Assessment of The Nurses' Knowledge about Skin Care For Patients Undergo Radiotherapy of Breast Cancer at Al –Amal National Hospital for Cancer Management in Baghdad City.

تقييم معارف الممرضين حول العناية الجلدية للمرضى الخاضعين للعلاج الاشعاعي لسرطان الثدي في مستشفى الأمل الوطني لعلاج السرطان في مدينة بغداد

Dr. Wafaa M. Atoof Al-Attar/ Prof. Iraqi National Cancer Research Center/ Baghdad University

wafaattoof@yahoo.com

الخلاصة

الهدف: تهدف الدراسة إلى التعرف على معارف الممرضين تجاه العناية الجلدية لمرضى سرطان الثدي الخاضعين للعلاج الإشعاعي

المنهجية : تم اختيار سبعون ممرض وممرضة للتحقيق اهداف الدراسة. واجريت الدراسة خلال شهر شباط/ في مستشفى الأمل الوطني لعلاج السرطان في مدينة بغداد. ويتألف الاستبيان من محورين المحور الاول تضمن الصفات الديموغرافية للممرضين والمحور الثاني تضمن فقرات تتعلق بمعارف الممرضين حول العناية بالجلد للمرضى الخاضعين للعلاج الاشعاعي وتكونت من (20) فقرة وقد تم تحليل البيانات باستخدام التكرارات، والنسبة المئوية والمتوسط الحسابى واختبار مربع كاى

النتائج: اظهرت نتائج الدراسة أن معظم معارف الممرضين تراوحت مابين منخفضة (40٪) ومتوسطة (45.7٪)،وتبين وجود فروق ذات دلالة إحصائية بين معارف الممرضين ومتغيرات العمر، ومستوى التعليم، وسنوات الخبرة في وحدة العلاج الإشعاعي وعدد الدورات التدريبية بمستوى معنوية (P<0.05) .

الاستنتاج: استنتج الباحث بان معارف الممرضين غير كافية حول العناية بالجلد لمرضى سرطان الثدي الخاضعين للعلاج الإشعاعي

التوصيات: يوصى الباحث بزيادة التركيز على معارف الممرضين من خلال دورات تتعلق بكيفية العناية بالجلد لمرضى سرطان الثدي الخاضعين للعلاج الإشعاعي وتحديد الاعراض من التاثيرات الجانبية للعلاج الاشعاعي والوقاية منه.

ABSTRACT

Objectives: The study aims to identify the nurse's knowledge toward skin care for patients undergo radiotherapy breast cancer

Methodology: Seventy nurses were selected to achieve the objectives of the study. The study was conducted during Feb./2014 at Al –Amal National Hospital for Cancer Management in Baghdad City. The questionnaire consists of two parts first part: included demographic characteristics of the nurses and the second part: included clauses relating to the knowledge of nurses about skin care to patients undergoing radiation therapy consisted of (20) items .Data were analyzed by using Frequency, percentage and chi-squared test.

Results: The study results showed that most of nurse's Knowledge was range between low(40%) and moderate(45.7%)and there were significant differences between nurse's knowledge and nurse's variables age, level of education, years of experience in radiotherapy unit and number of training sessions at ($p<0.05$).

Conclusion: The researcher concluded that the nurse's knowledge is insufficient about skin care for patients undergoing radiotherapy of breast cancer.

Recommendation: It is recommended increase the researcher to focus on the nurses knowledge about skin care for patients undergoing radiotherapy of breast cancer and to identify the symptoms of the side effects of radiation therapy and prevention.

Keywords: breast cancer, skincare, radiotherapy

INTRODUCTION:

Breast cancer is one of the most fearful illnesses for women. It accounts for nearly one of every three cancers diagnosed[1]. Breast cancer is the most common form of malignancy and accounts for 13% of all cancers diagnosed in the UK[2]. Carcinoma of the breast is the most prevalent cancer among Iraqi women and constitutes 29% of Iraqi Cancer Registry cases and 32% of all female cancers[3].

