕክምና ማዕከላት የሚታከሙ የካንሰር ሕመሙን ያልተሟሉ የድጋፍ ፍላጎቶች እና ተያያዥ ችግሮች ላይ ነው። ይህ ጥናት የሚካሄደው በድህረ ምረቃ የአዋቂዎች ጤና ነርስ ማስተርስ ዲግሪ የመመረቂያ የምርምር ጥናት ነው።

የጥናቱ ጥቅሞች፡- የጥናቱ ግኝቶች እና የውሳኔ ሃሳቦች የሚመለከታቸው ድርጅቶች እና ፖሊሲ አውጪዎች የፖሊሲ እይታ፣ ስትራቴጂ እና ፕሮቶኮል እንዲቀረፅ ያግዛል። ነገር ግን ጥናቱ ለጥናቱ ተሳታፊ እንደ ግለሰብ ምንም አይነት ፈጣን የገንዘብ፣ የጤና እንክብካቤ እና የአቅም ግንባታ ጥቅማጥቅሞች የሉትም።

የጥናቱ ስጋት፡- ጥናቱ በተሳታፊዎች ላይ የሚያደርሰዉ የአካል ጉዳት፣ ማህበራዊ መድልዎ፣ የስነልቦና ጉዳት ወይም የገንዘብ ኪሳራ አይኖርም።

ምስጢራዊነት፡ የጥናቱ ተመራማሪ የጥናቱን መረጃ ምስጢራዊነት ለመጠበቅ ከስም ይልቅ ኮዶችን ይጠቀማል። ዋናው መረጃ የመረጃ ትንተናው እስኪጠናቀቅ ድረስ በተቆለፉ ካቢኔቶች ውስጥ ይቀመጣል። ዋናው አጥኝ እና አማካሪዎች ብቻ ማግኘት ይኖርባቸዋል። የእርስዎን የግል መረጃ እና ባህሪያትን ሚስጥራዊ እናደርጋለን። ዋናው የመረጃ መጠይቅ የጥናቱ የመጨረሻ ስራ በጤና ሳይንስ ትምህርት ቤቱ ትምህርት ኮሚሽን እና በዩኒቨርሲቲው ኮሚቴ ከፀደቀ በኋላ ደህንነቱ በተጠበቀ ሁኔታ ይቃጠላል።

የውጤቶች ስርጭት፡- አጥኝዉ ሁሉም ጥናት የተካሄደባቸዉን ሆስፒታሎች ግኝቶች የማሳወቅ ሙሉ ሀላፊነት አለበት። መጨረሻም ግኝቶቹ እዉቅና ባላቸው ድርጅቶች ይታተማሉ።

የመውጣት ነፃነት፡ በጥናቱ መሳተፍ ካልፈለጉ በመረጡት ጊዜ ሁሉ ከጥናቱ የመውጣት ሙሉ መብት አለዎት። ለመውጣትዎ ማብራሪያ እንዲሰጡ ማንም አያስገድድዎትም፣ እና ይህ እምቢታዎ በሚያገኟቸው የጤና ወይም ሌሎች አስተዳደራዊ ጥቅማ ጥቅሞች ጋር ምንም አይነት ግንኙነት አይኖረውም። በዚህ ጥናት ላይ ስጋት ካለዎት ዋና አጥኝዋን ጣፋጭ ጥሩቀለምን በሚከተሉት አድራሻዎች ማግኘት ይችላሉ።

ስልክ፡ 0963099234 ኢሜል፡ tafachtiru@gmail.com

የስምምነት ቅጽ

ውድ ተሳታፊዎች ስሜ _____ ነው። የጎልማሶች ጤና ነርሲንግ ሁለተኛ ዲግሪ መስፈርትን በከፊል ለማሟላት ምርምር ከሚያደርጉት ጣፋጭ ጥሩቀለም ጋር በመተባበር ላይ ነኝ። ስለ ጥናቱ ምንም አይነት ጥያቄ ካለዎት እኛን ለማግኘት ስልክ ቁጥር 0963099234ን ይጠቀሙ። ጥያቄው ጥቂት ደቂቃዎችን ሊወስድ ይችላል፣ እና እርስዎ የሚያቀርቡልኝን ማንኛውንም መረጃ በምስጢር እንደማቆይ ዋስትና እሰጣለሁ። እባኮትን ወደ መረጃ መሰብሰቢያዉ እንድቀጥል ፍቃደኛ መሆንዎትን ያሳዉቁኝ።

