

A STUDY TO UNDERSTAND KNOWLEDGE , AWARENESS AND PRACTICES OF ASTHMA
IN MEDICAL / HEALTH / PHARMA GRADUATE STUDENTS IN JAIPUR AND MEERUT
REGION

Dissertation Submitted to



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by

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled “ A study to understand Knowledge , awareness and practices of asthma in Medical / Health / Pharma graduate students in Jaipur and Meerut Region “ is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

Dishi Chaudhary

30 / 06 / 2022

CERTIFICATE

This is to certify that dissertation titled is a record of the research “A study to understand Knowledge , awareness and practices of asthma in Medical / Health / Pharma graduate students in Jaipur and Meerut Region “ work undertaken by Dishy Chaudhary in partial fulfillment of the requirements for the award of the degree of MBA (Pharmaceutical Management from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

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I submit this project with a sense of contentment and utmost regards.

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INTRODUCTION -

Asthma is a chronic disease that affects your airways. It affects more than 20 million Americans. Asthma is characterized by inflammation and spasm of the airways. Your airways are tubes that carry air in and out of your lungs. If you have asthma, the inside walls of your airways become sore and swollen. That makes them very sensitive, and they may react strongly to things that you are allergic to or find irritating. (*Asthma*. (n.d.). Cleveland Clinic. Retrieved July 5, 2022)

Spasm (narrowing of the bronchial tubes) is caused by the inflammation of the muscles surrounding the air passageways. The inflammation makes the airways smaller makes it difficult to move air in and out of the lung. When your airways react, they narrow and your lungs get less air. This can cause wheezing, coughing, chest tightness and trouble breathing, especially early in the morning or at night.

When your asthma symptoms become worse than usual, it's called an asthma attack. In a severe asthma attack, the airways can close so that your vital organs do not get enough oxygen. In some cases, people die from severe asthma attacks.

Of the 20 million asthmatics, 10 million – including 3 million children – suffer specifically from allergic asthma. Research shows that many people with asthma could better control their disease by controlling their allergies.

Allergic asthma is the most common form of asthma. Allergic asthma is triggered by inhaling allergens such as dust mites, pet dander, pollens, mold, etc. These allergens cause inflammation and swelling of the airways. This results in coughing, wheezing and chest tightness.

Allergens are the key cause of allergic asthma and they can't be completely avoided. But the real culprit is the IgE antibody that is produced by the body in response to allergen exposure. The combination of the IgE antibody with allergens results in the release of potent chemicals. Thus, IgE is the root cause of allergic asthma. A new and exciting way to control allergic asthma is to take a medication that binds IgE and prevents it from setting off the inflammatory response. Only allergists or pulmonologists can prescribe and administer this medication.

Asthma is treated with two kinds of medicines: quick-relief medicines to stop asthma symptoms and long-term control medicines to prevent symptoms. Allergic asthma is treated with avoidance of allergens, anti-allergy medication and allergy shots.

Asthma symptoms vary from person to person. You may have infrequent asthma attacks, have symptoms only at certain times — such as when exercising — or have symptoms all the time.(*Mayo Clinic*, 2022 – Website)

Asthma signs and symptoms include:

- Shortness of breath
- Chest tightness or pain
- Wheezing when exhaling, which is a common sign of asthma in children
- Trouble sleeping caused by shortness of breath, coughing or wheezing
- Coughing or wheezing attacks that are worsened by a respiratory virus, such as a cold or the flu

Signs that your asthma is probably worsening include:

- Asthma signs and symptoms that are more frequent and bothersome
- Increasing difficulty breathing, as measured with a device used to check how well your lungs are working (peak flow meter)
- The need to use a quick-relief inhaler more often

Treatment

Treatment usually involves learning to recognize your triggers, taking steps to avoid triggers and tracking your breathing to make sure your medications are keeping symptoms under control. In case of an asthma flare-up, you may need to use a quick-relief inhaler. (**Asthma** *Mayoclinic.org*, 2022 – Website)

Medications

The right medications for you depend on a number of things — your age, symptoms, asthma triggers and what works best to keep your asthma under control.

Preventive, long-term control medications reduce the swelling (inflammation) in your airways that leads to symptoms.

