Nurses' Knowledge Concerning the Management of Bleeding in Patients with Leukemia

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Abstract

To achieve the objectives of the study, a non –probability (purposive) sample of (50) nurses were selected those were working at the oncology wards at the above listed hospitals. The data selected according to the criteria of the study sample. The validity of the questionnaire was determined through an expert panel consists of (11) specialist expert and its reliability was determined through a pilot study by test – retest which was estimated as averages (R=0.89). Data was collected by direct interview technique using the questionnaire formal and data was analyzed by application of descriptive & inferential statistical methods (frequency, percentage, mean of score and Chi-Square). The results of the study indicated that most of the study sample were male (60%), (78%) within age group (20-29 years), (70%) were nursing college graduates and (62 %) has 1-3 years of experience at oncology wards. The results of the study indicated that the majority of the study sample had a low significance in items concerning nurses' knowledge about managements taken by nurse to avoid bleeding, and the majority of them had a moderate significant relationship between nurses' knowledge and the years of experience and training sessions inside and outside Iraq.

Keyword*: Nurse, Knowledge, Bleeding, Leukemia.*

Introduction

The patient with leukemia is at risk for many problems, including fatigue, bleeding, infection, and other complications of the disease and its treatment.[1]

In 2016, the estimated number of leukemia cases in the United States was about 16,430.[2] while in Iraq the estimated cases for leukemia were about 22,568 for the year 2017.[3]

The most dangerous complications of leukemia are bleeding and infection, those considered the major causes of death. The risk of bleeding correlates with the level of platelet deficiency (thrombocytopenia). [4]

The major goals for the nurse may include absence of complications and pain, ability to provide self-care and to cope with the diagnosis and prognosis, and an understanding of the disease process and its treatment.[5]

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Nurses should follow a set of practices concerning the management of bleeding in patients with leukemia at all times and use critical thinking and problem solving in managing clinical situation.[6]

The first precaution of intended bleeding is following a good personal protective equipment measures including ; hand washing, gloves, masks cover the mouth and nose, gown, face and eye protection.[7]

For this reason the researcher do this study to assess the nurses' knowledge about management of bleeding in patients with leukemia

Material and Methods

A descriptive study carried out at three teaching hospitals at Medical City Complex (Baghdad teaching hospital, consultation clinic at Baghdad teaching hospital and oncology teaching hospital) starting from September 4th, 2019 up to December 10th, 2019.

A simple random sample of (50) nurses who were working at the oncology wards according to the following criteria (adult nurse age (20-49 years) with at least one year of experience).

The questionnaire that used to collect the data and measure the variables, it consisted of two parts; the first part concerned with the nurses' demographic characteristics of (7) items (age, gender, residency, marital status, educational level, years of experience, and specialized courses taken inside and outside Iraq). The second part concerned with nurses' knowledge concerning management of bleeding which consists of (2) domains which include (20) items. The first domain is for the measures taken by the nurses to prevent bleeding, the second domain involves the advices which provided by the nurse to prevent bleeding. These items are measured, scored and rated on a 3 level type Likert scale (3) for always, (2) for sometimes and (1) for never.

Content validity of the questionnaire is determined through a panel of (11) experts they are faculty members of nursing college, university of Baghdad. A pilot study was carried out on the 6th, September, to the 10th September. 2019. Determination of the reliability of the questionnaire was based upon the (test-retest) which has been (0.89) for (10) nurses. Data was collected from (13th, September to 25th October, 2019 by utilization of the study instrument and interviewing with the nurses.

Data Analysis

Data were analyzed through application of descriptive and inferential statistical data analysis approaches [8]. This approach used for determining the following measurements:

1. Frequency (F).

2. Percentage (%).

3. Arithmetic Mean.

$$X = \frac{\sum x}{n}$$

$\sum$**xi** = sum of the (3x always + 2x sometimes + 1x never) for items. n = number of the sample

4. Mean of score (MS): A mean of score equal to (1.67- 2.33) was considered moderate MS, greater than (2.34) was considered high MS, less than (1.67) was considered low MS.

$$M.S = \frac{\sum ri=1Fi \times Si}{\sum ri= 1Fi}$$

5. Pearson Correlation Coefficient

It was used to estimate the scale (test & retest) reliability through the application of the following formula :

$$r = \frac{n\sum xy - \left(\sum x\right)\left(\sum y\right)}{\sqrt{n\left(\sum x^2\right) - \left(\sum x\right)^2}\sqrt{n\left(\sum y^2\right) - \left(\sum y\right)^2}}$$

6. Chi – square: it was applied for the confirmation of association between the nurse's knowledge about infection control and his/ her demographic characteristics such as years of experience and specialized courses taken inside and outside Iraq. This was computed using this formula :

$$X^2 = \sum \frac{(Oi-Ei)^2}{Ei}$$

Results

The analysis of the data after being processed and tabulated. Such presentation is systematically oriented relative to nurses and their demographic characteristic.

Table (1): Mean of Score for Items Concerning Nurses' Knowledge about Managements Taken by Nurse to Avoid Bleeding.

