



RESEARCH ARTICLE

TO STUDY THE KNOWLEDGE OF ASTHMA IN MOTHERS OF CHILDREN
SUFFERING FROM WHEEZING DISORDERS

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ABSTRACT

Background; wheezing disorders like asthma have significant negative impact on disability-adjusted life-years (DALY) index. Their timely recognition, which is highly dependent on care givers knowledge, is the most important step in the management of such disorders. **Aim;** The purpose of this study was to assess the knowledge of asthma of mothers of children suffering from wheezing disorders. **Methods;** a total of 300 mothers having children aged 6 months to 18 years were enrolled in the study. **Results;** Maximum number of mothers (79.3%) reported change in weather as the most important precipitating factor for their child's illness. Dust (47.3%), food/drinks (42.7%) and cold air (37.3%) were other commonly reported precipitating factors. Mothers had poor knowledge about home management of an acute attack of asthma. Only 34% of mothers give aerosol therapy during an acute attack. Although majority of mothers knew about aerosol therapy, but they were not using it because of various false beliefs like addictive nature of therapy, social stigma associated with its use and its side effects. **Conclusion:** information about wheezy disorders like asthma was inadequate among mothers of asthmatic children in our setting. Misconceptions about the disease and the available therapies and paucity of information about current trends in management are significant findings.

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INTRODUCTION

A wheeze (formally called "sibilant rhonchi" in medical terminology) is a continuous, coarse, whistling sound produced in the respiratory airways during breathing.¹ Population studies have shown that approximately one in three children has at least one episode of wheezing prior to his third birthday, and the cumulative prevalence of wheeze is almost 50% at the age of 6 yrs.^{2,3} Asthma, the most common cause of wheeze in children, affects an estimated 300 million individuals worldwide. Annually, the World Health Organization (WHO) has estimated that 15 million disability-adjusted life-years are lost and 250,000 asthma deaths are reported worldwide.⁴ Timely recognition, which is highly dependent on care givers knowledge, is the most important step in the management of such disorders. The aim of the study was to assess knowledge about wheezy disorders among mothers of wheezy children

aged 6 months to 18 years, to counsel them regarding their misconceptions or misbeliefs about these disorders and to educate mothers about home management of wheezing episodes and/or asthma.

METHODS

This cross sectional study was carried out in the Department of Pediatrics, Government Medical College, Amritsar. The mothers, 300 in number, having children aged 6 months to 18 years were enrolled in the study. Before the enrollment clearance from hospital ethical committee was obtained and written informed consent was taken from the mothers of all the participants. The sampling for the study was done randomly among the mothers of children visiting the Outdoor Department, Indoor Department and Allergy and Asthma clinics. Inclusion criteria: Mothers accompanied by children aged 6 months to 18

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years, having two or more episodes of wheezing in the preceding six months; Mothers of children diagnosed as asthma.

Exclusion criteria: Mothers of children having cerebral palsy or significant congenital abnormalities; Mothers with adopted child/children; Mothers belonging to medical or paramedical profession.

The method adopted for the collection for the data was of Structured Interview Questionnaire Type. The questions translated in vernacular language from the questionnaire were asked in a face to face interaction session and the responses were recorded in the proforma attached to the plan. Mothers were asked about their qualification. Those who could not read and write were labeled illiterate. Those who had studied up to 10th standard were labeled less than high school and those who had studied more than 10th standard were labeled more than high school. Questions were asked regarding type of household. To label a house overcrowded, any of the following criteria of persons per room was used: 1 room : 2 persons ; 2 rooms: 3 persons; 3 rooms :5 persons; 4 rooms: 7 person ; 5 or more rooms: 10 persons; (additional 2 for each further Room). A baby under 12 months was not counted and children 1 to 10 years were counted as half a unit. Socioeconomic status was assessed by Modified Kuppaswamy scale. The estimated time taken to fill one questionnaire was 20-25 minutes.