Quick-relief inhalers (bronchodilators) quickly open swollen airways that are limiting breathing. In some cases, allergy medications are necessary.

Long-term asthma control medications, generally taken daily, are the cornerstone of asthma treatment. These medications keep asthma under control on a day-to-day basis and make it less likely you'll have an asthma attack. Types of long-term control medications include:

Inhaled corticosteroids. These medications include fluticasone propionate (Flovent HFA, Flovent Diskus, Xhance), budesonide (Pulmicort Flexhaler, Pulmicort Respules, Rhinocort), ciclesonide (Alvesco), beclomethasone (Qvar Redihaler), mometasone (Asmanex HFA, Asmanex Twisthaler) and fluticasone furoate (Arnuity Ellipta).

You may need to use these medications for several days to weeks before they reach their maximum benefit. Unlike oral corticosteroids, inhaled corticosteroids have a relatively low risk of serious side effects.

Leukotriene modifiers. These oral medications — including montelukast (Singulair), zafirlukast (Accolate) and zileuton (Zyflo) — help relieve asthma symptoms.

Montelukast has been linked to psychological reactions, such as agitation, aggression, hallucinations, depression and suicidal thinking. Seek medical advice right away if you experience any of these reactions.

Combination inhalers. These medications — such as fluticasone-salmeterol (Advair HFA, Airduo Digihaler, others), budesonide-formoterol (Symbicort), formoterol-mometasone (Dulera) and fluticasone furoate-vilanterol (Breo Ellipta) — contain a long-acting beta agonist along with a corticosteroid.

Theophylline. Theophylline (Theo-24, Elixophyllin, Theochron) is a daily pill that helps keep the airways open by relaxing the muscles around the airways. It's not used as often as other asthma medications and requires regular blood tests.

Quick-relief (rescue) medications are used as needed for rapid, short-term symptom relief during an asthma attack. They may also be used before exercise if your doctor recommends it. Types of quick-relief medications include:

Short-acting beta agonists. These inhaled, quick-relief bronchodilators act within minutes to rapidly ease symptoms during an asthma attack. They include albuterol (ProAir HFA, Ventolin HFA, others) and levalbuterol (Xopenex, Xopenex HFA).

Short-acting beta agonists can be taken using a portable, hand-held inhaler or a nebulizer, a machine that converts asthma medications to a fine mist. They're inhaled through a face mask or mouthpiece.

Anticholinergic agents. Like other bronchodilators, ipratropium (Atrovent HFA) and tiotropium (Spiriva, Spiriva Respimat) act quickly to immediately relax your airways, making it easier to breathe. They're mostly used for emphysema and chronic bronchitis, but can be used to treat asthma.

Oral and intravenous corticosteroids. These medications — which include prednisone (Prednisone Intensol, Rayos) and methylprednisolone (Medrol, Depo-Medrol, Solu-Medrol) — relieve airway inflammation caused by severe asthma. They can cause serious side effects when used long term, so these drugs are used only on a short-term basis to treat severe asthma symptoms.

PREVENTION and management - However, more information is known about preventing asthma attacks. These strategies include:(Holland K, Goldman L *Healthline*, 2021 – Website)

Avoiding triggers. Steer clear of chemicals, smells, or products that have caused breathing problems in the past.

Reducing exposure to allergens. If you've identified allergens, such as dust or mold, that trigger an asthma attack, avoid them if possible.

Getting allergy shots. Allergen immunotherapy is a type of treatment that may help alter your immune system. With routine shots, your body may become less sensitive to any triggers you encounter.

Taking preventive medication. Your doctor may prescribe medication for you to take on a daily basis. This medication may be used in addition to the one you use in case of an emergency.

LITERATURE REVIEW –

Disease Burden in Individuals with symptomatic undiagnosed or COPD - asthma This cross-sectional case-finding study used data from the *Undiagnosed COPD and Asthma Population (UCAP) study*. Adult subjects with respiratory symptoms who had no history of diagnosed lung disease were recruited in a two-step case-finding process using random digit-dialling of land lines and cell phones located within a 90-min radius of 16 Canadian study sites. Participants were assessed for COPD, asthma or no airflow obstruction using pre- and post-bronchodilator spirometry based on American Thoracic Society diagnostic criteria.

