



Daffodil
International
University

Project on

“Survey on Asthma: it's causes, management and creation of patient’s awareness in Daffodil International University”.

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

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APPROVAL

This project paper on Asthma: its causes, management, and raising patient awareness at Daffodil International University was accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Pharmacy and was given the thumbs up for both its style and contents.

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By signing, I certify that the project report, Survey on Asthma: Its Causes, Management, and Raising Patient Awareness at Daffodil International University, was completed by me under the guidance of Md.Shajib Khan, Lecturer, Department of Pharmacy, Faculty of Allied Health Sciences, Daffodil International University. I hereby claim originality for this Project. I hereby also certify that neither this project nor any of its components have been submitted elsewhere for the purpose of receiving a bachelor's degree or any other degree.

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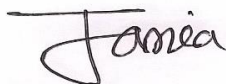
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Tania Akter

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My Parents

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

Abstract

Your airways narrow, swell, and produce an excessive amount of mucus as a result of the illness known as asthma. This could make breathing challenging, causing coughing, wheezing (whistling) when exhaling, and shortness of breath. For some people, having asthma is a minor irritation. The test starts with a review and 20 qualifying questions. There are about 100 volunteers who are interested in participating in this study. The Daffodil International University was the subject of this actual research. This study aims to pinpoint asthma's underlying causes. The poll revealed that 88.8% of participants believed allergens were the primary cause of asthma. 52% of people think that the common cold is to blame for it. According to 56% of respondents, the problem is caused by air pollution. Approximately 32% of people think that a certain dish is to blame. One particular medication was blamed for it, according to 24% of respondents.

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1.1 Introduction

Asthma is the medical term for this chronic inflammation of the airways in the lungs. This syndrome is characterized by a number of symptoms, such as reversible airflow restriction and easily triggered bronchospasms. [1] Among other symptoms of asthma are wheezing, tightness in the chest, and shortness of breath.

These occasions can happen as often as once day or once or twice weekly. Depending on the person, asthma symptoms may get worse at night or when exercising. Asthma is thought to be inherited, as well as influenced by one's surroundings. Environmental factors include things like allergies and exposure to air pollution. Beta-blockers and aspirin are a couple of additional medications that could cause an allergic reaction. A diagnosis is made based on the symptom pattern, treatment response over time, and spirometry lung function testing. [3] Based on the frequency of symptoms, forced expiratory volume in one second (FEV1), and peak expiratory flow rate, asthma can be categorized. [4-8] It can also be divided into two categories: people who are prone to type 1 hypersensitivity reactions and people who are not.[9-10] There is no known cure for asthma. It is extremely treatable, though. Utilizing inhaled corticosteroids and avoiding triggers like allergens and respiratory irritants can both help with symptom relief.[11]If long-acting betaagonists (LABA) and anti-leukotriene medications are needed to manage asthma symptoms after inhaled corticosteroids have failed to do so, this is possible.[12]Short-acting beta-2 agonists like salbutamol and corticosteroids are frequently used to address symptoms that are rapidly getting worse.[13] In the most severe situations, corticosteroids, magnesium sulfate, and hospitalization may all be required. [14-15] In 2019, 461,000 individuals died as a result of asthma, which afflicted approximately 262 million people. In the underdeveloped world, deaths predominate. Since the 1960s,[16] the prevalence of asthma in children has dramatically increased.

Asthma and chronic bronchitis have been studied as far back as Ancient Egypt. [17] The word "asthma" in English has its roots in the Greek word for panting, asthma.

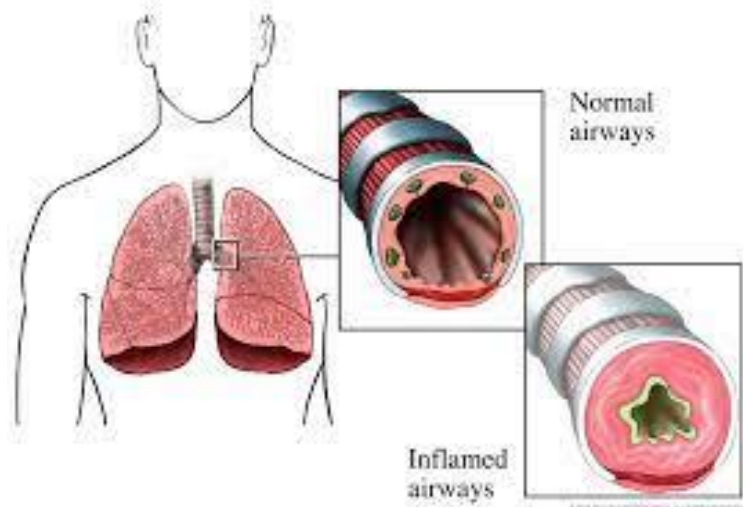


Figure 01 : Asthma

1.2.History

[18] In ancient Egypt, kyphi, a type of incense blend, was used to treat asthma. Our current name, which was first used by Hippocrates around 450 BC, derives from the Greek word for "panting." It was believed that, at least in part, emotions were to fault in 200 BC. In the 12th century, Jewish physician and philosopher Maimonides wrote an Arabic book on asthma that listed numerous dietary and other forms of treatment while outlining the need of a healthy environment and pure air. [19] One study from 1873 attempted to explain the pathophysiology of asthma, while another from 1872 suggested that applying chloroform liniment to the chest could alleviate asthma. [20-21] In 1880, a drug called pilocarpine was administered intravenously as a form of treatment. [22] F. H. Bosworth asserted this connection between hay fever and asthma in 1886. [23] Epinephrine was initially utilized to treat asthma in 1905. [24] Oral corticosteroids were first used in the 1950s, while inhaled corticosteroids and selective short-acting beta-agonists first gained widespread use in the 1960s. [25-26] In the 19th century, Theodore Roosevelt (1858–1919) was a notable and well-researched example. There weren't many possibilities for treatment back then. Roosevelt's boyhood was influenced by his asthma-related health issues in part. He and his parents were horrified by the sense of being suffocated when he had an asthma attack at night. [27] In the 1930s

through the 1950s, asthma was regarded as one of the "holy seven" psychosomatic disorders. Psychoanalysis and other talk therapies were therefore often utilized as treatments. [28] Psychoanalysts who considered asthmatic symptoms as an expression of the child's longing for its mother to be heard and heard again believed that people with asthma are more prone to depression. [29]A French appeals court overturned a deportation order against a 40-year-old asthmatic Bangladeshi man in January 2021. His legal team claimed that Bangladesh's high levels of pollution could harm his health or perhaps cause his demise.

1.3 Epidemiology

[30] Globally, asthma affects over 262 million people, and it causes about 461,000 fatalities annually. Depending on where you reside, the prevalence might range from 1 to 18 percent. It occurs more frequently in the developed world than the developing world. The rates are lower in Asia, Eastern Europe, and Africa. It affects the poor more frequently in developed nations than the wealthy do in developing ones. These differences' fundamental reasons are still a mystery. Over 80% of fatalities take place in developing and middle-income countries. Both sexes are equally likely to have severe asthma, despite the fact that boys are twice as likely as girls to have it. However, adult women are more likely to develop the condition than adult men, and children are more likely to do so than adults. The most common reason for hospitalization in the US in 2011 was children's asthma, which accounted for more than 900,000 ER visits in 2010. [31] [32] Since the 1970s, when it was first acknowledged as a significant public health issue, there has been a tremendous increase in the prevalence of asthma globally. Since the middle of the 1990s, asthma rates have been stable in developed nations. However, they have recently increased, with the majority of the increase taking place in developing nations. [34] Asthma affects 7% of people in the United States and 5% of people in the United Kingdom. [35] The average for the three nations is between 14 and 15 percent. [36] Compared to the average for the European Union, the number of asthma deaths in the UK increased by almost 5% over the period of three years, from 2011 to 2015. [37] Children with asthma symptoms are more likely to visit the doctor after the start of school in September. [38] According to population-based epidemiological research, acute respiratory infections, asthma, and the emergence of severe asthma with irreversible airflow limitation are all related over time. This is referred to as the "overlap" syndrome between asthma

and chronic obstructive pulmonary disease, or ACOS. [39-41] According to data from prospective studies, ACOS is a severe form of asthma that frequently requires hospitalization. It results from early-onset asthma that has developed into airflow obstruction.

1.4. Types of asthma

The causes and methods that asthma can present themselves are many, but the triggers are frequently the same. They may fit into a number of broad categories, including:

- Allergic asthma
- Aspirin-induced asthma
- Cough-variant asthma
- Exercise-induced asthma
- Nighttime asthma
- Steroid-resistant asthma
- Occupational asthma

The most common types of asthma are covered in the sections below:

Childhood asthma

Asthma in children is the most prevalent chronic condition. Although it can affect anyone at any age, children are more likely to experience it than adults. In 2019, 12 to 14-year-old youngsters had the highest prevalence of asthma. According to Trusted Source, 10.8% of people in this age group were affected by the condition. Children between the ages of 5 and 14 had the second-highest frequency, averaging 9.1%. In the same year, 8% of adults over the age of 18 developed asthma.

According to the American Lung Association (ALA), some typical pediatric asthma triggers include:

- colds and respiratory illnesses
- allergies

- cigarette smoke, including secondhand tobacco smoke
- air pollutants, such as ozone and particle pollution, both indoors and outside
- exposure to cold air
- sudden changes in temperature
- excitement
- stress
- exercise

It's important to get medical attention straight away if a child develops asthma since it could be fatal. Your physician can advise you on the most effective ways to approach your issue. When children get older, their asthma may occasionally get better. However, it is a chronic condition for many people.

Adult-onset Asthma

Any age, even as an adult, can experience the onset of asthma. Reliable sources: Among the elements that influence the likelihood of acquiring asthma in adulthood:

- respiratory illness
- allergies and exposure to allergens
- hormonal factors
- obesity
- stress
- smoking

Occupational Asthma

Because of exposure to an allergen or irritant at work, occupational asthma develops. About 1 in 6 cases of adult-onset asthma have a work-related origin. Furthermore, 21% of working adults who have asthma report that their symptoms get worse at work. Workplaces that are both indoor and outdoor can expose a person to asthma triggers.

Difficult-to-control and severe asthma

According to a 2014 study, 5% to 10% of asthmatics had a severe version of the disease. Some people experience severe symptoms for reasons other than asthma. For instance, they might not understand how to use an inhaler correctly. Some people may be in danger of dying from allergies. Many patients with asthma do not react to treatment, despite taking high amounts of medication or using inhalers properly. This type of illness affects 3.6% of asthma sufferers. Eosinophilic asthma is a different type of asthma that, in severe cases, may not respond to conventional therapies. Traditional asthma medications can help some people with eosinophilic asthma regulate their symptoms, but other people may benefit from biological therapies. One kind of biological therapy can lower eosinophils, a type of blood cell linked to an allergic reaction that can lead to asthma.

Seasonal Asthma

This type of asthma is brought on by seasonal allergens in the environment, which are only present at certain times of the year. Cold air in the winter or pollen in the spring or summer can also cause seasonal asthma. People with seasonal asthma continue to have the condition the rest of the year, even though they typically don't experience symptoms. It's crucial to remember that allergies aren't the only factor in asthma development.[42]

1.5 Signs and Symptoms of Asthma

Asthma is characterized by bronchial constriction and mucus buildup in the airways, and symptoms include sneezing, runny nose, and breathing difficulties. [9] Long-term and short-term lung changes might result from asthma symptoms. The effect may be that symptoms worsen and increase in frequency.



Figure 02 : Signs and Symptoms of Asthma

Frequent Symptoms

The four classic signs of asthma are:

- Wheezing
- Coughing
- Chest tightness
- Shortness of breath

Wheezing: As you inhale, make a whistling or squeaking noise. Asthma sufferers and their loved ones are more likely to become concerned about this symptom. Poor asthma control is frequently indicated by wheezing that may be heard on both the inhalation and exhale sides of the breath. Inflammation results in bronchoconstriction, which narrows the airways, making breathing more

difficult. 1 Stridor, which is a high-pitched sound that differs from wheezing, is a symptom of croup. They are therefore very different from one another. A barrier external to the lung may be the cause of stridor, or a reduction in airflow.

Coughing: Asthma frequently causes coughing, especially if it disturbs sleep or gets worse during night. A chronic cough may make it more difficult for some asthmatics to keep their condition under good control. Patients with asthma who cough at least twice a month at midnight may benefit from taking more medication.

Chest Tightness: Patients say they feel like they are suffocating because the air isn't moving. The expression "it's just tight" is used frequently. It may be very upsetting for someone to be frightened they won't be able to breathe regularly.

Shortness of Breath: Knowing what causes shortness of breath is crucial because it is a typical symptom of asthma. The medical terms "dyspnea" and "air hunger" both refer to the inability to breathe. Some people experience the symptom immediately, while others do so gradually over a period of months or years. Many different people have expressed their experience with shortness of breath using a wide variety of words. Some people frequently find themselves unable to accomplish as much as they formerly could and tire far more quickly. Some people might find that they need to take a second breath before they can fully exhale, while others might find that their chest tightens frequently. Exercise or high-altitude travel should never cause you to feel out of breath. Even with mild exercise, obese patients may develop shortness of breath. [43-44]

Symptom Pattern

Asthma symptoms can appear and disappear throughout the day, however they are typically more severe at night or in the morning when sleep deprivation is more prevalent. If you have a cold or another infection, your asthma symptoms could become worse. There are numerous causes that might cause asthma symptoms. [45]

Rare Symptoms

Cough-variant Coughs that are dry and hacking are symptoms of asthma. When you perspire frequently, your body doesn't have enough air to function properly. If you're breathing quickly (every two seconds or less in adults), it's conceivable that your lungs aren't getting enough air.

Restricted breathing might lead to increased focus issues and lack of sleep. Anxiety and fatigue have been listed as symptoms. [46-47]

1.6. Causes

Health professionals concur that environmental factors and genetics play a substantial role in asthma, despite the fact that the specific etiology of the disease is unknown. Sensitization to an allergen, for instance, may act as both the cause and the trigger. [48] Additional root causes and triggers are covered in detail in the sections that follow:

Pregnancy

According to a 2020 study that will be released, pregnant women who smoke are more likely to develop asthma later in life. Some women's asthma symptoms may get worse during pregnancy.