No.	Items	Always	Sometimes	Never	M.S.	Severity
1.1	Wash hands before any nursing procedure	45	5	0	1.10	LS
1.2	Taking temperature through anal	1	26	23	2.44	LS

Cont... **Table (1): Mean of Score for Items Concerning Nurses' Knowledge about Managements Taken by Nurse to Avoid Bleeding.**

1.3	Taking temperature through mouth	14	29	7	1.86	MS
1.4	Taking temperature through axilla	30	19	1	1.42	LS
1.5	Avoid intramuscular injection	16	30	4	1.76	MS
1.6	Taking precaution during intravascular injection	37	13	0	1.26	LS
1.7	Pressure on injection site for a while	37	12	1	1.28	LS
1.8	Measure blood pressure in the non-invasive hand	41	8	1	1.20	LS
1.9	Avoid giving anticoagulant medications	36	14	0	1.28	LS
1.10	Avoid using sharp objects during wound caring	42	7	1	1.18	LS

No. = Number, M.S. = Mean of score, LS = Low severity, MS = Moderate severity,

HS= High severity. Rating of severity (LS = 1- 1.66, MS = 1.67- 2.32, HS= 2.33- 3).

This table shows that the majority of sample reflect a low significance in items concerning nurses' knowledge about managements taken by nurse to avoid bleeding.

Table (2): Mean of Score for Items Concerning Nurses' Knowledge about Advices Given by Nurse Concerning Management of Bleeding.

No.	Items	Always	Sometimes	Never	M.S.	Severity
1.1	Using electric razor	23	17	10	1.74	MS
1.2	Using soft tooth brush	38	11	1	1.26	LS
1.3	Using flossing in cleaning teeth	20	17	13	1.86	MS
1.4	Avoid crowded places	26	22	2	1.52	LS
1.5	Wearing shoes during waling to avoid any injury	41	9	0	1.18	LS
1.6	Cutting nails carefully	42	8	0	1.16	LS
1.7	Washing wounds with warm water and using detergents	42	7	1	1.18	LS
1.8	Avoid uncooked meals and fruits	40	10	0	1.20	LS
1.9	Take precaution while using sharp or contaminated equipment	45	4	1	1.12	LS
1.10	Reporting Nurse / Physician when feeling sudden signs or symptoms of bleeding	45	5	0	1.10	LS

No. = Number, M.S. = Mean of score, LS = Low severity, MS = Moderate severity,

HS= High severity. Rating of severity (LS = 1- 1.66, MS = 1.67- 2.32, HS= 2.33- 3).

This table reflects that the majority of sample shows a low significance in items concerning nurses' knowledge about advices given by nurse concerning management of bleeding.

Table (3): Association between Nurse's Knowledge about Managements Taken by Nurse to Avoid Bleeding and Their Years of Experience

Nurses' Knowledge Years of Experience	**High**	**Moderate**	**Low**	**TOTAL**
1-3 years	0	18	2	20
4-6 years	2	10	7	19
7-9 years	2	1	3	6
10 years and more	1	3	1	5
TOTAL	5	32	13	50
$\chi 2$ Obs. = 32.357 , df = 13 , P ≤ 0.05 , $\chi 2$ Crit. = 23.362				

χ^2 Obs. = Observed Chi-Square, **df**= degree of freedom, **P**= probability, **χ^2 Crit.=** Chi-Square critical

This table showes that there is a moderate significant relationship between years of experience and nurses' knowledge.

Table (4): Association between Nurse's Knowledge about Advices Given by Nurse Concerning Management of Bleeding and Training Courses Inside and Outside Iraq.

Nurses' Knowledge Training Courses	**High**	**Moderate**	**Low**	**TOTAL**
1. Training Inside Iraq: Yes No	22 13	6 4	3 2	31 19
TOTAL	35	10	5	50
2. Training Outside Iraq: Yes No	4 7	7 22	1 9	12 38
TOTAL	11	29	10	30
$\chi 2$ Obs. = 18.951 , df = 13 , P ≤ 0.05 , $\chi 2$ Crit. = 23.362				

χ^2 Obs. = Observed Chi-Square, **df**= degree of freedom, **P**= probability, **χ^2 Crit.=** Chi-Square critical

This table shows that there is a high significant relationship between nurse's knowledge and courses taken inside Iraq, while there is a moderate significance in having courses outside Iraq.

Discussion

Regarding the managements taken by the nurse to avoid bleeding (table 1) showed that the study sample reflect a moderate significance in items concerning with taking temperature through mouth and avoiding intramuscular injection. This result agrees with Weightman et al., (2009) who discussed the first line of preventing bleeding during injections and taking temperature through axilla rather than rectal and oral methods [9]. But, this result is disagree with Jafari et al., (2008) and Shinde and Mohita, (2014) who listed that the nurses' knowledge most be at highest as possible to achieve better prevention of bleeding.[10, 11]

The results of the present study (table 2) showed that the majority of study sample reflect a low significance in items concerned with advices given by nurse concerning management of bleeding. These results disagree with Mehtar and Marais, (2011) who studied the policy to practice education in dealing with bleeding prevention and infection control.[12]

These results are similar to a study done by Kumbargere, (2015) who analyzed that shortage of nursing staff and the decrease in the specialized training courses was the main causes [13]. In addition to the huge numbers of patients with leukemia admitted to the medical wards at Baghdad teaching hospitals.

