

Effect of the Treatment on Physical and Psychosocial Problems of Cancer Patients in Al Hussein Center, Amman-Jordan

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Abstract

The purpose of this study was to compare between the level of physical and psychosocial problems among cancer patients before and after treatment (chemo and / or radiotherapy), at Al - Hussein cancer center in Amman- Jordan.

The study's sample is a convenient one that is consisted of (138) male and female cancer patients, attending the center for receiving chemo and / or radiotherapy. The patients with chronic disorders were excluded from the study. The physical and psychosocial problems were estimated by a questionnaire.

To realize the study objective, a questionnaire was developed consists of 93 items, distributed to five main parts related to physical and psychological problems before and after radiotherapy and chemotherapy, its validity and reliability, and internal consistency by Cronbach Alpha, were achieved through a pilot study. The questionnaire was answered through interview with the patients. Those patients were asked about their physical and psychosocial problems in the periods before and after treatment.

To answer the study questions the questionnaires data were entered at the SPSS program, the means, and the standard deviations is calculated, to investigate the significant differences among patients; the Chi Square test by the Kurkals-Willis test is computed. The overall findings showed an increase in the means of the physical problems level accompanied increase in the psychosocial problems level following the treatment, The Chi Square results of " Kruksal-Willis " test showed that there were significant differences between male and female in their physical psychosocial problems. Women suffered significantly more than men physically and psychosocially.

Less marked but also significantly higher was the physical problems of women resulting from radiotherapy and chemotherapy. The Chi Square results of " Kruksal-Willis" test showed the availability of information about symptoms, and the kind of treatment and its side effects, have an important effect in reducing psychosocial problems. A similar significant relief of physical problems was also observed after radiotherapy and chemotherapy.

Conclusion

Females are suffering more than males from psychosocial and physical problems after chemotherapy and radiotherapy. The availability of information about treatment help in reducing physical and psychosocial problems, and the side affect of the illness.

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The study recommend to conduct further studies to establishing a counselling program, which includes an information curriculum increases the patients' awareness about the cancer it self, the treatment of the cancer, side effects of the treatment, how the patients take care of themselves, and exchange experience with other patients, and making it accessible to reflect what patients of different cultural backgrounds want. Such programs help the patients to know other patients, and share their experience, that might help to enhance coping with their illness.

Keywords: Chemotherapy, Radiotherapy, Physiological, Psychosocial, Cancer patients.

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Introduction

Cancer is a disease, which has a high profile, and represents an extensive health problem in the world. In Jordan, it is reported that cancer is the second most frequent cause of death after heart disease, and it is the major cause of morbidity among the Jordanian population, total of 3478 new cases of cancer were recorded among Jordanians in 2003, the curded incidence rate of all cancers among Jordanians was 66.9% per 100.000 populations. Colo-rectal is the leading male cancer incidence 11.7%, breast cancer is the most common cancer for females16.6%, and leukaemias were most common for children 33.6%. A total of 3.362 new cancer cases were registered by the National Cancer Registry distributed evenly between males and females. The rank order of the five most common cancers affecting Jordanian is Breast, Colo-rectal, Leukaemia, Lymphoma and Lung cancer.¹

Cancer diagnosis produces a more alarming response than the diagnosis of other diseases. It can disorganize social process, daily functioning and mental stability, thus producing an adverse effect on the quality of life.

It can also disrupt the life of family members and threaten the functioning of entire family system.² Cancer is a disease that represents an extensive health problem in the world. It is the leading cause of death in Canada and second only to heart disease in the United States.³

In the United Kingdom, where cancer is also the second most common cause of death, the incidence is rising with approximately 250000 new cases diagnosed each year.⁴

Traditionally, a diagnosis of cancer was regarded as a 'death sentence' but advances in treatment have resulted in people surviving for longer periods (Woods, Lewis & Ellison, 1989). Nevertheless, the effect of the disease process and the protracted and severe nature of the treatment mean that the implications of the disease for patients and their families are immense.

Although significant advances have been achieved in the management and treatment of cancer, the treatment can lead to the development of multiple physical and psychological problems. Patients receiving chemotherapy treatment are at risk of developing multiple problems in addition to dealing with a number of new informational issues.⁴ Problems associated with treatment include pain, nausea, vomiting, hair loss, weight changes, fatigue and anxiety.⁵

Radiation therapy may be curative, as for early-stages of Hodgkin's disease, adjuvant following certain surgery, or palliative for pain relief. Because radiation therapy is a local treatment, adverse actions occur within the treatment field. Some of the side effects of skin radiation are oedema, redness, dryness and itching. Radiation of head and neck can cause alopecia, mucositis, dry mouth and dental caries.

The side effect can also be general as in fatigue.⁶ Indeed lack of information, explanation and support has been cited as the greatest cause of anxiety and stress in cancer patients.⁷ Cancer patients need information, not only to give them an understanding of the disease and its treatment, but also to prepare them for changes in life style and the uncertainty inherent in the diagnosis.⁸ Harris (1997) has argued that professionals who cannot provide their patients with consistent information cannot expect those patients to be compliant or cope with their diagnosis.⁹ Providing appropriate information to patients must be an integral component when meeting this challenge.¹⁰

In general, all of these problems can be aggravated by anxiety, which may be directly related to a lack of knowledge about the disease itself and treatment. The real challenge lies in finding ways to promote self-care in a population of patients with a life threatening disease that are also receiving an arduous treatment.

The current study was concerned with changes in the physical symptoms and psychosocial features in cancer patients before and after treatment (Chemotherapy and/or Radiotherapy) and whether the availability of information about the treatment affects their responses and improves their ability to cope with the illness.

