

# Assessment of Nurses' Knowledge and Practices toward Children with Solid Tumors Malignancy Hospitalized in Baghdad Pediatrics Hospital

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**Abstract- Background:** The Solid tumors is one of the problem facing early childhood and the common types of solid tumors are (Lymphomas, Nephroblastoma (Wilm's Tumors), Neuroblastoma, Retinoblastoma, Bone Tumors, Ewing's Sarcoma Family of Tumors and Soft Tissue Sarcom), and it is abnormal mass of tissue that usually does not contain cysts or liquid areas. Benign solid tumors may be (non-cancerous) or malignant (cancerous). It is named different types of solid tumors to the type of cells that make up.

**Objectives:** To assess nurse's knowledge and practices towards children with solid tumors malignancy hospitalized in Baghdad Pediatric Hospitals.

**Research Methodology:** descriptive study dealt with object-analytical sample randomly from the 40 nurses working in the hospitals of Baghdad oncologic ward of solid tumors. The questionnaire was designed to gather information. Data was gathered by questionnaire format involved multiple choice item test for the purpose of evaluation nurses knowledge and practices for the period (18th October/ 2015 to 10th July/ 2016). Data was analyzed by applying descriptive statistics (frequency and percentage) and deductive statistics (Chi-Square test) SPSS version (20).

**Results:** The study has shown that female participants in the study sample more than males, and the percentage (57.5%) and over the sample aged more than 34 years, and the proportion (37.5%). And most of sample members are graduates of the institutes, and the proportion (52.5%), the total score of nurses knowledge was moderate (1.53). And the total score of nurse's practice was also moderate (2.3). There is a significant association between nurses' knowledge and practices with level of education and participant in training course in addition to significant relationship between practices and years of experience inside oncology ward.

**Recommendation:** The researcher suggests that establishment of training courses for the nursing staff to increase their knowledge and develop their expertise. Created specialized centers for the treatment of cancers.

## I. INTRODUCTION

Solid tumors usually are unnatural mass involving tissues that always does not contain cysts or even liquid locations. Solid tumors may be benign (not cancerous), or even malignancy (cancerous). Several types of solid tumors usually are branded intended for the type of tissue in which of cells that from them.

Samples of solid tumors usually are sarcomas, carcinomas, and lymphomas. Throughout talking about tumors which can be cancerous (cancerous), however, the term solid tumor can be used to tell apart among any localized muscle size involving tissues and leukemia. Leukemia is a sort of tumor which has fluid properties of the organ it affects – e.g. the blood. Within 2005, 7.6 million people died of cancer from 58 million deaths worldwide. Over 70% of all cancer fatalities occur in low and middle-income nations around the world, where resources available for reduction, diagnosis and treatment of cancer malignancy is limited or nonexistent. Dependent on projections, cancer deaths will always rise with an estimated 9 trillion people dying from cancer throughout 2015, and 11.4 trillion dying in 2030<sup>(1)</sup>. The oncology nurse should have guidelines for assessing cultural beliefs that might influence the family's coping style following a cancer diagnosis. The nurse could provide assistance by assessing the family situation at home; it might be helpful if parents notify a teacher or counselor in school about the adjustments going on at home. Their observations of changes in the child's behavior or school performance may be indicators of the child's coping ability. Nurses teach mothers how to care for the child and provide psychological support to the family and identify factors that will mediate a positive adjustment and outcome. Nursing care should be coordinated to meet child physical and psychological needs and involving the family when needed<sup>(2)</sup>. Solid tumors account for 30% of all pediatric malignancies. Pediatric tumors are most often classified by histology rather than anatomic location, as is done in adult tumors. The most commonly occurring pediatric solid neoplasms are neuroblastoma, and wilms tumor. Other malignancies that affect the pediatric population include Hodgkin's lymphoma, non-Hodgkin,s lymphoma, Ewing,s sarcoma, osteosarcoma, hepatoblastoma, retinoblastoma, and rhabdomyosarcoma. These and other less commonly occurring tumors will be reviewed in this chapter<sup>(3)</sup>. Solid tumor usually presents with painless. On physical examination the lymph node is usually described as firm and rubbery, and it may be sensitive or painful if it has enlarged quickly. Eighty percent of individuals present with disease in the cervical area, and 60% of those affected have some degree of mediastinal disease. Systemic symptoms are present in 25–30% of children and include

1. Fever >38°C for more than 3 days
2. Drenching night sweats
3. Weight loss comprising 10% of body weight over a period of 6 months
- 4.

