Asthma awareness among primary school teachers in Zanjan in 2014

Original Article

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Abstract:

Background: Asthma is the most common chronic respiratory disease and a leading cause of school absenteeism. Awareness, attitude, and knowledge of asthma can play an effective role in controlling this disease and its consequences. Accordingly, this study aimed to determine the level of asthma awareness among primary school teachers in Zanjan.

Methods: This descriptive cross-sectional study was conducted on 403 teachers of boys- and girls-only primary schools, who were selected using single-stage cluster sampling. Data were collected using a researcher-made questionnaire, in which higher scores indicated higher level of asthma awareness. Findings were analyzed using descriptive and analytical statistics in SPSS.

Results: Data analysis showed that 58 (14.4%) and 345 (85.6%) out of 403 participants were male and female, respectively. The means of age and work experience of the participants were 45±5.53 and 22±5.92 years old, respectively. In addition, teachers' mean score for asthma awareness was at a good level (12±2.2). Teachers' mean level of asthma awareness had a significant relationship with gender and history of dealing with asthmatic children ($p = 0.03$, $p = 0.04$), while it had no significant relationship with age, work experience, and education level.

Conclusion: In this study, the mean level of asthma awareness among the primary school teachers was good. Due to the importance of the disease in children and effective role of teachers in helping them, effective measures must be taken to increase teachers' awareness.

Key Words: Asthma, Awareness, Teachers, Children

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Introduction:

Asthma is the most common chronic respiratory disease with a progressive increase of prevalence over the years [1]. Several risk factors including poverty, environmental factors (smoking, air pollution, overpopulation, house dust, and contact with pets), psychological factors, and lack of sanitation facilities account for the high incidence rate of asthma and hospitalization rate of children under 18 years of age. Other risk factors are gender (asthma is more prevalent in boys than girls), family history, history of viral infection, low birth weight, food allergy and sensitivity to allergens [2]. In the United States, asthma is the most common chronic respiratory disease and the leading cause of school absenteeism, (2-7 days a year), [3]. Mortality rate from asthma is also increasing in school-aged children (6.2%, annually). According to a study conducted in Babol, the prevalence rate of asthma among primary school students was estimated to be 17.2% [4]. The incidence and symptoms of asthma decrease with age; therefore, prevention and treatment of asthma at an early age is of significant importance [1].

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Given that two-thirds of children's lives are spent at schools under the supervision of teachers, awareness and understanding of asthma and coping techniques are essential. Children become panicked during an asthma attack, which is a quite natural reaction for school-aged children. These children need to be supported by teachers at school. Teachers should identify asthmatic children, and even other students' awareness seems to be necessary [3]. Teachers' awareness of attitude and knowledge about asthma, and acquisition of necessary skills in controlling this disease can be effective in decreasing the frequency of school absenteeism among asthmatic children [3].

This study aimed to evaluate teachers' awareness of asthma and treatment mechanism; thereby an appropriate operational program could be designed based on the findings of this and other studies.

Methods:

The statistical population of this cross-sectional study included primary school teachers in Zanjan (Iran). The samples were selected using single-stage cluster sampling. The city of Zanjan was divided into four eastern, western, northern, and southern regions. The instrument used in this study was a researcher-made questionnaire, which measured asthma awareness and coping technique. The validity of the questionnaire was approved by an expert panel. It included items pertinent to demographic information and questions on asthma awareness. Correct and wrong answers were scored 1 and 0, respectively. The total score of this questionnaire was 16, where scores ≤ 6, 7-11, and ≥ 12 indicated poor, moderate, and good levels of asthma awareness. After making arrangements with the Education Department of Zanjan, a number of boys- and girls-only primary schools were selected, and the questionnaires were distributed among their teachers. After the questionnaires were completed, they were collected by the teachers. They were then analyzed using descriptive and analytical statistics (frequency, mean, standard deviation, chi-square test, and analysis of variance) in SPSS.

