

RESEARCH ARTICLE

Effectiveness of an Instructional Program on Knowledge for Breast Cancer Patients Undergoing Chemotherapy

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ABSTRACT

Objectives: To assess the effectiveness of the instructional program on knowledge for breast cancer patients undergoing chemotherapy.

Methods: A quantitative/Quasi-experimental study was conducted among 118 breast cancer patients, (59 study group, 59 control group) the 59 study group has been exposed to the instructional program while the 59 control group has not been exposed to the instructional program. The instrument used in this study Breast Cancer and Chemotherapy Questionnaire (BCCQ).

Results: The study finding shows, a deficit of knowledge among breast cancer patients in the pre-test before the instructional program about breast cancer and chemotherapy, but after the program in the post-test, the knowledge improved, which means that the effectiveness of the instructional program in increasing patients' knowledge about breast cancer and chemotherapy.

Conclusions: The majority of the sample in both the study and control group were answered incorrectly for most items, which means had poor knowledge about breast cancer and chemotherapy for both groups at this point in a pre-test. The patients who were exposed to the instructional program noticed improved knowledge, unlike the patients who were not exposed to the program and still have no information about breast cancer and chemotherapy.

Recommendations: The study recommended conducting continuous educational workshops by the Ministry of Health and health institutions to increase women's knowledge about breast cancer and chemotherapy, as well as encourage them to early detection of breast cancer.

Keywords: Breast cancer, chemotherapy, knowledge, BCCQ.



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INTRODUCTION

Cancer is one of the leading causes of death internationally and the main health problem still present in the world (Al-Jubouri et al., 2021), (Bzeipez & Al-Fayyadh, 2022). where there would be at least 8 million deaths from cancer every year, with the death rate rising from 45% in 2007 to 65% in 2030 (Fadhil & Hassan, 2018). Breast cancer (BC) is the most prevalent form of cancer and the leading cause of cancer death in women worldwide. When compared to other malignancies, breast cancer results in the greatest loss of life years due to incapacity (Pan American Health Organization, n.d). Breast cancer is a difficult condition that frequently starts as a small lesion in the breast and develops into invasive cancer that spreads to the armpit lymph nodes and other organs (Khalifa, 2022).

Chemotherapy is a common breast cancer therapy that uses drugs to stop or slow the growth of breast cancer cells (Mohammed, 2018), (Hayder & Mohammed, 2018). Chemotherapy minimizes cancer symptoms and shrinks tumors, which aids in the treatment or palliation of the disease (Abid & Mohammed, 2021).

Breast self-examination (BSE), an important screening method for early diagnosis of BC, is not practiced by women in third-world countries for a variety of reasons. Early detection of BC has a significant role in reducing death and morbidity (Ewaid et al., 2018).

Women in Baghdad, Iraq, had a limited understanding of breast cancer. So that women can identify any symptoms as soon as possible, knowledge of indications, risk factors, and protective factors is important (Hasan et al., 2015).

METHOD

Study Design: A quantitative/Quasi-experimental design (Two group pretest-posttest) study group and control group, were used to guide this study. That is stated earlier to assess the effectiveness of an instructional program on knowledge for breast cancer patients undergoing chemotherapy.

Study Sample: non-probability (purposive) sample of 118 patients who have breast cancer undergoing chemotherapy, (59 study group, 59 control group) the 59 study group has been exposed to the instructional program while the 59 control group has not been exposed to the instructional program.

The Study Instrument: The data was collected using the socio-demographic characteristics of the patients, and the Breast Cancer and chemotherapy knowledge scale (BCCQ).

Validity of the questionnaire: The content validity is assessed through a panel of (10) experts from different scientific branches in nursing colleges and oncologists in Al-Falluja Teaching Hospital.

Reliability of the Questionnaire: The reliability of the instrument was determined through the computation of Alpha Cronbach's test (Alpha Correlation Coefficient).

RESULTS

Table (1) illustrated the demographical data of the study and control groups of the study sample. The majority of the study group age was within the age group 38-47 years accounted for (44.1%), while the control group age 38-47 years accounted for (35.6%). The body mass index BMI 30 and above accounted for both the study and control groups respectively (42.4 %, 50.8%). Regarding the question of family history, most of the study and control group respondents answer no. relationship of kinship questions the majority of all of the study and control group respondents answers none.