The modalities for the treatment of breast cancer are surgery, chemotherapy, hormone therapy and radiation therapy. More than half of breast cancer patients will undergo radiation therapy, where ionizing radiation will cause cells, both normal and malignant, to be destroyed[4].

The goal of radiotherapy is to provide maximum benefit to the patient with minimal side effects[5]. However, even with the most modern radiotherapy techniques, up to 90% of patients will experience a dose-dependent skin reaction at the treated area[1]. Skin reactions to radiation can range from a mild "sunburn" effect to severe rash and swelling[4]. Skin reactions related to radiation therapy usually manifest within 1–4 weeks of radiation start, persist for the duration of radiation therapy, and may require 2–4 weeks to heal after completion of therapy. The severity of the skin reaction ranges from mild erythema (red rash) and dry desquamation (itchy, peeling skin) to more severe moist desquamation (open wound) and ulceration. After the initial dose of radiation, tissue damage occurs immediately, and every subsequent fraction of radiation generates inflammatory cell recruitment. Acute radiation dermatitis is the combined result of a decrease in functional stem cells, changes in the skin's endothelial cells, inflammation, and skin-cell necrosis and death. Potential complications of radiation dermatitis in the acute setting include local infection[5]. The pathophysiology of a radiation skin reaction is a combination of radiation injury and the subsequent inflammatory response and can occur at both the entrance and exit site of the irradiation [6,7].

The reaction's presentation will to some degree impact on the physiological, emotional and financial well-being of the patient, and can be significant enough to warrant cessation of the radiation treatment[1].

Skin care protocols are compiled by radiation therapy departments to prevent, and manage, acute and chronic skin reactions. The protocols aim to maintain cleanliness, protect skin integrity, alleviate pain, protect from trauma, prevent and control infection and odor, and promote wound healing[6,,8,9]

Patients need guidance, education, and support from nurses to navigate the healthcare system and the cancer- care continuum. Provide education, encouragement, problem-solving help, and resource assistance to them and their families. Teaching is a primary responsibility of nursing care for radiation patients[10]. The vital role of the oncology nurse is assessment of skin reactions, patient education regarding skin care, prevention, and managing skin breakdown if it occurs[1,11].

Radiation oncology nurses have access to all of the information they need, to provide the excellent patient care we do so very well! Our challenge is to grow along with our specialty, keeping up with new treatment procedures and protocols, using evidence-based interventions, and taking care of ourselves so we can give necessary support and caring to patients[12].

OBJECTIVES OF STUDY:

1- To identify the nurse's knowledge toward skin care of breast cancer patients undergo radiotherapy.
2- To find an association between nurses knowledge level And their socio-demographic characteristics

METHODOLOGY

Design of the study: Descriptive analytical study was used in this study.

Sample of the study: The total number of participants recruited for the study was 70 nurses

Setting of the study: Data were collected from at Al –Amal National Hospital for Cancer Management in Baghdad City and conducted during Feb./2014.

Instruments: The questionnaire was constructed for the purpose of the study

Consisted two parts:

Part I: Demographic Date Sheet: This part concerned with personal information include, the nurses (gender, age, educational level, years of employment, years of experience in radiotherapy unit and number of training sessions).

Part II: Nurses knowledge: knowledge questionnaire will be developed by the researcher to assess knowledge regarding skin care of breast cancer patients under radiotherapy included (20) items, each item was rated and scored as(3) for I know ,(2) uncertain and(1) don't know, relative sufficiency that the cut- off point were(2)with low limits for acceptance were 66.66, which consider of items in the assessment of knowledge as the following:

(66.66-77.7%) was low, **(77**.8-88.9%) was moderate, **(89-**100%) was high

Validity of the instrument: validity determined for questionnaire through the use of panel experts who are faculty members from College of Nursing.

Statistical methods: The data were analyzed by using, frequency, percentage, mean of score, relative sufficiency and were tabulated and association between variables was measured with the chi-squared test.

