Project on

A survey on asthma management practices and implementation

[In the partial fulfillment of the requirements for the degree of Bachelor of Pharmacy]

Submitted To

The Department of Pharmacy,

Faculty of Allied Health Sciences,

Daffodil International University

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APPROVAL

This project paper on, A survey on asthma management practices and implementation, submitted to the Department of Pharmacy, Faculty of Allied Health Sciences, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Pharmacy and approved as to its style and contents.

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DECLARATION

I hereby declare that this project report, "A survey on asthma management practices and implementation", is done by me under the supervision of, Ms. Tahmina Afroz, Lecturer (senior scale), Department of Pharmacy, Faculty of Allied Health Sciences, Daffodil International University. I am declaring that this Project is my original work. I also declare that neither this project nor any part thereof has been submitted elsewhere for the award of Bachelor or any degree.

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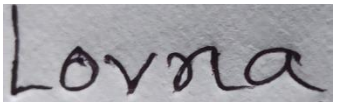

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I might want to communicate my profound applause to the All-powerful Allah who has given me the capacity to finish my undertaking work and the chance to concentrate in this subject.

I'm a lot of thankful to my honorable project supervisor of Ms. Tahmina Afroz, Lecturer (senior scale), Department of Pharmacy, Daffodil International University for her brilliant direction and steady oversight just as for giving essential data in regards to the task and furthermore for her help in finishing the project.

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Finally, I would like to express my gratitude towards my parents and other family members for their kind cooperation and encouragement which helped me in completion of this project.

My Parents

The persons who always encourage me in every sphere of my life.

Abstract

A chronic illness that affects both children and adults is asthma. Caused by inflammation and muscle stiffness around the tiny airways, the airways in the lungs become more restricted. The aim if this survey to identify the elements that influence the development of Asthma & also gain a better understanding of the many diagnostic procedures used to identify this illness. Online knowledge is used to direct the assessment. 13 questions were asked in the poll, which had a total of 180 participants. According to the results of this survey, 84.1 percent of persons suffer from asthma. 15.9 percent of the population does not have any symptoms of asthma. The survey found that 35.7% of respondents had the misconception that allergies are the root cause of asthma. It is believed by 21.4% of individuals to be caused by the common cold. 17.9 percent of respondents believe that air pollution is to blame for it. 61.5 % of the individuals in this study said that they use Medication. 38.5% of the population does not use any kind of medicine & also 37% of adults use an inhaler to treat their asthma. People take Medication in tablet form in 29.6% of cases. 33.3 percent of individuals take Medication in the form of syrup. Based on this survey, 64.3% of people have a history of asthma in their families. 35.7% of people do not have a history of asthma in their families & also 65.4% of patent follow up with doctors regularly. 34.6% of patients are not followed up regularly. Permitting to this survey, 68% of people think asthma affects their lifestyle. 32% of people think it has no effect. Current asthma treatment may help people regulate their symptoms and avoid permanent airway abnormalities

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Chapter one
Introduction

1. Introduction

The airways may narrow, swell, and create additional mucus if you have asthma. This may make breathing challenging and cause coughing, wheezing when you exhale, and shortness of breath. Asthma is a mild annoyance for some people. [1] Others may experience a serious issue that hinders everyday tasks and could result in a potentially fatal asthma attack. Although asthma cannot be treated, its symptoms can be managed. It's crucial that you cooperate with your doctor to monitor your symptoms and manifestations and modify your therapy as necessary since asthma frequently changes over time. [2]

