

Knowledge of school teachers regarding Asthma in Aseer region of Saudi Arabia

Zeinh Hussein Fardan (1)
 Abdulbari Ahmed Alzahrani (2)
 Sara Abdullah Althumairy (2)
 Hana Saeed Al Malih (2)
 Shahad Awad AlQahtani (2)
 Wijdan Saleh Quraishi (2)
 Hasnaa Abdullah Althumairy (3)
 Fajr Abdulhadi Alnaami (2)
 Wafaa Sulaiman Alhifzi (2)

(1) Pediatric consultant, King Khalid University
 (2) Medical Intern
 (3) Medial student

Corresponding author:

Zeinh Hussein Fardan
 Pediatric consultant, King Khalid University
 Saudi Arabia
Email: Zali@kku.edu.sa

Received: September 2021; Accepted: September 2021; Published: October 1, 2021.

Citation: Zeinh Hussein Fardan et al. Knowledge of school teachers regarding Asthma in Aseer region of Saudi Arabia. World Family Medicine. 2021; 19(10): 136-144 DOI: 10.5742/MEWFM.2021.94151

Abstract

Background: Asthma is a leading cause of impairment, high health-care costs and poor quality of life for those who suffer from it. Asthma is the most prevalent chronic medical illness that schoolteachers must deal with in their students, impacting more than 10% of them. Teachers may be required to supervise inhaler administration and determine the necessity for additional treatment in acute attacks. Asthma prevalence varies greatly over the world, ranging from 1 to 20% for both children and adults.

Methods: The data for this cross-sectional study was acquired using a specially designed questionnaire. The questionnaire includes demographic questions as well as questions about asthma awareness and knowledge. After collection of data, it was coded and entered in the SPSS ver.20 software for analyses descriptive statistics (mean standard deviation, frequencies and percentages were computed), to measure the significance differences t test and chi-square test was used at 5% level of significance. Data was collected from the teachers of Aseer region of KSA. Ethical approval was obtained from King Khalid University, Saudi Arabia. The study duration was from January-2021 to April-2021.

Results: Out of a total 759 respondents, the mean (S.D.) of the respondents were 31.6(12.8). 14.2% were male while 85.8% were females. The Cronbach alpha of the questionnaire was 0.79. We have observed that age and education have a significant impact over the prevalence of Asthma awareness.

Conclusion: We should train our teachers by conducting series of seminars, webinars and workshops. We will also incorporate training the trainer sessions for teaching staff to enhance their skills to deal with asthma.

Key words: Asthma, diseases, teacher, knowledge, awareness

Background

Asthma is a leading cause of impairment, high health-care costs, and poor quality of life for those who suffer from it. Asthma is the most prevalent chronic medical illness that schoolteachers must deal with in their students, impacting more than 10% of them (1). Teachers may be required to supervise inhaler administration and determine the necessity for additional treatment in acute attacks. Asthma prevalence varies greatly over the world, ranging from 1 to 20% for both children and adults. These significant variances are due to environmental differences between nations, as well as the use of different measurement methodologies and epidemiological definitions of asthma (2).

Asthma is one of the most frequent chronic respiratory diseases that affect children under the age of five. According to the International Study of Asthma and Allergies in Childhood, 14 percent of the world's youngsters have had asthmatic symptoms (ISAAC) (3). The prevalence of asthma in children and adolescents has been studied in Saudi Arabia. According to one study the prevalence of bronchial asthma in the southern part of Saudi Arabia is 19.5 percent at sea level and 6.9 percent at higher elevations (4-6).

A study was conducted in the United States (US) to look into asthma mortality in schools and the factors behind these deaths. It was discovered that some asthma deaths were caused by a delayed response or difficulties in deciding how to care a child with asthma symptoms by school workers.

In order to recognize the risk factors, symptoms of an exacerbation, and how to deal with an emergency; instructors play a critical role in the care of asthmatic school children (7).

Numerous studies from India, New York City, Spain, Turkey, and Bahrain revealed a lack of understanding and practice in the care of asthma in children. Training programs should enhance awareness in order to satisfy the needs of children and reduce school absence (8-10). Teachers play a critical role in recognizing and controlling asthma in schools, thus it is critical to assess their expertise in order to avoid asthma problems. The main aim of this study is to find out the awareness and knowledge of teachers regarding asthma and how to deal with it.

Methods

The data for this cross-sectional study was acquired using a specially designed questionnaire. The questionnaire includes demographic questions as well as questions about asthma awareness and knowledge. After a series of meetings with the panel of experts, the questionnaire was created. This panel is made up of subject experts, researchers, and language experts. To measure the internal consistency of the questionnaire, Cronbach's alpha of the questionnaire was calculated. The study was conducted in the Aseer region of Saudi Arabia. The questionnaire included items related to the awareness regarding Asthma, and its symptoms, first aid, courses regarding asthma, demographic variables and awareness regarding the response to asthma.

