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Impact of Cancer Related Fatigue on Health Related Quality of Life in Cancer Survivors

Supriya S. Jadhav[1], T. Poovishnu Devi[2]

[1]Final year BPTh Student, [2]Associate Professor, Department of Oncology. Krishna College of Physiotherapy, KIMSDU

Abstract

Background: Cancer related fatigue is multidimensional and has a negative impact on physical, mental, emotional and social health. Most of the time cancer related fatigue is under-reported by patients and under-treated by clinicians, and it may hamper the quality of life in cancer survivors. This study focusses on assessing the impact of fatigue on health related quality of life in cancer survivors.

Objective: To find the impact of cancer related fatigue on health related quality of life in cancer survivors.

Material and Methodology: In this cross sectional study, 66 cancer survivors were enrolled between the age group of 40 and 70, who completed treatment 3 months prior to the study and scoring of fatigue between 3 and 10 in rate of perceived exertion scale. Thus SF-36 questionnaire was used to determine the impact.

Result: According to this study there is a decline of 61.81% in general health, 57.121% in physical functioning, 44.88% in role physical, 41.41% in role emotional, 40.57% in social functioning, 40.75% in mental health, 38.75% in vitality and 37.61% in pain. This indicates an overall decline in the quality of life of the cancer survivors which sums up to 51.46% with P value <0.0001, which considered extremely significant.

Conclusion: Many cancer survivors experienced moderate to severe fatigue which affects their health related quality of life. There is need to develop interventions for effective management of cancer related fatigue to improve quality of life.

Key Words: *Health related quality of life, cancer related fatigue, cancer survivors.*

Introduction

Cancer is the disease that results when cellular changes causes the uncontrolled growth and division of cells. There are many causes of cancer and some are preventable. Smoking is one of the most common cause of cancer. Cancer shows various local and systemic symptoms. Swelling, abnormal bleeding, pain and local skin changes are some local symptoms seen in cancer patients. While the systemic symptoms are fever, excessive fatigue, weight loss and generalized skin changes[12].

Cancer related fatigue is recognized as one of the most common and distressing side effects of cancer and its treatment[1]. Fatigue may also present before treatment onset and typically increases during cancer treatment, including treatment with radiation, chemotherapy, hormonal, and/or biological therapies. Prevalence of fatigue during treatment ranges from 25% to 99%[1]. Fatigue is subjective symptom and is the most bothersome adverse effect of cancer[4].

Cancer-related fatigue is more severe, more persistent, and more debilitating than "normal" fatigue caused by lack of sleep or overexertion and is not relieved by adequate sleep or rest. Studies showed that the intensity and duration of fatigue experienced by cancer patients and survivors is significantly caused greater impairment in quality of life. Cancer-related fatigue is multi-dimensional and may have negative impact on physical, mental, and social health including generalized weakness, diminished concentration, decreased motivation or, and emotional liability. Although

cancer related fatigue shares some characteristics with depression, patients experience fatigue as a central symptom that impairs functional abilities and social functioning[1].

Causes of cancer-related fatigue mainly includes any cardiovascular disease, low platelet count (thrombocytopenia), anaemia, any recent major surgery, fever or active infection. It also includes pain, emotional distress (depression, anxiety), sleep disturbances (insomnia, sleep apnoea), side effects of medications, nutritional disorders (dehydration, malnutrition and electrolyte imbalance), lack of exercise and myopathies, etc[2, 3].

Cancer may cause fatigue due to disturbed circadian rhythms. Circadian rhythms are exogenous or endogenous physiological patterns that run on an approximate 24-hour cycle and modulate several biological functions. It regulates the expression of genes with circadian rhythmicity, resulting in daily oscillations of proteins and is disrupted in cancer patients due to abnormal or uncontrollable cell division and tissue damage. This disruption of clock damages organization of gene and protein expressions, leading to deregulated cell proliferation[13, 14].

Altered circadian also includes changes in endocrine rhythms, metabolic processes, immune system and rest activity patterns. ATP is the major source of energy for contraction of skeletal muscle. Disturbed metabolism processes causes failure to replenish ATP and compromises muscle function[13, 14].

Fatigue in cancer is multifactorial and maybe influenced by a variety of demographic, medical, psychosocial, behavioural and biological factors[1]. Cancer related fatigue clinically presents with reduced physical performance, physical inactivity, avoidance of participation, feeling of helplessness, depressed mood[2].

In the majority of studies, 30% to 60% of patients report moderate to severe fatigue during treatment, which in some cases may lead to treatment discontinuation. Fatigue typically improves in the year after treatment completion. Studies of long-term cancer survivors suggest that approximately one-quarter to one-third experience persistent fatigue for up to 10 years after cancer diagnosis. Fatigue has a negative impact on physical activity, social functioning, emotional health, and activities of daily living and causes significant impairment in overall quality of life during and after treatment. Fatigue may also be a cause for shorter survival[1].

