The Effect of Psycho Educational Nursing Program on Coping and Quality of Life of Patients Undergoing Chemotherapy

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Abstract

Although Treatment of cancer can cause social, intellectual, emotional, developmental, and financial stress. This stress effects on patients quality of life dimensions with negative ways and also effects on their coping styles. Therefore, this study aimed to evaluate the effect of psycho-educational nursing program on coping and quality of life among patients undergoing chemotherapy. A quasi experimental research design was utilized in this study. A sample of convenience of fifty patients undergoing chemotherapy was recruited for this study. Data were collected by using, Semi-structure interview schedule, Adaptive Coping Strategies Questionnaire and Quality of life index. Finding of this study revealed that, statistically significant differences were found between Quality of life at post interview than pre. To conclude, psycho-educational program have useful effect in Improving Quality of life and coping of patients undergoing chemotherapy. Educational program should be developed to support cancer patients emotionally, financially and family relation to minimize patient stress.

Key words: psycho-educational Nursing, cancer, chemotherapy, Quality of life, coping.

Introduction

Cancer is a major public health problem in developed and developig countries, deserving increasingly more research in order to promote better quality and humanization of care to patients with this disease. It is estimated that by 2020, the number of new cases per year will be nearly 15 million, of which about 60% occur in developing countries (Ali, 2014) Because of the increased life expectancy and the aging population, caused Consequently, much more is known today about the patient's psychological functioning during the course of cancer and about the strategies they use in order to deal with this disease. It is commonly believed that a person's mental attitude in response to the cancer diagnosis affects his or her chances of the survival. Although different coping strategies in cancer patients are predominantly designed in order to diminish the distress and to improve their quality of life (Lin & Bauer-Wu, 2013).

Chemotherapy is a form of cancer treatment that involves taking one or more of a type of drug that interferes with the DNA (genes) of fast-growing cells. They are usually given by IV infusion (slowly injected into patient vein), but can be given orally (in pill form) or by direct infusion into a limb or the liver. Chemotherapy has side effects.

These side effects are usually temporary which; include nausea, vomiting, hair loss, fatigue, anemia, abnormal bleeding, and increased risk of infection due to destruction of the bone marrow. Patient with a severe bodily disease experiences a threat to body image, either from the illness itself or from the medical and nursing interventions (Gerali, 2011).

Quality of life (QOL) is a concept that encompasses the multidimensional well-being of a person and reflects an individual's overall satisfaction with life. QOL is a broad term that involves several dimensions, including physical or functional status, emotional well-being, and social well-being. Patients with cancer undergoing chemotherapy face serious challenges to their QOL. They have difficulties with general symptoms such as headache, anorexia, nausea, seizures, and insomnia. These patients also face symptoms secondary to focal neurologic deterioration, including motor deficits, personality changes, cognitive deficits, aphasia, or visual field defects (Mohamed, 2008).

Coping is a complex mental process by which a person deals with stress, solves problems, and makes decisions. It is an emotional, cognitive and behavioral response of a patient to an illness. Coping process involves at least two stages: confronting and managing with different aspects of illness or disability. Since every patient is a unique person, an emotional, cognitive and behavioral response can vary a lot and can occasionally be quite unpredictable in the same patient. The acknowledged psychological model of coping processes with the illness in general, is derived from the presumption that managing with the illness is usually a long graduate process, accompanied with many ego-defense patterns (e.g. denial, repression, projection, compensation, fatalism, dissimulation, etc.) and consecutively with a cognitive, emotional and behavioral consolidation (Ali, 2014).

Nurses are well placed to play a pivotal role in chemotherapy management and lead interventions such as a specialist oncology nursing roles that provide information and support to guide patients through their chemotherapy cycles. Patients receiving chemotherapy require access to specialized care to manage distressing symptoms, as they are at significant clinical risk because of immunosuppressant and may not exhibit the usual signs of critical illness. A team approach both within and across nursing specialties may improve care for patients receiving chemotherapy and increase effective use of healthcare resources. Strategies to improve cancer patients' quality of life and reducing the cost of cancer care (Lotfy, 2012).

