

Effect of Autogenic Relaxation Program on Psychological Stress and Body Image among Patients Undergoing Chemotherapy

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Abstract: Patients undergoing chemotherapy face numerous of psychological stressors that have a significant effect on their body image. **Aim of the study:** This study aimed to evaluate the effect of autogenic relaxation program on psychological stress and body image among patients undergoing chemotherapy. **Design:** A quasi-experimental correlational research design, with one group pre and posttest assessment, was used in conducting the present study. **Setting:** The study was conducted at the oncology unit at benha university hospital, in benha city Qalubia governorate. This unit is located in the medicine department, it contain 2 wards (one male and one female) which have critical room and chemotherapy room. **Sample:** A purposive sample of (40) patients undergoing chemotherapy was selected from the above mentioned settings. **Tools for data collection:** Data were collected by using three tools. **Tool (I):** Structured Interview Questionnaire to assess socio-demographic and clinical characteristics. **Tool (II):** Stress Scale and **Tool (III):** Body image scale. **Results:** Findings indicated that there were highly statistically significant reduction in the severity of total stress and highly statistically significant improvement in the level of body image post program implementation than before. Also, there was a highly statistically significant negative correlation between total stress score and total body image score of studied patients' pre and post program implementation. **Conclusion:** The autogenic relaxation program had a positive effect on psychological stress and body image among studied patients undergoing chemotherapy. **The study recommended** that Generalization of autogenic relaxation program for all patients undergoing chemotherapy in all hospitals to alleviate their psychological stress and improve body image

Keywords: Autogenic relaxation, Chemotherapy, Psychological stress, Body image.

1. INTRODUCTION

Cancer can be defined as a disease in which a group of abnormal cells grow uncontrollably by disregarding the normal rules of cell division. Normal cells are constantly subject to signals that dictate whether the cell should divide, differentiate into another cell or die. Cancer cell develop a degree of autonomy from these signals, resulting in uncontrolled growth and proliferation (Kangas et al, 2019).

Cancer is a major public health problem in developed and developing countries. The number of new cases per year will be nearly 15 million, of which about 60% occur in developing countries (Ali, 2020). It is commonly believed that a person's mental attitude in response to the cancer diagnosis affects chances of the survival. Although different coping strategies in cancer patients are predominantly designed in order to diminish the stress (Lin, & Bauer-, 2020).

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 and psychological stress, either from the illness itself or from the medical and nursing interventions (**Gerali, 2018**).

The stress from chemotherapy is a result of the multiple demands for adjustment precipitated by the illness. In cancer these adjustments have to occur in behavioral, cognitive, emotional, interpersonal and social and physical spheres of functioning. Subjectively perceived demands exceed perceived resources for responding to the demands. Difficulties with these adjustments to illness are the basis for potentially chronic elevation of stress, which can then contribute to a host of problems. The negative effects associated with stress reactions include anxiety and fear states, depression and anger which can adversely affect symptoms and disease itself (**Russell, 2018**).

The influence of chemotherapy may involve loss of a body parts, scarring, having to adjust to a prosthesis, decreased physical activities, tumor affecting the neck, eye, head, hair loss. Chemotherapy and radiotherapy. Each and every one of these changes would expose body image to the threat (**Fan& Eiser, 2019**). Body image would be exposed to the threat when any probable, or real, change in the function or appearance of the body happens. In other words, there are many factors that lead to person's body image disturbance; some of these include chemotherapy, burning, face scars, decreased physical function such as kidney failure and paralysis. In response to body image change, individuals should develop self-protective or coping strategies (**Noghani et al, 2019**).

Body image disturbance has a direct relationship with low self-confidence, sexual functioning, weak social relationships, and depression (**Gehrman et al, 2016**). Body image disturbance, in patients with cancer, is known as one of the most important physical, mental, and social changes, which greatly effect on the patients' come back to their normal lives. That is to say that emotional, cognitive, behavioral, and social factor also has high impacts on shaping the body image (**Kelly et al, 2018**).

Autogenic relaxation technique, developed by Schultz (1932), consists of six standard exercises. The first exercise aims at muscular relaxation, which is achieved mainly by repeating a verbal formula to encourage feelings of heaviness. Subsequently, the concentration is focused passively on feeling warm, then calming cardiac activity, slowed respiration, warmth in the abdominal region and, finally, coolness in the head. Autogenic training exerts a calming effect on the mind and body, and is used to treat medical conditions that are associated with stress or exacerbated by it, for example, cancer, angina pectoris, hypertension (**Bratt et al., 2020**).

