

Estimating the Knowledge and Attitude of Parents about their Children's Asthma and Evaluating the Impact of their Education Status in Baghdad/ Iraq

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ABSTRACT

Background: Parents have an essential role in treating their children's asthma. Therefore, caregivers should gain large knowledge that enable them identifying the risk factor particular for each child and bypass them as a strategy for secondary prevention to control asthma attacks.

Methods: children diagnosed with asthma aged between 1-12 years who attend chest clinic in Baghdad hospitals, were included in this study parental level of knowledge regarding asthma in childhood was assessed by application of 17-item asthma knowledge questionnaire (ANQ). During the study, the parents responded to each item on a Likert-type scale of 5 points with answers ranging from "strongly disagree" to "strongly agree." Responses to each item were thus graded from 1 to 5 and greater weight was assigned to correct answers.

Results: A total number of 260 parents have completed the questionnaire of asthma knowledge regarding their children, the age of children participants in this study ranged from 1 to 12 years with 56 (21.53%) with an age less than two years and a higher percentage was achieved by those who aged more than 3 years, with a male predominance over female by about 2.1:1. Duration of asthma since diagnosis ranged from 2 months to 11 years before beginning this study, with about half of children 126 (48.46%) present with symptoms between 1-2 years. The mean score for the first section (myths and beliefs regarding asthma) with regard to parents' level of education showed higher knowledge score that was noted among groups with higher education, and, thus, was statistically significant ($p=0.009$). In the second section of the score (knowledge about asthma), the mean was greater for the groups of parents who completed their university studies (23.5 ± 3.2) and was statistically significant ($p= 0.027$).

Conclusion: In this study there was a significant correlation between level of education of parents and score of AKQ, as the parents present with higher education can obtain knowledge easier, but despite of that most parents are highly educated but a lot of them were have misconception and lack of information regarding use of inhalers and factors that triggering asthma of their children which necessitate to provide more effective education programs.

Keywords: Asthma, knowledge, Attitudes, Parents, Children's asthma

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INTRODUCTION

Asthma is one of the most popular chronic diseases among children around the world. There are about more than 339 million people living with asthma, with (1-30%) represent the prevalence of childhood asthma in different populations [1, 2]. In the Middle Eastern countries, the prevalence of asthma is lower than that in developed countries, while the prevalence of asthma and wheezing in Baghdad are similar to developed and industrialized countries [3,4]. During childhood, asthma is a popular cause of increased school absenteeism, hospitalization, and visit to emergency room, in addition to decrease parental/caregiver and child's quality of life. Moreover, asthma is a common cause of parents being out of work and increased family, persons, and governmental expenses in the health sector [5, 6]. Parents have an essential role in treating their children's asthma and are responsible for looking after their young children's environment, treatment and bringing them to the hospital when additional treatment is required. In older children, parents should supervise their children's surrounding and attitude and compliance to treatment. Children's illness can affect their parents, both emotionally and physically [7]. Therefore, caregivers should gain large knowledge that enable them identifying the risk factor particular for each

child and bypass them as a strategy for secondary prevention to control asthma attacks [8]. Asthma-related knowledge involves learning about medications, prevention and pathological mechanisms [9]. Confidence and positive relationships with physicians can reflect a good attitude for parents [10]. Consequently, one should guarantee that parents are well-prepared to manage asthma day after another as an essential step towards improving outcomes of childhood asthma [11]. Severe uncontrolled asthma can be related to family dysfunction, noncompliance to medication and psychopathology [12]. The conception that this chronic condition is controllable raises the trust about coping with this health state and preserve a superior quality of life [13]. This study designed to evaluate the knowledge and attitude of parents about asthma of their children, and also to estimate the impact of their education on the knowledge about disease, use of medication and action required during attack.

Methods

Design of study: A cross sectional study of knowledge and attitudes for parents of children with asthma was conducted by using a questionnaire. The questionnaire developed by the author, was based on several study contents, and after reviewing similar studies. The study

was executed at a pediatric chest clinic in several Baghdad hospitals.

Population: The study subjects comprised the parents of children diagnosed with asthma; 260 child patients aged between 1-12 years were included in this study. Sociodemographic data were collected from child's parents including age, gender, duration of asthma symptoms for the child and level of education for the parents.

