Prevalence of Cancer-related Fatigue among Women with Breast Cancer in Erbil City

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ABSTRACT

Background and objective: Cancer-related fatigue is greatest frequent upsetting sense of tiredness or exhaustion can happen regardless of cancer type and could be experienced physically or emotionally, and or cognitively, that is associated with the tumor or its treatment. The current study aimed at assessing prevalence of cancer related fatigue among women with breast cancer.

Method: A descriptive cross- sectional study design was conducted from 8th of October 2018 to 8th October 2019. To find out the prevalence of cancer-related fatigue among female breast cancer patients at Nankali Hospital in Erbil city. A sample of 60 breast cancer patient was obtained through non-probability purposive convenience sampling techniques. Data were analyzed using Statistical Package for the Social Sciences version 23 for windows.

Results: The results showed that the highest percentage of participants (45%) were from age group between 39-54, most of them were from urban area, graduated from primary school, married, however; 53.3% of breast cancer women they had family history of breast cancer. Regarding breast cancer stages, 40% of participants were in third stage. Most of the breast cancer patients were receiving chemotherapy treatment and they had surgery (81.7% and 71.7% respectively). Concerning cancer related fatigue 75% of participants suffered from fatigue, nonetheless; fatigue severity among participants range from severe 53.3% to moderate 48.3%. Also, physical fatigue was a common type of fatigue among women with breast cancer.

Conclusion: One of the most common complains symptom of patient with cancer is fatigue. Cancer related fatigue impact physical, emotional, cognitive domains of patients'. Moreover, cancer-related fatigue has undesirable effect on patients, mood, daily task performance, and the patient's life.

Keywords: prevalence; cancer related fatigue; breast cancer; severity of fatigue; types of fatigue.

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INTRODUCTION

Cancer is a global health issue regardless of a country's economic status. The incidence and mortality of cancer are continuously increasing universally, and in 21st century cancer is a major health concern that decreases the life continuum of people all over the world. In 2015, cancer was expected to be the first and second leading reason of death among adults in 91 countries before age 70[1], In 2017, the second cause of death in United States was cancer [2], and the cancer rate in the United States is estimated to be 1,762,450 new cases, and breast cancer is predicted to be third most common cancer for women with approximately 62,930 new cases in 2019 [3].Breast cancer (BC) is the most frequent cancer diagnosis among women worldwide, and incidence BC is steadily increasing, but-the rate of

mortality is declining in developed countries in contrast to developing countries[4], BC accounts for 14% to 42% of all cancer cases in women younger than 50 years, which indicates that BC has occurred a decade earlier in Arab women when compared with women in developed countries that a half of BC women are aged, older than 65 years [5].In Turkey BC is the leading type of cancer among women, which accounts for 40.6% of all cancer cases, and it is predicted that annually, up to 10,000 women are diagnosed with BC in Turkey [6], In Iran BC was the fifth most common cause of death among women [7], and in Iran, BC was accounted for 24.6% which was less than the incidence of BC in Iraq and Turkey. The mean age of women living with BC in Iran was 49.7 years [8], the incidence of BC among Iraqi population has been rising over the last 20 years. However, BC is now the most common type of cancer, and among women approximately 33.3% of all cancer diagnosis were BC [9]. Treatment of BC includes utilizing different treatment approaches. Either a single treatment or combination. Treatment options consist of surgery, radiation, systematic treatment with chemotherapy, hormonal therapy, biological and immune therapy. The selection of treatment regimen depends on tumor type and stage, hormone receptor, and clinical health state of patients[10]. One of the most symptom complaints reported among cancer patients and survivors is fatigue, regardless the cancer type [11], Cancer related fatigue (CRF) is a complex and multifactorial symptom that affect around 70% to 100% of cases with the moderate to severity intensity for the period of receiving treatment, and impact 30% of all survivors[12]. Cancer related fatigue (CRF) is defined by NCCN (National Comprehensive Cancer Network) as a, " is a distressing, persistence, subjective sense of physical, emotional and cognitive tiredness and/or exhaustion related to cancer or cancer treatment that is not proportional to recent activity and interferes with usual functioning" [13].CRF rates frequently vary among patients receiving different treatments, and occurs among nearly 90% patients with radiotherapy and 80% of patient receiving systematic treatment. CRF has a great impact on physical, emotional, cognitive, and over patients quality of life [14], It can remains for months or even years after completing of cancer treatment, and as a result this symptom has a significant influence on patients quality of life [15]. Management of CRF includes both pharmacological and non-pharmacological ways. There are a wide range of non-pharmacological options including patient education, exercise, psychosocial education, suitable nutrition and hydration, cognitive behavior, and relaxation[16].Cancer related fatigue decreases patient quality of life, capacity, and possibly decreases patient chance for survival [17], and also CRF affects emotional and spiritual suffering for both patients and their families [18].In the Kurdistan region of Iraq patients do not have sufficient information regarding cancer and their consequence, as a result, patients face issues with many tasks including incapacity to perform normal daily tasks to restricted and devastated from society. There is a big gap between patients and health care providers concerning and utilizing the various ways of treatment side effect management, patients are still believe that they should not assume any physical exercise as well as they do not have information regarding valuable nutrition, except the patients insufficient information, also health providers are kind of careless to saturate patient with recent and available dietary and exercise guidelines to eliminate patients suffering, and they do not use any specific guideline. It is crucial to determine the prevalence of CRF