Purpose

The purpose of this study was to identify the effect of the treatment on physical and psychological problems of cancer patients, difference among cancer patients in the degree of suffering physical and psychosocial before and after treatment chemo and / or radiotherapy, and the effect of availability information about the treatment.

Study questions

1. What are the levels of physical and psychosocial problems of cancer patients before and after treatment (radiotherapy and

chemotherapy) according to: gender, kinds of job, education levels, civil status, chronological age, diagnosis period, treatment period, and information about chemotherapy and information about radiotherapy.

2. Are there significant differences among cancer patients in the physical and psychosocial problems before and after the treatment (chemo and /or radiotherapy) according to gender, kinds of job, education levels, civil status, chronological ages, diagnosis period and treatment period?

Operational Definition of the study Variables

Treatment: treatment of cancer patients aim cure, control pain, palliathiph care symptoms, and treatment management, through the chemotherapy and radiotherapy therapy in this study.

Cancer Patients: who came to the clinics at Al Hussein cancer centre suffering the symptoms of cancer cause pain without chronic disease, and took chemotherapy and/or radiotherapy, and visited the centre during the study.

Physical problems: which result of cancer, it consisted of three parts: before the treatment such as: losing weight, vomiting, after radiotherapy such as: skin problems, headache, chest pain, etc. and after chemotherapy such as: vomiting, hair loss, weight changes, fatigue etc. they are measured by the study questionnaire.

Psychosocial problems: General negative emotionally feelings of cancer patients, caused psychological and/or social problems before treatment such as isolating, negative self image; and after treatment such as fatigue, anxiety, sleepless etc., as they are measured by the study questionnaire.

Literature Review

Pain and discomfort in cancer may be related to the underlying disease, pressure exerted by the tumour, diagnostic procedures or the treatment itself. In addition perception of pain increased due to fear, anxiety, apprehension, fatigue, anger and social isolation.

Patients with cancer who are receiving chemotherapy may experience a variety of side effects such as pain, nausea; vomiting, hair loss, weight changes, fatigue and anxiety, with fatigue being one of the most commonly reported side effects.¹¹ This rapid succession of events can diminish the individual's sense of mastery and induce feeling of powerlessness and helplessness,¹² 1991, 3 indicated that fatigue is a major concern among patients with cancer.¹³

It is becoming increasingly realized that quality of life in patients with cancer is affected by fatigue. It is often the first indication of the presence of some abnormality.¹⁴ mentioned the diagnosis and ensuing treatment can be highly traumatic. The person finds themselves catapulted into an unfamiliar learning environment, where they have little or no time emotionally or psychologically to accept the diagnosis of a life- threatening illness before they are asked to consider treatment options and deal with the physical impact of the chosen treatment. Galloway et al. 1997 study results mentioned that the cancer experience can be seen as a sequence of related events, proceeding from the first sign or symptoms to possible hospitalization, diagnosis and treatment, followed by convalescence and cure, or by recurrence and death.¹⁵ Warmkessel (1981) study which mentioned, that because side effect of radiation therapy is a local treatment, any adverse results will occur mainly within the treatment field, Some of the side effects of skin radiation are edema, redness, dryness, and itching.⁶ Radiation of head and neck can cause alopecia, mucositis, consider to be appropriate from their

dry mouth, and dental caries. Bower et al., (2000) mentioned that cancer patients are forced to cope with many assaults to body image throughout the course of the disease and treatment).¹⁶ Atkinson, Bersevic and Cella (2000) reported that fatigue affects 70% to 100% of patients' with cancer. Although fatigue can be a symptom of the disease itself it can be expected to accompany cancer treatment.¹⁷

Van den Berg, Visser, Schoolmeesters, Edelman, & Borne (2006) Indicated that no improvement were found in mood, meaning in life, general function, sleep quality and body awareness after the chemotherapy.¹⁸

Berger & Higginbotham (2000) who showed that women with breast cancer during chemotherapy had poorer physical and social functioning, low activity, more daytime naps, and more night awakenings.^{19, 20} Kim (2002) reported that, women experienced higher stress and less coping.²¹ Psychosocial problems that accompany the disease and its treatment were studied by Emma (2002) who mentioned that variations in certain physical and psychological suffering based on gender.²² Byar, Berger, Bakken, & Cetak (2006) found out that fatigue is associated with other physical and psychological symptoms that fluctuate during and after treatment among women with breast cancer.²³ Lengacher, Bennett, Kip, Gonzalez, Jacobsen & Cox (2006) found the relief of physical and psychological distress hasn't changed by complementary and alternative medicine but it reduces physical symptoms and side effects.²⁴

Cooley, Moriaty, & Berger, (1995); Bilodeau & Degner (1996); & Hagopian, (1996) stated that, information is a necessary prerequisite to informed decision-making that might aid in coping.^{25, 26, 27} Cameron et al., (1994) and Shaw, Wilson, & Brien, (1994) mentioned that information caused lower anxiety and distress.^{28, 29} Marteau Kidd, Cuddeford & Walker (1996) mentioned that, patients are still dissatisfied with the information received as staffs are only providing information, which they effectively with their illness.³⁸ Thome, Dykes,

perspectives.³⁰ Koopman, et al., (1998) found a significant interaction between life stresses and social support; having more people in patient support systems was associated with less mood disturbances.³¹ Sitza & Wood (1998) reported that patients want as much information as possible about their diagnosis, treatment and potential side effects.³² Additionally, Mills and Sullivan (1999) identified the beneficial function of information given for patients with cancer.³³

