

## Impact of Instructional Intervention Program upon Women's Psychological Health status who Candidates Radiation Therapy for Breast Cancer

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**Abstract: Background:** Radiation therapy is treatment with high-energy rays that destroy cancer cells. It is also affects healthy tissue in the area being treated. There are two main types of radiation therapy that can be used to treat breast cancer external beam radiation this type of radiation comes from a machine outside the body and internal radiation, for this treatment, a radioactive source is put inside the body for a short time. Normal tissues neighboring to the tumor are going to receive variable quantities of radiation, which may result in damaging of these tissues and consequently emergence of adverse effects. **Objectives:** To assess psychological health status before and after instructional intervention and information about psychological treatment. **Methods:** The sample consisted of (100) women, (50) considered as study group, and another (50) the control group. A pretest was done for both groups (study and control), and then the study samples were exposed to an instructional intervention and three-dimensional post tests and the length of time between each test 21 days in Al- Amal National Hospital for Cancer Management and Oncology Teaching Hospital. **Results** shows that psychological sub domains regarding "Anxiety " items at the three-post period (1,2,3) for study group after the implementation of the educational program with comparisons had highly significant differences are at  $P < 0.01$ . Analysis of data was performed through the application of descriptive and inferential statistical data analysis approach. **Recommendations:** the study recommended that the radiation and nuclear medicine hospital must include an instructional intervention program concerning the psychological health care in women Candidates Radiation Therapy for Breast Cancer.

**Keywords:** Breast Cancer, Anxiety, Radiotherapy

Date of Submission: 11-09-2017

Date of acceptance: 26 -09-2017

### I. Introduction

Cancer is an important factor in the global burden of disease. The estimated number of new cases per year is expected to rise from 10.2 million 2002 to 15 million by 2025, 60 % of those cases exist in the developing countries [1]. Globally, Cancer is among the most common causes of morbidity and mortality worldwide, with an estimated 14 million new cases and 8 million deaths in 2012, projected to rise by at least 70% by 2030 breast cancer is the second most common cancer overall, and by far the most common cancer in women. In 2012, worldwide, there are estimated to have 1.67 million new cases (25% of all incident cancer cases) [2]. Breast cancer is one of the most common diseases in which abnormal or malignant cancer cells form in the tissues of the breast [3]. It is not a single disease, but rather a group of diseases that can develop in the ducts, and lobules or other parts of the breast. Breast cancer is the second most common prevalent and diagnosed cancer that affects women and the leading cause of cancer death and disability in world-wide [4] [5]. In Iraq, Breast cancer is the commonest malignancy among women in countries within the Eastern Mediterranean Regions (EMR). In Iraq, it comprises approximately one third of the registered female cancers. Other features that justify increasing efforts for breast cancer control in the EMR include the obvious rise in the incidence rates, the higher frequencies of younger ages and advanced stages at the time of presentation and the likely prevalence of more aggressive tumors resulting in high mortality/incidence ratios [6]. Radiation treatment is based on different kinds of radiation and depends on the different kinds of interaction between the radiation and psychological health status [7].