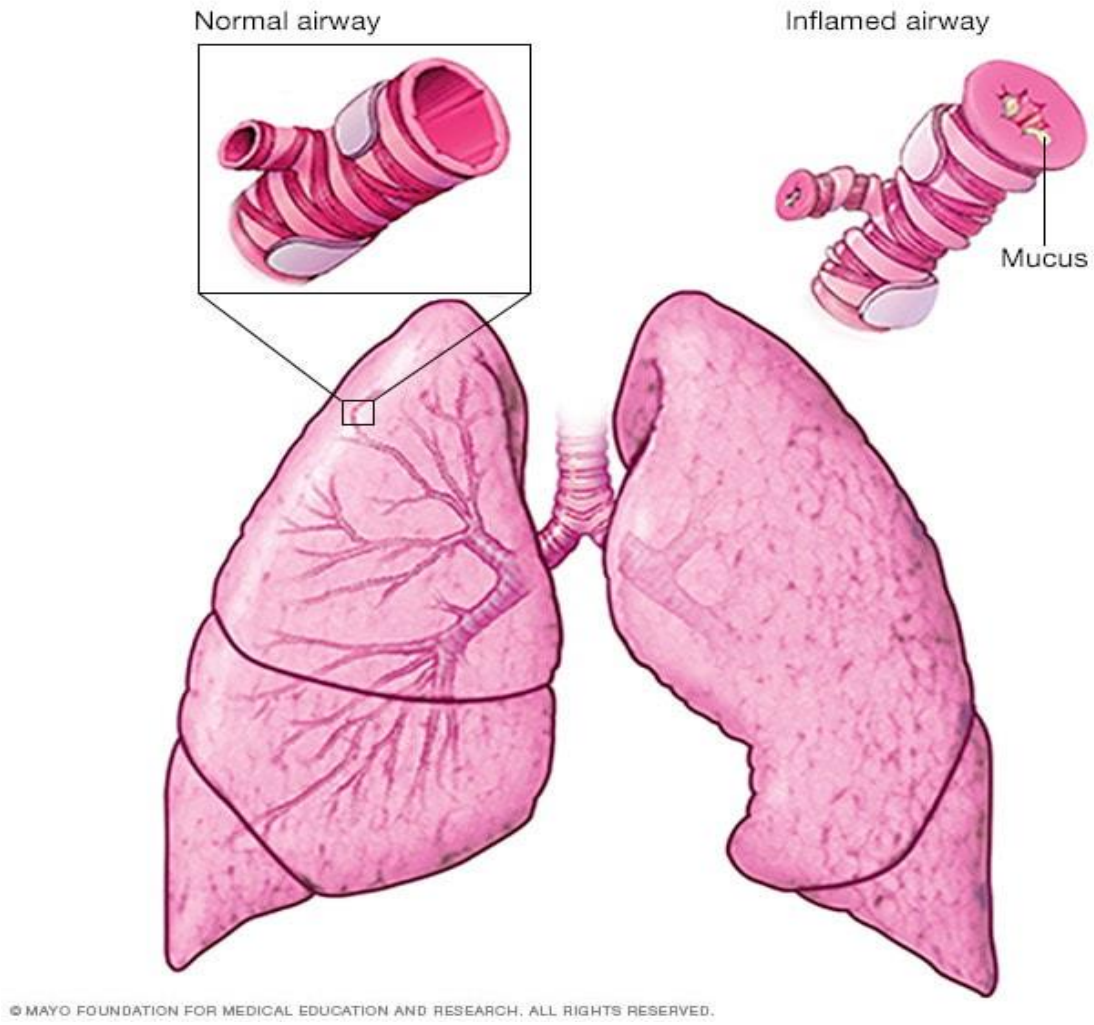

Figure 1: Normal airway Vs Inflamed airway [3]

1.1 Pathogenesis

Viral respiratory infections, particularly those caused by subtypes A and C of the human rhinovirus (RV), are the most causative factors of exacerbations. Hospital admission rates for asthma flare-ups in school-aged children are correlated with the seasonal rise in RV infections from September throughout December and yet again in the spring. [4] Adult patients with asthma frequently encounter peaks in hospitalization. Exacerbations can also be caused by other respiratory infections. [22] Asthma was commonly linked to mortality and admissions to the intensive care unit even during 2009 H1N1 influenza A outbreak. In addition to frequently causing wheezing in newborns and young children, respiratory syncytial virus can also result in acute asthma in adults, especially in people over 65. There have been sporadic reports of coronaviruses, human metapneumoviruses, parainfluenza viruses, adenoviruses, and bocaviruses being present in bronchospasm. [5]

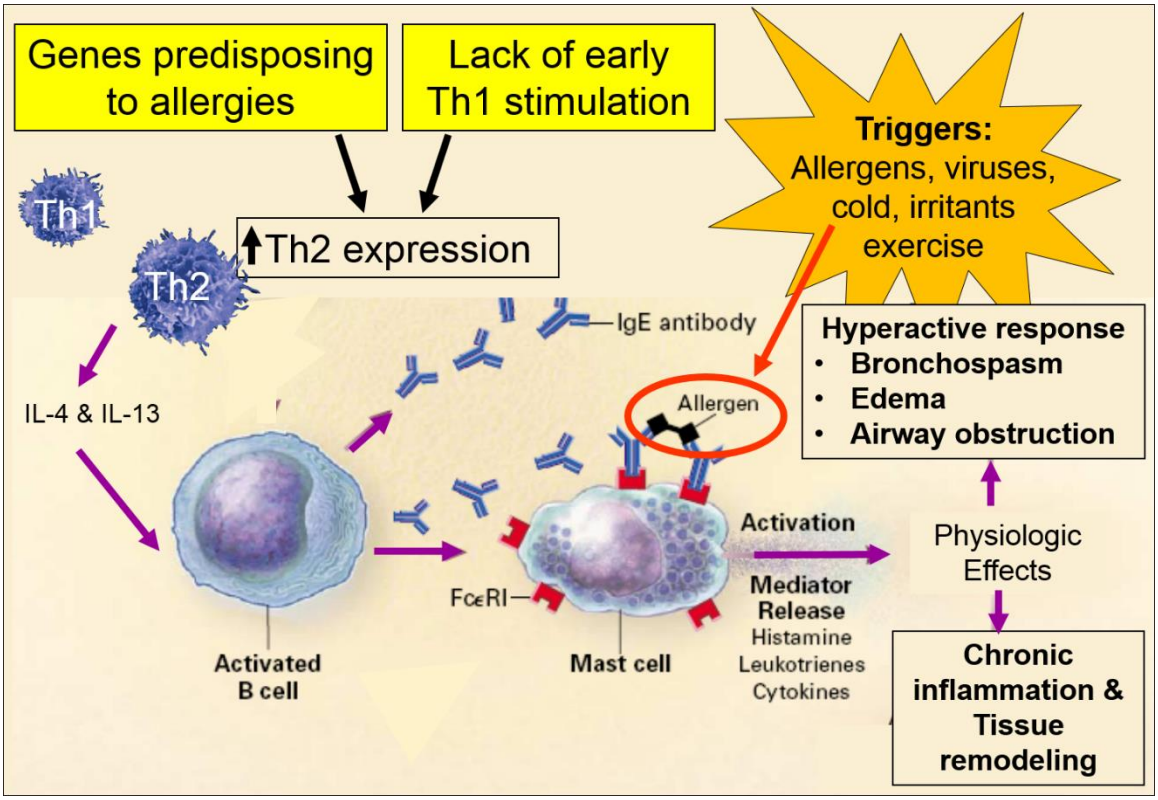

Figure 2: Pathogenesis of Asthma [6]

1.2 What causes asthma?

Why some people have asthma while others do not is a mystery to researchers. However, some elements increase the risk:

Allergies: Asthma development is more likely in people who have allergies.