Parker (2002) suggested further that individual patient's information preferences, priority information needs, and information-seeking activities should be identified early and incorporated with educational programs to target resources and maximize the likelihood that positive patient's outcomes would result.³⁴ Pain management was considered by Chang et al. (2002) in which patients who received a pain educational program had significantly improved in medication adherence, pain intensity, and pain interference.³⁵

Paker (2002) concluded that the opportunity to talk to someone about fatigue was the most beneficial strategy within a "Beating Fatigue Program", which had the capacity to lessen fatigue and enhanced emotional well being.³⁴ Kuo(2002) reached a similar conclusion, and showed that the degree of symptoms distress during the therapeutic period was mild to moderate; and as a result he recommended support groups to enable sharing of experiences and emotional support among patients.³⁶ Hipkins, Whitworth, TARRIER & Jayson (2004) found out that chemotherapy treatment increase in case of anxiety and the intrusive thoughts and the data show that social support and intrusive thoughts, rather than physical parameters, are the principal deterrents of psychological morbidity in patients.³⁷

Furthermore, Golant, Altman, and Martin (2003) found that an educational program developed as a pilot test on a small sample was effective in educating patients about specific cancer side effects and in empowering them to cope more

Gunnars, and Hallberg (2003) indicated that it seems to be important that the health care professional supports the elder patients in their choices, whether they choose to take an active part in understanding the disease and handling of daily life or whether they decide to be more passive and hand themselves over to the health care system.³⁹

Procedure

Setting: Al - Hussein center in Amman, is the secondary and tertiary institution for cancer patients, located in Urban Area. In this centre diagnosis, confirmation of already diagnosed cases and establishment of treatment regimes is conducted; and all these steps are accompanied by psychological support provided by specialist personnel) National Cancer Registry 2003). Overall median age at diagnosis was (56 years) with considerable variation among the sites (57 years for males and 56 years for females), the age standardized rate, adjusted to the world standard population was 126.1per 100.000 for males and 123 per 100.000 for females, For all cancer sites the evidence rate increased with age for both male and female, and over 65, there was more increase in incidence for males compared to females, the most common cancer among Jordanian population 2000, indicted that the leading cause in order as follows: breast 555 cases, colo-rectal 346, leukemia including multiple myeloma 292, lymphoma 242, lung 223, brain\$ CNS 172, urinary bladder 154, stomach 132, prostate 123, an thyroid 106.Amman the capital reported 57.4% of different types of cancer cases, it is the highest rates among other governorates in Jordan.

The primary goal of the Hussein cancer centre is realized through the excellence in clinical care, by treating the patient as a whole, focusing on the physical, emotional, social and environmental needs of each individual patient, through team methodology, multi modality clinics, which highly specialized clinics in specific types of caner. Each multi-modality clinic is comprised of

a team of health care specialists including a medical oncologist, a surgical oncologist, a radiation oncologist, chemotherapy, and other needed specialists who plan patients' treatment, discuss it with them directly and supervise their care, and the support program, palliative care program, paediatric pain clinic, physical rehabilitation, nutrition, psycho- oncology clinic, survivor groups, and Patient entertainment program, which offers the treatment to the patient as a "whole" Beside the excellence in cancer education, training and public awareness, develop several programs and initiatives such as: education and medical training (oncology fellowships and residency programs, medical therapy, hospital registry, public awareness (prevention and control, early detection).

Sample: The study sample consisted of (138) volunteer cancer patients who met the study criteria, around 95 percent of male and female patients who came to the clinics and took chemotherapy and /or radiotherapy, in the period of the three months of the study were included in this study, they usually were treated with chemotherapy or/and radiotherapy, without chronic disease such as: diabetes, mellitus, renal failure or heart diseases. The patients were having different types of cancer, married and single, different jobs: housekeepers, employees, students, retired, different education level: less than 6 grade, 6-12 grade, and more than 12 grade of education from different chronological age: 18-28 years 28-47 years, and 48 & above years, different period of diagnosis: less than 5 years, and more than 5 years, or the period of treatment less than a year, a one years and more. All the involved patients were asked for their acceptance as an ethical issue, the researcher at the beginning of the questionnaire are some general questions about you, but non-that will allow us to identify you from the data. Since we do not know your name no one will know your answers. These answers will be reported in summed form thus making it impossible for any one to identify any of the respondents.

By responding to these questions, you will help us better understand what you are experiencing so we may better assist others like you in this difficult time.

Questionnaire: The study questionnaire was developed after a thoroughly reviewing previous literature. It includes 94 items related to the five parts of physical and psychosocial problems of cancer patients "irrespective of the type of cancer" before and after treatment (chemotherapy and /or radiotherapy).

The questionnaire includes the personal variables such as age, gender, marital status, jobs, and level of education, period of diagnosis, period of treatment and availability of information about the treatment, the second part of the questionnaire was the content of the questionnaire, and the five main parts: the physiological problems before treatment (5) items such as losing weight, vomiting etc. The psychosocial problems before treatment (13) items, such as isolating, negative self image etc. The physiological problems after radiotherapy (15) items, such as skin problems, headache, chest pain, etc. The physiological problems after chemotherapy (15) items, such as vomiting, hair loss, weight changes, fatigue etc, and the psychosocial problems after treatment (16) items, such as, fatigue ,anxiety, sleepless etc. Five – point Likert type scale (Always, Often, Sometimes, Rarely and Never), was used to assess the degree of occurrence frequency of the type problems, for each item of the questionnaire the respondents were asked to choose the problems on scale from 0-4. According to Anastazi (1998) the person with response 50 % or more faces a problem.

