Original Article

Effectiveness of an Interventional Package on the Level of Anxiety, Depression, and Fatigue among Patients with Cervical Cancer

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ABSTRACT

Objective: To evaluate the effectiveness of interventional package on the level of anxiety, depression, and fatigue. **Methods:** The study was conducted in room no. 5, first floor, B Block, Department of Radiotherapy, Nehru Hospital, Postgraduate Institute of Medical Education and Research, Chandigarh Quasi experimental pretest-posttest design was used in the study. A total of 60 patients receiving radiotherapy/chemotherapy were assigned in two groups of 30 each, through total enumeration sampling technique. The tools used for the study were Zung Anxiety Scale, Beck Depression inventory, and Fatigue Scale. The protocol used for the study includes the Jacobson's Progressive muscle relaxtion technique, counsling and home care techniques. **Results:** Sociodemographic variables and clinical profile of participants in both groups were comparable. Interventional package significantly reduces the anxiety, depression, and fatigue ($P < 0.001$ in 3 variables) in experimental group. **Conclusions:** Interventional package for patients with cervical cancer proved to be an effective modality in reducing the anxiety, depression, and fatigue.

Key words: Anxiety, cervical cancer, depression and fatigue, interventional package

Introduction

Cancer is a disease that has clearly existed from many centuries.[1] In 2012, estimated 266,000 deaths occurred from cancer of cervix worldwide.[2] Cancer of cervix is a foremost cause of cancer mortality in women and

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more than a quarter of its burden is contributed by developing countries. In India, cervical cancer contributes approximately 6%-29% of all cancers in women.[3] The most widespread type of cancer of cervix is squamous cell cancer (10% are adenocarcinomas).[4] In the initial phase, cervical cancer is a cancer of the cervix, due to abnormal growth of cells which may invade the surrounding tissues of the cervical area. In the starting phase no symptoms are seen, but later vaginal bleeding, pelvic pain, or pain during sexual intercourse indicates the presence of cervical cancer. Human papillomavirus infection is the important cause of cancer of cervix. Other risk factors may include smoking, early intercourse, early marriage, having multiple sexual partners. Treatment of cervical cancer may consist of combination of modalities such as surgery, chemotherapy, and radiotherapy. Worldwide, cervical cancer is both fourth main cause of cancer and common cause of death in women. In India, it is the second most common type of cancer among females.[5]

"Fighting cancer is half the battle, living life is another half".[4] Cancer patients might feel the lack of control over life events. They might grieve at the losses fear, pain, death, and suffering. In patients of cancer, problem of fatigue does not occur as a solitary problem. Physical problems such as fatigue due to the disease as well as the diagnosis of cancer initiate the psychological distress in these patients. The main treatment modalities for cancer of cervix are radiotherapy, chemotherapy, and surgery. Chemotherapy and radiotherapy side effects causes many problems, out of theses fatigue, anxiety, and depression are the most common.[6]

It had been found in various studies that patients suffering from gynecologic cancers receiving first internal radiation therapy, levels of anxiety, and distress were significantly increased. After 24 h of treatment, the level of anxiety and depression were still elevated.[7] Another study showed that patients suffering from cancer were having 15% to 40% of clinical depression and anxiety. The prevalence was higher in those who were superficially cured than normal population after a year or after a short time of diagnosis.[8]

Cancer-related fatigue (CRF) had been reported as the common distressing symptom, which is comparatively more distressing than pain affecting quality of life (QOL). A study revealed that patients with breast cancer experiences 58% to 94% of CRF during treatment, and 56%-95% after getting adjuvant chemotherapy.[9,10] Estimates are that more than 50%of people who have cancer experience (CRF). It is often said to be the most common and distressing symptom reported by people living with cancer.[11]

A study was conducted among hospitalized gastrointestinal cancer patients for the use of progressive muscle relaxation for managing fatigue and depression. In this study, total 80 patients, 40 in experimental and 40 in control were included in the study. Patients in experimental group received four PMR sessions within 4 weeks. While the patients in control group received routine care. It had been found that comparison of cancer fatigue scale (CFS) scores showed a significant reduction ($P < 0.05$) in PMR group and postbeck depression inventory (BDI) scores also found to be significantly reduced ($P < 0.05$) in PMR group in the pre- to post-group. The study also showed no reduction in CFS and BDI scores in control group.[12]

A study was conducted to see the effectiveness of Guided Imagery and PMR as anxiety decreasing interventions in patients of breast and prostate cancer receiving chemotherapy. The results showed that after 3 weeks of that intervention mean anxiety score was decreased from baseline (45.01 ± 6.9) to (38.71 ± 6.1) in the intervention group, while the control group showed increase mean anxiety score from baseline (39.47 ± 9.9) to (44.38 ± 7.6).[13]

Hence, it had been seen that the problems in cervical cancer patients are occurring in bunch of symptoms, so in place of single intervention, the interventional package must be healthier in reducing the selected symptoms. In Addition none of the studies have been seen the effect of interventional package on selected symptoms among cervical cancer patients under treatment in the department of radiotherapy. Hence, it is very essential to explore the level of anxiety, fatigue, and depression undergoing chemotherapy radiotherapy. Thus, there is a need of developing a protocol for the improvement of knowledge and reduction of anxiety, fatigue, and depression among patients of cervical cancer.