After collection of data, data was coded and entered into SPSS ver.20 software for analyses descriptive statistics (mean standard deviation, frequencies and percentages were computed); to measure the significance differences t test and chi-square test was used at 5% level of significance. Data was collected from the teachers of Aseer region of KSA. Ethical approval was obtained from King Khalid University, Saudi Arabia. The study duration was from January-2021 to April-2021

Results

Out of a total 759 respondents, the mean (S.D.) of the respondents were 31.6(12.8). 14.2% were male while 85.8% were female. The Cronbach alpha of the questionnaire was 0.79.

Figure 1: Prevalence of Asthma

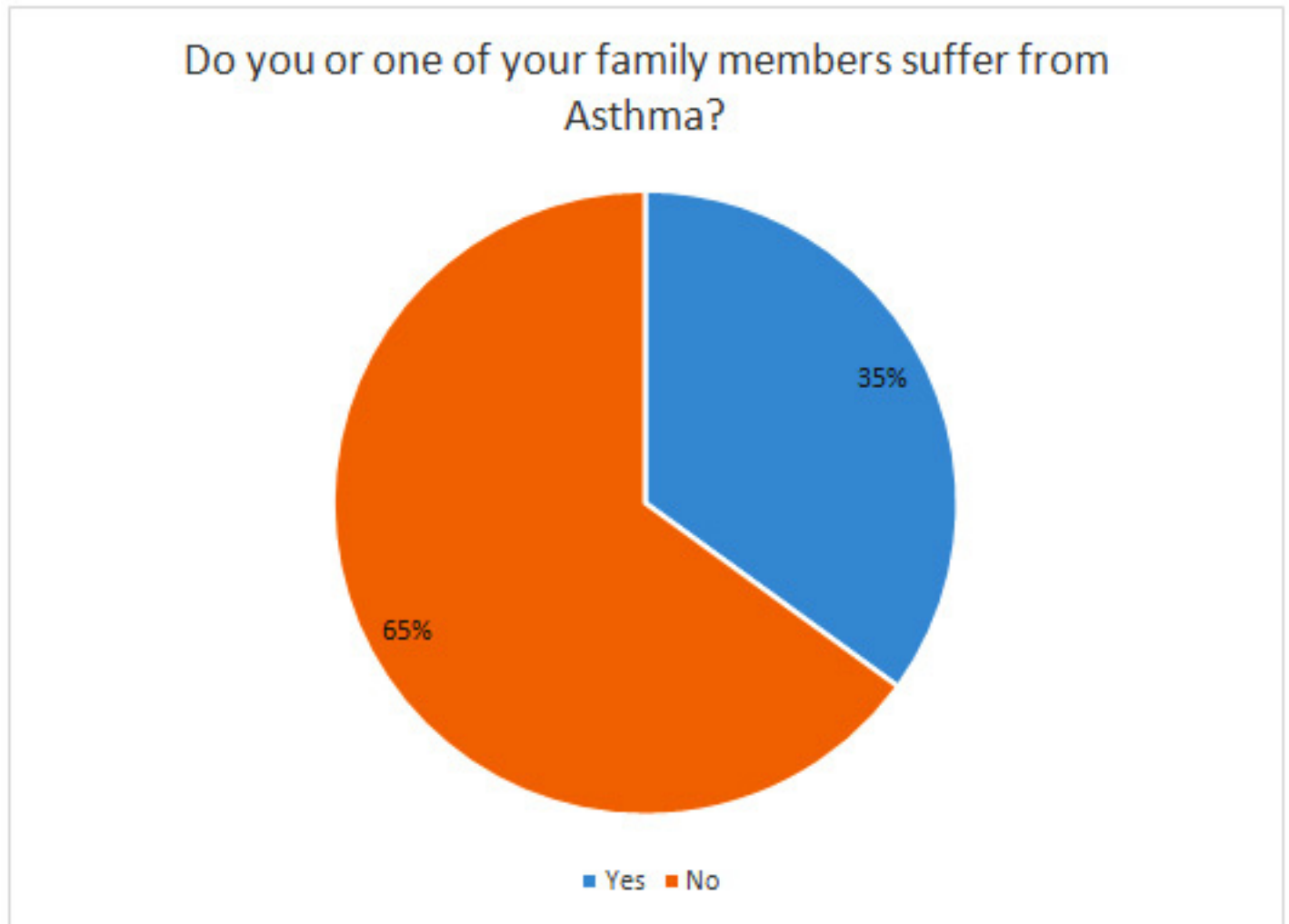


Figure 1 depicts that 35% (out of 759) of the respondents or their family members suffer from Asthma.

Table 1: Comparison between Asthma and demographical variables

Do you or one of your family members suffer from asthma?				Total
		No	Yes	
Do you live in	City	427	221	648
	Village	73	38	111
p=0.529				
Education	Bachelor's degree	411	197	608
	Certificate of Secondary Education	58	55	113
	Doctor degree	5	3	8
	Master's degree	26	4	30
p=0.001				
		No	Yes	
Age	25-34 Years	70	34	104
	35-45 Years	227	99	326
	46-55 years	170	95	265
	less than 25 years	4	1	5
	more than 55 years	29	30	59
p=0.036				
		No	Yes	
Gender	Female	425	236	661
	Male	75	23	98
p=0.10				
		No	Yes	
Income	5000-15000 SAR	320	174	494
	More than 15000 SAR	111	48	159
	up to 5000 SAR	69	37	106
p=0.499				
		No	Yes	
Married life	Married	454	229	683
	Separated	17	15	32
	Single	29	15	44
p=0.298				

In Table 1 we have compared the asthma patients with demographical variables and we have observed that age and education have a significant impact over the prevalence of the Asthma.