RESULTS:

Table 1: Distribution of the Nurses by Socio-Demography Characteristics

Variables	Number	Percentage
Age (years)		
25-29	21	30
30-34	10	14.3
35-39	18	25.7
40-45	21	30
Total	70	100
Gender		
Male	46	65.7
Female	24	34.3
Total	70	100
Educational Level		
secondary Nursing School	38	54.3
Nursing Institute	12	17.1
college of Nursing	20	28.6
Total	70	100
Years of Employment		
1-5	23	32.9
6-10	16	22.9
11-15	31	44.3
Total	70	100
Years of Experience at Radiation Unit		
1-5	26	37.2
6-10	32	45.7
11-15	12	17.1
Total	70	100
Training Sessions		
No Session	25	35.7
1-5	27	38.6
6-10	4	5.7
11-15	14	20
Total	70	100

Table 1shows that the highest percentages (65.7%) of nurses were males and (30.0 %) and at the age (25-39) and (40-45) years respectively. According to the educational level, the highest percentage (54.3 %) of the nurses were secondary nursing school, and (44.3%) of the sample was related to (11-15) years of employment. Concerning to the years of experience in the radiation therapy unit (45.7%) of the sample was related to (6-10) years and (38.6%) of nurses had (1-5) training session.

Table 2: Nurse's knowledge assessment about skin care for patients undergo radiotherapy of breast cancer

No.	Items related to nurse's knowledge	I know		Uncertain		don't know		M.S.	R.S%	Ass..
		F	%	F	%	F	%			
	Continuing effects on the skin from 1-4 weeks after radiation therapy.	13	18.6	48	68.6	9	12.8	2.05	68.3	L
	Skin area exposed to radiation more sensitive than other areas of the body	39	55.7	28	40	3	4.3	2.51	83.7	M
	Washing the skin with warm water after treatment to avoid overheating and causing thermal shock	43	61.4	20	28.6	7	10	2.51	83.7	M
	Using soap and shampoo that does not contain chemically manufactured materials such as soap or baby shampoo avoid dry skin	36	51.4	24	34.3	10	14.3	2.37	79	M
	Using Deodorant that does not contain chemicals manufactured	26	37.1	37	52.9	7	10	2.27	75.7	L
	using of medical creams keeps the skin non-dry	40	57.1	23	32.9	7	10	2.47	82.4	M
	using of razor blades constantly increase the incidence of skin infections	35	50	32	45.7	3	4.3	2.45	81.9	M
	Using powder kids cause fungal skin infections	22	31.4	37	52.9	11	15.7	2.15	71.9	L
	Use suitable dressings for the amount of exudates. Do not use adhesive dressings.	60	85.7	10	14.3	-	-	2.85	95.2	H
	Using of cosmetics (make-up and perfume) increases skin irritation	26	37.1	27	38.6	17	24.3	2.17	72.4	L
	keeping the skin continuously leads to erythema	35	50	27	38.6	8	11.4	2.39	79.5	M
	Radiation therapy causes skin scaling	48	68.6	14	20	8	11.4	2.57	85.7	M
	Radiotherapy causes dry skin	62	88.6	8	11.4	-	-	2.88	96.2	H
	Radiation therapy causes itchy skin	63	90	7	10	-	-	2.9	96.6	H
	Radiotherapy causes blisters on the skin	67	95.7	3	4.3	-	-	2.95	98.6	H
	Radiation therapy causes the hair loss in the treatment area	31	44.3	36	51.4	3	4.3	2.4	80	M
	Using of hats and cotton clothing that covers all parts of the body from the sun's rays	24	34.3	39	55.7	7	10	2.24	68.3	L
	Rubbing the region exposed to radiation therapy to irritation	37	52.9	20	28.6	3	4.3	2.2	75.7	L
	Put warm compresses on the treat area	16	22.9	50	71.4	4	5.7	2.17	71.9	L
	Smoking worsens mucositis during radiation therapy	12	15.7	48	68.6	10	14.3	2.02	72.4	L
	TOTAL							2.430	80.9	M

M.S. =Mean of score, R.S%=Relative Sufficiency, Ass.= assessment.

