Knowledge of Medical students towards Childhood Asthma

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Abstract

Background: - Actually, asthma is a most common chronic disease among children. It can be controlled but cannot be prevented.

Objectives: - To assess students' knowledge about childhood asthma and to identify some of the factors associated with knowledge.

Methodology: - a cross-sectional study was conducted in Institute of Medical Technology/ Baghdad for the period started from 29 March 2016 to first May 2016. The sample size was 387 cases. A special questionnaire was designed to include all the information that concern to the level of knowledge among the institute students. The study was done by only the Institute students and excluded the others. Collected data were verified and analyzed by statistical package Statistical Package for Social Science (SPSS) Version 16 (SPSS Inc. Released 2007. SPSS for Windows, Chicago).

Results: - About 50.2 % of cases still in the age groups 18-19 years, followed 43.9% in the age 20-21 years. Male cases were 54.5% greater than female cases 45.5%. 53.5% (207/387) of cases were collected from the 1st stage while 46.5% (180/387) from 2nd stage. 26.1% of cases were collected from nursing department, followed community health department, dental, anesthetic, dental preventive, physiotherapy, radiology and special needs care, 19.9%, 13.2%. 8.5%, 6.2%, 10.1%, 9%, and 6.9% respectively. One hundred - eight of students knows the symptom asthma caused by the air pollution, followed by seventy - one (71/387) of them thought that the allergy could cause asthma and a common cold in (57/387).

Conclusions:- Significant has been found between the knowledge score and asthmatic symptoms , pathophysiology, assessment of severity, measures the severity , gender, age groups , *p.* value was (0.004, 0.000, 0.000, 0.006, 0.000, 0.01, 0.02, 0.0001, respectively.

Recommendation: - We need to focus on measures with the potential to improve lung and general health, such as: reducing smoking, indoor and outdoor air pollution and occupational exposures; reducing childhood obesity and encouraging a diet high in vegetables and fruit; encouraging breastfeeding; promoting childhood vaccinations; and reducing social inequalities.

Keyword: Asthma, Childhood, Knowledge, air pollution, allergy, medication, prevent, symptom, assess

INTRODUCTION

Several topics on childhood asthma were addressed in the Pediatric Clinical Year in Review session at the 2015 European Respiratory Society International Congress. With regard to the relationship between lower respiratory tract infections and asthma, it emerges that is the number of respiratory episodes in the first years of life, but not the particular viral trigger, to be associated with later asthma development [1].

Actually, asthma is a most common chronic disease among children. It can be controlled but cannot be prevented. Over recent decades the asthma prevalence was increased in industrialized countries and those with allergic asthma have symptoms triggered by allergens such a pet dander, pollen and dust mites [2]. Some cases of a cough occur at night and are free of symptoms during the day, contrariwise in other cases are a frequent chest cold and continuous during the day. Allergies and asthma tend to run in families and we know that if one parent has been physician diagnosed with allergies or asthma the risk of the child developing asthma is approximately 50%, while if both parents have physician diagnosed allergies and or asthma the risk of the child developing asthma climbs to 75%[3]. Both of smoking and air pollution which increase the risk of asthma due to early exposure to large amounts of house dust and dust mites. Asthma is also more prevalent in premature infants, those born at less than 36 weeks of gestation [4]. Our study aims to assess the students' knowledge about asthma and to identify some of the factors associated with knowledge.

METHODOLOGY

A cross-sectional study was conducted in Institute of Medical Technology/ Baghdad for the period started from 29 March 2016 to first May 2016. The sample size was 387 cases. A special questionnaire was designed to include all the information that concern to the level of knowledge among the institute students. The study was done by only the Institute students and excluded the others. Collected data were verified and analyzed by statistical package Statistical Package for Social Science (SPSS) Version 16 (SPSS Inc. Released 2007. SPSS for Windows, Chicago).

RESULTS

Out of 387 of the studied sample was selected randomly. We show that 50.2 % of cases still in the age groups 18-19 years, followed 43.9% in the age 20-21 years. Regarding the gender, male cases were 54.5% greater than female cases 45.5%. [Table 1]. As for the study stage, 53.5% (207/387) of cases was collected from 1st stage while 46.5% (180/387) from 2nd stage. [Table 2]. Concerning to all the departments of Institute which has been collecting the samples, reveals that 26.1% of cases was collected from nursing department, followed community health department, dental, anesthetic, dental preventive, physiotherapy, radiology and special needs care, 19.9%, 13.2%. 8.5%, 6.2%, 10.1%, 9%, and 6.9% respectively. Table 3. Sixty seven student had the lowest score, 132(34.1%) had intermediate and 188(48.6%) had higher score. Table 4.