Obesity

According to a 2018 study (Trusted Source), obesity has been linked to a higher risk of developing asthma in both children and adults. Obesity in people can lead to worse symptoms, which occur more frequently, as well as a lower quality of life. There is a possibility that the medication won't work as well on them.

Allergies

When a person's immune system overreacts to a particular allergen, an allergy results. A person is more likely to have an allergic reaction if they come into touch with the allergen again after developing sensitization. The most prevalent type of asthma is that brought on by allergies. An allergen inhaled may result in asthma symptoms.

Smoking tobacco

The American Lung Association claims that smoking can make asthma symptoms worse. The secondhand smoking might also have an impact on the lungs. As a result, a patient's therapeutic response and lung airflow can suffer.

Environmental factors

Air pollution, both at one's home and outdoors, can affect the development and triggers of asthma. Some allergens inside the house include:

- mold
- dust
- animal hair and dander
- fumes from household cleaners and paints
- cockroaches
- feathers

Other triggers in the home and outdoors include:

- pollen
- air pollution from traffic and other sources
- ground-level ozone

Stress

Stress is just one of the many emotions that might trigger an asthma attack. An asthma attack may be brought on by intense emotions like joy or sorrow, horror or revulsion, or even a combination of these. Apparently, there may be some connection between asthma, depression, and anxiety, according to a reliable source.

Genetic factors

According to the American Lung Association (ALA), hereditary characteristics may have an impact on a person's lifelong risk of developing cancer. Children with asthmatic parents are more likely to develop the condition themselves.

Hormonal factors

Men are 6.1% more likely than women to have asthma, according to recent research. Symptoms may also be influenced by a person's menstrual cycle and other life events, such as menopause.

A Trustworthy Source. Because a woman's progesterone and estrogen levels are lower during her period than at other times of the month, her symptoms may be more severe. Perimenstrual asthma

is the name given to this illness by medical professionals. Each person's sensitivity to hormones and asthma is different, and there are many different ways that these two conditions interact. In some people, a drop in estrogen levels during menopause may make this disease worse or even cause it. Some women may see a decrease in their asthma symptoms with menopause, however others may experience an increase. Airway immune activity may potentially be influenced by hormonal action. When someone has intermittent asthma, symptoms only occasionally appear. [49-50]

1.7. Diagnosis

Despite being a well-known illness, there is no universally accepted definition of asthma. It is described as "a long-term inflammation of the airways involving a variety of cells and cellular components" by the Global Asthma Initiative. Chronic inflammation is associated with a hyperresponsiveness of the airways that results in nighttime or early morning wheezing, chest tightness, coughing, and shortness of breath. In these times, an extensive and changeable lung airflow obstruction is typically reversible, either naturally or with treatment. It's also a smart move. As there is currently no reliable test available, diagnosis is based on the pattern of symptoms and the response to treatment over time. A diagnosis of asthma may be determined based on persistent wheezing and coughing that are aggravated or made worse by physical activity, viral diseases, allergens, or air pollution. Spirometry is then used to confirm the diagnosis [51]. [51] It is more difficult to diagnose children under the age of six because spirometry cannot be used on them. [52]

Spirometry

Spirometry is a recommended diagnostic and therapeutic tool. [54-55] It is the de facto method for identifying asthma. If the FEV1 measured by this method increases by at least 200 milliliters and by more than 12 percent, a bronchodilator such salbutamol should be given.

However, this might be typical in people who have a history of moderate asthma that isn't currently causing any symptoms. Since coffee is a bronchodilator in asthma patients, drinking it before a lung function test could affect the results. [55] The ability of a single breath to diffuse several

substances can help distinguish between asthma and chronic obstructive pulmonary disease (COPD).



Figure 03 : Spirometry

Others

During the methacholine challenge, the amount of a substance that causes airway obstruction is inhaled increases. A score of zero means that a person does not have asthma, while a result of 100% means the exact opposite. Examples of supporting data include at least three days per week for at least two weeks, a 20% increase in peak expiratory flow rate after treatment with salbutamol, inhaled corticosteroids, or prednisone, or a 20% decrease after exposure to a trigger.[57] Due to the wide range of possible results, PDF testing is less dependable than spirometry.

Clinical classification

Asthma is categorized in the clinical context using the frequency and severity of symptoms, FEV1, and peak flow rate. The distinction between atopic (extrinsic) and non-atopic (intrinsic) asthma can also be made based on whether or not allergens cause symptoms (atopic) or not (non-atopic). Beyond this paradigm, which is focused on severity, there is currently no clear basis for identifying distinct asthma subgroups. Due to the vast range of possible outcomes, current research on asthma seeks to identify subgroups that benefit from various treatments. Despite being a chronic condition, asthma does not fall under the umbrella term "chronic obstructive pulmonary disease," which is only used to describe irreversible disease states like emphysema and advanced bronchiectasis. Asthma airway obstruction is typically reversible compared to other diseases, but unchecked

chronic inflammation from asthma can result in irreversible airway remodeling, which will permanently obstruct the lungs. Asthma affects the bronchi, whereas emphysema affects the alveoli. The term "overlap syndrome" (ACOS) is used to describe when a person has both asthma and chronic obstructive pulmonary disease (COPD). Compared to people with "pure" asthma or COPD, those with ACOS are more likely to die and suffer from morbidity.

Exercise-induced

Physical activity may cause bronchoconstriction in both asthmatics and non-asthmatics. It affects up to 20% of non-asthmatics and the majority of asthmatics [112]. [59] As a result of exertion, professional athletes are more prone to get bronchoconstriction. The highest rates are found among cross-country skiers, swimmers, and cyclists. [60] Although it can occur in any climate, it is more frequent in dry and chilly environments. [61] There is no proof that oral beta2-agonists boost strength and endurance in healthy adults, although there is evidence that inhaled beta2-agonists improve athletic performance in people without asthma. [62-64]

Occupational

Asthma can be brought on (or made worse) in the workplace by a number of exposures. [65] There are many more cases, even if many go unreported and unidentified. [66] In 5-25% of adult asthma cases, the workplace is thought to be the culprit. Some of the most notable offenders include isocyanates, grain and wood dust, colophony, soldering flux, latex, animals, and aldehydes. The vocations with the biggest risk of problems are those that involve working with animals, such as welders, hairdressers, and lumber workers. [67] Asthma can be brought on (or made worse) in the workplace by a number of exposures. [65] Despite the fact that many instances go unreported and unidentified, there are many more. [66] In 5-25% of adult asthma cases, the workplace is thought to be the culprit. grains, wood particles, and isocyanates, The main offenders include colophony, soldering flux, latex, animals, and aldehydes. The vocations with the biggest risk of problems are those that involve working with animals, such as welders, hairdressers, and lumber workers.

Aspirin-induced Asthma

Aspirin-exacerbated respiratory disease (AERD), often known as aspirin-induced asthma, affects up to 9% of patients with asthma. [68] AERD (such as ibuprofen and naproxen) includes respiratory

reactions to aspirin and other NSAIDs (such as aspirin), nasal polyps, sinusitis, and asthma. [69] Many persons who drink alcohol experience a loss of smell and respiratory reflexes.[70]

Alcohol-induced Asthma

Alcohol use worsens asthma symptoms for up to one-third of asthma sufferers.

Some racial groups may be more susceptible to this, including the Japanese and those who have asthma brought on by aspirin. Numerous studies have demonstrated that alcohol can reduce the symptoms of asthma. [71]

non-atopic asthma

Non-atopic variants of the disease, commonly referred to as intrinsic or nonallergic types, affect 10% to 33% of patients with asthma. Skin testing is inconclusive for typical inhalant allergies. Later in life, the illness is more likely to affect women than it is men. Some treatments may not have the desired effects. [72] Epidemiological data that "non-atopic" is synonymous with "nonallergic" is called into question in light of epidemiological data showing a strong correlation between the prevalence of asthma and serum IgE levels standardized for age and gender (P0.0001), which suggests that asthma is almost always associated with some sort of IgE-related reaction and therefore has an allergic basis.[73] In a recent comprehensive review and meta-analysis, the PAR for *C. pneumoniae*-specific IgE was reported to be 47%.

Infectious Asthma

Patients with asthma may claim that they first became aware of their symptoms after becoming ill with anything affecting the lower respiratory system. To distinguish infection-related asthma from the well-known link between respiratory infections and asthma exacerbations, it has been named the "infectious asthma" (IA) syndrome or "asthma associated with infection" (AAWI). IA prevalence among adults has been observed to range from roughly 40% in a primary care setting [75] to 70% in a clinic that focuses on treating patients with severe asthma. [76] The true prevalence of IA in adult-onset asthma is unknown due to memory and training issues, and doctors are not trained to ask about this type of history.

Differential diagnosis

Asthma-like symptoms can also be brought on by a wide range of medical conditions. Children may experience symptoms from upper airway problems such as allergy rhinitis, sinus infections, and others.

Foreign body aspiration, laryngotracheal malacia, enlarged lymph nodes, and neck tumors that can cause airway obstruction are some additional causes of airway obstruction. [77] Infections with viruses, such as bronchiolitis, can also induce wheezing. Congestive heart failure, airway masses, COPD, and ACE inhibitors can all cause similar symptoms in adults. Similar symptoms of vocal cord dysfunction may appear in both populations. [79] Asthma and COPD may coexist, or COPD may manifest as a complication of persistent asthma. Most people with asthma and chronic obstructive pulmonary disease (COPD) start experiencing symptoms beyond the age of 65. In this scenario, COPD is distinguished by increased smooth muscle in the bronchi, abnormal wall thickness, and increased airway neutrophils. This level of research is not done, though, because long-acting betaagonists, corticosteroids, and quitting smoking are used to treat COPD and asthma. [80] It has symptoms that are quite similar to those of asthma. Smokers, older individuals, those with poorer symptom reversibility following bronchodilator usage, and those without a family history of atopy are more likely to experience it.[81-82]

1.8 Complications

Uncontrolled asthma can lead to bronchial remodeling, or the bronchi's gradual constriction. 6 The body's natural tissues are replaced with scar tissue. Smoking can result in symptoms that are comparable to COPD symptoms.

Infants and Children

Infants and children with asthma are fairly prevalent. Infants may experience symptoms that are comparable to those of adults, but they may also have trouble swallowing and make noises when being fed. Since there is no definitive test for asthma, it cannot be identified in newborns. As your child gets older, the wheezing may stop on its own. Between 40 and 50 percent of babies have a respiratory illness, which makes them wheeze more frequently. Atopic dermatitis, food allergies,

and allergy symptoms in infants are all risk factors for developing asthma, according to the asthma prediction index (API). Children who are worn out might not be as interested in sports or other forms of social interaction. A young toddler might express pain in her chest.

Pregnant Women

Oxygen levels for both the mother and the fetus are decreased by poorly controlled asthma during pregnancy. Any of the following issues could result from this:

- Infant death
- Preterm delivery
- Miscarriage
- Bleeding before and after delivery
- Depression
- Preeclampsia or pregnancy-induced hypertension
- Blood clots or pulmonary embolism
- Congenital malformations
- Hyperemesis

1.9 Management

Although its symptoms can be controlled, asthma is a chronic condition. [86] The best way to treat asthma is to avoid triggers like aspirin, aspirin use, and triggers like smoking, pets, and aspirin. If avoiding the triggers in question doesn't work, medication may be used. When choosing a pharmaceutical treatment, among the factors taken into account are the severity of the illness and the frequency of symptoms. Asthma medications that operate quickly and slowly can be categorized into two main categories. [87-88] The medications for asthma listed here have been proved to lessen symptoms. Their "real world" effectiveness is however constrained because more than 50% of asthmatics worldwide experience persistent unsatisfactory symptoms despite receiving treatment. [89-91] Patients with "refractory asthma" (also known as "difficult to treat" asthma) may not have their asthma well managed because they are unable or unwilling to take the recommended amounts of their asthma treatments. It is impossible to distinguish between the "refractory" and "difficult to treat" groups in patients who have never used the recommended

dosages of asthma medications. The majority of asthma patients were not included in the asthma efficacy trials that form the basis of the current recommendations for pharmacological therapy.

survey on the causes, treatment, and development of people with asthma Awareness at the medical college in Dhaka.

It is advised to take bronchodilators just temporarily. There is no need for additional treatment if the incidence only sometimes occurs. If you experience more than two episodes of a mild chronic sickness each week, you should take a leukotriene antagonist or a mast cell stabilizer by mouth. Patients with asthma who experience recurrent attacks are given a higher dose of inhaled corticosteroids. Oral corticosteroids are added to the treatment plan if the exacerbation is moderate or severe. Patients with asthma are more likely to experience anxiety, stress, and sadness. This has been connected to a decline in asthma management [92]. CBT may help asthma patients control their condition, reduce their anxiety, and improve their quality of life. [93] By raising awareness of the condition among the populace and putting a written action plan into effect, asthma management can be improved. It is likely that education that is catered to a person's cultural background will be successful. [94] Long-term improvements in the safety of children with asthma can only be made if educators and families are better informed about the condition and are assisted in doing so by home and school-based interventions. School-based asthma self-management programs, which work to raise awareness of asthma, its triggers, and the value of routine medical checkups, may reduce the number of emergency department visits and hospitalizations. These therapies may aid in improving the quality of life for persons with asthma, in addition as decreasing the number of days a child experiences asthma symptoms. Additional research may be beneficial for adults with asthma who take part in group decision-making. Whether or not an asthma action plan that is specific to a person's requirements is beneficial or necessary. Some asthmatics use pulse oximeters to measure their own blood oxygen levels during an asthma attack. However, there is no proof that it is applied in these circumstances. [95]

Lifestyle modification

The key to better control and fewer attacks is to stay away from triggers. The most common causes include sulfite-containing foods, tobacco, air pollution, non-selective beta-blockers, and allergens. Smoking cigarettes and passive smoking can reduce a drug's ability to work, including

corticosteroids. Hospitalizations for asthma are decreasing as a result of smoke-free laws. The symptoms of asthma were unaffected by aerobic filtration, chemical mite kills, vacuuming, mattress covers, or any other dust mite control measures. Dehumidifiers have not been shown to be helpful for controlling asthma. Exercise on a regular basis can be beneficial for those with stable asthma. Yoga may help asthma patients live better lives and manage their symptoms. Before additional weight loss research can be done, it is important to better understand the quality of life, healthcare needs, and negative effects on the bodies of asthma patients of all ages.

