Nurses' Knowledge about Asthmatic Attacks in Children at Pediatric Teaching Hospitals in Baghdad City

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Abstract:
Objectives of the study: *To assess of nurses` knowledge toward asthmatic attacks in children at pediatric teaching hospitals and to find out the association between nurses` knowledge and their demographic characteristic including (gender, age, level of education, years of experience, and number of training courses and reading article about asthmatic attacks.*

Methodology*: A non –probability (purposive) sample of (77) nurseswas conducted on male and female at pediatric nurses who were working in medical units, started from February 9^{th}2017 up to the end of 20th March 2017 in order to assess Nurses' knowledge regarding asthmatics attack in children at Pediatric Teaching Hospitals in Bagdad city. The present study was carried out in three Pediatric Hospitals, central Teaching Hospital of Pediatric in Al-karkhdirectorate.Iba Al-Balady Maternal and child Hospital in Al-Rasafa directorate, and Child welfare Hospital in Medical City Directorate A questionnaire format was used for data collection , which consisted of (2) parts; the first part is related to the nurses' demographic data , and the second part is related to the pediatric Nurses' knowledge about the asthmatics attack. The overall number of the items included in the questionnaire was (41). The items concerning Nurses' knowledge were rated on three levels Likert scale;(Yes–No) scored.The level was scored as (2) for yes, (1) for no. Data were collected through a direct interview with the Nurses of the sample by using a constructedquestionnaire.****Descriptive statistical*** *This approach was performed through the determination of: A- Frequency (F). Inferential statistical procedure This approach was performed through the determination of:A- Chi-square (χ^2) test.*

Result:*The study showed that majority of sample (88.31%) were female, (32.47%) of them were between(32-47) years-old,(51.95%) of there were married, while (48.05%) were single, (55.84%) of them were secondary nursing school graduates.Furthermore, the majority of the sample (68.83%) were less than five years of experience, while (75.32%) of them had less than five years of experience in medical unit. Also, (90.91%) of nurses had no opportunity to be involved in training sessions in asthmatic attacks, andthe study indicated that (90.24%) of sample had accepted knowledge, while (9.76%) of them had poor knowledge toward all aspects of asthmatic attacks.*

Conclusion: *The study showed that the relationship between nurses' knowledge with some demographic characteristics, the study indicated that there was no significant relationship between nurses' knowledge and their age, gender, marital status, Years of experience and training sessions.****The study recommended*** *that there is needed for an orientation program for all new nurses, and a need for implementing activities, skills training to all nurses and Emphasizing on the importance of participating them in training sessions outside or inside of Iraq related to the asthma.*

I. Introduction

Childhood asthma as an allergic disease remains the common cause of hospitalization for children and is a disease characterized by episodic bronchospasm and airway obstruction leading tobreathlessness, wheezing and excessive coughing. Robson,Woodman and Burgess(2001) Asthma is considered a reactive airway disease caused by some allergens such as pollens, foods, dust mites and animal dander which irritate the airway and irritate bronchoconstruction also asthma triggered in the time of temperature changes, cold air, viral infections, exercise and exposure to cigarette smoke.

The child has a tight,non-productive cough, wheezing may be audible or heard through a stethoscope, the child can develop signs of increasing respiratory distress (Tachycardia, dyspnea, tachypnea, retraction and may be strider, sometimes child have difficulty talking and shows tiredbecause asthma is an obstructer airway disease we see some changes include.Increased lung volumes and respiratory flows rates are seen in pulmonary function test. X-ray findings usually reveal hyperinflation and perbronchial thickening.Mucous secretion and plugging are usually increased, and expiratory wheezing is usually the hallmark of the physical exam airway

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limitation is generally at least partiallyreversible. Basher (2003) and Forero (2001). Asthma is a common disease in the world affect more than 15% all over the world of the population. One third of children with asthma develop symptoms in the first year of life, most have developed symptoms by school age. The morbidity and mortality of asthma in children have increased over the past two decades, despite advances in the understanding of its pathogenesis and treatmentAsthma remains the most common chronic disease of childhood affecting around 30 million.