Environmental factors: People who are exposed to activities that stimulate their airways may suffer asthma. Allergens, poisons, gases, and second- or third-hand smoke are some of these things. These can be particularly dangerous for babies and young children whose immune systems are still maturing. [7]

Genetics: Your risk of acquiring asthma or an allergy disease is higher if your family has a history of the conditions. [21]

Illness: The expanding lungs of young children can be harmed by some respiratory diseases, including the respiratory syncytial virus (RSV). [8]

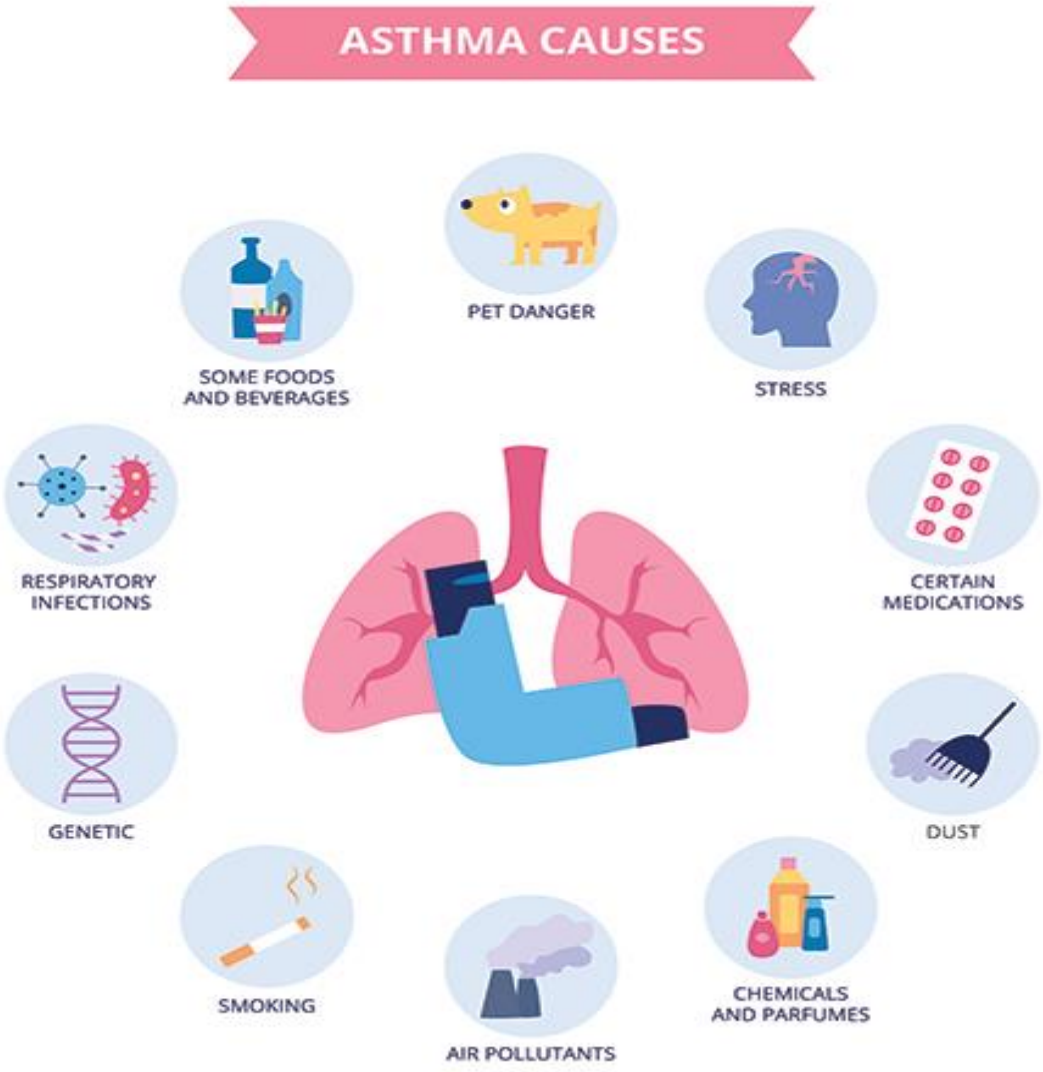

Figure 3: causes of asthma

1.3 Maintenance Inhaled Corticosteroid Therapy

For more than 40 years, the mainstay of asthma therapy has been the use of ICSs. 5 According to studies, ICSs significantly reduce the likelihood that patients would experience severe asthma exacerbations, which reduces or eliminates the requirement for management oral corticosteroid medication. ICSs also alleviate all allergy symptoms and physiological abnormalities. [9] However, medication was only available to those with

mild to moderate asthma in the 1970s and early 1980s due to worries about the complications of frequent steroid use. [20] The advantages of ICSs resurfaced as studies encouraged their use not only in moderate to serious asthma but also as a standard treatment in mild asthma as a result of the 1980s asthma morbidity surge and its association with an excess of SABAs. [10] Additionally, ICSs are the most effective controller drugs and have been demonstrated to enhance clinical outcomes, air trapping, and airway hyperresponsiveness. Additionally, ICSs decrease the likelihood of illness, and asthma mortality, and reduce the probability of exacerbations, and airway hyperresponsiveness. [11] Their anti-inflammatory properties, in specifically, their capacity to lessen eosinophilic inflammation within the airway, are responsible for these changes. Additionally, ICSs alleviate a number of the pathologic defects that define asthma, such as structural alterations in the airway epithelium,a rise in subepithelial collagen deposition,13 and a decrease in the neovascularization of the airways that is characteristic of asthma. [13]