Table (3) showed that there is a moderate significant positive relationship between years of experience and nurses' knowledge about management of bleeding. These results supported by Saini et al., (2011) who had done a study on infection control among health care assistants and he found that there is a positive relationship between nurses' knowledge and their years of experience [14]. In addition, the commitment of standard precautions for all nursing staff in selected Egyptian cancer hospitals even those with less years of experience may improve the nurses' skills in dealing with bleeding as discussed by Eskander et al., (2013). [15]

Table (4) showed that there is a high significant positive relationship between nurses' knowledge about management of bleeding and specialized training courses taken inside Iraq, while there is a moderate significance in having courses outside Iraq. These results supported by Joshi et al., (2014) in the study results that reflected a positive significant relationship between nurses and health care staffs' knowledge and training [16]. A similar study done by Farmer et al., (2010) confirmed the existence of that relationship. [17]

Conclusions

The study indicated that the majority of the study sample had a low significance in items concerning nurses' knowledge about managements taken by nurse to avoid bleeding with the presence of moderate significant relationship between years of experience and nurses' knowledge. In addition, there is moderate to high significance in participating in training courses inside and outside Iraq.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Adults Nursing Department, Iraq and all experiments were carried out in accordance with approved guidelines.

References

1. Williams SL, Hopper DP. Understanding Medical-Surgical Nursing, 5th ed., Imprint of F.A. Davis Company, Philadelphia, 2015, P.P.: 576- 579.
2. Dan L. Harrison Hematology and oncology, 3rd ed., Imprint of Lippincott Williams and Wilkins Company, Philadelphia, 2010; 166-175.
3. Iraqi Ministry of Health and Environmental, Annual Statistical report: Diseases and medical Management. 2018.
4. Brown M, Cutler T. Hematology Nursing, 2nd ed., John Wiley & sons, 2012; 643.
5. Johnson J. Handbook for Brunner & Suddarth's textbook of medical-surgical nursing, 12th ed., Imprint of Lippincott Williams & Wilkins. USA, 2010; 410-424.
6. Barry C, Boyd N, Cleator N. Infection prevention and control best practices for long term care, home and community care including health care offices and ambulatory clinics, Canadian Committee on Antibiotic Resistance, 2010: 19-25.
7. Jissir S. Effectiveness of Educational Program Concerning World Health Organization Guideline of Infection Control on Nurse's Knowledge in Medical Wards at Baghdad Teaching Hospitals, PhD Dissertation, College of Nursing, University of Baghdad, 2012.

8. Polit FD, Beck TC. Nursing Research, Generating and Assessing Evidence for Nursing Practice, 8th ed., Imprint of Lippincott Company, Philadelphia, 2008: 39- 55.
9. Weightman WM, Gibbs NM, Sheminant MR, Newman MA, Grey DE.: Moderate exposure to allogeneic blood products is not associated with reduced long-term survival after surgery for coronary artery disease, Anesthesiology Journal, 2009; 111: 327–333.
10. Jafari H., Lahsaeizadeh J, and Askarian M.: Healthcare-associated Infection in Shiraz, Iran, Journal of Hospital Infection. 2008; 69(3): 283-287.
11. Shinde M., Mohita V.,: A Study to Assess Knowledge, Attitude and Practices of Five Minutes Hand Hygiene among Nursing Staff and Students at a Tertiary Care Hospital at Karad, International Journal of Science and Research, 2014; 3(2) : 311-320.
12. Mehtar S, Marais F, Aucamp M. From Policy to Practice Education in Infection Prevention and Control, International Journal of Infection Control, 2011; 7(2): 1-7.
13. Kumbargere N Sumantha, Melaka Manipal, Jalan Batu et al.,: Interventions for treating post-extraction bleeding, Cochrane Database of Systematic Reviews, John Wiley & Sons, Ltd, 2015; 6: 28.
14. Saini R, Singh S., Singh J., : Infection Control among Healthcare Assistants, Nursing Journal of India, 2011, 1(4) : 1-6.
15. Eskander H., Morsy W., Elfeky H., : Intensive Care Nurses' Knowledge and Practices Regarding Infection Control Standard Precautions at a selected Egyptian Cancer Hospital, Journal of Education and Practice, 2013, 4(19) : 160-174.
16. Joshi SA, Gadre KS, Halli R, Shandilya R. Topical use of Hemo-coagulase: A simple and effective way of managing post-extraction bleeding, Annuals of Maxillofacial Surgery, 2014, l4 : 119.
17. Farmer T, Mitchell C, Cruickshank M. Clinical Educators Guide for the Prevention and Control of Infection in Healthcare, National Health and Medical Research Council, 2010: 2-3.