Asthma affects 1 to 3 school-age children and is a leading cause of emergency and hospitalization visit, school absenteeism, the mortality increases and takes around 5500 fatalities annually. The death rate of asthma continuous to increase affecting school and work, attendance,occupational choices,physical activity and quality of life in general.In many countries, the prevalence of asthma is increasing,particularly in the second decade of life where this disease affects 10-15% of the population.

Childhood asthma is the most frequent encountered pulmonary disease in children more than 50% of them present before 6 years of age. Boys are affected more than girls prior to adolescence. Risk factors coming with genetics, exposure to cigarette smoke, living in urban area, and poverty.Respiratory system disease in children is there have upper respiratory tract infection disease like respiratory syncytial virus (RSV), common cold, sinusitis, tonsillitis, otitis media, pharangitis and laryngitis. The lower respiratory tract infection is pneumonia usually caused by bacteria or fungi or viruses, respiratory tumors, T. B and asthma.Asthma is a chronic inflammatory disease of the air way resulting in air way hyper responsiveness mucosal edema, and mucus productive. Asthma is a common disease in the world affect more than 15% all over the world of the population(Leifer, 2009).

Objectives of the study: To assess the level of nurses` knowledge toward asthmatic attack andtofind out the association between nurses' knowledge and their demographic characteristic including (gender, age, level of education years of experience, and number of training sessions

II. Methodology

A descriptive design was conducted on male and female pediatric nurses who were working in medical units, started from February 9[th]2017 up to the end of 20th March 2017 in order to assess Nurses' knowledge regarding asthmatics attack in children at Pediatric Teaching Hospitals in Bagdad city. The present study was carried out in three Pediatric Hospitals, central Teaching Hospital of Pediatric in Al-karakh directorate, Ibn Al-Balady Maternal and child Hospital in Al-Rasafa directorate, and Child welfare Hospital in Medical City Directorate. A non–probability (purposive) sample of (77) nurses (males and females). The nurses were assigned for the study according to the following criteria:

1-Those who were working in medical unit 2- Those who should have one year of experience or more. 3-All the educational levels of nurses. 4- Nurses who worked in the morning and evening shift.

Study *instrument:*

For the purpose of the study, the researcher constructed the study instrument because no existing tool was found to measure the desired information. the construction was based on the extensive review of relevant literature and related studies. A questionnaire format was used for data collection, which consisted of (2) parts: the first part is related to the nurses' demographic data, and the second part is related to the pediatric Nurses' knowledge about the asthmatics attack.

The overall number of the items included in the questionnaire was (41). The items concerning nurses' knowledge were rated on three levels Likert scale;(Yes) scored.The level was scored as (2) for yes, (1) for no. Data were collected through a direct interview with the Nurses by using a constructed questionnaire. The content validity of the constructed questionnaire was determined through the use of a panel of experts to investigate the content of the questionnaire for the clarity and adequacy in order to achieve the objectives of the present study preliminary questionnaire was designed and presented to (10) experts for the determination of its validity.In order to determine whether the objectives of the study were met or not, the following statistical procedures were used in analyzing the data of the study.

Descriptive statistical procedure: This approach was performed through the determination of: A-Frequency (F). Inferential statistical procedure: This approach was performed through the determination of:A-Chi-square (χ^2) test: It was used to determine the significant relationship between the nurses' knowledge and their demographic characteristics at $P \leq 0.5$, and was computed as follows:

$X^2 = \sum \frac{(0-E)^2}{E}$]