መለያ ቁጥር --

የአማርኛ መጠይቅ

በሰሜን ምዕራብ ኢትዮጵያ የመንግስት ሆስፒታሎች በካንሰር ህክምና ማዕከላት የሚታከሙ የካንሰር ታማሚዎች ያልተሟሉ የድጋፍ ፍላጎቶችን እና ተያያዥ ችግሮች ለመገምገም የተዘጋጀ መጠይቅ። ይህ መጠይቅ ስድስት ክፍሎች አሉት። እባክዎ ለእያንዳንዱ ጥያቄ ትክክለኛ ምላሽ ይስጡ። ምንም አይነት ምላሽ ሳይሰጡ የሚያልፉ ከሆነ፣ በጥናቱ ላይ ተጽእኖ ይኖረዋል።

ክፍል 1: የጥናቱ ተሳታፊዎች ማህበራዊ ስነ-ሕዝብ ባህሪያት

እባክዎ የሚሆንዎትን መልስ ከእያንዳንዱ ጥያቄ ፊት ለፊት ካሉት ምርጫዎች ይምረጡ።

ተ.ቁ	ጥያቄዎች	መልስ
101	ዕድሜ በዓመት	---
102	ፆታ	1. ወንድ 2. ሴት
103	የጋንቻ ሁኔታ	1. ያላገባ/ች 2. ያገባ/ች 3. የፈታ/ች 4. ባል/ሚስት የሞተባት/የሞተችበት
104	የመኖርያ ቦታ	1. ከተማ 2. ገጠር
105	የትምህርት ደረጃ	1.ማንበብ እና መፃፍ የማይችል/ማትችል 2. ማንበብ እና መፃፍ የሚችል/የምትችል 3. ከ1-8 የተማረ/ች 4. ከ9-12 የተማረ/ች 5. ከኮሌጅ/ዩንቨርሲቲ ከፍተኛ ትምህርት ያጠናቀቀ/ች
106	የስራ ሁኔታ	1.የመንግስት ሰራተኛ 2. ስራ የሌለዉ 3. ከግል ድርጅት የሚሰራ 4. አርሶአደር/ገበሬ 5. ነጋዴ 6. የቤት እመቤት 7. ሌላ
107	የወር ገቢዎ (በብር)	---
108	ካንሰር ከታመመ በኋላ በስራዎ ላይ ለዉጥ	1. የለም 2. የስራ ስዓት መቀነስ 3. ከስራ መቅረት 4. ስራ መልቀቅ 5. ስራ መቀየር 6. ከስራ መባረር

ክፍል 2: የበሽታው ሁኔታ

109	ካንሰሩ በቅድሚያ የጀመረበት የሰውነት ክፍል	1. ጡት 2. አንጀት 3. የወንዶች የዘር ፍሬ 4. ሳምባ 5. የማህፀን 6. ሆጅኪን ያልሆነ ሊምፎማ 7. ሌላ
110	በሽታው የታወቀበት ጊዜ	---
111	በሽታው በታወቀበት ጊዜ የነበረው የካንሰሩ ደረጃ	1. 1 2. 2 3. 3 4. 4 5. አይታወቅም
112	የበሽታዉ የመሻል ሁኔታ	1. አለዉ 2. የለዉም
113	በባለፈው አንድ ወር ውስጥ የነበረዉ የህክምና አማራጭ	1. የመዳህኒት ህክምና 2. ጨረር 3. የቀዶ ህክምና 4. የሆርሞን ህክምና 5.ሌሎች

ክፍል 3: የጥናቱ ተሳታፊዎች ስለበሽታቸዉ ያላቸዉ መረጃ

አሁን ባለዎት በሽታ ከዚህ በታች ከተዘረዘሩት ዉስጥ መረጃ ደርሶዎታል?

ተ.ቁ	ጥያቄ	የምልክት መደቦች
201	ህመምዎ ምን እንደሆነ ተነግሮዎታል?	1. አዎ 2.የለም
202	የህመምዎ ደረጃ/ሁኔታ ተነግሮዎታል?	1. አዎ 2. የለም
203	የበሽታዎ መንስኤ ምን ሊሆን እንደሚችል ተነግሮዎታል?	1. አዎ 2.የለም
204	ስካሁን ያደረጉት/ ወደፊት ሊያደርጉት የሚገባ የጤና ምርመራ አላማ ለምን እንደሆነ ተነግሮዎታል?	1. አዎ 2. የለም
205	የጤና ምርመራዎቹ እንዴት እንደ ሚካሄዱ ተነግዎታል?	1. አዎ 2. የለም
206	ለአርስዎ ህመም ሊሆኑ የሚችሉ የህክምና አይነቶች እነማን እንደሆኑ ተነግሮዎታል? (መዳህኒት፣ ጨረር፣የቀዶ ጥገና ወይም ሌላ ህክምና አይነቶች)	1.አዎ 2. የለም
207	የህክምናዎ ቅደም ተከተል ተነግሮዎታል?	1. አዎ 2. የለም
208	ህክምናው ሊሰጠው ስለሚችለው ጥቅም ተነግሮዎታል?	1. አዎ 2. የለም
209	በህክምናው ምክንያት ሊመጡ ስለሚችሉ የጎንዮሽ ጉዳቶች ተነግሮዎታል?	1. አዎ 2. የለም
210	ህክምናው ለምን ያክል ጊዜ ሊቆይ እንደሚች ተነግሮዎታል?	1. አዎ 2. የለም
211	ከላይ ለተጠየቁት ጥያቄዎች መረጃ ከማን አገኙ? (አግኝተዉ ከሆነ)	1.ከጤና ባለሞያ 2.በማንበብ 3.ከሁለቱም 4. ከሌላ ታካሚ 5. ከብዙ ምንጭ

