Short Communication

The Effect of Peer Education on Management of Chemotherapy Side Effects in Patients with Cancer

Abstract

Background: Chemotherapy drugs may have numerous side effects for patients. Thus, this study was conducted with the aim to determine the effect of peer education on the management of chemotherapy side effects in patients with cancer. Materials and Methods: This randomized, controlled trial was conducted on 80 patients with cancer in 2018. They were allocated to two groups of intervention and control. The self-care education on chemotherapy side effects was provided by the peers to the individuals in the intervention group. The data collection tools included a demographic characteristics form and the Self-Care Diary (SCD). Data analysis was performed using independent t-test and Chi-square test in SPSS software. Results: The results showed that the mean scores of the effectiveness of self-care behaviors were significantly higher in the intervention group compared to the control group after the intervention (p < 0.05). Conclusions: Peer education is recommended for cancer patients undergoing chemotherapy.

Keywords: Neoplasms, education, Iran, self care

Introduction

Cancer has become one of the most serious causes of disease-related death, accounting for about 15% of total human deaths every year. In Iran, cancer is the third major cause of mortality and disability. Chemotherapy is an important component of treatment for many cancers. The administration of chemotherapy drugs may have numerous short-term and long-term side effects.

Peer education is used as a tool for patient education. It consists of emotional, social, and practical help provided by nonprofessionals, who have a condition similar to that of the patient and, are currently managing their condition effectively, to assist patients in sustaining health behaviors.

Studies carried out in Iran have focused on investigating the effect of peer education on knowledge, comprehension, and knowledge application of patients regarding chemotherapy complications, but the management of side effects of chemotherapy has not been investigated. Patients with cancer and their families lack knowledge of chemotherapy, its expected side effects, and patient care or self-care for minimizing the side effects, and thus, require the necessary education on the nature of the disease as well as control and prevention of treatment side effects. Thus, this study aimed to determine the effect of peer education on the management of side effects of chemotherapy in patients with cancer undergoing chemotherapy.

Materials and Methods

This randomized clinical trial (IRCT2016111603092N2) was conducted at Urmia University of Medical Sciences, Urmia, Iran, in 2018. The research population consisted of patients with cancer visiting the clinic and oncology department of Imam Khomeini Medical Education Hospital, Urmia, for the first time.

We calculated that the sample size for each group should be 40 individuals (total: 80 participants) at an alpha of 0.05, power of 0.80, d = 4 (the minimum mean difference for each of the variables between the two groups), and s1 = 7.44 and s2 = 3.71 (based on the results of a similar study). The participants were selected using a convenience sampling method and for each of the variables between the two groups, and s1 = 7.44 and s2 = 3.71 (based on the results of a similar study).

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blocked randomization methods. The size of the blocks was determined as eight in this study (a combination of AAAABBBB). Based on the sample size, the number of the required blocks was considered as 10.

Data collection tools used were demographic characteristics form and the self-care diary (SCD) designed by Williams and Schreier. The SCD examines the number of side effects experienced, number of self-care behaviors performed to reduce side effects, and the effectiveness of self-care behaviors.

The validity of the SCD was assessed by Neil. The reliability of the SCD was calculated by Foltz et al. using an 80% test-retest in 1996. In the present study, to determine the content validity of the SCD, it was distributed among 10 faculty members of Urmia University of Medical Sciences (content validity ratio = 0.98, content validity index = 0.98), and its reliability was calculated using Cronbach’s alpha ($\alpha = 0.80$).

In the stage of peer selection, three cancer patients with a history of chemotherapy were selected as peers based on less involvement with chemotherapy side effects upon the doctor’s approval. In the first meeting, the demographic questionnaire was completed. In the intervention group, in addition to the routine care provided at the hospital, the patients also received peer training. The education sessions were held during two chemotherapy sessions; 1 h prior to the first and second sessions of chemotherapy, the patients were individually instructed by peers under the supervision of the researcher on various issues. The control group only received the routine care of the chemotherapy clinic. After the end of peer education, both groups were instructed on how to complete the SCD. The patients were asked to complete their SCD during the first course of chemotherapy, and training pamphlets that contained the content of the sessions were also given to the patients. The collected data were imported into SPSS software (version 16, SPSS Inc., Chicago, IL, USA) and the independent t-test was used to compare the quantitative data between the intervention and control groups [Figure 1].

**Ethical considerations**

The permission for research was acquired from the Vice-Chancellor for Research, and a code of ethics was obtained from the Ethics Committee of Urmia University of Medical Sciences (IR.UMSU.REC.1397.1188). Written informed consent forms were obtained from participants before the study.

**Results**

Demographic findings indicated that most participants in the two groups of women, were aged 46–65 years, and had Genital Urinary cancer, and a history of cancer in their family; The groups were homogeneous in terms of all the characteristics ($\chi^2, p > 0.05$). According to the results, after the intervention, the mean score of the frequency of chemotherapy side effects was significantly lower in the intervention group compared to the control group ($\chi^2, p < 0.05$) [Table 1]. The results of the statistical analysis showed that, in the intervention group, the mean score of the effectiveness of self-care behaviors after the intervention for each item separately (sleeping, decreased appetite, constipation, etc.,...) was significantly higher in the intervention group compared to the control group ($p < 0.05$) [Table 2].

**Discussion**

This present study was conducted to determine the effect of peer education on the management of the side effects of chemotherapy in patients with cancer. Based on the results of the data analysis, no statistically significant difference was observed between the two groups in terms of demographic and disease characteristics. In fact, the results of the statistical tests confirm the random allocation of subjects in the two groups. According to the results, after a peer-based education program during the first course of chemotherapy, a significant difference was found in all aspects between the intervention and control groups, This indicates the effect of peer education on the effectiveness of self-care behavior in cancer patients. Williams et al. reported that the side effects of fatigue, nausea, vomiting, and changes in taste had the highest frequency and the side effects caused by chemotherapy were reduced in women who received training through the voice tapes and telephone calls; These findings were not in agreement with that of the present research in which anxiety was high in both groups. Fathollahi-Dehkordi and Farajzadegan examined the effect of peer group interventions on clinical breast examination in women with a positive history of breast cancer and reported the positive effect of this educational method. This was in line with the results of the present study. However, their study differed from the present study in terms of the research population and their...
These studies were in line with the present study in terms of the effectiveness of training on chemotherapy side effects (nausea and vomiting), but they differed from the present study in terms of the training method and examination of a limited number of chemotherapy side effects.  

One of the limitations of this research was the use of a self-report questionnaire that was only based on the statements made by participants, and thus, it was outside the control of the researcher. The small sample size and the short duration of the follow-up are among the limitations of this research. Therefore, it is recommended that future researches be conducted on a larger number of samples with a 6-month to 1-year follow-up.

### Conclusion

Based on the findings of this study, it can be concluded that the use of peers and their experiences can promote the management of chemotherapy side effects in patients undergoing chemotherapy.

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Conflicts of interest
Nothing to declare.

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