For the validity of the questionnaire, the questionnaire was submitted to a (10) arbitrators (professors), whose specialties in the nursing or educational psychology for recommendations and suggestions, corrections and additions. The questionnaire was revised on the basis of their recommendations.

The internal consistency coefficient calculated by Cronbach Alpha was 0.82. The reliability of the questionnaire was estimated by test and retest reliability, through administering it to 15 patients at Al Hussein centre, after an interval of two weeks, the questionnaire was also administered again to the same (15) patients, then correlation coefficient between the two administrations was calculated for each part were, physiological problems before treatment (0.60) psychosocial problems before treatment (0.91) physiological problems after radiotherapy (0.81) physiological problems after chemotherapy (0.75) psychosocial problems after treatment (0.82).

The final scale form was administered to (138) cancer patients who constituted the whole subjects of the study sample.

Ethical consideration for data collected was considered through out of the study.

Data analysis: To answer the study questions, the SPSS program was used, the Means and Standard deviations were calculated, and the Chi Square were computed by Kruksal-Willis test which is equivalent to one-way analysis of variance.⁴⁰

The study results

The study results concerned with answering the study questions:

To answer the first question, the means and the standard deviations of cancer patients answers were calculated according to gender, chronological age, kinds of job, civil status, education levels, treatment period, diagnosis period, information about radiotherapy and information about chemotherapy, within each of the psychosocial and physical problems of cancer patients before and after treatment (radiotherapy and chemotherapy), the findings were shown in table (1).

Table 1: Means and Standard deviations of cancer patients' answer according to the study variables.

Study variables	Physical problems before therapy		Psychosocial problems before therapy		Physical problems after chemotherapy		Physical problems after radiotherapy		Psychosocial after therapy		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Gender	Male	12.94	6.10	29.34	12.74	33.16	14.18	33.13	33.31	14.10	23.33
	Female	11.43	6.81	33.10	10.92	35.04	16.10	48.10	39.10	28.60	23.64
Age	18-27	13.81	6.00	30.96	9.58	35.37	14.25	24.41	37.27	24.11	22.56
	28-48	10.84	6.74	32.88	12.10	38.76	12.22	49.28	43.69	27.76	26.04
	48->	12.14	6.72	31.25	10.99	32.46	15.02	41.85	31.00	22.25	23.55
Job	House k	11.49	6.65	32.60	11.86	32.86	16.71	46.26	36.10	26.66	24.25
	Employee	11.47	6.25	32.89	12.10	36.92	15.55	49.25	40.70	30.18	25.99
	Student	13.21	5.41	29.32	8.19	36.95	12.70	20.00	31.10	12.53	21.81
	Retired	13.00	6.20	29.54	13.55	31.54	14.50	37.50	32.40	12.86	20.80
Civil status	Married	12.32	6.84	30.74	12.71	33.30	15.38	41.10	35.78	20.34	24.18
	Single	11.92	5.46	32.18	10.00	36.02	14.35	38.61	39.92	23.15	25.01
	> 6y	12.79	7.56	29.83	15.18	31.21	19.48	50.99	39.75	24.67	22.89
Educatin level	12-6y	12.52	5.73	31.00	11.48	34.10	15.69	40.04	37.28	19.27	24.31
	12<y	11.70	6.33	31.82	11.21	35.12	12.87	37.58	35.55	21.80	24.49
Treatment Period	1<y	11.48	6.61	30.21	11.90	31.65	15.70	33.64	36.55	19.01	23.59
	1y > y	13.19	5.95	32.35	13.10	37.86	15.33	48.25	36.98	25.54	26.47
Diagnosis Period	> 1Y	11.89	6.38	31.07	12.15	33.51	15.39	39.11	36.71	20.22	24.22
	1y > y	16.67	6.89	33.17	11.66	38.90	13.30	55.91	39.47	29.66	24.87
Info. Radio therapy	Yes	12.47	6.40	30.18	11.85	31.75	15.36	31.46	34.71	18.23	23.38
	No	11.74	6.63	32.44	12.22	37.63	14.22	53.61	36.52	26.00	25.34
Info. Chemo therapy	Yes	12.02	6.10	29.32	12.11	31.64	16.46	37.98	34.51	16.02	22.64
	No	12.42	6.83	32.61	11.86	36.11	13.86	41.98	39.23	25.55	25.20
Total		12.21	6.4	31.15	11.99	34.07	15.10	40.3	36.8	21.13	24.36

The findings in table (1) show the male patients had higher mean (12.94) than female's mean (11.43) in physical problems before the treatment, while females had higher mean (33.10) than the males' mean (29.34) in psychosocial problems before treatment, in the physical problems after chemotherapy females mean (35.04) and the males' (33.16), in radiotherapy treatment female mean (48.10) but the male's (33.13), and in Psychosocial after treatment the females had higher mean (28.60) than males' mean (14.10).

The patients ages 18 - 27 years had the highest mean (13.81) in the physical problems before treatment, in comparison with whose ages more than 48 years with mean (12.14), the last whose age 28-48 years with mean (10.84). The patients with ages 28-48 years had the highest mean (32.88) in the psychosocial problems before treatment, in comparison with whose ages more than 48 years with mean (31.25), the last whose ages 18-27 with mean (30.96). The patients whose ages 18-27 years had the highest mean (38.76) in the physical problems after chemotherapy, in comparison with whose age 28-48 years with mean (35.37), the last whose ages more than 48 years with mean (32.46). The patients whose ages 28-48 years had the highest mean (49.28) in physical problems after the radiotherapy in comparison with whose age more than 48 years with mean (41.85), and the lowest whose age 18-27 with mean (24.41). The patients whose ages 28-48 had the highest mean (27.76) in psychosocial problems after therapy, with comparison with whose ages 48-57 with mean (22.25), and the lowest whose ages 18-27 years with mean (14.11).