ክፍል 4፡ አስሎ-3 የማህበራዊ ድጋፍ ልኬት/መጠይቅ

እባክዎ በእያንዳንዱ መግለጫ ምን ያህል እንደተስማሙ የሚያመለክተውን ቁጥር አክብቡ።

401	እርዳታ ካስፈለገዎት ከጎረቤቶችዎ ምን ያህል በቀላሉ ለማግኘት ይችላሉ?				
	በጣም ከባድ	2. ከባድ	3. ይቻላል	4. ቀላል	5. በጣም ቀላል
402	ከባድ ችግር ካጋጠመዎት ምን ያህል ሰዎች ለእርስዎ ቅርብ እንደሆኑ ሊተማመኑባቸዉ ይችላሉ?				
	1. የሉም	2.1-2	3. 3-5	4. ከ 5 በላይ	
403	ሰዎች በሚያደርጉት ነገር ምን ያህልት ኩረት/ አሳቢነት ያሳያሉ?				
	1. ምንም	2. ትንሽ	3.እርግጠኛ አድለሁም/ አላውቅ	4. አንዳንድ/ትንሽ	5. ብዙ

ክፍል 5: የኢኮግ አፈጻጸም ሁኔታ

መግቢያ፡ እነዚህ መመዘኛዎች በአጥኝዎች የታካሚውን የህመም ሁኔታ እና የእለት ተእለት የመሥራት አቅማቸውን እንዴት እንደሚጎዳ ለመገምገም ይጠቅማሉ። እባክዎን በሣጥኑ ውስጥ ያለውን ተዛማጅ ቁጥር ምልክት ያድርጉ።

ደረጃ	የእንቅስቃሴ ማብራሪያ
0	ሙሉ በሙሉ ንቁ፣ ሁሉንም የቅድመ በሽታ አፈጻጸም ያለ ገደብ ማከናወን የሚችል/የምትችል
1	በአካላዊ አድካሚ እንቅስቃሴ የተገደበ/ች ነገር ግን በመንቀሳቀስ እና በብርሃን ወይም በእንቅስቃሴ ላይ ያለ ስራን ማከናወን የሚችል/የምትችል፣ ለምሳሌ የመብራት ቤት ስራ፣ የቢሮ ስራ
2	ተንቀሳቃሽ እና ሁሉንም እራስን መንከባከብ የሚችል/የምትችል ነገር ግን ምንም አይነት የስራ እንቅስቃሴዎችን ማከናወን የማይችል/የማትችል እና ከ50% በላይ የሚሆነው የንቃት ሰአት
3	እራስን ለመንከባከብ የተገደበ/ች፣በአልጋ ወይም በወንበር ከ50% በላይ የእንቅልፍ ሰዓታት የትያዘ/ች
4	ሙሉ በሙሉ ተሰናክሏል/ች፤ ምንም አይነት ራስን መንከባከብ አይቻልም/አትችልም፤ ሙሉ በሙሉ በአልጋ ወይም በወበር ላይ ተወስኗል/ች፡፡