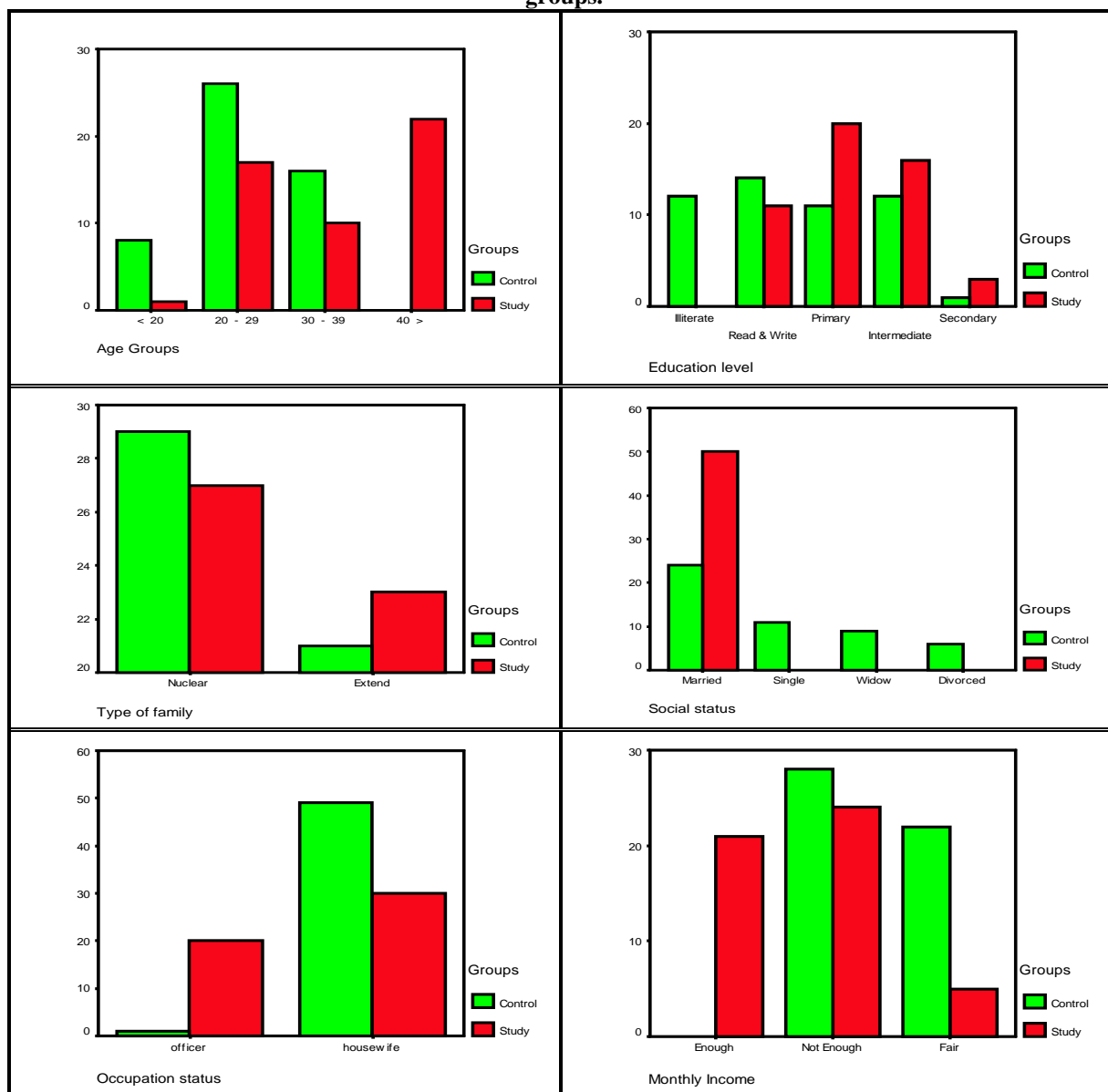
Radiotherapy can be used before or after surgery; before surgery to reduce tumor size and after it to destroy the remaining cells in the breast, chest wall, and axilla (underarm) regions. Normal tissues neighboring to the tumor are going to receive variable quantities of radiation, which may result in damaging of these tissues and consequently emergence of adverse effects [8]. Radiation is a local, targeted therapy designed to kill cancer cells that may still exist after surgery and it is given to the area where the cancer started or to another part of the body to which the Communication with the patient remains the main diagnostic approach to assessing anxiety. A discussion on the reasons for the patient's anxiety can lead to an understanding of how the patient perceives the disease, how she is coping and to identify symptoms for diagnosis [9].

