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RESEARCH ARTICLE

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Assessment of Knowledge and Awareness Regarding Asthma among School Teachers in urban area of Quetta, Pakistan

Talieha Aqeel*, Naila Akbar, Sameer Dhingra[1] and Noman-Ul-Haq

Department of Pharmacy Practice, Faculty of Pharmacy, University of Balochistan, Quetta, Pakistan.

[1]*Department of Pharmacy Practice, School of Pharmacy, Faculty of Medical Sciences, The University of the West Indies, Champ Fleurs, Trinidad and Tobago.*

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***Correspondence to:**

Dr. Talieha Aqeel, PharmD

Department of Pharmacy Practice, Faculty of Pharmacy, University of Balochistan, Quetta, Pakistan.

Email: taliehaaqeel004@gmail.com

Abstract

Objective : Current study is conducted to assess the level of knowledge, awareness and source of information of asthma among school teachers those who are working in government and private schools in urban area of Quetta district in Balochistan Province, Pakistan.

Methodology : A prospective, cross-sectional study was conducted among School teachers in Quetta city of Pakistan. Convenience sampling approach was used to recruit 330 teachers based on sample size calculation. A content- and face-validated questionnaire was used to collect the data from the participants. The collected data were reviewed and statistically analyzed by using SPSS. Man Whitney and Kruskal-Wallis tests were applied to relate the study variables.

Results : The recent study shows that 57% teachers have knowledge about asthma and exacerbate factors which increased the risk of asthma attack. Knowledge of female teachers were better as compared to male teachers (p = 0.002). Education levels and school type also affect the knowledge of teachers.

Conclusion : This study highlights that school teachers need to train to recognize the early symptoms of asthma in the class room and seek appropriate treatment. The delay of such necessary treatment can have serious consequences or even death. An educational program is needed for Quetta teachers to increase their knowledge about asthma and to meet the needs of a child with asthma to improve wellbeing and school attendance.

Key words: Knowledge, Awareness, Asthma, Teachers, Pakistan.

INTRODUCTION

Asthma is a chronic inflammatory disease of airways characterized by recurrent attacks of shortness of breath associated with wheezing and may get worse during physical activity or at night time.[1] Asthma can leads to impairment in quality of life.[2] The prevalence of asthma is increasing globally. The natural history of asthma is still not well defined. Although asthma can occur at any time but the prevalence is more associated with children with most patients being diagnosed by 5 years of age and up to 50% of children having symptoms by 2 years of age. In the United States, it is estimated that about 15 million of asthma patients are under the age of 18 years.[2] The high prevalence of asthma among children is also reported in many other countries including Saudi Arabia,[3] Australia,[4] Iran[5] and Oman.[6]

Pakistan has a high prevalence of asthma in children like any other country. The prevalence has increased from 9 to 18% since last five years.[7] This is in line with the increase in asthma prevalence worldwide despite availability of effective treatment.[8] Guidelines are seen as a primary mechanism to combat the increase in asthma prevalence and a number of international and national guidelines have been developed over the last 10 to 15 years.[9-12] Pakistan Chest Society (PCS) has also give his own guidelines in 2001 to streamline the diagnosis and management of asthma in country.[13] The

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latter adopt the GINA goals for the long term management of asthma minimal need for as required bronchodilators and no limitations to daily activities. In school age children asthma has medical, psychological and physical effects. The flare up of asthma may lead to impaired daily function and absence from school.

According to a study conducted in United States showed that an average, a child with active asthma missed 2.6 school days per year.[14] Although asthma cannot be cured at present, symptoms can be controlled with appropriate medical treatment, self-management education, and by avoiding exposure to environmental allergens and irritants that can trigger an attack.[15-16] Mostly the complications of bronchial asthma could be influenced by poor knowledge, poor use of inhaler technique, on compliance and negative attitude toward the illness and the drugs.[17] The proper management of bronchial asthma of children requires attention to the behavior of teachers of asthmatic children and also to the underlying beliefs which derive that behavior. Asthma deaths are uncommon especially among children and young adults but they remain a focus of preventive efforts because high quality health care and patient education should theoretically prevent asthma related deaths. Additionally, school is the place where children spend their most of the time after their homes. Schools are associated with various physical and mental activities and a little additional activity associated with stress may precipitate asthma or may worsen the symptoms of existing asthma.[18-19] Therefore, it becomes necessary to manage asthma at both preventive and symptomatic levels in school. Various studies have been conducted to assess the level of knowledge on asthma among teachers in developing countries including Hong Kong, Bahrain, Malaysia and Turkey.[20-22] These studies have indicated that school teachers were less informed about the symptoms, management and treatment. However, studies have shown that the developed countries like Australia and England has permanent full-time nurses or other healthcare workers placing the responsibility for daily asthma management of students with asthma on nonmedical staff and teachers. Since improved knowledge of parents has been shown to improve asthma in their children, it would be expected that improved knowledge of school teachers would give similar outcomes when the children are at school. Restrictions in school activities seemed to be less if the children sensed an understanding of their disease from the teachers. With improved knowledge, teachers should be able to manage the school children with asthma and deal with emergency medical situations appropriately.[6, 23-24]