The effect of the autogenic training help to relieve many conditions, including chemotherapy symptoms, post-traumatic stress, irritable bowel syndrome, coronary heart disease, and even to enhance lung capacity. Autogenic training has been found to help with some stress- and circulatory-related issues, such as hypertension, chronic headaches, mental stress associated with chemotherapy, pain disorders, anxiety, depression, and insomnia. And there's some evidence that, when combined with mental imagery, autogenic training can be a useful tool for enhancing athletic skills (**Spadaro & Hunker, 2018**).

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. (**Lotfy, 2017**).

Significant of the study:

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. 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 2020 was estimated Conclusion. These data are the only available cancer rates at national and regional levels of Egypt (**Ibrahim et al., 2019**).

Autogenic relaxation techniques help patients with cancer to reduce feelings of helplessness and hopelessness, provide distraction from the experience of pain and emotional reactions associated with the diagnosis of cancer and help to break the pain–anxiety–tension cycle .Coping with cancer and its treatment presents many challenges. The illness itself may cause physical or mental disability, and emotional health problems, such as stress, anxiety, depression and even grief. (Lamiani & Furey, 2019) .In my opinion this study is important because it will help to identify the effect of autogenic relaxation technique on psychological stress among patients undergoing chemotherapy.

Research Aim

This study aims to evaluate the effect of autogenic relaxation program on psychological stress and body image among patients undergoing chemotherapy

The aim will be achieved through:

1. Assessing the psychological stress among patients undergoing chemotherapy.
2. Assessing the body image among patients undergoing chemotherapy.
3. Implementing and evaluating the effect of the autogenic relaxation program on psychological stress and body image among patients undergoing chemotherapy.

Research questions

- 1-What is the level of the psychological stress among patients undergoing chemotherapy pre and post the program?
- 2- What is the perception of body image among patients undergoing chemotherapy pre and post the program?
- 3-What is the effect of autogenic relaxation program on psychological stress and body image among patients undergoing chemotherapy pre and post the program?

Research Hypothesis:-

- The autogenic relaxation program will have a positive effect on psychological stress and body image among patients undergoing chemotherapy.

2. SUBJECTS &METHODS

Research design:

A quasi-experimental correlational research design, with one group pre and posttest assessment, was used in conducting the present study.

Setting:

This study was conducted at the oncology unit at benha university hospital, in benha city Qalubia governorate. This unit is located in the medicine department, it contain 2 wards (one male and one female) which have critical room and chemotherapy room.

Subject:

- Subjects type:

A purposive sample

- Subjects size:

Based on the previous studies that examine the same outcome and found significance differences, sample size has been calculated using the following equation: $n = (z^2 \times p \times q) / D^2$ at power 80% and CI 95%, so the sample of the study (40 patients undergoing chemotherapy who are hospitalized at the above mentioned settings and fulfill the following inclusion and exclusion criteria:

Inclusion criteria:

- 1- Patients diagnosed with cancer, Over 18 years.
- 2- Undergoing chemotherapy.
- 3- Agree to participate in the research.

Exclusion criteria:

Patients have mental diseases

Tools of data Collection:

In order to fulfill the aim of the study, the data will be collected by using the following tools

Tool (1): *structured interview Questionnaire:*

It was developed by the researcher based on scientific review of literature, it include two parts:

Part A: Patient Socio demographic data such as: (patient's age, sex, occupation, education ...etc.)

Part B: Clinical characteristics such as: onset of cancer, type of cancer and route of administration).

Tool (2):- Stress Scale

This scale was developed by (**Jacob, 2015**). It was translated into Arabic and tested for reliability and validity by (**Mostafa, 2017**). It's used to assess psychosocial stress; it consisted of 25 items in the form of scale covering psychological (13), physiological (4), social (6) and spiritual areas of stress (2). Positive and negative statements were included in the scale. The response alternatives were always, sometimes, rarely and never. These responses score as 1, 2, 3 and 4 for positive items and 4, 3, 2 and 1 for negative items.

Positive statements (12 statements): 1, 2, 3, 4, 5, 6, 7, 14, 15, 18, 19 and 24.

Negative statements (13 statements): 8, 9, 10, 11, 12, 13, 16, 17, 20, 21, 22, 23 and 25.

