

## Asthma and Myths: An online survey

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### ABSTRACT

**Objective:** To determine the information about myths regarding asthma among internet users.

**Methodology:** An open access internet based close ended survey was hosted on a website which included questions related to common myths regarding asthma. Data was entered automatically into a database at the hosting servers. The survey invitations were sent by email by the authors with request to forward to the contact lists of recipients. After closure of survey, data from responses were recoded into new variables as correct and incorrect using the key made by the authors. Frequencies of correct responses were reported and analyzed on the basis of gender, educational status and profession.

**Results:** A total of 782 complete responses were submitted out of which 498 (63.7%) were submitted by males and 284 (36.3%) by females. Majority of the participants were graduate (36.1%) and postgraduates (44.8%), while the most common profession of the participants was doctor (49.9%) followed by non-medical students (17.1%). Frequency of correct responses was better in males. Lowest correct responses were given by unemployed and best responses were given by doctors. Self-employed persons fared better than bankers and people associated with education. Surprisingly non-medical students fared better than medical students.

**Conclusion:** There is a need to increase public awareness regarding asthma, as the status of relatively educated internet users is also inadequate.

**KEY WORDS:** Asthma, Myths, Survey.

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### INTRODUCTION

Asthma has been difficult to define with definitions evolving over time by how the people interpreted the word asthma.<sup>1</sup> It has been surrounded by various myths and people dread being labeled as

asthmatics, this might be reason for its underdiagnoses.<sup>2</sup> It is one of the common respiratory disease affecting children and adult world over and there is increasing trend in its prevalence.<sup>3-5</sup> Etiology of asthma is multifactorial with impact of genetic, immunological, socioeconomic and environmental factors all contributing in etiology.<sup>6</sup>

Increasing incidence of asthma is attributed to increases obesity and decrease exercise; air pollution and changes in childhood infections. The Hygiene Theory postulates that there exist an inverse association between the number of siblings in a family and hay fever at ages 11-23 years due to the protective effect of infections in infancy. Although this effect have not been found in all the surveys conducted subsequently but the theory has universal acceptance now.<sup>7,8</sup> It has been documented in experimental models that microbial compounds in early life could modify allergic inflammation and thus could prevent development of allergic disorders in later life.<sup>9</sup> The

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relation of asthma with obesity is controversial but there are reports of strong association between them.<sup>10,11</sup>

There are lot of taboos and myths regarding asthma in our society.<sup>12-15</sup> In a country like Pakistan these are hindrance to proper management and affect quality of life of sufferer. This online survey was conducted to seek the opinion of people with access to internet and information present on web and thus enabling us to formulate strategies to overcome the deficiencies of knowledge in general public.

### METHODOLOGY

An internet based close ended survey was hosted on a website which included questions related to common myths regarding asthma. The survey was open to all to participate. All questions were mandatory except that regarding the email address which was optional. The participants were restricted to proceed to the next question without responding to the earlier one. No personal information was collected during the survey. Participants were given the option to save their responses and complete later if they were not able to do so at that time, for this a unique ticket was allocated to them to complete it later. Once a response was submitted an auto email was generated by system to the principal author and data was entered automatically into a database in PASW Statistics version 18.0 format at the hosting servers. IP addresses of all the participants were automatically recorded at the time of submission. The survey invitations were sent by email by the authors with request to forward to the contact lists of recipients. Information was also posted on various colleges and

school notice boards and on internet social networks like Facebook, MySpace, and Twitter. The survey was opened for public on 1<sup>st</sup> September 2009 and closed on 30<sup>th</sup> November 2009.

After collection of data the responses were recoded into new variables as correct and incorrect using the key made by the authors. Frequencies of correct responses were reported and analyzed on the basis of gender, educational status and profession.

### RESULTS

A total of 782 complete responses were submitted out of which 498 (63.7%) were submitted by males and 284 (36.3%) by females. Mean age of males was  $34.7 \pm 12.5$  years and that of females was  $29.7 \pm 11.3$  years. The difference in ages between genders was statistically significant ( $P < 0.001$ ). Majority of the participants were postgraduates (44.8%), and graduate (36.1%) while the most common profession of the participants was doctor (49.9%) followed by non-medical students (17.1%) details are given in Table-I. The details of ten questions asked are as under

The first question that asthma is a psychological condition was correctly answered as 'no' by 98.1%. The second question that of one can grow out of asthma was correctly answered 'no' by 43.2%. The third question was correctly answered that asthma cannot be cured by 45.0%. Asthma was correctly categorized as non-contagious by 96.4%. Change of location/environment could improve asthma was correctly answered by 22.8%. Asthma medications are not habit forming was correctly answered by 74.2% and inhalers are not the last resort was

Table-I: Demographic Details of Surveyors.