The goal of treatment for children with solid tumors has become increasingly focused on response-based therapy and on minimizing late effects. Chemotherapy and radiation therapy are the cornerstones of treatment in solid tumors. Children are at an increased risk for late secondary malignancies resulting from having both chemotherapy and radiotherapy at a time when they are still growing. For this reason, attempts to minimize treatment for those children who already do well based on stage and histology are being trialed. Chemotherapy is an important part of the treatment for solid tumors <sup>(5)</sup>.

**Importance of nursing profession role in the care of sick child in oncology ward**

Today's pediatric oncology nurse faces a number of challenges, both from within the profession and from society, to provide clinical expertise in what is a complex and rapidly change specialty. Advance in the medical treatment of childhood cancer means that expected survival rates have never been better. Consequently, nurses caring for children with cancer have had to keep pace with advances with treatment as well as with

technological development. The nature of care provided in inpatient, outpatient and community setting has changed over recent years and will continue to do so as a growing number of children in all three setting required highly specialized care throughout their disease trajectory <sup>(6)</sup>.

**II. METHODOLOGY**

Descriptive study dealt with object-analytical sample randomly from the 40 nurses working in the hospitals of Baghdad oncologic ward of solid tumors. The questionnaire was designed to gather information. And data was gathered by questionnaire format involved multiple choice item test for the purpose of evaluation nurses knowledge and practice for the period (18th October/ 2015 to 10th July/ 2016). Data was analyzed by applying descriptive statistics (frequency and percentage) and deductive statistics (Chi-Square test) SPSS version (20).

**III. RESULT**

**Table (1) observed the frequencies and the present of demographic characteristics in the study.**

List	Demographic characteristics	Frequency	Percent
<b>1</b>	<b>Gender</b>		
	Male	17	42.5
	Female	23	57.5
	<b>Total</b>	<b>40</b>	<b>100.0</b>
<b>2</b>	<b>Age (year)</b>		
	19 - 23	6	15.0
	24 - 28	13	32.5
	29 - 33	6	15.0
	34 - and more	15	37.5
	<b>Total</b>	<b>40</b>	<b>100.0</b>
<b>3</b>	<b>Marital status</b>		
	Married	21	52.5
	Single	14	35.0
	Divorced	2	5.0
	Widowed	3	7.5
	<b>Total</b>	<b>40</b>	<b>100.0</b>
<b>4</b>	<b>Educational level</b>		
	College	6	15.0
	Institute	21	52.5
	Secondary School	13	32.5
	<b>Total</b>	<b>40</b>	<b>100.0</b>
<b>5</b>	<b>Hospital</b>		
	Children Welfare Teaching	22	55.0
	Child's Central Teaching	18	45.0
	<b>Total</b>	<b>40</b>	<b>100.0</b>

List	Demographic characteristics	Frequency	Percent
<b>6</b>	<b>Years of experience in general nurses</b>		
	Less than 1 year	6	15.0
	1 - 5	7	17.5
	6 - 10	<b>18</b>	<b>42.0</b>
	11 - 15	2	5.0
	16 - 20	2	5.0
	21 - and more	5	12.5
	<b>Total</b>	<b>40</b>	<b>100.0</b>
<b>7</b>	<b>Years of experience in oncology unit</b>		
	Less than 1 year	<b>11</b>	<b>27.5</b>
	1 - 3	6	15.0
	4 - 6	<b>11</b>	<b>27.5</b>
	7 - 9	8	20.0
	10 - 12	1	2.5
	13 and more	3	7.5
	<b>Total</b>	<b>40</b>	<b>100.0</b>
<b>8</b>	<b>Training Courses</b>		
	Yes	<b>25</b>	<b>62.5</b>
	No	15	37.5
	<b>Total</b>	<b>40</b>	<b>100.0</b>