A systemic study of burden of illness in adults with uncontrolled moderate/ severe asthma to better understand the impact of moderate-to-severe asthma in the US, the UK, Germany, France, Italy, Spain, Canada, Japan, and Australia in terms of prevalence, clinical measures, health-related quality of life (HRQoL) and economic burden, for patients whose asthma is uncontrolled despite inhaled corticosteroid/long-acting β_2 -agonist (ICS/LABA) therapy.

David Lang, MD, a professor of medicine and chair of the department of allergy and clinical immunology and co-director of the asthma center at the Cleveland Clinic, presented on the newest developments in asthma treatment during the NAMCP 2016 Fall Managed Care Forum population health management track session.

Dr Weinstein and colleagues randomized a cohort of 26 patients with a mean age of 45 years into an intervention group and a control group. Patients in both groups had poor asthma control at the time of study enrollment, based on Asthma Control Questionnaire (ACQ) results. Patients in the intervention group completed the Asthma Adherence Pathway in order to identify barriers to adherence. The intervention group was also monitored for Dulera adherence using a SmartInhaler and dose counter.

The retrospective cross-sectional analysis used Medical Expenditure Panel Survey data for the years 2010 through 2017 to estimate direct medical costs and indirect costs from productivity loss for patients 12 years and older with and without asthma. Researchers categorized patients with asthma as having mild, moderate, or severe asthma based on their symptom control medications. The study estimated costs in 2017 US dollars.

RESEARCH OBJECTIVE-

To study the level of awareness and knowledge of asthma in graduate students in Meerut and Jaipur region .

To study the practices of management of asthma in graduate students in Meerut and Jaipur region.

METHODOLOGY-

STUDY DESIGN - Cross – sectional study approach .

STUDY TOOL – For the purpose of study a pre – designed questionnarie in the form of google form was prepared and used to get the data regarding the asthma knowledge and awareness .

STUDY SAMPLE – The sample size of the study was 89 students from Jaipur and Meerut .

TYPE OF RESEARCH – Primary research .

DURATION – 21 March 2022 – 18 June 2022

RESULT AND INTERPETRATION-

GENDER
89 responses

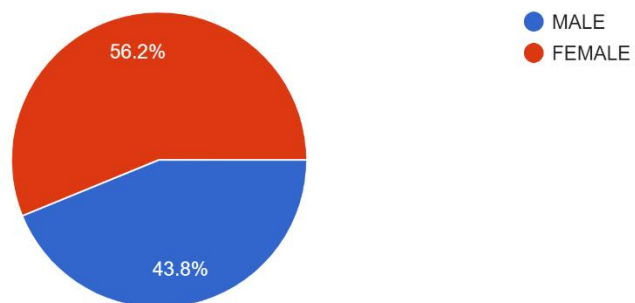


Fig 1 - The data collected comprises of 56.2 % of females and 43.8 % of male students .

AGE GROUP
87 responses

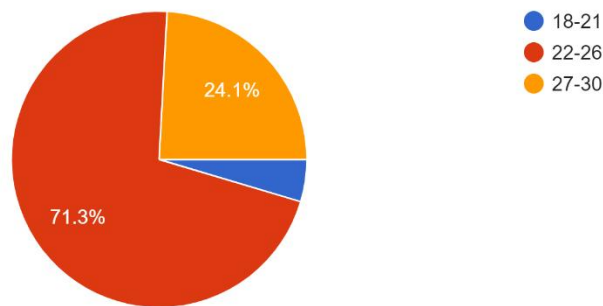


Fig 2 - Different age group students took part in the study among which 24.1% comprises of 27-30 age , 71.3% of 22-26 age group and rest were of 18- 21 age group .

Do you know about asthma ?
89 responses

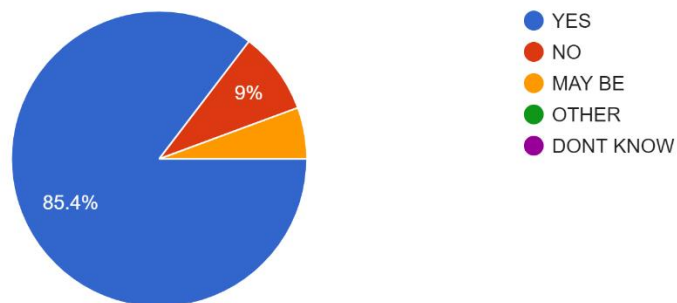


Fig 3 - Out of 89 responses collected during the study , 85.9 % students know about asthma , 6% are not sure whether they know or not and 9% don't even know about asthma .