Medications

The two primary categories of asthma medications are short-term therapy for quick relief and long-term therapies for long-term control.[97] Antibiotics are not required unless your symptoms suddenly get worse or if you have asthma at any time. [98-99]. Our ability to control our asthma is highly dependent on the medications we take. There are two broad categories of treatment, each with a specific focus. Taking medicines that control your asthma can help you avoid episodes. Our airways become less sensitive to triggers and less prone to inflammation as a result of taking these drugs. When you use quick-relief medications, sometimes referred to as rescue treatments, your airway muscles relax. [100-103] If you need to use a rescue medication more than twice per week, your asthma control is poor. Before exercising, asthmatics may take a beta-agonist, a fast-acting drug. With the aid of the proper medication, we ought to be able to live a regular, active life. Ask your doctor about trying a different medication if your asthma symptoms aren't under control.

Long-Term Control Medications

You'll need to regularly take some of these medications to keep your asthma under control. Others are occasionally used to decrease the severity of an asthma attack. The best course of action is to stop airway irritation. Anti-inflammatory drugs known as inhaled corticosteroids may be used with other treatments, such as beta-agonists. that last a long time. An agent that enlarges the airways is a bronchodilator, or beta-agonist. Anticholinergics are long-acting. Anticholinergics, often known as bronchodilators, which reduce lung airway tightness, make breathing easier [104–107]. Tiotropium bromide, also known as Spiriva Respimat, is an anticholinergic that can be used by anybody over the age of six. This is a good drug to use in addition to your normal maintenance

medication. Leukotriene modifiers stop the flow of chemicals that cause inflammation. Mast cell stabilizers halt the chemical release that causes inflammation. If your symptoms don't go away after using Theophylline or another bronchodilator, you may need additional treatment. If you have moderate to severe asthma brought on by allergies or another factor, and some drugs aren't helping your immune system, Your doctor might advise an injection of an immunomodulator if you have an inflammatory problem. The patient's immune system is maintained using the immunomodulator drug Reslizumab (Cinqair). You can take it along with other asthma treatments. This medication is injected intravenously over about an hour every four weeks. Eosinophils are a type of white blood cell that are reduced in the bloodstream by anti-inflammatory drugs. A drug called Nucala (mepolizumab) is used to lower blood eosinophil levels because it lessens severe asthma attacks. It is injected into the patient every four weeks throughout maintenance therapy. Asthma is treated with the immunoglobulin E (IgE)-inhibiting antibody omalizumab (Xolair).[108] This prevents an allergic reaction from occurring. This medicine is given intravenously. A patient must have a high IgE level and a high IgG level in order to be qualified for this treatment. allergies in the past. To confirm the allergy, a blood or skin test is necessary. Tezepelumab-Gekko (Tezspire) injectable is administered in addition to customary maintenance therapy to patients 12 years of age and older. It targets a molecule that causes inflammation in the airways, similar to other asthma drugs, to lessen inflammation in the airways.



Figure 04 : Reslizumab

Quick-Relief Asthma Drugs

With the help of these medications, asthma attack symptoms including coughing, tightness in the chest, and wheezing can be promptly relieved. Among them are:

Short-acting beta-agonists (bronchodilators)

Anticholinergics. Bronchodilators that work together with or in place of short-acting beta-agonists can be found here. Corticosteroids, which are anti-inflammatory medicines, are used to control symptoms.



Figure 05 : Ibuprofen

Inhalers, Nebulizers, and Pills as Asthma Medicine

Treatments for asthma can be given in a variety of ways. Common means of administration (which turn medication from a liquid to a mist) include metered-dose inhalers, dry powder inhalers, and nebulizers. Oral ingestion of medicines or liquids is sometimes necessary. There is a chance to Likewise, give them intravenously. Some medications for asthma interact well with one another. Additionally, you may use inhalers that incorporate two or more different medications[109].



Figure 06 : Inhaler

1.10. Literature Review

Hamid, Q., & Tulic, M. (2009). Immunobiology of Asthma. Annual Review of physiology, 71, 489-507.

Asthmatics' airways are overpopulated with eosinophils, mast cells, and activated T-helper lymphocytes. Bronchoconstriction, mucus formation, and bronchial remodeling are brought on by the mediators produced by these inflammatory cells. Cytokines, chemokines, and other mediators of inflammation. Histamine, immunoglobulins, lipid mediators, and growth factors. In allergic asthma, it might be challenging to manage the inflammation. Immunological memory is primarily produced when an adaptive immune response is established to an allergen. The onset of an allergic reaction causes ongoing inflammation and harm to the airways as a result. Th2 cytokines, which may also promote the production of other inflammatory mediators including cytokines and chemokines, are most frequently responsible for the inflammation in asthma. The immunobiology of asthma, as well as the morphological and functional abnormalities in asthmatic patients' lungs,

are discussed here in relation to these cytokines and chemokines. We'll talk about how cytokines interact with infectious pathogens and their involvement in asthma immunology.

Papiris, S., Kotanidou, A., Malagari, K., & Roussos, C. (2001). Clinical Review: severe asthma. Critical Care, 6(1), 1-15.

When defining severe asthma, it is important to take into account all cases of difficult/therapy-resistant illness in any age group as well as a significant portion of morbidity and mortality from asthma. A more-or-less rapid but nonetheless severe asthma attack known as status asthmaticus may not respond to standard treatment. A ventilation-perfusion imbalance, pulmonary hyperinflation, and increased breathing effort brought on by a constricted airway can all result in respiratory muscle exhaustion and possibly death. Nebulizations of oxygen and 2-agonists (continuous or repeated nebulization) are the two most common treatments for acute, severe asthma. Patients who do not respond well to continuous nebulization, who are unable or unwilling to participate, who are intubated and have not responded to inhaled medication, or who do not respond well to subcutaneous epinephrine or terbutaline should be administered. The exact timing of intubation is left up to the treating physician's judgment once an asthmatic patient has been diagnosed, although it should never be delayed. Gas is helped by mechanical ventilation. During intensive medical therapy, the patient's ventilatory muscles are exchanged and relieved of stress while their functional state is improved. Paralytic medications must not be administered to individuals who are mechanically ventilated after intubation. Patients with asthma are mechanically ventilated using permissive hypercapnia, longer expiratory periods, and greater patient-ventilator synchronization. To avoid issues and find the ideal window for weaning, the patient's health must be closely monitored. A well-thought-out strategy for averting future asthma attacks is essential after a successful course of therapy and before being released.

McCracken, J. L., Veeranki, S. P., Ameredes, B. T., & Calhoun, W. J. (2017). Diagnosis and management of Asthma in adults: a review. Jama, 318(3), 279-290.

Around 7.5% of adults in the population have asthma. People with asthma who receive an evidence-based diagnosis, monitoring, and treatment have better functioning and a higher quality of life. Wheezing, shortness of breath, and a persistent cough are all symptoms of asthma, which is a Clinical sickness with potential for episodic or chronic occurrence that affects the lower

respiratory system. Spirometry, which reveals an airway obstruction that is reversible, can be used to diagnose asthma. There may be clinically significant allergen sensitivity found. Acute asthma symptoms may be momentarily relieved by short-acting 2-agonists, but daily inhaled corticosteroids continue to be the cornerstone of treatment for those with chronic asthma issues. Patients may use a combination of long-acting 2-agonists and corticosteroids when corticosteroids alone are ineffective. It is insufficient to use long-acting 2-agonists that are breathed. Tiotropium, a long-acting anti-muscarinic medication, and a biological agent that targets a particular protein that causes asthma are two examples of these.

Maddox, L., & Schwartz, D. A. (2002). The pathophysiology of asthma. *Annual Review of Medicine*, 53(1), 477-498.

Airway inflammation, reversible airflow restriction, and persistent airway hyperreactivity are all symptoms of asthma, which is a long-term condition that affects the lungs. Asthma has a complicated and diverse etiology. Recently, genetics has been shown to have an important role in the development of asthma, especially atopic asthma. Asthma has also been connected to conditions that affect young children, like measles and mumps. These factors appear to be responsible for the Th-2 lymphocyte-predominant immunological response that has been associated with atopic illness. Additionally, IgE-mediated inflammation. Recently, reversible airflow blockage has also been called into question. The formation of an airflow blockage may be influenced by long-term changes in the airways. Numerous factors, both genetic and environmental, may have an impact on asthma phenotypes. As well as discussing the importance of Th-1 and Th-2 lymphocyte-mediated immunity, inflammatory mechanisms leading to chronic airway inflammation are discussed.

Edwards, M. R., Bartlett, N. W., Hussell, T., Openshaw, P., & Johnston, S. L. (2012). The microbiology of asthma. *Nature Reviews Microbiology*, 10(7), 459-471.

Asthma is still a significant human illness that causes significant morbidity and mortality on a global scale. The causes of asthma are multifaceted and comprise a complicated concoction of host genetic, immunological, and environmental variables. Furthermore, epidemiological research

indicates a strong correlation between respiratory pathogen infection and asthma. These pathogens include bacteria, fungi, and common respiratory viruses like the human respiratory syncytial virus, adenoviruses, coronaviruses, and influenza viruses. In this review, we outline the numerous contributions that microbes make to asthma risk, pathogenesis, and protection against the condition. We also go over the ways in which infections influence the prevalence and severity of asthma.

Cochrane, G. M., Horne, R., & Chanez, P. (1999). Compliance in Asthma. *Respiratory medicine*, 93(11), 763-769.

Most chronic illnesses, including asthma, are more challenging to manage when patients refuse to take their prescriptions as directed. There appear to be no effective solutions to cope with noncompliance, which has high medical and societal consequences. This difficult subject gotten more attention recently. There are two basic categories of non-compliance that have been identified: unintentional (or "accidental") and intentional (or "planned") non-compliance. Unintentional errors could result from ineffective doctor-patient communication or a failure to follow directions. Intentional non-compliance is defined as when a patient is aware of the expectations but nonetheless disobeys them. Healthcare professionals need to be aware that a number of variables may have an impact on patient compliance. Non-compliance is influenced by a number of factors, such as the complexity of the treatment plan, the delivery method, the way the patient views the therapy, and other psychological elements.

Purpose of the study

Your airways swell and tighten as a result of the disorder asthma, which increases mucus production. Breathing becomes more difficult when you start coughing, wheezing, or feel short of breath. Some people only experience a slight annoyance from their asthma.

My aim of this study is,

- To determine which age group is most susceptible to asthma.
- To learn about asthma's treatment regimen.

- In order to observe how asthma affects a person's daily routine.
- To identify the root cause of asthma.
- To create a new field of study.

4. METHODOLOGY

Type of study

It was a cross-sectional descriptive research. The study's findings are used to survey on Asthma: its causes, management and creation of patients awareness in Daffodil International University

Place of the study

Both the study group and the intended audience are university students. Daffodil International University (Ashulia) was chosen as the study's location.

Selection of the study place

The following criteria were used to choose the study location.

- Feasible to study.
- Easy to approach.
- Young generation.

Sampling Technique

The study's population consisted primarily of university students. A single open-ended and closed-ended questionnaire was used to collect data from 100 university students at Daffodil International University.

Period of study:

The time frame for this study was just one month, from February 10 to March 10, 2023.

Sample size:

The sample included about 100 Daffodil International University college students.

Selection criteria:

Undergraduate and graduate students who were running.

Data collection instrument

Both an open-ended and a closed-ended questionnaire were prepared as part of a structured interview schedule. On the basis of the Asthma: it's causes, management and creation of patients awareness in Daffodil International University, the questionnaire was created. The questionnaire was quite straightforward and simple to comprehend.

Procedure of data collection

A self-introduction session was held prior to data collection to explain the aim of data collection and ask for oral assent in order to ensure that the respondents understood the goals and objectives of the study. Data were acquired through in-person conversations and an online Google form using open-ended and closed-ended questions from the respondents. There is only one questionnaire used for one respondent. Once the interviewer has the respondents' answers to the questions, they complete the questionnaire.

Data processing and analysis

The questions were organized on a Google Form using the correct headings and sections. Consequently, a logical and practical automatic summary has been generated. The results were presented using graphs, percentages, and connections between the knowledge attitude and behaviors and the different components.

Gender

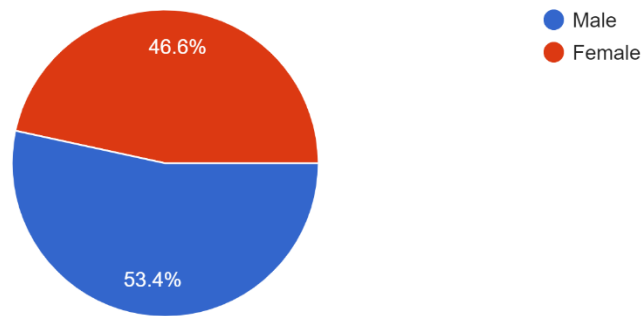


Figure: Gender

According to the survey's findings, 53.4 percent of men have asthma. 46.6 percent of women with asthma have respiratory system issues. As a result, it seems that asthma affects men more frequently than women.

The condition of having asthma

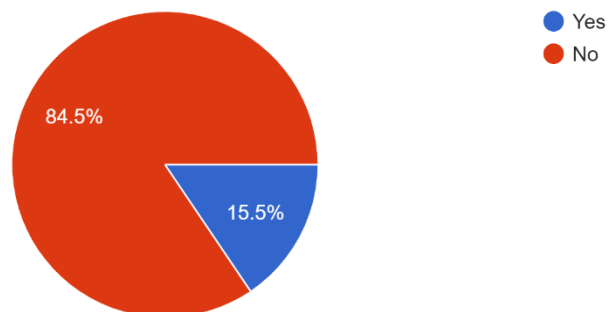


Figure: The condition of having asthma

According to the survey's findings, 84.5 percent of people have asthma. 15.5 % of people in the population are asthma symptom-free.

