

# Jordanian Caregivers' General Knowledge about Asthma among Children

*Sandi Sami Alshahwan*<sup>1</sup>, *Hala Mahmoud Obeidat*<sup>2</sup>, *Malek Khalel Alnajjar*<sup>3</sup>,  
*Ahmed Hussein Alduhni*<sup>4</sup>

## Abstract

**Background aims:** Asthma affects many children in Jordan and all over the world. The awareness and knowledge about asthma are important for children with asthma and their caregivers to enhance the overall health condition of these children. The purpose of the study was to determine the general knowledge about asthma among Jordanian caregivers of children with asthma, and to measure the influence of caregiver's demographic characteristics on their knowledge.

**Materials and method:** A descriptive cross-sectional study using a 17 item Likert-scale questionnaire was employed and a total number of 73 caregivers participated in the study.

**Results:** The findings showed fair knowledge about asthma among caregivers (65.41%) M=55.60 out of 85, no differences in caregiver's knowledge were based on their demographic characteristics. Jordanian caregivers had considerable areas of knowledge deficit that need to be addressed in designing educational programs.

**Conclusion:** This study provided baseline data regarding Jordanian caregivers' general knowledge about asthma and identified areas of knowledge deficit that help in designing educational programs for caregivers, focusing on these deficits to increase their knowledge for effective asthma management.

**Keywords:** Asthma, Children, Caregivers, Knowledge, Jordan.

(J Med J 2018; Vol. 52(3):147-157)

Received

Aug. 29, 2017

Accepted

Oct. 8, 2017

## Introduction

Asthma is "a chronic disease caused by inflammation of the airways that leads to narrowed airways or bronchoconstriction"<sup>(1)</sup>, it is accompanied with an increase in air way hyperresponsiveness"<sup>(2)</sup>. Asthma affects many children all over the world; it is described as one of the most common chronic illnesses within

this population and a major cause of absence from school. Asthma is a repeated, hampering, and potentially a deadly condition<sup>(3)</sup>. It is rated among the six main causes of childhood morbidity<sup>(4)</sup>. Costs of asthma management are estimated by 1597.4US\$ per patient annually<sup>(5)</sup>. Asthmatic individuals face higher medical expenditures, more utilization of medical services, and are less productive<sup>(3, 6)</sup>.

1. Clinical Instructor, Maternal and Child Health Nursing Department, School of Nursing, The University of Jordan, Amman, Jordan.
2. Associate Professor, Princess Muna College of Nursing, Mutah University, Al Karak, Jordan.
3. Clinical instructor, Clinical Nursing Department, School of Nursing, The University of Jordan, Amman, Jordan.
4. Assistant Professor, Princess Muna College of Nursing, Mutah University, Al Karak, Jordan.

\* Correspondence should be addressed to:

Sandi Sami Alshahwan, RN, CNS, MSN

Clinical Instructor, Maternal and Child Health Nursing Department, School of Nursing, The University of Jordan, Amman, Jordan.

E-mail: sa.alshahwan@ju.edu.jo

In the Arab countries, prevalence of childhood asthma increased significantly in the past few years<sup>(6,7)</sup>, 11% of the Saudi Arabian population are affected by asthma<sup>(8)</sup>, and 14% of Lebanese children are affected too<sup>(2)</sup>. In Jordan, Asthma rates were not less than other countries; prevalence was estimated by ~12.3% among the Jordanian population in general<sup>(9)</sup>, and 10% among children who are 6-7 years old in Amman<sup>(10)</sup>, and 16.6% among children less than 12 years old in Ma'an governorate<sup>(6)</sup>.

Caregivers are the direct care providers for their asthmatic children, whether they were mothers, fathers, or other family members. As asthma is a chronic lifelong disease, they have a huge responsibility for taking care of their asthmatic children. This needs a sufficient background and knowledge about the disease, including its triggers, management, and prognosis, for the best asthma care<sup>(11)</sup>. The awareness and knowledge of asthma are one of the most important factors for children with asthma and their caregivers. This is because this knowledge governs asthma control, taking into account that well-controlled asthma is linked to an enhanced overall health condition, less contact with healthcare services, and a decreased number of hospitalizations caused by asthma<sup>(1,12)</sup>. On the other hand, asthma may compel both the child and his family to serious modifications in their life style, including environmental conditions, activities, family member's roles, expenses, and different daily habits<sup>(3)</sup>.