Objectives

- To assess the level of anxiety, depression, and fatigue among patients with cervical cancer under treatment in the department of Radiotherapy, Post graduate institute (PGIMER), Chandigarh.
- To develop and administer interventional package among patients with cervical cancer under treatment in the department of Radiotherapy, PGIMER, Chandigarh.
- To assess and compare the effect of interventional package on the level of anxiety, depression, and fatigue among patients with cervical cancer under treatment in the department of Radiotherapy, PGIMER, Chandigarh.

Methods

This was the first quasi experimental study to assess the effectiveness of an interventional package on the level of anxiety, depression, and fatigue among patients with cervical

cancer under treatment in the department of Radiotherapy, PGIMER, Chandigarh, between July - August 2016. A total of patients, 30 in each control and experimental group of cervical cancer undergoing radical chemo/radiation were age 18 years or older were recruited in the study. All patients of cervical cancer the tools for the study had been used were Beck Depression Inventory (BDI), Zung anxiety scale, and Fatigue scale. The conceptual framework for this study was based on Orem's self-care deficit theory. The intervention package includes Jacobson Progressive Muscle technique, counseling sessions, and home care techniques. The combination of these interventions was chosen so that it could significantly improve the patient's condition.

Eligible participants who consented to participate in the study were randomized through opaque envelope method in the experimental and control group. Preassessment of anxiety, depression, and fatigue was done before starting of the treatment. The patients in the experimental group received interventional package. Jacobson (JPMR) was taught by the researcher only. For the consistency of the exercises information booklet with pictures was given to patients. Patients were instructed on JPMR for seven times during the 4½ weeks of treatment. Counseling was given in the 1st and 3rd week of treatment. Information booklet was given to the patients which contained diet and side effects related knowledge and was given at the starting of the treatment and after 4½ weeks of treatment posttest assessment was done.

Analysis

Sociodemographic characteristics of the participants

Table 1 depicts the sociodemographic profile of the sixty patients who were included in the study. The mean age in experimental group was 54.00 ± 10.72 (range: 25–73) years and in control group it was 49.20 ± 10.73 (range: 25–73) years. Majority of the patients (83.3%) in experimental group and more than half (66.7%) of the patients in control group were married. Majority of the patients (83.3%) in the experimental group and 76.7% in control group were homemakers. Almost (90.0%) patients in experimental group and majority of patients (80.0%) in control group had little education which was less than primary (less than primary means below 10th standard including well illiterate). More than half of patients (63.3%) in experimental and control group (56.7%) were from joint families. More

Table 1: Sociodemographic profile of the study participants (n=60)

Sociodemographic variable	Experimental group (n_1=30), n (%)	Control group (n_2=30), n (%)	χ^2, df, P
Age (years)*			
25-50	14 (46.7)	20 (66.7)	2.44, 1, 0.12
51-75	16 (53.3)	10 (33.3)	
Marital status			
Married	25 (83.3)	20 (66.7)	2.22, 1, 0.14
Widower	5 (16.7)	10 (33.3)	
Occupational status			
Unemployed/homemaker	25 (83.3)	23 (76.7)	1.17, 2, 0.56
Working	5 (16.7)	7 (23.3)	
Educational status			
Less than primary	27 (90.0)	24 (80.0)	2.05, 1, 0.06†,‡
More than primary	3 (10.0)	6 (20.0)	
Family type			
Nuclear	11 (36.7)	13 (43.3)	0.28, 1, 0.59
Joint	19 (63.3)	17 (56.7)	
Monthly income (Rs.)			
<10,000	19 (63.3)	22 (73.3)	1.57, 1, 0.66
>10,001-20,000	11 (36.6)	8 (26.7)	
Habitat			
Urban	11 (36.6)	9 (30.0)	0.32, 1, 0.85
Rural	19 (63.3)	21 (70.0)	
Religion			
Hindus	22 (73.3)	22 (73.3)	<0.01, 2, <1.00
Sikhs and others‡	8 (26.6)	8 (26.7)	
Spouse occupation			
Unemployed	7 (23.3)	4 (33.3)	1.506, 3, 0.826
Unskilled	7 (23.3)	10 (13.3)	
Semiskilled	16 (53.3)	5 (20.0)	

