Evaluation of nurses' knowledge toward pain management of leukemic child under chemotherapy

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المستخلص

الهدف: تقويم معارف الممرضين العاملين في ردهات أمراض الدم والأورام باتجاه إدارة الألم للأطفال المصابين بابيضاض الدم وتحت العلاج الكيماوي.

المنهجيّة: دراسة وصفية شملت (٤٠) من الممرضين العاملين في ردهات أمراض الدم في اثنان من مستشفيات الأطفال في بغداد (مستشفى حماية الأطفال التعليمي، مستشفى الطفل المركزي التعليمي) للمُدّة من ١ تشرين الأول ٢٠١٠ ولغاية ١ تشرين الأول ٢٠١١ لغرض تقويم معارف الممرضين تجاه تدابير الألم للأطفال المصابين بابيضاض الدم وتحت العلاج الكيماوي. اختيرت العيّنة الغرضيّة "غير احتمالية" من (٤٠) من الممرضين العاملين في ردهات أمراض الدم. استعملت استبانة مصممة من جزئين؛ الجزء الأول يتضمن المعلومات الديموغرافية للعيّنة والجزء الثاني يتضمن فقرات تتعلق بمعارف الممرضين تجاه تدبير الألم لأطفال إبيضاض الدم والذي يتكوّن من (٣) أجزاء موزعة على(٨٩) فقرة. تمّ تحديد ثبات ومصداقية الاستمارة من خلال إجراء دراسة استدلالية. تمّ تحليل بيانات الدراسة بإستعمال الإحصاء الوصفي الذي تضمّن (التكرارات، النسب المئوية، والإنحراف المعياري)؛ فضلاً عن إستعمال الإحصاء الإستنتاجي الذي شمل معامل الارتباط مربع كاي.

النتائج: بيّنت نتائج الدراسة عدم كفاية معارف الممرضين تجاه تدبير الألم لأطفال إبيضاض الدم تحت العلاج الكيماوي، ثلثي العينة (٧٥%) لديهم ضعف في أسالسب تدبير الألم الدوائية وغير الدوائية.

التوصيات: بناءاً على نتائج البحث، أوصت الدراسة بإجراء دورات تدريبية في مجال تدبير الألم للأطفال تحت العلاج الكيماوي؛ فضلاً عن تصميم كتيب مصغر خاص لغرض تقييم الألم عند الأطفال المصابين بابيضاض الدم.

Abstract

Objective(s): To evaluate nurses' knowledge toward pain management of leukemic child in oncology wards how were receiving chemotherapy.

Methodology: A descriptive study was conducted in two hospitals on (40) nurses, who provided care for the children with leukemia in oncology wards (2) hospitals (Children Welfare Teaching Hospital and Child's Central Teaching Hospital) in Baghdad city from October 2010 up to the 27th of October 2011 for the purpose of evaluating their knowledge towards pain management for leukemic child. A purposive "non-probability sample" was selected that consisted of (40) nurse who are working in oncology wards. A questionnaire format was used which consist of (2) parts, the first part includes demographic information of the sample and the second part consists of structured Items concerning nurses' knowledge toward pain management for leukemic child which includes (3) main sections and comprised of (89) Items. Reliability and validity of questionnaire was estimated through a pilot study and a panel of expert. The data were analyzed by using descriptive statistical measures which included frequencies, percentages, and standard deviation, as well as the use of inferential statistical measures which include the chi- square test.

Results: The results revealed inadequate nurse's knowledge about pain management for leukemic child under chemotherapy, two third (75 %) of the sample has poor knowledge toward pharmacological and non pharmacological pain management methods.

Recommendations: Based on the results of research, the study recommends initiating training courses in pain management and developing pain assessment tools for assessing child's pain and evaluating the level of pain management procedures

Keywords: Nurses' knowledge; Pain Management; Children under Chemotherapy

Introduction:

Leukemia are a group of malignant blood disorders, characterized by an abnormal increase of white blood cells (WBCs), usually at an immature stage, in the bone marrow [(1)],It is the most common form of childhood cancer, the annual incidence is 3-4 cases per 100,000, It occurs more frequently in boys than in girls after age 1 year , and the peak onset is between 2 and 6 years of age [(2)] Most forms of leukemia are treated with pharmaceutical medications, typically combined into a multi-drug chemotherapy regimen. Some cases are treated also with radiation therapy. In some cases, a bone marrow transplant is useful [(3)].Most children with leukemia will be at risk for significant pain at some time during the course of their illness, pain may be the product of the disease itself or the results, Leukemia caused different types of pain that the child suffering from due to the disease progression and the side effect of chemotherapy and other treatment for leukemia [(3)].