Despite all the attention and the abundant research regarding asthma control, it is still inadequately managed. Recently, it was reported that 80% of caregivers of asthmatic children were not aware of corticosteroids, and 86% of them did not know its mechanism in

managing asthma<sup>(13)</sup>. Furthermore, only 21% of asthmatic children in India used inhalers and this could be related to their caregivers' lack of knowledge about its role in asthma management<sup>(14)</sup>.

Assessing caregivers' general knowledge about asthma would be significant in managing asthma effectively, leading to a better quality of life for asthmatic children, decreasing rates of hospitalization, school absenteeism, emergency department (ED) visits, in addition to decreasing costs of asthma care<sup>(3,7,15)</sup>. Knowledge about asthma varies according to individual beliefs, attitudes, and behaviors that differ among cultures and affect asthma control<sup>(16)</sup>, so it is essential to have a view of the caregiver's knowledge about asthma in the Jordanian culture. To the best of the authors' knowledge, no previous studies in Jordan assessed knowledge among caregivers of asthmatic children, and only one study was found in the Middle East that was conducted in Saudi Arabia and found inadequate level of knowledge<sup>(7)</sup>. Additionally, assessing knowledge about asthma among Jordanian caregivers of children with asthma will identify the areas of knowledge deficit, which may guide healthcare providers and decision makers in designing educational programs and setting policies for their care. Therefore, this study aimed to determine the level of general knowledge about asthma among Jordanian caregivers of children with asthma.

### **Materials and Methods**

This study used a descriptive cross-sectional research design, in which a sample of 73 caregivers of children with asthma participated. The sample size was calculated using G-power V.3.1 software, i.e. 67 participants ( $p=0.80$ , moderate effect size=0.3,  $\alpha=0.05$ ).

The sample consisted of caregivers from in-patient and out-patient departments who were referred to the hospital due to asthma as a main cause. Two hospitals were selected; a military one that is the only pediatric specialized hospital to treat different specialties in Jordan, and a private one that was chosen due to ease of access to the researchers. A convenience sample was selected as these hospitals provide services for children with respiratory conditions across Jordan and from other Arab countries. Inclusion criteria applied to caregivers of asthmatic children less than 18 years old who have been diagnosed as a case of asthma for more than six months, and do not have any other co-morbidity. This was done to ensure that they have had enough experience with the disease. Caregivers who could not read or write in Arabic were excluded.

The Arabic Asthma Knowledge Questionnaire (AAKQ) was used in this study<sup>(17)</sup>. It was a 17 item Likert-Scale type questionnaire, each item has 5 points ranging from "strongly agree" to "strongly disagree". A caregiver response of "agree" or "strongly agree" was considered correct, while a response of "disagree" or "strongly disagree" was considered an incorrect answer. The questionnaire consisted of three parts; the first one asked questions about common misconceptions about asthma that are widely spread among many caregivers. The second part included questions related to knowledge about asthma, common symptoms, and preventive measures followed to avoid vigorous attacks. The third part contained few related behaviors that play a role in triggering asthmatic attacks, such as smoking and physical exercise. However, an additional part concerning demographic characteristics of the caregivers was added. AAKQ had good reliability and consistency to evaluate the level

of asthma awareness among caregivers /guardians of children with asthma; the Cronbach Alpha score of the Arabic version was 0.714, which is within the acceptable range<sup>(17)</sup>.