Table 2 shows the nurses' knowledge about skin care for patients undergo radiotherapy of breast cancer were low with items, (Smoking worsens mucositis during radiation therapy) (Continuing effects on the skin from 1-4 weeks after radiation therapy), (Using powder kids cause fungal skin infections),(Using of cosmetics (make-up and perfume) increases skin irritation),(Rubbing the region exposed to radiation therapy to irritation) , (Using Deodorant that does not contain chemicals manufactured),(Using of hats and cotton clothing that covers all parts of the body from the sun's rays) was(78.8%)and(put warm compresses on the treat area).

Table 3: Association between the nurse's age and their knowledge score about skin care for patients undergo radiotherapy of breast cancer

Age (years)	knowledge score*							
	Good		fair		poor		Total	
	F	%	F	%	F	%	F	%
25-29	7	10	14	20	-	-	21	30
30-34	-	-	3	4.3	7	10	10	14.3
35-39	-	-	3	4.3	15	21.4	18	25.7
40-45	3	4.3	12	17.1	6	8.6	21	30
Total	10	14.3	32	45.7	28	40	70	100
χ^2= 77.850		df=6		p<0.05		crit=12.59		

*knowledge score (less than 70%) was poor and (70-85%) was fair and (85-100%) was good.

Table 3 revealed that there were significant differences between nurses' knowledge score about skin care for patients under radiotherapy of breast cancer and their age (p <0.05).The majority of age (35-39)years were poor level were (21.4%), and (17.1%) of those with age(40-45)years were fair level.

Table 4: Association between nurses' educational level and their knowledge score about skin care for patients undergo radiotherapy of breast cancer

Educational level	**knowledge score***							
	Good		**fair**		**poor**		**Total**	
	F	%	F	%	F	%	F	%
Secondary Nursing School	6	8.6	15	21.4	17	24.2	38	54.3
Nursing Institute	-	-	3	4.3	9	12.9	12	17.1
college of Nursing	4	5.7	14	20	2	2.9	20	28.6
Total	10	14.3	32	45.7	28	40	70	100
χ^2= 14.694	df=4		p<0.05		crit=9.411-15			

*knowledge score (less than 70%) was poor and (70-85%) was fair and (85-100%) was good.

Table 4 revealed that there were significant differences between nurses 'knowledge score about skin care for patients under radiotherapy of breast cancer and their level of education (p <0.05).The majority at educational level in Secondary Nursing School were (24.2%)were poor and (21.4%) were fair level.

Table 5: Association between the years of experience of nurses in radiotherapy unit and their knowledge score about skin care for patients undergo radiotherapy of breast cancer

Years of Experience at Radiation Unit	knowledge score*							
	Good		fair		poor		Total	
	F	%	F	%	F	%	F	%
1-5	7	10	17	24.3	2	2.9	26	**37.2**
6-10	3	4.3	7	10	22	31.4	32	**45.7**
11-15	-	-	8	11.4	4	5.7	12	**17.1**
Total	**10**	**14.3**	**32**	**45.7**	**28**	**40**	**70**	**100**
χ^2= 29.394	**df=4**		**p<0.05**		**crit=9.48**			

***knowledge score (less than 70%) was poor and (70-85%) was fair and (85-100%) was good.**

Table 5 revealed that there were significant differences between nurses' knowledge score about breast cancer toward skin care under radiotherapy and their years of experience in the radiation therapy unit (p <0.05).The majority of percentage (31.4%) of the sample in years of experience in the radiation therapy unit at(6-10) were poor level and(24.3%)of sample (1-5) were fair.

Table 6: Association between training session of nurses and their knowledge score about skin care for patients undergo radiotherapy

training session	knowledge score*							
	Good		fair		poor		Total	
	F	%	F	%	F	%	F	%
No session	7	10	13	18.6	5	7.1	25	35.7
1-5	3	4.3	15	21.4	9	12.9	27	38.6
6-10	-	-	4	5.7	-	-	4	5.7
11-15	-	-	-	-	14	20	14	20
Total	10	14.3	32	45.7	28	40	70	100
χ^2=33.145	df=6		p<0.05		crit=12.59			

*knowledge score (less than 70%) was poor and (70-85%) was fair and (85-100%) was good.