To manage pain appropriately nurse play very important role in managing pain appropriate and to decrease the level of pain so nurses need to have an understanding of each of these components and nurse education should equip them with this knowledge [(4)]. Managing pain appropriately is, therefore, important in both human and economic terms, the best possible management of pain is a moral and ethical obligation for caregivers, yet patients are still suffering unnecessary pain during hospitalization [(5)]. The nurse is an important advocate in helping the child and family to understand the complexities of treatment decisions and manage the pain, side effect and toxicities of the medication[(5)]. Insufficient knowledge about managing pain in leukemic children has been suggested as one reason nurses do not manage pain effectively however; pediatric nurses' pain management practices continue to fall short of the ideal with children often experiencing moderate to severe unrelieved pain [(6).] Nurse must be knowledgeable about the basic path physiology of cancer pain and treatment related side effects. The nurse often serves as the coordinator of care, playing a key role in cancer pain management [(6)].

Methodology:

A purposive "non-probability" sample of 40 nurses working in (2) pediatric hospitals in Baghdad city (Children Welfare Teaching Hospital and Child's Central Teaching Hospital).Data were collected by self administrative method was used to fill out the constructed questionnaire for nurse's knowledge and their demographic characteristics, the questionnaire format consisted of two parts; the first part is concerned with the socio-demographic characteristics of the nurses which included; age, gender, marital status, level of education, years of employment as a nurse, years of experience in oncology wards and training session in pain management ; the second part is consists of structured Items concerning nurses' knowledge toward pain management for leukemic child which includes(3) main sections and comprised of (89) Items . The questionnaire was rated on a three likert scale (know, uncertain, and do not know) and was scored as 3 for know, 2 for uncertain, and 1 for don't know. The validity and reliability for the constructed questionnaire were determined by using pilot study and the experts panel for validity, and the application of alpha correlation coefficient (r= 0.84) which was statistically acceptable. Data were analyzed through the application of descriptive statistical analysis (Frequency, Percentage, Mean of score and Standard deviation) and inferential statistic (Chi-square test) [(6-7)].

Results:

Table 1. Distribution of Nurses by their Characteristics (n=50)

List	Variables	Frequency	Percentage
1.	Age (years)		
1.1.	20 - 24	12	30
1.2.	25 – 29	11	27.5
1.3.	30 - 34	10	25
1.4.	35 – 39	6	15
1.5.	45 - 49 and more	1	2.5
	Total	40	100
	Mean of age = 28.77 year		
2.	Gender		
2.1.	Male	14	35
2.2.	Female	26	65
	Total	40	100
3.	Level of education		
3.1.	Intermediate Nursing School graduate	1	2.5
3.2.	High Nursing School graduate	5	12.5
3.3.	Institute Nursing graduate	26	65
3.4.	college Nursing graduate	8	20
	Total	40	100
4.	Marital status		
4.1.	Married	13	32.5
4.2.	Single	19	47.5
4.3.	Widowed	7	17.5
4.4.	Divorced	1	2.5
	Total	40	100
5.	Years of Experience in the leukemic wards		
5.1.	1 – 5	28	70
5.2.	6 – 10	4	10
5.3.	11 – 15	6	15
5.4.	16 – 20 and more	2	5
	Total	40	100
6.	Training Sessions in pain management		
6.1.	Yes	5	12.5
6.2.	No	35	87.5
	Total	40	100
8.	Number of Training Sessions in the pain management		
8.1.	No	35	87.5
8.2.	Two Training Sessions	4	10
8.3.	Three Training Sessions	1	2.5
	Total	40	100
9.	Place of Training Sessions for the pain management		
9.1.	No	35	87.5
9.2.	In Iraq	5	12.5
9.3.	Outside Iraq	0	0
	Total	40	100

Table 1. (Continued)

10.	Source of information relate pain management for leukemic child	**Frequency**	**Percentage**
10.1.	Yes	19	47.5
10.2.	No	21	52.5
	Total	40	100
11.	Source of information for the pain management		
11.1.	No information	22	55
11.2.	Scientific magazines	10	25
11.3.	Medical magazines	6	15
11.4.	General magazines	2	5
	Total	40	100
12	Watch movies and electronic movies for the pain management		
12.1.	No	27	67.5
12.2.	Movies and TV	12	30
12.3.	Electronic movies	1	2.5
	Total	40	100
13	Workshop for pain management for leukemic child		
13.1.	No	26	65
13.2.	Inside the hospital	9	22.5
13.3.	Outside the hospital	5	12.5
	Total	40	100