Table (2) illustrated a descriptive analysis of knowledge of breast cancer studied samples for the study group at pre and post-test periods in terms of mean and standard deviation. It can be seen clearly that most of the items on the Chemotherapy Knowledge Scale showed poor levels before applying for the program as compared to the post-test period which is after applying for the program where most items had a good level furthermore, this table showed that overall assessment of the studied sample knowledge was fair at post-test period while poor level at pretest period for the study group.

Table (3) showed the descriptive analysis of knowledge of breast cancer studied samples for the control group at pre and post-test periods in terms of mean and standard deviation. It can be interpreted that the most of study items were within a poor level of knowledge for both pre and post-test periods of the current study.

Table (4) showed a comparison of the overall Knowledge levels for studied breast cancer samples between the Study and control groups by Independent t-test. The findings showed that there is no significant difference between the study and control groups regarding overall knowledge before applying for the instructional program at $p \leq 0.05$. While there is a significant mean difference regarding overall knowledge levels between the study and control groups of the current study after applying for the instructional program at $p \leq 0.05$.

Table (1): Descriptive statistical analysis of Demographical Characteristics for Patients with Breast Cancer (N=118)

Variables	Groups	Study Group		Control Group	
		F	%	F	%
Age groups	18-27	1	1.7	2	3.4
	28-37	9	15.3	10	16.9
	38-47	26	44.0	21	35.6
	48-57	13	22.0	11	18.6
	58-67	8	13.6	13	22.01
	67 and above	2	3.4	2	3.4
	Total	59	100.0	59	100.0
Body Max Index	18.5-24.9	13	22.0	9	15.3
	25-29.9	21	35.6	20	33.9
	30 and above	25	42.4	30	50.8
	Total	59	100.0	59	100.0
Family history	Yes	11	18.6	18	30.5
	No	48	81.4	41	69.5
	Total	59	100.0	59	100.0
Relationship of kinship	None	43	72.9	42	71.2
	First-degree relationship	10	16.9	9	15.3
	Second-degree relationship	6	10.2	8	13.6
	Totally	59	100.0	59	100.0

Table (2): Descriptive Analysis of knowledge of Breast Cancer Studied Samples for the study Group at Pre and Post-Tests periods

No.	Breast Cancer and Chemotherapy Questionnaire (BCCQ-15)	Pre-test			Post-test		
		M.S.	S.D.	Ass.	M.S.	S.D.	Ass.
1	Breast cancer is more common in women with big breasts.	0.38	0.491	P	0.79	0.405	G
2	Lumps in the breast that are cancer are usually painful.	0.33	0.477	P	0.76	0.429	G
3	Changes found in the breast during breast self-examination (BSE) are usually breast cancer.	0.38	0.491	P	0.81	0.392	G
4	A change in the color or discharge of a women's nipple could be a sign of breast cancer.	0.49	0.504	P	0.84	0.362	G
5	If a woman's mother or sister had breast cancer, she is more likely to get breast cancer.	0.40	0.495	P	0.57	0.498	F
6	One of the best ways to find breast cancer is monthly BSE	0.10	0.304	P	0.44	0.500	P
7	A woman who eats foods high in fat and little fruit and vegetables may be more likely to get breast cancer.	0.50	0.504	F	0.81	0.392	G

8	The best time to check for lumps in the breast is just after the period ends.	0.27	0.448	P	0.59	0.495	F
9	Doctors and nurses are the only ones who could find a lump in the breast.	0.30	0.464	P	0.66	0.477	F
10	A women's chance of surviving breast cancer is very low, even if it is found early.	0.38	0.491	P	0.57	0.498	F
11	Chemotherapy is a treatment that can weaken and destroy cancer cells in the body.	0.72	0.448	F	0.93	0.253	G
12	Cancer chemotherapy is a systemic treatment that affects only the cancer cells.	0.40	0.495	P	0.55	0.500	F
13	Complete Chemotherapy treatment is made up of several cycles.	0.89	0.304	G	0.96	0.182	G
14	Chemotherapy medicines can only be given intravenously	0.27	0.448	P	0.74	0.439	F
15	Chemotherapy is highly associated with nutrition-related side effects such as anorexia, nausea, vomiting, mucositis, diarrhea, and constipation	0.83	0.378	G	1.00	0.000	G
Overall assessment of the studied sample knowledge		0.44	0.217	P	0.73	0.165	F

M.S. =Mean of the score; S.D. = Standard deviation; Ass. = assessment; No.= Number; Level of assessment: (0-0.49) = Poor (P); (0.50-0.75) = Fair (F); (0.76-1) = Good (G).

