

## Knowledge about asthma: A cross-sectional survey in 4 major hospitals of Karachi, Pakistan

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### Abstract

**Objective:** To determine knowledge and misconceptions about asthma among the local population.

**Methods:** This cross-sectional study was conducted at four tertiary care hospitals; Aga Khan University Hospital, Civil Hospital Karachi, Jinnah Postgraduate Medical Centre and Ojha Institute of Chest Diseases, Karachi, from October to November 2016, and comprised hospital attendants. The questionnaire used in the study comprised 26 questions answered with a true, false or not sure answer. SPSS 20 was used for data analysis.

**Results:** There were 400 participants. The overall mean age was 41.2±14.2 years, and 214(53.5%) of the participants were males. Moreover, 75(19%) participants thought that asthma was a psychological disorder while 181(45%) considered it an infectious disease. Nearly 174(43.5%) believed that inhaled medications had significant side effects. Besides, 264(66%) participants considered steam inhalation to be an effective treatment for asthma, 269(67%) thought that patients with asthma should avoid rice in their diet and 167(42%) considered milk as a common trigger.

**Conclusion:** Participants' knowledge about asthma was poor and misconceptions were common about the condition.

**Keywords:** Asthma, Misconceptions, Karachi, Knowledge of asthma. (JPMA 67: 1787; 2017)

### Introduction

Asthma is a serious global health problem affecting all age groups, with worldwide prevalence ranging from 1% to 21% in adults, and up to 20% in children aged 6-7 years.<sup>1,2</sup> The revised global estimate of asthma in 2014 suggests that 334 million people suffer from this condition.<sup>3</sup> According to a study conducted in Karachi, the overall prevalence of asthma in children was found to be 10.2%.<sup>4</sup>

Asthma is a common reversible chronic inflammatory condition of the lungs that leads to narrowing of the airways. Common symptoms include breathlessness, wheezing, chest tightness and coughing.<sup>5</sup> Asthma poses an economic burden which is expected to exceed that of tuberculosis and acquired immune deficiency syndrome (AIDS) combined.<sup>6</sup> When treated ineffectively, asthma often leads to nocturnal awakening, limited physical activity, missed work and school, hospitalisations, and in some cases even death.

Little is known about the public knowledge concerning asthma in Pakistan. An earlier study from Pakistan about

the general understanding of the disease in caregivers of asthmatic patients revealed inadequate awareness of the disease.<sup>7</sup>

Poor understanding of asthma can result in under utilisation of healthcare services, sub-optimal control of symptoms and reduced adherence to medication, hence, leading to a higher morbidity and mortality.<sup>8</sup> The current study was planned to assess the awareness of asthma in our local population using a predesigned questionnaire. To date, no survey has been conducted in Asia to assess the misconceptions about asthma. We stress on identification of misconceptions for a better overall management of the disease. There are widespread misconceptions about type of disease, risk factors and management.

### Subjects and Methods

This cross-sectional study was conducted at Aga Khan University Hospital (AKUH), Civil Hospital Karachi (CHK), Jinnah Postgraduate Medical Centre (JPMC) and Ojha Institute of Chest Diseases (OICD), Karachi, from October to November 2016, and comprised hospital attendants. The questionnaire comprised 26 questions, answered as true, false or not sure. It was available in both English and Urdu. The questionnaire was pilot-tested and modified accordingly by the experts. Demographic data was collected, including age, gender, level of education and

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the name of the hospital.

AKUH is a private hospital with a majority of patients coming from middle and high socio-economic classes. OICD relatively caters to middle-income groups whereas JPMC and CHK are government institutes with a majority of the population from lower socio-economic background. Institutional permissions for survey were obtained from the four hospitals. Hospital attendants, aged 18 years or above, accompanying patients in the outpatient clinics of the four teaching hospitals were included in the study. Written informed consent was obtained from the participants in both Urdu and English. The participants were interviewed by the students in the study with the questionnaire available in both English and Urdu. Those who refused to give consent, were unable to communicate verbally in English or Urdu and aged below 18 years were excluded. Non-responders were not recorded. There were very few non-responders who basically didn't know what asthma actually was.