## II. Methodology

A quasi-experimental design was carried out throughout the present study with the application of a pre-posttests approach for the study group and control group after implementation of instructional intervention program. The study was conducted Al- Amal National Hospital for Cancer Management, and Oncology Teaching Hospital is located at the center of Baghdad city, in Al-Rasafa sector. A convenient “Non-probability” sampling technique was used consisting of (100) women Candidates Radiation Therapy for Breast Cancer. Fifty (50) Women considered as (study group) and another (50) women were considered as (control group). The study group was exposed to instructional intervention program; the criterion of this sample was seeking treatment for their skin problem. Data for such assessment was collected from (50) women who were present at Al- Amal National Hospital for Cancer Management, and Oncology Teaching Hospital who women Candidates Radiation Therapy for Breast Cancer An open- ended questionnaires was used, structured interviews by investigator, and group discussion were employed for the benefits of assessing the needs of women’s for such knowledge to reduce their anxiety problems during one month period before starting construction of program from 8<sup>st</sup> of Juan 2016to 6<sup>st</sup> April 2017).

## III. Results

**Figure (1) represented graphically distributions of socio-demographic variables in the studied groups.**



**Figure (1): Bar Charts for Distribution of Socio-demographic Variables for the Studied Groups**

**Table (1): Distribution of the Studied Samples According to (Information about Breast Cancer) Variables with Comparisons Significant**

Information about breast cancer	Groups Classes	Control		Study		C.S. P-value
		No.	%	No.	%	
Period where they had been diagnosed with the disease(Months):	1 m.	4	8	6	12	C.C.=0.438 P=0.000 (HS)
	2 m.	9	18	29	58	
	3 m.	21	42	13	26	
	4 m.	16	32	2	4	
Type of breast cancer	Ductal carcinoma in situ	10	20	33	66	C.C.=0.540 P=0.000 (HS)
	lobular carcinoma in situ	12	24	17	34	
	Infiltrating ductal carcinoma	9	18	0	0	
	Infiltrating lobular carcinoma	11	22	0	0	
	Ductal carcinoma in situ	8	16	0	0	
Method of radiation management	Internal radiation	50	100	50	100	-
	External radiation	0	0	0	0	
The duration to give radiation treatment (Hr.)	≤ 1 h.	50	100	50	100	-
	> 1 h.	0	0	0	0	
Number of sessions set to take radiation therapy	7	7	14	0	0	C.C.=0.490 P=0.000 (HS)
	8	17	34	0	0	
	9	26	52	50	100	
Do you have information about radiation therapy and it's side effects?	Yes	10	20	37	74	C.C.=0.476 P=0.00 (HS)
	No	40	80	13	26	
If yes: From where you get information?	Family and friend	7	14	0	0	C.C.=0.707 P=0.000 (HS)
	Internet	3	6	0	0	
	Lecture	0	0	28	56	
	Media	0	0	5	10	
	Doctor	0	0	4	8	
In which stage of cancer the breasts removed?	Early stage	26	52	6	12	C.C.=0.394 P=0.000 (HS)
	Late stage	24	48	44	88	
Is a family member suffering from breast cancer?	Yes	38	76	21	42	C.C.=0.327 P=0.001 (HS)
	No	12	24	29	58	

(\*) HS: Highly Sig. at P<0.01; NS: Non Sig. at P>0.05; Testing based on a contingency coefficient

Table (1) presented that the highest percentage (42%) in control samples were diagnosed in period of (3) months of disease occurrence, while (58%) for study samples were diagnosed in period of (2) months of disease occurrence, (24%) of control samples were diagnosed with Ductal carcinoma in situ, while (66%) for study samples were diagnosed with Lobular carcinoma in situ, (100%) for both groups managed by internal radiation, (100%) for both samples the duration of radiotherapy session was more the one hour, (52%) (100%) respectively their sessions number were (9), (80%) of control sample have no information about radiation and its side effects, while (74%) of study sample have information about radiation and its effects, (52%) of control samples were in early stage of breast cancer, while (88%) of study samples were in late stage of breast cancer, and (76%) (42%) respectively in both groups have family history of breast cancer.