Scoring system of stress scale was categorized as follows:

50-60%	Mild
61-70%	Moderate
>70%	Severe

Tool (3):- Body Image Scale

This scale developed by **Edel McDermott (2013)** to measure body image .It includes 30 items, each question a answered from 0 to3 grade where no negative body image scored as 0,mild negative body image scored as 1, moderate negative body image scored as 2, highly negative body image scored as 3,appositively the negative items scored.

Scoring system

0-13: indicate no negative body image

14-43: indicate mild negative body image

44-73: indicate moderate negative body image

74-90: indicate highly negative body image

Data Collection Procedure**Administrative Approval**

An official approval was obtained from the Dean of Faculty of Nursing and the director of Benha University Hospital and from all participants in the study through official letters that sent to the head of department explaining the aim of the

study. Assured complete confidentiality of the obtained information and the study would not affect in any the work or patient care. The results of the study, along with the recommendations will be forwarded to the hospital administration for possible application, to obtaining their permission and help in conduction and facilitate data collection.

Meetings were held between the researchers and the patients undergoing chemotherapy at Benha University Hospital. The aim of the study was discussed with them. The time for data collection and program implementation were also determined based on their views to gain their approval and cooperation

Tool Reliability and Validity

Content validity of tools was carried out by a Jury of 5 experts of psychiatric mental health nursing and medical field as some modifications was done in rephrasing of some sentences to give the right meaning in Arabic translation for stress scale and body image scale to become easier and more understandable for the patients. In addition, the researcher gathering positive sentences in sequence followed by negative sentences in stress scale to become easier in gathering data. Test re-test reliability was done, 0.88 for stress scale and 0.90 for body image scale.

Pilot Study

During August 2019, before collecting data, the revised questionnaires were piloted with 10% from the total sample (4 patients) to test the clarity of questionnaires and to evaluate the effectiveness of the proposed data collection tools and assess the feasibility of the study. In addition to estimating the time needed to fill questionnaires. No modifications were done and patients included in the pilot study were included in the main study subjects.

Field work:

Before beginning collecting data, a brief explanation of the aim of the study was given to the study subjects. Data collection was conducted throughout the following phases:

Phase 1 (assessment phase): Data collected during the period of (September 2019). Throughout this phase, Socio-demographic Questionnaire, Stress Scale, Body Image Scale was distributed on the studied patients to test the level of stress and body image toward chemotherapy. The collected data analyzed to identify studied patients level of stress and body image

- **Phase 2 (planning phase):** During October 2019 according to the results of the pretest and extensive review of literature, the autogenic relaxation program was designed. The educational materials were designed after reviewing the related literature as the program booklet and the power point presentations. The autogenic relaxation program booklet: Contained the program specification, objectives, timetable, and contents. The power-point presentations: Contained 3 main presentations (50% theory) given 4 sessions each session 60-90 minute, in addition to four sessions covered 50% practice on performing autogenic relaxation technique. The aim of the program was to evaluate the effect of autogenic relaxation program on psychological stress and body image among patients undergoing chemotherapy. To achieve this aim, the program covered the following topics:

- **The 1st session:** Introduction about aim, objectives and content of the sessions.
- **The 2nd session:** Theoretical background about cancer and its causes
- **The 3rd session:** Chemotherapy and its effect
- **The 4th session:** Psychological stress and its causes
- **The 5th session:** Application of methods to improve the body image
- **The 6th session:** Relaxation technique and its benefits
- **The 7th session:** Application of autogenic relaxation technique coping with psychological stress and body image
- **The 8th session:** Summary about the program sessions and post- assessment test

Phase 3 (implementing phase): The sessions were carried out during the period (from November 2019 to the end of Mars 2020)The study hypotheses that the application of the autogenic relaxation program will have a positive effect on

psychological stress and body image among patients undergoing chemotherapy. The planned program was developed and implemented throughout (8) session\ two days \ week. Each session lasted from 60-90 minutes. The patients were classified into five groups: each group consisted of 8 patients. The program has a general objectives and every session has its specific contents and objectives, this was achieved through several teaching methods as, brain storming, lecture, group discussions, demonstration, re -demonstration and intervention booklet using the following media as laptop, PowerPoint, video, and pictures. At end of each session a feedback was taken and also a time was devoted for answering any questions.

Phase 4 (evaluation phase): in (April 2020), the post-test was done to examine to what extent the program improved the psychological stress and body image among patients undergoing chemotherapy. The results were analyzed and interpreted and clinical significance of finding evaluated for comprehended discussion of the data analysis results of the study.