III. Results
Table1. Distribution of nurses by their Demographic Characteristics Data

List	Demographic characteristics	Frequency	Percent
1-	Gender		
	Male	9	11.69
	Female	68	88.31
	Total	77	100.0
2-	Age (years)		
	18-22	17	22.08
	23-27	25	32.47
	28-32	20	25.97
	33-37	5	6.49
	38 years or more	10	12.99
	Total	77	100.0
3-	Marital status		
	Single	37	48.05
	Married	40	51.95
	Total	77	100.0
4-	Level of education		
	Nursing school graduate	2	2.6
	Secondary nursing school graduate	43	55.84
	Nursing institute graduate	16	19.48
	Nursing college graduate	16	22.08
	Total	77	100.0
5-	Years of experiences in hospitals		
	1-5	53	68.83
	6-10	13	16.88
	11-15	4	5.19
	16-20	1	1.3
	21-and more	6	7.79
	Total	77	100.0
6-	Years of experiences in medical units		
	1-5	58	75.32
	6-10	10	12.99
	11-15	2	2.6
	16-20	1	1.3
	21-and more	6	7.79
	Total	77	100.0
7-	Training sessions about asthmatic attacks in children		
	None	65	84.42
	Yes	12	15.58
	Total	77	100.0
8-	Reading a articles about asthmatic attacks		
	No	70	90.91
	Yes	7	9.09
	Total	100	100.0

Table (1) show the highest proportion of sample (88.31%) were females, (32.47%) of them were between (23-27) years-old, (51.95%) of them were married, while (48.05%) were single, (55.84%)of them were secondary nursing school graduates

Furthermore, the majority of sample (68.83%)were less than five years of experience in hospitals,while (75.32%) of them had less than five years of experience in medical units. Also, (90.9%) of nurses had no opportunity to be involved in training sessions in asthmatic attacks, and(84.42%) of them say that they are not able to be read any articles about asthmatic attacks

Table 2. Distribution of Nurses' knowledge toward asthmatic attacks

List	Item	Yes		No		Mean	Level
		F	%	F	%		
A.	*Definition of asthma*						
1-	Asthma is a chronic inflammatory disorder of airway .characterized by recurring symptoms airway obstruction bronchial hyper-responsiveness.	68	88.31	9	11.69	1.88	*high*
B.	*Causes of asthma*						
1-	Asthma occurs due to sensitive of immune system which plays a greater roles	61	79.22	16	20.78	1.79	*high*
2-	Inherited traits	51	66.23	26	33.77	1.66	moderate

3-	Viral airway infections such as common cold	66	85.77	11	14.29	1.85	High
4-	Exposure to environmental factors						
4-1	weather changes or cold air	63	81.82	14	18.18	1.81	High
4-2	Exposure to air pollutants such as tobacco smoke	56	72.73	21	27.27	1.73	High
4-3	Allergies to dust mites, pet dander, pollen or mold	62	80.52	15	19.48	1.80	High
C.	*Pathophysiology of asthmatics attack*						
1-	The hypersensitivity reaction results from histamine release produce of the respiratory mucosa cause obstruction due to bronchiolar narrowing	60	77.92	17	22.08	1.77	***High***
2-	Accumulation of mucus secretion	54	70,13	23	29,87	1.70	High
3-	Bronchial and bronchial smooth muscle spasm this lead to airway tapping wheeze and respiratory distress	66	85,71	11	14,49	1.85	High
D.	*Types the severity of asthmatics attack*						
1-	Mild asthmatics attack sign						
1-1	Simple wheezing	77	100.0	0		2	High
1-2	Attack occur 1 monthly	77	100.0	0		2	High
2-	Moderate asthmatics attack sign						
2-1	Cough	74	96,1	3	3,9	1.98	High
2-2	Severe chest wheezing	77	100.0	0		2	High
2-3	Increasing respiratory rate	77	100.0	0		2	High
2-4	Attack occur 1 weekly	77	100.0	0		2	High
3-	Severe asthmatics attack sign						
3-1	lip cyanosis	67	87,01	10	12,99	1.87	High
3-2	Child said single word	68	88.31	9	11.69	1.88	Moderate
3-3	Shattering	77	100.0			2	High
3-4	Unconscieces	76	98.7	1	1.3	1.93	High
3-5	Attack occur more than one weekly	77	100.0	0		2	High
3-6	Cough is dry and harsh	72	93.51	5	6.49	1.93	High
E.	*Complications of asthmatics attack*						
1-	The commonest complications of bronchial asthma is emphysema, Pneumothorax	47	61.04	30	38.96	1.61	***moderate***
2-	Pneumo-mediastinum bronchiectasis	68	88.31	9	11.69	1.88	High
3-	Respiratory failure	61	79.22	14	18.18	1.84	High
4-	Congestive heart failure	58	75.32	19	24.68	1.75	High
5-	Psychological problems and chronic invalidism may develop	43	55.84	32	41.56	1.55	Moderate
F.	*Treatment of asthmatics attacks*						
1-	O$_2$ therapy	77	100.0	0		2	High
2-	Venture (ventolin)	77	100.0	0		2	High
3-	Bronchodilator ,steroids	76	98.7	1	1,3	1.98	high
4-	I.V fluids	76	98.7	1	1.3	1.98	High
G.	*Nursing care and management*						
1-	Monitor vital signs (breathing , pulse , blood pressure , temperature)	77	100.0	0		2	***High***
2-	Monitor O$_2$	75	97.4	2	2,6	1.97	High
3-	Monitor the level of awareness	77	100.0	0		2	High
4-	Monitor Cyanosis of face and hands	77	100.0	0		2	High
5-	Place the patient in semi fowler- position , keep the child calm	77	100.0	0		2	High
6-	Keep the child away from stressful situations	72	93.51	5	6.49	1.93	High
7-	Educate mothers and family in recognizing factors such as allergens, irritants ,temperature changes, and upper respiratory infections that trigger asthma symptoms	77	100.0	0		2	High
8-	Help child and family in recognitions of the asthmatic attacks	77	100.0	0		2	High
9-	Collaborating with family to put care plan to child with asthma	77	100.0	0		2	High
10-	Discuss the impact of the illness on the family's lifestyle	77	100.0	0		2	high