Asthma Knowledge Questionnaire: This questionnaire system consists of 17 items. It was developed by viewing many previous studies [14, 15]. During the study, the parents responded to each item on a Likert-type scale of 5 points with answers ranging from "strongly disagree" to "strongly agree." Responses to each item were thus graded from 1 to 5 and greater weight was assigned to correct answers. That is, if a true statement obtained a correct response of "strongly agree," a score of 5 was assigned. Scoring was gradually decreased until a score of 1 was reached when an item received a response of "strongly disagree." Similarly, if a false affirmation was received, a score of 5 was assigned to a response of "strongly disagree" option. It was observed that scoring gradually has decreased until only 1 point was given for a response of "strongly agree." Item scores were then added for a total score ranging from 17 to 85, with higher scores indicating greater knowledge of asthma. The questionnaire was divided in to three domains: the myths and beliefs domain included (questions 1,2,3,4,5,6, and 10), the knowledge domain included (questions 7,11,12,15,16 and 17) and the associated aspects domain included (questions 8,9,13 and 14).

Data analysis: The data of this study were analyzed using the Statistical Program for Social Sciences (SPSS) software version 23. Numbers and percentages were used to

express categorical variables, while continuous variables were conducted by using mean and standard deviation (SD). Differences between continuous variables such as score of asthma knowledge questionnaire (ANQ) according to each domain and score of this questionnaire with regard to the level of education of the parents were summarized using ANOVA t-test. Statistical significance was considered at $p \leq 0.05$.

Ethical considerations: Approval was gained from each hospital before beginning this study. A verbal consent was obtained from each participant after explaining the questionnaire for him/her.

Results

A total number of 260 parents (father and mother) have completed the questionnaire of asthma knowledge regarding their children. For demographic data (Table 1), the age of children participants in this study ranged from 1 to 12 years with 56 (21.53%) with an age less than two years and a higher percentage was achieved by those who aged more than 3 years, with a male predominance over female by about 2.1:1. Duration of asthma since diagnosis ranged from 2 months to 11 years before beginning this study, with about half of children 126 (48.46%) present with symptoms between 1-2 years. With regard to the parents' educational level, higher percent for both mothers and fathers present with high school 125 (48.07%) and 164(63.07%) respectively, and lower percent was observed for illiterate parents. Also, it was evident from Table (1) that with regard to correlations between the demographic data of children and parents with score of AKQ, there was no significant correlation with child age, but the correlation was significant with regard to the gender of children, duration of symptoms of asthma, and the educational level of parents.

Table 1: Demographic Data

Variables	No (%)	P value
Age (years) <2 2-3 >3	56 (21.53 %) 92 (35.38 %) 112 (43.07 %)	0.063 NS
Gender M F	177 (68.07 %) 83 (31.92 %)	0.035 S
Duration of symptoms <1 1-2 >2	46 (17.69 %) 126 (48.46 %) 88 (33.84 %)	0.043 S
Educational level of parents (Mother): - Illiterate - High school - University (Father): - Illiterate - High school - University	32 (12.3 %) 125 (48.07 %) 103 (39.61 %) 18 (6.92 %) 164 (63.07 %) 78 (30 %)	0.02 S 0.013 S

The mean score for AKQ for each domain (Table 2) was higher for the myths and beliefs section 20.7 ± 6.1 and lower for the associated aspects with mean of (15.8 ± 5.7) . The mean score for the first section (myths and beliefs regarding asthma) with regard to parents' level of education (Table 3), showed higher knowledge score that was noted among groups with higher education, and, thus, was statistically significant ($p=0.009$). In the second

section of the score (knowledge about asthma), the mean was greater for the groups of parents who completed their university studies (23.5 ± 3.2) and was statistically significant ($p= 0.027$). On the other hand, the mean score of asthma knowledge showed insignificant changes regarding the third section (Associated aspects) when compared with the parents' level of education.

Table 2: Score of asthma knowledge questionnaire according to each domain

Domains	ASQ score
Myths and beliefs	20.7 ± 6.1
Knowledge	17.1 ± 3.2
Associated Aspects	15.8 ± 5.7

Table 3: Score of asthma knowledge questionnaire of each domain regarding to level of education

Domains	Level of education	AKQ score	P value
Myths and beliefs	- Illiterate	14.6 ± 3.0	0.009 S
	- High school	22.4 ± 2.7	
	- University	28.2 ± 4.1	
Knowledge	- Illiterate	15.0 ± 1.6	0.027 S
	- High school	17.9 ± 4.0	
	- University	23.5 ± 3.2	
Associated Aspects	- Illiterate	14.7 ± 5.2	0.084 NS
	- High school	15.4 ± 2.4	
	- University	18.5 ± 3.6	

Discussion

This study was conducted to evaluate the level of knowledge and attitudes of parents of children with asthma; due to the fact that those very parents are the main connection between the pediatric patient and the physician. It is significant that these parents should comprehend the major concepts of asthma. However, in this study, the parents appraised showed unsatisfactory levels of knowledge about asthma. Excellent knowledge of caregivers and knowing about how to deal with pediatric asthma and the medicines utilized in its treatment were related to improving outcomes and efficient control of disease [16]. The demographic data of children in this study have shown that the greater percentage of children aged > 3 years was (43.07%) and this has chimed with the result of many authors [17]. Also, these findings were

similar to similar studies conducted in Saudi Arabia that found out that most children with asthma (86%) range between the ages of 8 and 12 years as in Al Frayh *et al* [18]. AlOtaibi *et al.*, for instance, showed that most of the studied children were boys who aged ≥ 5 years [19]. Shivbalan *et al* and Abutiheen *et al.* showed that more than one third of the children's ages ranged between 4 to 5 years [20, 21].