1.4 Combination of Inhaled Corticosteroid and Long-Acting b-Agonist Therapy

A combination of ICSs and LABAs is superior to high-dose ICSs alone in the asthma treatment amongst patients who are not managed on low doses of ICSs alone, according to a seminal study by Greening et al18 published in 1994. [14] The mixture of low-dose ICSsLABAs especially in comparison to ICSs alone in asthma patients (who managed to stay symptomatic even after twice-daily administration of 200 mg of beclomethasone therapy) led to substantially decreased manifestations and enhanced peak expiratory flows at all-time points, but there were no variations in asthma exacerbations, according to this randomised controlled, double-blind trial. [15] The way people generally think about managing asthma has significantly changed as a result of this study. Despite the numerous benefits of using ICS-LABA combinations to control asthma, there were concerns that mixing LABAs with low-dose ICSs would conceal chronic inflammation and cause asthma exacerbations. [16] A meta-analysis of 9 parallel-group trials comprising 3685 patients aged 12 and older who were symptomatic despite using ICS addressed this question. It revealed that adding a LABA to ICS enhanced lung function, decreased symptoms, and did not enhance exacerbations of any severity. [17] 20 Despite this encouraging results, other

researchers conducted a meta-analysis that found LABA use to be linked to a greater risk of asthma mortality, even when combined with ICSs. [18]

Category	*Generic Name*	*Common Trade Names*	*Comments*	*Side Effects*
Bronchodilator				
Inhaled β2				
Short acting	Albuterol•	Ventolin™, Proventil™	First line drugs; recommended use "as needed" for symptoms. Effects last 4–6 hr	Transient tachycardia, tremor, nausea; less frequently nervousnes, palpitations
	Terbutaline• Bitolterol Pirbuterol Metaproternol•	Brethaire™ Tornalate™ Maxair Autohaler™ Alupent™ Metaprel™		
Long acting	Salmeterol	Serevent™	Used as maintenance therapy with anti-inflammatory drugs	Same as short acting

Table 1: Combination of Inhaled Corticosteroid and Long-Acting b-Agonist Therapy [19]

Chapter two
Purpose of the study

2.1 Purpose of the study

- The project's aims include developing a full grasp of the medical issue under investigation.
- To identify the elements that influence the development of Asthma.
- To gain a better understanding of the many diagnostic procedures used to identify this illness.
- To get a complete grasp of the illness, including its origin, symptoms, effects, and available nursing and medical treatments.
- My friends, juniors, and seniors can benefit from my expertise and experience.
- The goal of this inquiry was to learn more about Bangladesh's Asthma status.

Chapter three
Methodology

3.1 Methodology

- **Introduction:**

Online knowledge is used to direct the assessment. 13 questions were asked in the poll, which had a total of 180 participants. The replies were created by several undergraduate and graduate students from public and private universities in Bangladesh.

- **Research Design:**

This exploration was planned using a Google context that had 13 questions. The first five questions were set up to acquire about the members' names, ages, and sexual alignment.

- **Study Population:**

The exam is given in a relaxed environment. Facebook has a significant impact on how many people participate in this assessment and how it turns out. There are 180 participants in all, most of whom are understudies. Men make up 69% of the population, while women make up 31% of it.

- **Data Collection Procedure:**

Members of Google Infrastructure were able to interact with Google Framework via web-based media including Facebook, WhatsApp, and Messenger, and Google Infrastructure obtained the data for this study. The ideal institution for obtaining member feedback is Facebook, though.

- **Research Instrument**

A collection of well-organized polls was developed and placed in a Google structure.

- **Method of Data Analysis**

All surveys were checked after the data was collected for accuracy and internal reliability to rule out any missing or contradictory information, and those were removed. The investigation was conducted using Microsoft's most popular updated version.

Chapter four
Literature Review

4.1 Asthma: pathogenesis and novel drugs for treatment [23-26]

More than 300 million individuals globally and almost 20 million Americans suffer from asthma. 15% to 20% of them have severe asthma that is resistant to treatments with widely accessible medications. Although presently offered medications can have negative side effects and are unable to treat symptoms and exacerbations in all patients, new medications are required. The knowledge of asthma genetics, airway biology, and immune cell signaling has significantly improved during the last ten years. These developments have resulted in the creation of biologic and small molecule therapies, which could one day enhance the treatment of asthma. Controlled trial studies have assessed a number of new types of asthma medications, such as ultra-long lasting agonists and modulators of the interleukin 4 (IL-4) and the pathways for IL-5, IL-13, and IL-17. Other novel medication classes are still in the initial stages of development, such as dissociated corticosteroids, CXC chemokine receptor 2 antagonists, toll-like receptor 9 agonists, and tyrosine kinase inhibitors. Although some early performance data, there is not enough information to support the usage of these more recent medicines. To lower the prevalence of asthma globally, additional study is required on the therapeutic effectiveness of these biologic therapies, the impact of more recent medications on pediatric patients with asthma, and the biology of non-eosinophilic and corticosteroid resistant asthma.

4.2 The microbiome in asthma: Role in pathogenesis, phenotype, and response to treatment [27-30]

In order supply insight on future objectives of the research and problems, it is necessary to consolidate the information on the contribution of the microbiota to asthma pathogenesis, phenotype, and treatment response. A PubMed searching that included all or some of the keywords "asthma," "microbiome," "microbiota," "gut," "airway," "respiratory," "lung," "viral," and "fungal" produced studies. Studies were chosen for inclusion and citation based on the writers' assessment of the study's design and methodology, the usefulness of the research questions, and the applicability of the findings to the article's goal. Numerous studies have shown that the intestinal or upper airway bacteria play a significant role in modulating the etiology of pediatric asthma. The lower respiratory tract microbiota may play a role in the adult asthma phenotype, such as the effects of therapies, according to

fewer but more reliable studies. Specific molecular phenotypes of adult asthma are linked to and may be driven by bacterial and fungal elements of the respiratory microbiota. The human microbiota's influence on asthma risk, development, and clinical manifestations is currently supported by studies. It will be necessary to better integrate cutting-edge analytical instruments, analytical techniques, and quite well clinical research to gain a deeper knowledge of how bacteria functionally regulate these characteristics in therapeutically relevant circumstances.