Ethical Consideration

At the interview with patients to collect data they informed about the purpose and benefits of the study, and they were informed that their participation is voluntary and they have the right to refuse to participate in the study without giving any reason. In addition, confidentiality and anonymity of the subjects were assured the coding of all data.

Statistical analysis:

The collected data were organized, coded, computerized, tabulated and analyzed by using the statistical package for social science (SPSS), version (20). Data analysis was accomplished by the use of number, percentage distribution, mean, and standard deviation, and correlation, coefficient. A significant level value was considered when $p < 0.05$.

Table (1) Shows Percentage distribution of studied patient undergoing chemotherapy according to their socio-demographic characteristics, It clarified the studied subjects consists of 40 patients undergoing chemotherapy their mean age 42.3 ± 13.0 years. Among them 62% their age ranged between 18 to 44 years.. Also (65.0%, 75.0% and 60%) of studied subjects were female, married are read write respectively. Regarding to occupation (52.5%) of studied subjects is employed. Regarding to residence (62.5%) of studied subjects from rural area

Figure (1) Shows distribution of studied subject regarding their type of cancer, it reveals 36.0%, 30.0%, 14.0% have breast cancer, Hodgkin's and liver cancer respectively.

Figure (2) Reveals distribution of onset of cancer among the studied subjects undergoing chemotherapy, it clarifies that (72.0%) of studied subject were suffering from cancer from less than 6 months.

Figure (3) Reveals distribution of chemotherapy route of administration among the studied subjects, it shows that the majority (88.0%) of studied subject takes chemotherapy in the form of intravenous injection.

Table (2) shows percentage distribution of studied patient undergoing chemotherapy according to level of stress in pre and post program, it clarifies there are highly statistically significant differences pre and post program mean scores of the patient stress level.

Figure (4) reveals comparison between total body image among studied patients pre and post program implementation) illustrates that there is decrease in the level of low body image from 82.50% to 20.00% post program than before program and increase in the level of high body image from 12.5% to 35% post program than before with a highly statistically significant difference at p -value $< 0.001^{**}$

Table (3) reveals relationship between socio-demographic characteristics of studied patients undergoing chemotherapy and the mean score of total stress pre and post program implementation. It illustrates that there is no statistically significant difference between all socio-demographic characteristics items and the mean score of total stress among studied patients pre and post program implementation at p -value > 0.05 .

Table (4) lustrates relationship between socio-demographic characteristics of studied patients undergoing chemotherapy and the mean score of total body image pre and post program implementation. It indicates that there is no statistically significant difference between all socio-demographic characteristics items and the mean score of total of body image among studied women pre and post program implementation at p -value > 0.05 .

Table (5) Reflects correlation between mean score of total stress and mean score of total body image among studied patients undergoing chemotherapy pre and post program implementation. It shows that, there is a highly statistically significant negative correlation between mean score of total stress and mean score of total body image of studied patients pre and post program implementation at p- value <0.001**. This is meaning when stress decrease body image increase.

Table (1) Percentage distribution of studied patient undergoing chemotherapy according to their socio-demographic

Variables	No	
Age		
18-44	25	62.0
45-60	11	25.0
over60	4	13.0
X-±SD	42.3±13.0	
Sex		
Male	14	35.0
Female	26	65.0
Marital status		
Single	4	10.0
Married	30	75.0
Divorced	3	7.5
Widowed	3	7.5
Education		
Illiterate	3	7.5
read& write	24	60.0
intermediate education	7	17.5
university education	6	15.0
Occupation		
Employed	21	52.5
Unemployed	19	47.5
Residence		
Urban	15	37.5
Rural	25	62.5