Significance of the study

Cancer is a major public health problem in developed and developing countries, deserving increasingly more research in order to promote better quality and humanization of care to patients with this disease. It is estimated that by 2020, the number of new cases per year will be nearly 15 million, of which about 60% occur in developing countries (Ali, 2014).

Incidence rates of cancer at national and regional level of Egypt based upon results of National Cancer Registry Program (NCRP). NCRP stratified Egypt into 3 geographical strata: lower, middle, and upper. One governorate represented each region. Future projection up to 2050 was also calculated. Age standardized incidence rates per 100,000 were 166.6 (both sexes), 175.9 (males), and 157.0 (females). Commonest sites were liver (23.8%), breast (15.4%), and bladder (6.9%) (both sexes): liver (33.6%) and bladder (10.7%) among men, and breast (32.0%) and liver (13.5%) among women. By 2050, a fold increase in incident cancer relative to 2013 was estimated Conclusion. These data are the only available cancer rates at national and regional levels of Egypt (Ibrahim et al., 2014).

Numerous studies have reported that coping with cancer and its treatment presents many challenges. The illness itself may cause physical or mental disability, not to mention pain and fatigue. These, in turn, can lead to emotional health problems, such as stress, anxiety, depression and even grief. Chemotherapy can damage patient's self-image, leading to withdrawal from society, isolation and depression. Patient may become anxious and uncertain about the future, worrying about physical or financial difficulties down the road. Or the illness may stop patient doing what he once found important or enjoyable, causing grief for the changes in his lifestyle and environment. For some, these emotional issues can have just as real an impact as the illness itself (Mohamed , 2008).

Findings of this study might help in improving the quality of and coping of patients undergoing chemotherapy, and establish evidence based that can promote nursing practice and research.

Aim of the study

The aim of this study was to evaluate the effect of psycho educational nursing program on coping and quality of life among patients undergoing chemotherapy

Research hypothesis

Patients who will receive the psycho educational nursing program will have improving on quality of life and coping after the program than before.

Research design

A Quasi experimental design (one group pre-post) was selected for the nature of the problem under investigation. This type of research design involves one or more group of subjects on intervention (polite, and Beck, 2010).

Setting

This study was conducted at Nasser Institute clinical Oncology department. The hospital affiliated to the ministry of Health.at out patient's clinics two days in the week. The researcher takes their phone number to meet them for practical part of the research.

Sample

A sample of convenience of (50) patients undergoing chemotherapy from the above mentioned settings and fulfill the following inclusion and exclusion criteria: Adult male and female patients diagnosed with cancer, Over 18 years, Undergoing chemotherapy, Able to read and write, Able to communicate clearly and Agree to participate in the research.

Tools of data collection

three tools were used to measure the current study variables

Tool (1): Semi-structure interview scheduale It was developed by the investigator and include two parts:

Part A: Patient Socio demographic data as: (patient's age, sex, occupation, education, marital status …ect.Part B: Clinical characteristics such as: onset of disease, family history, number of chemotherapy, side effects…..ect).

Tool (2): Adaptive Coping Strategies Questionnaire. This questionnaire was adopted from Büssing et al., (2008) to assess adaptive coping styles in patients with chronic diseases. The questionnaire was translated into Arabic and modified by the researcher .It consists of 31 items including (conscious way of life, positive attitude, Reappraisal, search for alternative help, Trust medical help and God's help. All items were scored on a 3-point scale from (0 = Never), (1 =sometimes) and (often=2).

Tool (3) Quality of Life Scale Index: The scale was originally developed by Ferrel (1991), and translated into Arabic by Mohammed (2008).and used to assess the impact of chemotherapy on Quality of Life of Cancer patients. It consists of (40) items in the form of four point likart scale based on quality of life model that consists of four dimensions of quality of life (1) physical well-being, includes 10 items (2) psychological well-being includes 14 items, (3) social well-being includes 9 items and Spiritual well-being includes 7 items. Scoring system for physical well-being (0-30), for psychological well-being (0-42), for social well-being (0-27) and spiritual well-being (0-21).

Validity and reliability

The tools were submitted to five members of psychiatric nursing and medicine experts. Modification on the tool was made in the response to panel`s judgment on the appropriateness of the content and grouping of statements regarding to each subscale and accuracy of scoring and recording items. Cronbach`s alpha coefficient was calculated to assess the reliability of the study tools through their internal consistency. The tools proved to be strongly reliable r = 0.87 for tool two and 0 .84 for three appendices.