Duration

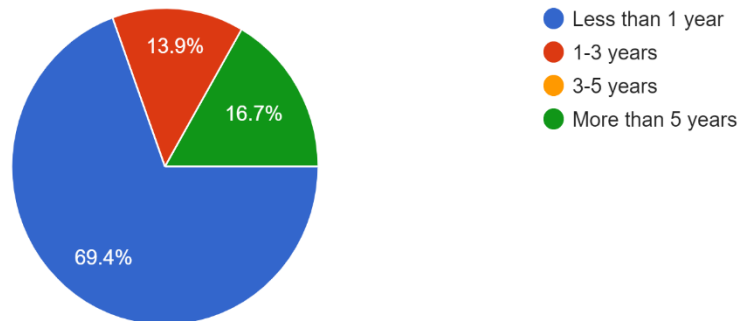


Figure: Duration

The results of this study show that 69.4 % of the individuals have had an asthma diagnosis for less than a year. Asthma has been identified in 13.9 % of people within the past three years. Asthma has been identified in 16.7 % of people within more than 5 years.

Caused By

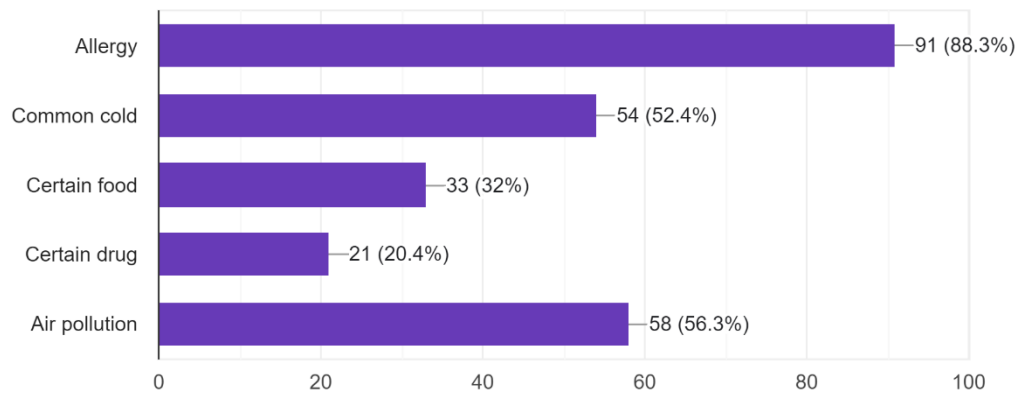


Figure: Cause

According to the survey, 88.3 percent's of participants believed that asthma is primarily brought on by allergies. 52.4 % of people think the common cold is to blame for it. According to 56.3 % of respondents, air pollution is to blame. 32 percent of people think that a specific dish is to blame. One particular medication was blamed for it, according to 20.4 % of respondents.

Taking Medication

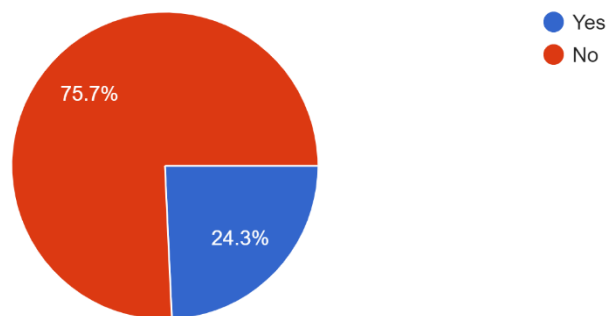


Figure: Medication

24.3 % of the participants in this study reported using medication. 75.7 % of people don't take any medication at all.

Family History

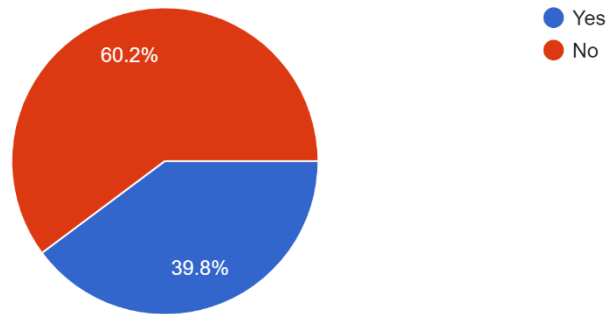


Figure: Family History

According to this survey, 39.8 percent of respondents had experienced asthma in the past. 60.2 % of participants report that asthma has never run in their families.

Genetically Diseases

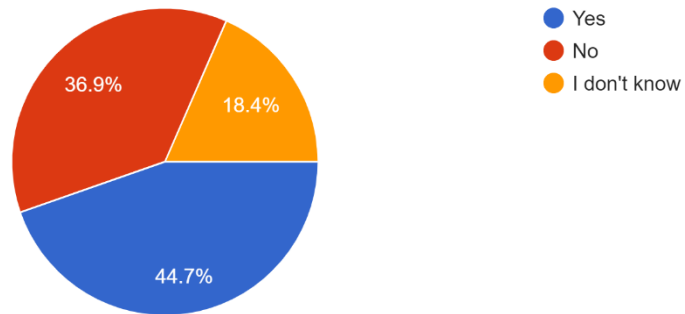


Figure: Genetically Diseases

44.7 percent of respondents to this survey believe that asthma is a genetic disease. A whopping 36.9 % of people believe it is not a genetic condition.

Follow Up Doctor

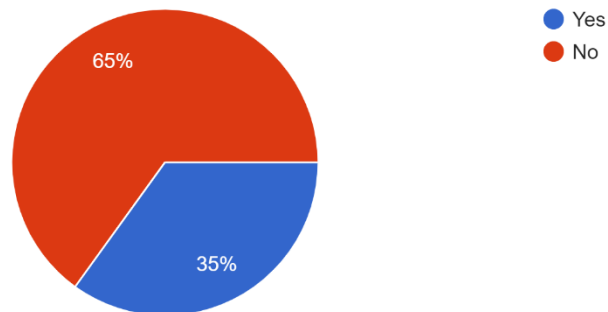


Figure: Follow Up Doctor

This poll found that 65% of patients follow up with doctors on a frequent basis. Only 35% of patients receive routine follow-up.

Type Of Drug

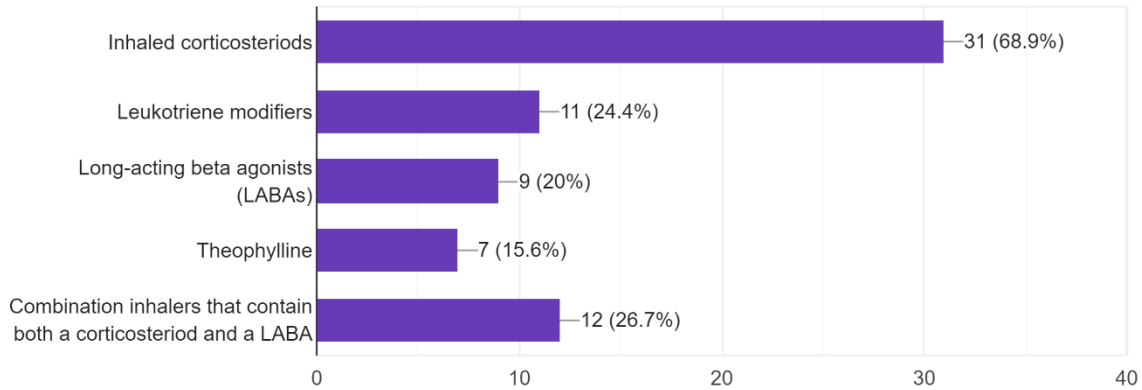


Figure: Type Of Drug

Leukotriene modifiers are a common form of medication, used by 24.4% of respondents. 68.9% of respondents report using corticosteroids for inhalation. 20 % of persons (LABAs) utilize long-acting beta-agonists.

Theophylline is a medication that 15.6% of people use. A corticosteroid and a LABA-containing inhaler is used by 26.7% of persons.

Effect On Lifestyle

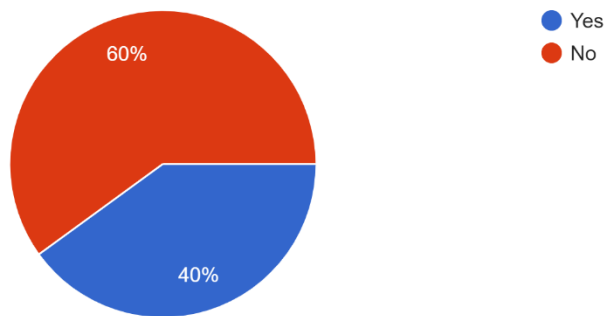


Figure: Effect On Lifestyle

40 % of respondents to this study believe that asthma has an impact on their way of life. 60 % of respondents believe it has no impact.

Conclusion

Asthma is a severe, long-term condition that can lead to clinically significant morbidity, missed days of work or school, substantial costs for emergency care and hospitalization, and in some circumstances, even death. People who have asthma may benefit from the current treatments to control their symptoms and prevent long-term airway abnormalities. I wanted to see how asthma affected someone's daily activities in this study. This poll found that 68% of respondents believe asthma impacts their way of life.

Reference

1. Ramya, A., Geetha, P., Nandhini, M., & Raja, M. (2019). The Role of Leukotriene Receptor Antagonist as an add on therapy to β 2-Agonists in Acute Asthma. *Research Journal of Pharmacy and Technology*, 12(4), 1974-1978.
2. Martinez, F. D. (2007). Genes, environments, development and asthma: a reappraisal. *European Respiratory Journal*, 29(1), 179-184.
3. Lemanske Jr, R. F., & Busse, W. W. (2010). Asthma: clinical expression and molecular mechanisms. *Journal of allergy and clinical immunology*, 125(2), S95-S102.
4. Harlow, K. E., Africa, J. A., Wells, A., Belt, P. H., Behling, C. A., Jain, A. K., ... & Yates, K. (2018). Clinically actionable hypercholesterolemia and hypertriglyceridemia in children with nonalcoholic fatty liver disease. *The Journal of pediatrics*, 198, 76-83.
5. Laskey, W. K., Jenkins, C., Selzer, F., Marroquin, O. C., Wilensky, R. L., Glaser, R., ... & NHLBI Dynamic Registry Investigators. (2007). Volume-to-creatinine clearance ratio: a pharmacokinetically based risk factor for prediction of early creatinine increase after percutaneous coronary intervention. *Journal of the American College of Cardiology*, 50(7), 584-590.

6. Teixeira, T. M. B. (2022). *Farmácia Saúde, Porto e Serviços Farmacêuticos do Hospital CUF Porto, Porto.*
7. Mulukutla, S. R., Marroquin, O. C., Vlachos, H. A., Selzer, F., Toma, C., Kip, K. E., ... & Williams, D. O. (2013). Benefit of long-term dual anti-platelet therapy in patients treated with drug-eluting stents: from the NHLBI dynamic registry. *The American journal of cardiology*, 111(4), 486-492.
8. Koolen, B. B., Pijnenburg, M. W. H., Brackel, H. J. L., Landstra, A. M., Van den Berg, N. J., Merkus, P. J. F. M., ... & Vaessen-Verberne, A. A. P. H. (2011). Comparing global initiative for asthma (GINA) criteria with the childhood asthma control test (C-ACT) and asthma control test (ACT). *European respiratory journal*, 38(3), 561-566.
9. Yawn, B. P. (2008). Factors accounting for asthma variability: achieving optimal symptom control for individual patients. *Primary Care Respiratory Journal*, 17(3), 138-147.
10. Jazz, A. M., Wali, M. K., & Fayadh, R. A. (2023, March). Respiratory temperature measurement to monitor asthma patients. In *AIP Conference Proceedings* (Vol. 2591, No. 1, p. 040003). AIP Publishing LLC.
11. . *Stedman's Medical Dictionary* (28 ed.). Lippincott Williams & Wilkins. 2005. ISBN 978-0-7817-3390-8.
12. Koolen, B. B., Pijnenburg, M. W. H., Brackel, H. J. L., Landstra, A. M., Van den Berg, N. J., Merkus, P. J. F. M., ... & Vaessen-Verberne, A. A. P. H. (2011). Comparing global initiative for asthma (GINA) criteria with the childhood asthma control test (C-ACT) and asthma control test (ACT). *European respiratory journal*, 38(3), 561-566.
13. Koolen, B. B., Pijnenburg, M. W. H., Brackel, H. J. L., Landstra, A. M., Van den Berg, N. J., Merkus, P. J. F. M., ... & Vaessen-Verberne, A. A. P. H. (2011). Comparing global initiative for asthma (GINA) criteria with the childhood asthma control test (C-ACT) and asthma control test (ACT). *European respiratory journal*, 38(3), 561-566.
14. Calapai, G., Casciaro, M., Miroddi, M., Calapai, F., Navarra, M., & Gangemi, S. (2014). Montelukast-induced adverse drug reactions: a review of case reports in the literature. *Pharmacology*, 94(1-2), 60-70.
15. Glauser, T. A., Roepke, N., Stevenin, B., Dubois, A. M., & Ahn, S. M. (2015). Physician knowledge about and perceptions of obesity management. *Obesity research & clinical practice*, 9(6), 573-583.

16. Anandan, C., Nurmatov, U., Van Schayck, O. C. P., & Sheikh, A. (2010). Is the prevalence of asthma declining? Systematic review of epidemiological studies. *Allergy*, 65(2), 152-167.
17. Manniche, L. (1999). *Sacred luxuries: fragrance, aromatherapy, and cosmetics in ancient Egypt*. Cornell University Press.
18. M Al Musawi, Z., Mahdi, A., Matrood, M., & AN Abood, H. (2017). Assessment of asthma severity by history and lung function study in school age children. *Kerbala Journal of Medicine*, 10(1), 2607-2612.
19. Rosner, F. (2002). The life of Moses Maimonides, a prominent medieval physician. *Einstein Quart J Biol Med*, 19, 125-8.
20. Thorowgood JC (November 1873). "On Bronchial Asthma ." *British Medical Journal*. 2
21. (673): 600. doi:10.1136/bmj.2.673.600. PMC 2294647. PMID 20747287.
22. Gaskoin, G. (1872). On the treatment of asthma. *British Medical Journal*, 1(587), 339.
23. Berkart, J. B. (1880). The treatment of asthma. *British medical journal*, 1(1017), 960.
24. Bosworth, F. H. (1885). Hay fever, asthma, and allied affections. In *Transactions of the Annual Meeting of the American Climatological Association (Vol. 2, p. 151)*. American Clinical and Climatological Association.
25. Doig, R. L. (1905). Epinephrin; especially in asthma. *California state journal of medicine*, 3(2), 54.
26. von Mutius, E., & Drazen, J. M. (2012). A patient with asthma seeks medical advice in 1828, 1928, and 2012. *New England Journal of Medicine*, 366(9), 827-834.
27. Crompton, G. (2006). A brief history of inhaled asthma therapy over the last fifty years. *Primary care respiratory journal*, 15(6), 326-331.
28. McCullough, D. (2001). *Mornings on Horseback: The Story of an extraordinary family, a vanished way of life and the unique child who became Theodore Roosevelt*. Simon and Schuster.
29. Opolski, M., & Wilson, I. (2005). Asthma and depression: a pragmatic review of the literature and recommendations for future research. *Clinical Practice and Epidemiology in Mental Health*, 1, 1-7.
30. "Bangladeshi man with asthma wins France deportation fight ." *The Guardian*. January 12, 2021. Retrieved January 12, 2021.