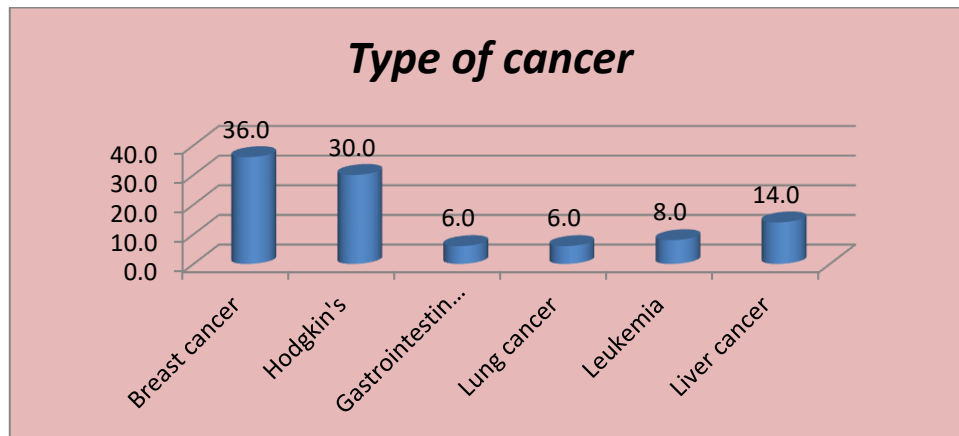


Figure (1) distribution of studied subject regarding their type of cancer (N=40).

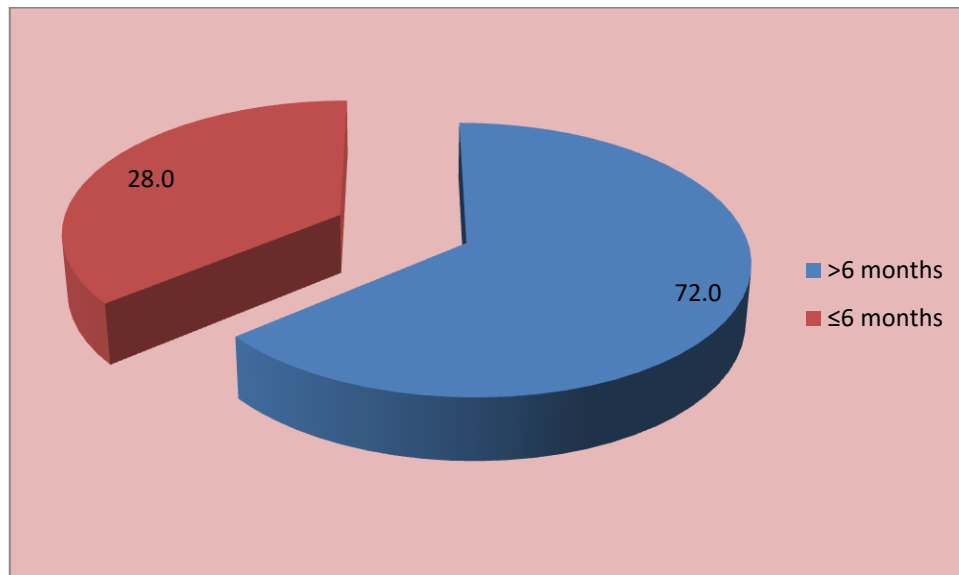


Figure (2) distribution of onset of cancer among the studied subjects undergoing chemotherapy (N=40).

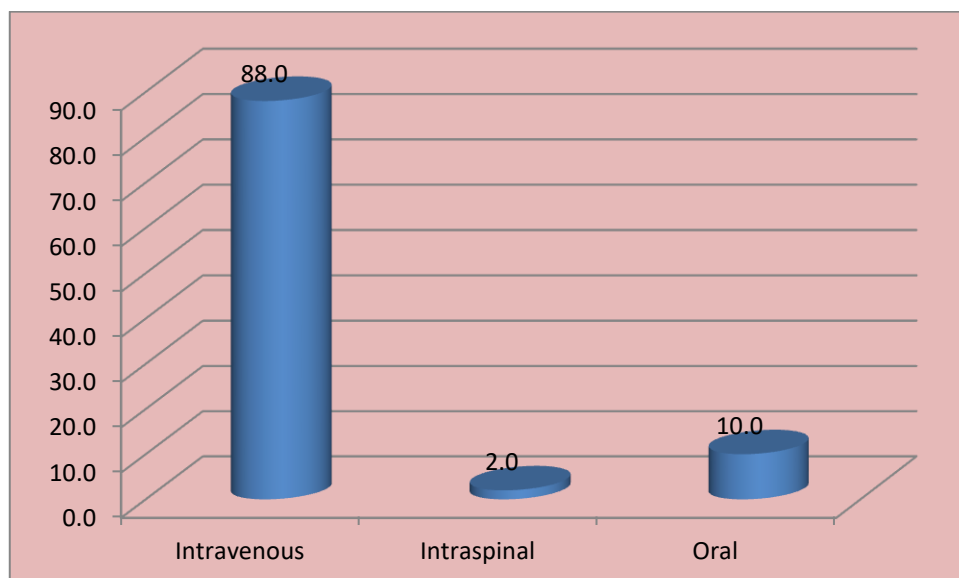


Figure (3) distribution of chemotherapy route of administration among the studied subjects (N=40)

Table (2) Percentage distribution of studied patient undergoing chemotherapy according to level of stress in pre and post program (N=40).