Table 6 revealed that there were significant differences between nurses' knowledge score about skin care for patients under radiotherapy of breast cancer and their training session (p <0.05).While the majority of percentage (21.4%) had (1-5) training session were fair and (20%) had (11-15) training session of knowledge score were poor levels.

DISCUSSION:

The demographic characteristics of the nurses in the present study was 65.7% were males, the majority of them (30%) at age (25-29) years and (40-45), most of nurses were secondary Nursing School graduated were of (54.3%), 44.3% of nurse's were have (6-10) years of experience in the radiation therapy unit and the majority of the nurses were have(38.6%) where have(1-5) of training session table1.

The findings of the present study revealed that the nurse's Knowledge assessment were low mean of score with items (Smoking worsens mucositis during radiation therapy) was (67.6%) (Continuing effects on the skin from 1-4 weeks after radiation therapy)was(68.3%), (Using

powder kids cause fungal skin infections) was(71.9%),(Using of cosmetics (make-up and perfume) increases skin irritation) was(72.4%) ,(Rubbing the region exposed to radiation therapy to irritation) was(73.3%), (Using Deodorant that does not contain chemicals manufactured) was (75.7%),(Using of hats and cotton clothing that covers all parts of the body from the sun's rays) was(78.8%),(put warm compresses on the treat area was(72.4%) table2.

Many literature and studies mention about general nurses instructions to patients who will undergo radiation therapy such as: Do not use thick creams because creams that have a high content of paraffin or petroleum jelly. Daily washing of the skin with mild soap and water. Cosmetics, perfume and powder increases skin irritation. Deodorants may continue to be used unless these are found to irritate the skin. Avoid rubbing the area .Use an electric shaver rather than a wet razor. Do not use wax to remove hair or other hair removing creams or product. Smoking during radiotherapy may have a negative influence on prognosis, Smoking limits the oxygen carrying capacity of hemoglobin. Elevated carboxyhemoglobin levels have been associated with changes to the epithelium and increased platelet stickiness. Nicotine affects macrophage activity and reduces epithelialization. Don't expose the treatment area to sun. If you can't avoid sun exposure, use sunscreen with a sun protection factor of at least 30, and wear a hat. Patients are encouraged to avoid direct application of heat or cold to the irradiated area i.e. ice or electric heating pads.[6,7,10,13,14].

Wengström, (2000)stated that, the nurses identified several areas of priority related to nursing care. "Poor follow-up of patients who have completed the course of radiation therapy" (76%) was perceived as the greatest nursing problem[8] .D'Haese, et al., (2005) presented in their study on Sixty-seven nurses, identified through nine Belgian radiotherapy departments, responded to a questionnaire survey consisting of 58 items regarding prevention and management of erythema, dry desquamation and moist desquamation. Consensus for a given advice was categorized as small if less than 50% of the nurses gave the same answer, as moderate if between 50% and 75% and as large when more than 75%. Overall, 33% of the items showed small consensus, 29% showed moderate consensus and 38% showed large consensus. The highest consensus was seen for advice in cases of moist and dry desquamation. There was less agreement in the case of erythema and it decreased further for preventive advice[11.]

This study presented that the nurse's Knowledge score was (45%) felt that nurses played a moderate level and (40%) of the sample was poor level, and reveal that significant differences between knowledge score about breast cancer toward skin care under radiotherapy and nurse's variables age, level of education, years of experience in radiotherapy unit and number of training sessions ($p < 0.05$) table3,4,5,6.

The College needs to urgently publish new guidelines based on the current evidence available to provide a foundation and radiotherapy departments need to routinely monitor, assess and document skin reactions using grading systems and noting intrinsic and extrinsic related factors, thus assisting in the overall data collection and management of irradiated skin2,12.Ruppert, (2011) mention that, the body of evidence is insufficient to provide clinicians with comprehensive guidelines for the prevention and management of radiation induced skin reactions[10].Oncology nurses need to increase their awareness of the evidence or lack of evidence when recommending interventions to their patients[14].