The study was approved by the research ethical committee of both hospitals. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The primary researcher was responsible for identifying the caregivers who met the inclusion criteria, and consent was obtained from the participants who agreed to complete the questionnaire. The caregivers of children with asthma were met individually either in the in-patient units or at the out-patient clinics by the primary researcher. The purpose of the study was explained to them, and issues related to confidentiality and anonymity were assured. A total of 73 caregivers of children with asthma completed the questionnaire, the Statistical Package for the Social Sciences (SPSS) version 17.0 software was used to analyze data, and both descriptive and inferential statistical tests were computed. A *p*-value of < 0.05 was considered statistically significant. Mean, standard deviations, and percentages were reported as appropriate for descriptive purposes.

## **Results**

### **Caregivers' Characteristics**

A total of 73 caregivers of children with asthma completed the questionnaire, with a response rate of 91.2%. Participating caregivers were distributed among hospitals; 42 (57.5%) were from the military hospital. The sample included 45 females (61.6%) and 28 males (38.4%). The participants' ages ranged from 22 years to 50 years with a mean age of 32.6 years (SD=6.49).

Regarding their level of education, the participants were distributed among different levels but none of them had a health related education. Most of the caregivers had a child diagnosed with asthma for more than 24 months ( $n=30$ , 41.1%). Many caregivers ( $n=46$ , 63%) reported having previous knowledge about asthma, either from teaching programs, media, their doctors, or any other source. The majority were either a father or a mother of the child ( $n=70$ , 95.9%), and only three participants (4.1%) were other relatives. However, Table 1 presents a detailed description of caregivers' demographic characteristics.

### General knowledge about asthma

Descriptive statistics, such as mean, frequency, and percentage were used to determine the level of caregivers' general knowledge about asthma. Data revealed that the total correct scores of caregivers' general knowledge about asthma on the AAKQ ranged from 42-73 out of 85 and the mean of total correct score was found to be 55.6 ( $SD= 6.53$ ). This means that 65.41% of the questions were correctly answered.

Frequencies and percentages were utilized to describe caregivers' answers in AAKQ. In this study, the result revealed that the most correctly answered questions were those that asked about smoking near a child with asthma 67 (91.7%, Question 16), and that asthmatic children might have attacks that are severe enough to require hospitalization or cause death 57 (78.1%, Question 12). On the other hand, the most questions that were incorrectly answered included the questions that asked about the need for an emergency department visit after an attack even if the symptoms are mild 49 (Question 7), and that it is not good for children

to use inhalers for too long 42 (Question 3). The percentages of incorrect answers for these questions were 67.1% and 57.5%, respectively. Discrepancies in adding the total number of correct and incorrect answers for each question refer to the number of participants who were neutral about these questions. Table 2 shows the frequency and percentage of correct answers for each question.

Analyzing the total score of correct answers for each category of the questionnaire separately revealed that caregivers were more knowledgeable in the second part that was concerned with knowledge about asthma, where their mean score for this part was 20.60 ( $SD = 3.51$ ) out of 30. Caregivers were least knowledgeable in the first part that was concerned with common misconceptions about asthma with a mean score of 21.53 ( $SD = 4.97$ ) out of 35, while the mean score for the third part was 12.95 ( $SD=2.86$ ) out of 20. Thus, the data revealed that the percentages of correct answers for each category were 61.5%, 68.7%, and 67.4% for categories 1, 2, and 3, respectively.

In order to compare the mean score of the total correct answers with caregivers' demographics, the *t*-test and ANOVA revealed no significant differences in the mean of the total score among caregivers based on these demographics (type of the hospital, gender, having previous education, relationship with the child, level of education, and the time since diagnosis).

Furthermore, Pearson's correlation was used to determine the differences in caregivers' total score of knowledge about asthma based on their age, and the test confirmed that there were no significant differences ( $p$  value = 0.978). Table 3 presents the differences in caregivers' knowledge mean score based on their demographic characteristics.

