How to Cite:
Hussein, Z. H. A., & Khdair, F. W. (2022). Effect of fatigue on activities of daily life and lifestyle among patients with cancer at Euphrates cancer hospital. *International Journal of Health Sciences*, *6*(S6), 660–670. https://doi.org/10.53730/ijhs.v6nS6.10396

Effect of fatigue on activities of daily life and lifestyle among patients with cancer at Euphrates cancer hospital

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***Abstract*---**Background: Cancer-Related Fatigue (CRF) is the most common and treatable symptom. CRF severely affects numerous aspects of cancer patients' quality of life (QoL). Further, the healthy lifestyle adopted by patients is considered a significant factor in cancer etiologic and prevention. Key known lifestyle factors include physical activity, sleep pattern, social and family relationships, spirituality, safety, relaxation, nutrition, and others. The World Health Organization (WHO) stresses the importance of alleviating distressing symptoms to improve QoL in patients suffering from a life-shortening disease. Another type of activities, known as Activities of Daily Living (ADL), are those that individuals perform to live independently within the society. Methods: A Descriptive correlational Design is used to study the relationships between the variables and how such relationships are analyzed to assess the research objectives. The study is conducted throughout the period of January 8th November 2021 to 1st July 2022. A Non-Probability (Purposive Sample) of (250) cancer patients, those who visited Al-Euphrates Cancer Hospital/ Al-Najaf/Chemotherapy and hormonal, Radiation, Surgery for treatment or follow up or both, are included in the study sample. The data are collected through the utilization of the developed questionnaire by using an interview technique after the estimation of the validity and reliability of the study instrument. On other hand, the validity of the questionnaire is assessed and approved by 20 experts from different specialties, and the reliability of the data was assessed using the Cronbach's Alpha technique and the stability of the instrument was assessed via multiple retesting and conducting a pilot study with a selected sample. The gathered data is analyzed by using descriptive

and inferential statistical analytical techniques. A questionnaire composed of four parts was used. The first part included an inquiry regarding socio-demographic characteristics of participants, and the second part included questions concerning physical fatigue and mental fatigue. The third part includes questions related to the lifestyle which is in turn subdivided into four domains, while the last part included questions related to the daily activities which subdivided into five domains. Result: The findings of the present study indicate that the effect fatigue on daily activities and lifestyle among patient's with cancer. Statistically, there is a highly significant positive correlation the patients' fatigue and their lifestyle (r= 0.489 ; P value<0.01).The study concludes that effect fatigue on daily activities and lifestyle among patient's with cancer. In addition, other variables were studied and the study found a significant relationship between educational level, the monthly income/IQ, occupation, residence, cancer type on the patient's fatigue. Conclusion: The study concludes that effect fatigue on daily activities and lifestyle among patient's with cancer. In addition, other variables were studied and the study found a significant relationship between educational level, the monthly income/IQ, occupation, residence, cancer type on the patient's fatigue. The study recommends the Ministry of Health, provide Activate the psychological counseling unit The clinicians should prescribe exercise and psychological interventions such as teach techniques for coping with cancer and rehabilitation programs that address psychosocial, cognitive, and occupational factors .Such actions can help cancer patients as the first-line therapy for patients experiencing CRF. Higher Education and Scientific Research should do more research conducted other about such issue to explore effective methods for reducing the fatigue effect on daily activities and lifestyles. the provision of health education is essential to increase the patients' knowledge regarding cancer-related fatigue and its effect on their lifestyle and their daily living standards.

***Keywords*---**fatigue, daily life, patients, cancer.

Introduction

Cancer is one of the leading causes of morbidity and mortality in the Eastern Mediterranean Region (EMR), accounting for approximately 550 000 new cases and 360 000 cancer deaths in 2012. The most prevalent malignancies, however, are mostly preventable or treated if detected early (1). Every year, 56.2 million people die in the globe, according to the World Health Organization (WHO). Cancer kills 7.6 million of these people.In Europe, 3.2 million people die each year, and 1.7 million deaths are caused by cancer. low- and middle-income nations accounted for over half (51%) of all malignancies globally; this proportion climbed to 55% in 2007 and is expected to reach 61% by 2050. Lung, breast, colon/rectum, and prostate cancers are no longer isolated to Western developed nations, but are among the most frequent malignancies globally(2).In 1975, low- and middle-income nations accounted for over half (51%) of all malignancies

globally; this proportion climbed to 55% in 2007 and is expected to reach 61% by 2050. Lung, breast, colon/rectum, and prostate cancers are no longer isolated to Western developed nations, but are among the most frequent malignancies globally(3).