(1-1.67) low * (1.68-2.33) moderate *(2.34-3) high knowledge*

Table(2) nurse's knowledge and can be interpretation as follow:

Concerning nurse's knowledge about definition of asthmatic attacks (88.31%) of nurse's, their answers were correct, while (11.69%) were in correct answer nurse's knowledge about the causes of asthmatic attack (77.71%)of nurses, their answer were correct, while (22.29) were incorrect answer. Nurse's knowledge about the

path physiology of asthmatic attack (77.92%)of nurses, their answers were correct, while (22.08%) were incorrect answer.

Nurses' knowledge about the types the severity of asthmatic attacks (96.47%) of nurses' their answers were correct, while (3.03%) were incorrect answers.Nurses' knowledge about the complications of asthmatic attacks (71.95%) of nurses' their answers were correct, while (28.05%) were incorrect answer. Nurses' knowledge about the treatment of asthmatic attacks (99.35%) of nurse's their answers were correct, while (0.65%) were incorrect answer. Nurses' knowledge about nursing care and patient's education (99.09%) of nurses' their answers were correct, while (0.09%) were incorrect answer.

Table3. The overall item regardingknowledge concerning asthmaticattacks Nurses

List	Number of items	Section	Yes		No	
			F	%	F	%
1.	1	Definition of asthmatic attacks	68	88.31%	9	11.65%
2.	6	The causes of asthmatic attacks	359	77.7%	103	22.29%
3.	3	Path physiology of asthmatic attacks	180	77.92%	51	22.08%
4.	12	The types severity of asthmatic attacks	896	96.97%	28	3.03%
5.	5	Complication of asthmatic attacks	277	%71.95	108	%28.05
6.	4	Treatment of asthmatic attacks	306	%99.35	2	%0.65
7.	10	Nursing care and patient education	763	%99.09	7	%0.91
8.	41	Total knowledge	2849	%90.24	308	%9.76

Table (3) shows the total nurse's knowledge concerning asthmatic attacks which reveals that (90.24%) of nurse's who working in medical units had acceptable knowledge, while (9.76%)had poor knowledge.