RESULTS

A total of 300 mothers were selected for the study. They were asked questions pertaining to the study in a structured questionnaire having both open ended and closed ended responses. Demographic and other baseline characteristics have been depicted in table 1.

Table 1 Demographic and other Baseline line characteristics

Attribute	Count (n) / (% age)	Attribute	Count (n) / (% age)
Age: M= Months; Y= Years		Residence	
6 M – 3 Y	162 / (54)	Rural	177 / (59)
3 – 6 Y	75 / (25)	Urban	123 / (41)
6 – 10 Y	39 / (13)	Type of fuel	
10 – 18 Y	24 / (8)	Cow dung	4 / (1.3)
Sex		Firewood	6 / (2)
Male	183 / (61)	Kerosene	8 / (2.7)
Female	117 / (39)	LPG	203 / (67.7)
Education of mothers		Mixed	79 / (26.3)
Illiterate	45 / (15)	Any pet in the house	
Less than high school	160 / (53.3)	Yes / No	117 (39) / 183 (61)
Type of household		Any smoker in the house	
Kutcha	39 / (13)	Yes / no	138 (46) / 162 (54)
Pucca	261 / (87)	Socioeconomic status (by Kuppaswamy scale)	
Overcrowding		Upper	38 (12.7)
Yes / No	187 (62.3) / 113 (37.7)	Upper middle	73 (24.3)
Ventilation		Lower middle	83 (27.7)
Adequate	243 / (81)	Upper lower	75 (25)
Not adequate	57 / (19)	Lower	31 (10.3)

Factors precipitating child's illness and measures taken are depicted in table 2.

Knowledge of mothers regarding aerosol therapy has been shown in table 3

Whether oral medication is given to the child or not and the nature of the oral medication has been shown in table 4.

Table 2 Factors precipitating child's illness and measures taken

Factors (Mothers reply)	Count (n) / % age	What Measures do you take (Mothers reply)	Count (n) / % age
Change in weather	238 (79.3)	Avoid dust exposure	110 (36.7)
Tobacco smoke	31 (10.3)	Avoid smoke exposure	28 (9.3)
Dust	142 (47.3)	Avoid cold food items	125 (41.7)
Animal dander/ Coackroach	0 (0) / 0 (0)	No pets at home	1 (0.3)
Strong odour/other smells	22 (7.3)	Who advised you these methods (Mothers reply)	
Exercise/sports	25 (8.3)	Medical staff	141 (71.6)
Cold air	112 (37.3)	Paramedical staff	30 (15.2)
Medicines	10 (3.3)	Quacks	10 (5.1)
Swimming	6 (2)	Relatives/friends	16 (8.1)
Food/drinks	128 (42.7)		
Indoor mould	0 (0)		

Table 3 Mothers answers when asked about aerosol therapy?

Do you know about aerosol therapy?	Count (n) / % age	Nature of drug	Count (n) / % age
Yes / No	280 (93.3) / 20 (6.7)	Beta agonist	12 (15.3)
Do you regularly use aerosol therapy for your child?		Steroids	10(12.8)
Yes / No	78 (26) / 222 (74)	Both	45 (57.6)
Which one you prefer; Mother' answer	Count (n)	Don't know	11 (14.1)
Nebulizer	14 (17.9)	If no then why? Count (n)/ % age	
Metered Dose Inhaler (MDI) with spacer	48 (61.5)	Not advised by treating doctor	74 (33.3)
MDI without spacer	10 (12.8)	Addictive	66 (29.7)
Rotahalers	6 (7.6)	Social stigmata	41 (18.5)
		Financial reasons	34 (15.3)
		Harmful	7 (3.1)

DISCUSSION

Out of the total 300 mothers, 54% had children in the age group 6 months - 3 years, 25% in 3 - 6 years, 13% in 6 -10 years and 8% had children above 10 years. Sixty one percent were having male and 39% were having female wards. Of the mothers who participated in the study, only 15% were illiterate, 53.3% had

studied less than high school and 31.7% more than high school (Table 1).