31. Weiss, A. J., Wier, L. M., Stocks, C., & Blanchard, J. (2014). Overview of emergency department visits in the United States, 2011.
32. Martin, M. A., Press, V. G., Nyenhuis, S. M., Krishnan, J. A., Erwin, K., Mosnaim, G., ... & CHICAGO Plan Consortium. (2016). Care transition interventions for children with asthma in the emergency department. *Journal of Allergy and Clinical Immunology*, 138(6), 1518-1525.
33. Grant, E. N., Wagner, R., & Weiss, K. B. (1999). Observations on emerging patterns of asthma in our society. *Journal of Allergy and Clinical Immunology*, 104(2), S1-S9.
34. Haque, M. A., Tarafder, M. K. H., Kabir, A. L., Pramanik, D., & Ahmed, M. U. (2017). Association of Nasal Polyposis with Bronchial Asthma. *Bangladesh Journal of Otorhinolaryngology*, 23(1), 11-18.
35. Anderson, H. R., Gupta, R., Strachan, D. P., & Limb, E. S. (2007). 50 years of asthma: UK trends from 1955 to 2004. *Thorax*, 62(1), 85-90.
36. Masoli, Matthew (2004). Global Burden of Asthma (PDF). p. 9. Archived from the original (PDF) on 2013-05-02.
37. . "Asthma-related death rate in the UK among highest in Europe, charity analysis finds ." *Pharmaceutical Journal*. May 3, 2018. Archived from the original on July 26, 2020. Retrieved August 13, 2018.
38. "Asthma attacks triple when children return to school in September NHS." *The UK*. July 3, 2019. Archived from the original on July 26, 2020. Retrieved August 23, 2019
39. Rantala, A., Jaakkola, J. J., & Jaakkola, M. S. (2011). Respiratory infections precede adult-onset asthma. *PLoS One*, 6(12), e27912.
40. Yeh, J. J., Wang, Y. C., Hsu, W. H., & Kao, C. H. (2016). Incident asthma and *Mycoplasma pneumoniae*: A nationwide cohort study. *Journal of Allergy and Clinical Immunology*, 137(4), 1017-1023.
41. Silva, G. E., Sherrill, D. L., Guerra, S., & Barbee, R. A. (2004). Asthma as a risk factor for COPD in a longitudinal study. *Chest*, 126(1), 59-65.
42. Boulet, L. P., & Boulay, M. È. (2011). Asthma-related comorbidities. *Expert review of respiratory medicine*, 5(3), 377-393.
43. George, R. B. (Ed.). (2005). *Chest medicine: essentials of pulmonary and critical care medicine*. Lippincott Williams & Wilkins.

44. British Guideline 2009, p. 14
45. Kaplan, A., van Boven, J. F., Ryan, D., Tsiligianni, I., Bosnic-Anticevich, S., & REG Adherence Working Group. (2021). GINA 2020: Potential Impacts, Opportunities, and Challenges for Primary Care. *The Journal of Allergy and Clinical Immunology: In Practice*, 9(4), 1516-1519.
46. Boulet, L. P. (2009). Influence of comorbid conditions on asthma. *European Respiratory Journal*, 33(4), 897-906.
47. Petsky, H. L., Kew, K. M., Turner, C., & Chang, A. B. (2016). Exhaled nitric oxide levels to guide treatment for adults with asthma. *Cochrane Database of Systematic Reviews*, (9).
48. Choudhry, S., Seibold, M. A., Borrell, L. N., Tang, H., Serebrisky, D., Chapela, R., ... & Burchard, E. G. (2007). Dissecting complex diseases in complex populations: asthma in latino americans. *Proceedings of the American Thoracic Society*, 4(3), 226-233.
49. Dietert, R. R. (2011). Maternal and childhood asthma: risk factors, interactions, and ramifications. *Reproductive toxicology*, 32(2), 198-204.
50. Tan, D. J., Walters, E. H., Perret, J. L., Lodge, C. J., Lowe, A. J., Matheson, M. C., & Dharmage, S. C. (2015). Age-of-asthma onset as a determinant of different asthma phenotypes in adults: a systematic review and meta-analysis of the literature. *Expert review of respiratory medicine*, 9(1), 109-123.
51. NHLBI Guideline 2007, p. 42
52. GINA 2011, p. 20
53. American Academy of Allergy, Asthma, and Immunology. "Five things physicians and patients should question" (PDF). *Choosing Wisely*. ABIM Foundation. Archived from the original (PDF) on November 3, 2012. Retrieved August 14, 2012.
54. National Asthma Education, Prevention Program (National Heart, Lung, & Blood Institute). *Second Expert Panel on the Management of Asthma*. (1998). Expert panel report 2: guidelines for the diagnosis and management of asthma (No. 98). National Institutes of Health, National Heart, Lung, and Blood Institute.
55. Welsh EJ, Bara A, Barley E, Cates CJ (January 2010). Welsh EJ (ed.). "Caffeine for asthma" (PDF). *The Cochrane Database of Systematic Reviews* (1): CD001112. doi:10.1002/14651858.CD001112.pub2. PMC 7053252. PMID 20091514.
56. NHLBI Guideline 2007, p. 58

57. Pinnock H, Shah R (April 2007). "Asthma BMJ". 334 (7598): 847–50.
doi:10.1136/bmj.39140.634896.BE. PMC 1853223. PMID 17446617.
58. NHLBI Guideline 2007, p. 59
59. Khan, D. A. (2012, January). Exercise-induced bronchoconstriction: burden and prevalence. In *Allergy & Asthma Proceedings* (Vol. 33, No. 1).
60. Khan, D. A. (2012, January). Exercise-induced bronchoconstriction: burden and prevalence. In *Allergy & Asthma Proceedings* (Vol. 33, No. 1).
61. GINA 2011, p. 17
62. Carlsen, K. H., Anderson, S. D., Bjermer, L., Bonini, S., Brusasco, V., Canonica, W., ... & Van Cauwenberge, P. (2008). Exercise-induced asthma, respiratory and allergic disorders in elite athletes: epidemiology, mechanisms and diagnosis: Part I of the report from the Joint Task Force of the European Respiratory Society (ERS) and the European Academy of Allergy and Clinical Immunology (EAACI) in cooperation with GA2LEN. *Allergy*, 63(4), 387-403.
63. Kindermann, W. (2007). Do inhaled B2-agonists have an ergogenic potential in non-asthmatic competitive athletes?. *Sports Medicine*, 37, 95-102.
64. Pluim, B. M., de Hon, O., Staal, J. B., Limpens, J., Kuipers, H., Overbeek, S. E., ... & Scholten, R. J. (2011). β 2-Agonists and physical performance: a systematic review and meta-analysis of randomized controlled trials. *Sports Medicine*, 41, 39-57.
65. Baur, X., Aasen, T. B., Burge, P. S., Heederik, D., Henneberger, P. K., Maestrelli, P., ... & Wilken, D. (2012). The management of work-related asthma guidelines: a broader perspective. *European Respiratory Review*, 21(124), 125-139.
66. Kinnamon I, ed. (2005). Evidence-based medicine guidelines. Chichester: Wiley. p. 214. ISBN 978-0-470-01184-3.
67. Frew AJ (2008). "Chapter 42: Occupational Asthma". In Castro M, Kraft M (eds.). *Clinical Asthma*. Philadelphia: Mosby / Elsevier. ISBN 978-0-323-07081-2.

68. Chang, J. E., White, A., Simon, R. A., & Stevenson, D. D. (2012, March). Aspirin-exacerbated respiratory disease: burden of disease. In *Allergy and asthma proceedings* (Vol. 33, No. 2, p. 117). OceanSide Publications.
69. "Aspirin Exacerbated Respiratory Disease (AERD)." www.aaaai.org. American Academy of Allergy Asthma & Immunology. August 3, 2018. Archived from the original on September 18, 2018. Retrieved August 2, 2018.
70. Kennedy, J. L., Stoner, A. N., & Borish, L. (2016). Aspirin-exacerbated respiratory disease: prevalence, diagnosis, treatment, and considerations for the future. *American Journal of Rhinology & Allergy*, 30(6), 407-413.
71. Adams, K. E., & Rans, T. S. (2013). Adverse reactions to alcohol and alcoholic beverages. *Annals of Allergy, Asthma & Immunology*, 111(6), 439-445.
72. Peters, S. P. (2014). Asthma phenotypes: nonallergic (intrinsic) asthma. *The Journal of Allergy and Clinical Immunology: In Practice*, 2(6), 650-652.
73. Burrows, B. (1989). Martinez FD, Halonen M, Barbee RA, Cline MG. Association of asthma with serum IgE levels and skin-test reactivity to allergens. *N Engl J Med*, 320, 271-277.
74. Hahn, D. L. (2021). Chlamydia pneumoniae and chronic asthma: Updated systematic review and meta-analysis of population attributable risk. *PLoS One*, 16(4), e0250034.
75. Hahn, D. L. (1995). Infectious asthma: a reemerging clinical entity?. *Journal of Family Practice*, 41, 153-153.
76. Hahn, D. L., Peeling, R. W., Dillon, E., McDonald, R., & Saikku, P. (2000). Serologic markers for Chlamydia pneumoniae in asthma. *Annals of Allergy, Asthma & Immunology*, 84(2), 227-233.
77. Wagshul, F. A., Brown, D. T., Schultek, N. M., & Hahn, D. L. (2021). Outcomes of antibiotics in adults with “difficult to treat” asthma or the overlap syndrome. *Journal of Asthma and Allergy*, 703-712.
78. NHLBI Guideline 2007, p. 46
79. Lichtenstein, Richard (2013). *Pediatric emergencies*. Philadelphia: Elsevier. p. 1022.
80. ISBN 978-0-323-22733-9. Archived from the original on 2017-09-08.
81. Gibson, P. G., McDonald, V. M., & Marks, G. B. (2010). Asthma in older adults. *The lancet*, 376(9743), 803-813.

82. Hargreave, F. E., & Parameswaran, K. (2006). Asthma, COPD and bronchitis are just components of airway disease. *European Respiratory Journal*, 28(2), 264-267.
83. Diaz, P. Knoell (2009). "23. Chronic obstructive pulmonary disease". *Applied herapeutics: the clinical use of drugs* (9th ed.). Philadelphia: Lippincott Williams & Wilkins.
84. Petsky, H. L., Kew, K. M., & Chang, A. B. (2016). Exhaled nitric oxide levels to guide treatment for children with asthma. *Cochrane Database of Systematic Reviews*, (11).
85. Keeney, G. E., Gray, M. P., Morrison, A. K., Levas, M. N., Kessler, E. A., Hill, G. D., ... & Jackson, J. L. (2014). Dexamethasone for acute asthma exacerbations in children: a meta-analysis. *Pediatrics*, 133(3), 493-499.
86. Ali, K. M., Amin, A. F., & Muhammed, A. K. (2019). An investigation into the effect of cigarette smoking on the severity and control of asthma in adults in Sulaimani City. *Revista Latinoamericana de Hipertensión*, 14(6), 675-681.
87. ^ Jump up to a b c d e NHLBI Guideline 2007, p. 213
88. British Thoracic Society. (2016). Scottish intercollegiate guidelines network. British guideline on the management of asthma, 58.
89. Rabe, K. F., Adachi, M., Lai, C. K., Soriano, J. B., Vermeire, P. A., Weiss, K. B., & Weiss, S. T. (2004). Worldwide severity and control of asthma in children and adults: the global asthma insights and reality surveys. *Journal of Allergy and Clinical Immunology*, 114(1), 40-47.
90. Demoly, P., Gueron, B., Annunziata, K., Adamek, L., & Walters, R. D. (2010). Update on asthma control in five European countries: results of a 2008 survey. *European respiratory review*, 19(116), 150-157.
91. FitzGerald, J. M., Boulet, L. P., McIvor, R. A., Zimmerman, S., & Chapman, K. R. (2006). Asthma control in Canada remains suboptimal: the Reality of Asthma Control (TRAC) study. *Canadian respiratory journal*, 13(5), 253-259.
92. Herland, K., Akselsen, J. P., Skjøsberg, O. H., & Bjermer, L. (2005). How representative are clinical study patients with asthma or COPD for a larger "real life" population of patients with obstructive lung disease?. *Respiratory medicine*, 99(1), 11-19.

93. Travers, J., Marsh, S., Williams, M., Weatherall, M., Caldwell, B., Shirtcliffe, P., ... & Beasley, R. (2007). External validity of randomised controlled trials in asthma: to whom do the results of the trials apply?. *Thorax*, 62(3), 219-223.
94. Lazarus, S. C., Chinchilli, V. M., Rollings, N. J., Boushey, H. A., Cherniack, R., Craig, T. J., ... & Fahy, J. V. (2007). Smoking affects response to inhaled corticosteroids or leukotriene receptor antagonists in asthma. *American journal of respiratory and critical care medicine*, 175(8), 783-790.
95. Stapleton, M., Howard-Thompson, A., George, C., Hoover, R. M., & Self, T. H. (2011). Smoking and asthma. *The Journal of the American Board of Family Medicine*, 24(3), 313-322.
96. Hayes, C. E., Nuss, H. J., Tseng, T. S., & Moody-Thomas, S. (2015). Use of asthma control indicators in measuring inhaled corticosteroid effectiveness in asthmatic smokers: a systematic review. *Journal of Asthma*, 52(10), 996-1005.
97. Kew, K. M., Yorke, J., & Nashed, M. (2015). Cognitive behavioural therapy (CBT) versus usual care for adults and adolescents with asthma. *Cochrane Database of Systematic Reviews*, (8).
98. Ali, K. M., Amin, A. F., & Muhammed, A. K. (2019). An investigation into the effect of cigarette smoking on the severity and control of asthma in adults in Sulaimani City. *Revista Latinoamericana de Hipertensión*, 14(6), 675-681.
99. ^ Jump up to a b c d e NHLBI Guideline 2007, p. 213
100. British Thoracic Society. (2016). Scottish intercollegiate guidelines network. British guideline on the management of asthma, 58.
101. Rabe, K. F., Adachi, M., Lai, C. K., Soriano, J. B., Vermeire, P. A., Weiss, K. B., & Weiss, S. T. (2004). Worldwide severity and control of asthma in children and adults: the global asthma insights and reality surveys. *Journal of Allergy and Clinical Immunology*, 114(1), 40-47.
102. Demoly, P., Gueron, B., Annunziata, K., Adamek, L., & Walters, R. D. (2010). Update on asthma control in five European countries: results of a 2008 survey. *European respiratory review*, 19(116), 150-157.