This table shows that most of nurses' ages were (20-24) years accounted for (30 %), (65 %) were female, (65%) were graduate from nursing institute, (47.5%) were single,(70 %) have (1-5) years of experience and their employment in the leukemic wards, only (12.5%) from (5) that had training sessions in pain management for leukemic child in Iraq, more than half (52.5%) of the sample had not read any source of information related to the pain management for leukemic child. (25%) of the sample have information related to pain management from scientific magazines and (67.5%) not watching movies and electronic movies for pain management. Only (22.5%) accounted one fourth had participated in workshops for pain management for leukemic child.

Table 2. Level of nurses' knowledge according to the range of the total score of knowledge items

Range of the Total score	**Nurses**		**Level of the Nurses' Knowledge**
	Frequency	**Percentage**	
(83-98)	30	75	Poor
(99 – 114)	6	15	Accepted
(115-130)	4	10	Good
Total	40	100	

The finding of this table presented that (75%) of nurses have poor knowledge and only (10%) have good knowledge toward pain management for leukemic child.

Table 3. Association between nurse's age and their knowledge scores

Scores / Age	Poor		Accepted		Good		Total		χ^2 obs.	Sig.
	f	%	f	%	f	%	f	%		
20 – 24	10	25	0	0	2	5	12	30	9.541	N.S
25 – 29 years	9	22.5	1	2.5	1	2.5	11	27.5		
30 -34 years	5	12.5	4	10	1	2.5	10	25		
35 – 39 years	5	12.5	1	2.5	0	0	6	15		
45 -49 years and more	1	2.5	0	0	0	0	1	2.5		
Total	30	75	6	15	4	10	40	100		
P≤0.05	df = 8			χ^2 crit. = 15.51						

df= degree of freedom; f= frequency; NS= Non-significant; P= Level of probability; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage

This table indicates that there is no significant association between nurse's ages and their knowledge scores however (25 %) of age range from (20 -24) years has poor scores.

Table 4. Association between nurses' gender and their knowledge scores

Scores / Gender	Poor		Accepted		Good		Total		χ^2 obs.	Sig.
	f	%	f	%	f	%	f	%		
Female	17	42.5	6	15	3	7.5	26	65	4.322	N.S
Male	13	32.5	0	0	1	2.5	14	35		
Total	30	75	6	15	4	10	40	100		
P≤0.05	df = 2			χ^2 crit. = 5.99						

df= degree of freedom; f= frequency; NS= Non-significant; P= Level of probability; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage

This table shows that there is no significant association between nurses' gender and their knowledge scores however (42.5 %) of female has poor scores.

Table 5. Association between nurses' marital status and their knowledge scores

Scores / Marital States	Poor		Accepted		Good		Total		χ^2 obs.	Sig.
	f	%	f	%	f	%	f	%		
Married	11	27.5	1	2.5	1	2..5	13	32.5	9.547	N.S
Single	15	37.5	3	7.5	1	2.5	19	47.5		
Widowed	4	10	1	2.5	2	5	7	17.5		
Divorce	0	0	1	2.5	0	0	1	2.5		
Total	30	75	6	15	4	10	40	100		
P≤0.05	df = 6			χ^2 crit. = 12.59						

df= degree of freedom; f= frequency; NS= Non-significant; P= Level of probability; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage

This table shows that there is no significant association between nurses' marital status and their knowledge scores.

Table 6. Association between nurses' level of education and their knowledge scores

Scores / Level of Education	Poor		Accepted		Good		Total		χ^2 obs.	Sig.
	f	%	f	%	f	%	f	%		
Nursing Intermediate School graduate	1	2.5	0	0	0	0	1	2.5	14.564	S
Nursing High School graduate.	4	10	0	0	1	2.5	5	12.5		
Nursing Institute graduate.	18	45	5	12.5	3	7.5	26	65		
Nursing college graduate and Other	0	0	1	2.5	7	17.5	8	20		
Total	23	57.5	6	15	11	27.5	40	100		
P≤0.05 df = 6 χ^2 crit. = 12.59										

df= degree of freedom; f= frequency; NS= Non-significant; P= Level of probability; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage

This table shows that there is significant association between nurses' level of education and their knowledge scores and this table also revealed that (45 %) of the sample from nursing institute graduate has poor scores.

