

Effect of Structured Exercise Program on Fatigue among Women with Carcinoma Cervix Receiving Radiotherapy

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ABSTRACT

The present study assessed the effect of structured exercise program on fatigue among women with carcinoma cervix receiving radiotherapy in Medical College Hospital, Kozhikode. The objectives were to assess the fatigue among women with carcinoma cervix receiving radiotherapy, evaluate the effect of structured exercise program on fatigue and to find out the association between fatigue and selected socio-personal variables. Experimental approach with quasi experimental, pre-test post-test control group design was used. The tools used were interview schedule to assess socio-personal data and rating scale to assess the fatigue ($r=0.744$). The sample consisted of 60 women with carcinoma cervix receiving radiotherapy, from which 30 were assigned to the control and experimental group using non-probability purposive sampling. Using interview schedule, socio-personal data were collected from both groups. In the control group, the fatigue assessment was done for 3 consecutive weeks and in experimental group, the structured exercise program was taught and continued for 3 consecutive weeks, and fatigue was assessed in this period. The data were analysed by descriptive and inferential statistics. The findings revealed that the structured exercise program is effective in reducing the fatigue of women with carcinoma cervix receiving radiotherapy. There is significant association between the fatigue and the education, monthly family income, ability to perform activities of daily living, treatment modality and body built. The study has implications in various aspects in nursing.

Keywords: Structured exercise program, Fatigue, Carcinoma cervix, Radiotherapy

INTRODUCTION

Women are the basic component in the building of the society. Women's health is the concept that examines gender differences in health and disease states. Usually the health of the women is seen being ignored by themselves. The leading causes of death among women are cardiovascular disease, malignant cancer, cerebrovascular disease, chronic lung disease, pneumonia/influenza, and diabetes. Carcinoma cervix ranks as the second cause of female cancer and about 11.8% of total cancers detected are cervix cancer in India. The top three gynaecological cancers contribute to about 40% of newly diagnosed cases. The annual number of new cases of cervical cancer in India is 1, 22,844 whereas in the world, it is 5, 27,624 [1]. The total population affected with cancer cervix is expected to increase to 21 million in 2030 [2]. The crude incidence rate from UK shows that there are around 10 new cervical cancer cases for every 100,000 females [3]. According to a published article in India, 17% of cancer deaths among women are due to cervical cancer [4]. In Kerala, the age adjusted rate of incidence of cancer in women is 8.8 in 1, 00,000 women [5].

The patients who undergo treatment for cervix cancer may experience various kinds of problems due to the disease or the treatment [6]. Unlike other symptoms, fatigue has got a higher prevalence rate among the patient. According to a survey of 1,569 cancer patients, the symptom is experienced by 80% of individuals who receive chemotherapy and/or radiotherapy [7]. According to a study, severe fatigue was more prevalent in chemotherapy and concurrent chemo-radiation as compared to radiotherapy [8]. Cervical cancer survivors with chronic fatigue had a significantly lower Quality Of Life, higher level of anxiety and depression and more physical impairments than those without chronic fatigue [9]. Cancer survivors report that fatigue is a disruptive symptom months or even years after treatment ends. In patients with metastatic diseases, the prevalence of cancer-related fatigue (CRF) exceeds 75%. Patients perceive fatigue to be the most distressing symptom associated with cancer and its treatment, more distressing even than pain or nausea and vomiting.

There are studies which proved that exercise has benefits for people with cancer. Exercise improves physical energy, appetite,

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cardiopulmonary function and reduces fatigue. Preliminary evidences are suggesting that exercise has potential benefits for people with cancer. The benefits include improved physical energy, appetite stimulation, enhanced functional capacity, improvements in quality of life and psychological state [10]. In Indian scenario, the area is remaining unexplored. Only very few published studies are conducted on effect of exercise program on level of fatigue of cancer patients in India and Kerala. So it is high lightened that the area should be explored to benefit to the patients who is undergoing treatment for cancer.