among breast cancer patients to encourage health care providers to develop an educational program to educate patients for better self- care, how manage adverse effects, including CRF.

METHODS

A descriptive cross-sectional study was undertaken to determine the prevalence of CRF among female breast cancer patients at Nankali hospitals in Erbil City, Iraq. Study setting and participant The study was conducted at outpatient oncology department of Nanakali Hospital, a government hospital located near Nine Shahed mosque in Azady Q, Erbil, which provides specialty care for blood diseases and cancer. Nanakali Hospital, opened in 2004, comprises of two essential departments including administration and the scientific/art department. The hospital has a staff of 246 professionals including, 103 medical staff (51 occupied nurses, 52 volunteers) and 60 specialized physicians (oncologist, hematologist, pediatrician, anesthetist, dentist, radiologist, pharmacist). The hospital has 95 beds. Each oncologic cases is admitted at either the in-patient and out-patient oncology department. There are 11 oncology staff including two shifts (morning, evening). During the morning shift, there are eight nurses and during the evening shift, there are three nurses. On average, six nurses work during the morning shift and there are 25 beds in the oncology department including, ten beds for male outpatients, ten bed for female outpatients, and five for in-patients cases. The study sample includes female breast cancer patients who were admitting outpatient oncology department and the study used a non-probability, purposive convenience sampling techniques to collect the relevant study data. A total of 60 women participated. The inclusion criteria included adult female patients diagnosed with breast cancer who were at least 18 years old and who suffered from cancer stages 0 through four. The exclusion criteria included female patients with end stage breast cancer and patients with mental disorders. Ethical consideration Ethical approval was obtained from the Ethical and Scientific Committees in the College of Nursing, Hawler Medical University (Code No.72 in 2019.06.20). The researcher also obtained official approval from the Nanakaly Hospital in Erbil city. Oral informed consent was obtained from patients after a detailed explanation about the aim of the study. Data were coded maintain anonymity. Data CollectionA face-to-face interview technique was used to gather information about socio-demographics, patient medical information, and CRF. Data collection was started from the period of 1st April to 1st June 2019, using a questionnaire that was designed by the researcher through literature review. The data of each sample has been separately obtained that spent at least 20 minutes; the interview took place in an outpatient oncology unit. The reliability of the questionnaire was obtained through review by medical experts in the fields of nursing, medicine, oncology, and psychiatry. The researcher assessed the relevant socio-demographic characteristics including age, residential area, education level, marital status, employment statue, family income, and family history of breast cancer. The Medical history, information was collected through six questions that assessed disease status, disease stage, types of breast cancer treatment regimen, Information on usual and current body mass index. According to American Cancer Society (ACS) in 2016, BMI for adult person are illustrate below [19]:

BMI	Range
Underweight	<18.5
Normal body weight	18.5-24.9
Overweight	25-29.9
Obese	≥30

Current Hgb level, According to National Institute of Health (NIH) in 2019 adult women who Hgb level less than 12.0 g/dl were identified anemic as following [20]:

Hgb	Range
Mild anemia	10g/dl
Moderate anemia	8-9.9g/dl
Severe anemia	6.5-7.9g/dl
Life-threatening	>6.5g/dl