ክፍል 6: የእገዛ እና እንክብካቤ እርዳታን በተመለከተ

በባለፈው ወር ውስጥ ምን ያክል እገዛ እና እንእብካቤ አስፈልጎዎት ነበር? እባክዎ በተጠቀሰው ቦታ ላይ ትክክለኛ መልስ ያክብቡ

1	የአካልና የቀን ከቀን ኑሮ ላይ ያለ ሁኔታ	መልሶችና የኮድ መደቦች				
ተ.ቁ		ይዜ ችግር የለኝ ም	ፍላጎቴ ተሞል ቶአል	ትንሽ ፍላጎት አለኝ	መጠነ ኛፍላጎ ት አለኝ	ከፍተኛ ፍላጎት አለኝ
301	ህመም ለማስታገስ እርዳታ መፈለግዎት	1	2	3	4	5
302	ከታመሙ በኃላ አቅም ማነስ/ድካም አጋጥሞዎት እርዳታ መፈለግዎት	1	2	3	4	5
303	ጤና የማጣት ስሜት ተሰምትዎት እርዳታ መፈለግዎት	1	2	3	4	5
304	በቤት ውስጥ በሚሰሩ ስራዎች ላይ እርዳታመፈለግዎት	1	2	3	4	5
305	በፊት ይሰሩ የነበሩትን ስራ መስራት ባለመቻልዎት እርዳታ መፈለግዎት	1	2	3	4	5
2	**ሳይኮሎጂካል ጎራ/ስነ-አይምሮ**					
301	በዚህ ህመም ከታመሙ በኃላ የጭንቀት ስሜት ተሰምትዎት የስነ-ልቦና እርዳታ መፈለግዎት	1	2	3	4	5

302	በዚህ ህመም ከታመሙ በኃላ የድብርት ስሜት ተሰምትዎት የስነ-ልቦና እርዳታ መፈለግዎት	1	2	3	4	5
303	በዚህ ህመም ከታመሙ በኃላ የማዘን ስሜት ተሰምትዎት የስነ-ልቦና እርዳታ መፈለግዎት	1	2	3	4	5
304	በዚህ ህመም ከታመሙ በኃላ ህመሜ ይባባሳል ብለው በመፍራት የስነ-ልቦና እርዳታ መፈለግዎት	1	2	3	4	5
305	የህክምና ውጤቱን ሲሰሙ ከአቅሜ በላይ ሊሆን ይችላል የሚል ስሜት ኖሮዎት የስነ ልቦና እርዳታ መፈለግዎት	1	2	3	4	5
306	ስለ ወደፊቱ ሲያስቡ የመጨነቅ ስሜት ተሰምትዎት የስነ-ልቦና እርዳታ መፈለግዎት	1	2	3	4	5
307	ያሉበትን ሁኔታ እንዴት እንደ ሚወጡት ማወቅ ፈልገው የስነ-ልቦና እርዳታ መፈለግዎት	1	2	3	4	5
308	ከሁኔታዎች ጋር በተስፋ ለመቀጠል እርዳታ መፈለግዎት	1	2	3	4	5
309	በህይወት አልቀይም የሚል ስሜት ተሰምትዎት የስነ-ልቦና እርዳታ መፈለግዎት	1	2	3	4	5
310	የቤተሰብዎና የወዳጅዎ ጭንቀት አሳስቦዎት የስነ-ልቦና እርዳታ መፈለግዎት	1	2	3	4	5
3	**የጤና ስርዓት ወይም መረጃ**					
301	ህክምናውን ከማግኘትዎ በፊት ስለህክምናው ጥቅም እና ጉዳት መረጃ የማግኘት ፈላጎትዎት	1	2	3	4	5
302	ስለ ምርመራ ውጤትዎ ወዲያውኑ የማወቅ ፈላጎትዎት	1	2	3	4	5
303	ከበሽታው እያገገሙ ወይም እየዳኑ እንደሆነ የማወቅ ፈላጎትዎት	1	2	3	4	5
304	ከበሽታው ለማገገም ምን ማድረግ እንዳለብዎት መረጃ የማግኘት ፈላጎትዎት	1	2	3	4	5
305	እንደ በሽተኛ ሳይሆን እንደ ማንኛውም ሰው ህክምና የማግኘት ፈላጎትዎት	1	2	3	4	5
4	**የታካሚ እንክብካቤ/የድጋፍ ፍላጎት**					
301	በፈለጉት እስፔሻሊስት ሀኪም መርጠው የመታከም ፈላጎትዎት	1	2	3	4	5

302	በመረጡት ሆስፒታል ህክምናውን የማግኘት ፈላጎትዎት	1	2	3	4	5
303	እርስዎ የሚሰማዎት ስሜት ሌሎች ተመሳሳይ ታማሚዎች የሚሰማቸው መሆኑን ከጤና ባለሙያ ማረጋገጫ የማግኘት ፈላጎትዎት	1	2	3	4	5
5	**ስለሰነ-ጾታ**					
301	የወሲብ ስሜትዎ ተቀይሮ እርዳታ መፈለግዎት	1	2	3	4	5
302	የፆታዊ ግንኙነት መቀየር አጋጥሞዎት እርዳታ መፈለግዎት	1	2	3	4	5
303	ከህመምዎ በኋላ ስለ ፆታዊ ግንኙነት የማወቅ ፈላጎትዎት	1	2	3	4	5

ስለ ትብብርዎ እናመሰግናለን!!!