Items	Pre program		Post program		X ²	P-value
	N	%	N	%		
Psychological area						
Mild	15	37.5	32	80.0	20.16	<0.001**
Moderate	12	30.0	7	17.5		
severe	13	32.5	1	2.5		
Physiological area						
Mild	15	37.5	30	75.0	22.00	<0.001**
Moderate	19	47.5	6	15.0		
severe	6	15.0	4	10.0		
Social area						
Mild	20	50.0	30	75.0	18.00	<0.001**
Moderate	11	27.5	7	17.5		
severe	9	22.5	3	7.5		
Spiritual area						
Mild	8	20.0	36	90.0	28.00	<0.001**
Moderate	18	45.0	3	7.5		
severe	14	35.0	1	2.5		
Total						
Mild	15	37.5	32	80.0	22.15	<0.001**
Moderate	14	35.0	7	17.5		
severe	11	27.5	1	2.5		

** Highly statistically significant

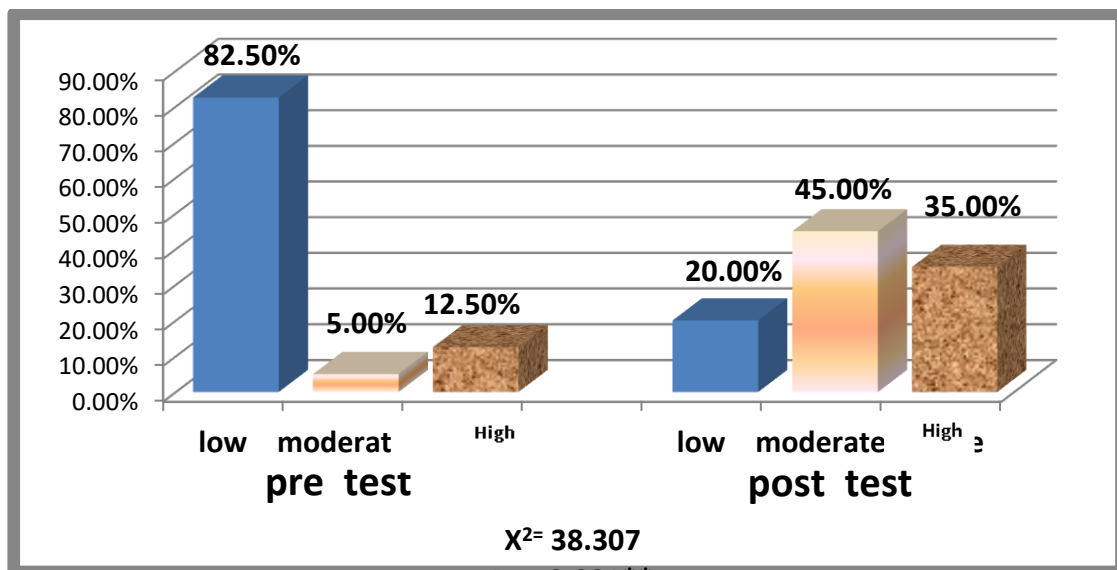


Figure (4) Comparison between total body image among studied patients pre and post program implementation (N=40).

Table (3): Relationship between socio-demographic characteristics of studied patient undergoing chemotherapy and the mean score of total stress pre and post program implementation (N=40)