Chronic diseases assessing, and treatment regimen data consist of whether the patient had undergone chemotherapy, radiotherapy, surgical therapy, biology therapy, and hormonal therapy. The CRF assessment consisted, of seven unique questions to determine CRF over the prior two weeks, and the scoring included (0) for none, (1) for not much, (2) for some, (3) for a great deal. Question two and six were recoded as following: (0) for none, (1) for a great deal, (2) for some, (3) for not much.
Fatigue severity was assessed using two questions about asking patients to rate fatigue severity levels during two different times (once in previous weeks vs. current fatigue). Regarding NCCN in 2018 the fatigue severity level is rating on numerical rating scale from 0 to 10 as (0 for no fatigue and 10 for worst fatigue can be imagine),also fatigue has been divided as

Fatigue	Score
Mild fatigue	1-3
Moderate fatigue	4-6
Sever fatigue	7-10

The different types of fatigue during cancer were also assessed. Physical fatigue questions included contains five questions; emotional fatigue included seven questions, and cognitive fatigue included five questions. Each type was assessed, that using a four scale level (none, not much, some, a great deal), the scoring were as (0) for none, (1) for not much, (2) for some, and (3) for a great deal. Data analysis Demographic and questionnaire data was coded and entered Statistical Package for the Social Sciences (SPSS) version 23 for windows, for descriptive statistics (Frequency and Percentage).

RESULTS

Sociodemographic characteristics of the study sampleThe table 1 shows the socio-demographic characteristics of participants. The highest percentage of sample were between 39-54 years old (45%), and 23.3% were between 23-38 years old. Most (70%) were from urban areas. The highest percentage had graduated from primary school (38.8%), meanwhile only 3.3% were graduated from the high school. More than half of participants were married (66.7%), and only one was divorced. Most (86.7%) were unemployed, and 13.3% were employed. More than half (63.3%) have sufficient economic status. Regarding the family history half of study samples had family history of breast cancer (50.3%), from first degree relevant.

Table 1: Socio-demographic characteristics of the study sample

Socio-demographic characteristics		F.	(%)
Age group (years)	23-38	14	(23.3)
	39-54	27	(45)
	55-70	19	(31.7)
Residential area	Urban	42	(70)
	Rural	18	(30)
Level of education	Illiterate	19	(31.7)
	Primary School	23	(38.3)
	Secondary School	7	(11.7)
	Institute graduate	6	(10)
	College graduate	5	(8.3)
Marital status	Single	10	(16.7)
	Married	40	(66.7)
	Divorced	1	(1.7)
	Widowed	9	(15)
Employment status	Employed	8	(13.3)
	Unemployed	52	(86.7)
Family income	Sufficient	38	(63.3)
	Insufficient	22	(36.7)
Family history of breast cancer	No	28	(46.7)
	Yes	32	(53.3)
Total		**60**	**(100)**

Past medical history of women with breast cancer Table 2 shows medical history. The highest percentages (73.3%) of participants' breast cancer condition were progress. Concerning the breast cancer stage, 40% of the patients were in the third stage, 31.7% were in second stage, and one in the zero stage of breast cancer. Most of the breast cancer patients were under the treatment of chemotherapy and surgery (81.7% and 71.7% respectively), moreover only 18.3%, 16%, and 15% were under the biology, hormonal, and radiation therapies respectively, and some cases were under more than one therapy. About body mass index, 48.33% of participants were obese, meanwhile; only one case was underweight. Regarding anemia, the majority of patients (83.3%) had mild anemia and 16.7% had moderate anemia. On the subject of having comorbid diseases 68.3% did not have any comorbid diseases, while; 31.7% had comorbid diseases including, 16.7%, 6.7%, and 3.3% came beyond diabetes mellitus and hypertension, Hypothyroidism, and heart failure respectively.

Cancer related fatigue among breast cancer women Table 3 shows overall history of CRF during the last two weeks. No participants reported no fatigue it. The highest percentage of study samples (75%) suffered from a great deal of fatigue, while; 20% assumed some degree of fatigue, and 5% were not much fatigued.

Severity of fatigue among participants

Table four illustrates the severity of fatigue among study samples. Concerning the severity of fatigue since last week, almost half of breast cancer patients 53.3% were experience severe degree, 30% were moderately fatigued, and 16.7% had mild fatigue. Current fatigue included moderate (48.3%), severe (25%), and mild (26%).

Cancer related fatigue domains Table five shows the domains of fatigue. Concerning the findings all women patients were experienced physical, emotional, and cognitive with some degree of fatigue as 60%, 40%, and 40% respectively.