Table (1) shows that the females of sample study are more than males, it is ( 57.5 % ) females and ( 42.5 % ) males, within age group of ( 34 and more ) years, the highest percentage ( 37.5 % ) of the study sample, the marital status shows that the highest percentage are married ( 52.5 % ) of the study sample, the nurse's educational level is institution it ( 52.5 % ), and the nurse's number shows that the highest percentage it is ( 55.0 % ) in

Children Welfare Teaching Hospital, the years of experience in general nurses group ( 6 – 10 ) shows that the highest percentage ( 42.0 % ), and the years of experience inside oncological unit of nurse's group( Less than 1 years and 4 – 6 ) shows that the highest percentage ( 27.5 % ) in both of them. Regarding Training Course. It indicates that the highest percentage are (62.5% ) they have training course.

**Table (2): Nurses' knowledge toward nature of solid tumors.**

List	items	Right Answers	Wrong Answers	M.S	RS	Ass.
1	Characteristics of tumor by localization.	19	21	1.47	M.S	73.5
2	Solid tumors characterized fixed or moveable.	15	25	1.37	M.S	68.5
3	Type of solid tumors	29	11	1.72	H.S	86.0
4	Non Hodgkin Lymphoma target	20	20	1.50	M.S	75.0
5	Wilm's Tumor means nephroblastoma	28	12	1.70	H.S	85.0
6	The Neuroblastma means neurous node cancer	22	18	1.55	M.S	77.5
7	<b>The Retinablastoma means cancer of retina.</b>	<b>32</b>	<b>8</b>	<b>1.80</b>	<b>H.S</b>	<b>90.0</b>
8	The Ewing's Sarcoma means cancer of bones	16	24	1.40	M.S	70.0
9	<b>The Rhabdomyosarcoma means cancer of stratified muscles.</b>	<b>12</b>	<b>28</b>	<b>1.30</b>	<b>L.S</b>	<b>65.0</b>
10	Causes of solid tumors.	31	9	1.77	H.S	88.5

11	Symptoms of Hodgkin's disease.	17	23	1.42	M.S	71.0
12	Symptoms of Wilm's Tumor.	12	28	1.30	L.S	65.0
13	Symptoms of Neuroblastoma.	17	23	1.42	M.S	71.0
14	Symptoms of Retinoblastoma.	16	24	1.40	M.S	70.0
15	Symptoms of Rhabdomyosarcoma	16	24	1.40	M.S	70.0
16	Symptoms of Ewing's Sarcoma	23	17	1.57	M.S	78.5
17	The diagnosis of solid tumors	28	12	1.70	H.S	85.0
18	The stages of solid tumors	22	18	1.55	M.S	77.5
19	Treatment of the solid tumors.	29	11	1.72	H.S	71.0
<b>Total</b>		404	356	1.53	M.S	76.5

Mean of Score (MS) = Low Less than (1.33), Moderate = (1.33-1.67), High= More than (1.67)

Table (2) demonstrated the total mean of scores (1.53) is moderate for nurses' knowledge.