103. FitzGerald, J. M., Boulet, L. P., McIvor, R. A., Zimmerman, S., & Chapman, K. R. (2006). Asthma control in Canada remains suboptimal: the Reality of Asthma Control (TRAC) study. *Canadian respiratory journal*, 13(5), 253-259.
104. Herland, K., Akselsen, J. P., Skjøsberg, O. H., & Bjermer, L. (2005). How representative are clinical study patients with asthma or COPD for a larger “real life” population of patients with obstructive lung disease?. *Respiratory medicine*, 99(1), 11-19.
105. Travers, J., Marsh, S., Williams, M., Weatherall, M., Caldwell, B., Shirtcliffe, P., ... & Beasley, R. (2007). External validity of randomised controlled trials in asthma: to whom do the results of the trials apply?. *Thorax*, 62(3), 219-223.
106. Lazarus, S. C., Chinchilli, V. M., Rollings, N. J., Boushey, H. A., Cherniack, R., Craig, T. J., ... & Fahy, J. V. (2007). Smoking affects response to inhaled corticosteroids or leukotriene receptor antagonists in asthma. *American journal of respiratory and critical care medicine*, 175(8), 783-790.
107. Stapleton, M., Howard-Thompson, A., George, C., Hoover, R. M., & Self, T. H. (2011). Smoking and asthma. *The Journal of the American Board of Family Medicine*, 24(3), 313-322.
108. Hayes, C. E., Nuss, H. J., Tseng, T. S., & Moody-Thomas, S. (2015). Use of asthma control indicators in measuring inhaled corticosteroid effectiveness in asthmatic smokers: a systematic review. *Journal of Asthma*, 52(10), 996-1005.
109. Kew, K. M., Yorke, J., & Nashed, M. (2015). Cognitive behavioural therapy (CBT) versus usual care for adults and adolescents with asthma. *Cochrane Database of Systematic Reviews*, (8).

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Project on "Survey on Asthma: it's causes, management and creation of patient's awareness in Daffodil International University". [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 Submitted By Student ID:191-29-1404 Batch : 21(A) Department of Pharmacy, Faculty of Allied Health Sciences, Daffodil International University. Submission Date : May 2023 i [Table of content Chapter One: Introduction](#) & Literature Review S. I [Topic Page No 1](#). 1 [Introduction](#) 01 1.2 History 02 1.3 Epidemiology 03 1.4 Types of Asthma 04-06 1. 5 Signs and Symptoms of Asthma 07-08 1.6 Causes 09-10 1.7 Diagnosis 11-15 1.8 Complications 15-16 1.9 Management 16-21 1.10 Literature Review 21-24 04 [Chapter Two: Purpose of my study S.I Topic](#) 1. Purpose of my study 24 [Chapter Three: Methodology S.I Topic](#) 1. Methodology 25-26 ii [Chapter Four: Result and Discussion S.I Topic](#) 5.1 [Result and Discussion](#) 26-32 [Chapter](#) Five: [Conclusion S.I Topic](#) 1. Conclusion 33 Chapter Six: Reference S.I Topic 1. Reference 33-42 iii [List of Figure S.I Topic Page No 1](#). Asthma 02 2. Signs and Symptoms of Asthma 07 3 Spirometry 12 4. Reslizumab 19 5. Ibuprofen 20 6. Inhaler 21 7. Gender 27 8. The condition of having asthma 27 9. Duration 28 10. Cause 29 11. Medication 29 12. Family History 30 13. Genetically Diseases 31 14. Follow Up Doctor 31 15. Type Of Drug 32 16. Effect On Lifestyle 32 iv APPROVAL This project paper on Asthma: its causes, management, and raising patient awareness at [Daffodil International University](#) was [accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Pharmacy and](#) was given the thumbs up for both [its style and contents](#). BOARD OF EXAMINERS [Dr. Muniruddin Ahmed Professor and Head, Department of Pharmacy, Faculty of Allied Health Sciences, Daffodil International University](#)
..... [Internal Examiner 1 Internal Examiner 2 External Examiner 3](#) Md.Shajib Khan Lecturer [Department of Pharmacy Faculty of Allied Health Sciences Daffodil International University](#) v [DECLARATION](#) By signing, I certify [that the](#) project report, Survey on Asthma: Its Causes, Management, and Raising Patient Awareness at Daffodil International University, was completed [by me under the](#) guidance of Md.Shajib Khan, [Lecturer, Department of Pharmacy, Faculty of Allied Health Sciences, Daffodil International University](#). I hereby claim originality for this Project. I hereby also [certify that neither this project nor any of its components have been submitted elsewhere for the purpose of receiving a bachelor's degree or any other degree](#). Supervised By [Md.Shajib Khan Lecturer Department of Pharmacy Faculty of Allied Health Sciences Daffodil International University Submitted By ID: 191-29-1404 Department of Pharmacy, Faculty of Allied Health Sciences Daffodil International University](#) vi [ACKNOWLEDGEMENT 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 Md Shajib Khan Lecturer, Department of Pharmacy, Daffodil International University for his brilliant direction and steady oversight just as for giving essential data in regards to the task and furthermore for his help in finishing the project. I would like to express my humble regards to Dr. Muniruddin Ahmed, Professor and Head, Department of Pharmacy, Daffodil International University. I also wish to offer my respect to all of the teachers of Pharmacy Department, Daffodil](#)

[International University and thankful to other members for their excellent cooperation with us. 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.](#) Tania Akter Author vii My Parents The persons who always encourage me in every sphere of my life. viii Abstract Your airways narrow, swell, and produce an excessive amount of mucus as a result of the illness known as asthma. This could make breathing challenging, causing coughing, wheezing (whistling) when exhaling, and shortness of breath. For some people, having asthma is a minor irritation. The test starts with a review and 20 qualifying questions. There are about 100 volunteers who are interested in participating in this study. The Daffodil International University was the subject of this actual research. This study aims to pinpoint asthma's underlying causes. The poll revealed that 88.8% of participants believed allergens were the primary cause of asthma. 52% of people think that the common cold is to blame for it. According to 56% of respondents, the problem is caused by air pollution. Approximately 32% of people think that a certain dish is to blame. One particular medication was blamed for it, according to 24% of respondents. ix 1.1 Introduction Asthma is the medical term for this chronic inflammation [of the airways](#) in [the lungs](#). This syndrome [is characterized by](#) a number of [symptoms](#), such as [reversible airflow restriction and easily triggered bronchospasms](#). [1] Among other [symptoms of](#) asthma are [wheezing](#), tightness in the chest, and shortness of breath. These occasions can happen as often as once day or once or twice weekly. [Depending on the person, asthma symptoms may get worse at night or](#) when exercising. [Asthma is thought to be](#) inherited, as well as influenced by one's surroundings. Environmental factors include things like allergies and exposure to air pollution. Beta-blockers and aspirin are a couple of additional medications that could cause an allergic reaction. A [diagnosis is made based on the symptom pattern, treatment response over time, and spirometry](#) lung function testing. [3] [Based on the frequency of symptoms, forced expiratory volume in one second \(FEV1\), and peak expiratory flow rate](#), asthma [can be](#) categorized. [4-8] It can also be divided into two categories: people who are prone to type 1 hypersensitivity reactions and people who are not. [9-10] [There is no known cure for asthma. It is](#) extremely [treatable](#), though. Utilizing inhaled corticosteroids and avoiding triggers like allergens and respiratory irritants can both help with symptom relief. [11] If long-acting betaagonists (LABA) and anti-leukotriene medications are needed to manage asthma symptoms after inhaled corticosteroids have failed to do so, this is possible. [12] Short-acting beta-2 agonists like salbutamol and corticosteroids are frequently used to address symptoms that are rapidly getting worse. [13] In the most severe situations, [corticosteroids, magnesium sulfate, and hospitalization may all be required](#). [14-15] [In 2019](#), 461,000 individuals died as a result of asthma, which afflicted approximately 262 million people. In the underdeveloped world, deaths predominate. Since the 1960s, [16] the prevalence of asthma in children has dramatically increased. Asthma and chronic bronchitis have been studied as far back as Ancient Egypt. [17] The word "asthma" in English has its roots in the Greek word for panting, asthma. Figure 01 : Asthma 1.2. History [18] In ancient Egypt, kyphi, a type of incense blend, was used to treat asthma. Our current name, which was first used [by Hippocrates](#) around [450 BC](#), derives from [the Greek word for](#) "panting." It was believed that, at least in part, emotions were to fault in 200 BC. [In the 12th century, Jewish physician and philosopher Maimonides wrote](#) an Arabic book [on asthma](#) that listed numerous dietary and other forms of treatment while outlining the need of a healthy environment and pure air. [19] One study from 1873 attempted to explain the pathophysiology of asthma, while another from 1872 suggested that applying chloroform liniment to the chest could alleviate asthma. [20- 21] In 1880, a drug called pilocarpine was administered intravenously as a form of treatment. [22] [F. H. Bosworth](#) asserted this

[connection between](#) hay fever [and](#) asthma in 1886. [23] Epinephrine was initially utilized to treat asthma in 1905. [24] Oral corticosteroids were first [used in the 1950s, while inhaled corticosteroids and selective short-acting beta](#)-agonists first gained widespread use in the 1960s. [25-26] In the 19th century, Theodore Roosevelt (1858–1919) was a notable and well-researched example. There weren't many possibilities for treatment back then. Roosevelt's boyhood was influenced by his asthma-related health issues in part. He and his parents were horrified by the sense of being suffocated when he had an asthma attack at night. [27] In the 1930s through the [1950s, asthma was](#) regarded [as one of the](#) "holy seven" [psychosomatic](#) disorders. Psychoanalysis and other talk therapies were therefore often utilized as treatments. [28] Psychoanalysts who considered asthmatic symptoms as an expression of the child's longing for its mother to be heard and heard again believed that people with asthma are more prone to depression. [29] A French appeals court [overturned a deportation order against a 40-year-old](#) asthmatic [Bangladeshi man](#) in January 2021. His legal team claimed that Bangladesh's high levels of pollution could harm his health or perhaps cause his demise.

1.3 Epidemiology

[30] Globally, asthma affects over 262 million people, and it causes about 461,000 fatalities annually. Depending on where you reside, the prevalence might range from 1 to 18 percent. It occurs more frequently in the developed world than the developing world. The rates are lower [in Asia, Eastern Europe, and Africa](#). It affects the poor [more](#) frequently [in](#) developed nations than the wealthy do in developing ones. These differences' fundamental reasons are still a mystery. [Over 80% of](#) fatalities [take place in](#) developing [and middle-income countries](#). Both sexes are [equally](#) likely to have severe asthma, despite the fact that boys are twice as likely as girls to have it. However, [adult women are more likely to](#) develop the condition [than](#) adult [men](#), and children [are more likely to](#) do so [than](#) adults. The most common reason for hospitalization in the US in 2011 was children's asthma, which accounted for more than 900,000 ER visits in 2010. [31] [32] Since the 1970s, when it was first acknowledged as a significant public health issue, [there has been](#) a tremendous [increase in the prevalence of asthma globally](#). Since the middle of the 1990s, asthma rates have been stable in developed nations. However, they have recently increased, with the majority of the increase taking place in developing nations. [34] Asthma affects 7% of people in [the United States and 5% of people in the United Kingdom](#). [35] [The](#) average for the three nations is between 14 and 15 percent. [36] Compared to [the average for the European Union](#), the number of asthma deaths in the UK increased by almost 5% over the period of three years, from 2011 to 2015. [37] Children with asthma symptoms are more likely to visit the doctor after the start of school in September. [38] According to population-based epidemiological research, [acute respiratory](#) infections, [asthma, and](#) the emergence [of severe asthma with irreversible airflow limitation](#) are all related over time. This is referred to as the "overlap" syndrome between asthma 3 ©Daffodil International University and chronic obstructive pulmonary disease, or ACOS. [39-41] According to data from prospective studies, ACOS is a severe form of asthma that frequently requires hospitalization. It results from early-onset asthma that has developed into airflow obstruction.