Table 1:- Distribution of participants according to age groups and gender

Variables	Frequency	%
Age		
18-19	194	50.2
20-21	170	43.9
>21	23	5.9
Total	387	100
Gender		
Male	211	54.5
Female	176	45.5
Total	387	100

Table 2:- Distribution of studied sample according to study stage

Study stage	Frequency	Percentage
1st stage	207	53.5
2nd stage	180	46.5
Total	387	100

Table 3:- Distribution of studied sample according to scientific department

Scientific Department	Frequency	Percentage
Nursing	101	26.1
Community health	77	19.9
Dental	51	13.2
Anesthetic	33	8.5
Dental preventive	24	6.2
Physiotherapy	39	10.1
Radiology	35	9.0
Special Needs Care	27	6.9
Total	387	100

Table 4:- Knowledge score of the studied sample according to asthma

Score	Frequency	%
Low	67	17.3
Intermediate	132	34.1
High	188	48.6
Total	387	100

Regarding to knowledge questions, one hundred and eight of participants knows the symptom asthma caused by the air pollution, followed by seventy one (71/387) of them thought that the allergy could cause the asthma and a common cold in (57/387) Significant has been found between the causes of asthma and participants knowledge score *p.* value <0.004. This table elucidate two hundred eight cases thought that in lung the breathing tube become narrow due to swelling. Highly Significant has been found between pathophysiology and participants knowledge score *p..* value <0.000. As well the symptom and assessment of severity, we found that (167/387) of them thought that the Asthma symptoms was occur at night. Highly Significant has been found between assessment of asthmatic severity and participants knowledge score p. value <0.000. According to measurement of asthmatic severity, we found that two hundred sixty five of cases thought that can be measured by use the test of blowing out of air into a machine. Significant has been found between measurement of severity and participants knowledge score p. value <0.006. Not significant has been found between prevent of asthmatic symptoms and participants knowledge score, p .value was 0.662. Shows as in Table 5.

Table 5 – Relationship between knowledge questions and participants knowledge score

Knowledge Questions		Low 67 No.	%	Intermediate 132 No.	%	High 188 No.	%	Total No.	%	*p.* value
Asthma symptom caused by	Allergy	13	18.3	17	23.9	41	57.8	71	100	0.004*
	Air pollution	16	14.8	35	32.4	57	52.8	108	100	
	Living with person who has asthma	8	3.8	9	4.3	4	1.9	21	100	
	Exercise	4	10.5	12	31.6	22	57.9	38	100	
	Certain drugs	3	8.3	10	27.8	23	63.9	36	100	
	Certain food	11	19.6	28	50.0	17	30.4	56	100	
	A common cold	12	21.1	21	36.8	24	42.1	57	100	
Pathophysiology	In asthma , the breathing tubes in lung become narrow due to swelling	44	20.2	67	30.7	107	49.1	218	100	0.000*
	In asthma , the breathing tubes also become narrow due to tightening of muscle around them	13	16.3	43	53.7	24	30.0	80	100	
	In asthma , the breathing tubes become narrow due to mucous collection	10	11.2	22	24.9	57	64.0	89	100	
Symptoms and assessment of severity	Symptom of asthma are breathing difficulty with wheezing	24	22.2	31	28.7	53	49.1	108	100	
	Asthma symptoms vary in severity from time to time, being less sometimes and more at other times	11	9.8	62	55.4	39	34.8	112	100	0.000*
	Asthma symptoms are more likely to occur at night	32	19.2	39	23.4	96	57.5	167	100	
Can measure how sever the asthma	The asthma was measured by test of blowing out air into a machine	54	20.4	86	32.5	125	47.1	265	100	
	Measured at home using a simple device	13	10.7	46	37.7	63	51.6	122	100	0.006*
Medication	Can be given as tablets/syrups/ inhalers	15	13.8	51	46.8	43	49.4	109	100	
	Best way to take asthma medicine is by inhalation	44	21.8	67	33.2	91	45.0	202	100	0.000*
	I know which is the drug for regular use and is to be used if breathlessness occur	8	10.5	14	18.4	54	71.1	76	100	
I can prevent asthma symptoms	if I take medicine regularly	28	16.5	55	32.4	87	51.1	170	100	0.662
	Taking the reliever inhalers	39	18.0	77	35.5	101	46.5	217	100	
Asthma cannot be cured	Yes	14	14.0	47	47.0	39	39.0	100	100	0.01*
	No	53	18.5	85	29.6	149	51.9	287	100	