Table4. Association between nurses' knowledge concerning asthmatic attacks with their gender

Gender		Yes	No	Total
Male	F	336	33	369
	%	91.06	8.94	100%
Female	F	2889	268	2.806
	%	89.81	9.55	100%
Total	F	2856	301	3.157
	%	90.47	9.53	100%
χ^2 = 8.231 df= 1, P ≥0.05, P-value = 0.60, Sig NS				

The table shows that there are no significant association between nurse's knowledge and Gender at p≥0.05

Table5. Association between nurses' knowledge about asthmatic attacks with their age.

Age		Yes	No	Total
18-22	F	641	76	717
	%	89.4	10.6	100%
23-27	F	911	113	1024
	%	88.96	11.04	100%
28-32	F	699	100	799
	%	87.48	12.52	100%
33-37	F	178	25	203
	%	87.68	12.32	100%
38- and more	F	366	48	414
	%	88.41	11.59	100%
Total	F	2795	362	3.157
	%	88.53	11.47	100%
χ^2= 43.523 df 3 P-value = 0.324 p ≥ 0.05 Sig NS				

The table shows that there is no significant association between nurses' knowledge and Gender at p≥0.05.

Table6. Association between nurses' knowledge about asthmatic attacks with their marital status

Marital status		Yes	No	Total
Single	F	1380	143	1523
	%	90.61	9.39	100%
Married	F	1487	147	1634
	%	91	9	100%
Total	F	2867	290	3.157
	%	90.81	9.19	100%
χ^2 = 16.119 df1 P-value = 0.096 P ≥ 0.05 Sig NS				

The table shows that there are no significant association between nurse's knowledge and marital status at p≥0.05

Table7. Association between nurse's knowledge about asthmatic attacks with their level of education

Level of Education		Yes	No	Total
Nursing School Graduate	F	79	3	82
	%	96.34	3.66	100%
Secondary Nursing School Graduate	F	1587	177	1764
	%	89.97	10.03	100%
Nursing Institute Graduate	F	554	61	615
	%	90.08	9.92	100%
Nursing College Graduate	F	633	63	696
	%	90.95	9.05	100%
Total	F	2853	304	3157
	%	90.37	9.63	100%
χ^2= 28.687 df2 P-value = 0.539 P ≥0.05 Sig NS				

The table shows that there are no significant association between nurse's knowledge and level of education at p≥0.05

Table8. Association between nurses' knowledge about asthmatic attacks with their years of experience in hospitals

Years of experiences in hospitals		Yes	No	Total
1-5 years	F	1969	204	2173
	%	90.61	9.39	100%
6-10	F	485	48	533
	%	90.99	9.01	100%
11-15	F	151	13	164
	%	92.07	7.93	100%
16-20	F	38	3	41
	%	92.68	7.32	100%
21–and more	F	226	20	246
	%	91.87	8.13	100%
Total	F	2869	288	3157
	%	90.88	9.12	100%
χ^2= 18.402 df3 P-value = 0.999 P≥ 0.05 Sig NS				

The table shows that there are no significant association between nurse's knowledge and years of experience at p≥0.05

Table9. Association between nurse's knowledge about asthmatic attacks with their years of experience in medicals units

Years of experience in medical units		Yes	No	Total
1-5	F	1959	214	2173
	%	90.15	9.85	100%
6-10	F	487	46	533
	%	91.37	8.63	100%
11-15	F	150	14	164
	%	91.46	8.54	100%
16-20	F	38	3	41
	%	92.68	7.32	100%
21- and more	F	220	26	246
	%	89.43	10.57	100%
Total	F	2854	303	3157
	%	90.4	9.6	100%
χ^2= 26.187,df = 3, P-value = 0.967, P≥0.05 Sig NS				

The table shows that there are no significant association between nurse's knowledge and Years of experience in medical unit at p≥0.05.

Table10. Association between nurse's knowledge about asthmatic attacks with their training about asthmatic attacks in children

Training sessions about asthmatic attacks in children		Yes	No	Total
No	F	2419	246	2665
	%	90.77	9.23	100%
Yes	F	450	42	492
	%	91.46	8.54	100%
Total	F	2869	288	3157
	%	90.88	9.12	100%

$X^2$7.234	df1	P-value = 0.703	P≥0.05	Sig NS

The table shows that there are no significant association between nurse's knowledge and training at p≥0.05.