Purpose of the study was to assess the fatigue of the women with carcinoma cervix undergoing radiotherapy and find out the effect of structured exercise program on fatigue of women with cancer cervix receiving radiotherapy. Statement of the problem is 'A study to evaluate the effect of structured exercise program on fatigue among women with carcinoma cervix receiving radiotherapy in Medical College Hospital, Kozhikode.'

Objectives are:

- Assess the fatigue among women with carcinoma cervix receiving radiotherapy.
- Evaluate the effect of structured exercise program on fatigue among women with carcinoma cervix receiving radiotherapy.
- Find out the association between fatigue among women with carcinoma cervix receiving radiotherapy and selected socio-personal variables.

Operational definitions are:

Effect: refers to the changes in fatigue of women with carcinoma cervix receiving radiotherapy after the structured exercise program as measured by the rating scale.

Structured exercise program: it is a scheduled sequence of exercise program for three consecutive weeks. It includes side leg rises, leg overs, rear leg lift, flexion of trunk (sitting), side bender, bouncing in place, twisting legs supine, push away with hands, rowing and deep breathing exercise. Each exercise has to be done 5 times daily for 5 days in a week. Total duration of exercise per day is 15-30 minutes.

Fatigue: refers to subjective state of overwhelming and sustained exhaustion and decreased capacity for physical and mental work not relieved by rest. In this study, fatigue refers to physical and mental exhaustion experienced by women with cancer cervix receiving radiotherapy as measured by rating scale.

Women with carcinoma cervix: women diagnosed to have carcinoma cervix receiving radiotherapy between the age group of 25- 60 years.

Selected socio-personal variables: age, education, monthly family income, age at marriage, parity, ability to perform activities of daily living, treatment modality, body built, blood pressure, body weight and body mass index.

Assumptions of the study are:

- Women with carcinoma cervix receiving radiotherapy experiences fatigue.
- Fatigue is affected by socio-personal factors
- Regular exercise helps in reducing fatigue

Hypotheses are:

H1: There is a significant difference in the mean fatigue scores of women with carcinoma cervix receiving radiotherapy in the control and experimental group

H2: There is a significant association between the fatigue among women with carcinoma cervix receiving radiotherapy and selected socio-personal variables.

The conceptual framework selected for the present study is based on Imogene King's Goal Attainment Theory.

RESEARCH METHODOLOGY

The research approach used in the present study is experimental approach and research design used is quasi experimental, pre test-post test control group design. Dependent variable is fatigue of women with carcinoma cervix receiving radiotherapy, independent variable is structured exercise program and extraneous variables are age, education, monthly family income, age at marriage, parity, ability to perform activities of daily living, treatment modality, body built, blood pressure, body weight and body mass index. The study was conducted at radiotherapy department of Medical college hospital, Kozhikode. Population of the study was women with carcinoma cervix receiving radiotherapy. The sample of the present study consisted of 60 women with carcinoma cervix receiving radiotherapy from medical college hospital, Kozhikode. From them, 30 were assigned to the control group and remaining 30 were assigned to the experimental group by using non probability purposive sampling technique.

The socio-personal data and clinical data were assessed using the interview schedule and the fatigue was assessed using the rating scale to assess the fatigue of women with carcinoma cervix receiving radiotherapy. The instruments used were measuring tape, weighing machine, BP apparatus and stethoscope. The techniques used were interview, observation and self-report. Pilot study was conducted with 6 samples that satisfy the inclusion criteria in Medical College Hospital, Kozhikode.

For the main study, the samples were selected from the radiotherapy department of medical college hospital, Kozhikode. The sample size was 60. The first 30 sample were assigned to control and the next 30 to the experimental group. After getting the consent, data were collected from the control group first. The investigator collected the socio-personal data and clinical data and the fatigue was assessed on the first day (O_1). The time duration taken for this process was approximately 10 minutes per person. On the fifth day of first week, fatigue was reassessed (O_2). Fatigue assessment was continued on the first and fifth day of second and third week, using the same tool (O_3 and O_4 , O_5 and O_6 respectively).