4.3 Asthma Exacerbations: Pathogenesis, Prevention, and Treatment [31-34]

Guidelines-based asthma medication places an emphasis on the severity of the illness and selecting the best medical treatment to alleviate the symptoms and lower the likelihood of exacerbations. Furthermore, patients can experience sudden exacerbations of symptoms and a loss of disease control regardless of how severe their asthma is and frequently in spite of receiving appropriate medical treatment. The most frequent cause of asthma flare-ups is viral respiratory infections, notably those caused by the human rhinovirus. We will examine the typical precipitating factors for asthma exacerbations as well as strategies for preventing and treat these episodes given their significance to asthma morbidity and medical costs.

Chapter five
Results & Discussion

5.1 About Asthma

a) Results

Do you know about Asthma?

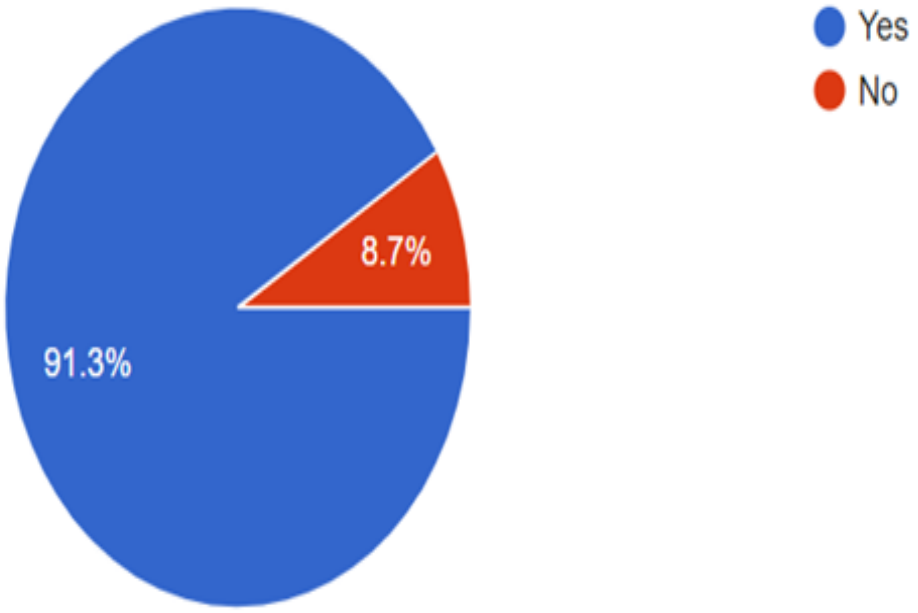

Figure 4: About Asthma

b) Discussion

This investigation found that 91.3% of people recognized about asthma earlier they were analyzed with it. 8.7% of people do not know what asthma is. So, we can say that asthma is a common infection.

5.2 Location

a) Results

What's your current location?

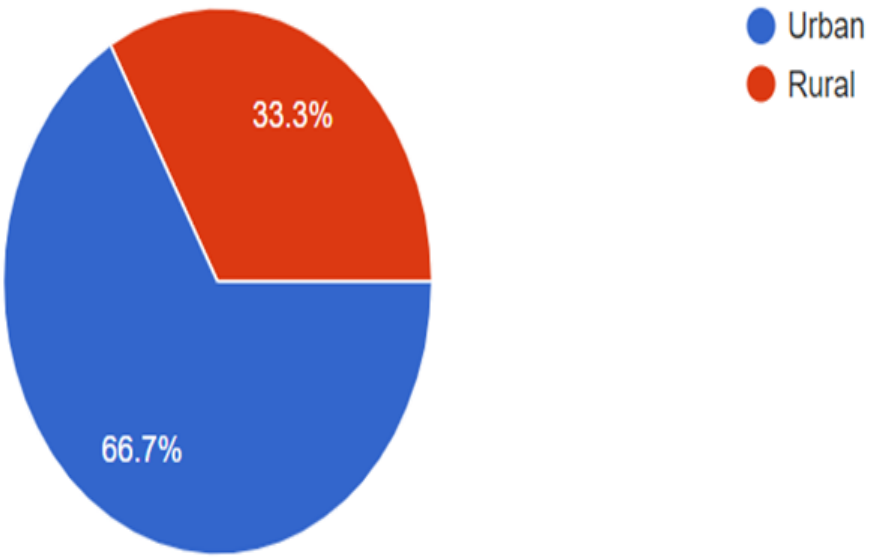

Figure 5: Location

b) Discussion

According to the survey, 66.7% of people who live in cities have asthma. In rural areas, 33.3% of residents have asthma. Living in cities makes asthma particularly prevalent.

5.3 Gender

a) Results

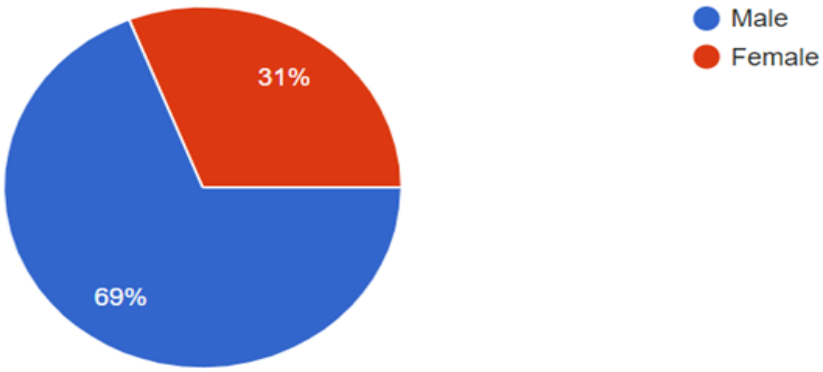

Figure 6: Gender

b) Discussion

This survey's findings indicate that 69 percent of men have asthma. 31 percent of women with asthma have respiratory system problems. As a sense, it would seem that men are more likely than women to suffer from asthma.

5.4 Being afflicted with asthma

Do you have asthma?