Are you asthmatic patient or do you have any history of asthma in your family?

89 responses

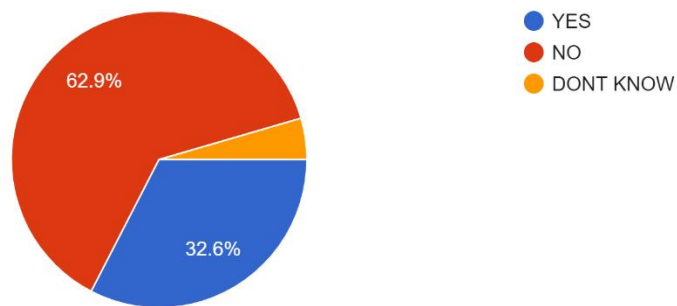


Fig 4 - Out of 89 responses collected during the study , 62.9 % are not asthmatic and do not have history of asthma in there family ;32.6% are asthmatic or have history of asthma in their family and rest do were not aware .

Do you know asthma is a reversible condition?

89 responses

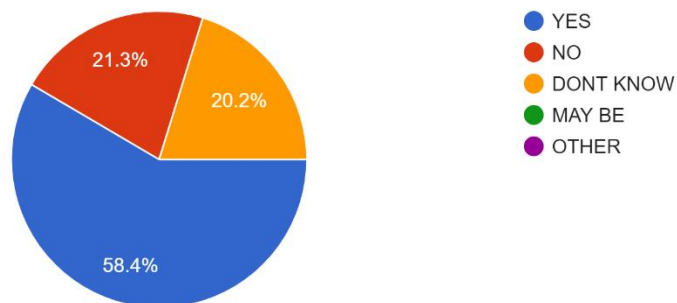


Fig 5 - Out of 89 responses , 58.4% know that asthma is reversible condition and rest of the respondents have no idea about this.

Asthma can be induced by inhaled smoking?
89 responses

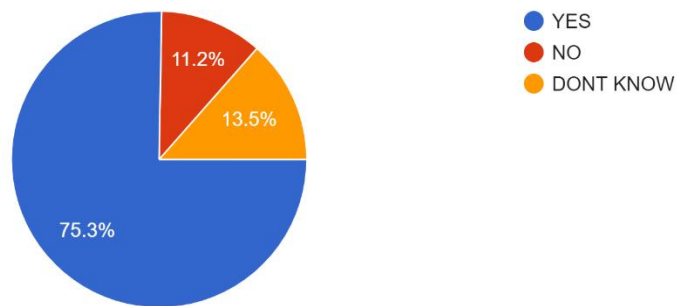


Fig 6 - Out of 89 respondents , 75.3 % are aware of the fact that asthma can be induced by inhaled smoking and rest of the respondents have no idea .

Does level of surfactant of lungs decrease in asthma?
88 responses

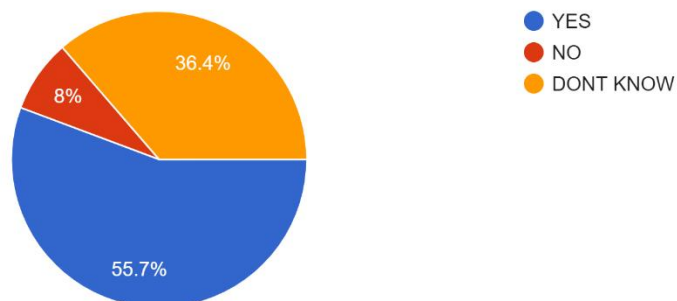


Fig 7 - Out of 89 respondents , 55.7 % of respondents know that level of surfactants decrease in asthma ; 8 % think that level of surfactant do not decrease and rest 36.4 % do not know.