In order to assess this, it is important to know their knowledge about childhood asthma. Local data on disease-related knowledge among school teachers are scarce. This study was aimed to assess the level of knowledge regarding asthma and its management among primary school teachers in Quetta, Pakistan. It is hoped that the findings would enable us to identify areas of poor understanding as well as to provide a foundation for the development of a disease-related teaching program to school teachers.

METHODS

A prospective, cross-sectional study was conducted among School teachers in Quetta city of Pakistan from July to September 2014.A sample size of 323 participants was calculated from Raosoft calculator.[25] Convenience sampling was used to approach the participants. The twelve schools which agreed to participate in this study included schools from both government and private sector.

A self-administered questionnaire was used a tool to collect the data from the teachers. The questionnaire was distributed to the teachers by one of the author responsible for data collection. The same author was also assigned the responsibility of providing an explanation to students regarding the questionnaire. The questionnaire was designed after a thorough literature review, which was then subjected to content and face valid. The questionnaire was developed in English and Urdu. The reliability coefficient was found to be 0.76. The responses from these participants were not included in final analysis. The final version of the questionnaire was composed of 27 questions, distributed over 4 sections including demographic information, knowledge about prevention, disease and its management etc

The data were analysed by using SPSS version 20 (SPSS Inc., Chicago, IL).Descriptive and inferential statistics were applied; categorical data are expressed as mean ± std, and mean comparison and categorical variables are represented in frequency and percentage. Inferential statistics (Mann Whitney, Kruskal-Wallis test were used to differentiate or relate the study variables. P value less than 0.05 were considered statistically significant. The study approved by Institutional Ethics Committee, Faculty of Pharmacy, University of Balochistan. All the teachers were informed by the consent form that their participation is voluntary and their name and knowledge will be kept anonymous.

Table 1: Demographic Information of Participants

Characteristics	Frequency	Percentage
Age		
18-24	98	33.0
25-31	114	38.4
32-38	32	10.8
39-45	25	8.4
46-52	18	4.1
53-59	10	3.4
Gender		
Male	107	36.0
Female	190	64.0
Education		
FA	36	12.1
Intermediate (F.Sc)	16	5.4
Bachelor of arts (BA)	58	19.5
Bachelor of Science (B.Sc)	31	10.4
Master of Arts (MA)	54	18.2
Master of Science (M.Sc)	42	14.1
Bachelor of Education (B.Ed)	31	10.4
Master of Education (M.Ed)	29	9.8
School type		
Government girls high school	44	14.2
Government boys high school	54	18.2
Private co-education	199	67.6
Experience		
1-5 years	191	64.6
6-10	47	15.5
11-15	17	5.7
16-20	21	7.1
More than 20years	21	7.1
Knowledge score		
Good	172	57.7
Poor	125	42.1

*Good =above cut of level> 9
*Poor = cut of level≤ 9

RESULTS

A total of 297 questionnaires were retuned, giving a response rate of 90%. However, 33 questionnaires were discarded because of non-adherence to the instruction of completing the questionnaire. Most respondent teachers were from the age range of 25-31 that were 114(38.4) and the lowest respondent were with the age group of 53-59 that were 10(3.4). The majority of participants were female 190 (64%) and male 107(36.0). The most of the teachers were master's degree holder (42.10%) followed by bachelors 40.40% and F.Sc 17.50%. The highest participants were belonging to private coeducation schools [199(67.6%)]. Teachers with experience16 -20 years and more than 20 years were 21(7.1%). The participants' demographic variables are tabularized in Table 1.