Despite the prevalence and negative impact of cancer-related fatigue, this symptom is under-reported by patients and undertreated by clinicians. One of the barriers to the assessment and management of fatigue is the lack of information about mechanisms underlying this symptom, risk factors, and effective treatments[1].

Quality of life is a major concern in cancer survivors. Cancer survivors experience many symptoms that affect their quality of life. The symptom that most commonly interferes with activity of daily living is fatigue. When compared with other symptoms, fatigue persist in a substantial number of cancer survivors. The different domains of quality of life such as physical and psychological well-being, familial relationship, sexual and personal abilities, economic well-being is hampered[5,10].

Methodology

This cross sectional survey was carried out on 66 subjects which were selected on basis of convenient sampling method. This study was done from Krishna hospital, karad and was completed in 6 months.

Statistical Analysis And Results

Statistical analysis of the recorded data was done. Study design is cross sectional. Arithmetic mean and standard deviation was calculated for each outcome measure. T test was done. The study has p value <0.0001 and is extremely significant.

Table 1- Scoring of the health related quality of life according to the scales

Scales	Mean
General Health	196.909
Physical Functioning	428.79
Role Physical	220.4545
Role Emotional	175.75
Social Functioning	118.86
Mental Health	298.21
Vitality	245.303
Pain	124.77

Interpretation

The graph shows decline in physical functioning, role physical, role emotional, vitality, mental health, social functioning, pain and general health. Thus, there is an overall decline in the quality of life in cancer survivors.

Table 2 – Mean and standard deviation.

Score Name	MEAN±SD
General Health	190.909±86.784
Physical Functioning	428.89±157.89
Role Physical	220.4545±100.38
Role Emotional	175.75±82.389
Social Functioning	118.86±31.142
Mental Health	296.21±41.496
Vitality	245.303±93.648
Pain	124.77±29.462

Discussion

Fatigue is the most commonly experienced in the pre-treatment and post-treatment phase. According to various studies, tumor and treatment methods used can induce fatigue. Fatigue in cancer is multifactorial and may be influenced by a variety of demographic medical, psychological, behavioral and biological factors. Fatigue lasts longer than other treatment side effects and is the symptom reported to interfere most substantially with activities of daily living. The health related quality of life in the cancer survivors shows a significant decline in various aspects of life. The areas where quality of life in cancer survivors is affected are: Physical functioning, Role physical, Role emotional, Vitality, Mental health, social functioning, Pain and General health. These are the components which determine the health related quality of life.

This study aims at finding the impact of cancer related fatigue on health related quality of life in cancer survivors. And the following factors were assed 1, the severity of fatigue and its effect on health related quality of life in cancer survivors 2, to find the type of cancer survivors who perceive more fatigue.

This study was completed with 66 cancer survivors of both the sexes who were between the age group of 40 and 70 years, completed treatment 3 months prior to the study, scoring of fatigue between 3 and 10 in the rate of perceived exertion scale.

This study was completed in 6 months of duration and was conducted in Krishna Institute of Medical Sciences 'Deemed to be' University, Karad. An informed written consent was obtained from the subjects were undergone a test using SF-36 questionnaire and according to the result, conclusion was obtained.

According to the survey the most commonly seen cancers in an around karad is leukemia, carcinoma cervix, oral cancer and lung cancer. Leukemia is a cancer of blood forming tissues including bone marrow and those survivors experienced more fatigue , 8.5 out of 10 according to rate of perceived exertion scale. Carcinoma cervix is another common cancer which had more fatigue. And followed by oral cancer and lung cancer. Most of the population in this geographical area are addicted to tobacco chewing, cigarettes and bidi smoking which results in lung cancer or oral cancer.

After analyzing the data, there is a decline in the different aspects of quality of life in cancer survivors. There is a decline of 61.81% in general health, 57.121% in physical functioning, 44.88% in role physical, 41.41% in role emotional, 40.57% in social functioning, 40.75% in mental health, 38.75% in vitality and 37.61% in pain. This indicates an overall decline in the quality of life of the cancer survivors which sums up to 51.46%.

Conclusion

This study concludes that the health related quality of life is severely affected in cancer survivors with moderate to severe fatigue. The data analysis concluded that there is more decline in general health, physical functioning, role physical and role emotional followed by mental health , social functioning, vitality and pain. According to this study an overall decline in the quality of life of the cancer survivors is up to 51.4%.

Conflict of Interest: The authors declare that there is no conflict of interest.

Ethical Clearance: An ethical clearance certificate was obtained from the Institutional Ethical Committee Krishna Institute of Medical Sciences Deemed to be University, Karad.

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