

ORIGINAL ARTICLE

Effectiveness of an Educational Program on Oncology Nurses Knowledge about Diagnostic Bone Marrow Aspiration and Biopsy at Blood Diseases Center in Medical City Directorate

ABBAS LABEEB WADI AL-GBURY¹, KHALIDA M. KHUDUR²

¹Phd students/ university of Baghdad/ college of nursing

²Assistant Professor, Adults Nursing Department, College of Nursing, University of Baghdad, Iraq

Correspondence to: Abbas Labeeb Wadi Al-Gbury, Email: Ali2012abas@yahoo.com

ABSTRACT

Background: Bone marrow aspiration and biopsy is a procedure which done for patients may be have a blood disorder or a suspected or previously diagnosed blood malignancy. Bone marrow examination is done during the initial diagnosis and/or staging and used to determine treatment response in patients with leukemia, lymphoma, and other blood disorders.

Aims: To evaluate the effect of an educational program on nurse's knowledge related to about Diagnostic Bone Marrow Aspiration and Biopsy at blood diseases center in medical city directorate.

Methodology: A pre experimental study design (one group Pretest-Posttest study design) on 20 nurses who work in bone marrow examination unit, it is carried out through the application of pre-test and post-test approach for the study group, from the period 13th June to 13th of December 2021. Three sessions were submitted to the nurses that participate in an educational program.

Results: The results of current study indicated that that there were significances differences between pre and post educational program related to nurses knowledge.

Conclusion: Based on the study findings that the program applied has an observational enhanced nurses' knowledge relating to the bone marrow aspiration and biopsy management.

Keywords Effectiveness, Educational Program, Oncology Nurses, Knowledge, Bone Marrow Aspiration,

INTRODUCTION

Bone marrow examination (aspiration and biopsy) is an invasive rout to obtain the bone marrow fluids or piece of bone tissue for diagnosis. It is done during the initial diagnosis and/or staging and used to determine treatment response in patients with leukemia, lymphoma, multiple myeloma, and other blood disorders. (Grønkvær, et al., 2016) (Wiegand, 2016).

In Bone marrow examination a special needle is inserted into the bone and marrow is collected through suction. Bone marrow sampling requires good technical skills to avoid complications and increase diagnostic yield (Obasi & Umpierrez De Reguero, 2019).

Contraindications to bone marrow biopsy and aspiration include severe bleeding such as severe hemophilia or severe disseminated intravascular coagulopathy. Thrombocytopenia is not a contraindication, and platelet transfusion can be performed if clinically warranted prior to the procedure (Suzuki, K., et al, 2019).

Post-BMAB bleeding is very common because of the high vascularity of the sampled tissue. Rarely, retroperitoneal or gluteal hemorrhage can occur as result to injury of the internal iliac artery or superior gluteal artery. Any invasive procedure may be risk for infection, it can be reduced with good sterile technique and avoiding areas of superficial. Another risk is tumor seeding that must be explained to the patient if a biopsy is being performed at the site of a suspected metastatic lesion (Rindy& Chambers, 2020).

METHODOLOGY

A pre experimental study design (one group Pretest-Posttest study design) on 20 nurses who work in bone marrow examination unit, it is carried out through the application of pre-test and post-test approach for the study group, from the period 13th June to 13th of December 2021. Three sessions were submitted to a study group that participate in an interventional program. The instrument was consist from two parts, the 1st is the nurses demographical characteristics, the 2nd assess nurses knowledge about bone marrow examination, this two part scored on a Likert scale with three levels of knowledge (wrong=1, not sure=2, and wright=3), and it is grading as (1-1.49) low knowledge, (1.5-1.99) moderate knowledge, and (2-3) good knowledge.

RESULTS

Table 1: Distribution of the Study Samples by Socio- Demographic Characteristics NO. =20.

