Effectiveness of an Educational Program on Nurses Knowledge towards Vitamin D3 and calcium for Cancer Patients

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Abstract

Introduction: Malnutrition was a severe and widespread concern among cancer patients. It had a detrimental impact on their prognosis and quality of life. According to studies, 15 percent to 40percent of cancer patients lost weight while undergoing therapy. In individuals with advanced cancer, this number could rise to as high as 85 percent. As a result, early treatment and health education on dietary supplement and behaviors might help patients achieve better outcomes and avoid issues. Objectives: of this study were to Assess the Nurses Knowledge toward vitamin d3 and calcium need for patients with Cancer at oncology center in AL-Diwaniyah Governorate. and To Find out the Association Between Certain demographical data and Participation in Training Course with Oncology Nurses' Knowledge. Methodology: A quasi experimental study design is conducted at Al-Diwaniyah Specialized Oncology Center, from 17th March 2021 to 15th May 2022. For the aim of the study, the researcher created the program and instrument. A non-probability purposive sampling had been consisted of (60) oncologic nurses have been chosen to obtained represent and accurate data. The sample size is (60) nurses, split into two groups, one of which includes of (30) nurses as the study group and the other of which consists of (30) nurses as the control groups. The study groups taking the educational programs that deals with Vitamin D3 and calcium that necessary and recommended for cancer Patients (vit. D3 and ca++) of cancer patients, the control group, on the other hand, has not been subjected to the instructional programs. To obtain data from study participant, the researcher employed the following tool: First part is the socio-demographic variables and second the Nurses knowledge related to The Vitamin D3 and calcium that necessary and recommended for cancer Patients (vit. D3 and ca++). The study instrument's validity was assessed by a group of experts, and its reliability was assessed using the internal consistency approach. To determine the difference between the study the control groups, descriptive analysis and analytical inferential analysis were performed. The study's findings revealed that there is very significant difference in between study group's (pretest and posttests) in terms of (nurse's knowledge of vitamin d3 and calcium of people with cancer), (MEAN ± SD= 2.37±0.451) comparing to the pretest score (MEAN ± SD=1.58±0.402) due to effectiveness of an educational programs. Finally, the study finds that an education program focusing on food for vitamin d3 and calcium of people with cancer has a high chance of success. Recommendation: Training health and medical through continuing nursing and medical education (on job training) of all health care providers including nurses who have a major role in raising the level of patient's awareness about the nutrition and importance of having optimum level of this vitamin D and Ca++, explaining the signs and symptoms of vitamin D and Ca.

Keywords: Vitamin D3, Calcium, Patients, Cancer

1. Introduction

A Cancer is a complicated collection of illnesses with several potential causes, including tobacco use, diet and physical activity, sun and other forms of radiation, virus, and other infection. Cancer is seen as a major public health issue worldwide. In 2018, 18.1 million people were diagnosed with cancer globally, with 9.6 million dying as a result. By 2040, the incidence may have steadily increased, with LMICs accounting for nearly two-thirds of all cancers globally. Cancer account for about a third of all non-communicable diseases (NCD) related early deaths in people aged 30-69. Lung cancer is the common cancer kind (11.6 % of all cases), following by female breast cancer (11.6 percent) and colorectal malignancies (11.6 percent) (10.2 percent). Lung cancer is the most common cause of cancer mortality (18.4% of all fatalities), following by colorectal (9.2%) and gastric cancers (8.2%)(WHO, 2020).

Nurses have an important role in nutrition care, even though the dietician is the food and nutrition specialist. Nurses may be in charge of screening hospitalized patient to detect those who are at risk of malnutrition. They frequently act as a link between the dietician and the physician, and also other members of the medical team. (Soediono, 2013).

Nurses have far greater interaction with patients and their families, and they are frequently accessible as a nutrition source when dietitian are unavailable, such as in the evenings, on weekend, as well as during discharge instruction. Dietitians may only be accessible on a consulting basis in home care and health settings. Nurses may supplement the dietitian's nutrition counseling and give basic

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nutrition education to hospitalized patients who are at low to moderate nutritional risk. Nurses have an important role in all aspect of nutritional treatment. (Parker et al., 2017).

The relation between diet and cancer is complex. 1/3 of all cancer fatalities in the U.s are due to nutritional variables, such as ingesting items that may cause cancer or neglecting to consume nutrients that guard against cancer (American Institute for Cancer Research, World Cancer Research Fund (WCRF)). For example, an approximately 14 percent to 20 percent of all deaths that caused by cancer in the USA is related to obesity, whole grains, A diet rich in fruit and vegetable, poultry and fish, and low in red and processed meats has been associated to a lower risk of developing or dying from various cancers. (Haskins et al.,2020).