It is obvious, in this study, that there is a difference in the numbers of males and females, but, with a predominance of males (2.1:1 ratio) and this matches several studies that showed that the prevalence and incidence of asthma vary by gender through the lifespan. Boys before puberty exhibit a higher prevalence of asthma, incidence, and rate of hospitalization than the same age of girls, but this orientation inverts during adolescence [22, 23].

Surprisingly, high ratio of caregivers lacked enough information about asthma. This was similar to a study that was conducted in Islamabad and Chicago community survey which say that knowledge about the disease of family members of asthmatic patients was not better than that of the general public [24,25].

In this study, the sociodemographic data of children with asthma and their parents (such as gender of children, duration of asthma, level of parent's education) were significantly related to the score of asthma knowledge questionnaire, while show insignificant correlation with age of children. A study in Khartoum showed that the age at onset and duration of asthma have associated with the level of knowledge of parents which was in line of this study [26]. But Kuti *et al* and Bahari *et al* have shown that the sociodemographic data of children with asthma and their parents had no significant relation to caregivers' level of knowledge about childhood asthma [6, 27]. It has been observed that the mean and standard deviation for the knowledge domain was (17.1 ± 3.2) that included information about causes and triggers of asthma, in a way that most parents are unaware about the factors that cause or trigger asthma, and this resembles the findings made by different authors [28,29].

It is worth to saying that large number of parents have expressed their anxiety about inhalers side effects and fear from causing dependency; this was according to myths and beliefs domains questions that gave a mean of (20.7 ± 6.1) that came similar to a study from Malaysia [30]. Basically, the majority of participants in this study had a moderate knowledge score for all knowledge subcategories like (myths and beliefs, general knowledge, and associated aspects). Similar findings were reported in another study conducted in Riyadh, Saudi Arabia [19, 31]. Lower score present with associated aspects domain including questions about the ability of children with asthma to participate in different sports and these were similar to a study conducted in Karbala/Iraq that showed that only 26.8% of parents believed that their children can play as normal children, which suggests that there was a misconception among parents about the ability of children with asthma to engage in sport [21].

In this study, there was a significant correlation between the level of parents' education and the score of asthma knowledge questionnaire with the higher score attained by parents with a university level of education, and this is probably achieved because these parents had previous knowledge about asthma due to their education and life experience which lead to easier acquisition of new information [32]. Silva *et al*, Fazil *et al* came up with similar results that good asthma knowledge was significantly related to high level of parental education [33, 34]. A study in China has also showed a positive correlation between the level of education and knowledge, attitudes and practice (KAP) scores [35]. Unlike our findings. Prapphal *et al.* detected an insignificant correlation between parents' educational level and their asthma knowledge level; this is probably due to an increased awareness about asthma which led to elevate the level of asthma knowledge among general population in Thailand, for instance [36]. Most of the parents engaged in this study were educated (high school and university) and only a small percentage of them were illiterate (12.3% mothers) and (6.92% fathers). These results are similar to AlOtaibi *et al* study; a study in which 197 out of 230 parents were educated [19]. However, there was a different study that was carried out in Al-Hilla/ Iraq concerning mothers' level of education

that came up with different results that showed that mothers were uneducated (65.5%), this difference may be related to the fact that 74% of mothers present with urban background [37].

There are many limitations in this study, first of all, this study was conducted in outpatient clinics of hospitals. This study has not included parents of inpatient children with asthma because they may have more sever symptoms and, accordingly, their scores can be different from the other groups in this study. Secondly, the economic level of parents was not studied in order to avoid any potential effects on the results of the study. Thirdly, the limitations have clarified that many factors examined in this work were based on questionnaires, which may result in recall bias.

Conclusion

In this study there was a significant correlation between the parents' level of education and score of AKQ as the parents with higher education can obtain knowledge easier. Nonetheless, most parents were highly educated, though a lot of them had misconception and lack of information regarding the use of inhalers and other factors that triggered the asthma of their children which necessitates providing more effective education programs.

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Conflicts of interest

There are no conflicts of interest.

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