No.	Variable	Frequencies	%
1	Gender		
1.1	Male	3	15
1.2	Female	17	85
2	Age (year)	Frequencies	%
2.1	22-25	11	55
2.2	26-30	3	15
2.3	30-35	3	15
2.4	36-40	2	10
2.5	41-45	1	5
3	Marital status	Frequencies	%
3.1	Single	12	60
3.2	Married	8	40
4.	Level of education	Frequencies	%
4.1	Secondary	8	40
4.2	Institute	10	50
4.3	College and above	2	10
5	Residency	Frequencies	%
5.1	City	20	100
5.2	village	0	0
6	Experiences years	Frequencies	%
6.1	less than 5 years	11	55
6.2	5-9	6	2.30

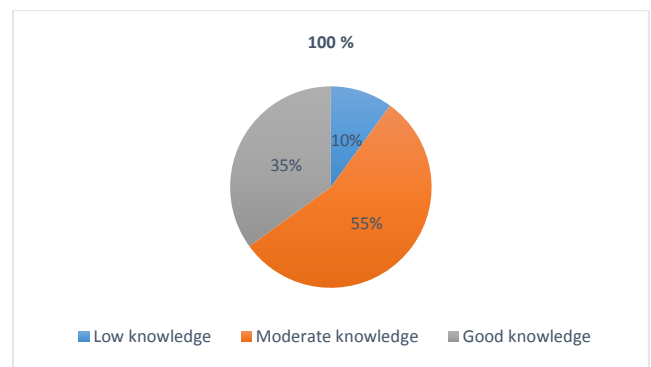


Figure 1: Shows distribution of Nurses Knowledge Pre educational Program.

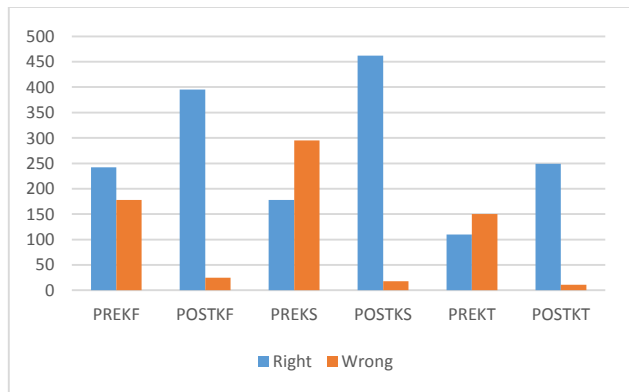


Figure 2: Shows Nurses Knowledge Pre- and Post- educational Program Domains.

PREF. = pre knowledge first domain, PRES. = pre knowledge second domain, PRET. = pre knowledge third domain

Table 2: The Differences between the Level of Nurse's Knowledge Pre-Interventional Program and Post- educational Program.

items	Mean	Std. Deviation	t	P value
Preprogram nurses knowledge mean	1.930	0.256		
Post program nurses knowledge mean	2.941	0.081		
Pre knowledge mean-post knowledge mean	-1.011	0.264	-17.087	0.000 H.S

Std. Deviation = Standard Deviation, t. = t test, P value = ≤ 0.05 , H.S= high significant.

DISCUSSION

Through table (1) findings it can be observed that the 85% of the study sample were females at age 22-25 years old, all of the study group were live in city, and 60% of those were single, this findings agree with Hashem, H. J., & Hassan, H. B. (2018). Most of the nurses who participate in the study were graduates of the institute, and they made up 50% of the total nurses participating in the study, this results similar with Mardan, R. S., & Mohammed, S. J. (2019). The years of experiences of the study sample was less than 5 years which mean that 55% of the study sample, this results supported by Hamel, O. L., & Ahmed, S. A. (2020).

From figure 1 it can be observed that the maximum value of assess the nurse's knowledge pre interventional program was occurred in moderate knowledge (11) (55%), followed by good knowledge (7) (35%), while the minimum value was (2) (10%) in low knowledge and all the nurses were sometimes apply the standard nursing management for bone marrow aspiration and biopsy. The findings of the present study supported by Mardan, R. S., & Mohammed, S. J. (2019) in their study which were their study group were fair knowledge about knowledge about the management of leukemia.

The figure 2 shows the effectiveness of educational program concerning the nurse's knowledge toward Bone Marrow Aspiration and Biopsy educational program which presented that the post

program nurses knowledge was elevated than pre educational program, this results agree with Bedier, N. A., et al., (2016) in their study which reveals that the nurses knowledge increased after educational program.

Table (2) reveals to there was a high significant difference between the level of nurse's knowledge pre and post- educational program at $P \leq 0.05$, the results supported by Jissir, S., & Hassan, H. (2015), they found that nurses knowledge after educational program better than nurses knowledge before educational program.

Recommendation:

Increase health awareness among oncology nurses through the implementation of courses and lectures in order to increase nurses' knowledge about bone marrow aspiration and biopsy managements.

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