**Table 1. Descriptive analysis of caregiver's demographic data (N=73)**

Variable	Frequency (%)	Mean (SD)
<b>Hospital</b>		
<b>Military hospital</b>	42 (57.5%)	
<b>Private hospital</b>	31 (42.5)	
<b>Gender</b>		
<b>Male</b>	28 (38.4%)	
<b>Female</b>	45 (61.6%)	
<b>Level of education</b>		
<b>Illiterate</b>	0 (0.00%)	
<b>Primary school</b>	27 (37%)	
<b>High school</b>	21 (28.8%)	
<b>Diploma</b>	11 (15.1%)	
<b>Bachelor</b>	13 (17.8%)	
<b>Master</b>	1 (1.4%)	
<b>Time since diagnosis</b>		
<b>Less than 12 months</b>	18 (24.7%)	
<b>Between 12-24 months</b>	25 (34.2%)	
<b>More than 24 months</b>	30 (41.1%)	
<b>Previous knowledge about asthma</b>		
<b>Yes</b>	46 (63%)	
<b>No</b>	27 (37%)	
<b>Relationship to the child</b>		
<b>Father/Mother</b>	70 (95.9%)	
<b>Other</b>	3 (4.1%)	
<b>caregiver's age</b>		32.6 years (6.49)

**Table 2. Caregiver's knowledge about asthma (correct answers) by AAKQ (N=73)**

No.	Question	Correct answer Frequency (%)
	<b>Myths and beliefs regarding asthma</b>	
<b>1</b>	Inhaler use can lead to dependence or addiction	42 (57.5%)
<b>2</b>	Inhalers can have an effect on the heart and damage it	33 (45.2%)
<b>3</b>	It's not good for children to use the inhalers for too long	19 (26%)
<b>4</b>	After a child's asthma attack, once the coughing is over, use of the inhalers and medication should stop	35 (47%)
<b>5</b>	Children with asthma should use asthma medications only when they have symptoms (coughing, congestion, or wheezing).	28 (38.3%)
<b>6</b>	It's better to use inhalers directly, without a holding chamber, so medication can go more directly to the lungs.	43 (58.9%)

7	When a child has an asthma attack it's best to go to the emergency room even if symptoms are mild.	19 (26%)
<b>Level of knowledge about asthma</b>		
8	The main cause of asthma is airway inflammation	53 (72.6%)
9	Asthma attacks can be prevented if medications are taken even when there are no symptoms – between attacks.	52 (71.2%)
10	Flu infections are the main causes or triggers of asthma attacks.	42 (57.6%)
11	If an asthmatic child gets the flu, you should apply the inhalers even if there is no coughing or wheezing	28 (38.3%)
12	Asthmatic children might have attacks that are severe enough to require hospitalization in an intensive care unit or they might even die from an attack	57 (78.1%)
13	Some medications for asthma don't work unless they're administered every day	47 (64.4%)
<b>Knowledge about the associated aspects of asthma</b>		
14	Caregivers should ask a doctor to tell the school that an asthmatic child shouldn't exercise or participate in physical education classes	44 (60.2%)
15	Children who have asthma shouldn't participate in sports that make them run too much	38 (52.1%)
16	It's best not to smoke near a child who has asthma	67 (91.7%)
17	If the parents of a child with asthma smoke outside the house, it won't affect the child	37 (50.7%)

**Table 3. The differences of knowledge score based on caregivers' demographic characteristics (N=73)**

Variable	Mean (SD)	Test Statistic	P value
<b>Hospital</b>		t =0.530	0.598
<b>Military Hospital</b>	55.95 (6.97)		
<b>Private Hospital</b>	55.13 (5.97)		
<b>Gender</b>		t =0.288	0.774
<b>Male</b>	55.32 (5.48)		
<b>Female</b>	55.78 (7.16)		
<b>Education Level</b>		f =0.993	0.417
<b>Illiterate</b>	0(0)		
<b>Primary school</b>	56.37 (6.34)		
<b>High school</b>	54.76 (7.97)		
<b>Diploma</b>	55.09 (4.28)		
<b>Bachelor</b>	54.92 (5.80)		
<b>Master</b>	55.60 (6.53)		