The student patients had the highest mean (13.21) in physical problems before treatment, in comparison with the retired patients with mean (13.00), the house keeper patients with mean (11.49), and the last were the employee patients with mean (11.47).

The employee patients had the highest mean (32.89) in the psychosocial problems before treatment, in comparison with house keeper patients with mean (32.60), the retired patients with mean (29.54), and student with mean (29.32). The patient students had the highest mean (36.95) in the physical problems after chemotherapy, in comparison with the employee patients with mean (36.92), the house keeper patients with mean (32.86), and the retired patients with mean (31.54). The employee patients presented the highest mean (49.25) in the physical problems after radiotherapy, in comparison with the house keeper patients with mean (46.26), the retired patients with mean (37.50), and the student patients presented with mean (20.00). The employee patients had the highest mean (30.18) in the psychosocial problems after therapy in comparison with the house keeper patients with mean (26.66), the retired patients with mean (12.86), and the student patients with mean (12.66).

The married patients showed a higher mean (12.32) than the single patients mean (11.92) in the physical problems before treatment, the physical problems after the radiotherapy (41.10) and the single with mean (38.61), but the single patients had higher mean (32.18) than the married mean (30.74), in psychosocial problems before treatment. The physical problems after chemotherapy the single with mean (36.02) and the married with (33.30), and in the psychosocial problems after treatments the single with mean (23.15) the married with mean (20.34).

The patients with an education less than 6 grade had the highest mean (12.79) in the physical problems before treatment, in comparison with the patients whose education of 6-12 grades with mean (12.52), and whose education more than 12 years with mean (11.70).

The patients with education more than 12 years showed the highest mean (31.82) in the psychosocial problems before the treatment, in comparison with the patients with education of 6-12 grades with mean (31.00), and whose education less than 6 grade with mean (29.83).

The patients with education more than 12 years showed a highest mean (35.12) in the physical problems after chemotherapy, in comparison with education of 6-12 grades with mean (34.10), and those with education of less than 6 grade had the least mean (31.21). The patients with education less than 6 grades had the highest mean (50.99) in physical problems after the radiotherapy, in comparison with whose education from 6-12 grades with mean (40.04), and the last those with education of more than 12 years with mean (37.58). The patients with education less than 6 grades had the highest mean (24.67) in the psychosocial problems after treatment, in comparison with whose education less than 6 grade with mean (21.80), and whose education of 6-12 grades with mean (19.27).

The patients who were under treatment for less than a year had lower mean (11.48) than the patients who were under treatment for more than one year with mean (13.19) in physical problems before treatment, and in the psychosocial problems before treatment with mean (30.21) and whose more than one year under treatment with mean (32.35), The physical problems after chemotherapy with mean (31.65), and whose under treatment more than a year with mean (37.86), the physical problems after radiotherapy (33.64) and whose more than a year under treatment with mean (48.25), and the psychosocial problems after therapy (19.01) and whose more than a year under treatment under treatment with mean (255.4).

The patients who were diagnosed in less than five years had lower mean more than the patients who were diagnosed in five years and more, in the physical problems before treatment the mean (11.89), and whose diagnosis in five years and

more with mean (1667.), the psychosocial problems before treatment the mean (31.07), and whose diagnosis in five years and more with mean (3317.), the physical problems after chemotherapy with mean (33.51), and whose diagnosis in five years and more with mean (38.90), the physical problems after radiotherapy the mean (39.11), and whose diagnosis in five years and more with mean (55.91), and the psychosocial problems after therapy the mean (20.22) and whose diagnosis in five years and more with mean (2966.).

The patients who had information about radiotherapy showed higher mean (12.47) in physical problems before the treatment, than the patients who did not have information with mean (11.74), in the psychosocial problems before treatment had less mean (30.18), than who did not have information more with mean (32.44), in after treatment of chemotherapy the mean (31.75), and who had information with mean (37.63), in after radiotherapy with mean (31.46), and who didn't have information with mean (53.61), and in the psychosocial problems after therapy who had information with mean (19.01) and who didn't have information with mean (255.4).

The patients who had information about chemotherapy showed less mean (12.02) in physical problems before the treatment than the patients who didn't have information with mean (12.42), in the psychosocial problems before treatment with mean (29.32), and who did not have information more with mean (32.61), after chemotherapy with mean (31.64) and the who didn't have information with mean (36.11), and after the radiotherapy treatment the patients who had information with mean (37.98) and the who didn't have information with mean (41.98), and in psychosocial problems the patients who had information with mean (16.02) and the who didn't have information with (25.55).

To answer the second questions of the study, the Chi Square test was employed through the Kruksal-Wallis test in order to determinate the

significant differences in the physical and psychosocial problems before and after the treatment (chemo and /or radiotherapy) according to; gender, chronological ages, kinds of job, civil status, education levels, diagnosis period, treatment period, interest information about chemotherapy and interest radiotherapy.

The findings are shown in the tables (2a, 2b, 2c, 2d, 2e, 2f, 2g, 2h, 2, i).