After collecting the data from the control group, the data were collected from the experimental group, using the same tool and in the same manner. The structured exercise program was taught to them by using demonstration method, and the return demonstration was done by the sample. It took about 20 minutes. The participants were instructed to perform the exercise program daily for 15-30 minutes for five days in a week for three consecutive weeks. During this period, regular monitoring was done and the fatigue was assessed on the first and fifth day of each week (O_1 and O_2 , O_3 and O_4 , O_5 and O_6). The average number of sample obtained per week was about 12.

RESULTS

The major findings of the study were:

- Most of the samples were above the age of 36 years.
- Majority of the sample were educated up to primary education.

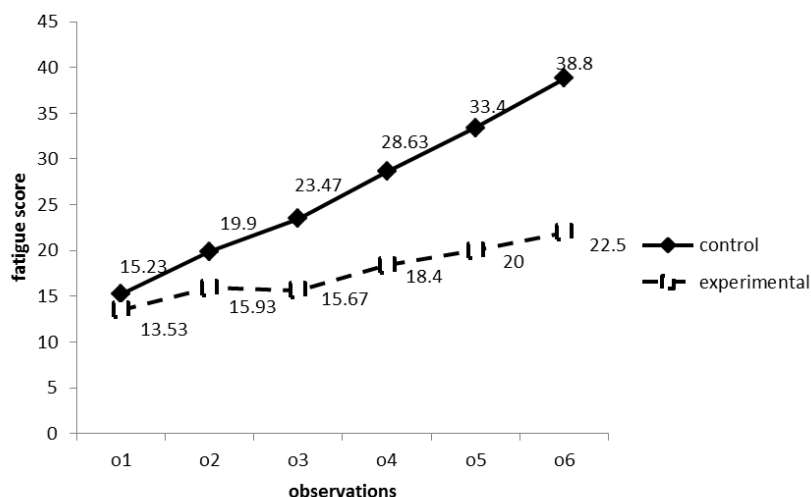


Figure 1: Comparison of mean fatigue scores of sample in the control and experimental group based on the number of observations.

- Hundred percentage of the sample in both group were married, out of which, 26.7% in control group and 20% in experimental group were widows and 3.3% of the sample in control group were separated.
- In both groups, >80% of the sample were married at the age less than 18 years, had the duration of marital life >15 years and were able to perform activities of daily living independently.
- All the sample were getting adequate support from the family in both groups and had the duration of illness <6 months.
- In control group, the major treatment modality was post chemo radiotherapy (in 53.3% sample), whereas in experimental group, 56.7% of the sample were having radiotherapy only as the treatment modality.

Figure 1 shows that the mean fatigue score in both groups are almost same in the first assessment on the 1st day of first week, i.e., before starting the intervention. But as the duration of radiotherapy increases, there is wide variation in the fatigue score in both groups. The rate of increase in fatigue score is low in the experimental group when compared to control group. There is a significant difference in the mean fatigue scores of control and experimental group. So it is evident that the exercise program has an effect in reducing the fatigue of women with carcinoma cervix receiving radiotherapy.

There is a significant difference in the mean fatigue scores of control and experimental group ($p < 0.001$). There is significant association between the fatigue and education ($p < 0.05$), monthly family income ($p < 0.05$), ability to perform activities of daily living ($p < 0.001$), treatment modality ($p < 0.05$) and body built ($p < 0.01$). There is no significant association between the fatigue and the age, age at marriage, parity, blood pressure, body weight and height, body mass index.

The findings of this study showed that the exercise program has an effect in reducing the fatigue of women with carcinoma cervix receiving radiotherapy.

RECOMMENDATIONS

On the basis of the findings of the study, the following recommendations have been made:

- A similar study can be replicated on a large sample.
- Comparative studies can be done to find out the differential effects of structured exercise program and other interventions to reduce fatigue among women with carcinoma cervix receiving radiotherapy.
- A longitudinal study can be undertaken to identify long term effects of structured exercise program.

A descriptive study may be conducted to describe the physical, psychological, social, emotional and sexual effects of fatigue among women with carcinoma cervix receiving radiotherapy.

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