Original Research Article

DOI: http://dx.doi.org/10.18203/2349-3291.ijcp20185520

Knowledge and beliefs of parents of asthmatic children presenting to the outpatient department in Kovai medical centre and hospital, Tamil Nadu, India

Rajendran, P. Aarthi*

Department of Pediatrics and Neonatology, KMCH Institute of Health Science and Research, Coimbatore, Tamil Nadu, India

Received: 20 December 2018 **Accepted:** 25 December 2018

*Correspondence:

Dr. P. Aarthi,

E-mail: meetaarthi43@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Childhood asthma has a major impact on a child's quality of life and that of their parents. To assess the level of understanding and beliefs by parents of asthmatic children about causation, pathophysiology, treatment, and prognosis.

Methods: The study was conducted in Kovai medical centre and hospital Coimbatore in 2017. Totally 101 asthmatic children were included in the study. Asthmatic children aged 6 years to 15 years. A total of 101 parents participated in this study. The sex and age of the informant, mother's literacy and mother's occupation were noted. The socioeconomic status of the family was computed using modified Kuppuswamy scale 2016.

Results: In present study among the 101 children, 38.61% are in the school age (5-8 years), 38.61% are in the tweens (9-12 years) and 22.78% are teenagers. 45.54% of the children are from the rural area. Half of the children are experiencing the disease for more than 6 years now, the other half less than 6 years. 5.94% of the parents interviewed were not aware of the diagnosis. 71.29% thought that asthma is a hereditary condition.

Conclusions: A wide gap exists between recommendations and the actual practice. Hence by improving parents' knowledge about asthma, their attitude and practice can be positively affected.

Keywords: Awareness about asthma, Chronic obstructive pulmonary disease, Kuppuswamy scale, Low socio-economic status

INTRODUCTION

Asthma is a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness, and cough that vary over time and in intensity, together with variable expiratory airflow limitation. It affects 1-18% population in different countries. In India, approximately 15 million children are suffering from asthma. In the last two decades, there is a steady increase in asthma prevalence in our country. There are more asthmatic children in the

6-7 years age group as compared to 13-14 years children and the prevalence is increasing by +0.06% and +0.02% in each age groups respectively.² The prevalence is approximately 10-15% in 5-11-year-old children. Urban children and males are more commonly affected. Asthma influences a child's life physically, emotionally and socially.³ Dyspnoea and dependence on medication have a negative influence on them. They are prone to depression and loneliness. They have low self-esteem considering their inability to participate in sports activities and in building relationships with their peers.⁴ Asthma is an important cause of school absenteeism due

to doctors' appointments, emergency room visits, symptoms of asthma and environmental triggers. It was found that about 40% of the absentees at a time were asthmatics.⁵ Nearly half of the asthmatics fall asleep during class hours. Untreated asthma leads to delay of puberty by approximately 1.3 years. This pubertal delay is the cause for apparent growth failure in pediatric age group, but the mean attained adult height did not differ significantly from predicted height derived from a midparental height. Asthma can either remit or increase in severity over time.⁶ There is a deficit in lung function growth by 6 years of age when asthma-like symptoms begin during the first 3 years of life and are increasing in severity. So, interventions to prevent this deficit should be targeted to those who develop symptoms before 3 years of age and have risk factors for developing persistent asthma.⁷

METHODS

The study was conducted in Kovai medical centre and hospital Coimbatore. Totally 101 asthmatic children were included in the study. Asthmatic children aged 6 years to 15 years. A total of 101 parents participated in this study. The sex and age of the informant, mother's literacy and mother's occupation were noted. The socio-economic status of the family was computed using modified Kuppuswamy scale 2016. Parents of asthmatic children selected based on the inclusion criteria were interviewed with the questionnaire after getting informed consent for participating in the study. A total of 101 parents participated in this study. The sex and age of the informant, mother's literacy and mother's occupation were noted. The socio-economic status of the family was computed using the modified Kuppuswamy scale 2016 The questionnaire includes 25 items to assess the knowledge, beliefs, and practice of the subjects. It has both multiple-choice and direct questions. Score less than 50% was categorized as inadequate knowledge, 50-74% as moderate knowledge and >75% as adequate knowledge.

Inclusion criteria

- Children between 6 years to 15 years of age who were diagnosed with asthma.
- The diagnosis of asthma was based on the history of recurrent reversible bronchospasm responding to bronchodilator drugs.
- There should be a minimum duration of two years since the onset of symptoms and there should be more than four documented episodes of wheeze, with two episodes in the last six months, with a history of at least two emergency room visits and one hospitalization for wheeze.