<b>Time since diagnosis</b>		f = 0.068	0.934
<b>Less than 12 months</b>	55.61(6.34)		
<b>Between 12-24 months</b>	55.24 (7.49)		
<b>More than 24 months</b>	55.90 (5.97)		
<b>Previous knowledge</b>		t = 0.268	0.789
<b>Yes</b>	55.76 (7.29)		
<b>No</b>	55.33 (5.23)		
<b>Relation to the child</b>		t = -0.197	0.845
<b>Father/Mother</b>	55.57 (6.49)		
<b>Other</b>	56.33 (8.96)		

## Discussion

The main findings of the study showed fair knowledge about asthma among caregivers. No differences in caregiver's knowledge were based on their demographic characteristics. Furthermore, Jordanian caregivers had considerable areas of knowledge deficit.

In accordance with the grading scale (if the percentage of correct answers was less than 50 %, it means poor knowledge about asthma, 50-75% means fair knowledge, and more than 75% means good knowledge), it can be indicated that the participating caregivers in this study had fair knowledge about asthma with a mean score of correct answers that reached 55.60 out of 85, which is equal to 65.41%. Comparing this result with another recent study that was conducted in Saudi Arabia and used the same questionnaire to assess knowledge about asthma among Saudi Arabian caregivers of children with asthma, the researcher of that study suggested that his study showed a lower percentage of knowledge about asthma (62.35%) with a mean score of 53 out of 85.<sup>(7)</sup> In addition, the result of the current study showed a higher level of knowledge about asthma compared to two other studies that were conducted in Australia<sup>(18)</sup> and Pakistan<sup>(19)</sup> but used different tools to determine caregiver's knowledge about asthma, and reported a total

mean score of 18.13 (SD = 4.7) out of 31 (58.49%), and 36.37 (SD = 7.99) out of 64 (56.83%), respectively. However, the result of the present study is probably related to the small sample size. Hence, this result is not conclusive and a further study with a larger sample size is recommended.

In this study, it was found that the most correctly answered question was question 16 that asked about smoking near a child with asthma, where 67 participants out of the total 73 answered it correctly (91.7%). This means that caregivers were familiar with the risk of negative smoking on asthmatic children. This result is close to that of another study which found that 96% of the participants responded correctly to the same question.<sup>7</sup> In addition, Zhao and colleagues<sup>18</sup> reported that 90% of caregivers believe that the child's condition is highly affected by smoking.

The second most correctly answered question was question 12, which asked about that children who might have severe attacks that may require hospitalization or cause death (78.1%). This result could be explained by the caregiver's long experience with their children's disease where more than third of the caregivers had more than 24 months of

diagnosis with asthma, and probably experienced numerous attacks of their children's asthma. This result was also similar to another study that used the same questionnaire and reported that 80.4% of participants answered this question correctly<sup>(7)</sup>.

On the other hand, questions that were, mostly, incorrectly answered were questions 7 and 3, where 67.1% erroneously believed in the need for ED visit after an attack even if the symptoms are mild (question 7). This could be related to the caregiver's belief that the ED provides better management to asthma, that the child will be treated immediately, and that EDs are open 24 hours as was reported in the literature<sup>(15)</sup>. A lower percentage (62%) believed that it is better for their child to visit an ED after an attack.<sup>7</sup> Nevertheless, this result is significantly lower than a study conducted in Karachi and reported that 92% of caregivers hurry to the hospital after an attack without trying to manage it at home<sup>(19)</sup>.

The percentage of incorrect answers for question 3 was 57.5%; this question asked about the detrimental long-term use of inhalers. A different study reported a lower percentage of incorrect answers of this question (46.2%)<sup>(7)</sup>. In addition, others reported that caregivers were hesitant to use inhalers due to their side effects on children; (18.6%)<sup>(14)</sup> and (56%)<sup>(2)</sup>. This could be related to the widely spread notion in these communities that inhaled asthma medications contain steroids and that any medication that contains steroids is harmful regardless of its indications, dose, or route of administration.