Socio-demographic characteristics		N	Total stress										
			Pre Test			ANOVA or T-test		Post Test			ANOVA or T-test		
			Mean	±	SD	test value	P-value	Mean	±	SD	test value	P-value	
Age	18-44	25	78.500	±	11.902	F	0.978	> 0.05	68.750	±	20.839	1.488	> 0.05
	45-60	11	69.200	±	17.681				54.800	±	13.710		
	over60	4	74.375	±	15.802				59.375	±	14.773		
Sex	Male	14	69.364	±	17.959	T	1.631	> 0.05	57.409	±	17.440	0.987	> 0.05
	Female	26	71.375	±	16.597	F			57.625	±	15.654		
Marital status	Single	4	72.899	±	17.776	F	0.799	> 0.05	62.667	±	19.284	0.678	> 0.05
	Married	30	75.524	±	13.400				67.444	±	14.875		
	Divorced	3	72.219	±	15.309				59.031	±	15.047		
	Widowed	3	72.219	±	15.309				59.031	±	15.047		
Education level	Illiterate	5	66.000	±	19.481	F	0.632	> 0.05	47.400	±	8.620	0.873	> 0.05
	Basic education	9	75.222	±	12.194				67.444	±	14.875		
	Secondary	16	71.375	±	16.597				57.625	±	15.654		
	University	10	76.700	±	14.562				59.800	±	16.019		
Occupation	Employed	21	75.524	±	13.400	T	1.751	> 0.05	61.714	±	15.634	1.173	> 0.05
	Unemployed	19	69.947	±	17.171				56.211	±	15.299		
Residence	Rural	25	75.320	±	13.919	T	0.764	> 0.05	59.800	±	14.858	0.184	> 0.05
	Urban	15	70.467	±	17.768				57.933	±	17.056		

>0.05 No statistically significant

Table (4): Relationship between socio-demographic characteristics of studied patient undergoing chemotherapy and the mean score of total level of body image pre and post program implementation (N=40).

Socio-demographic characteristics		N	Total body image										
			Pre Test			ANOVA or T-test		Post Test			ANOVA or T-test		
			Mean	±	SD	test value	P-value	Mean	±	SD	test value	P-value	
Age	18-44	25	66.500	±	15.622	F	0.907	> 0.05	68.750	±	20.839	1.458	> 0.05
	45-60	11	69.200	±	12.731				44.800	±	13.710		
	over60	4	73.375	±	13.782				56.375	±	14.773		
Sex	Male	14	69.364	±	15.519	T	1.413	> 0.05	47.409	±	17.440	0.747	> 0.05
	Female	26	71.375	±	16.597	F			47.625	±	15.654		
Marital status	Single	4	52.899	±	17.576	F	0.722	> 0.05	62.667	±	19.284	0.648	> 0.05
	Married	30	73.524	±	18.300				77.444	±	14.875		
	Divorced	3	72.219	±	12.309				59.031	±	15.047		
	Widowed	3	72.219	±	12.309				69.031	±	15.047		
Education level	Illiterate	5	56.000	±	19.481	F	0.632	> 0.05	47.400	±	8.620	0.793	> 0.05
	Basic education	9	71.222	±	12.194				47.444	±	14.875		
	Secondary	16	71.375	±	19.487				55.625	±	15.654		
	University	10	66.700	±	12.432				39.800	±	16.019		
Occupation	Employed	21	75.524	±	11.250	T	1.231	> 0.05	51.714	±	15.634	1.133	> 0.05
	Unemployed	19	54.947	±	11.161				55.211	±	15.299		
Residence	Rural	25	60.320	±	18.8619	T	0.751	> 0.05	57.800	±	14.858	0.744	> 0.05
	Urban	15	70.467	±	17.768				57.933	±	17.056		

>0.05 No statistically significant

Table (5): Correlation between mean score of total stress and mean score of total level of body image among studied patient undergoing chemotherapy pre and post program implementation(n=40)

Correlation (Pre& Post Test)	Total level of Stress			
	Pre-program		Post-program	
	R	P-value	R	P-value
Total level of body image	-0.473	<0.001**	-0.364	<0.001**

** Highly statistically significant

3. DISCUSSION

The cancer diagnosis brings important changes to the way of living with physical and emotional changes due to discomfort, pain, deformity, dependence and loss of self-esteem. It is common to associate the word "cancer" to a life threatening disease and consider it "morally contagious", even avoiding to pronounce its name. In addition, the patient must face the different types of treatment for the disease, such as surgeries and radiotherapy and chemotherapy treatments, frequently associated to adverse effects (*Michelone & Santos, 2019*).

The present study aimed to evaluate the effect of autogenic relaxation program on psychological stress and body image among patient undergoing chemotherapy. It was hypothesized that significant improvement effect on psychological stress and body image among patients undergoing chemotherapy after implementation of the program. So the researcher assess the level of psychological stress and body image among studied sample, developing autogenic relaxation Program as therapeutic strategy , implementing this program and evaluating the effect of autogenic relaxation program on psychological stress and body image among patients undergoing chemotherapy

The result of the present study revealed that , more than two third of the studied subject' aged from eighteen to forty four 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 become more stress . This result comes in agreement with a study done by *Abd El-Moneem, (2018)*, who found that the majority of sample was in the middle adulthood.