Table 2: Statement about Asthma

Which of the following is true about asthma?		
	Frequency	Percent
No response	134	17.7
A genetic disease that can be treated, a chronic disease that does not affect the heart	51	6.7
A hereditary disease that cannot be cured but that can be controlled, it is a chronic disease that does not affect the heart	54	7.1
A hereditary disease that cannot be cured, but it can be controlled	180	23.7
A hereditary disease that cannot be cured, but it can be controlled, Contagious disease, Chronic disease and no effect on the heart	1	.1
Chronic disease and no effect on the heart	116	15.3
Contagious disease	6	.8
Hereditary disease that can be cured	174	22.9
A hereditary disease that cannot be cured but that it can be controlled, it is a chronic disease that does not affect the heart	12	1.6
A hereditary disease that cannot be cured, but it can be controlled	31	4.1
Total	759	100.0

In Table 2, 23.7% stated that it is a hereditary disease that cannot be cured, but it can be controlled, 22.9% stated that it is a Hereditary disease that can be cured, while 15.3% stated that it is a Chronic disease and has no affect the heart

Figure 2: Source of information regarding Asthma

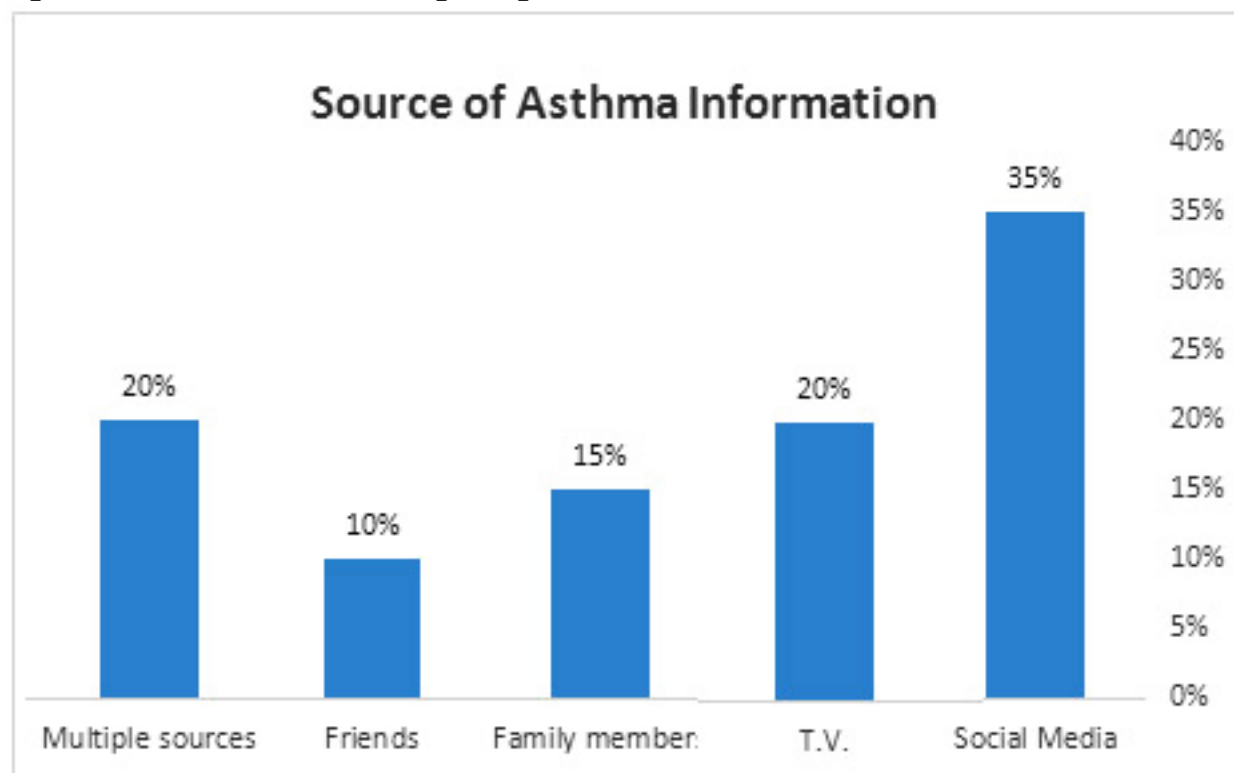
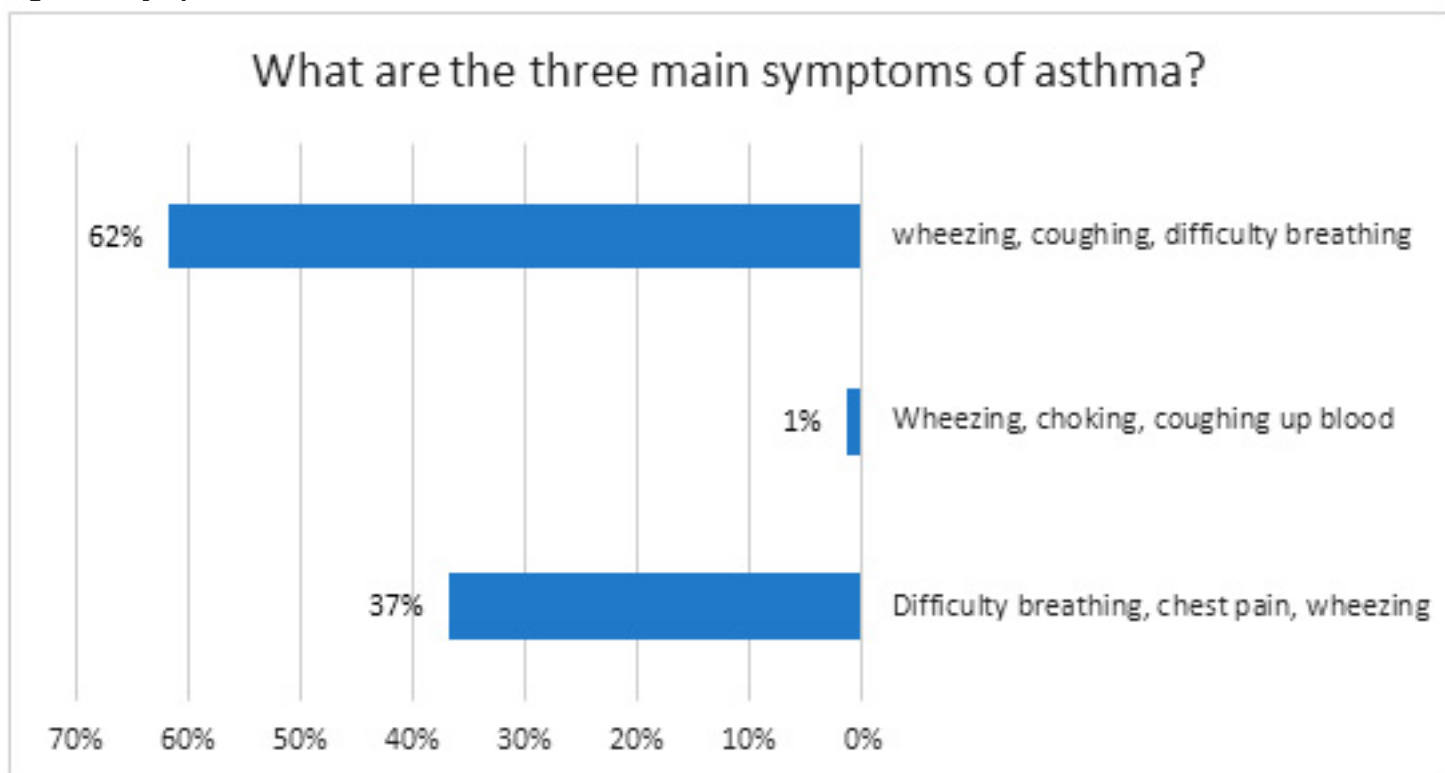