Cancer has a large economic cost, which is unsurprising. For example, it was projected in 2009 that the 12.9 million new cancer cases globally cost nearly $286 billion in that year alone. Costs are likely to rise to $458 billion for the estimated 21.5 million additional cases forecast in 2030 (4).A healthy lifestyle is an important part of sickness prevention. Many dangerous behaviors are connected to severe diseases later in life, such as heart disease, lung disease, cancer, and psychological problems. A healthy lifestyle is essential in the development and prevention of cancer. Physical activity, sleeping patterns, social and familial ties, spirituality, safety, relaxation, diet, and other factors have all been identified as lifestyle variables (5). Physical activity (PA), a healthy body weight and diet, and non-smoking, are associated with lower risks for overall morbidity and mortality in cancer survivors. PA is currently recognized as a safe technique for reducing cancer-related side effects during and after treatment.

Several meta-analyses of interventional studies have found that physical activity had a substantial influence on physical functioning, cardiorespiratory fitness, muscle strength, weariness, anxiety, depressive symptoms, self-esteem, exhaustion, and health-related QoL both during and after cancer treatment (6). Further, the healthy lifestyle adopted by patients is considered a significant factor in cancer etiologic and prevention. Key known lifestyle factors include physical activity, sleep pattern, social and family relationships, spirituality, safety, relaxation, nutrition, and others. The World Health Organization (WHO) stresses the importance of alleviating distressing symptoms to improve QoL in patients suffering from a life-shortening disease(7). Nutrition is one of the lifestyle determinants, and there is evidence that cancer rates are growing in areas with a high proportion of obesity and nutritional issues. It is well acknowledged that improving eating habits can lessen the incidence of several malignancies. Several studies have indicated that consuming a sufficient number of fruits and vegetables can help prevent the development of cancer. The most consistent data indicated that focusing on a diet rich in fruits and vegetables likely lowered the incidence of oral cavity, esophageal, stomach, and colorectal cancers (8). Fruits and vegetables include a variety of nutrients, including vitamins, minerals, and fiber. Fruits and vegetables have been demonstrated to reduce the risk of cardiovascular disease.

Each year, it is predicted that type II diabetes and the worldwide burden of insufficient intake cause more than 2.7 million fatalities(9). Another type of activities, known as Activities of Daily Living (ADL), are those that individuals perform to live independently within the society.Physical activity and exercise can reduce the development of cancer by reducing fat tissues, hormone concentration, and energy balance. Friedenreich demonstrated that sedentary living increases the risk of colorectal cancer. Furthermore, investigations revealed that cigarette smoking practices and a high cigarette consumption were risk factors for stomach and colorectal cancers. Stress, poor sleeping habits, environmental dangers, and substance misuse are other significant factors to cancer development(10).

Objectives of the study

- To estimate the level of activities and lifestyle among cancer patients.
- To examine the effect of fatigue on activities and lifestyle among cancer patients.

Methods

Ethical Considerations and Administrative Agreements

To conduct the study, the researcher obtained consent from the Nursing/University of Kufa faculty. The ethical committee of the Faculty of Nursing provides further authorisation. These permissions are one of the most basic requirements to adhere to while collecting data in order to respect the participant's values and dignity. In addition, formal clearance from the Ministry of Planning/Central Council for Statistics is necessary to approve the study questionnaire and protect the rights of the researcher and participants . Al-Najaf Al-Ashraf Health Directorate/Euphrates Cancer Hospital also gives their consent in order to conduct interviews with each subject Finally, the researchers got subject permission from the patients themselves after explaining the goal of the study and obtaining informed consent. The confidentiality of the participants is respected, and the patients are notified that their participation is entirely optional, and they are not required to complete the survey or answer the interview questionnaire items.

Design of the study

A descriptive correlational design is used to study the relationships between the variables and how such relationships are analyzed to assess the research objectives. The study is conducted throughout the period of October 20 th 2021 to 15st June 2022.