Exclusion criteria

Children with chronic systemic illness.

- Children who are on therapy for tuberculosis, bronchiectasis and cardiac diseases.
- Children who are not accompanied by their parents.

Statistical analysis

The statistical analysis was carried out using the SPSS version 16.0 for windows. Descriptive analysis was done to exhibit the frequency of observations, mean and standard deviation. Chi-square analysis was used to test the significant association on target variable by substantial variable. ANOVA was used to test the significant difference between three or more groups on selected variables. All statistical analyses are tested at 5% level of significance.

RESULTS

Among the 101 children, 38.61% are in the school age (5-8 years), 38.61% are in the tweens (9-12 years) and 22.78% are teenagers. 81.19% of the mothers are homemakers. There is an equal number of boys and girls in present study population. 45.54% of the children are from the rural area. 19.81% are from suburb and 34.65% from an urban area (Table 1).

Table 1: Age wise patient distribution.

Age group	Count	Percentage
5-8 years	39	38.61
9-12 years	39	38.61
13-18 years	23	22.78
Total	101	100.00

As per modified Kuppuswamy scale 2016,15.84% of the families are from upper socioeconomic class. 65.34% are from middle socioeconomic class. 18.81% are from lower socioeconomic class (Table 2).

Table 2: Socio-economic classes.

Socioeconomic classes	Count	Percentage
Upper	16	15.84
Upper middle	31	30.69
Lower middle	35	34.65
Upper lower	17	16.83
Lower	2	1.98
Total	101	100.00

Half of the children are experiencing the disease for more than 6 years now, the other half less than 6 years.

There was an equal distribution between those with the family history and those without. 5.94% of the parents interviewed were not aware of the diagnosis. 71.29% thought that asthma is a hereditary condition. 24.75% believed that asthma is contagious (Table 3).

Table 3: Duration of illness.

Duration of illness	Count	Percentage
<6 years	50	49.50
>6 years	51	50.50
Total	101	100.00

After computing the score, 21.78% of respondents were found to have inadequate knowledge, 65.35% had moderate knowledge and only 12.87% had adequate knowledge (Table 4).

Table 4: Knowledge level.

Level of knowledge	Count	Percentage
Inadequate knowledge	22	21.78
Moderate knowledge	66	65.35
Adequate knowledge	13	12.87
Total	101	100

Physician is the chief source of asthma knowledge. 16.83 % came to know about asthma from friends/relatives (Figure 1).

Internet/books were the sources of knowledge for 18.81%. 17.82% of parents are sure that asthma is not curable. 20.79% thinks that medicines can cure asthma. 10.89% knows that it is only controllable with treatment. 9.9% were not aware of the prognosis. 20.79% believed that asthma gets better as the child grows. 19.8% held the belief that asthma can only be cured by improving the child's immunity.

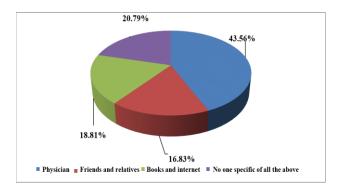


Figure 1: Source of knowledge about asthma.

According to parents, the common triggers in decreasing order of frequency are sweets, tobacco, cold foods, cold air, heavy traffic, exercise, strong odor, and dust mite (Table 5).

When asked about their response during an attack, 62.38% of parents correctly responded that they will give medication at home before taking to the hospital, 23.76% will go to the hospital immediately which correlates with their panic level, 13.86% said they will give medicines and take the child to the hospital only the next morning (Table 6).

Table 5: Identified triggers.

Triggers	Count	Percentage
Tobacco	27	1.64
Dust mite (mattress, pillow, curtain)	13	5.60
Animal Dander	8	3.45
Cockroach	3	1.29
Indoor mold	3	1.29
Pollen	7	3.02
Strong odor (sprays, perfume, talcum powder)	15	6.47
Other smells	2	0.86
Exercise	16	6.90
Sports	5	2.16
Cold air	25	10.78
Medicines	0	0
Swimming	0	0
Sulfite in food (dried fruits, processed potato, sauces)	0	0
Mosquito repellant	7	3.02
Heavy traffic	17	7.33
Wood burn smoke	10	4.31
stuffed animals	6	2.59
Sweets/chocolate	31	13.36
Cold foods	26	11.21
Citrus fruits	11	4.74
Total	232	100

These 13.86% were not aware of life-threatening asthma and the need for immediate hospitalization in case of worsening respiratory distress.