Can asthma be triggered by emotional changes ?
89 responses

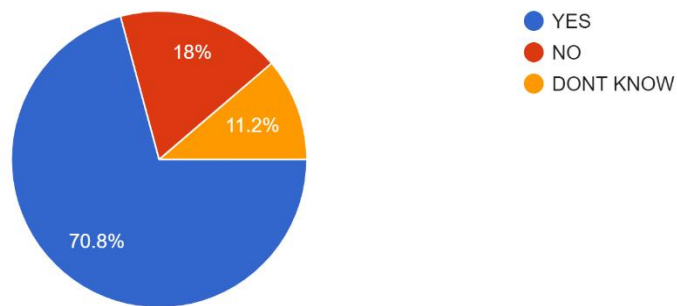


Fig 8 - Out of 89 respondents ,70.8 % know asthma is triggered by emotional changes and rest of the respondents do not know .

Asthma can cause dyspnea?
89 responses

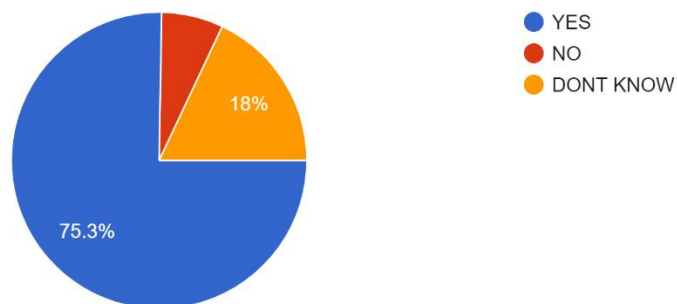


Fig 9 - Out of 89 respondents , 75.3 % respondents are aware about dyspnea and rest do not know .

The best way to take asthma medicines is by inhalation
89 responses

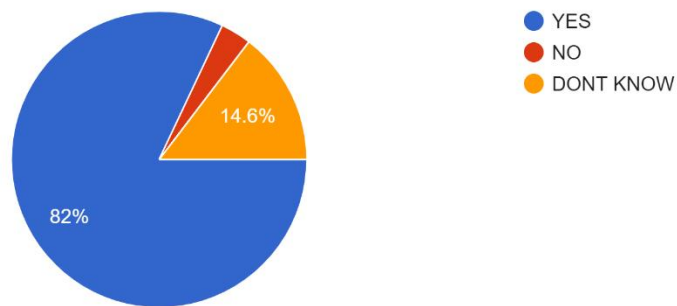


Fig 10 - Out of 89 respondents , 82% think that asthma medicines is taken by inhalation and 14.6 % think that its not the best way and have no idea .

Do you know about inhaled corticosteroids ?
89 responses

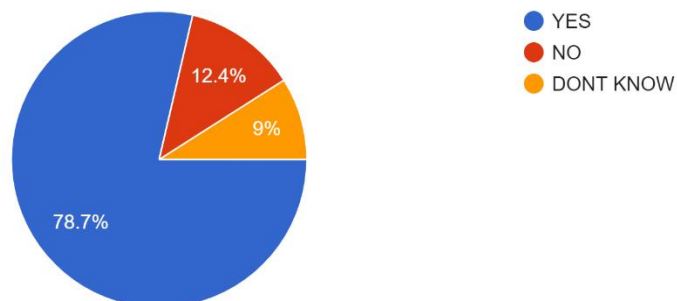


Fig 11 - Out of 89 respondents , 78.7 % know about inhaled corticosteroids and rest do not know .

Do you know how inhaled corticosteroids work?
89 responses

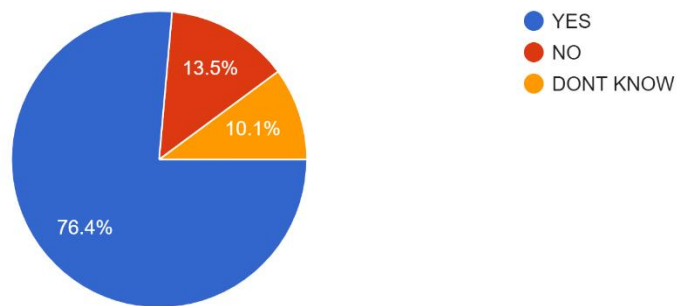


Fig 12 - Out of 89 respondents , 76.4 % know how corticosteroids work and rest do not know .