*Significant level

In male cases, 44.1% had highest score, followed by 34.1% had intermediate and 21.8% had lowest score. While in female cases 54% had highest, 34.1% had intermediate and 11.9% had lowest score. Significant has been found between gender and knowledge score p. value <0.02.Table 6

Table 6:- Relationship between gender and knowledge score

Gender	Knowledge score			Total
	Low	Intermediate	High	
Male	46	72	93	211
	21.8	34.1	44.1	100
Female	21	60	95	176
	11.9	34.1	54.0	100
Total	67	132	188	387
	17.3	34.1	48.6	100

X^2=7.3, *p*.. value <0.02.

In age groups 18-19 years, 61.9% had highest score, followed by 21.6% had intermediate and 16.5% had lowest score. While in age 20-21 years, 35.3% had highest score, 46.5% had intermediate and 18.2% had lowest score. So in the age >21, 47.8% had intermediate but 17.4% had lowest score. Highly significant has been found between age groups and knowledge score *p.* value <0.0001. Table 7

Table 7:- Relationship between age groups and knowledge score

Age groups years	Knowledge score			Total
	Low	Intermediate	High	
18-19	32	42	120	194
	16.5	21.6	61.9	100
20-21	31	79	60	170
	18.2	46.5	35.3	100
>21	4	11	8	23
	17.4	47.8	34.8	100
Total	67	132	188	387
	17.3	34.1	48.6	100

X^2=31.9, *p*.. value <0.0001

DISCUSSION

Asthma represents the most common chronic respiratory disease of childhood. In our study, we found that 50.2% of cases still in the age groups 18-19 years, other results have been found in Saudi at 2016 by Al-Harbi 23.7%, also in Spanish 2016 by Varela 44.7%. These differences reflect the different of tradition and habits between the countries [5, 6]. As for the gender, in this results we observed that the male participants was greater than female and compare with other results have found in Zambia by Chishala, the female cases were greater than male [7]. In African countries the girls have freedom to participate and express their views on the contrary the Arab countries that restrict women's freedom. Exposure to air pollutants is one of the factors responsible for hospitalizations due to respiratory diseases [8]. In this study we noticed that 27.9% of participants know asthma caused by air pollution compare with other result found in US by O'Lenick, has found 73% [9]. Point to the differing nature and the large number of factories and the movement of cars that increase air pollution. Today, asthma and allergies are most popular chronic diseases in children and leading to school absences, chronic medication usage, emergency department visits and hospitalizations, which affect all members of the family .18.3% of participants knows the asthma caused by the allergy as compare with the result in Sweden by Rönmark [10], has found 37.1%, this reflects the difference of weathers that cause the disease between countries. Asthma caused by exercise common among athletes. Only 9.2% of them knows asthma caused by exercise but another results found in Iran by Mohammadi [11], has found 44.8%, this may be a difference of habits and tradition between the countries. As a result of asthma leads to airway obstruction and this in turn

leads to smooth muscle spasm. 56.3% of participant know in patients with asthma the breathing tube become narrow due to swelling. Another result in India has found 11.7% [12], this may be differences in habits between the countries. Although most children with asthma derive clinical benefit from daily administration of low-to-medium-dose inhaled corticosteroid (ICS) therapy, a small subset of children with "severe" or "refractory" asthma require high doses of ICS and even systemic corticosteroids to maintain symptom control [4]. In our study we found that 52.2% of participants know that the inhalation is the best way to prevent asthma, this results as compare with another result in Turkey by Baççıoğlu [13], has found 61.7%, this may be a difference of ways which used in treatment. 31.5% of participants know how to measure the severity of asthma, other results have found that 44.2% in India [12], this may be different from education and knowledge between the countries. This study revealed significant association has been found between medication knowledge question and participants score *p.* value <0.000. As compared with the previous results in Jordan by Basheti [14]. This reflects the similar tradition and habits between the countries.

CONCLUSIONS: -

Half of the participants still in the groups 18-19 years, the male participants was greater than female. Half of the participants in the 1st stage of the institute. significant has been found between the knowledge score and asthmatic symptoms, pathophysiology, assessment of severity, measures the severity, gender, age groups, p. value was (0.004, 0.000, 0.000, 0.006, 0.000, 0.01, 0.02, 0.0001, respectively.

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