*Mean±SD age in years: Experimental group 54.00±10.72; range (25-73) years, Control group 49.20±10.73; range (25-73) years, †Yates corrected Chi square, ‡Others: Only one participant was Muslim. SD: Standard deviation

than half of the patients (63.3%) in the experimental group and majority of the patients (73.3%) in the control group had monthly income <Rs. 10,000. More than half of patients (63.3%) in experimental group and majority of the patients (73.3%) in control group were from rural area. Majority of the patients (73.3%) in both groups, i.e. in experimental group and control group were Hindu by religion. The spouses of more than half (53.3%) of the patient's in experimental group were semi-skilled workers and about one-third 33.3% were unskilled workers in control group (semiskilled and unskilled means they were employed). Both groups were comparable in age, marital status, occupational status, educational status, family type, monthly income, habitat, religion, and spouse occupation.

Table 2 depicts the clinical profile of the patients in experimental and control group. All the chief complaints were high in control group except the bleeding. Bleeding was equal in both groups. Half of the patients (50.0%) in the experimental group and more than half (53.3%) in control group were having pasthistory of comorbidity. Majority of the patients (76.7%) in experimental group and more than half (56.7%) had history of some surgery in the past. About 33.3% patients in the experimental group and 40.0% in the control group had history of use of complimentary therapies. Both groups were comparable.

Table 3 depicts the risk factors among cervical cancer patients in experimental and control group. Approximately one-fourth (23.3%) of the patients in experimental group and more than one-third (36.7%) of patients in control group had family history of cancer. 6.7% patients in the experimental group and 13.3% patients in control group having history of substance abuse. More than half (66.7%) patients in experimental and control group were married at the age group between (10-19) yrs. The mean age of marriage in experimental group was17.87 ± 3.203 (10–28) years and in control group was 18.53 ± 3.875 (15–28) years. More than half (63.3%) patients in experimental and control group had their first intercourse between the age group 10–19 year. The mean age at intercourse in experimental group was 18.47 ± 3.17 (11–25) years and in control group it was 19.43 ± 2.93 (15–28) years. More than half (63.3%) patients in the experimental group and 46.7% had their first pregnancy at the age between (10–20) years. The mean age of first time pregnancy in experimental group was 19.87 ± 2.78 (15–25) years and in control group it was 20.93 ± 3.23 (16–30) years. More than half of children (53.3%) patients in the experimental group had more than three children and 70.0% patients in control group had less than three children. Both groups were comparable.

Table 4 depicts the comparison of mean scores of anxiety, depression, and fatigue among experimental and control group. There was significant difference in pre- to post-intervention in experimental group in anxiety ($P \leq 0.001$), depression ($P \leq 0.001$), and fatigue ($P \leq 0.001$). There were significant increase in the mean score in depression ($P = 0.001$), fatigue ($P = 0.001$) and except anxiety ($P = 0.73$), which revealed increase in the level depression and fatigue among control group and statistically significant decrease in the level of anxiety, depression, and fatigue among experimental group.

Table 2: Clinical profile of the cervical cancer patients ($n=60$)

Variable	Experimental ($n_1=30$), *n* (%)	Control group ($n_2=30$), *n* (%)	χ^2, df, *P*
Chief complaints			
Bleeding	22 (73.3)	22 (73.3)	0.25, 1, 0.61
Discharge	20 (66.6)	25 (83.3)	0.09, 1, 0.75
Pain	18 (60.0)	19 (63.3)	0.07, 1, 0.79
Others*	9 (30.0)	12 (40.0)	0.65, 1, 0.41
Past history of comorbidity	15 (50.0)	16 (53.3)	0.07, 1, 0.79
History of surgery	23 (76.7)	17 (56.7)	2.70, 1, 0.10
History of complimentary therapy	10 (33.3)	12 (40.0)	0.28, 1, 0.10

*Others: Urinary complaints, bowel complaints

Table 3: Risk factors among cervical cancer patients ($n=60$)