If yes , then specify how?
89 responses

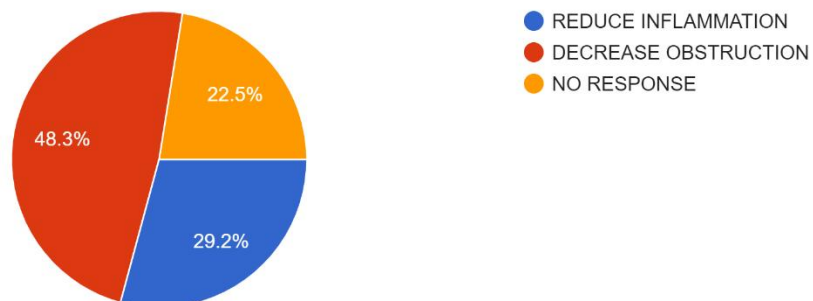


Fig 13 - Out of 89 respondents , 48.3 % think that inhaled corticosteroids works by decreasing obstruction ; 29.2 % recudes inflammation and 22.5 % have no idea .

Asthma symptoms can be caused by –
88 responses

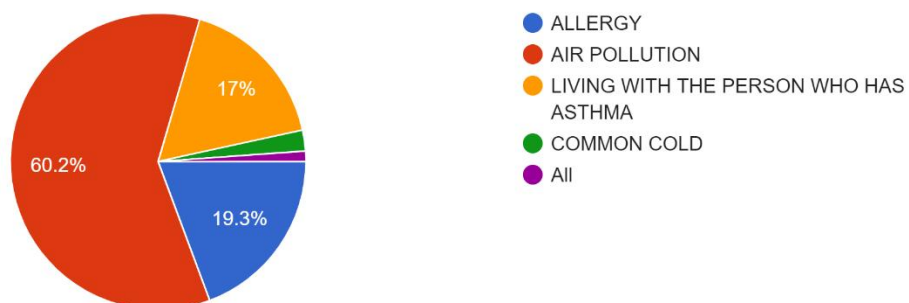


Fig 14 - Out of 88 responses , it is cleared that the main cause of the asthma is air pollution and least caused by common cold .

DISCUSSION –

We performed this study in order to understand the level of knowledge , awareness and practices of asthma in medical / health / pharma graduate students in Jaipur and meerut region.

It was found that 85.9% students do not even know about asthma which is really a matter of concern.

36.2 % students have asthma or a history of asthmatic patient in their family which shows that asthma has a high prevalence rate in our society

More than half of the student are aware of the fact that asthma can be induced by inhaled smoking and rest of the respondents have no idea .

Nearly half of the people know that level of surfactants decrease in asthma.

Asthma is triggered by emotional changes also as concluded from the above research.

It is concluded from the responses that asthma medicines are best taken by inhalation.

More than half of the respondents know about inhaled corticosteroids and rest do not know

So , it was found that more than half of the students have a good knowledge asthma and were aware with different facts related with asthma .

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APPENDIX - QUESTIONNAIRE

Do you know about asthma ?

Yes b. No c. May be

Asthma is a reversible condition?

Yes b.No c.Dont know

Asthma symptoms can be caused by –

Allergy b. air pollution c . exercise d. certain foods e. drugs

Asthma can be induced by inhaled smoking?

Yes b.No c. Don't know

Asthma is more in children than in adults?

Yes b.No c. Don't know

Is asthma characterized by bronchial constriction , chronic airway inflammation and airway obstruction ?

Yes b.No c.Don't know

Asthma is triggered by internal stimuli such as release of mediators?

Yes b.No c. Don't know

Does level of surfactant of lungs decrease in asthma?

Yes b.No c.Don't know

Can asthma be triggered by emotional changes ?

Yes b.No c.Don't know

Asthma can cause dyspnea?

Yes b. No c. Don't know

Are you asthmatic patient or do you have any history of asthma in your family?

Yes b. no c. Don't know

Specifications of medicine taken by asthmatic patient?

Salbutamol b. Montelukast c. Others

The best way to take asthma medicines is by inhalation

Yes b. no c. Don't know

Do you know about inhaled corticosteroids ?

Yes b. No c. Don't know

Do you know how inhaled corticosteroids work?

Yes b. No c. Don't know

If yes , then specify how?

No response b. Reduce inflammation c. Decrease obstruction