Results:

Results showed that 58 (14.4%) and 345 (85.6%) out of 403 primary school teachers were male and female, respectively. Teachers' mean score for asthma awareness was 12±2.2, which was good based on the determined cut-off point. Table 1 shows the frequency distribution of demographic variables of participants, among whom 57.8% had a bachelor's degree or higher. The means of their age and work experience were 42±5.5 and 22±5.9 years, respectively. In total, 35.4% of the participants had a history of dealing with an asthmatic patient.

According to findings, there was no family history of disease reported by 92.1% of the participants. A total of 48.6% of the participants believed that asthma training could be best done in classes. Table 2 illustrates the relationship between demographic variables and different levels of asthma awareness. Findings indicated a significant relationship of different levels of asthma awareness with gender and history of dealing with an asthmatic child. Table 3 presents the frequency distribution of responds to asthma awareness items.

Discussion:

Findings of the current study suggested that in the primary school, the mean score of teachers was at a good level and 65.2% of teacher had good awareness about asthma; whereas, it was poor in different parts of the world. Assessment of knowledge and awareness regarding asthma among school teachers in urban area of Quetta, Pakistan by Aqeel et al [5]. showed that 57% teachers had knowledge about asthma. A study in northern India stated poor knowledge of teachers on how to use metered dose inhaler (MDI), which was improved after training [6], whereas teachers' familiarity with the use of MDI spray was evaluated by a questionnaire theoretically rather than practically, in the current study. In addition, 52% of our participants stated that they knew how to use the spray. However, lower rate might be expected if their practical knowledge was evaluated. Although proper use of spray is a major principle in treating asthma, it is an issue when it comes to children. However, this problem may be dealt with by provision of effective training, thereby improving relevant awareness. A study by Gibson Scipio et al. showed that the level of asthma awareness among both rural health workers and asthmatic children was poor [7]. Our study aimed to determine the level of asthma awareness among teachers in an urban setting. However, since hygienic conditions in rural areas are usually lower than in urban areas and children are more susceptible to predisposing risk factors, investigation into the level of asthma awareness among teachers in rural areas seems essential. Therefore, future studies are recommended to evaluate the level of asthma awareness among rural teachers.

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In the present study, a significant relationship was observed between the history of dealing with asthmatic patients and higher mean score of asthma awareness among teachers. This relationship was also reported in a study on the level of asthma awareness among primary school teachers [8].

Another study on the effect of training on teachers' knowledge represented that training significantly improved their awareness [9]. Although, the current study was a survey using a questionnaire without any intervention, the best ways to improve the relevant knowledge of teachers were educational classes (48%), TV and radio programs (22.8%), learning from family members (20.8%), and papers and magazines (5%) were the best training methods. Teachers' level of asthma awareness may be increased by holding workshops and educational classes, thereby improving the quality of care for asthmatic children. Many studies have reported a poor awareness of asthma and its management among teachers [10-12].

Table 1. Frequency distribution of demographic variables for the participants

Variable		Numbers	Percentage
Gender	Male	58	14.4
	Female	345	85.6
Education Attainment	High School Diploma	0	0
	Diploma	21	5.2
	Associate's Degree	149	36.9
	Bachelor's Degree and Higher	233	57.8
History of Dealing with Asthmatic Patients	Yes	143	35.4
	No	260	64.5
Family History of Disease	Yes	32	7.9
	No	371	92.1
Teachers' Opinion about the Best Asthma Training Method	Papers and Magazines	20	5
	TV and Radio	92	22.8
	Class	196	48.7
	Through Family Members	84	20.8
	Through Friends and Acquaintances	11	2.7
Teachers' Awareness of Appropriate Action in Dealing with Asthmatic Children	Calming Children Down and Preventing them from Feeling Restless	246	61
	Administrating Children Drugs	96	23.9
	Informing Parents	57	14.1
Teachers' Awareness of Proper Storage of Asthma Medications	Lack of Awareness	174	43.3
	With Children	109	27
	With Teachers	79	19.6
	School First Aid Kit	32	7.9

Table 2. Relationship between demographic variables and different levels of asthma awareness