The sample size was estimated using the software EpilInfo and assuming that 50% of the population knows about it with a 95% confidence level and a bound on error of  $\pm 5\%$ . The sample size was further increased by 6% to account for non-responders. SPSS 20 was used for data analysis. Each categorical item from the questionnaire was summarised by frequency count and percentage.

## Results

Data was collected from 400 participants, 100(25%) from each of the 4 tertiary care hospitals. The overall mean age was  $41.2 \pm 14.2$  years. Moreover, 214(53.5%) participants were males and 186(46.5%) were females. Also, 72(18%) participants had received no education, 91(22.8%) had a primary level of education, 79(19.8%) and 66(16.5%) had received education up to matriculation and intermediate,

**Table-1:** Demographics of participants.

| Variable                                  | Frequency | Percentage |
|---|-----------|------------|
| <b>Age (years)</b>                        |           |            |
| 18-30                                     | 115       | 22.8       |
| 31-40                                     | 88        | 22.0       |
| 41-50                                     | 83        | 20.8       |
| 51-60                                     | 66        | 16.5       |
| >60                                       | 45        | 11.3       |
| Male                                      | 214       | 53.5       |
| Female                                    | 186       | 46.5       |
| <b>Education</b>                          |           |            |
| Illiterate                                | 72        | 18.0       |
| Primary                                   | 91        | 22.8       |
| Matric                                    | 79        | 19.8       |
| Intermediate                              | 66        | 16.5       |
| Graduate                                  | 60        | 15.0       |
| Post-graduate                             | 32        | 8.0        |
| <b>Hospitals</b>                          |           |            |
| Aga Khan University Hospital (AKUH)       | 100       | 25.0       |
| Civil Hospital (CHK)                      | 100       | 25.0       |
| Jinnah Postgraduate Medical Centre (JPMC) | 100       | 25.0       |
| Dow University Ojha Campus (DUHS)         | 100       | 25.0       |

respectively, and 92(23%) had higher than intermediate education level (Table-1).

Concerning the pathophysiology of asthma, 181(45.3%) believed that it was an infectious disease and nearly 75(19%) participants thought it was a psychological disorder. Regarding the treatment of this condition, 246(61.5%) participants thought that inhalers were only recommended at the advanced stage of the disease while 174(43.5%) of the participants believed that inhalers had significant side effects. In addition, 214(53.5%) of the participants believed that regular use of inhalers might lead to its addiction.

**Table-2:** Major misconceptions identified in the study.

| Q.No | Questions   | Frequency (%) |           |           |
|------|---|---------------|-----------|-----------|
|      |   | Yes           | No        | Not sure  |
| 1    | Is asthma a psychological disorder?                               | 75(18.8)      | 284(71.0) | 41(10.3)  |
| 2    | Is asthma an infectious disease?                                  | 181(45.3)     | 176(44.0) | 43(10.8)  |
| 3    | Does inhaled asthma medications have significant side effects?    | 174(43.5)     | 120(30.0) | 106(26.5) |
| 4    | Are inhalers only recommended at the advanced stage of disease?   | 246(61.5)     | 93(23.3)  | 61(15.3)  |
| 5    | Is steam inhalation an effective way for asthma treatment?        | 264(66.0)     | 79(19.8)  | 57(14.3)  |
| 6    | Can regular exercise such as swimming cure asthma?                | 186(46.5)     | 135(33.8) | 79(19.8)  |
| 7    | Is milk a common trigger for asthma?                              | 167(41.8)     | 119(29.8) | 114(28.5) |
| 8    | Should children avoid eggs and fish if their parents have asthma? | 171(42.8)     | 124(31.0) | 105(26.3) |
| 9    | Can patients become addicted to inhalers by regular use?          | 214(53.5)     | 102(25.5) | 84(21.0)  |
| 10   | Are most asthma attacks triggered by dairy products?              | 189(45.0)     | 144(36.0) | 76(19.0)  |
| 11   | Can an asthma patient take part in all physical activities?       | 110(27.5)     | 275(68.8) | 14(3.5)   |
| 12   | Should rice be avoided by asthmatic patients?                     | 269(67.3)     | 74(18.5)  | 57(14.3)  |

Furthermore, we found several misconceptions regarding food and asthma. For instance, 167(42%) participants thought that milk was a common trigger of asthma and 171(42.8%) participants thought that children should avoid eggs and fish in their diet if their parents have asthma. Besides, 269(67%) participants believed that rice should be avoided if a patient is suffering from asthma.