1.4. Types of asthma

The causes and methods that asthma can present themselves are many, but the triggers are frequently the same. They may fit into a number of broad categories, including: • [Allergic asthma](#) • [Aspirin-induced asthma](#) • [Cough-variant asthma](#) • [Exercise-induced asthma](#) • [Nighttime asthma](#) • [Steroid-resistant asthma](#) • [Occupational asthma](#) The most common types [of asthma are](#) covered in the sections below: [Childhood asthma](#) [Asthma](#) in children [is the most](#) prevalent [chronic condition](#). Although [it can](#) affect anyone [at any age](#), children are more likely to experience it than adults. In 2019, 12 to 14-year-old youngsters had the highest prevalence of asthma. According to Trusted Source, 10.8% of people in this age group were affected by the condition. Children between the ages of 5 and 14 had the second-

highest frequency, averaging 9.1%. In the same year, 8% of adults over the age of 18 developed asthma. [According to the American Lung Association \(ALA\)](#), some typical pediatric asthma [triggers include](#): • colds and [respiratory illnesses](#) • allergies • [cigarette smoke, including secondhand tobacco smoke](#) • [air pollutants, such as ozone and particle pollution, both indoors and outside](#) • [exposure to cold air](#) • [sudden changes in temperature](#) • [excitement](#) • [stress](#) • [exercise](#) It's important [to get medical attention](#) straight away [if a child](#) develops [asthma](#) since [it](#) could [be](#) fatal. Your physician can advise you on the most effective ways to approach your issue. When children get older, their asthma may occasionally get better. [However, it is a](#) chronic [condition](#) for many people. [Adult-onset Asthma](#) Any age, even as an adult, can experience the onset of asthma. Reliable sources: Among the elements that influence the likelihood of acquiring [asthma in adulthood](#): • [respiratory illness](#) • [allergies and exposure to allergens](#) • [hormonal factors](#) • [obesity](#) • [stress](#) • [smoking](#)

[Occupational Asthma](#) Because of [exposure to an allergen or irritant](#) at work, occupational asthma develops. [About 1 in 6](#) cases of [adult-onset asthma](#) have a [work](#)-related origin. Furthermore, 21% of working adults who have asthma report that their symptoms get worse at work. Workplaces that are [both indoor and outdoor can expose](#) a person [to asthma triggers](#). [Difficult-to-control and severe asthma](#) According to [a 2014 study](#), 5% to 10% of asthmatics had a severe version of the disease. Some people experience severe symptoms for reasons other than asthma. For instance, they might not understand how to use an inhaler correctly. Some people may be in danger of dying from allergies. Many patients with asthma do not react to treatment, despite taking high amounts of medication or using inhalers properly. This type of illness affects 3.6% of asthma sufferers. [Eosinophilic asthma is](#) a different [type of asthma that, in severe cases, may not respond to](#) conventional therapies. Traditional asthma medications can help some people with eosinophilic asthma regulate their symptoms, but other people may benefit from biological therapies. One kind of biological therapy can lower eosinophils, [a type of blood cell](#) linked to [an allergic reaction that can](#) lead to [asthma](#). [Seasonal Asthma](#) This [type of asthma](#) is brought on by seasonal allergens in the environment, which are only present [at certain times of the year](#). [Cold air in the winter or pollen in the spring or summer](#) can also cause [seasonal asthma](#). [People with seasonal asthma](#) continue to [have the condition the rest of the year](#), even though [they](#) typically don't [experience symptoms](#). It's crucial to remember that allergies aren't the only factor in asthma development.[42] 1.5 [Signs and Symptoms of Asthma](#) [Asthma is characterized by](#) bronchial constriction [and](#) mucus buildup in [the](#) airways, and [symptoms](#) include sneezing, runny nose, and breathing difficulties. [9] Long-term and short-term lung changes might result from asthma symptoms. The effect may be that symptoms worsen and increase in frequency. Figure 02 : Signs and Symptoms of [Asthma](#) [Frequent Symptoms](#) [The four classic signs of asthma are](#): • [Wheezing](#) • [Coughing](#) • [Chest tightness](#) • [Shortness of breath](#) [Wheezing](#): As you inhale, make a whistling or squeaking noise. Asthma sufferers and their loved ones are more likely to become concerned about this symptom. Poor asthma control is frequently indicated by wheezing that may be heard on both the inhalation and exhale sides of the breath. Inflammation results in bronchoconstriction, which narrows the airways, making breathing more difficult. ©Daffodil International University

1 Stridor, which is a high-pitched sound that differs from wheezing, is a symptom of croup. They are therefore very different from one another. A barrier external to the lung may be the cause of stridor, or a reduction in airflow. Coughing: Asthma frequently causes coughing, especially if it disturbs sleep or gets worse during night. A chronic cough may make it more difficult for some asthmatics to keep their condition under good control. Patients with asthma who cough at least twice a month at midnight may benefit from taking more medication. Chest Tightness: Patients say they feel like they are suffocating because the air isn't moving. The expression "it's just tight" is used frequently. It may be very

upsetting for someone to be frightened they won't be able to breathe regularly. Shortness of Breath: Knowing what causes shortness of breath is crucial because it is a typical symptom of asthma. The medical terms "dyspnea" and "air hunger" both refer to the inability to breathe. Some people experience the symptom immediately, while others do so gradually over a period of months or years. Many different people have expressed their experience with shortness of breath using a wide variety of words. Some people frequently find themselves unable to accomplish as much as they formerly could and tire far more quickly. Some people might find that they need to take a second breath before they can fully exhale, while others might find that their chest tightens frequently. Exercise or high-altitude travel should never cause you to feel out of breath. Even with mild exercise, obese patients may develop shortness of breath. [43-44] Symptom Pattern Asthma symptoms can appear and disappear throughout the day, however they are typically more severe at night or in the morning when sleep deprivation is more prevalent. [If you have a cold or another infection, your asthma symptoms](#) could become worse. There are numerous causes that might cause asthma symptoms. [45] Rare Symptoms Cough-variant Coughs that are dry and hacking are symptoms of asthma. When you perspire frequently, your body doesn't have enough air to function properly. If you're breathing quickly ([every two seconds or less in adults](#)), it's conceivable [that your lungs aren't getting enough air](#). 8 ©Daffodil International University Restricted breathing might lead to increased focus issues and lack of sleep. Anxiety and fatigue have been listed as symptoms. [46-47] 1.6. Causes Health professionals concur that environmental factors and genetics play a substantial role in asthma, despite the fact that the specific etiology of the disease is unknown. Sensitization to an allergen, for instance, may act as both the cause and the trigger. [48] Additional root causes and triggers are covered in detail in the sections that follow: Pregnancy According to a 2020 study that will be released, pregnant women who smoke are more likely to develop asthma later in life. Some women's asthma symptoms may get worse during pregnancy. Obesity According to a 2018 study (Trusted Source), obesity has been linked to a higher risk of developing asthma in both children and adults. Obesity in people can lead to worse symptoms, which occur more frequently, as well as a lower quality of life. There is a possibility that the medication won't work as well on them. Allergies When a person's immune system overreacts to a particular allergen, an allergy results. A person is [more likely to have an allergic reaction](#) if [they come into touch with](#) the allergen again after developing sensitization. The most prevalent type of asthma is that brought on by allergies. An allergen inhaled may result in asthma symptoms. Smoking tobacco The American Lung Association claims that smoking can make asthma symptoms worse. The secondhand smoking might also have an impact on the lungs. As a result, a patient's therapeutic response and lung airflow can suffer. [Environmental factors Air pollution, both at one's home and outdoors, can affect the development and triggers of asthma. Some allergens inside the house include: • mold • dust • animal hair and dander • fumes from household cleaners and paints • cockroaches • feathers Other triggers in the home and outdoors include: • pollen • air pollution from traffic and other sources • ground-level ozone](#) [Stress](#) Stress is just one of the many emotions that might trigger an asthma attack. An asthma attack may be brought on by intense emotions like joy or sorrow, horror or revulsion, or even a combination of these. Apparently, there may be some connection between asthma, depression, and anxiety, according to a reliable source. Genetic factors According to the American Lung Association (ALA), hereditary characteristics may have an impact on a person's lifelong risk of developing cancer. Children with asthmatic parents are more likely [to develop the condition](#) themselves. [Hormonal factors](#) Men are [6.1%](#) more likely than women to have asthma, according to recent research. Symptoms may also be influenced by a person's menstrual cycle and other life events, such as menopause. A Trustworthy Source. Because a

woman's progesterone and estrogen levels are lower during her period than at other times of the month, her symptoms may be more severe. Perimenstrual asthma is the name given to this illness by medical professionals. Each person's sensitivity to hormones and asthma is different, and there are many different ways that these two conditions interact. In some people, a drop in estrogen levels during menopause may make this disease worse or even cause it. Some women may see a decrease in their asthma symptoms with menopause, however others may experience an increase. Airway immune activity may potentially be influenced by hormonal action. When someone has intermittent asthma, symptoms only occasionally appear. [49-50] 1.7. Diagnosis Despite being a well-known illness, [there is no universally accepted definition of asthma](#). It is [described as](#) "a long-term inflammation of the airways involving a variety of cells and cellular components" by the Global Asthma Initiative. [Chronic inflammation is associated with a hyperresponsiveness of the airways](#) that results [in](#) nighttime or early morning wheezing, [chest tightness](#), coughing, [and shortness of breath](#). In [these](#) times, an extensive and changeable lung [airflow obstruction is](#) typically [reversible, either naturally or with treatment](#). It's also [a smart move](#). As [there is currently no reliable test available, diagnosis is based on the pattern of symptoms and the response to treatment over time](#). A [diagnosis of asthma](#) may [be](#) determined based on persistent wheezing and coughing that are aggravated or made worse by physical activity, viral diseases, [allergens, or air pollution](#). [Spirometry is then used to confirm the diagnosis](#) [51]. [51] It is more difficult to diagnose children under the age of six because spirometry cannot be used on them. [52] Spirometry Spirometry is a recommended diagnostic and therapeutic tool. [54-55] It is the de facto method for identifying asthma. If the FEV1 measured by this method increases by at least 200 milliliters and by more than 12 percent, a bronchodilator such salbutamol should be given. However, this might be typical in people who have a history of moderate asthma that isn't currently causing any symptoms. Since coffee is a bronchodilator in asthma patients, drinking it before a lung function test could affect the results. [55] The ability of a single breath to diffuse several substances can help distinguish [between asthma and chronic obstructive pulmonary disease \(COPD\)](#). Figure 03 : Spirometry Others During the methacholine challenge, the amount [of a substance that causes airway obstruction is inhaled increases](#). A score of zero [means that a person does not have asthma](#), while a result of 100% means the exact opposite. Examples of supporting data include [at least three days per week for at least two weeks, a 20% increase in peak expiratory flow rate after treatment with salbutamol, inhaled corticosteroids, or prednisone, or a 20% decrease](#) after exposure to a trigger.[57] Due to the wide range of possible results, PDF testing is less dependable than spirometry. Clinical classification Asthma is categorized in the clinical context using the frequency and severity of symptoms, FEV1, and peak flow rate. [The distinction between atopic \(extrinsic\) and non-atopic \(intrinsic\) asthma](#) can also be made based on whether or not allergens cause symptoms (atopic) or not (non-atopic). Beyond this paradigm, which is focused on severity, there is currently no clear basis for identifying distinct asthma subgroups. Due to the vast range of possible outcomes, current research on asthma seeks to identify subgroups that benefit from various treatments. Despite being a chronic condition, asthma does not fall under the umbrella term "chronic obstructive pulmonary disease," which is only used to describe irreversible disease states like emphysema and advanced bronchiectasis. Asthma airway obstruction is typically reversible compared to other diseases, but unchecked 12 ©Daffodil International University chronic inflammation from asthma can result in irreversible airway remodeling, which will permanently obstruct the lungs. [Asthma affects the bronchi](#), whereas emphysema affects [the alveoli](#). The term "overlap syndrome" (ACOS) is used to describe when a person has both asthma and chronic obstructive pulmonary disease (COPD).

Compared to people with "pure" asthma or COPD, those with ACOS are more likely to die and suffer from morbidity. Exercise-induced Physical activity may cause bronchoconstriction in both asthmatics and non-asthmatics. It affects up to 20% of non-asthmatics and the majority of asthmatics [112]. [59] As a result of exertion, professional athletes are more prone to get bronchoconstriction. The highest rates are found among cross-country skiers, swimmers, and cyclists. [60] Although it can occur in any climate, it is more frequent in dry and chilly environments. [61] There is no proof that oral beta2-agonists boost strength and endurance in healthy adults, although there is evidence that inhaled beta2-agonists improve athletic performance in people without asthma. [62-64] Occupational Asthma can be brought on (or made worse) in the workplace by a number of exposures. [65] There are many more cases, even if many go unreported and unidentified. [66] In 5-25% of adult asthma cases, the workplace is thought to be the culprit. Some of the most notable offenders include isocyanates, grain and wood dust, colophony, soldering flux, latex, animals, and aldehydes. The vocations with the biggest risk of problems are those that involve working with animals, such as welders, hairdressers, and lumber workers. [67] Asthma can be brought on (or made worse) in the workplace by a number of exposures. [65] Despite the fact that many instances go unreported and unidentified, there are many more. [66] In 5-25% of adult asthma cases, the workplace is thought to be the culprit. grains, wood particles, and isocyanates, The main offenders include colophony, soldering flux, latex, animals, and aldehydes. The vocations with the biggest risk of problems are those that involve working with animals, such as welders, hairdressers, and lumber workers. Aspirin-induced Asthma Aspirin-exacerbated respiratory disease (AERD), often known as aspirin-induced asthma, affects up to 9% of patients with asthma. [68] AERD (such as ibuprofen and naproxen) includes respiratory 13 ©Daffodil International University reactions to aspirin and other NSAIDs (such as aspirin), nasal polyps, sinusitis, and asthma. [69] Many persons who drink alcohol experience a loss of smell and respiratory reflexes. [70] Alcohol-induced Asthma Alcohol use worsens asthma symptoms for up to one-third of asthma sufferers. Some racial groups may be more susceptible to this, including the Japanese and those who have asthma brought on by aspirin. Numerous studies have demonstrated that alcohol can reduce the symptoms of asthma. [71] non-atopic asthma Non-atopic variants of the disease, commonly referred to as intrinsic or nonallergic types, affect 10% to 33% of patients with asthma. Skin testing is inconclusive for typical inhalant allergies. Later in life, the illness is more likely to affect women than it is men. Some treatments may not have the desired effects. [72] Epidemiological data that "non-atopic" is synonymous with "nonallergic" is called into question in light of epidemiological data showing a strong correlation between the prevalence of asthma and serum IgE levels standardized for age and gender (P0.0001), which suggests that asthma is almost always associated with some sort of IgE-related reaction and therefore has an allergic basis. [73] In a recent comprehensive review and meta-analysis, the PAR for C. pneumoniae-specific IgE was reported to be 47%. Infectious Asthma Patients with asthma may claim that they first became aware of their symptoms after becoming ill with anything affecting the lower respiratory system. To distinguish infection-related asthma from the well-known link between respiratory infections and asthma exacerbations, it has been named the "infectious asthma" (IA) syndrome or "asthma associated with infection" (AAWI). IA prevalence among adults has been observed to range from roughly 40% in a primary care setting [75] to 70% in a clinic that focuses on treating patients with severe asthma. [76] The true prevalence of IA in adult-onset asthma is unknown due to memory and training issues, and doctors are not trained to ask about this type of history. Differential diagnosis Asthma-like symptoms can also be brought on by a wide range of medical conditions. Children may experience symptoms from upper airway problems