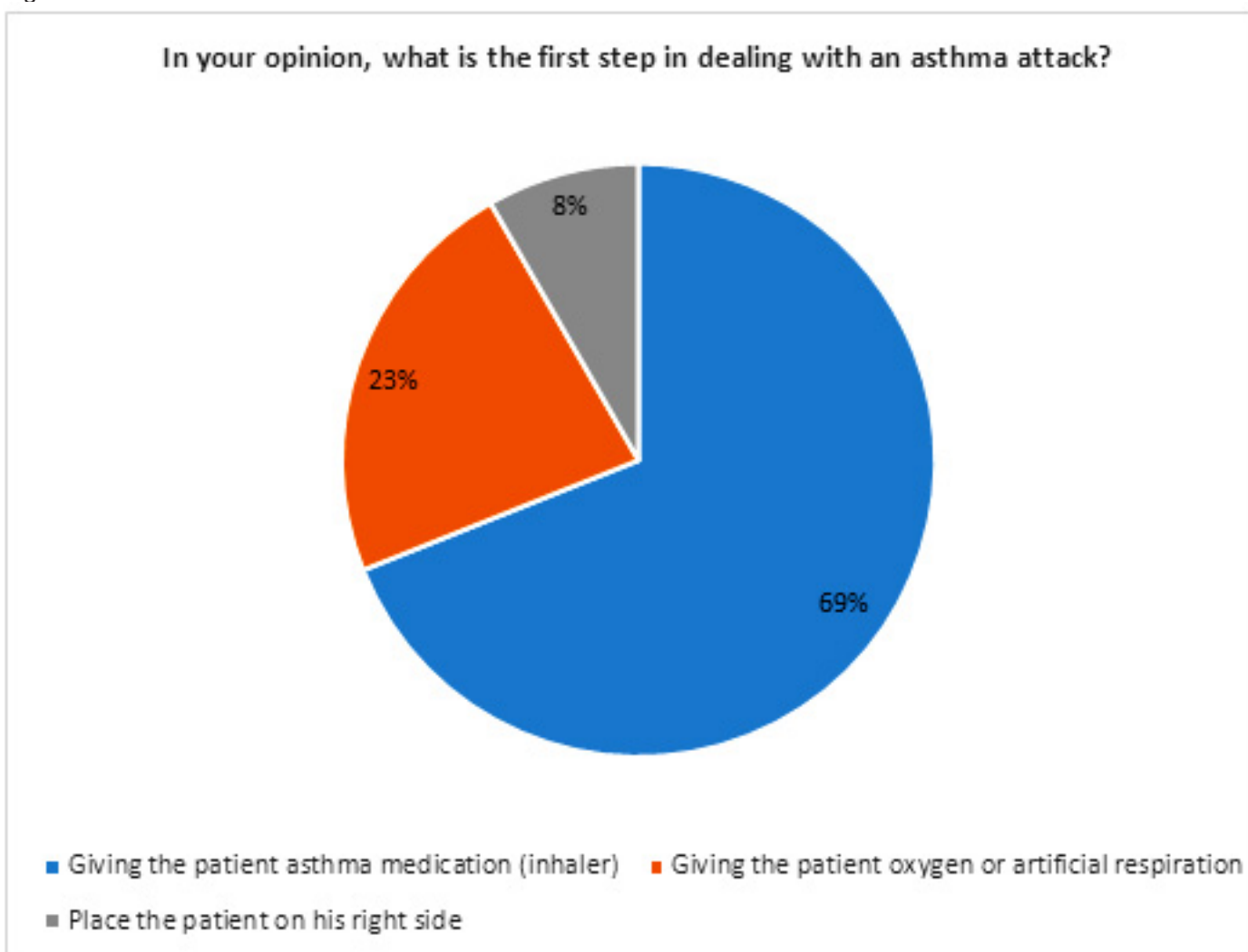
Figure 2 depicts that 35% got information regarding Asthma from social media, 20.% from TV, 20.% from multiple sources, and 15.0% and 10.% from family members and friends respectively.