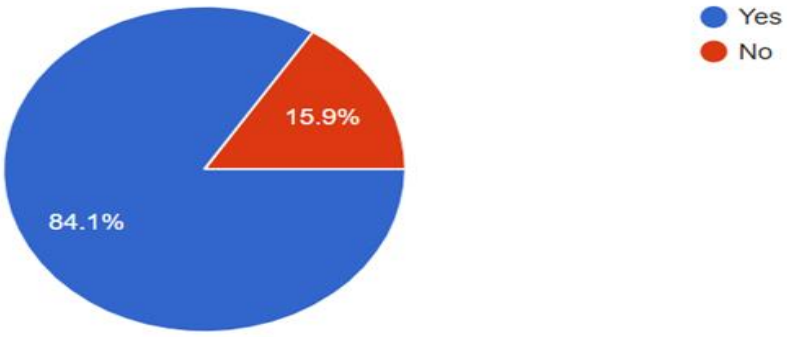

Figure 7: Being afflicted with asthma

b) Discussion

This survey's findings indicate that 84.1 percent of people have asthma. Only 15.9% of people in the population exhibit any asthmatic symptoms.

5.5 Duration of illness

a) Result

how long you have been suffered from asthma?

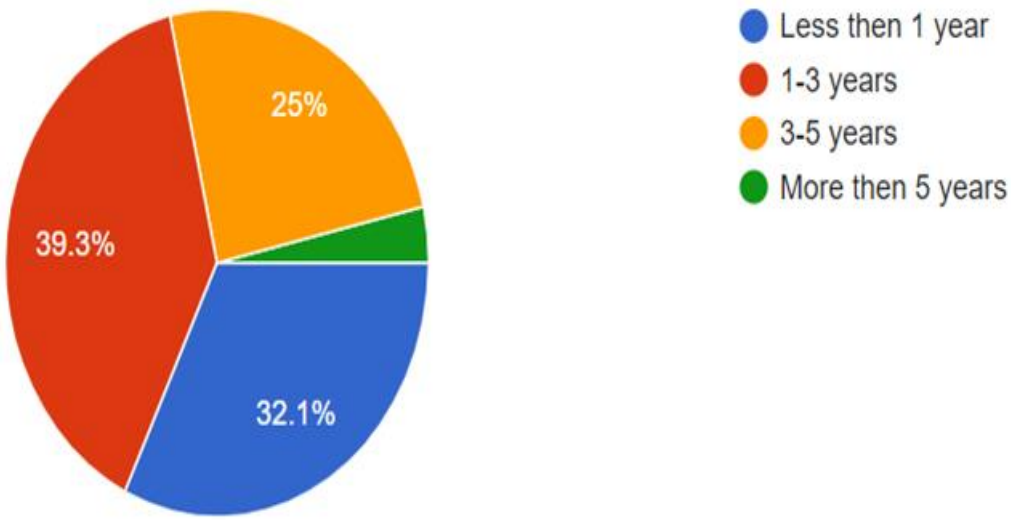

Figure 8: Duration of illness

b) Discussion

According to the report's results, 32.1% of participants have had an asthma diagnosis for less time than a year. In the past one to three years, 39.3% of the population has received an asthma diagnosis. Between the ages of three and five years, 25 percent of people suffer from asthma. 3.6% of the population has been affected by asthma in the past five years.

5.6 Common people thoughts about asthma causes

a) Results

Asthma symptoms may be caused by

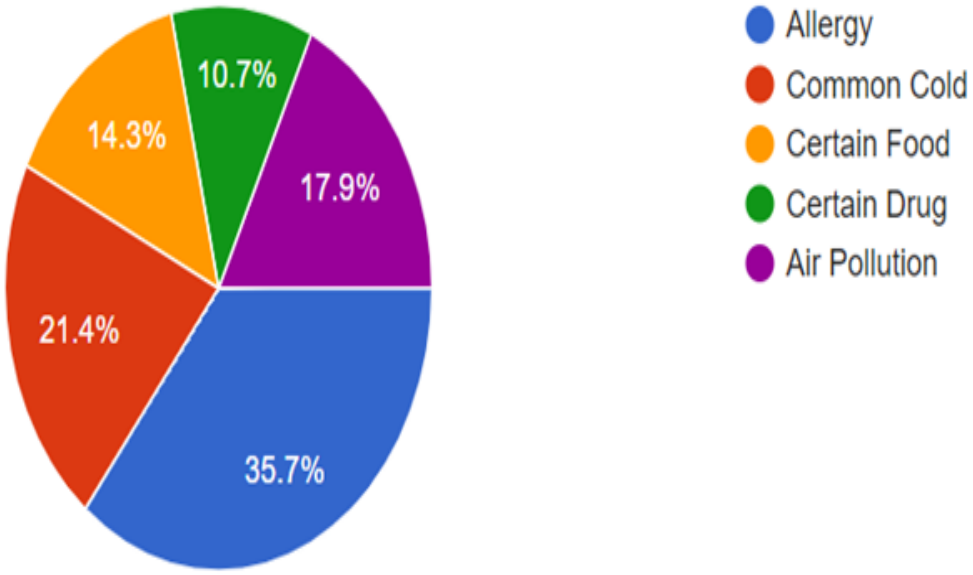

Figure 9: Common people thoughts about asthma causes

b) Discussion

According to the survey, 35.7% of participants believed that allergies are the main cause of asthma. According to 21.4% of people, the common cold is to blame. 17.9% of those surveyed think that air pollution is to blame. 14.3% of people think that a specific dish is the reason why it happens. 10.7% of respondents believed that a specific medication was to blame.

5.7 Medicine taken

a) Results

Do you take any medicine for management of asthma?