Presentation and Data Analysis

Table (1): Socio-demographic characteristics of studied patients undergoing chemotherapy (n=50).

Variables	No	%
Sex		
Male	19	38.0
Female	31	62.0
Age		
18-	31	62.0
45-	14	28.0
over60	5	20.0
X-±SD		
Marital status		
Single	7	14.0
Married	37	74.0
Divorced	3	6
Widowed	3	6
Education		
Illiterate	3	6.0
read& write	30	60.0
intermediate education	9	18.0
university education	8	16.0
Occupation		
Employee	8	16.0
free business	12	24.0
Student	3	6.0
house wife	27	54.0
Job status after disease		
working in working time	2	4.0
working part of time	28	56.0
leave work	17	34.0
joined another job	3	6.0

Table (1) reveals that, the studied participants consists of 50 patients undergoing chemotherapy their mean age42.3±13.0years.Among them 62% their age ranged between 18to44 years. Also table (1) reveals that (62.0%, 74.0% and 60%) of studied subjects were female, married are read write respectively. Regarding to Work nature (68.0%) of studied subject their work need muscular effort. And (56%) of them work part time after disease.
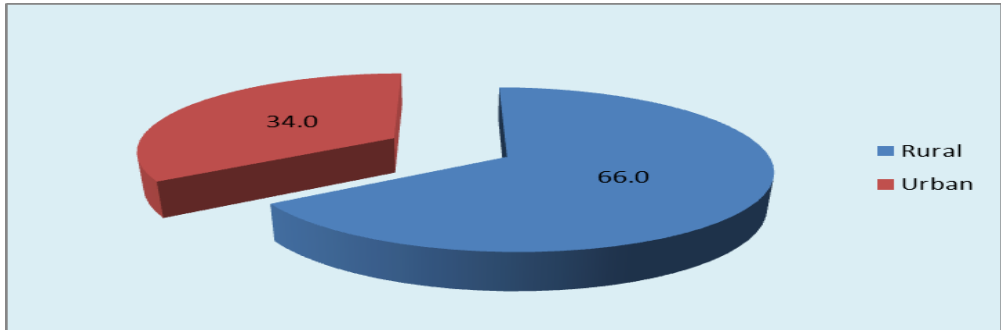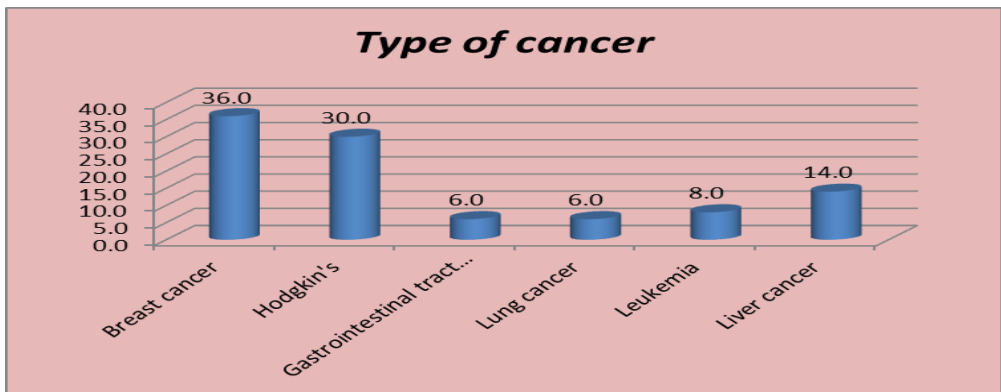

Figure (1): frequency distribution of studied subject regarding their residence (n=50)

As regard residence Figure (1) reveals that 66.0%, 34.0% of studied subject were from rural & urban areas respectively.

Figure (2): frequency distribution of studied subject regarding their type of cancer.