Chi Square values in table (2\|a) revealed significant differences among males and females cancer patients in physical problems after radiotherapy at .02 level, and in psychosocial problems after treatment at .00 level, but Chi Square values indicted no significant differences among the cancer patients related to physical, psychosocial problems before treatment, and physical problems after chemotherapy.

Table (2/a): Chi Square results related to the relationship between physical and psychosocial problems among cancer patients and gender.

Variables	Gender	N	Mean	Chi square	df	Sig.
Physical problems before treatment	Male	71	75.74	3.61	1	.06
	Female	67	62.89			
Psychological problems before treatment	Male	71	64.27	2.51	1	.113
	Female	67	75.04			
Physical problems after chemo therapy	Male	71	65.08	1.79	1	.181
	Female	67	74.18			
Physical problems after radio therapy	Male	71	62.01	5.42	1	.02
	Female	67	77.43			
Psychological problems after treatment	Male	71	59.53	10.92	1	.00
	Female	67	80.07			

Table (2/b): Chi Square results related to the relationship between physical and psychosocial problems among cancer patients and chronological age.

Variables	The age	N	Mean	Chi square	df	Sig.
Physical problems before treatment	18-27	27	76.24	1.29	2	.524
	28-48	50	68.38			
	More than 48	61	58.83			
Psychosocial problems before treatment	18- 27	27	67.02	.903	2	.637
	28-48	50	70.90			
	More than 48	61	56.17			
Physical problems after Chemo therapy	18- 27	27	73.06	1,75	2	.417
	28-48	50	79.74			
	More than 48	61	49.33			
Physical problems after Radio therapy	18- 27	27	52.78	6.24	2	.04
	28-48	50	73.74			
	More than 48	61	70.58			
Psychosocial problems after treatment	18- 27	27	59.46	3.34	2	.188
	28-48	50	72.68			
	More than 48	61	59.00			

Chi Square values in table (2/b) revealed significant differences among males and females cancer patients in physical problems after radiotherapy at .02 level, and in psychosocial problems after treatment at .00 level, but Chi Square values indicated no significant differences among the cancer patients related to physical, psychosocial problems before treatment, psychosocial problems after treatment, and physical problems after chemotherapy.

Chi Square values in table (2/c) indicated that significant differences among cancer patients related to the kinds of job in problems after radiotherapy at .03, and in psychosocial problems after treatment at .00 level, but Chi Square values indicated no significant differences among the cancer patients according to the kinds of job in physical, psychosocial problems before treatment, and problems after chemotherapy.

Table (2/c): Chi Square results related to the relationship between physical and psychosocial problems among cancer patients and different kinds of job.

<i>Variables</i>	<i>Kinds of job</i>	<i>N</i>	<i>Mean</i>	<i>Chi square</i>	<i>df</i>	<i>Sig.</i>
<i>Physical problems before treatment</i>	<i>House keeper</i>	44	67.52	1.05	3	.79
	<i>Retired</i>	37	65.88			
	<i>Student</i>	19	75.34			
	<i>Employee</i>	38	72.57			
<i>Psychosocial problems before treatment</i>	<i>House keeper</i>	44	74.56	3.89	3	.27
	<i>Retired</i>	37	75.57			
	<i>Student</i>	19	60.58			
	<i>Employee</i>	38	61.84			
<i>Physical problems after chemotherapy</i>	<i>House keeper</i>	44	70.70	6.92	3	.07
	<i>Retired</i>	37	77.83			
	<i>Student</i>	19	77.24			
	<i>Employee</i>	38	55.54			
<i>Physical problems after radiotherapy</i>	<i>House keeper</i>	44	75.65	8.65	3	.03
	<i>Retired</i>	37	77.21			
	<i>Student</i>	19	48.66			
	<i>Employee</i>	38	64.97			
<i>Psychosocial problems after treatment</i>	<i>House keeper</i>	44	75.53	8.74	3	.00
	<i>Retired</i>	37	83.63			
	<i>Student</i>	19	57.11			
	<i>Employee</i>	38	54.18			

Table (2/d): Chi Square results related to the relationship between physical and psychosocial problems among cancer patients and civil status.

<i>Variables</i>	<i>Civil Status</i>	<i>N</i>	<i>Mean</i>	<i>Chi square</i>	<i>df</i>	<i>Sig.</i>
<i>Physical problems before treatment</i>	<i>Married</i>	99	71.03	.520	1	.471
	<i>single</i>	39	65.62			
<i>Psychosocial problems before treatment</i>	<i>Married</i>	99	69.83	.024	1	.876
	<i>single</i>	39	68.65			
<i>Physical problems after chemo therapy</i>	<i>Married</i>	99	67.64	.760	1	.383
	<i>single</i>	39	74.22			
<i>Physical problems after radio therapy</i>	<i>Married</i>	99	70.32	.157	1	.692
	<i>single</i>	39	67.41			
<i>Psychosocial problems after treatment</i>	<i>Married</i>	99	68.23	.426	1	.514
	<i>single</i>	39	72.73			

Chi Square values in table (2/d) revealed no significant differences among married and single cancer patients related to physical and psychological problems before treatment, physical problems after chemotherapy or radiotherapy and psychosocial problems after treatment.

Chi Square values in table (2/f) revealed no significant differences among the cancer patients at different levels of education related to physical and psychological problems before treatment, physical problems after chemotherapy or radiotherapy and psychosocial problems after treatment.

Chi Square values in table (2/e) revealed no significant differences among the cancer patients at different levels of education related to physical and psychological problems before treatment, physical problems after chemotherapy or radiotherapy and psychosocial problems after treatment.