IV. Discussion

Part one: Discussion of the nurses' demographic characteristics

Through the course of present study, it has been noticed that the majority of nurses (88.31%) of the study sample were females and remaining were males. This result agrees with study done byKamunge (2013) was found that 70.2% of the sample were female.

The highest proportion of sample (88.31%) were female, (32.47%) of them were between (23-27) years-old the study disagree with the study done by Raju and others (2011) who provided in their study that the age were (21-30 years) and (51.95%) of them were married, while (48.05%) were single, (55.84%)of them were secondary nursing school graduates this result agree with Hassand and Hassan (2012) who showed in the study that graduated from a secondary school of nursing.Furthermore, the majority of sample (68.83%)were less than five years of experience in hospitals.This result agrees with the study done with Asadullaland others (2013),while (75.32%) of them had less than five years of experience in medical units. Also, (90.91%) of nurses had no opportunity to be involved in training sessions in asthmatic attacks, and(84.42%) of them say that they are not able to be read any articles about asthmatic attacks table (1).

Part two: Discussion of Nurses' knowledge

This part includes (41)items presented nurse's knowledge relative to their general information about asthmatic attacks , and the result was as concerning nurse's knowledge about definition of asthmatic attacks (88.31%) of nurse's, their answers were correct , while (11.69%) were in correct answer . Concerning nurse's knowledge about the causes of asthmatic attack (77.71%)of nurses, their answers were correct, while (22.29) were incorrectanswer.Also the table showed that nurse's knowledge about the path physiology of asthmatic attack (77.92%)of nurses, their answer were correct, while (22.08%) were incorrect answer regarding nurses' knowledge about the types the severity of asthmatic attacks (96.47%) of nurses' their answers were correct, while (3.03%) were incorrect answers .Nurses' knowledge about the complications of asthmatic attacks (71.95%) of nurses' their answers were correct , while (28.05%) were incorrect answer. About nurses' knowledge about the treatment of asthmatic attacks (99.35%) of nurse's their answers were correct, while (0.65%) were incorrect answer.Concerning nurses' knowledge about nursing care and patients' education (99.09%) of nurses' their answers were correct, while (0.09%) were incorrect answer. (Table2). The present result disagrees with the study done by (Yanget al., 2005), Rose and Glaze (2013) andAlrasheedand others (2011) showed in their study that the nurses had low knowledge regarding asthma in children.

Part 3:Association between nurses' knowledge with their demographic characteristics:

Result of data analysis illustrated that there was no significant relationship between nurses' knowledge and their age, gender, marital status, educational level, years of experience in hospitals, years of experience in pediatric hospitals about asthmatic attacks and training sessions.Based on the researcher's point of view, working in medical unit, dealing with asthmatic attack needs a special knowledge and skills which derive from experience, most of nurses (68.83%) were new.So, the age, gender, level of education, years of experience, and training sessions of there are no significant association between nurses'knowledge and demographic characteristics as in tables(4,5,6,7,8 ,8,9,and 10). This result is opposite of the study done byForero(2000), and Ahmed (2016) that there is that there are significant association between nurse's knowledge and demographic characteristics at p≥0.05

V. Conclusion

1- The study indicated that (90,24%) of sample had accepted knowledge, while (9.76%) of them had poor knowledge toward all aspects of asthmatic attacks.
2- The study showed that the relationship between nurses' knowledge with some demographic characteristics, the study indicated that there was no significant relationship between nurses' knowledge and their age, gender, marital status, educational level, years of experience in pediatric hospitals, training session and reading articles about asthmatic attacks.

Recommendations

1- The study recommended that there is needed for an orientation program for all new nurses, and a need for implementing activities, skills training to all nurses.
2- Emphasizing on the importance of participating them in training sessions outside or inside of Iraq related to the asthma.

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