Methodology

A quasi-experimental study design is conducted at Al-Diwaniyah Specialized Oncology Center, from 17th March 2021 to 15th May 2022. For the aim of the study, the researcher created the program and instrument. A non-probability purposive sampling had been consisted of (60) oncologic nurses have been chosen to obtained represent and accurate data. The sample size is (60) nurses, split into two groups, one of which includes of (30) nurses as the study group and the other of which consists of (30) nurses as the control groups. The study groups taking the educational programs that deals with Vitamin D3 and calcium that necessary and recommended for cancer Patients (vit. D3 and ca++) of cancer patients, the control group, on the other hand, has not been subjected to the instructional programs. To obtain data from study participant, the researcher built the tools consisted of two parts: First part is the socio-demographic variables and second part the knowledge of the nurses (knowledge related to The Vitamin D3 and calcium that necessary and recommended for cancer Patients (vit. D3 and ca++) of cancer patients).

The study instrument's validity was verified by presenting it to (19) experts and its reliability were assessed using the internal consistency approach. To determine the difference between the study and the control groups, descriptive analysis and analytical inferential analysis were performed.

Results

Table 1: findings show participants age, the mean age for nurses in study group is 25, the age 20-29 years old were recorded the highest percentage among nurses in study group (n=25; 83.3%). While, the mean age for nurses in control group is 28, the age 20-29 years old were recorded the highest percentage among nurses in control group (n=19; 63.3%). There were no-significant differences in age groups for nurses in both groups (p=0.130). Respect to the gender, the female was predominated among nurses in study group (n=20; 66%), compared with male among nurses in control group (n=18; 60%). There were significant differences in gender for nurses both groups (p=0.039). Gender related findings, the urban residents were predominated among nurses in both groups study-control (n=23; 76.7%) and (n=18; 60%) respectively. There were no-significant differences in residents for nurses both (p<0.171). In regard with education level, most of nurses were diploma graduated in study group (n=13; 43.3%). While, most of nurses in control group were distributed a diploma and college of nursing graduated (n=10; 33.3%) for both. There no-significant differences in educational level for both groups (p<0.757). Concerning years of experience, nurses in study and control groups expressed a less than 5 years of experience (n=25; 83.3%) and (n=18; 60%) respectively. There no-significant differences in years of experience of nurses for both groups (p<0.360). Years of experience in oncology unit, nurses expressed a less than 5 years of experience in oncology unit (n=29; 96.7%) and (n=21; 70%) respectively. There no-significant differences in years of experience of nurses for both groups (p<0.061). Nurses in study and control groups expressed no attended training sessions in oncology unit (n=19; 63.3%) and (n=17; 56.7%). There no-significant differences in training sessions of nurses for both groups (p<0.480).

Table 1: Descriptive Statistic of Socio-Demographic Variables (SDVs) of the Study-Control Groups

	Classification	Study		Control		p-value
		Freq.	%	Freq.	%	
Age /years	20-29 years old	25	83.3	19	63.3	0.130
	30-39 years old	3	10.0	5	16.7	
	40-49 years old	1	3.3	6	20.0	
	50 and older	1	3.3	0	0.0	
	Mean ± SD	25 ± 7.694		28 ± 7.672		
Gender	Male	10	33.3	18	60.0	0.039
	Female	20	66.7	12	40.0	
Residents	Rural	7	23.3	12	40.0	0.171
	Urban	23	76.7	18	60.0	
Education level	Nursing graduate	0	0.0	1	3.3	0.757
	Nursing High School	8	26.7	9	30.0	
	Diploma Degree	13	43.3	10	33.3	
	College of Nursing	9	30.0	10	33.3	
Years of experience	<5 years	25	83.3	18	60.0	0.360
	5-10 years	3	10.0	5	16.7	
	>10 years	2	6.7	7	23.3	
Experience in oncology	<5 years	29	96.7	21	70.0	0.061
	5-10 years	1	3.3	8	26.7	
	>10 years	0	0.0	1	3.3	
Training sessions	No	19	63.3	17	56.7	0.480
	One session	8	26.7	8	26.7	
	More than once	3	10.0	5	16.7	

Table 2: Mean Difference (Independent Sample t-test) between the Study and Control Group responses at pre-posttest Knowledge related to VitaminD3 and calcium Ca++ of Cancer Patients							
Pre-test	Weighted	Mean	S. D	t-value	d.f	p≤ 0.05	Sig
	Study	1.55	0.355	0.925	58	0.359	NS
	Control	1.46	0.423				
Post-test	Study	2.44	0.468	7.330	58	0.000	HS
	Control	1.53	0.487				
M: Mean, SD: Standard deviation, t: t-test, d.f: Degree of freedom, Sig: Significance, p: Probability value, HS: NS: No significant, highly significant							

This table shows that there is a no statistically significant difference between study (M ± SD= 1.55±0.355) and control (M ± SD= 1.46±0.423) groups in the pre-test period of measurement (p=0.359). While there is a highly statistically significant difference between the study (M ± SD= 2.44±0.468) and control (M ± SD= 1.53±0.487) groups at the post-test period of measurement (p=0.000). With respect to the statistical mean, the study results indicate that there is an improvement in the study group responses after the application of the program compared with the control group.