		Gender					
		Female		Male		Total	
		Count	N %	Count	N %	Count	N %
Educational status	Uneducated	0	0.0%	0	0.0%	0	0.0%
	Primary	4	0.5%	2	0.3%	6	0.8%
	Matric/O-Level	14	1.8%	6	0.8%	20	2.6%
	Inter/ A-Level	50	6.4%	74	9.5%	124	15.9%
	Graduate	118	15.1%	164	21.0%	282	36.1%
	Postgraduate	98	12.5%	252	32.2%	350	44.8%
Profession	Student (Non-medical)	60	7.7%	74	9.5%	134	17.1%
	Student (Medical)	42	5.4%	38	4.9%	80	10.2%
	Doctor	120	15.3%	266	34.0%	386	49.4%
	Engineer	6	0.8%	22	2.8%	28	3.6%
	Banking	4	0.5%	22	2.8%	26	3.3%
	Education	26	3.3%	14	1.8%	40	5.1%
	Self Employed	10	1.3%	60	7.7%	70	9.0%
	Unemployed	16	2.0%	2	0.3%	18	2.3%

Table-II: Frequencies of Correct Responses According to Gender.

	<i>Female</i>		<i>Male</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Asthma is a psychological condition, it's all in mind?	266	37.0%	452	63.0%
You can grow out of asthma?	120	35.5%	218	64.5%
Asthma is a curable disease?	110	31.3%	242	68.8%
Asthma is contagious; you can catch it from someone suffering from it?	280	37.1%	474	62.9%
Change of location/environment can cure asthma?	56	31.5%	122	68.5%
Asthma medications are habit forming?	216	37.2%	364	62.8%
Inhalers are used in last stage of asthma?	264	38.8%	416	61.2%
Asthma runs in family?	218	37.6%	362	62.4%
Can people with asthma exercise?	238	37.2%	402	62.8%
Asthma can be controlled by medicines?	270	36.9%	462	63.1%

correctly replied by 87.0%. Asthma does runs in families and this was correctly answered by 74.2% and asthmatic patients are allowed to exercise was correctly answered by 81.8%. Lastly that asthma can be controlled by medications was correctly responded by 93.6%.

Analyzing the responses according to gender showed that the frequency of correct responses was better in males. Details are given in Table-II. Analysis of correct response on the basis of educational status showed that there was positive correlation of correct response with education status highest correct responses being given by the postgraduates, there was no uneducated responder in our survey, details in Table-III. Analysis of correct responses

according to the profession showed interesting results. Lowest correct responses were given by unemployed and best responses were given by doctors. Self-employed persons fared better than bankers and people associated with education. Non-medical students also gave better answers as compared to medical students, details in Table-IV.

## DISCUSSION

The results of this study put forward the impression of asthma, which people in Pakistan have. With an increase in air pollution due to urbanization and a change in lifestyle, there has been a rapid rise in patients being diagnosed with asthma. Allergens and irritants along with a genetic predisposition

Table-III: Frequency of Correct Responses According to Education.

	<i>Primary</i>		<i>Matric/O-Level</i>		<i>Inter/A-Level</i>		<i>Graduate</i>		<i>Postgraduate</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Asthma is a psychological condition, it's all in mind?	6	0.8%	20	2.8%	118	16.4%	260	36.2%	314	43.7%
You can grow out of asthma?	0	0.0%	10	3.0%	66	19.5%	116	34.3%	146	43.2%
Asthma is a curable disease?	0	0.0%	8	2.3%	56	15.9%	118	33.5%	170	48.3%
Asthma is contagious; you can catch it from someone suffering from it?	6	0.8%	20	2.7%	120	15.9%	280	37.1%	328	43.5%
Change of location/environment can cure asthma?	0	0.0%	8	4.5%	28	15.7%	50	28.1%	92	51.7%
Asthma medications are habit forming?	2	0.3%	16	2.8%	88	15.2%	202	34.8%	272	46.9%
Inhalers are used in last stage of asthma?	4	0.6%	18	2.6%	106	15.6%	246	36.2%	306	45.0%
Asthma runs in family?	4	0.7%	16	2.8%	80	13.8%	208	35.9%	272	46.9%
Can people with asthma exercise?	2	0.3%	14	2.2%	68	10.6%	238	37.2%	318	49.7%
Asthma can be controlled by medicines?	4	0.5%	16	2.2%	102	13.9%	266	36.3%	344	47.0%

Table-IV: Frequency of Correct Responses According To Profession.