Figure 3: Symptoms of Asthma



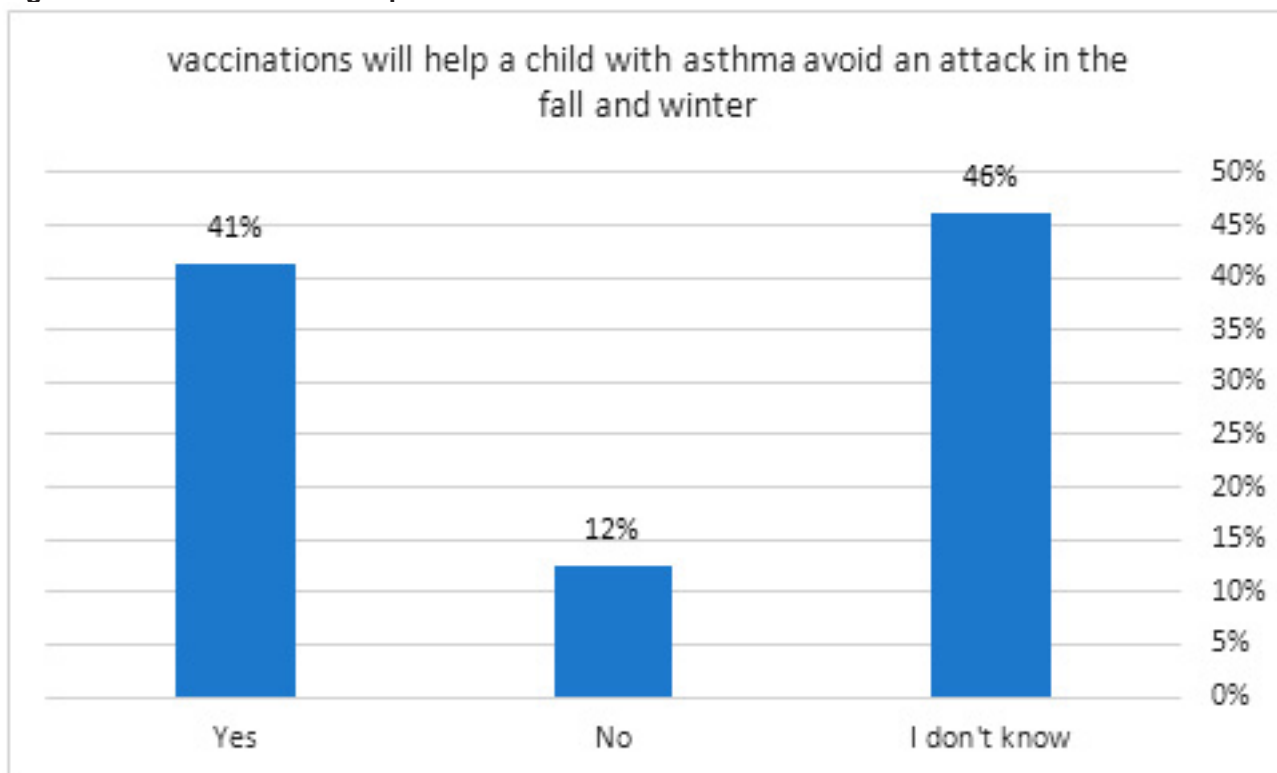
As per Table 3, wheezing, coughing, difficulty breathing were the major symptoms (62%), followed by difficulty breathing, chest pain, wheezing (37%).