As regards types of cancer among the studied subject (figure 4) reveals 36.0%, 30.0%, 14.0% have breast cancer, Hodgkin's, liver cancer respectively.
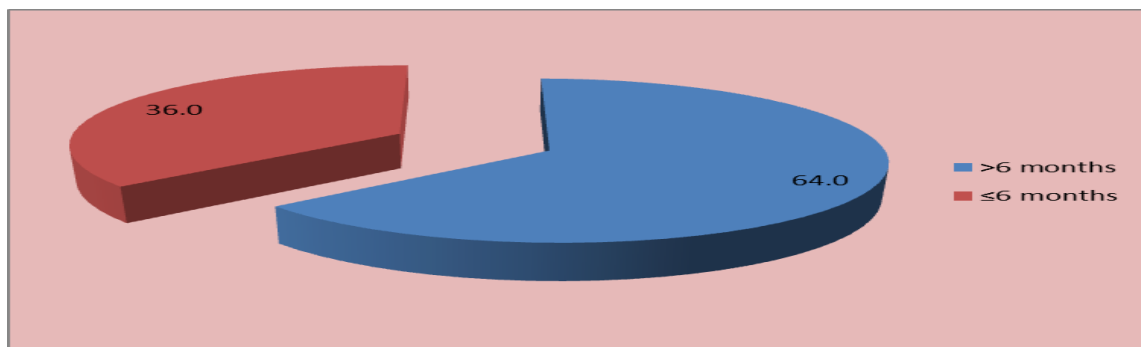
Figure (3): frequency distribution of onset of cancer among the studied subjects undergoing chemotherapy (n=50).

Figure (3) Reveals that (64.0%) of studied subject were suffering from cancer from less than 6 months.

Table (2) Differances between quality of life (physical health domains among the studied subjects before and after the program.

Physical items	Before Mean ± SD	After Mean ± SD	Paired –t- test	P
-1feeling fatigue	2.64±0.59	0.86±0.49	17.08	0.000
-2loss in appetite	2.74±0.44	0.80±0.40	57.18	0.000
-3presence of pain	2.32±0.71	0.24±0.43	17.23	0.000
-4Insomnia	2.06±0.65	0.30±0.46	13.58	0.000
-5Nausea and vomiting	2.98±0.14	0.40±0.49	36.59	0.000
-6constipation / diarrhea	2.36±0.48	0.38±0.49	22.49	0.000
-7skin changes	1.76±0.74	0.88±0.32	8.66	0.000
-8Alopecia	2.60±0.78	0.18±0.38	13.27	0.000
9-Dry mouth	1.42±0.49	0.26±0.44		0.000

Table (2) shows that there is highly reduction of the mean scores in all items of quality of life (physical dimension at post program than preprogram Also, statistically significant differences are found between all items of physical domains at P< 0.000.

Table (3) Differences between quality of life (psychological health domains among the studied subjects before and after the program (n=50).

Psychological Items	Before Mean ± SD	After Mean ± SD	Paired – t- test	P
1-coping with chemotherapy	2.82±0.38	1.04±0.66	16.48	0.000
2-Good overall quality of life	2.84±0.37	1.38±0.49	20.50	0.000
3-control of events in your life	1.86±0.78	1.02±0.62	5.33	0.000
4-Satisfying his life	2.80±0.40	1.22±0.58	13.78	0.000
5-Ability to concentrate things	2.20±63	1.48±0.50	6.29	0.000
6-How useful do he feel	2.86±0.35	1.28±0.57	13.78	0.000
7-Distressing initial chemotherapy	2.62±0.63	0.78±0.61	13.04	0.000
8-Distressing routs of chemotherapy	2.44±0.70	1.16±0.54	10.85	0.000
9-Distressing decide chemotherapy until beginning	2.52±0.64	0.86±0.63	11.71	0.000
10-Feeling of anxiety	2.46±0.73	0.38±0.49	24.48	0.000
11-Feeling of depression	2.40±0.67	0.54±0.50	23.002	0.000
12-Fearful from side effects of chemotherapy	2.70±0.46	0.90±0.67	14.45	0.000
13-Fearful return of the cancer	2.74±0.44	2.44±0.50	2.68	0.010
14-Fearful spread of cancer in multiple places	2.86±0.350	2.54±0.50	3.17	0.003

Table (3) shows that there is highly reduction of the mean scores in all items of quality of life (psychological dimensions) at post program than preprogram Also, statistically significant differences are found between all items of psychological domains at P< 0.000.