**Table (3): Nurses' practices concerning solid tumors.**

Items	Always	Some time	never	M.S	R.S	Ass.	
<b>1</b>	<b>General rules to be observed before holding any nursing action :</b>						
1.1	<b>Hand washing before any nursing action.</b>	36	4	0	2.9	96.66	H.S
1.2	<b>Hand washing after any nursing procedure.</b>	9	26	5	2.1	70.0	M.S
1.3	Preparation of equipment.	34	6	0	2.8	93.33	H.S
1.4	Provide explanation about each procedure applied to child and mother.	11	23	6	2.1	70.0	M.S
1.5	Documentation for nursing action inside patient chart.	38	2	0	2.9	96.66	H.S
1.6	Care of the equipment after finishing the procedure.	28	12	0	2.7	90.0	H.S
<b>2</b>	<b>Measure vital signs: 2.1. Temperature measurement through the armpit:</b>						
2.1.1	Make sure that the thermometer is less than 35 ° C by shaking down the thermometer.	40	0	0	3	100.0	H.S
2.1.2	<b>Wiping the armpit area dried</b>	10	0	30	1.5	50.0	L.S
2.1.3	Put the thermometer under the armpit and put the hand over the chest.	40	0	0	3	100.0	H.S
2.1.4	Leave the thermometer for 3-5 minutes.	40	0	0	3	100.0	H.S
2.1.5	Read thermometer and addition 0.6 ° C to the existing reading.	40	0	0	3	100.0	H.S
2.1.6	Cleaning and disinfection of the thermometer.	36	4	0	2.9	96.66	H.S
<b>2.2</b>	<b>Pulse right</b>						
2.2.1	<b>Check the status of the child in the bed.</b>	2	4	34	1.2	70.0	M.S
2.2.2	Make sure that the hand in a comfortable position	0	4	36	1.1	36.66	L.S
2.2.3	Put the top of three fingers on the radial artery area.	0	4	36	1.1	36.66	L.S
2.2.4	Put the hand over the chest.	2	2	36	1.1	36.66	L.S
2.2.5	Counting the pulse for full minute.	2	2	36	1.1	36.66	L.S
<b>2.3</b>	<b>Respiratory right.</b>						

2.3.1	Place the child's arm over the chest and observe treating.	4	0	36	1.2	70.0	M.S
2.3.2	Count breathing for full minute.	4	0	36	1.2	70.0	M.S

<b>2.4</b>	<b>Measurement of blood Pressure:</b>						
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2.4.1	Make sure that the blood pressure device is working properly.	4	0	36	1.2	70.0	M.S
2.4.2	Make sure that the stethoscope work well.	4	0	36	1.2	70.0	M.S
2.4.3	Wrap the cuff of the syphgmonometer correctly.	4	0	36	1.2	70.0	M.S
2.4.4	Measure blood pressure systolic and diastolic.	4	2	34	1.2	70.0	M.S

<b>3</b>	<b>Administration of Intravenous solutions</b>						
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3.1	<b>Clean the top of bottle with alcohol.</b>	<b>10</b>	<b>6</b>	<b>24</b>	<b>1.6</b>	<b>53.33</b>	<b>L.S</b>
3.2	Remove air from I.V set.	40	0	0	3	100.0	H.S
3.3	Use kidney basin to receive the running fluid from I.V set.	38	0	2	2.9	96.66	H.S
3.4	Lock screw valve after removing air from I.V set fix screw on tube.	40	0	0	3	100.0	H.S
3.5	Connect I.V set with (Cannula).	40	0	0	3	100.0	H.S

<b>4</b>	<b>Fix the Cannula</b>						
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4.1	Wrapping the tourniquet.	38	2	0	2.9	96.66	H.S
4.2	Sense the vein	38	2	0	2.9	96.66	H.S
4.3	Clean and disinfect the area with alcohol sponge.	38	2	0	2.9	96.66	H.S
4.4	Insert cannula	40	0	0	3	100.0	H.S
4.5	Make sure that cannula in right place.	37	3	0	2.8	93.33	H.S
4.6	Fixed with tape adhesive.	40	0	0	3	100.0	H.S

<b>5</b>	<b>Administration of medications.</b>						
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5.1	Make sure of patient's name.	40	0	0	3	100.0	H.S
5.2	Make sure of medications name.	40	0	0	3	100.0	H.S
5.3	Be sure about the route of drug administration.	40	0	0	3	100.0	H.S
5.4	Be sure about dosage of medication	40	0	0	3	100.0	H.S
5.5	Make sure about the time of giving medication.	40	0	0	3	100.0	H.S
5.6	Monitor child's administration of medication	<b>0</b>	<b>0</b>	<b>40</b>	<b>1</b>	<b>33.33</b>	<b>L.S</b>

<b>6</b>	<b>Blood withdrawn.</b>						
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6.1	Make sure of medical guidance concerning procedure.	40	0	0	3	100.0	H.S
6.2	Make sure of the type of test.	40	0	0	3	100.0	H.S
6.3	Fix the tourniquet.	40	0	0	3	100.0	H.S
6.4	Sense the site of vein.	40	0	0	3	100.0	H.S
6.5	Clean and disinfect the area with alcohol sponge.	38	2	0	2.9	96.66	H.S