	Student (Non-medical)		Student (Medical)		Doctor		Engineer		Banking		Education		Self Employed		Unemployed	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Asthma is a psychological condition, it's all in mind?	126	17.5%	78	10.9%	368	51.3%	22	3.1%	20	2.8%	36	5.0%	56	7.8%	12	1.7%
You can grow out of asthma?	54	16.0%	40	11.8%	164	48.5%	16	4.7%	6	1.8%	20	5.9%	28	8.3%	10	3.0%
Asthma is a curable disease?	48	13.6%	30	8.5%	204	58.0%	8	2.3%	8	2.3%	18	5.1%	32	9.1%	4	1.1%
Asthma is contagious; you can catch it from someone suffering from it?	130	17.2%	78	10.3%	382	50.7%	20	2.7%	24	3.2%	40	5.3%	64	8.5%	16	2.1%
Change of location/environment can cure asthma?	30	16.9%	10	5.6%	102	57.3%	6	3.4%	4	2.2%	6	3.4%	18	10.1%	2	1.1%
Asthma medications are habit forming?	90	15.5%	52	9.0%	336	57.9%	8	1.4%	12	2.1%	26	4.5%	52	9.0%	4	.7%
Inhalers are used in last stage of asthma?	110	16.2%	76	11.2%	364	53.5%	20	2.9%	12	1.8%	36	5.3%	50	7.4%	12	1.8%
Asthma runs in family?	82	14.1%	68	11.7%	320	55.2%	8	1.4%	14	2.4%	22	3.8%	50	8.6%	16	2.8%
Can people with asthma exercise?	74	11.6%	62	9.7%	344	53.8%	20	3.1%	24	3.8%	38	5.9%	64	10.0%	14	2.2%
Asthma can be controlled by medicines?	108	14.8%	74	10.1%	382	52.2%	20	2.7%	22	3.0%	40	5.5%	70	9.6%	16	2.2%

increase the predisposition for someone to develop asthma;<sup>16</sup> therefore it was surprising that only 22.8% of those who were surveyed thought a change of environment could improve the disease. This is significant as dusty carpets and pets in households are a common sight, and if adjustments are made to the environment, symptoms can be improved for many.

Inhaled corticosteroids (ICS) are the first line therapy for asthmatics, especially children. ICS reduce the inflammatory process associated with the persistence of asthma. Of the sample surveyed, 93.6% understood that there was treatment available for asthma. However 80.9% of those surveyed were well educated and would have awareness about whether or not treatment existed for asthma, given its common occurrence. Concurrently, 87% also were aware that Inhalers were not a last resort. This showed that there was a significant majority understanding the treatment options of the condition. Despite that, false perceptions seemed to exist in our community about the side effects of the treatment, as 25.8% seemed to think that Inhalers were habit forming. This has been a barrier as a significant number of patients in our community seem to be hesitant in the use of Inhalers as treatment for asthma. Cortisol, which is essentially the drug in ICS, is a natural hormone in our body with no addictive effects, but the

only major short-term side effect of ICS is oral candidiasis when used in high doses.<sup>17,18</sup>

Majority of asthmatics suffer from exercise induced bronchoconstriction, and many healthy individuals performing at high ventilatory demand also suffer from bronchoconstriction.<sup>19,20</sup> However, as 81.8% who were surveyed thought, proper pharmacotherapy will provide adequate control for individuals to perform exercise.<sup>17</sup> On the contrary, studies have shown that exercises such as aerobic training and swimming have actually improved control in asthmatics.<sup>19,21</sup> This is promising as there is already awareness that exercise is acceptable in asthmatics; therefore in the future, there is hope that with more health promotion, asthmatics may possibly benefit from a change in sedentary lifestyle.

The positive points that can be taken from this is that more than 96% of those surveyed believed that asthma was not related to one's psyche but is truly a physical disorder, and that asthma is not a disease that is contagious. Both show that there is an overall understanding of what the disease is, and there are no false superstitious beliefs of what the disease is. However, still there is much room for improvement in the awareness using mass media. The better performance of non-medical students as compared to medical students is unexplainable on scientific grounds and could be attributed to chance findings.

## CONCLUSION

The understanding of the treatment of asthma is much poorer. More awareness needs to be created in the public to ensure that the ICS are not habit forming, and their importance as a first line agent in asthma. Furthermore, health professionals need to increase awareness about the environmental and household conditions that could aggravate or promote asthma. In reference to exercise, more research needs to be done on its benefits for asthmatics, however a sedentary lifestyle should be discouraged by health professionals.

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### *Authors Contribution:*

Study was conceived and designed by BFZ & FFZ, information dissemination regarding survey was done by MS, data processing and proof writing were done by FFZ and MS, final editing and approval was done by BFZ.