Table 6: Emergency action during an acute attack.

Emergency action during an acute attack	Count	Percentage
Give drug at home	63	62.38
Go to the hospital immediately	24	23.76
Go to the hospital the next morning	14	13.86
Total	101	100.00

DISCUSSION

The mean age of the children in present study is 9.74. The mean age of onset of wheeze is 3.83. In present study, when asked about the cause of asthma to caretakers, around 60% of parents correctly responded as either bronchoconstriction/edema of the bronchus.17 % had the misconception that it is due to infection.8 Alternative medicines were tried by 33.6% of parents in present study, the most commonly opted method being homeopathy/Siddha. In a previous study, two-thirds were using herbs for a cure. Echinacea herb is considered as curative for asthma.55.45% of parents in this study had a misconception that their children would become addicted to inhalers.

In a recent survey 50% of parents thought the same and in a survey by Ford ES. et al, 37% of parents had a similar fallacy. We also found that 8.9% of parents think that regular use of asthma medication can cause stunting. 22% admitted that they are unaware of the side effects. In another study report, 66% of parents were scared about the side effects of allopathy medicines for asthma. In our group, 5.94% of parents are unaware of the diagnosis of asthma.11 But in a study by Guilbert TW et.al, 50% hesitated to disclose the diagnosis of asthma. This shows that parent's knowledge about the diagnosis is inadequate.¹² We noted that 25% of parents worry that asthma is a contagious disease and that siblings could be affected. The result of a previous study was that 33% of parents thought the same and most of them were from a rural background and were parents of younger children.¹³ Our finding is that 45.5% of parents are restricting intake of fruits in their children fearing that these might precipitate wheezing. 5% have identified citrus fruits as a stimulus for wheeze.14

Illi S et al, observed that parents are avoiding orange, banana, curd and tender coconut water. In another similar study, parents were avoiding allergic foods like milk, eggs, nuts, and peanuts though parents in our group did not restrict these foods. Present study demonstrated that there is good acceptance of home aerosol therapy in present study population, around 90% of parents had aerosol therapy at home when compared to only 66% of parents in a previous study. 15 The key observation of this study is that 70% of parents knew about the nature of asthma. In present study, 25% of parents believed that antibiotics are essential in treating asthma, while 16% of parents had similar concepts in a previous study.16 Inhaled steroid use was not dependent on the duration of illness. This is not unique to this study and has been documented by other researcher.¹⁷ Lal A and colleagues inferred from their study that time factor did not play a significant role in promoting caregiver's knowledge. Inhaled steroid use depended on the level of knowledge which in turn is influenced by parent's literacy in present study, consistent with Sigurs N colleagues study report.¹⁸

The common precipitants identified in present study population are tobacco, cold air, strong odor, traffic soot, sweets, chocolates, and cold foods. In another study tobacco, dust, pollen, and smoke were identified as important triggers. ¹⁹The mean knowledge score of the study participants is 3.26.²⁰ Literate parents (p<0.001) and parents from urban and suburban areas (p=0.041) were noted to have better knowledge about asthma in present study. ²¹

It is contradictory to the observation made by Hesitancy in revealing the diagnosis of asthma was minimal in our population and was not influenced by the socioeconomic status of the family (p=0.997) as opposed to the result of another study where a strong correlation was found between socioeconomic status of the family and parents' hesitation in disclosing about asthma.²²

CONCLUSION

In this study, the knowledge of parents regarding asthma is found to be unsatisfactory. There are innumerable misconceptions about the disease and treatment. These have led to inadvertent non-compliance to treatment and overprotection of their children by restricting nutritive foods and physical activity. A wide gap exists between recommendations and the actual practice. It is noteworthy to mention that there is an inadequacy in the physician-parent communication. Hence by improving parents' knowledge about asthma, their attitude and practice can be positively affected.

ACKNOWLEDGEMENTS

Authors would like to thank consultant pediatrician and pulmonologist staff nurses, and laboratory technicians of the Pediatrics Department of Kovai Medical Centre And Hospital Coimbatore for helping with data collection and laboratory analyses.