Table (4) Differences between quality of life (social health dimensions among the studied subjects before and after the program (n=50).

Social items	Before Mean ± SD	After Mean ± SD	Paired –t- test	P
1-Distressing your illness your family	2.52±0.50	0.88±1.09	14.94	0.000
2-Supporting received from others	2.58±0.49	0.66±0.91	12.12	0.000
3- chemotherapy interfered with your relationship	2.42±0.49	0.36±0.48	16.36	0.000
4- chemotherapy interfered with your sexuality	1.88±0.65	0.36±0.48	14.09	0.000
5- chemotherapy interfered with your employment	2.38±0.49	0.62±0.85	10.33	0.000
6- chemotherapy interfered with home activity	1.38±0.49	0.44±0.50	7.28	0.000
7-Isolation caused by chemotherapy	2.38±0.49	0.24±0.47	20.01	0.000
8-financial burden	2.20±0.67	0.24±0.43	15.35	0.000

Table(4) shows that there is highly reduction of the mean scores in all items of quality of life(social health dimensions) at post program than preprogram Also, statistically significant differences are found between all items of social dimensions at P< 0.000.

Table (5) Differences between quality of life (spiritual health dimensions among the studied subjects before and after the program (n=50).

Spiritual items	Before Mean ± SD	After Mean ± SD	Paired – t- test	P
support from religious activities	2.48±0.50	2.12±0.65	3.84	0.000
support from personal spiritual activities	2.48±0.50	2.22±0.81	1.46	0.150
uncertainty about future	2.44±0.76	0.46±0.50	25.32	0.000
Positive change in life from illness	1.18±0.38	0.32±0.47	8.68	0.000
Sense of areas on for being a life	2.54±0.50	2.64±0.48	2.33	0.024
feel hopeful	1.80±0.72	2.38±0.49	8.22	0.000

Table(5) shows that there is highly reduction of the mean scores in all items of quality of life (spiritual health dimensions) at post program than preprogram Also, statistically significant differences are found between all items of social domains at P< 0.000 except amount of support from personal spiritual activities and sense of area on for being a life.

Table (6) Differences between total quality of life (physical, psychological, social, spiritual) dimensions among the studied subject at pre and post program.

Quality of life dimensions	Before Mean ± SD	After Mean ± SD	Paired –t- test	P
total physical	20.8±2.0	4.3±1.2	58.00	0.000
total psychological	36.1±3.5	17.0±1.7	29.88	0.000
total social	17.7±1.3	3.8±2.6	29.08	0.000
total spiritual	12.9±1.7	10.1±0.7	9.66	0.000

Table(6) shows that there is highly reduction of the mean scores in all total of the quality of life subscales(physical, psychological, social and spiritual) post program than pre , Also statistical significance differences were between al quality of life subscales at P< 0.000.
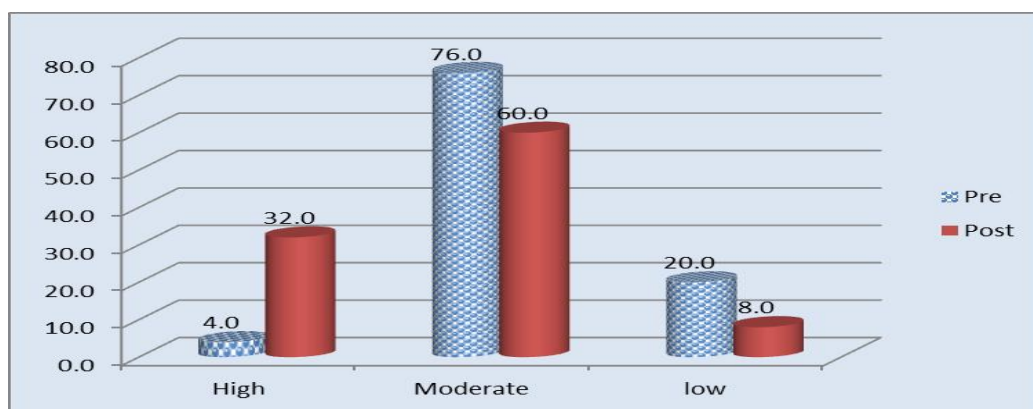

Figure (4) Percentage distribution of studied sample regarding their total coping strategies.