Analysis of the three parts of the questionnaire revealed that 68.7% of Jordanian caregivers responded correctly to the questions in the second part that was concerned with

knowledge about asthma, while a lower percentage (61.5%) responded correctly to the first part that was concerned with misconceptions about asthma. This could be related to the fact that 34.2% of the participants had higher than high school education, but other sources of knowledge might have affected their attitudes towards asthma care. This is a point that must be highlighted in designing educational programs for the caregivers.

Caregiver's knowledge about asthma was not that different based on their demographic characteristics although participants from the military hospital had a mean score higher by 0.82 than those from the private one, using a *t*-test did not reveal statistical significance of this difference (*p* value = 0.598). In addition, caregivers who had longer duration of asthma diagnosis (more than 24 months) had higher mean score than those diagnosed for a period between 12-24 months or less than 12 months. However, using ANOVA did not reveal statistical significance among the three groups (*P* value = 0.934). Similar results were reported by Rais and colleagues<sup>(19)</sup>, who found that the longer the duration of the child diagnosis with asthma, the higher the caregivers' knowledge about the disease. This could be related to the cumulative knowledge that caregivers have about asthma from their children's experiences.

However, despite that the participants who had diploma and bachelor degrees have higher levels of education, surprisingly, caregivers who have primary school education had higher total mean score than the other levels of education (high school, diploma, and bachelor), but no statistical significance was found using ANOVA (*p* value = 0.417). At the same time, other studies reported that lower educational levels were associated with poor asthma

knowledge<sup>(18)</sup>, and with lower compliance with daily prescribed medications.<sup>2,20</sup> Our findings could be related to the small sample size in this study that limits generalizing the results. The sample was also taken from two hospitals only that are not representative of different sectors of hospitals in Jordan.

Furthermore, other demographic characteristics, such as gender, having previous knowledge about asthma, or the participant's relationship with the child did not have significant effects on their knowledge score ( $p$  values were 0.774, 0.789, and 0.845, respectively). Some studies found that misconceptions about asthma are associated with caregivers who did not receive any previous education about asthma<sup>(2)</sup>. Similarly to our results, no relation was found between the caregivers' age and their level of knowledge<sup>(18)</sup>.

### Implications of the study

The results of this study are useful to provide an insight into the knowledge of Jordanian caregivers of children with asthma about asthma. The results of this study might be useful for healthcare professionals, healthcare administrators, and policy makers, in order to design educational programs for caregivers of asthmatic children to improve their quality of life after determining areas of knowledge deficit, especially regarding visiting an ED after attacks, and use of daily preventive asthma medications. This is due to the fact that caregivers have major roles in managing asthma in children. This study also provided baseline data regarding Jordanian caregivers' general knowledge about asthma, which may encourage other researchers to conduct further research studies in this regard to confirm these findings, and find more conclusive findings by assessing knowledge about asthma among

larger sample sizes and including more representative samples of the Jordanian population.

This study may be an important step in future guidance for the caregivers of children with asthma, as the gaps of knowledge were identified, the caregivers' ability to provide effective care for their children may be improved. Increasing the awareness of caregivers towards asthma will result in a well-controlled asthma, which will enhance the overall health of asthmatic children, decrease contact with healthcare services, and decrease the number of hospitalizations caused by asthma. Furthermore, bridging the gaps of knowledge related to asthma will result in improving the quality of life for both the child and his/her caregivers<sup>(9)</sup>.

### Limitations

The small sample size is considered as a main limitation of this study in addition to the limited number of the included hospitals, which makes the generalizability of the results difficult. This could also explain not finding any statistical significant differences regarding knowledge scores based on caregivers' demographic characteristics. So, it is recommended that a similar study among a larger population should be conducted. Another limitation could be using a convenience sampling which may increase the probability of bias. Additionally, using a self-reporting questionnaire in obtaining data might reduce the validity and accuracy of the information, so bias in reporting some results could be possible in this data collection method. Conducting a similar study to determine parents' knowledge about asthma using another method for data collection, such as interviews or observation is recommended.