Figure 4: First Aid for Asthma Attack



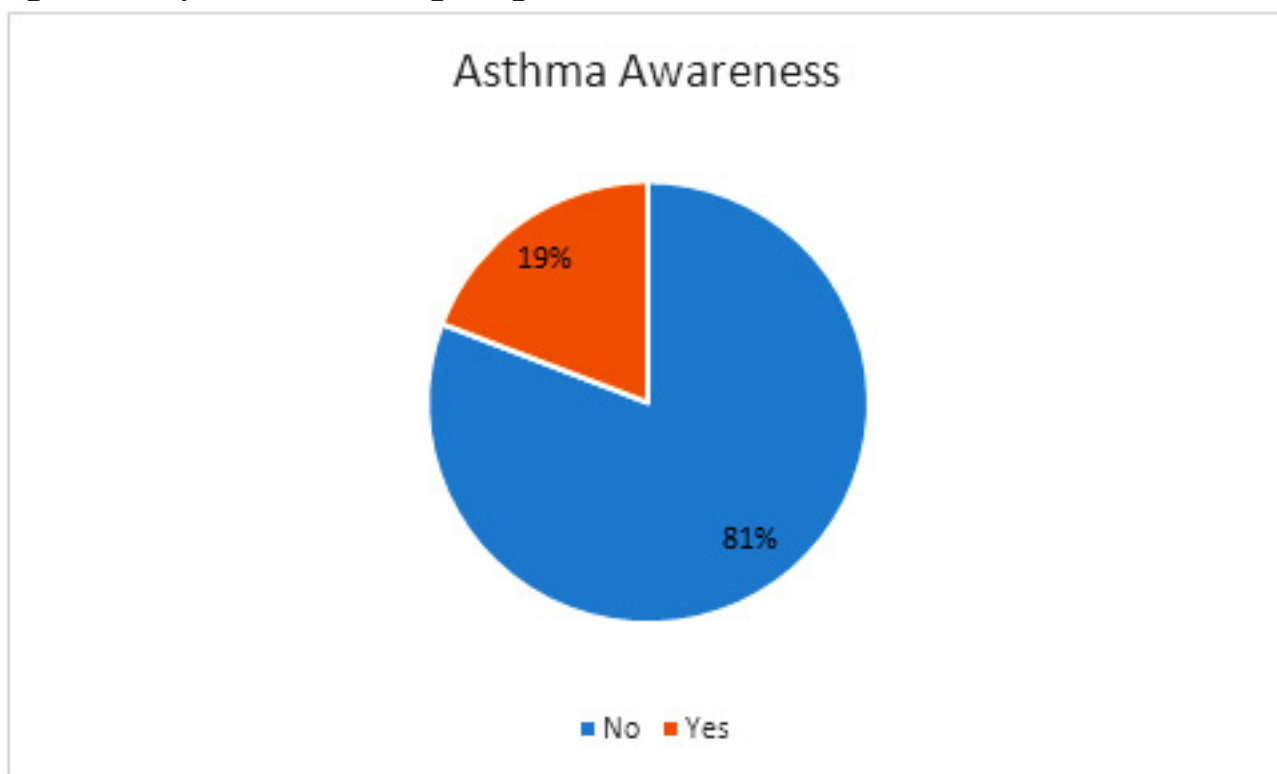
In Figure 4, we have observed that 69% of the respondents believed that inhaler is a major source of first aid, 23% believed that it was providing oxygen, while 8% believed that placing the patient on his right side is counted as a first aid option.

Figure 5: Vaccinations will help a child with asthma avoid an attack in the fall and winter



As per Figure 5, 41% opted yes, vaccinations will help a child with asthma avoid an attack in the fall and winter.

Figure 6: Adequate information regarding Asthma



As per Figure 6, only 19% had adequate information regarding asthma.