Table 2 describe about the knowledge of asthma among participated teachers they heard about asthma 297 (100%) and it's related to lung disease 273(91.9%). The maximum respondents have the information with the uncommon cause of asthma due to microorganism infection were 158(53.2%). Most of the teachers were showed poor knowledge about avoiding milk may improve the children asthmatic conditions were 128(43.1%) and physical activity can cause asthma attack 162(54.5).

Most of teachers have knowledge about Asthma from different source like seminars 70(23.6) followed by

Table 2: knowledge of Asthma among School Teachers

Knowledge of asthma.	Yes N (%)	No N (%)	Don't know N (%)
Have you heard about disease asthma?	297(100)	---	---
Asthma is a lungs disease?	273(91.9)	18(6.1)	6(2.0)
Asthma is a communicable disease it spread from one person to another?	151(50.8)	116(39.1)	30(10.1)
Symptoms of asthma are difficulty in breathing, cough and chest congestion?	238(80.1)	40(13.5)	19(6.4)
Asthma is a hereditary disease?	142(47.8)	98(33.0)	57(19.2)
Sometimes asthma can be caused by an infection due to microorganism?	158(53.2)	78(26.3)	61(20.5)
Asthma is a chronic disease which needs treatment for long time?	195(65.7)	66(22.2)	36(12.1)
Asthma predominantly effect female children?	87(29.3)	140(47.1)	70(23.6)
In children physical activity and exercise can induce asthma attack?	81(27.3)	162(54.5)	54(18.21)
Asthma occurs in specific age among children?	90(30.3)	141(47.5)	66(22.2)
Asthmatic attacks are more usually occur in day time as compare to night?	121(40.7)	117(39.4)	59(19.9)
Asthma attack can cause death?	183(61.6)	67(22.6)	47(15.8)
Could asthma be completely controlled by using medication regularly for longer period of time?	209(70.4)	48(16.2)	40(13.5)
Passive Smoking can worsen asthma?	207(69.7)	52(17.5)	38(12.5)
In asthmatic children avoiding milk may improve their condition?	94(31.6)	128(43.1)	75(25.3)
Asthma can be completely cured?	184(62)	60(20.2)	53(17.8)
Inhalers are used to treat asthmatic attack?	203(68.4)	40(13.5)	54(18.2)
Asthma can effect student's studies?	212(71.4)	52(17.5)	33(11.1)
Have you heard about disease asthma?	297(100)	---	---

Table 3: Source of information about asthma disease

Source	N	Percentage
TV /radio	61	20.5
Newspaper/ magazine	69	23.2
Friends/family	61	20.5
Brochure/poster	36	12.1
Others seminar etc	70	23.6

newspaper and magazines 69(23.2), from family or friends, television or radio (TV) 61(20.5) and the lowest source is brochure and posters.

Table 4 describe that the P value affect the result. P values show that any change between groups, gender, or any other variable is significant or not. P value use as a cut off for determining significance can be 0.05. P value for age group is 0.657 which is greater than 0.05 that mean age group does not affect the result. In a way the P value for greater for gender is 0.002 and for education is 0.045 and for school type 0.001 which are less than 0.05. So the change in gender, education and school type affect the knowledge of teachers (Table 4).

DISCUSSION

The present study showed more than fifty percent of school teachers have good knowledge score (57%). This finding is in line with other published studies which also reported good knowledge of school teachers about asthma and its management. Ones *et al.*, 2006, conducted a study in Turkey among school teachers about asthma knowledge and its management and reporting 97% study participants have good knowledge regarding asthma.[22] In the recent study the good knowledge score although 57% but this result is less than previous study conducted in Turkey. This difference could be is due to sample size, education of the teachers, living in rural area, may be most of the participants don't have any relative suffer with asthma etc and another reason. Most of the previous studies conducted in developing countries and developed countries their teachers show more attention on students health because these are part of their duties and policies of their administration as well.[26-30] Furthermore in our study revealed that asthma knowledge level not affected by age group and the results supported by statistics (p>0.657). This finding is similar with another study