**Table (2A): Psychological Domain's Items in Different Periods (Pre, and Post) of Applying Educational Program**

Items	Period Response	Pre - Period						Post - Period					W - test	P- value	
		No .	%	M S	S D	R S %	No .	%	M S	S D	RS %				
<b>Psychological Domain</b>															
Anxiety	1	Never	18	36	1.6	0.5	55.3	20	40	1.6	0.4	53.3	-	1.1	0.257 NS
		Some times	31	62				30	60						
		Always	1	2				0	0						
	2	Never	14	28	1.8	0.6	61.3	13	26	1.7	0.4	58.0	-	1.0	0.294 NS
		Some times	30	60				37	74						
		Always	6	12				0	0						
	3	Never	21	42	1.6	0.6	56.0	26	52	1.4	0.5	49.3	-	3.1	0.02 HS
		Some times	24	48				24	48						
		Always	5	10				0	0						
	4	Never	0	0	2.3	0.4	79.3	0	0	2.3	0.4	76.7	-	2.0	0.046 S
		Some times	31	62				35	70						

5	I feel with tense	Always	19	38	2.4	0.5	82.7	15	30	2.1	0.3	72.0	-4.0	0.0
		Never	0	0				0	0					
		Some times	26	52				42	84					
6	I feel that I am not being able to sit safely	Always	24	48	1.9	0.3	63.3	15	30	1.7	0.4	58.7	-2.6	0.0
		Never	5	10				12	24					
		Some times	45	90				38	76					
7	I feel that am unable to relax	Always	0	0	1.9	0.5	63.3	7	14	1.9	0.5	66.0	-1.6	0.1
		Never	10	20				6	12					
		Some times	35	70				37	74					
8	I feel with loss of hope	Always	5	10	1.5	0.7	52.0	29	58	1.5	0.7	51.3	-1.0	0.3
		Never	28	56				15	30					
		Some times	16	32				6	12					
9	I feel that my life has become abnormal	Always	6	12	1.6	0.4	54.0	0	0	1.6	0.4	56.0	-1.7	0.0
		Never	0	0				30	60					
		Some times	27	54				20	40					

**Table (2A)** Results shows that all studied items are successful at the post period of time concerning study group, since many items had a significant differences at  $P < 0.01$ , and as follows:

Regarding subjects sub domain "Anxiety", four items has reported significant differences in at least at  $P < 0.05$  as a resulted by the effectiveness of applying the suggested of instructional program, and they are (radiotherapy did not affect my role in the family, I suffer from boredom due to radiotherapy, I feel with tense, and I feel that I am not being able to sit safely), while the leftover items had no significant differences at ( $P > 0.05$ ) in the items (1,2,7,8,9).

**(2B): Summary Statistics of General Psychological Domain's Items Different Periods (Pre, Post1, Post2, and Post3) of Applying Educational Program with Comparisons Significant Concerning (Anxiety) Sub Domain**

Psychological Domain		No.	Period	MS	SD	RS%	MR	P-value
Anxiety	1	50	Pre	1.66	0.52	55.3	1.85	0.000 HS
			Post-1	1.60	0.49	53.3	1.77	
			Post-2	2.16	0.37	72.0	2.71	
			Post-3	2.80	0.40	93.3	3.67	
	2	50	Pre	1.84	0.62	61.3	3.13	0.000 HS
			Post-1	1.74	0.44	58.0	3.09	
			Post-2	1.16	0.37	38.7	1.95	
			Post-3	1.10	0.30	36.7	1.83	
	3	50	Pre	1.68	0.65	56.0	2.98	0.000 HS
			Post-1	1.48	0.50	49.3	2.67	
			Post-2	1.28	0.45	42.7	2.31	
			Post-3	1.14	0.35	38.0	2.04	
	4	50	Pre	2.38	0.49	79.3	3.49	0.000 HS
			Post-1	2.30	0.46	76.7	3.41	
			Post-2	1.36	0.48	45.3	1.69	
			Post-3	1.14	0.35	38.0	1.41	
	5	50	Pre	2.48	0.50	82.7	3.66	0.000 HS
			Post-1	2.16	0.37	72.0	3.26	
			Post-2	1.26	0.44	42.0	1.62	
			Post-3	1.12	0.33	37.3	1.46	
	6	50	Pre	1.90	0.30	63.3	3.36	0.000 HS
			Post-1	1.76	0.43	58.7	3.08	
			Post-2	1.14	0.35	38.0	1.84	
			Post-3	1.08	0.27	36.0	1.72	
	7	50	Pre	1.90	0.54	63.3	3.04	0.000 HS
			Post-1	1.98	0.51	66.0	3.17	
			Post-2	1.36	0.48	45.3	2.00	
			Post-3	1.20	0.40	40.0	1.79	
8	50	Pre	1.56	0.70	52.0	2.89	0.000 HS	
		Post-1	1.54	0.71	51.3	2.85		
		Post-2	1.14	0.35	38.0	2.15		
		Post-3	1.10	0.30	36.7	2.11		