Variable		Awareness			p-value
		Good N (%)	Moderate N (%)	Poor N (%)	
Education Level	Diploma	13 (61.9)	7 (33.3)	1 (4.8)	0.6
	Associate's Degree	97 (65.1)	51 (34.2)	1 (0.7)	
	Bachelor's Degree and Higher	153 (65.7)	75 (32.8)	5 (1.4)	
History of Dealing with Asthmatic Children	Yes	101 (73.2)	36 (26.1)	1 (0.7)	0.04
	No	162 (61.1)	97 (36.6)	6 (2.3)	
Gender	Male	31 (53.4)	25 (43.2)	2 (3.4)	0.03
	Female	232 (67.2)	108 (31.3)	5 (1.5)	
Work Experience	Mean and Standard Deviation	20.4±5.8	20.9±6	19±7.4	0.4
Age	Mean and Standard Deviation	41.7±5.5	42.5±5.7	38.4±4.5	0.07

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Table 3. Frequency distribution of answers to questions on asthma awareness

Questions	Yes N (%)	No N (%)	Don't know N (%)
Virus is the cause of asthma	62 (15.4)	279 (69.2)	62 (15.4)
Asthma is contagious	12 (3)	382 (94.8)	9 (20.2)
Asthmatic children's droplets from coughs and sneezes is an important factor in the transmission of this disease to other children	53 (13.2)	317 (78.7)	33 (8.2)
In asthma, airway obstruction occurs	341 (84.6)	34 98.4)	28 (6.9)
Every child might be susceptible to asthma	316 (78.4)	60 (14.9)	27 (6.7)
Children with allergies are more susceptible to asthma	368 (91.3)	23 (5.7)	12 (3)
Nervous children will develop asthma	168 (41.7)	159 (39.5)	76 (18.9)
Children of asthmatic parents might develop asthma	276 (68.5)	93 (23.1)	34 (8.4)
Physical exercises in asthmatic children might increase the risk of asthma attacks	359 (89.1)	21 (2.5)	23 (5.7)
Climatic conditions cause asthma attacks	381 (94.5)	15 (3.7)	7 (1.7)
Air pollution and smoking exacerbate asthma in children	393 (97.5)	8 (2)	2 (0.5)
Shortness of breath, along with wheezing and intercostal retractions are three important asthma symptoms	369 (91.6)	17 (4.2)	17 (4.2)
Sometimes, children's coughing attacks without considerable shortness of breath or persistent cough can be due to asthma	253 (62.8)	100 (24.8)	50 (12.4)
Cold viral infections are the most important causes of symptoms exacerbating asthma	308 (76.4)	63 (15.6)	32 (7.9)
For the long-term control of asthma, Salbutamol spray would suffice	197 (48.9)	147 (36.5)	59 (14.6)
Do you know how to use a spray for asthma?	211 (52.4)	145 (36)	47 (11.7)

Rodehorst et al. in the United States suggested that although teachers' attitude towards asthma was acceptable, they had poor knowledge of asthma [13]. Moreover, a study in Malaysia indicated poor knowledge of teachers about asthma and necessity of providing educational and management courses [14].

Results of the current study showed no significant difference between the mean asthma awareness score and educational attainment, which was consistent with the results of Fork et al. study [15]. This is probably due to the low number of teachers with high-school diploma and lower. Similar to other studies, findings of the present study demonstrated that the mean score of asthma awareness was not significantly different between various age groups [10, 15]. Inconsistent with Rodehorst et al.'s findings [13], the current study showed a significant relationship between the mean score of asthma awareness and history of dealing with asthmatic children. According to the findings, 43.2% of the participants in the present study did not know the proper storage of asthma medications. Therefore, given the importance of asthma awareness in terms of disease control and immediate and proper use of required medications, holding various educational sessions can be an effective way to improve relevant knowledge among teachers and other target groups. Taking appropriate measures at asthma attacks is essential.

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Given the responds of the participants of this study (i.e. calming children down and preventing them from feeling restless, administrating their medication, and informing parents), the provision of required trainings and prioritization of appropriate measures seem essential. As a limitation, more accurate evaluation of some questions such as use a spray should be checked during practical use.

In this study, the mean level of asthma awareness among the primary school teachers was good and 65.2% of teachers had good awareness about asthma. Due to the importance of the disease in children and effective role of teachers in helping them, effective measures must be taken to increase teachers' awareness.

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