2. Discussion

Table (1) shows participants' ages; the means of age of nurses in the study groups is (Mean SD 25 7.694), with ages 20-29 years old accounting for the biggest proportion (n=25; 83.3 percent). While the means of age of the nurses in the control groups is (Mean SD 28.672), the age group 20-29 years old has the largest proportion of nurses (n=19; 63.3 percent). In both groups, there were no significantly different in age categories for nurses (p=0.130). This absence of a significant difference means that the sample is homogeneous between the two groups, because most of them graduated with diplomas, so we find them from the youth group. These findings come with a study conducted in Jordan by Sharour, (2019), the mean age for participants is 29.5 and the ages group who 20-30 years old were records the majority.

Regarding to gender, female nurses largely dominated in the study group (n=20; 66 percent), whereas male nurses heavily dominated in the control group (n=18; 60 percent). Both group of nurses had significantly gender disparities (p=0.039). These findings come consisting with Al Kalaldeh & Shahein, (2014) who find in their participants the female nurse were more than male. Concerning to residency, the highest percentage of the study sample is living in urban resident were predominated among nurses in each group study-control (n=23; 76.7%) and (n=18; 60%) respectively. There were no-significantly different in residents for nurses both (p<0.171). These findings comes consisting with (Ismael & Baiee, 2020) in their 2018 Revision of World Urbanization Prospects, they discovered that 55 percent of the world's population lives in cities, with that percentage predicted to rise to 68 percent by 2050.

In regard with education level, most of nurses were diploma graduated in study group (n=13; 43.3%). While, most of nurses in control group were distributed a diploma and college of nursing graduated (n=10; 33.3%). These finding agree with Theilla et.al (2016) who Assessment, Knowledge and Perceived quality of nutrition care amongst findings showed a diploma degree (50%) as their nursing qualification and 29% had a nursing collage.

Concerning years of experience, nurses in study and control groups expressed < 5 year of experience (n=25; 83.3%) and (n=18; 60%) correspondingly. Years of experience in oncology unit, nurses expressed a less than 5 years of experience in oncology unit (n=29; 96.7%) and (n=21; 70%) correspondingly. These finding come consisting with a study conducted in Iraq by (Ahmed & suad, 2018). The result of the study was (66.7%) in study group, (63.3%) in control group have (5) years of working in oncology wards, this may interpret that most of oncology nursing staff are new and younger employees with low experiences.

Table (2) shows with this study finding, nurses showed a good knowledge level in relation to the Vitamin D3 and calcium that necessary and recommended for cancer Patients (vit. D3 and ca++) (Vitamin D3 & Ca++) for cancer patients at the posttest time of measurements (M=49.86) after application of education programs (table 4-3-4). While, nurses in control group stated a poor knowledge level(M=30.76) at the posttest period of measurement (table 4-3-9). This result indicates that the teaching programs was successful, since nurses in the research group indicated satisfaction.

There is a statistically significant differences among the study (M= 2.44) and control (M= 1.53) group at the posttest time of measurements (t= 7.330; p=0.000) with regards knowledge towards The Vitamin D3 and calcium that necessary and recommended for cancer Patients (vit. D3 and ca++) (Vitamin D3 & Ca++) for cancer patients (table 4-3-11). The study's finding displays that after applying the education programs, the knowledge scores of the study groups (30 nurses) improved when compared to the control groups (30 nurses).

There is a widely known theory that says (There are significant changes in nurses' knowledge among study and control groups). Nurses in the study group achieved considerable benefit from education programs concerning The Vitamin D3 and calcium that necessary and recommended for cancer Patients (vit. D3 and ca++) for cancer patients. Based on this regard, the rate of nurses who were willing to give nutrition support in terms of The Vitamin D3 and calcium that necessary and recommended for cancer Patients (vit. D3 and ca++) for cancer patients was

70% (table 4-3-4) and that knowledge not influenced by passage of time (p=0.326) (table 4-3-5). As a result, it has been established that a significant number of nurses will participate and benefits from training program tailored just for them. However, research is needed to determine the rate of success of these programs and their impact on oncology center knowledge.

3. Conclusion

Approximately half of oncologist nurses who said they gave dietary counselling to their patient felt they lacked the competence to do so.

4. Recommended

Nurses' knowledge, of nursing care nursing nutrition of oncologic patients should be studied in multisite studies, particularly qualitative studies (to make the study more representative and reduce bias).

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