Table 2: Past medical history of women with breast cancer

Past medical history		F	(%)
Breast cancer condition	Recurrent	16	(26.7)
	Progress	44	(73.3)
Breast cancer stage	Zero stage	1	(1.7)
	First stage	8	(13.3)
	Second stage	19	(31.7)
	Third stage	24	(40)
	Four stage	8	(13.3)
Chemotherapy use	No	11	(18.3)
	Yes	49	(81.7)
Radiation therapy	No	51	(85)
	Yes	9	(15)
Surgery	No	17	(28.3)
	Yes	43	(71.7)
Biology therapy	No	49	(81.7)
	Yes	11	(18.3)
Hormonal therapy	No	50	(83.3)
	Yes	10	(16.7)
Body Mass Index	Underweight	1	(1.7)
	Norm weight	10	(16.7)
	Overweight	20	(33.3)
	Obese	29	(48.3)
Anemia	Moderate	10	(16.7)
	Mild	50	(83.3)
Comorbid disease	No	41	(68.3)
	Yes	19	(31.7)
DM	No	50	(83.3)
	Yes	10	(16.7)
HT	No	50	(83.3)
	Yes	10	(16.7)
Hypothyroidism	No	56	(93.3)
	Yes	4	(6.7)
HF	No	58	(96.7)
	Yes	2	(3.3)
Total		**60**	**(100)**

Table 3: In-depth fatigue history since two weeks ago

Fatigue history	F	(%)
Not much	3	(5)
Some	12	(20)
A great deal	45	(75)
Total	**60**	**(100)**

Table 4: Fatigue severity level

Severity of fatigue		F.	(%)
Level of fatigue on the average during the past week	Mild	10	(16.7)
	Moderate	18	(30)
	Severe	32	(53.3)
Current fatigue level	Mild	16	(26)
	Moderate	29	(48.3)
	Severe	15	(25)
Total		**60**	**(100)**

Table 5: Cancer related fatigue domains

Fatigue domains	None		Not much		Some		A great deal		Total
	F.	(%)	F.	(%)	F.	(%)	F.	(%)	F. (%)
Physical fatigue	6	(10)	12	(20)	36	(60)	6	(10)	60(100)
Emotional fatigue	11	(18.3)	2	(3.3)	24	(40)	23	(38.4)	60(100)
Cognitive fatigue	11	(18.3)	21	(35)	24	(40)	4	(6.7)	60(100)

DISCUSSIONS

Breast cancer is a major global health concern for women. One of the concerning of cancer and its treatment is CRF that leads to decline person capabilities of physical, or emotional, and/ or mental capability. The present study aimed to assessing the prevalence of cancer related fatigue among women with breast cancer

Ghiasvand et al , 2011 in Iran, found that the mean age of cancer occurrence was 41 years old, while ; research in the United Kingdom among illustrated that 24.8% of BC occurred in age among women aged 20 to 39 years [21]. In this study, Breast cancer occurred a in younger women because Kurdistan a developing country that economic status, health care system, are under the development. Meanwhile; Kurdish civilian constantly suffer from stress, war, they have poor education, all are being the reason of BC occurring in young age which is supported by a research that says BC occurs earlier in younger age women in Asian's and African's countries which is more forceful and tense, mostly metastasis.[22]. The present study found that the majority of samples were from urban areas, the explanation for that is because in urban area the number of, industrial companies, cars, manufacturing wastes are increased randomly without taking public health in consideration, and most of urban civilians have sedentary lifestyle, all are helping factors for developing different kind of cancers, that is why the incidence of cancer are growing up. Correspond to research in China, that found as a result of changing global claiming cancer generally has been increased the entire world and is being an urbanizing disease [23]. Low education levels are associated with poor disease progress and affect the survival rate too [24]. Current study results showed that most participants graduated from primary school. In Kurdistan, migration and financial crisis have contributed to people not being able to complete their education. This study's results are supported by findings from a cross-sectional study among patients receiving anti-neoplastic treatment