Figure (4) shows that, there is higher improvement in the level of coping among the studied subject post program than preprogram from (4%to 32%) with statistical significant difference at P< 0.005.

Table (7): correlation between socio-demographic characteristics and quality of life pre and post program (n=50).

Variables	*Total quality of life*			
	Pre		*Post*	
	R	*p*	*R*	*P*
marital status	0.36	0.03*	0.11	0.4
Residence	0.51	0.000**	0.26	0.07
education	0.40	0.004*	0.29	0.03*
Occupation	0.40	0.004*	0.14	0.32
natural of work	0.25	0.07	0.12	0.37
Caregiver	0.48	0.000**	0.18	0.2

Spearman correlation   *Significant level at p<0.05

Table (7) reveals that, there is positive significance correlation between, all item of socio demographic characteristics and   total quality of life preprogram except nature of work. While no significant correlation post program except the occupation. This indicates the effectiveness of the program in improving the quality of life.

Table (8): correlation between Total coping strategies and total quality of life among the studied subject pre and post program: (n=50).

	Total Coping Strategies			
total quality of life	**Pre**		**Post**	
	R	p-	R	p-
	0.3	0.006	0.4	0.000

Table (8): Displays that, there is highly statistically significance positive correlation between total coping strategies and total quality of life post program than preprogram with p-< 0.000. This is mean when quality of life improve coping pattern also improve.

Discussion

The diagnosis and treatment of cancer present numerous challenges and sources of stress for patient and their family. Patients with cancer experience a variety of negative emotions such as shock, disbelief, fear, hopelessness, anger, guilty, and loss of control following diagnosis (Bougea et al., 2011). It is commonly believed that a person's mental attitude in response to the cancer diagnosis affects his or her chances of the survival. Although different coping strategies in cancer patients are predominantly designed in order to diminish the distress and to improve their quality of life (Lin, & Bauer-Wu, 2013).

Therefore, this study aimed to assess the effect of psycho educational program on coping and quality of life of patients undergoing chemotherapy.

(1) Sociodemographic characteristics of studied patient.

The subject of current study consisted of fifty patient undergoing chemotherapy aged over eighty years, who met inclusion criteria. Results of current study revealed that, more than two third of the studied subject' aged from 18-44 years with a mean age 42.3±13.0 years. This can explained that middle adulthood characterized by work and being productive person for both the family and society so feeling of not being able to perform social roles could affect coping and quality of life. This result comes in agreement with a study done by Lotfy (2012) and Abd El-Moneem, (2014), who found that the majority of sample was in the middle adulthood. While disagreement with Adamowicz & Zaucha (2016) who revealed that the majority of studied patients were 50 years old or more.

The present study revealed that, more than two third of studied subject were female. This could be due to early of menarche and late age at menopause, nullparity, and late age at first pregnancy have been associated with an increased risk of breast cancer. These results come with agreement with those results done by Mohamed (2008) and Ali (2014) who found that, the higher incidences of cancer among young females for thyroid cancer and malignant melanoma than male within the same age. These findings were in disagreement with to those of the study Adamowicz & Zaucha (2016) who found that, cancer is more prevalent among males than females.

Concerning educational level, the present study revealed that, more than half of studied patient were read and write. This might be due to generally low level of education have relationship with alcohol consumption and increase incidence of cancer. These results come with line with those results done by Ali (2014) who found that, the majority of studied subject were read and write. In contrast with Mohamed (2008) who found that illiteracy or just abilities to read and write was the majority of sample.

Regarding to Work nature after disease, it found more than half of the studied patients working part of time and more than one third leave the work .This might be due to feeling of fatigue after dose of chemotherapy made patient can't tolerate burden of work. This in agreement with Perry & Potter (2009) and Lofty (2012) who mentioned that a history of cancer significantly affects employment opportunities and the ability of a survivor to obtain and retain health and life insurance.

In relation to current medical history. It was found that, highest percentage was diagnosed with breast cancer, Hodgkin's disease, liver cancer, gastrointestinal and leukemia. This result was agreement with Daily News Egypt (2016) which repots 44 female from 100.000 diagnosed with breast cancer. Also this is supported by El-Bokainy (2012) who reported that the profile of cancer among Arab population is characterized by frequency of breast, lymphoma, nasopharynx, esophagus, larynx and liver disease and low frequency of cancer prostate.