Table 4: Comparison of mean Knowledge scores and Different Demographic Variables

Description	N	Mean ±std deviation	P value
Age group*			
18-24	97	10.23(2.45)	
25-31	113	10.49(2.86)	0.657
32-38	33	9.64(3.13)	
39-45	25	10.12(3.21)	
46-52	18	9.83(3.52)	
53-59	11	10.45(3.47)	
Gender**			
Male	108	9.58(3.01)	**0.0**02
Female	189	10.61(2.59)	
Education*			
FA	36	9.42 (2.47)	
Intemediate (F.sc)	15	9.87 (3.15)	
Bachelor of arts (BA)	50	10.91 (2.57)	**0.048**
Bachelor of science (BSc)	30	10.43 (2.75)	
Masters of arts (MA)	57	10.05 (2.59)	
Masters of science (M.Sc)	42	9.83 (3.26)	
Bachelor of Education (B.Ed)	30	11.37 (2.09)	
Master of Education (M.Ed)	29	9.66 (3.30)	
School type*			
Govt. girls high school	44	10.93(3.03)	0.001
Govt. Boys high school	53	8.58(2.46)	
Private coeducation	200	10.52(2.66)	
Experience(years)*			
1-5	191	10.43 (2.60)	
6-10	47	9.68 (3.10)	
11-15	17	9.47 (2.89)	0.138
16-20	21	9.38 (3.13)	
More than 20	21	11.19 (2.76)	

* Mann Whitney test (P< 0.05)
**Kruskal-Wallis test (P< 0.05)

which was conducted in like in Malaysia.[21]

In the present study the gender makes difference with the significant results ($p<0.002$). The participation of females teachers have good knowledge in our study, they have higher knowledge with the mean and SD (10.61 ± 2.59). This may be due to the fact that there are more females teachers involved with children health care than males at home in their daily life. This result is supported by other studied which was conducted in Turkey and Bahrain.[22, 31] Furthermore, another researcher found similar results the study conducted by Gibson et al study demonstrate similar results with the female teachers scoring significantly higher than male teachers.[30]

In the present study results showed that education level ($p<0.048$) effect asthma knowledge of teacher's. Teachers having master and graduate degree from science and Arts faculty were have good knowledge. In addition, Teachers having additional degree in education [Bachelor of Education (B. Ed)] have greater knowledge (11.37 ± 2.09). The reason could be due to because in their education (B.Ed) had more training programs, workshops and have more close relation with the students. The study conducted in Malaysia by Bahri et al. showed their results totally contrast.[23] In our study the knowledge level of asthma sign and symptoms in good knowledge. Teachers knew that shortness of breath, wheezing, coughing are symptoms of asthma with true response rate of 80.1%. The studies conducted by Hussey et al. and Khairunisa showed poor response 71% and 37.4% respectively.[32-33] The result could be due to different source of information available these days like internet, TV, Radio etc.

The recent study revealed that 54.5% teachers are not satisfied with knowledge about exercise induce asthma attack as a trigger factor. Hussey et al., reported in their study that 80% of teachers were conscious of asthma exercise induced asthma.[32] Another researcher also demonstrated that 82% of teachers knew about the existence of exercise induced asthma which show different result with the recent study.[34] This poor knowledge may be because of the lack of information regarding the potential trigger factors. The recent study shows that teachers have false knowledge that asthma more effect on male children than female (47.1%). Passive smoking is a significant factor in the development of childhood asthma. Exposure to passive smoking may trigger asthma in children who are already genetically predisposed to the condition. 69.7% teachers agreed that passive smoking may worsen the asthma. The knowledge of school teachers vary with the difference in school type teachers of private schools have more knowledge regarding asthma as compare with the teachers of government schools because in private schools strength of children in each class lesser than the government schools and teacher can easily pay attention to asthmatic children and for those student teachers know about their basic management rather than the government teachers. The potential feature of the study is that it chooses a very important part of the society which had been neglected before. Therefore the above mention study has been conducted.

Limitations

The study sample was small and was conveniently selected. As a result these findings may not be generalized to the larger populations of interest. The use of a comparison group would have a added strength to the study design. This study is only limited to teachers.

Conclusion

The present suggest that school teachers need to be trained to recognize early signs and symptoms of respiratory distress in the classroom and seek appropriate treatment. The delay of such necessary treatment can have serious or even deadly consequences. An educational program is needed for Quetta teachers to increase their knowledge about asthma and to meet the needs of a child with asthma to improve wellbeing and school attendance.

Recommendations

Most of the teacher's knowledge in the present study felt inadequate to handle the responsibility of asthmatic children. A community campaign can increase the knowledge and awareness about asthma among teachers. By this all children will allow to keep their inhalers with them which lead to improve in school attendance and reduction in asthma attacks. School should have included a compulsory session on asthma with in service training for teachers. Asthma education with magazines updated information should routinely distributed among school teachers which help them to increase their knowledge about asthma.

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