Funding: No funding sources Conflict of interest: None declared

Ethical approval: The study was approved by the

Institutional Ethics Committee

REFERENCES

- 1. Arshad SH, Tariq SM, Matthews S, Hakim E. Sensitization to common allergens and its association with allergic disorders at age 4 years: a whole population birth cohort study. Pediatr. 2001;108(2):33.
- 2. Bijanzadeh M, Mahesh P, Ramachandra N. An understanding of the genetic basis of asthma. Indian J Med Res. 2011;134(2):149.
- 3. Brightling CE, Bradding P, Symon FA, Holgate ST, Wardlaw AJ, Pavord ID. Mast-cell infiltration of airway smooth muscle in asthma. New England J Med. 2002;346(22):1699-705.
- 4. Cohn L, Elias JA, Chupp GL. Asthma: mechanisms of disease persistence and progression. Annu Rev Immunol. 2004;22:789-815.
- 5. Covaciu C, Bergström A, Lind T, Svartengren M, Kull I. Childhood allergies affect health-related quality of life. J Asthma. 2013;50(5):522-8.
- 6. Rao D, Phipatanakul W. Impact of environmental controls on childhood asthma. Current Allergy Asthma Reports. 2011;11(5):414-20.
- 7. Doull IJ. The effect of asthma and its treatment on growth. Archiv Dis Childhood. 2004;89(1):60-3.
- 8. Eder W, Ege MJ, von Mutius E. The Asthma Epidemic. N Engl J Med. 2006;355(21):2226-35.
- 9. Expert Panel Report 3(EPR-3): Guidelines for the diagnosis and management of Asthma-Summary Report 2007. J Allergy Clinic Immunol. 2007;120(5):S94-138.
- 10. Ford ES. The epidemiology of obesity and asthma. J Allergy Clinic Immunol. 2005;115(5):897-909.

- Guilbert TW, Morgan WJ, Zeiger RS, Mauger DT, Boehmer SJ, Szefler SJ, et al. Long-term inhaled corticosteroids in preschool children at high risk for asthma. New England J Med. 2006;354(19):1985-97.
- 12. Holgate ST, Polosa R. The mechanisms, diagnosis, and management of severe asthma in adults. Lancet. 2006;368(9537):780-93.
- 13. Horwood LJ, Fergusson DM, Shannon FT. Social and familial factors in the development of early childhood asthma. Pediatr. 1985;75(5):859-68.
- 14. Illi S, von Mutius E, Lau S, Bergmann R, Niggemann B, Sommerfeld C, et al. Early childhood infectious diseases and the development of asthma up to school age: a birth cohort study. BMJ. 2001;322(7283):390-5.
- Martinez FD, Wright AL, Taussig LM, Holberg CJ, Halonen M, Morgan WJ, Group Health Medical Associates. Asthma and wheezing in the first six years of life. New England J Med. 1995;332(3):133-8.
- Pal R, Dahal S, Pal S. Prevalence of bronchial asthma in Indian children. Ind J Community med: Official publication Ind Assoc Preventive and Social Med. 2009;34(4):310.
- 17. Sigurs N, Bjarnason R, Sigurbergsson F, Kjellman B. Respiratory syncytial virus bronchiolitis in infancy is an important risk factor for asthma and allergy at age 7. Am J Respiratory and critical care med. 2000;161(5):1501-7.

- 18. Stein RT, Sherrill D, Morgan WJ, Holberg CJ, Halonen M, Taussig LM, et al. Respiratory syncytial virus in early life and risk of wheeze and allergy by age 13 years. Lancet. 1999;354(9178):541-5.
- Stevenson DD, Szczeklik A. Clinical and pathologic perspectives on aspirin sensitivity and asthma. J Allerg Clinic Immunol. 2006;118(4):773-86.
- van den Bemt L, Kooijman S, Linssen V, Lucassen P, Muris J, Slabbers G, et al. How does asthma influence the daily life of children? Results of focus group interviews. Health Quality Life Outcomes. 2010;8(1):5.
- 21. Viswanathan R, Prasad M, Thakur AK, Sinha SP, Prakash N, Mody RK, et al. Epidemiology of asthma in an urban population. A random morbidity survey. J Ind Med Assoc. 1966;46(9):480.
- 22. Sears MR, Herbison GP, Holdaway MD, Hewitt CJ, Flannery EM, Silva PA. The relative risks of sensitivity to grass pollen, house dust mite and cat dander in the development of childhood asthma. Clinic Exp Allerg. 1989;19(4):419-24.

Cite this article as: Rajendran, Aarthi P. Knowledge and beliefs of parents of asthmatic children presenting to the outpatient department in Kovai medical centre and hospital, Tamil Nadu, India. Int J Contemp Pediatr 2019;6:502-6.