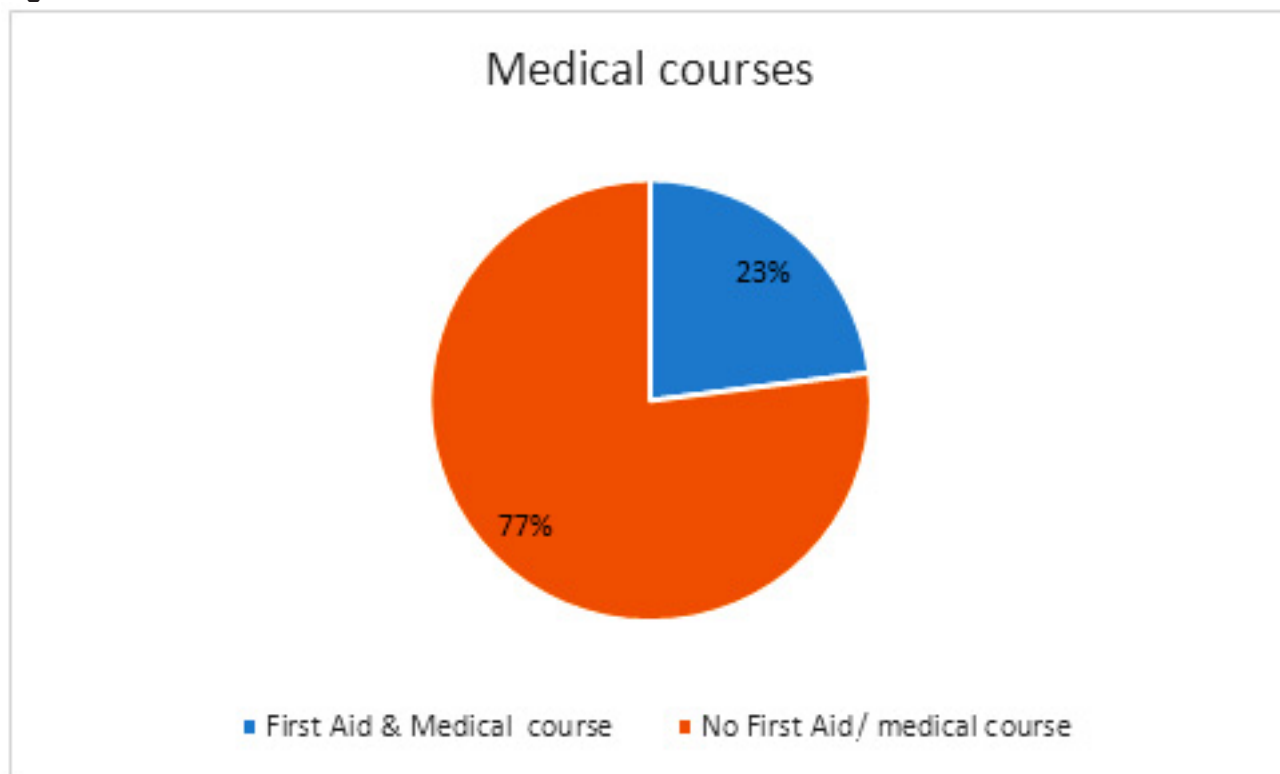
Figure 7: Prevalence of medical / first aid courses

Figure 7 showed that only 23% of the respondents received training regarding the medical / and first aid courses.

Discussion

The main aim of our study was to find out the knowledge and perceptions of teachers regarding asthma. Around 300 million people worldwide suffer from asthma, with an additional 100 million expected to be impacted by 2025 (6-12). Asthma affects 5-10% of the population, or 23.4 million people, with 7 million of them being children. In our study we have also observed the prevalence of asthma diseases among teachers and their relatives was 35% out of 759 respondents, which is quite alarming; physicians and government officials should make an effort to overcome this situation (13-14).

In our study we have compared prevalence of asthma with socio-demographical variables and we have observed the significant impact of age and education on asthma knowledge while gender, income status and other demographical variables were insignificant. As mentioned in the report of American Lung Association that males (8.3% of youngsters) have current asthma at a higher rate than females (6.7 percent). However, among adults, females (9.8%) are more likely than males (5.5%) to suffer from asthma (15-16). We did not observe gender differences among asthma patients which is in contrast with the findings of the other studies. As per one study indoor allergen levels in urban households in low-income areas and those hosting numerous families are greater than in rural areas and suburbs, which is in contrast with our study findings as in our study we did not observe any significant differences among rural and urban areas. According to the 2018 American annual lung report, asthma rates were significantly higher (11.0 percent)

among those with a family income below the poverty line than those with a family income above the poverty line in 2018, which is matchable with our findings that income and asthma have a significant relationship(15-18).

A study stated that severe asthma risk increased with each year of life until the age of 45, after which it climbed at a significantly slower rate which is in line with our study.

In our study 19.% have adequate information regarding asthma, which is in line with other studies stated that up to 85% of teachers do not receive any formal asthma training during their formal education in preparation for teaching jobs (16-17).

In this study we also evaluated the knowledge regarding the symptoms of asthma among school teachers and first aid and immediate actions to overcome the panic situation and facilitate and provide relief to the patients, We have observed that there is still a lot of work required to enhance the awareness regarding the complete knowledge of asthma i.e. symptoms, first aid, how to react, and how to observe the asthmatic students.

Conclusion

Asthma is increasing; we should train our teachers to fight it; a series of training and awareness sessions are the need of the day. We should train our teachers by conducting a series of seminars, webinars and workshops. We will also incorporate training the trainer sessions for teaching staff to enhance their skills to deal with asthma.