Sample of the study

A non-probability (purposive sample) of 250 cancer patient. These patients are selected from those who visited Al-Euphrates Cancer Hospital/Al-Najaf/Chemotherapy and hormonal, Radiation, Surgery for treatment or follow up or both.

Including Criteria

The study sample was selected using the following criteria for specifying the study subjects who are included in the study.

- All participants are diagnosed with different stages of cancer disease undergoing different treatment stages, such as chemotherapy, radiation, and other types of treatments, with no associated chronic diseases except cancer, and are willing to participate in the study voluntarily.

- All definitive participation diagnoses of cancer are based on the information contained in the medical records, having been diagnosed with cancer from six months or older.
- The age of all participants are over 18 years old and older because self-care and self-efficacy activities differ from adolescence to adult and with advanced ages.
- Because the investigation needs subjective measures, patients must be alert and free of any changes in consciousness.
- No prior history of psychological problems as disclosed by the patient or their family.

Data Collection methods

The data has been collected through the utilization of the adapted and developed questionnaire by the researcher after the validity and reliability are estimated. The data gathered using structured interview techniques with the subjects who are individually interviewed. Arabic version of the questionnaire is used. All those subjects who are included in the study sample are interviewed in the same way. The data collection process has been performed from January 3st to February 28th, 2022. Each subject spends approximately (20-25) minutes to complete the interview.

Statistical Analysis

The following statistical data analysis approaches is used in order to analyze the data of the study under application of the statistical package (SPSS) ver. (25), and the Microsoft excel (2010):

- **Descriptive Statistical measures:** this included use of tabular data through tables, figures. Further the researcher also utilized the mean, frequency, percentage and stander deviation to present the data.
- **Inferential Statistical measures:** This approach is used to accept or reject the statistical hypothesis, which included the following:
  - The reliability of questionanair was evaluated using internal consistency test (test-retest).
  - Correlation coefficient testing (r): The coefficient value ranges from zero (total no correlation) to one (perfect correlation), with the higher r value close to one indicating stronger correlation, the positive (no sign) r value indicating a direct(positive) correlation, and the negative signed r value indicating an inverse correlation. A significant difference or correlation was defined as a difference or correlation with a level of significance of 0.05.
  - Chi-Square test for testing the independency distribution of the observed frequencies, and for measuring the association between the studies variables according to its type.

Result

Table 1
Assessment and mean of scores of patients' lifestyle

No.	Items	MS	SD	Assessment
Lifestyle (Domain I Psychological)				
1	Do you feel sad?	2.43	0.66	Poor
2	Do you feel anxious?	2.46	0.68	Poor
3	Do you feel depressed?	2.39	0.69	Poor
4	Do you need helping others?	2.82	0.51	Poor
5	Does it hurt you when People talk about your disease?	1.72	0.87	Moderate
6	Do you think about family future?	2.84	0.42	Poor
7	Do you think of treatment cost?	2.84	0.49	Poor
8	Do you think of disease progress?	2.47	0.81	Poor
Lifestyle (*Domain II Physical Activity*)				
1	Do suffer from discomfort and pain?	1.91	0.81	Moderate
2	Do suffer of discomfort during Movement?	1.87	0.81	Moderate
3	Do suffer of discomfort during exercise?	1.87	0.81	Moderate
4	Do you feel fatigue during walking 1 Km?	1.92	0.86	Moderate
5	Do you feel fatigue during walking 3 km ?	2.15	0.82	Moderate
6	Do you feel fatigue during walking more 3km?	2.64	0.67	Poor
7	you can go to sleep easily ?	2.05	0.69	Moderate
8	Do you suffer insomnia during sleep ?	2.24	0.60	Moderate
Lifestyle (*Domain III Dietary*)				
1	Do you drink enough water?	2.62	0.51	Poor
2	DO you use a lot of salt?	2.31	0.75	Moderate
3	Do you use high sugar?	1.84	0.75	Moderate
4	Do you eat a lot of red meat?	2.01	0.78	Moderate
5	Do you take fruit?	2.84	0.42	Poor
6	Do you take high vegetable?	2.78	0.52	Poor
7	Do you eat any food seem to irritate in such as fires?	1.90	0.76	Moderate
Lifestyle(*Domain IV Environmental*)				
1	Are you exposed to industrial areas?	1.46	0.84	Good
2	Are you exposed to air pollutants?	2.10	0.69	Moderate
3	Are you exposed to chemicals or radiation?	1.98	1.00	Moderate
4	Are you exposed in your home that causes inconvenience?	2.07	0.88	Moderate
5	Is the water you drink filtered?	2.95	0.28	Poor
6	Does area crowded?	2.45	0.85	Poor