Variable	Experimental group ($n_1=30$), *n* (%)	Control group ($n_2=30$), *n* (%)	χ^2, df, *P*
Family history of cancer	7 (23.3)	11 (36.7)	1.27, 1, 0.26
History of substance abuse	2 (6.7)	4 (13.3)	0.74, 1, 0.67
Age at marriage (year)*			
10-19	20 (66.7)	20 (66.7)	0.01, 1, 1.00
20-29	10 (33.3)	10 (33.3)	
Age at the first intercourse (years)†			
10-19	19 (63.3)	19 (63.3)	0.01, 1, 1.00
20-29	11 (36.7)	11 (36.7)	
Age at the time of first pregnancy‡			
10-20	19 (63.3)	14 (46.7)	1.68, 1, 0.19
20-30	11 (36.7)	16 (53.3)	
Number of children			
<3	14 (46.7)	21 (70.0)	2.50, 1, 0.11
>3	16 (53.3)	9 (30.0)	
Contraceptives used	11 (36.7)	16 (53.3)	2.42, 1, 0.34

*Mean±SD (range) age in years, Age at marriage: Experimental group 17.87±3.203 (10-28) years; Control group 18.53±3.875 (15-28) years, †Age at intercourse: Experimental group 18.47±3.17 (11-25) years; Control group 19.43±2.93 (15-28) years, ‡Age at first baby: Experimental group 19.87±2.78 (15-25) years; Control group 20.93±3.23 (16-30) years. SD: Standard deviation

Results and Discussion

Studies showed that prevalence of cervical cancer is increasing among the young. Information on this topic is limited and contentious.[14]

Table 4: Comparison of mean scores of anxiety, depression, and fatigue between experimental and control group (n=60)

Variable	Mean±SD		Unpaired *t*-test, df , *P*
	Experimental group (n_1=30)	Control group (n_2=30)	
Anxiety			
Pretest	50.37±9.48	37.53±5.10	6.52, 58, <0.001
Posttest	32.23±3.22	39.77±7.55	4.59, 58, <0.001
Paired *t*-test, df, *P*	10.37, 29, <0.001	1.86, 29, 0.73	
Depression			
Pretest	22.93±7.57	13.07±6.96	6.52, 58, <0.001
Posttest	6.60±5.84	16.77±7.40	4.59, 58, <0.001
Paired *t*-test, df, *P*	12.25, 29, <0.001	2.55, 29, 0.001	
Fatigue			
Pretest	22.63±6.51	12.23±5.30	6.78, 58, <0.001
Posttest	7.17±3.99	17.47±5.94	7.90, 58, <0.001
Paired *t*-test, df, *P*	12.48, 29, <0.001	3.80, 29, 0.001	

SD: Standard deviation

In the present study, it has been observed that 63.3% patients in experimental and control group were in the age group between 10 and 19 years at the time of their first intercourse. 63.3% patients in experimental group and 46.7% patients in the control group were in age group between 10 and 20 year at the time of their first pregnancy. Findings of the case–control studies conducted by Louie *et al*. revealed that invasive cervical cancer risk was 2.4 fold who reported early age at first sexual intercourse (AFSI) and early age of pregnancy (AFP) at 16 years as compared to those with AFSI and AFP at 21 years.[15] The findings of the above study are similar to the observations of the present study.

In the present study, there was statistically significant reduction in the level of anxiety, depression, and fatigue ($P \leq 0.001$ in 3 variables) in experimental group after 4½ weeks of posttreatment. Similar results were seen in the study conducted by Peterson which was a randomized controlled trail on preventing anxiety and depression in gynecological cancer. In this study, fifty-three patients were randomized to control or intervention group. Intervention consisted of counseling and relaxation sessions. The intervention significantly reduces total hospital anxiety and depression score. This reduction was seen in both anxiety and moderate depression subscales ($P = 0.001$ and $P = 0.02$).[16]

The findings of the present study revealed that participants of the experimental group showed significant decrease in its mean anxiety scores to 4½ weeks of radiotherapy/chemotherapy and in control group had increase in mean anxiety scores from 37.53 ± 5.10 to 39.77 ± 7.55. A similar study conducted by Charalambous also found that intervention group revealed decrease in its mean anxiety scores to 3 weeks of intervention and control group has significant increase in the anxiety scores from (39.47 ± 9.9) to (44.38 ± 7.6) scores.[17]

Conclusion

Hence, it had been found that the ever growing challenge faced by cancer patients who are receiving chemotherapy and radiotherapy are anxiety, depression, and fatigue. Nonpharmacological therapy modalities are being recognized now-a-days as a useful adjunct to pharmacological therapy. Combination of nonpharmacologic methods are more effective instead of the single modality. Interventional package included JPMR exercises, counseling and home care techniques.

Recommendations

It was found to be helpful in reducing the anxiety, depression, and fatigue among cervical cancer patients. The radiation therapy nurses should be educated about the use interventional package such as the other diversion activities. Other nonpharmacological methods can also be compared with the interventional package in relieving the anxiety, depression and fatigue. Interventional package can also be used in the other types of cancers and disease conditions.

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Conflicts of interest

There are no conflicts of interest.

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