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, have been associated with an increased risk of cancer and more stress due to there are more responsible for all family and not able to perform this responsibility. These results come with agreement with those results done by *Linet et al., (2018)* who found that, the higher incidences of cancer among young females.

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 *Carozza et al., (2018)* who found that, the majority of their studied groups were lived in low-income rural areas of the United State of America

Concerning the occupation of the studied samples, the present study findings showed that more than half of them were employed. This might be due to patients having financial responsibilities toward their families. These results were similar to study done by *Lehrer et al., (2017)* who found that the majority of his studied sample was employed. But these findings inconsistent with study had done by *Kanji & Ernest (2018)*. who found that two thirds of his studied sample was unemployed.

The result of present study, revealed highly statistically significant differences between pre and post program in all items of physiological area of stress for the patients undergoing chemotherapy, These finding were similar to those of the studies done by *Bennett et al., (2017)* who found that, Autogenic training could reduce the patient's experience of anxiety and depression following chemotherapy. It could be due to Reduction of stress related behavioral reactions by the use of autogenic relaxation decreases stress and affects the immune system by the increase of Band T blood cells to fight cancer.

Also, the study revealed there are statistically and highly statistically significant differences between pre and post program body image for patients undergoing chemotherapy. It is in agreement with **Sloman (2016)** indicated that autogenic relaxation was effective in individuals with a variety of illnesses. Conducted a community-based nursing study in 56 people with advanced cancer. Autogenic relaxation training revealed significant improves in body image.

The result of the present study in congruence with, **Jacob (2015)** found that patients undergoing chemotherapy were experiencing mild to severe stress. But after sessions of autogenic relaxation the patients were experiencing mild stress. The findings of this study showed a significant difference in stress score before and after practicing autogenic relaxation technique. This Confirms that autogenic relaxation technique is effective in reducing stress. These finding were similar to those of the studies done by **Carruthers, (2018)** who found that, AT has been shown to be beneficial to a wide range of disorders such as high blood pressure, asthma, colitis, migraines and acute anxiety and sleep disturbances associated with stress.

It is in line with foregoing findings, **Tsay and Lee (2017)** emphasized that the study result has revealed that: A study was conducted to investigate the effectiveness of an adaptation autogenic relaxation technique to help patients to cope with illness-related stresses. Results showed that the autogenic relaxation technique had a beneficial effect on stress. On the same line, **Antoni et al., (2016)** showed that the autogenic relaxation technique can also be used to reduce stressful thoughts in patients with breast cancer. On the same line, **Kanji, (2017)** showed that These system's response to exercises allow the mind to calm and reduce sympathetic nervous stress and enables 'tapping' into ones own inner healing

As for correlation between mean score of total stress and mean score of total body image of studied patients pre and post program implementation, the current study results revealed that there was a highly statistically significant negative correlation between mean score of total stress and mean score of body image of studied patents pre and post program implementation. This indicated that when stress decrease, body image increase. These finding were similar to those of the studies done by **Walker, et al (2019)** who found that, there appears to be a difference between the control and experimental groups in terms of mean reduction in anxiety and stress scores.

It can be said that, the autogenic relaxation program in the current study has made a positive contribution on psychological stress and body image among studied patients undergoing chemotherapy. The results of this study were consistent with the study hypothesis that the autogenic relaxation program will be significant improvement effect on psychological stress and body image among patients undergoing chemotherapy after implementation of the program.

4. CONCLUSION

There were statistical significant differences between pre/post test regarding total level of stress and total level of body image. There was a highly statistically significant negative correlation between total stress score and total level of body image score of the studied patient's pre / post program implementation This is mean when stress decrease body image increase.. This concluded that the autogenic relaxation program had a positive effect on the psychological stress and body image among studied patients undergoing chemotherapy, which lead to acceptance of the study hypothesis that the autogenic relaxation program will have a positive effect on psychological stress and body image among studied patients undergoing chemotherapy.

5. RECOMMENDATIONS

- Generalization of autogenic relaxation program for all patients undergoing chemotherapy in all hospitals to alleviate their psychological stress and improve body image
- Stress management and assertiveness training program should be given to patients undergoing chemotherapy to relieve their psychological problems and enhance their body image

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