6.6	Administration the needle of syringe into a vein and draw blood.	40	0	0	3	100.0	H.S
6.7	Put a piece of sterile gauze on the place of administration of the syringe.	40	0	0	3	100.0	H.S
6.8	Put the blood in the test tube.	40	0	0	3	100.0	H.S
6.9	Put label on test tube by patient name.	40	0	0	3	100.0	H.S

<b>7</b>	<b>Infection Control</b>						
7.1	Wearing the gown.	38	2	0	2.9	96.66	H.S
7.2	Wear medical gloves.	24	10	6	2.4	80.0	H.S
7.3	Put a mask.	25	10	5	2.5	83.33	H.S
7.4	<b>Put the protective eye glasses.</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>1</b>	<b>33.33</b>	<b>L.S</b>
7.5	Checking the patient room.	26	12	2	2.6	86.66	H.S
7.6	Use sharp medical waste container.	32	6	2	2.7	90.0	H.S
7.7	Work mechanisms disposal of medical waste	34	2	4	2.7	90.0	H.S
<b>8</b>	<b>General guidelines for the child and parents.</b>						
8.1	Daily bath interest of the child.	17	17	6	2.2	90.0	H.S
8.2	Cut and trim the nails of the child.	14	12	14	2	66.66	M.S
8.3	<b>Checking the quality of the patient's diet.</b>	<b>5</b>	<b>10</b>	<b>25</b>	<b>1.5</b>	<b>50.0</b>	<b>L.S</b>
8.4	Educate parents' commitment to treatment even after the remission of the disease.	12	22	6	2.1	70	M.S
8.5	<b>Offer the medical advice in case of relapse episode.</b>	<b>13</b>	<b>11</b>	<b>16</b>	<b>1.9</b>	<b>96.66</b>	<b>H.S</b>
8.6	Educate parents about the importance of compliance on treatment.	10	14	16	1.8	60.0	L.S
<b>Total</b>		<b>1599</b>	<b>240</b>	<b>641</b>	<b>2.3</b>	<b>76.66</b>	<b>M.S</b>

Mean of Score (MS) = Low Less than (1.66), Moderate = (1.66-2.33), High= More than (2.33)

Table (3) demonstrated the total mean of score for nurses' knowledge and practice indicate that there is moderate level knowledge and practice toward solid tumors

#### IV. DISCUSSION OF THE RESULTS

Table (2) demonstrates the total mean scores (1.53) is moderate for nurses' knowledge toward nature of solid tumors, and the table also shows that the high score (1.80) for nurses answers were adequate knowledge concerning item (7) which is centered around retinoblastoma and the low score (1.30) of nurses answers were inadequate knowledge concerning the item (9) which is centered around the rhabdomyosarcoma.

These results supported by Sazzad, H. (2010)<sup>7</sup>. A study about Nurses Knowledge and attitude, and Pain Management Practices of postoperative Pediatric in Bangladesh. Which

revealed that, total, nurses level of knowledge and attitudes to postoperative pain management in children was at the moderate level M=66.79%. Also the current study result was disagreed with the study done by Lui, L. (2005)<sup>8</sup>, that report the showed Knowledge score of pain management the mean total right score was low (M=9.49) with range from (4 to 16) score.

Table (3) demonstrated the total mean score (2.3) is moderate for nurses' practices concerning solid tumors. Also the table shows the item (1)