Chi Square values in table (2/g) revealed no significant differences among the cancer patients at different levels of education related to physical and psychological problems before treatment, physical problems after chemotherapy or radiotherapy and psychosocial problems after treatment.

Table (2/e): Chi Square results related to the relationship between physical and psychosocial problems among cancer patients and education levels.

Variables	Education level	N	Mean	Chi square	df	Sig.
Physical problems before treatment	Less than 6 grade	26	73.12	.971	2	.615
	6-12 grade	52	72.05			
	More than 12	60	65.72			
Psychosocial problems before treatment	Less than 6 grade	26	69.73	.001	2	.999
	6-12 grade	52	69.38			
	More than 12	60	69.50			
Physical problems after chemotherapy	Less than 6 grade	26	66.21	.240	2	.887
	6-12 grade	52	69.65			
	More than 12	60	70.79			
Physical problems after radiotherapy	Less than 6 grade	26	77.67	1.67	2	.433
	6-12 grade	52	69.61			
	More than 12	60	65.87			
Psychosocial problems after treatment	Less than 6 grade	26	72.46	.496	2	.780
	6-12 grade	52	66.84			
	More than 12	60	70.53			

Table (2/f): Chi Square results related to the relationship between physical and psychosocial problems among cancer patients and treatment periods.

Variables	period of disease	N	Mean	Chi square	df	Sig.
Physical problems before treatment	Less than a year	113	66.48	3.59	1	.06
	More than a year	25	83.14			
Psychosocial problems before treatment	Less than a year	113	68.60	.319	1	.572
	More than a year	25	73.58			
Physical problems after chemotherapy	Less than a year	113	68.24	.623	1	.430
	More than a year	25	75.20			
Physical problems after radio therapy	Less than a year	113	68.02	.906	1	.341
	More than a year	25	76.20			
Psychosocial problems after treatment	Less than a year	113	67.65	1.60	1	.205
	More than a year	25	77.86			

Chi Square value in table (2/h) indicated significant differences among the cancer patients who are interested in radiotherapy related to physical problem after chemotherapy at .00 level, and in physical problem after chemotherapy at .00 level, but the Chi Square values indicated no significant differences between the cancer patients who are interested in radiotherapy information and the physical and psychological problems before the treatment, and the psychosocial problems after treatment.

Chi Square value in table (2/i) indicated significant differences in physical problems after chemotherapy among the cancer patients who are interested in chemotherapy information at .02 level, and the psychosocial problems after the treatment, at .05 level, but the Chi Square values indicated no significant differences between the cancer patients who are interested in chemotherapy information and the physical and psychological problems before the treatment, and the problems after the radiotherapy.

Table (2/g): Chi Square results related to the relationship between physical and psychosocial problems among cancer patients and diagnosis periods.

Variables	Diagnosis period	N	Mean	Chi square	df	Sig.
Physical problems before treatment	5-10	123	67.39	4.852	2	.088
	More than10	12	80.13			
	5-10	3	113.50			
Psychosocial problems before treatment	More than10	123	69.13	.247	2	.884
	5-10	12	70.58			
	More than10	3	80.50			
Physical problems after chemotherapy	5-10	123	68.27	1.106	2	.575
	More than10	12	78.71			
	5-10	3	83.17			
Physical problems after radio therapy	More than10	138		2.185	2	.335
	5-10	123	68.41			
	More than10	12	72.67			
Psychosocial problems after treatment	5-10	123	68.12	1.717	2	.424
	More than10	12	79.29			
	5-10	3	86.83			

Table (2/h): Chi Square results related to the relationship between physical and psychosocial problems among cancer patients and radiotherapy information.

Variables	Radio information	N	Mean	Chi square	df	Sig.
Physical problems before treatment	No	83	71.01	.617	1	.432
	Yes	54	65.91			
Psychosocial problems before treatment	No	83	67.48	.410	1	.522
	Yes	54	71.34			
Physical problems after chemotherapy	No	83	62.23	7.90	1	.00
	Yes	54	79.41			
Physical problems after radiotherapy	No	83	66.05	8.88	1	.00
	Yes	54	73.54			
Psychosocial problems after treatment	No	83	61.48	1.45	1	.229
	Yes	54	80.56			

Table (2/i): Chi Square results related to the relationship between physical and psychosocial problems among cancer patients and chemotherapy information.

Variables	Chemo information	N	Mean	Chi square	df	Sig.
Physical problems before treatment	No	62	69.37	.064		.801
	Yes	74	67.77			
Psychosocial problems before treatment	No	62	64.36	1.65		.199
	Yes	74	71.97			
Physical problems after chemotherapy	No	62	61.19	5.04		.02
	Yes	74	74.63			
Physical problems after radiotherapy	No	62	62.41	3.39		.955
	Yes	74	73.60			
Psychosocial problems after treatment	No	62	68.31	.003		.05
	Yes	74	68.66			

Discussion

The results of this study are summarized in Table (1) and (2) which clearly demonstrated differences among the cancer patients' problems before and after chemo and/or radiotherapy. Generally, treatment caused a marked increase in the physical suffering, and various degrees of psychosocial problems.