References

1. Zein JG, Dweik RA, Comhair SA, Bleecker ER, Moore WC, Peters SP, Busse WW, Jarjour NN, Calhoun WJ, Castro M, Chung KF, Fitzpatrick A, Israel E, Teague WG, Wenzel SE, Love TE, Gaston BM, Erzurum SC; Severe Asthma Research Program. Asthma Is More Severe in Older Adults. *PLoS One*. 2015 Jul 22;10(7):e0133490. doi: 10.1371/journal.pone.0133490. PMID: 26200463; PMCID: PMC4511639.
2. D'Amato G, Liccardi G, D'Amato M, Cazzola M. Outdoor air pollution, climatic changes and allergic bronchial asthma. *Eur Respir J*. 2002;20(3):763–76. . [PubMed] [Google Scholar]
3. Bousquet J, Mantzouranis E, Cruz AA, Ait-Khaled N, Baena-Cagnani CE, Bleecker ER, et al. Uniform definition of asthma severity, control, and exacerbations: document presented for the World Health Organization Consultation on Severe Asthma. *J Allergy Clin Immunol*. 2010;126:926–38. doi: 10.1016/j.jaci.2010.07.019.
4. Masoli M, Fabian D, Holt S, Beasley R. Global Initiative for Asthma P. The global burden of asthma: executive summary of the GINA Dissemination Committee report. *Allergy*. 2004;59(5):469–78. 10.1111/j.1398-9995.2004.00526.x . [PubMed] [CrossRef] [Google Scholar]
5. Al Ghobain MO, Algazlan SS, Oreibi TM. Asthma prevalence among adults in Saudi Arabia. *Saudi Med J*. 2018Feb;39(2):179-184. doi: 10.15537/smj.2018.2.20974. PMID: 29436567; PMCID: PMC5885095.
6. Masoli M, Fabian D, Holt S, Beasley R, Global Initiative for Asthma (GINA) Program The global burden of asthma: executive summary of the GINA dissemination committee report. *Allergy*. 2004;59:469–478. [PubMed] [Google Scholar]
7. Al-Ghamdi BR, Mahfouz AA, Abdelmoneim I, Khan MY, Daffallah AA. Altitude and bronchial asthma in south-western Saudi Arabia. *East Mediterr Health J*. 2008;14:17–23. [PubMed] [Google Scholar]
8. Al Ghobain MO, Al-Hajjaj MS, Al Moamary MS. Asthma prevalence among 16- to 18-year-old adolescents in Saudi Arabia using the ISAAC questionnaire. *BMC Public Health*. 2012;12:239. [PMC free article] [PubMed] [Google Scholar]
9. Al-Moamary MS, Alhaider SA, Idrees MM, Al Ghobain MO, Zeitouni MO, Al-Harbi AS, et al. The Saudi Initiative for Asthma - 2016 update: Guidelines for the diagnosis and management of asthma in adults and children. *Ann Thorac Med*. 2016;11:3–42. [PMC free article] [PubMed] [Google Scholar]
10. 5. Moradi-Lakeh M, El Bcheraoui C, Daoud F, Tuffaha M, Kravitz H, Al Saeedi M, et al. Prevalence of asthma in Saudi adults: findings from a national household survey 2013. *BMC Pulm Med*. 2015;15:77. [PMC free article] [PubMed] [Google Scholar]
11. Getch YQ, Neuharth-Pritchett S, Schilling EJ. Asthma and the Public School Teacher: A Two State Study. *Pediatr Allergy Immunol Pulmonol*. 2019 Sep 1;32(3):109-116. doi: 10.1089/ped.2019.1041. Epub 2019 Sep 17. PMID: 32140279; PMCID: PMC7057052.
12. <https://www.lung.org/research/trends-in-lung-disease/asthma-trends-brief/current-demographics>
13. American Association of School Administrators and National School Boards Association. Better together: collaborating to improve student success and well-being. http://www.aasa.org/uploadedFiles/Childrens_Programs/BetterTogetherReport_v4.pdf Accessed May25, 2018
14. Clark NM, Mitchell HE, Rand CS. Effectiveness of educational and behavioral asthma interventions. *Pediatrics* 2009; 123:S185–S192 [PubMed] [Google Scholar]
15. 35. Calabrese BJ, Nanda JP, Huss K, et al. . Asthma knowledge, roles, functions, and educational needs of school nurses. *J Sch Health* 1999; 69:233–238 [PubMed] [Google Scholar]
16. Bagnato SJ, Balir K, Slater J, et al. . Developmental healthcare partnerships in inclusive early childhood intervention settings: the healthy CHILd model. *Infant Child Dev* 2004;17:301–317 [Google Scholar]
17. Janssen Breen L, Diamond-Caravella M, Moore G, et al. When reach exceeds touch: student experiences in a cross-sector community-based academic- practice partnership. *Public Health Nurs* 2019; 36:429–438 [PubMed] [Google Scholar]
18. Hillemeier MM, Gusic M, Bai Y. Communication and education about asthma in rural and urban schools. *Ambul Pediatr* 2006; 6:198–203 [PubMed] [Google Scholar]
19. 43. American Association of School Administrators. Powerful Practices: a checklist for school districts addressing the needs of students with asthma. <http://www.aasa.org/uploadedFiles/Resources/files/AASAPowerfulPracticesInAsthmaManagement.pdf> Accessed May25, 2018
20. McCabe ME, McDonald C, Connolly C, et al. . A review of school nurses' self-efficacy in asthma care. *J Sch Nurs* 2019; 35:15–26 [PMC free article] [PubMed] [Google Scholar]