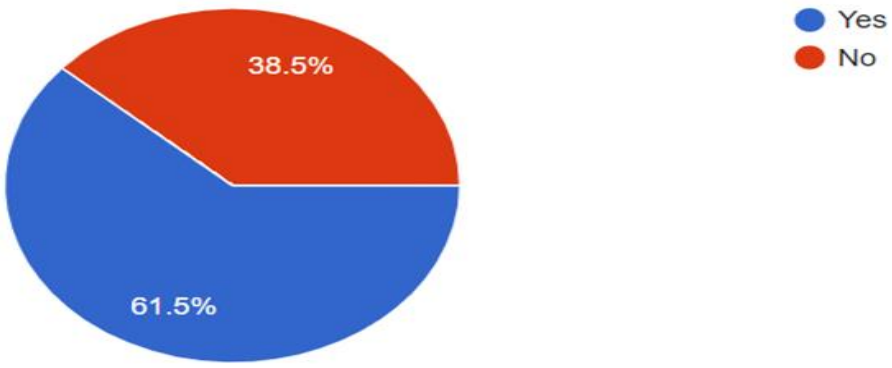

Figure 10: Medicine taken

b) Discussion

In this study, 61.5% of the participants reported using medication. 38.5% of people report not taking any medications at all.

5.8 Medication

a) Result

which type of medication you have been taken for asthma?

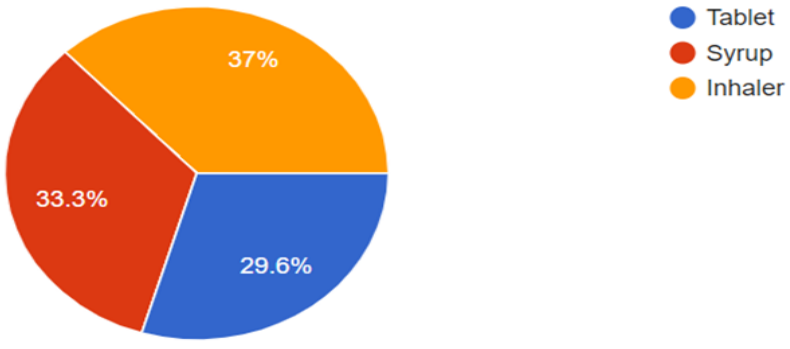

Figure 11: Medication

b) Discussion

This study found that 37% of individuals take inhalers to manage their asthma. 29.6% of the time, people take their medications as tablets. 33.3 percent of people take medication in syrup form.

5.9 Family History

a) Results

Do you have any family member who have been suffered from asthma?

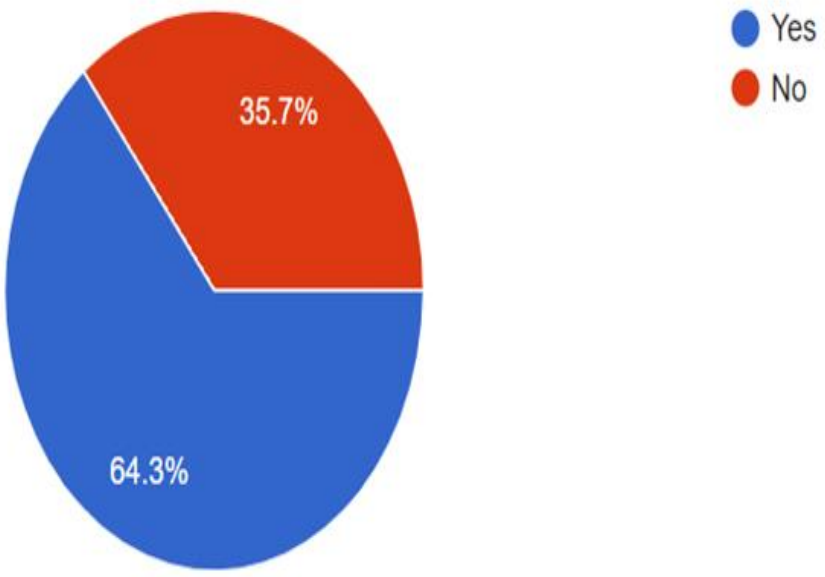

Figure 12: Family History

b) Discussion

According to this poll, 64.3% of respondents had a family history of asthma. A family history of asthma is absent in 35.7% of persons.

5.10 Genetic Diseases

a) Results

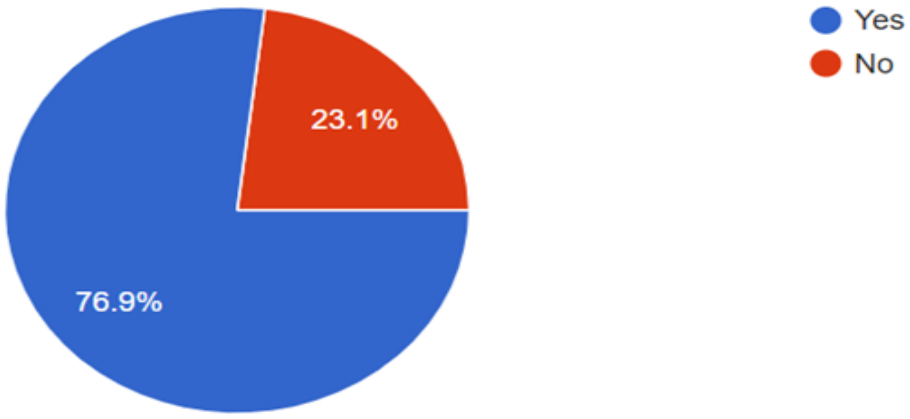

Figure 13: Genetic Diseases

b) Discussion

This poll found that 76.9% of people believe asthma is a genetic disease. 23.1% of respondents disagree that it is a genetic condition.