Concerning residence of studied subjects .the present study show that, more than two third of them were lived in rural area. This could be due to that, exposure to agricultural chemicals in general and agricultural pesticides in particular effects in the offspring of women who are exposed to these pesticides during pregnancy and also farmers who have direct relation with to chemical agriculture in farmers. These finding were similar to those of the studies done by Bennett et al., (2007); Carozza et al., (2008) and Hennessy et al., (2010) who found that, the majority of their studied groups were lived in low-income rural areas of the United State of America.

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As for the history of the current disease among studied patient. The result of present study revealed that, more than half of them suffering from cancer for less than 6 months. This results come with agreement with result done by Narod (2011) who added that woman develops invasive breast cancer in the left breast at age 30 from less than 6 month, While in congruent with this result Ali (2014) who revealed that half of them diagnosed with cancer since 3years or more.

The current study result revealed that there is highly reduction of the mean score in all items of physical domains of the quality of life post program than preprogram with highly statistical significance differences. This result could be due to that patient with cancer depends on treatment caring providers for receiving information required on their disease and controlling their situation. Nurses as one of the members of treatment team, have an important role in diagnosis, treatment and caring patient with cancer and they spend more time with patients compared to the other treatment team members. They may the first who can recognize the needs of the patients and their families and be effective in controlling disease complications and treatment as well as enhancing quality of life of the patients.

These results were in accordance with the study of Mohamed (2008) and lotfy (2012) who studied the effect of educational intervention on quality of life of patient undergoing chemotherapy, who found that there was highly statistically significant reduction in severity of post-chemotherapy nausea and vomiting after exposure to the educational program and educate the patient the relaxation technique as effective non pharmacological intervention for anticipatory nausea and vomiting, that developed during the course of chemotherapy.

Regard quality of life (psychological dimensions). the results of current study showed that there is highly reduction of the mean score in all items of psychological dimension of the quality of life post program than preprogram with highly statistical significance differences in most items. This could be due to the effect of stress management and the program content. Cancer affects all level of function. Physical and psychological distress or the medication itself can cloud patient intellectual function. The patient's self-concept is affected by physical, role or function changes. The more information about possible symptoms they receive the better they ability to cope .

In the same lines with Lotfy (2012) denoted that there was highly statistical significant improvement regarding their psychological dimensions of study group during immediate post and after three months of educational program as compere to control group. In addition to study done by Guan et al., (2016) who studied effect of educational intervention on breast cancer patients' quality of life and psychological outcome, revealed that there was highly statistically significance reduction in mean score of psychological items and added that educational intervention is superior to usual care in breast cancer patients for improved quality of life, higher self-efficacy and less depression, distress, and perceived stress.

Concerning quality of life (social dimensions). The present study shows that, there is highly reduction of the mean score in all items of social dimension of the quality of life post program than preprogram with highly statistical significance differences. This indicates that, perceived lack of support from family and friends may be associated with greater psychological distress. Further,

patients adjustment to living with cancer can be shaped by the reactions of their family and intimate others. Therefore, psycho-educational intervention can help cancer patient and their family to cope with stressful condition, improve their social needs an ultimately can lead to better QOL .

Similarly the results done by Mahomed (2012) denoted that there was statistical significant improvement regarding all items of social dimensions of study group (extract that affects radiotherapy to personal relationship, sexuality and isolation caused by radiotherapy and improvement occur after three months of the program. In the same line Mohamed (2008) stated that overall social dimension seems to be better after three months of the program. This could be due to improving the physical well-being as well. Ferrell (2009) suggest that the major coping strategies for cancer patients were social support, belief recovery and return to normal life as soon as possible.

As regard spiritual domains of quality of life the current study revealed that there is highly reduction of the mean score in all items of spiritual dimension of the quality of life post program than preprogram with highly statistical significance differences. Except amount of support from personal spiritual activities. These results could be due to that diagnosis of cancer changes lives of patients forever, the diagnosis after triggers deep questions of meaning and purpose and with the journey through treatment, deep issued, hope and fulfillment. The uncertainty and myriad decision may raise spirituality related issues more often than with other long term illnesses. Spirituality may affect how patient copes with the cancer experience, defenses well during cancer treatment or pain.