9	I feel that my life has become abnormal	50	Pre	1.62	0.49	54.0	2.86	0.000 HS
			Post-1	1.68	0.47	56.0	2.98	
			Post-2	1.28	0.45	42.7	2.18	
			Post-3	1.18	0.39	39.3	1.98	

(\*) **HS: Highly Sig. at P<0.01; S: Sig. at P<0.05; NS: Non Sig. at P>0.05; MS: Mean Score; MR: Mean Ranking ;RS: Relative Sufficiency; SD: Standard Deviation; Testing based on a Friedman's test. Red color items are reversed to the scoring scales assessment**

**Table (2B)** Results shows that psychological subdomains regarding "Anxiety " items at the three post periods (1,2,3) for study group after the implementation of the educational program with comparisons had highly significant differences are at P<0.001.

#### IV. Discussion

The study presented that regarding "Anxiety", sub domain four items has reported significant differences in at least at P<0.05 as a resulted by the effectiveness of applying the suggested of instructional program, and they are (Radiotherapy did not affect my role in the family, I suffer from boredom due to radiotherapy, I feel with tense, and I feel that I am not being able to sit safely), while the leftover items had no significant differences at (P>0.05) in the items (1,2,7,8,9) table (4-3-1A), regarding "Anxiety " items at the three post period (1, 2, 3) for study group after the implementation of the educational program with comparisons had highly significant differences are at P<0.001.[10] stated that anxiety is the most commonly seen in cancer patients. It can occur in four forms i.e. situational anxiety, disease related anxiety, treatment related anxiety and as an exacerbation of pre-treatment anxiety disorder.[16] stated that women (<50 years) represent a minority of breast cancer cases, yet they tend to be overrepresented with respect to demonstrating the poorest psychosocial adjustment during and following treatment. Concerns most frequently reported in this age group pertained to body image, sexual functioning, fertility, relationships, fear of cancer recurrence, and caring for children; failure of healthcare providers to initiate conversations to educate women about treatment side effects early on and/or safely discuss sensitive issues; lack of widespread availability of professional psychosocial programs that are tailored to the unique needs of this age group.

#### V. Conclusion

The majority for control samples was diagnosed in period (3) months of disease and study sample were (2) months of disease, no significant differences at P>0.05 are accounted between studied groups (study and control) at pre-period of time before applying instruction intervention program upon women's Bio-Psychosocial health status for all sub and main domains, except sub psychological domain of "Anxiety", which showed significant difference at P<0.05 between control and study groups.

#### VI. Recommendation

Before starting radiotherapy treatment an instructional intervention program about physical and psychological problem should be implemented to reduce the patient fear of the side effects after the treatment and increase their awareness about these effects and Booklet of instructions should be published and distributed to all women who have breast cancer candidate radiotherapy.

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Nuha Adel Ibrahim. "Impact of Instructional Intervention Program upon Women's Psychological Health status who Candidates Radiation Therapy for Breast Cancer." *IOSR Journal of Nursing and Health Science (IOSR-JNHS)* , vol. 6, no. 5, 2017, pp. 15–20.