Table (3) Descriptive Analysis of Knowledge of Breast Cancer Studied Samples for the Control Group at Pre and Post-Tests Periods

No.	Breast Cancer and Chemotherapy Questionnaire (BCCQ-15)	Pre-test			Post-test		
		M.S.	S.D.	Ass.	M.S.	S.D.	Ass.
1	Breast cancer is more common in women with big breasts.	0.39	0.492	P	0.51	0.504	F
2	Lumps in the breast that are cancer are usually painful.	0.42	0.498	P	0.46	0.502	P
3	Changes found in the breast during breast self-examination (BSE) are usually breast cancer.	0.53	0.504	F	0.68	0.471	F
4	A change in the color or discharge of a women's nipple could be a sign of breast cancer.	0.44	0.501	P	0.51	0.504	F
5	If a woman's mother or sister had breast cancer, she is more likely to get breast cancer.	0.32	0.471	P	0.46	0.502	P
6	One of the best ways to find breast cancer is monthly BSE	0.10	0.305	P	0.19	0.393	P
7	A woman who eats foods high in fat and little fruit and vegetables may be more likely to get breast cancer.	0.61	0.492	F	0.66	0.477	F
8	The best time to check for lumps in the breast is just after the period ends.	0.24	0.429	P	0.41	0.495	P
9	Doctors and nurses are the only ones who could find a lump in the breast.	0.32	0.471	P	0.42	0.498	P

10	A women's chance of surviving breast cancer is very low, even if it is found early.	0.34	0.477	P	0.41	0.495	P
11	Chemotherapy is a treatment that can weaken and destroy cancer cells in the body.	0.69	0.464	F	0.80	0.406	G
12	Cancer chemotherapy is a systemic treatment that affects only the cancer cells.	0.25	0.439	P	0.39	0.492	P
13	Complete Chemotherapy treatment is made up of several cycles.	0.85	0.363	G	0.92	0.281	G
14	Chemotherapy medicines can only be given intravenously	0.19	0.393	p	0.19	0.393	P
15	Chemotherapy is highly associated with nutrition-related side effects such as anorexia, nausea, vomiting, mucositis, diarrhea, and constipation	0.83	0.378	F	0.98	0.130	G
Overall assessment of the studied sample knowledge		0.43	0.225	P	0.53	0.234	F

M.S. =Mean of the score; S.D. = Standard deviation; Ass. = assessment; No.= Number; Level of assessment: (0-0.49) = Poor (P); (0.50-0.75) = Fair (F); (0.76-1) = Good (G).

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		M.S.	S.D.	Ass.	M.S.	S.D.	Ass.
1	Breast cancer is more common in women with big breasts.	0.39	0.492	P	0.51	0.504	F
2	Lumps in the breast that are cancer are usually painful.	0.42	0.498	P	0.46	0.502	P
3	Changes found in the breast during breast self-examination (BSE) are usually breast cancer.	0.53	0.504	F	0.68	0.471	F
4	A change in the color or discharge of a women's nipple could be a sign of breast cancer.	0.44	0.501	P	0.51	0.504	F
5	If a woman's mother or sister had breast cancer, she is more likely to get breast cancer.	0.32	0.471	P	0.46	0.502	P
6	One of the best ways to find breast cancer is monthly BSE	0.10	0.305	P	0.19	0.393	P
7	A woman who eats foods high in fat and little fruit and vegetables may be more likely to get breast cancer.	0.61	0.492	F	0.66	0.477	F
8	The best time to check for lumps in the breast is just after the period ends.	0.24	0.429	P	0.41	0.495	P
9	Doctors and nurses are the only ones who could find a lump in the breast.	0.32	0.471	P	0.42	0.498	P
10	A women's chance of surviving breast cancer is very low, even if it is found early.	0.34	0.477	P	0.41	0.495	P
11	Chemotherapy is a treatment that can weaken and destroy cancer cells in the body.	0.69	0.464	F	0.80	0.406	G