The increase in physical problems after treatment is clearly explained by the well-known side effects of chemotherapy and or radiotherapy, this consists with Nail & King (1987); Brockopp, et.al. (1989); Irvine, et, al., (1991) studies results regarding the significant increase in physical suffering after chemotherapy and radiotherapy.^{11, 12, 13}

The study results corroborate previous evidence presented by Adams (1991); Galloway et al. (1997), and Warmkessel (1998) about the diagnosis and ensuing treatment can be highly traumatic, and because of the side effect of radiation therapy on their physical and quality life, and Bower et al., (2000) Atkinson, Bersevick, & Cella (2000) and Van den Berg, et.al., (2006) who indicated there is no improvement in mood and general function, and body awareness after the chemotherapy, on the other hand, the increased of psychosocial problems after treatment can be explained by the glimmer of hope given by the treatment, despite its physical effects, rather than waiting for the inevitable end, patients share.^{6, 16-18}

The study findings are not congruent with other studies, which concluded that sharing experiences among patients boosted human strength and enhanced coping, Parker, (2002) indicated the relationships with other people might promote human strength.³⁴ Kuo (2002), and Koopman, et al., (1998) found a significant interaction between life stresses and social support. but appear to contradict results of Joly (2002) who did not find such correlation.^{36, 31, 20}

Chi square result on physical and psychosocial problems before and after radiotherapy and chemotherapy indicated a significant differences among patients, according to the gender, this consistent with Berger & Higginbotham (2000) finding that indicated women during chemotherapy had poorer physical and social functioning, Joly et al.(2002); Kim (2002) showed that women less coping accompany the disease and its treatment , Emma(2002); Kuo (2002); Kim, et al., (2002); and Parker, (2002) mentioned that variations in certain physical and psychological problem based on gender.^{19- 22, 36, 34} Byar et al., (2006) found out fatigue is associate with other physical and psychological symptoms that fluctuate during and after treatment women, also Lengacher, et al., (2006) found that women significantly had higher physical problems resulting from radiotherapy.^{23, 24}

Treatment had a significant mitigating influence on the psychosocial suffering of cancer patients. Chi Square results in this study showed that

patients who acquired information about cancer and its treatment had fewer problems, so they benefited most from the treatment. Knowledge appears to enhance coping, there was also a significant relief of physical problem after radiotherapy among patients who had the necessary accurate information, which enabled them to take care of themselves and minimize the side effects of therapy. Information was not observed to have any similar influence on chemotherapy treated patients, presumably due to general systemic effects of this therapy. The acquired information about cancer and its effect on the patients is consistent with numerous earlier studies; Koopman, et al., (1998); Paker (2002) concluded that the opportunity to talk to someone about fatigue was the most beneficial strategy within a "Beating Fatigue Program", Kuo (2002); Hipkins, et, al., (2004) indicated that the information related to the treatment and the social support and intrusive thoughts, are the principal deterrents of psychological morbidity among patients.^{31, 34, 36, 37}

On the other hand Sitza & Wood (1998); Mills and Sullivan (1999) reported that patients want as much information as possible about their diagnosis, treatment and potential side effects.^{23, 33}

Additionally Cooley, Moriaty & Berger, (1995); Bilodeau & Degner (1996); Hagopian, (1996); Marteau Kidd, Cuddeford & walker (1996) Grahs (1996); Thome, Dykes, Gunnars, and Hallberg (2003) concluded that the main role for health care is to take an active part in understanding the disease and handling of daily life the person living with cancer.^{26, 27, 30, 39, 41}

Cooly et al. (1995); Bilodeau & Denger (1996) agreed that information is a necessary prerequisite to informed decision making. Marteau et al. (1996); Mills & Sullivan (1999) showed that information availability helped to reduce anxiety distress.^{25, 26, 30, 33} Golant, Altman, and Martin (2003) found that an educational program was effective in educating patients about specific cancer side effects and in empowering them to cope more effectively with their illness.³⁸

Parker (2002) suggested further that individual patient's information preferences, priority information needs, and information-seeking activities should be identified early the likelihood that positive patient's outcomes would result. Pain management was considered by Chang et al. (2002) in which patients who received a pain educational program had significantly improved in medication adherence.³⁵ This study results were congruent with these findings regarding the positive role of information in improving psychosocial coping and mitigating pain. Attention is also drawn to the interactive nature of physical and psychosocial problems. It must be mentioned, however, that a study by Leydon (2000) found that not all patients want extensive information about their condition and treatment at all stages of their illness.

Recommendations

According to the study results the following recommendation is suggested:

1. Conduct a study to investigate the physical and psychological problems of the women and employees who have cancer, to develop information and counselling program.
2. Conduct a study to be directed towards determining the range and timing of information that would best help patients take care of themselves and manage pain in the various stages of their illness, and also define the setting of delivering information that would best promote a sense of sharing among patients.
3. Efforts should be made to organize specialized teams of health care professionals trained to administer to patients an integrated course combining therapy with the necessary information to help them cope better.
4. Efforts should be made to organize specialized teams of health care professionals trained to administer to patients psychological therapy to help them cope with their individual problems.
5. Various means must be used to deliver information and instructions ranging from web pages to advertisements and pamphlets, varying in sophistication and language, designed to patients interest and be accessible to all layers in the in the targeted community.

Conclusion

There were significant differences between males and females, and among the cancer patients who have information about chemotherapy and received chemotherapy and radiotherapy after the chemotherapy and/ or radiotherapy. Presence and availability of information about the treatment helped to reduce the psychosocial problems. This make establishing a counselling program includes information about cancer and physical and psychosocial treatment influence is necessary, designing of curriculum for cancer to increase awareness of the patient about cancer itself, its treatment, side effects of the treatment, how patients can take care of themselves, share and exchange their experience with other patients, benefit from the available support to reduce physical and psychosocial problems after chemotherapy and radiotherapy, and making it accessible to reflect what patients of different cultural backgrounds want. Such programs help the patients to know other patients that might help to enhance coping with their illness.

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