Table 4 Is your child receiving any regular oral medication?

Mother's answer	Count (n)/ % age
Yes /No	38 (12.7) / 262 (87.3)
If yes, Nature of medication	
Beta agonist	6 (15.8)
Steroids	5 (13.2)
Antihistaminics	12 (31.6)
Leukotriene modifiers	7 (18.4)
Desi medication	3 (7.9)
Homeopathic	3 (7.9)
Nature not known	2 (5.3)

Fifty nine percent of them belonged to rural areas whereas 41% were residing in urban areas. Only 13% of them were living in kutcha houses and 87% were residing in pucca houses. Overcrowding was present in 62.3% of houses. Sixty seven percent of mothers were using LPG as fuel in their houses while rest were using other fuels like firewood, cowdung and kerosene. Thirty nine percent were having pet(s) in their houses. Forty six percent mothers reported to have smoker(s) in their houses (Table 1).

Out of the 300 mothers, 12.7% belonged to upper class, 24.3% to upper middle class, 27.7% to lower middle class, 25% to upper lower and minimum i.e. 10.3% to lower socioeconomic class as assessed by Modified Kuppaswamy scale (table 1)

Mahdi B *et al*⁵ in their study on asthmatic patients have shown that family history of asthma was present in 44.5% cases of asthma. Zhao J *et al*⁶ in their study on parents of asthmatic children in 29 cities of China had reported family history of asthma in 29.7% cases. In our study family history of asthma is given by 53% participating mothers Table 5.

Table 5 Age of onset of wheeze and family history

Age	Count (n) / % age	Family history	Count (n) / % age
< 6 months	12 (4)	Siblings	49 (16.3)
6months – 3 years	183 (61)	Parents	56 (18.7)
3 – 6 years	94 (31.3)	Grandparents	35 (11.7)
6 – 10 years	8 (2.7)	Others	19 (6.3)
10 – 18 years	3 (1)	No history	141 (47)

Asthma is a global problem due to ignorance or distorted information/knowledge of patients about their disease.⁷ Ignorance about the disease is not only a problem in rural areas, it is equally affecting asthma management in urban areas. Lai A *et al*⁸ in their study had found that 48.2% parents of asthmatic children hesitated in referring to their child's illness as asthma. Shivbalan S⁹ in their study had shown that only 39% parents of asthmatic children accepted their child's illness as asthma. The physician was the only source of information regarding the diagnosis and disease related scientific knowledge to these parents. Out of rest of the parents 46% attributed their child's illness as wheeze, 8% as recurrent respiratory infections, 3% as eosinophilia, 2% as primary complex, 1% as allergy and 1% as respiratory distress. In the present study 32.3% mothers accepted their child's illness as asthma. Of the mothers who accepted their child as suffering from asthma, 84.5% had come to know this from their physician. Out of 110 parents who refused their child's disease

as Asthma, 43% attributed it to allergies, 17.3% to recurrent respiratory tract infections and 0.006% to pulmonary tuberculosis. There were 0.06% mothers who had no opinion about their child's illness table 6.

Table 6 knowledge of mothers about the disease?

Does your child has asthma?	Count (n)/ % age	Factors precipitating illness	Count (n) / % age
Yes /No	97 (32.3) / 203 (67.7)	Change in weather	238 (79.3)
How did you come to know?	Count (n) / Percentage (%)	Tobacco smoke	31 (10.3)
Medical staff	82 (84.5)	Dust	142 (47.3)
Paramedical staff	8 (8.2)	Animal dander	0 (0)
Quacks	5 (5.1)	Cockroach	0 (0)
Relatives/friends	2 (2)	Strong odour/other smells	22 (7.3)
What do you think you child is suffering from		Exercise/sports	25 (8.3)
Allergy	129 (63.5)	Cold air	112(37.3)
Recurrent respiratory tract infections	52 (25.3)	Medicines	10 (3.3)
Pulmonary tuberculosis	2 (0.9)	Swimming	6 (2)
Don't know	20 (9.8)	Food/drinks	128 (42.7)
Who is treating your child (Mother's answer)	Count (n) / % age	Indoor mould	0 (0)
Medical practioner (s)	211 (70.3)	Is asthma/your child's illness a hereditary disease?	
Paramedical	50 (16.7)	Yes / No	38 (12.6) / 262 (87.4)
Homeopathic/ Ayurvedic	15 (5)	Is asthma/your child's illness a contagious disease?	
Quacks	6 (2)	Yes/ No	88 (29.3)/ 212 (70.7)
No treatment	18 (6)		