MS: Mean of Scores; SD: Standard Deviation; Low: MS= 1-1.66; Moderate: MS =1.67-2.33; High: MS≥2.34.

Table (1) shows about the assessment and mean of scores of patients' lifestyle. This table reveals that the patients have (poor) assessment regarding most items of psychological aspect, while most items exhibited (moderate) assessment of

physical, nutrition and environmental aspects. This assessment is based on the statistical scoring system, in which the item is classified as (good) if the mean of scores between (1-166); it is considered (moderate) if the mean of scores between (1.67-2.33); while it is considered (poor) if the mean of scores is more than (2.34) (Table1 and figure 1).

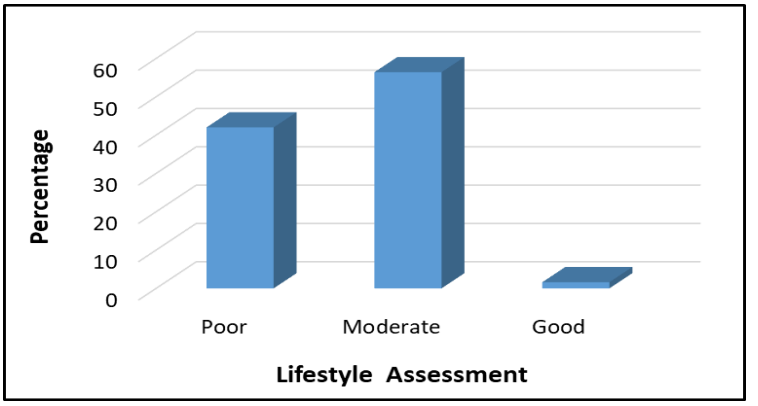

Figure 1. Percentage of patients according to their lifestyle assessment

Table 2
Assessment and mean of scores of patients' daily activities

No.	Items	MS	SD	Assessment
1	Are you practice exercise and fitness?	1.90	0.59	Moderate
2	Do you make time for rest and relaxation?	2.70	0.52	Poor
3	Are you interested in personal hygiene?	2.99	0.09	Poor
4	Do you Communicate with friends andrelatives?	2.67	0.67	Poor
5	Do you wear baggy cloth?	2.68	0.69	Poor
Overall assessment of daily activities		2.59	0.51	Poor

MS: Mean of Scores; SD: Standard Deviation; Low: MS= 1-1.66; Moderate: MS =1.67-2.33; High: MS≥2.34.

Table (2) shows about the assessment and mean of scores of patients' daily activities. This table reveals that the patients have (poor) assessment regarding most items of daily activities. This assessment is based on the statistical scoring system, in which the item is. This assessment is based on the statistical scoring system, in which the item is classified as (good) if the mean of scores between (1-1.66); it is considered (moderate) if the mean of scores between (1.67-2.33); while it is considered (poor) if the mean of scores is more than (2.34).

Table 3
Pearson correlation coefficient between patients' fatigue and their lifestyle and daily activities

Pearson Correlation Coefficient	Patients' Fatigue
Patients' Lifestyle	r = 0.489**
Patients' Daily Activities	r = - 0.073

** High Significant at P <0001

Concerning table (3), it is about Pearson correlation coefficient between patients' fatigue and their lifestyle and daily activities. It shows that there is a significant positive correlation the patients' fatigue and their lifestyle (r= 0.489 ; P value<0.01).