5.11 Follow Up Doctor

a) Results

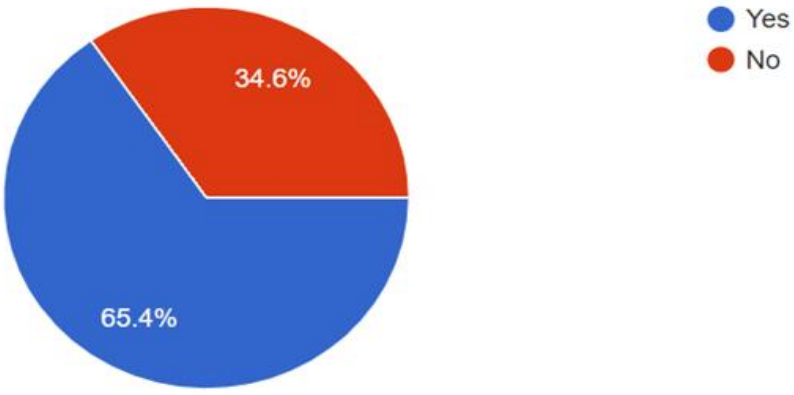

Figure 14: Follow Up Doctor

b) Discussion

This poll found that 65.4% of patients routinely follow up with their doctors. 34.6% of patients are not routinely followed up with.

5.12 Medicine suggested by doctor

a) Results

Which type of drugs you have been taken?

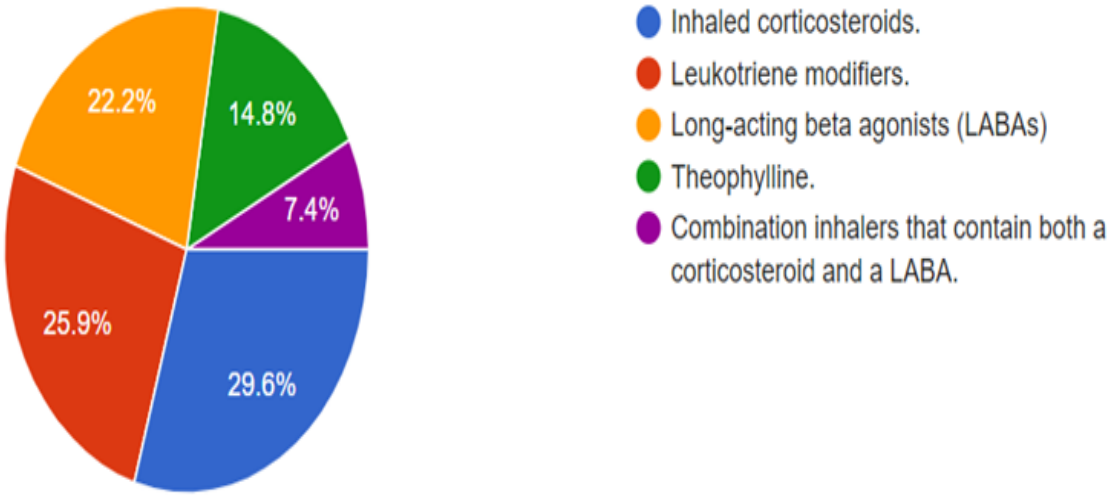

Figure 15: Medicine suggested by doctor

b) Discussion

Leukotriene modifiers are a medication that 25.9% of the respondents to this study use. 29.6% of participant's report using inhaled corticosteroids. 22,2% of persons use long-acting beta-agonists (LABAs). A whopping 14.8% of persons use theophylline. 7.4% of users of inhalers that contain both corticosteroids and LABAs.

5.13 Effect On Lifestyle

a) Result

Does asthma effect on your lifestyle?

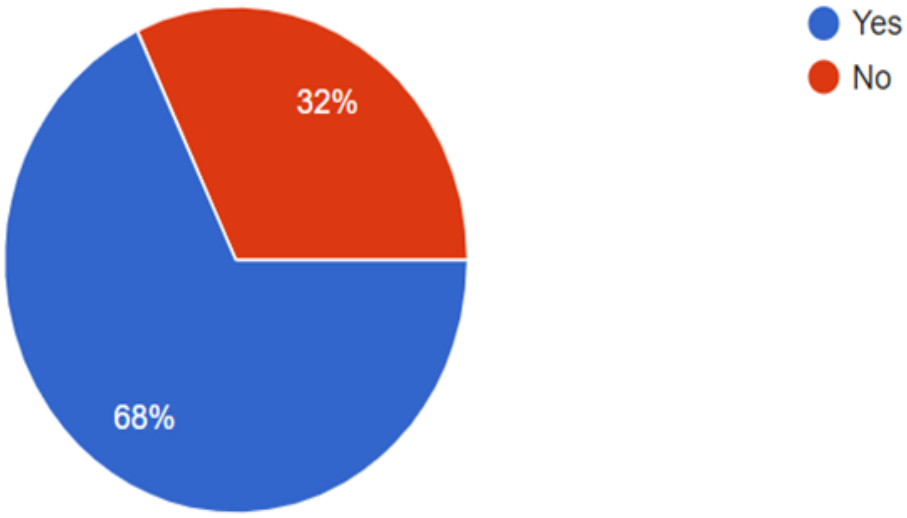

Figure 16: Effect On Lifestyle

b) Discussion

According to this survey, 68% of people think asthma affects their lifestyle. 32% of people think it has no effect.

Chapter six
Conclusion

6.1 Conclusion

Asthma is a significant chronic problem that occurs in clinically significant morbidity, missed days of work or school, high costs for hospitalization and emergency care, and in some cases, death. People who are taking current asthma medications may be able to control their symptoms and prevent long-term airway problems. The survey found that 35.7% of respondents had the misconception that allergies are the root cause of asthma. It is believed by 21.4% of individuals to be caused by the common cold. 17.9 percent of respondents believe that air pollution is to blame for it. 61.5 % of the individuals in this study said that they use Medication. 38.5% of the population does not use any kind of medicine & also 37% of adults use an inhaler to treat their asthma.

Chapter seven
Reference

Reference

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