(General role in nursing action) recorded the higher score (2.9), concerning the item (1.1) of hand washing before any nursing action; for the item (2) (measure vital sings) recorded low score (1.5) concerning (2.1.2) (wiping the armpit); and the



items (2.1.3, 2.1.4, 2.1.5) concerning (put, leave, read thermometer) respectively recorded high score (3). For item (2.2) concerning (pulse right), the item (2.2.1) concerning (child in the bed) recorded moderate score (1.2), and the items (2.2.2, 2.2.3, 2.2.4, 2.2.5) concerning (make sure hand position, put the top of fingers, put the hand, counting full minute) respectively, that recorded low score (1.1). The nurses' answers for item (2.3) concerning (respiratory right) recorded moderate score (1.2) concerning items (2.3.1 and 2.3.2) (place the arm over the chest and count breathing for full minute). The answers for item (2.4) concerning (measurement of blood pressure) it indicate moderate score (1.2) concerning (2.4.1, 2.4.2, 2.4.3, 2.4.4) (sure blood pressure device, stethoscope work well, wrap the cuff and measure blood pressure systolic and diastolic), and the answers for item (3) concerning (administration of intravenous solution) respectively recorded low score (1.6) for item (3.1) concerning the (clean bottle with alcohol), and the high score (3) for items (3.2, 3.4 and 3.5) concerning (remove air, lock screw valve and connect IV). And for item (4) concerning (fix the cannula) are recorded high score (3) for items (4.4 and 4.6) (insert cannula and fixed with tape adhesive), because they have good practice. For the item (5) concerning the (administration of medication) the high score (3) recorded for items (5.1, 5.2, 5.3, 5.4 and 5.5) concerning (patient name, medication name, route of drug, dosage of medication and time of giving), and the low score (1) recorded for item (5.6) concerning (monitor child's). The High score (3) recorded for item (6) concerning (blood withdrawn). For item (7) concerning (infection control), the result are low score (1) concerning the item (7.4) (put eye glasses) and the high score (2.9) concerning item (7.1)

(Wearing the gown). And the last question of nurses' practice concerning solid tumors item (8) concerning (general guideline for the child and parents) that recorded high score (1.9) for the item (8.5) (medical advice in relapse episode), while the low score (1.5) for the item (8.3) (checking patient's diet).

These results supported by Sazzad, H. (2010)<sup>7</sup>. Nurses Knowledge and Attitudes and Pain Management skills of postoperative Pediatric in Bangladesh. This result agreed with study that revealed nurses level for pain management skills are moderate (M= 87.16%).

These finding also; disagreed with results obtained from study done by Najma et al. (2012)<sup>6</sup> study about (Assessment of knowledge, skill and attitude of oncology nurses in

chemotherapy giving in Pakistan hospitals) The results findings of the study indicated that in majority of practice items nurses have inadequate performances in all three stages including preadministration, during administration and postadministration of anticancer drugs.

## V. RECOMMENDATION

The researcher suggests that establishment of training courses for the nursing staff to increase their knowledge and develop their expertise. Created specialized centers for the treatment of cancers.

## REFERENCES

- [1] Elkateb, N.; Samy, A. and Riad, S.: Quality of Life of Adolescents Cancer Patient as Perceived by Patient, Nurses and Mothers. Journal of the Egyptian National Cancer Institute. 2002, 14(4), P.P. 343-348.
- [2] Deborah, T.; Nancy, E. and Kline (Eds.): Pediatric Oncology Nursing Advanced Clinical Handbook, Springer Berlin Heidelberg NewYork ISSN 1613-53. 2005, P.P. 26, 68.
- [3] Chauvenet, A.; Schwarz, C.; Weiner, M.: Hodgkin's disease in children and adolescents. In Bast RC, Kufe, DW, Pollock RE, Weichselbaum RR, Holland JF, Frei E (eds), Cancer Medicine, 5th ed. Hamilton: B.C. Decker Inc. 2000.
- [4] Faith, G. et al.: A framework for Developing Practice in Pediatric Oncology Nursing, Royal College Nursing, 2000, P.P. 4.
- [5] Najma, K. et al.: Assessment of knowledge, skill and attitude of oncology nurses in chemotherapy administration in tertiary hospital Pakistan, Pakistan, June 2012.
- [6] Sazzad, H.: Nurses Knowledge and Attitudes, and Pain Management Practice of post- Operative Children in Bangladesh. PhD Thesis, Bangladesh, 2010.
- [7] Lui, L.: The Knowledge and Attitudes Regarding Pain Management among the Medical Nursing Staff in Hong Kong, University of Hong Kong, Department of Nursing Studies, 2005.

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