Discussion

In Table 1 the actual survey questions used to gather the research data for patients' lifestyle are presented with the mean score (MS) and the Standard Deviation (SD). The analysis showed that that 42% of the patients have poor lifestyle, 56.4% have moderate lifestyle, and 1.6% have good lifestyle. and are represented in the bar chart shown in Figure 1 where majority of patients have moderate lifestyle. Figure 1 also compare frequencies and percentages of the participants who had poor 'Quality of Life (QoL)' versus good QoL. Furthermore, The rapid socioeconomic changes in last four decades caused multiple changes in the diet habits with direct effect on the lifestyle. For example, there has been a dramatic shift from the indigenous traditional healthy diet (normally based on whole wheat flour, fish, milk, and dates) toward an affluent diet (normally rich in total calories, meat, saturated fat, and refined carbohydrates). What make these change in the dietary habits more impactful is the reduced physical activity practiced by people in general. These factors may have contributed to the increase in the number of cancer cases in the regions. As an example, the dietary fat has been suggested as one of the etiologic factors for cancer.

Possible explanations for the observed moderate lifestyle in all cancer patients may have resulted from any or combination of the following factors which are Cancer affects different parts of the body and is characterized by a rapid creation of abnormal cells in that part and can invade other parts of the body as well. In many cases, the cancer patients experience sleep disturbance, depression, and poor quality of life after being diagnosed and treated for cancer. Futher, this in turns to reduce the quality lifestyle from good to moderate.as well as The exposure to risk factors associated with smoking, environmental radiation, or living in air polluted place have direct impact on the behavioral characteristics of the patients resulting in reducing their lifestyle. These results agree with earlier published literature(11), The work presented by Taha and Eltom 2018 found that 100 (42.7%), 78 (33.3%) and 56 (23.9%), patients diagnosed with cancer are reported to have high levels of psychosocial distress and poor quality of life . It is also believed that improving the QoL helps to reduce the psychological distress in studies that used various populations .However, much research is required to further understand the complex

relationship and interdependencies between QoL and psychological distress for cancer patients.

The statistics of the patients' daily activities are listed in Table 2. In relation to the five assessment questions listed in Table 2, indicates that majority of the study (84.8%) of the patients have poor assessment of their daily activities, as shown in Table 2. The response of the majority of patients are highly dependent on the specific daily habits and the personality of the patients. This is because the cancer diagnosis can directly affect the emotional health of the patients, their families, and those who provide required care. Common feelings during this life-changing experience include anxiety, distress, and depression. These in turn effect the patient's interaction with his/her surrounding environments at home, school, and work. People around the cancer patient who are involved in the provision of the required care and support must recognize these changes and accordingly provide tailored help as needed. This result agrees with the published work of (12)who showed that the frequency and percentages of poor daily activities of the participants is 83.4%.

Moreover, In Table 3 The study results show a significant positive relationship between the patients' fatigue and the patient lifestyle, with associated Pearson coefficient of 0.489 and the p-value less than 0.01. The change in plant based diets, including fruits and vegetables, are associated with reduction in the cancer risk compared with food rich in fat and meat and lack of regular exercise. Our results showed that patients with cancer had a worse score on ADL domains in six months after chemotherapy. This is because cancer treatments based on chemotherapy, radiotherapy, surgery, bone marrow transplant, and immunotherapy can make the patient feel tired . In addition, cancer treatment harms the healthy cells as well as the cancer cell .Finally, the fatigue may occur while the body is working to repair the damage caused by the treatment. Some side effects of treatment incudes anemia, nausea, vomiting, pain, insomnia, and changes in mood which can further cause fatigue. These results are in agreement with (13) who also showed positive and significant relationship between the patients fatigue and their lifestyle and the daily activities The published studies also found that cancer patients have high risk of developing disability in their daily activities living (ADL).

Conclusions and Recommendations

The correlation between the patients' fatigue and their lifestyle is positive and statistically significant. Recommendations for the Ministry of Health the provision of health education is essential to increase the patients' knowledge regarding cancer-related fatigue and its effect on their lifestyle and their daily living standards. This will help to provide potential solutions to understand and manage potential factors that play important roles in causing or at least managing cancer-related illnesses. For example, improvement of patients' lifestyles can take place through the adoption of cognitive rehabilitation programs for the patients which helps to improve their cognitive function and their ability to perform ADL (i.e.manage medication, handle money) and also improve the patient's.Finally the Ministry of Higher Education and Scientific Research should do more research conducted other about such issue to explore effective methods for reducing the fatigue effect on daily activities and lifestyles.

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