These results congruent with Abd El moneem (2014) who stated that religious believers of patients with advanced cancer were positively correlated with both happiness and life satisfaction. Also in study of self-care practices of cancer patients

undergoing chemotherapy more than sixty percent of participated patients maintained the praying, reading or listening to Qur'an karim. This can attributed to most people who believed that spiritual aid can provide relieving of physical and psychological pain and tension. These results come with agreement with Jafari et al., (2013); Bahrami & Farzi (2014) & Guan et al., (2016) who stated that the mean score of spiritual and environmental domains of quality of life in his studied subject was significantly increased compared to the control group.

Concerning differences between total quality of life pre and post program the current study shows that, there is highly reduction of the mean score in all total dimension of the quality of life physical, psychological, social and spiritual post program than preprogram among the studied subject ,with highly statistical significance differences. These results explained that educating the patient and family is very important before administration of chemotherapy agent and it is the nurses' responsibilities to educate patients and families. Especially information about the side effects of treatment and interventions which can minimize these effects. Nurses take responsibility for educating patients about the disease and treatment recommendations potential side effects and other important information. Similarly to Sherman et al., (2012) and Jafari et al., (2013) who revealed that, there was a statistically significant difference in all functional total scales of quality of life after intervention.

As regards the total adaptive coping strategies, the current study shows that, there is higher improvement in the level of coping among the studied subject post program than preprogram from four percent to thirty two percent with statistical significant difference. This may be due to information from the researcher about the disease and how to cope with side effects of chemotherapy and also relaxation therapy that helping patient to relief stress making improvement in coping

after program than pre. This results come with line to results done by Browall et al., (2013) and Sherman et al., (2012) their Patients in all groups showed improvement in coping style over time in overall health, psychological well-being, and social adjustment.

Concerning correlation between socio-demographic characteristics and total quality of life the current study reveals that, there is positive significance correlation between, all item of socio demographic characteristics and total quality of life preprogram except nature of work. This finding could suggest that health problems appear to exert their effect on one's work performance, mainly through their effect on quality of life. While no significant correlation post program except the occupation. This indicates the effectiveness of the program in improving the quality of life. This explanation is congruence with Mohamed (2008), who stated that there were positive relationship between most quality of life domains and age, residence, caregiver and income. These result incongruent with Wilkes & Burke (2009) who revealed that all socio-demographic data had no statistical significant differences in relation to coping styles except job and type of work. While no significant correlation post program except the occupation. This indicates the effectiveness of the program in improving the quality of life.

In addition to correlation between quality of life and adaptive coping strategies the current study displays that, there is highly statistically significance positive correlation between total coping strategies and total quality of life post program than preprogram. This is mean when quality of life improve coping pattern also improve. This indicates the effectiveness of the program in improving coping pattern among the studied sample. this results agreed with Parekh et al., (2015) who reported, QOL was significantly better for those who primarily used adaptive coping styles compared with those who used maladaptive styles.

Similarly with Parekh et al., (2015) who reported, QOL was significantly better for those who primarily used adaptive coping styles compared with those who used maladaptive styles. Also this result come with line with results done by Lin et al., (2016) who found that there were statistical significance correlation between quality of life of patient with head and neck cancer and adjustment with side effects of chemotherapy.

Conclusion

Based on the result of the present study, the researcher can concluded that psycho-educational program has great effect on improving quality of life and adaptive coping strategies of patients undergoing chemotherapy. There were association between quality of life, adaptive coping strategies and socio-demographic characteristics of studied subject. There were associations between quality of life and adaptive coping strategies of studied subject.

Recommendation

- Develop a screening and assessment tool to assess psychological status and mental well-being of all patients undergoing chemotherapy.

- Health care professionals who are working in oncology clinics should help patient and their family to cooperate and learn to get through difficult situation and enhance patient self-esteem.

Future researches

- -Future studies are needed on Conduct research study the includes specific one type of cancer as breast cancer

- -Conduct longitudinal study to assess patient's responses,

coping process, and adaptation to chemotherapy.

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