Table 7. Association between years of experience in the leukemic wards and nurses' knowledge scores

Scores / years of Experience in the leukemic wards	Poor		Accepted		Good		Total		χ^2 obs.	Sig.
	f	%	f	%	f	%	f	%		
1 – 5 years	21	52.5	3	7.5	4	10	28	70	10.786	N.S
6 – 10 years	2	5	2	5	0	0	4	10		
11 -15 year	5	12.5	1	2.5	0	0	6	15		
16 -20 year	2	5	0	0	0	0	2	5		
21 year and more	0	0	0	0	0	0	0	0		
Total	30	75	6	15	4	10	40	100		
P≤0.05 df = 6 χ^2 crit. = 12.59										

df= degree of freedom; f= frequency; NS= Non-significant; P= Level of probability; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage

This table shows that there is no significant association between years of experience in the leukemic wards and nurses' knowledge scores and this table also revealed (52.5 %) of the years of experiences in the leukemic wards from (1-5)years has poor knowledge.

Table 8. Association between training sessions and nurses' knowledge scores

Scores / Training Sessions	Poor		Accepted		Good		Total		χ^2 obs.	Sig.
	f	%	f	%	f	%	f	%		
No	26	65	5	12.5	4	10	35	87.5	6.68	S
Yes	0	0	1	2.5	4	10	5	12.5		
Total	26	65	6	15	8	20	40	100		
P≤0.05 df = 2 χ^2 crit. = 5.99										

df= degree of freedom; f= frequency; P= Level of probability; S= Significant; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage

This table reflects that there is significant association between training sessions and nurses' knowledge scores.

Discussion:

The study found that, three third (75 %) of the nurses have poor knowledge toward pain management for leukemic child under chemotherapy (table 2), the finding of this study indicated that no significant association between nurses' gender, age, marital status and years of experience with nurses' knowledge toward pain management for leukemic child. The findings of this study show there was significant association with level of education and nurse's knowledge about pain management for leukemic child since higher percentage of nurse's knowledge was found among nurses collage graduate table(6).

The study results reveal that only (12.5%) of them had opportunity to participate in training courses; this may be due to the policy of the Ministry of Health or policy of the hospitals. This may have influence on the level of nurse's knowledge because training courses are very important to increase knowledge and practices and help nurses in updating their knowledge, therefore the nurse knowledge increase when the nurse has highly level of education table (7). These results are in consistence with (Al-Mansory 2005) in Iraq .This study revealed that a positive relationship between nurses' knowledge and their level of education [8].

Knowledge deficit and poor attitude towards pain can lead to bad pain management of nurse's practices, and as a consequence unnecessary suffering of children in their care, the findings of this study supported the concern that inadequate knowledge and poor practices exist towards pediatric pain management, the results agree with the finding of the study conducted by (McCaffery & Robinson, 2002) who reported that poor nurses knowledge about pain management led to lack of pain management practices provided for the child with pain attack[9].

Nurse's Knowledge deficits in the pharmacological pain management by morphine and other pain medications may have contributed to bad pain management and this area has been highlighted to be in need of some improvement in this study [10].

Manworren (2000) reported that Lack of nurse's knowledge about pain assessment may mean nurses cannot assess pain accurately and therefore do not apply their knowledge in the practice. Knowledge deficits may mean that nurses do not understand the rationale for using specific interventions [11].

The study concludes that the nurse's knowledge toward pharmacological inter-vention for pain management was poor, and inadequate attitude towards pain can lead to bad pain management practices of nurses, and as a consequence unnecessary suffering of children in their care. Effective care cannot be achieved while the nurse has a knowledge deficit or is influenced by attitudinal barriers.

In conclusion this study found that children's pain is still not managed effectively due to knowledge deficits, incorrect or outdated beliefs about pain and pain management and the decision-making strategies that nurses used.

Recommendations:

The study recommends special training programs should be designed and constructed for nurses in this area to reinforce their skill in pain management and promote their experiences, increasing the number of professional nurses' graduate from colleges of nursing to enroll in leukemic wards and provide them with scientific resources in related to pain management, developing pain assessment tools for assessing child's pain and evaluating the level of pain management procedures, establishing new standard checklist suitable for nurses' practices concerning pain management for Leukemic children in Iraq depending on international standard checklist and upon the result of this study.

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