## Conclusion

Jordanian caregivers of children with asthma had fair knowledge (65.41%) about asthma, and seemed to be knowledgeable about asthma as a disease, including its triggers, management, prognosis, and few related behaviors that play a role in triggering asthmatic attacks, such as smoking and physical exercise. Knowledge deficit was found to be related to common misconceptions about asthma that are widely spread among many caregivers, such as the need to visit an ED after an attack even if the symptoms are mild, and that inhalers are not good for long-term use due to their side effects. These findings should guide healthcare professionals and administrators in designing educational programs for caregivers of asthmatic children, focusing on knowledge deficit areas, which will improve the quality of life for this population.

## References

- Gandhi, P K, Kenzik, K M, Thompson, L A, DeWalt, D A, Revicki, D A, Shenkman, E A, I-Chan, H. Exploring factors influencing asthma control and asthma-specific health-related quality of life among children. *Respir Res.* 2013; 14 (2): 1-10.
- Zaraket, R, Al-Tannir, M A, Abdulhak, A B, Shatila, A, Lababidi, H. Parental perceptions and beliefs about childhood asthma: a cross-sectional study. *Croat Med J.* 2011; 52(5): 637-643.
- Oubeidat, H, Shudifat, R, Malkawi, O, Alduhni, A, Gyshan, H. Family dynamics in parenting asthmatic child. *J Med J.* 2010; 44(2): 216-222.
- Salvador, E, Leon, N, Bautista, M, Ayuyao, F. Validation of asthma questionnaire on asthma knowledge, attitudes and practices among parents of children with asthma for the asthma pediatric education program of the Philippine Heart Center. *Pediatr Pulmunol.* 2012; 16: 39-49.
- Beyhun, N, Soyer, O, Kuyucu, S, Sapan, N, Altintas, D, Yuksel, H, Sekerel, B. A multi-center survey of childhood asthma in Turkey – I: The cost and its determinants. *Pediatr Allergy Immunol.* 2009; 20: 72-80.
- Al Hroob, A M, Nawafleh, H, Altaif, K I. 2016. Population Prevalence of Asthma in Ma'an Governorate, Jordan. *Health Science Journal.* 2016; 10(2): 1.
- Al-Anazi, A, Al Moamary, M, Ismaeli, T, Alanazi, A N, Olayan, L, Alanazi, A M, Qureshi, S. Asthma in the pediatric population: Level of perception among the parents and guardians. *Int J Med Public Health.* 2015; 5 (1): 14-18.
- Al-Yami, S M, Mohajer, K A, Al-Jeraisy, M I, Batarfi, A M, Abolfotouh, M A.. Recurrent visits and admissions of children with asthma in central Saudi Arabia. *Saudi Medical Journal* 2010; 31(8): 921-924.
- Al-sheyab, N, Gallagher, R, Crisp, J, Shah, S. Peer-led education for adolescents with asthma in Jordan: a cluster-randomized controlled trial. *EMHJ.* 2012; 129 (1): e106-e112.
- Abu-Ekteish, F, Otoom, S, Shehabi, I. Prevalence of asthma in Jordan: comparison between Bedouins and urban schoolchildren using the International Study of Asthma and Allergies in Childhood phase III protocol. *Allergy and asthma proceedings.* 2009; 30 (2): 181-185.
- Rastogi, D, Gupta, S, Kapoor, R. Comparison of asthma knowledge, management, and psychological burden among parents of asthmatic children from rural and urban neighborhoods in India. *J Asthma.* 2009; 46 (9): 911-915.
- Alkhalwaldeh A, ALBashtawy M, Al Omari O, Wynaden, D, Alhalaiqa, F, Hamadne, S, Aljohani, K, Al-Awamreh, K, and Khatatbeh, M. Assessment of northern Jordanian adolescents' knowledge and attitudes towards asthma. *Nurs Child Young People.* 2017; 29 (6): 27-31.
- Bhagavayheeswaran, K, Kasav, B, Singh, A, Mohan, S, and Joshi, A. Asthma-related knowledge, attitudes, practices (KAP) of parents of children with bronchial asthma: A hospital-based study. *Ann Trop MedPublic Health.* 2016; 9: 23-30.
- Gajanan, G, Padbidri, V, Chandhury, A. Assessment of Knowledge and Attitude of parents Towards the Allergy and Bronchial Asthma in Their Children. *Int J Med Public Health.* 2016; 6 (3): 121-125.
- Al-Muhsen, S, Horanieh, N, Dulgom, S, Al Aseri, Z, Vazquez-Tello, A, Halwani, R, Al-Jahdali, H. Poor asthma education and medication compliance are associated with