Lai A *et al*⁸ in their study showed that 34.1% of parents had believed asthma to be contagious. Rodríguez MR *et al*¹⁰ in their study have shown that 53.1% of parents considered asthma an emotional illness and 52.5% believed that the way that parents raised their children caused asthma. Mavale-Manuel S *et al*¹¹ in their study had found that 11% of parents considered asthma to be contagious. Prasad R *et al*¹² in their study had found that 11.1% ascribed heredity as the underlying cause of asthma. Fifty percent patients believed this disease to be infectious, 12.6% due to curse of God and 5.2% to be associated with TB. Shivbalan S *et al*⁹ in their study found that 35% of parents believed asthma as hereditary and 26% as contagious. In our study, 12.7% mothers believed it to be hereditary and 29.3% as contagious (Table 3).

We found that majority of participating mothers (70.3%) were getting their child treated from a Registered Medical Practitioner. As found in other chronic ailments, parents of asthmatic children also have a tendency to seek alternative systems of medicine for treatment of their child's illness (Table 3). Lai A *et al*⁸ found that 65% parents in their study had attempted other systems of medicine. Homeopathy was the most common alternative therapy used. Parsad R *et al*¹² in their study concluded that alternative modes of treatment were sought by 46.7% participating patients. In the present study, 18% mothers had sought alternative modes of treatment. Desi

medication was the most common alternative attempted (Table 7).

Table 7 remedies taken if child would develop acute wheezing/breathlessness/cough at home?

Mothers answer	Count (n) / % age	Nature of medication (oral) available at home	Count (n) / % age
Give oral medications	205 (68.3)	Beta agonists	114 (38)
Steam inhalation	51 (17)	Steroids	19 (6.3)
Aerosol therapy	104 (34.9)	Antihistaminics	189 (63)
Immediately take child to doctor	30 (10)	Leukotriene modifiers	30 (10)
Others	6 (2)	Desi medication / Homeopathic	21 (7) / 16 (5.3)
		Nature not known	32 ((10.7)

Parents have diverse views regarding the prognosis and treatment of asthma. Lai A *et al*⁸ in their study found that only 30.6% parents believed that treatment from the hospital would cure their child. Shivbalan S *et al*⁹ 34% parents thought that disease would wane off with increasing age. Nineteen percent of them were not aware of the prognosis. In a study by Mavel-Manuel S *et al*¹¹ 50% parents answered that asthma is curable. In the present study, 26% mothers thought it to be curable and a large number (54%) was unaware about the prognosis of their child's illness (Table 8).

Table 8 mother's knowledge and perception about therapy and cure

Do you know about peak flow meter?	Count (n) / % age
Yes / No	13 (4.3) / 287 (95.7)
If yes, are you using one?	Count (n)
Yes / No	1 (7.6) / 12 (92.4)
Any alternative system of medicine attempted?	Count (n)
Yes/ No	54 (18) / 246 (82)
Do you think asthma is curable?	Count (n)
Yes	78 (26)
No	60 (20)
Don't know	162 (54)

CONCLUSIONS

There are many misconceptions about the nature and management of wheezing disorders in the society. Asthma management programs are incomplete without good parents' and patients' education program. Such programs would augment awareness; eliminate social stigma and misconceptions in the community regarding asthma. Knowledge about the prevailing perception about asthma in the community would be the first step in achieving it. This study is a step towards it.

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