in India in 2012, which demonstrated that participants were mainly from primary school too. [25]. Regarding marital status more than half of present study participants were married, the similar result found in the research performed among 60 Breast Cancer patients in United State at 2012; represented that most of study sample were married [26]. Most patients were in the third stage of their cancer. This is likely because of prevention programs in Iraq. While; the result of a research carried out in India at 2017 closed to existence study found that most of breast cancer were diagnosed in advance stage, is that because India like Kurdistan they may not have spent enough budget to health promotion and prevention [27]. Moreover; the current study result is disagree with American Association for Cancer Research finding in 2012 that found utmost of women diagnosed with BC were in first stage, that is because of existence of good and strong health policy in America [28]. Most of the patients were under the treatment of chemotherapy and surgery, nonetheless; the result is supported by a clinical practice guideline published by Oxford University, which showed that approximately one eight of BC cases will undergo surgery [29], and also a survey of 1954 women patient with BC illustrated that third-fourth of women were used chemotherapy, it is point out that two of the most effective and powerful management for BC are surgery and chemotherapy [30]. Nearly half the participants were obese, meanwhile; only one case were underweight, on the same time; the study finding is dissimilar with a research conducted in Bangladesh in 2015 represented that 69% of participants were had normal body weight. This differences is might related to the Bangladesh's' women awareness regarding knowing the values of healthy foods and consuming balance in diet to maintain healthy body weight. [31]. On the subject of having comorbid diseases 68.3% of current study did not have any comorbid diseases, while; 31.7% had comorbid diseases, this result is dissimilar with the American Cancer Society prospective surveillance model study for rehabilitation for women with breast cancer in Georgia at 2012 among 1500 patients discovered that 66% of participant had at list one comorbidities, while; 33% of them were have more than two comorbidities, and the most common comorbid disease was hypertension[37].

Cancer related fatigue assessment

Nearly every cancer patients go through some kind of fatigue during cancer treatment according to present study finding all the participants were fatigued with different level of fatigue, because there were no participants that were not being fatigue it. The highest percentage of study samples (75%) were suffered from a great deal of fatigue, this is similar with the cross-sectional observational study finding that was performed in Malwa region of Punjab at 2017 under the title "Assessment of Cancer-related Fatigue among Cancer Patients Receiving Various Therapies" among 126 participants the percentage of study fatigue was 83.3% [38].Severity of cancer related fatigue

Concerning the severity of fatigue of present study since last week, almost half of breast cancer patients 53.3% were experience severe degree; whereas 30% got moderate fatigue, and 16.7% were assume mild degree of fatigue, the study result is reinforced by the study conducted by Campos et al at 2011 in Brazil among 260 patients demonstrated fatigue severity as 47% for sever fatigue, 42% for moderate fatigue, and 10% for mild fatigue[39], while; American Cancer Society accomplished research in 2015 to under the title "screening, evaluation,

and management of cancer related fatigue" illustrated that the most common fatigue severity among cancer patient was severe fatigue ranged 98% [40]. Fatigue domains Fatigue domains finding in current study all women patients were experienced physical, emotional, and cognitive with some degree of fatigue as 60%, 40%, and 40% respectively, this is supported by review of literature research carried out in Netherland at 2013 stated that physical fatigue was more frequent fatigue among study participants who were under therapy than the mental (cognitive) fatigue [41].

CONCLUSIONS

The study illustrated that the highest percentage of participants (45%) were ages 39 to 54, most were from urban areas, bad graduated from primary school, and were married. Most of study samples were unemployed (86.7%), however; 53.3% of breast cancer women they had family history of BC, first degree relevant with Breast Cancer history were affected 62.5% of samples. Regarding breast cancer stages, 40% of participants were in third stage, Most of the breast cancer patients were under the treatment of chemotherapy and surgery (81.7% and 71.7% respectively, most of them were obese, while; majority of patients had mild anemia (83.3%). On conclusion, as a study result showed every breast cancer patients were assuming some level of fatigue while; concerning fatigue severity among participants were ranging between sever to moderate degree of fatigue 53.3% and 48.3% respectively coming beyond fatigue level in past week, and fatigue rate right now. Also physical fatigue was common type of fatigue among breast cancer women.

RECOMMENDATIONS

As a result of highly prevalent of CRF the researcher are recommending following things:

- Further study on larger sample to be conducted for dipper analysis of cancer related fatigue and its impact on patients' life.
- Instruct health care provider to assess all patients for presenting of CRF, and utilizing various ways (pharmacological and non-pharmacological) to increase patient's quality of life and decreasing suffering.
- Prepare an educational program for cancer patient to educate those regarding cancer and treatment consequences, and how can be handle it

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