- increased emergency department visits by asthmatic children. *Ann Thorac Med.* 2015; 10 (2): 123-131.
16. Van Dellen QM, Stronks K, Bindels PJ, Bruil J, Aalderen WM. Predictors of asthma control in children from different ethnic origins living in Amsterdam. *Respir Med.* 2007; 101 (4): 779-850.
17. Al-Anazi, A, AL Moamary, M, Ismaeli, T, Alanazi, A, Olayan, L, Alanazi, A, Qureshi, S. The reliability of the Arabic version of the asthma knowledge questionnaire and assessment of the level of asthma awareness among parents of children with asthma in Saudi Arabia. *Middle-East J. Sci. Res.* 2014; 20 (4): 412-418.
18. Zhao, X, Furber, S, Bauman, A. Asthma knowledge and medication compliance among parents of asthmatic children in Nanjing, China. *J Asthma.* 2002; 39 (8): 743-747.
19. Rais, H, Arif, F, Santosh, S. ASTHMATIC CHILDREN; Knowledge and practices in the parent. *Professional Med J.* 2014; 21(4): 739-744.
20. Deis, J N, Spiro, D M, Jenkins, C A, Buckles, T L, Arnold, D H. Parental knowledge and use of preventive asthma care measures in two pediatric emergency departments. *J Asthma.* 2010; 47 (5): 551-556.

## مدى معرفة مقدمي الرعاية الأردنيين لمرض الأزمة عند أطفالهم

ساندي الشهبان<sup>1</sup>، هالا عبيدات<sup>2</sup>، مالك النجار<sup>1</sup>، أحمد الدهني<sup>2</sup>

1- كلية التمريض الجامعة الأردنية، عمان، الأردن.

2- كلية التمريض جامعة مؤتة، الكرك، الأردن.

### الملخص

**الهدف:** يعاني عدد كبير من الأطفال في الأردن وحول العالم من مرض الأزمة الصدرية. ومن المهم أن يكون لدى من يقدم الرعاية لهؤلاء الأطفال معلومات كافية عن المرض لتحسين وضعهم الصحي قدر الامكان. تهدف هذه الدراسة الى تحديد مدى معرفة مقدمي الرعاية الأردنيين لمرض الأزمة الصدرية عند الأطفال.

**الطرق:** دراسة وصفية مقطعية، استخدمت استبانة مؤلفة من سبعة عشر سؤالاً، شملت الدراسة 73 مقدم رعاية لطفل مصاب بالأزمة. **النتائج:** أظهرت نتائج الدراسة مستوى متوسطاً من المعلومات بنسبة 65.4%. ولم تكن هناك علاقة بين الخصائص الديموغرافية لمقدمي الرعاية ومعلوماتهم. يوجد لدى مقدمي الرعاية الأردنيين تدنٍ في المعلومات في بعض الجوانب المتعلقة بالأزمة، ولا بد من التركيز عليها عند تشكيل البرامج التعليمية التي تستهدفهم.

**الاستنتاجات:** وفرت هذه الدراسة نظره أولية عن معلومات مقدمي الرعاية الأردنيين لمرض الأزمة عند الأطفال وحددت الجوانب التي تعاني من نقص المعلومات حيث يمكن التركيز عليها لزيادة معلوماتهم عن المرض لتوفير وضع صحي أفضل لأطفالهم.

**الكلمات الدالة:** الأزمة، الأطفال، مقدمو الرعاية، معرفة، الأردن.