12	Cancer chemotherapy is a systemic treatment that affects only the cancer cells.	0.25	0.439	P	0.39	0.492	P
13	Complete Chemotherapy treatment is made up of several cycles.	0.85	0.363	G	0.92	0.281	G
14	Chemotherapy medicines can only be given intravenously	0.19	0.393	p	0.19	0.393	P
15	Chemotherapy is highly associated with nutrition-related side effects such as anorexia, nausea, vomiting, mucositis, diarrhea, and constipation	0.83	0.378	F	0.98	0.130	G
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M.S. =Mean of the score; S.D. = Standard deviation; Ass. = assessment; No.= Number; Level of assessment: (0-0.49) = Poor (P); (0.50-0.75) = Fair (F); (0.76-1) = Good (G).

DISCUSSION

Table (1) shows the demographical data of the study and control groups the of study sample. More than a quarter of the sample of the study group age was within the age group 38-47 years accounted for (44.1%), while the control group age 38-47 years accounted for (35.6%). The results supported by this study Breast Cancer: demographic characteristics and clinic-pathological Presentation of Patients in Iraq. A Case recording and clinical examination design, at the Training Centre for Early Detection of Breast Tumours in the Medical City Teaching Hospital in Baghdad, Iraq. That shows this study was carried out on (721) out of a total of 5044 patients (14.3%) presenting with breast cancer diagnosed at the age (of 40-49) years (Emhj, 2010).

The body mass index BMI 30 and above accounted for both the study and control groups respectively (42.4 %,50.8%). A similar study (Dietary Habits of Iraqi Women with Breast Cancer at Oncology Hospitals in Baghdad City: Comparative Study) reported that the highest percentage is referring that women being overweight in both groups; the case and study are 38% and 44% (Mahalhal& Ghafel, 2021).

Regarding the question of family history, most of the study and control group respondents answer no. relationship of kinship questions the majority of all of the study and control group respondents answers none. The results supported by this study descriptive study (Assessment of Breast Tumors among Iraqi Women at Women Health Center in Baghdad City: Comparative Study Introduction), in the Al-Rsafa sector including (100) Iraqi women this study shows The highest percentage of women more than half (76%) had no known family history of breast cancer, (85%) had no prior incidence of breast cancer in their first-degree relatives, (84%) had no prior incidence of breast cancer in their

second-degree relatives, (75%) had no current family members with cancer, (81%) had no other types of cancer in their families, and the highest percentage of women (76%) had no breast cancer at all (Ghafel& Tuffah, 2019).

Table (2) shows a descriptive analysis of knowledge of breast cancer studied samples for the study group at pre and post-test periods in terms of mean and standard deviation. It can be seen clearly that most of the items on the Chemotherapy Knowledge Scale showed poor levels before applying for the program as compared to the post-test period which is after applying for the program where most items had a good level furthermore, this table showed that overall.

Table (3) showed the descriptive analysis of knowledge of breast cancer studied samples for the control group at pre and post-test periods in terms of mean and standard deviation. It can be interpreted that the most of study items were within a poor level of knowledge for both pre and post-test periods of the current study.

Table (4) showed a comparison of the overall Knowledge levels for studied breast cancer samples between the Study and control groups by Independent t-test. The findings showed that there is no significant difference between the study and control groups regarding overall knowledge before applying for the instructional program at $p \leq 0.05$. While there is a significant mean difference regarding overall knowledge levels between the study and control groups of the current study after applying for the instructional program at $p \leq 0.05$. this means that the instructional program is effective in increasing patient knowledge about breast cancer and chemotherapy.

CONCLUSIONS

There is a highly significant relationship between case group results (pre-application of the instructional program, after applications of the instructional program. The majority of the sample in both the study and control group were answered incorrectly for most items, which means had poor knowledge about breast cancer and chemotherapy for both groups at this point in a pre-test. The patients who were exposed to the instructional program noticed improved knowledge, unlike the patients who were not exposed to the program and still have no information about breast cancer and chemotherapy.

RECOMMENDATIONS

The study recommended conducting continuous educational workshops by the Ministry of Health and health institutions to increase women's knowledge about breast cancer and chemotherapy, as well as encourage them to early detection of breast cancer.

Ethical Considerations: The research's conduct has been approved by the research ethics committee of the College of Nursing at Baghdad University. By completing an acceptance form, each participant in the study confirmed that they were aware of their rights as human beings.

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