CONCLUSION:

The study concluded that the nurse's knowledge is insufficient about skin care during radiotherapy, and there were significant differences between nurse's knowledge and nurse's and age, level of education, years of experience in radiotherapy unit and number of training sessions.

RECOMMENDATION:

1- Increase body of nurse's knowledge by lectures and focus on special courses of these nurses who had experience in radiotherapy unit toward skin care of breast cancer patient under radiotherapy to prevent skin reactions and to limited patient symptoms from radiotherapy effects and identify the skin care should entail formulating a protocol that combines knowledge gained from current literature with consideration for each patient's comfort and preferences.
2- Encourage the nurses to use further work is required to develop and validate assessment tools that are sensitive to changes in skin damage resulting from radiation over time. Prevention and treatment interventions will likely require different tools.
3- Motivate the nurses to doing study or research about nurse's knowledge and nursing practice about management of skin reactions during radiotherapy
4- Further study is required to determine differences in the risk of radiation-induced skin toxicity for various tumor types and anatomic areas. A variety of assessment tools may need to be developed, depending the level, or risk and severity, of the expected reaction.
5- Provide more levels of institutes and colleges of nursing to work in the radiation units.
6- Published guidelines provide a sound basis for evidence-based supportive care.

REFERENCES:

a. Weheida S, Ali N , Masry S.: The Effect of Skin preparation by Using Aloe Vera Gel on Incidence of Skin Reactions among Breast Cancer Patients Undergoing Radiation Therapy, Journal of Biology, Agriculture and Healthcare ,2013 , Vol.3, No.15:130-145.
2- 2-- Harris R.: A UK Survey of Radiotherapy Skin Care by SCoR, Society of Radiographers, 2011, 4 October:1-23
3- 3-Ministry of health /Iraqi Cancer Registry 2010, :4-5
4- 4-Mariette G, Rejoice K, Menzi N, Matheko P, and Peirder S.:Skin care during breast radiotherapy, the south africican radiographer, MAY 2010 volume 48 number 1:15-18.
5- 5-Salvo N, Barnes E, van Draanen J, Stacey E, Mitera G, Breen D, Giotis A, Czarnota G, Pang J, De Angelis C: Prophylaxis and management of acute radiation-induced skin reactions: a systematic review of the literature,Current Oncology. Aug 2010; 17(4): 94–112.
6- 6-BC Cancer Agency: CARE OF RADIATION SKIN REACTIONS,2012, July 18 .
7- 7-Halperin, E., Perez, C., & Brady, L., ed., : Principles and Practice of Radiation Oncology. 5th Edition. Philadelphia, Pennsylvania, USA: Lippincott Williams & Wilkins,2008, p: 1496- 1543 .
8- Wengström y.: Nursing interventions in radiation therapy - Studies on women with breast cancer, thesis, Cover "Woman" by Susanne Steenhouwer Stockholm, Sweden 2000,12,32.
9- 9-Breast Cancer Network Australia: Radiotherapy: A project of the Supporting Women in Rural Areas, Diagnosed with Breast Cancer Program, funded by the Australian Government. 2010.
10- 10- Ruppert R.,: Radiationtherapy101 , American Nurse Today,2011, Volume 6, Number :24-29
11- 11-D'Haese S.,S'Claes E.,A'Boone,: Management of skin reactions during radiotherapy: a study of nursing practice. European Journal of Cancer Care, 2005; 14(1): 28-42.
12- 12- Carper E.,: Radiation Special Interest Group Newsletter , Oncology Nursing Society, November 2006, Volume 17, Issue 3 .
13- 13-Bolderston A1, Lloyd NS, Wong RK, Holden L, Robb-Blenderman L;The prevention and management of acute skin reactions related to radiation therapy: a systematic review and practice guideline. Support Care Cancer. 2006 Aug;14(8):802-17
14- 14- McQuestion M.: Evidence-based skin care management in radiation therapy. Semin Oncol Nurs. 2006 Aug;22(3):163-73