In the management of asthma, 264(66%) participants believed that steam inhalation was an effective treatment for this condition. In addition, 186(47%) participants reported that regular exercise such as swimming can cure asthma. None of the guidelines have recommended any restriction on physical activities in those suffering from asthma, but in our study 110(27.5%) participants thought that an asthmatic patient can take part in all physical activities (Table-2).

## Discussion

Our study revealed that there are several misconceptions regarding asthma and its treatment in the local population. We found that the overall knowledge about this common respiratory disorder was poor. Almost half of the attendants thought asthma to be an infectious disease. The stigma of asthma being an infectious disease can affect an individual's social and psychological life.

There were several misconceptions among the people surveyed about the relationship between diet and asthma. Many thought that common dietary items like milk, eggs and rice can be a cause for asthma exacerbation. Such fear in a caregiver's mind about a food item being a trigger for asthma attack can lead to unnecessary avoidance of these items in their daily food intake, causing an adverse effect on the nutritional status of an asthmatic, particularly in children.

Inhalers are the mainstay of therapy recommended for asthma in most age groups, but in our study over half of the participants thought that regular use of inhalers may result in inhaler addiction. In a study from Malaysia, most of the parents were concerned about the side effects of inhaled medication in addition to the fear of "inhaler dependency".<sup>9</sup> Many participants believed that inhaled medications are given only at the advanced stage of the disease. Furthermore, participants considered steam inhalation and swimming as an effective treatment for asthma.

In addition, three participants of the study claimed that rabbit's blood can permanently cure asthma, a finding consistent with other false beliefs in asthma literature. In the southern city of Hyderabad, India, every year thousands of asthmatic patients gather to gulp down a

fish administered by a tribal family stuffed with a yellow herbal paste, in the hope that it will help them cure asthma.<sup>10</sup> Khewra, a small town in Punjab, Pakistan, has the world's second-largest salt mine and is offering experimental therapy to asthmatic patients, with the asthma clinic located in the mine.<sup>11</sup> Such treatment measures are not based on scientific evidence, and also take the patients further away from evidence-based therapy, hence increasing morbidity and mortality.

Contrary to the results from an earlier study,<sup>12</sup> we did not find any significant difference in the understanding of asthma between people belonging to different educational classes. This highlights the lack of health education to the general public during primary and secondary school.

We interviewed the attendants coming to hospitals for this survey. The advantage of choosing a hospital as a place of interviewing was that it was convenient to the medical students who took part in the study. As these attendants came from various parts of the city, opinions expressed were representative of the general public. Although the questionnaire was translated into the most commonly spoken and understood language (Urdu), the people interviewed also spoke many other local languages. It was challenging to accurately translate some technical terms related to asthma in their local language. It is possible that people may not have accurately understood a few questions. Pakistan is ethnically, culturally, and socially a very diverse country; therefore, there is a need to conduct similar studies, preferably in community settings, in other regions of the country, as conclusions of this study cannot be representative of the entire country.

The findings of this study about asthma misconceptions could provide an evidence for the development of programmes designed to change asthma perceptions among the community at large. The misconceptions need to be addressed on a mass scale for better control and management of the disease. An organisation needs to be set up to increase awareness about asthma in the local population. Many countries around the world have special organisations for this purpose, for example, National Asthma Council Australia, Asthma United Kingdom (UK), and the Asia Pacific Association of Allergy, Asthma and Clinical Immunology (APAAACI).

Countries like Pakistan, India, Bangladesh, Iran and Sri Lanka share more or less similar ways of living and culture. A survey carried out in the largest city of Pakistan with a diverse population group holds immense regional importance in identifying misconceptions of the disease. The knowledge about asthma in general public not only

helps patients live a better quality of life but also prevents patients falling into the trap of quacks who are practising in many low income countries like Pakistan.

### Conclusion

Misconceptions about asthma were common among the participants. These misconceptions may lead to poor compliance with asthma medications resulting not only in poor quality of life but increased morbidity and mortality. There is a need for public education and awareness on chronic diseases like asthma in order to improve disease management and work towards decreasing the burden of the disease.

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