such as allergy rhinitis, sinus infections, and others. Foreign body aspiration, laryngotracheal malacia, enlarged lymph nodes, and neck tumors that can cause airway obstruction are some additional causes of airway obstruction. [77] Infections with viruses, such as bronchiolitis, can also induce wheezing. Congestive heart failure, airway masses, COPD, and ACE inhibitors can all cause similar symptoms in adults. Similar symptoms of vocal cord dysfunction may appear in both populations. [79] Asthma and COPD may coexist, or COPD may manifest as a complication of persistent asthma. Most people with asthma and chronic obstructive pulmonary disease (COPD) start experiencing symptoms beyond the age of 65. In this scenario, COPD is distinguished by increased smooth muscle in the bronchi, abnormal wall thickness, and increased airway neutrophils. This level of research is not done, though, because long-acting betaagonists, corticosteroids, and quitting smoking are used to treat COPD and asthma. [80] It has symptoms that are quite similar to those of asthma. Smokers, older individuals, those with poorer symptom reversibility following bronchodilator usage, and those without a family history of atopy are more likely to experience it.[81-82] 1.8 Complications Uncontrolled asthma can lead to bronchial remodeling, or the bronchi's gradual constriction. 6 The body's natural tissues are replaced with scar tissue. Smoking can result in symptoms that are comparable to COPD symptoms. Infants and Children Infants and children with asthma are fairly prevalent. Infants may experience symptoms that are comparable to those of adults, but they may also have trouble swallowing and make noises when being fed. Since there is no definitive test for asthma, it cannot be identified in newborns. As your child gets older, the wheezing may stop on its own. Between 40 and 50 percent of babies have a respiratory illness, which makes them wheeze more frequently. Atopic dermatitis, food allergies, and allergy symptoms in infants are all risk factors for developing asthma, according to the asthma prediction index (API). Children who are worn out might not be as interested in sports or other forms of social interaction. A young toddler might express pain in her chest. Pregnant Women [Oxygen levels for both the mother and the fetus](#) are decreased by poorly controlled asthma during pregnancy. Any of the following issues could result from this: • [Infant death](#) • [Preterm delivery](#) • [Miscarriage](#) • [Bleeding before and after delivery](#) • [Depression](#) • [Preeclampsia or pregnancy-induced hypertension](#) • [Blood clots or pulmonary embolism](#) • [Congenital malformations](#) • [Hyperemesis](#) 1.9 Management Although its symptoms can be controlled, asthma is a chronic condition. [86] The best way to treat asthma is to avoid triggers like aspirin, aspirin use, and triggers like smoking, pets, and aspirin. If avoiding the triggers in question doesn't work, medication may be used. When choosing a pharmaceutical treatment, among the factors taken into account are [the severity of the illness and the frequency of symptoms](#). Asthma [medications](#) that operate quickly and slowly can be categorized into two main categories. [87-88] The medications for asthma listed here have been proved to lessen symptoms.Their "real world" effectiveness is however constrained because more than 50% of asthmatics worldwide experience persistent unsatisfactory symptoms despite receiving treatment. [89-91] Patients with "refractory asthma" (also known as "difficult to treat" asthma) may not have their asthma well managed because they are unable or unwilling to take the recommended amounts of their asthma treatments. It is impossible to distinguish between the "refractory" and "difficult to treat" groups in patients who have never used the recommended 16 ©Daffodil International University dosages of asthma medications. [The majority of asthma patients](#) were not included [in the asthma](#) efficacy trials that form the basis of the current recommendations for pharmacological therapy. survey on the causes, treatment, and development of people with asthma Awareness at the medical college in Dhaka. It is advised to take bronchodilators just temporarily. There is no need for additional treatment if the incidence only sometimes occurs. If you experience more than two episodes of a mild chronic sickness each week, you

should take [a leukotriene antagonist or a mast cell stabilizer by mouth](#). Patients with asthma who experience recurrent attacks are given [a higher dose of inhaled corticosteroids](#). Oral corticosteroids are added to the treatment plan if the exacerbation is moderate or severe. Patients with asthma are more likely to experience anxiety, stress, and sadness. This has been connected to a decline in asthma management [92]. CBT may help asthma patients control their condition, reduce their anxiety, and improve their quality of life. [93] By raising awareness of the condition among the populace and putting a written action plan into effect, asthma management can be improved. It is likely that education that is catered to a person's cultural background will be successful. [94] Long-term improvements in the safety of children with [asthma can only be made if educators and families are better informed about](#) the condition and are assisted in doing so by home and school-based interventions. [School-based asthma self-management](#) programs, [which work to raise awareness of asthma, its triggers, and the value of routine medical checkups, may reduce](#) the number of [emergency department visits](#) and hospitalizations. [These therapies may aid in improving the quality of life for persons with asthma, in addition as decreasing the number of days a child experiences asthma symptoms](#). Additional research [may](#) be beneficial for adults with asthma who take part in group decision-making. Whether or not an asthma action plan that is specific to a person's requirements is beneficial or necessary. Some asthmatics [use pulse oximeters to measure their own blood oxygen levels during an asthma attack. However, there is no](#) proof that it is applied in these circumstances. [95] Lifestyle modification The key to better control and fewer attacks is to stay away from triggers. The most common causes include sulfite-containing foods, tobacco, air pollution, non-selective beta-blockers, and allergens. Smoking cigarettes and passive smoking can reduce a drug's ability to work, including corticosteroids. Hospitalizations for asthma are decreasing as a result of smoke-free laws. The symptoms of asthma were unaffected by aerobic filtration, chemical mite kills, vacuuming, mattress covers, or any other dust mite control measures. Dehumidifiers have not been shown to be helpful for controlling asthma. Exercise on a regular basis can be beneficial for those with stable asthma. Yoga may help asthma patients live better lives and manage their symptoms. Before additional weight loss research can be done, it is important to better understand the quality of life, healthcare needs, and negative effects on the bodies of asthma patients of all ages. Medications The two primary categories of asthma medications are short-term therapy for quick relief and long-term therapies for long-term control.[97] Antibiotics are not required unless your symptoms suddenly get worse or if you have asthma at any time. [98-99]. Our ability to control our asthma is highly dependent on the medications we take. There are two broad categories of treatment, each with a specific focus. Taking medicines that control your asthma can help you avoid episodes. Our airways become less sensitive to triggers and less prone to inflammation as a result of taking these drugs. When you use quick-relief medications, sometimes referred to as rescue treatments, your airway muscles relax. [100-103] If you need to use a rescue medication more than twice per week, your asthma control is poor. Before exercising, asthmatics may take a beta-agonist, a fast-acting drug. With the aid of the proper medication, we ought to be able to live a regular, active life. Ask your doctor about trying a different medication if your asthma symptoms aren't under control. Long-Term Control Medications You'll need to regularly take some of these medications to keep your asthma under control. Others are occasionally used to decrease the severity of an asthma attack. The best course of action is to stop airway irritation. Anti-inflammatory drugs known as inhaled corticosteroids may be used with other treatments, such as beta-agonists. that last a long time. An agent that enlarges the airways is a bronchodilator, or beta-agonist. Anticholinergics are long-acting. Anticholinergics, often known as bronchodilators, which reduce lung airway tightness, make breathing easier

[104–107]. Tiotropium bromide, also known as Spiriva Respimat, is an anticholinergic that can be used by anybody over the age of six. This is a good drug to use in addition to your normal maintenance 18 ©Daffodil International University medication. Leukotriene modifiers stop the flow of chemicals that cause inflammation. Mast cell stabilizers halt the chemical release that causes inflammation. If your symptoms don't go away after using Theophylline or another bronchodilator, you may need additional treatment. If you have moderate to severe asthma brought on by allergies or another factor, and some drugs aren't helping your immune system, Your doctor might advise an injection of an immunomodulator if you have an inflammatory problem. The patient's immune system is maintained using the immunomodulator drug Reslizumab (Cinqair). You can take it along with other asthma treatments. This medication is injected intravenously over about an hour every four weeks. Eosinophils are a type of white blood cell that are reduced in the bloodstream by anti-inflammatory drugs. A drug called Nucala (mepolizumab) is used to lower blood eosinophil levels because it lessens severe asthma attacks. It is injected into the patient every four weeks throughout maintenance therapy. Asthma is treated with the immunoglobulin E (IgE)-inhibiting antibody omalizumab (Xolair). [108] This prevents an allergic reaction from occurring. This medicine is given intravenously. A patient must have a high IgE level and a high IgG level in order to be qualified for this treatment. Allergies in the past. To confirm the allergy, a blood or skin test is necessary. Tezepelumab-Gekko (Tezspire) injectable is administered in addition to customary maintenance therapy to patients 12 years of age and older. It targets a molecule that causes inflammation in the airways, similar to other asthma drugs, to lessen inflammation in the airways. Figure 04 : Reslizumab Quick-Relief Asthma Drugs With the help of these medications, asthma attack symptoms including coughing, tightness in the chest, and wheezing can be promptly relieved. Among them are: Short-acting beta-agonists (bronchodilators) Anticholinergics. Bronchodilators that work together with or in place of short-acting beta-agonists can be found here. Corticosteroids, which are anti-inflammatory medicines, are used to control symptoms. Figure 05 : Ibuprofen Inhalers, Nebulizers, and Pills as Asthma Medicine Treatments for asthma can be given in a variety of ways. Common means of administration (which turn medication from a liquid to a mist) [include metered-dose inhalers, dry powder inhalers, and nebulizers](#). Oral ingestion of medicines or liquids is sometimes necessary. There is a chance to Likewise, give them intravenously. Some medications for asthma interact well with one another. Additionally, you may use inhalers that incorporate two or more different medications [109]. Figure 06 : Inhaler 1.10. Literature Review Hamid, Q., & Tulic, M. (2009). Immunobiology of Asthma. Annual Review of physiology, 71, 489-507. Asthmatics' airways are overpopulated with [eosinophils, mast cells, and activated T-helper lymphocytes](#). Bronchoconstriction, mucus formation, and bronchial remodeling are brought on by the mediators produced by these inflammatory cells. Cytokines, chemokines, and other mediators of inflammation. Histamine, immunoglobulins, lipid mediators, and growth factors. In allergic asthma, it might be challenging to manage the inflammation. Immunological memory is primarily produced when an adaptive immune response is established to an allergen. The onset of an allergic reaction causes ongoing inflammation and harm to the airways as a result. Th2 cytokines, which may also [promote the production of other inflammatory mediators including cytokines and chemokines](#), are most frequently responsible for the inflammation in asthma. The immunobiology of asthma, as well as the morphological and functional abnormalities in asthmatic patients' lungs, 21 ©Daffodil International University are discussed here in relation to these cytokines and chemokines. We'll talk about how cytokines interact with infectious pathogens and their involvement in asthma immunology. Papiris, S., Kotanidou, A., Malagari, K., & Roussos, C. (2001). Clinical Review: severe asthma. Critical Care, 6(1), 1-15. When defining severe

asthma, it is important to take into account all cases of difficult/therapy-resistant illness in any age group as well as a significant portion of morbidity and mortality from asthma. A more-or-less rapid but nonetheless severe asthma attack [known as status asthmaticus may not respond to standard treatment](#). A [ventilation-perfusion imbalance](#), pulmonary [hyperinflation, and increased breathing](#) effort brought on by a constricted airway can all result in respiratory muscle exhaustion and possibly death. Nebulizations of oxygen and 2-agonists (continuous or repeated nebulization) are the two most common treatments for acute, severe asthma. Patients who do not respond well to continuous nebulization, who are unable or unwilling to participate, who are intubated and have not responded to inhaled medication, or who do not respond well to subcutaneous epinephrine or terbutaline should be administered. The exact timing of intubation is left up to the treating physician's judgment once an asthmatic patient has been diagnosed, although it should never be delayed. Gas is helped by mechanical ventilation. During intensive medical therapy, the patient's ventilatory muscles are exchanged and relieved of stress while their functional state is improved. Paralytic medications must not be administered to individuals who are mechanically ventilated after intubation. Patients with asthma are mechanically ventilated using permissive hypercapnia, longer expiratory periods, and greater patient-ventilator synchronization. To avoid issues and find the ideal window for weaning, the patient's health must be closely monitored. A well-thought-out strategy for averting future asthma attacks is essential after a successful course of therapy and before being released. McCracken, J. L., Veeranki, S. P., Ameredes, B. T., & Calhoun, W. J. (2017). Diagnosis and management of Asthma in adults: a review. *Jama*, 318(3), 279-290. Around 7.5% of adults in the population have asthma. People with asthma who receive an [evidence-based diagnosis, monitoring, and treatment](#) have better [functioning and](#) a higher [quality of life](#). Wheezing, shortness of breath, and a persistent cough are all symptoms of asthma, which is a Clinical sickness with potential for episodic or chronic occurrence that affects the lower 22 ©Daffodil International University respiratory system. Spirometry, which reveals an airway obstruction that is reversible, can be used to diagnose asthma. There may be clinically significant allergen sensitivity found. Acute asthma symptoms may be momentarily relieved by short-acting 2-agonists, but daily inhaled corticosteroids continue to be the cornerstone of treatment for those with chronic asthma issues. Patients may use a combination of long-acting 2-agonists and corticosteroids when corticosteroids alone are ineffective. It is insufficient to use long-acting 2-agonists that are breathed. Tiotropium, a long-acting anti-muscarinic medication, and a biological agent that targets a particular protein that causes asthma are two examples of these. Maddox, L., & Schwartz, D. A. (2002). The pathophysiology of asthma. *Annual Review of Medicine*, 53(1), 477-498. Airway inflammation, reversible airflow restriction, and persistent airway hyperreactivity are all symptoms of asthma, which is a long-term condition that affects the lungs. Asthma has a complicated and diverse etiology. Recently, genetics has been shown to have an important role in the development of asthma, especially atopic asthma. Asthma has also been connected to conditions that affect young children, like measles and mumps. These factors appear to be responsible for the [Th-2 lymphocyte-predominant immunological response](#) that [has been associated with](#) atopic illness. Additionally, [IgE-mediated inflammation](#). Recently, [reversible airflow](#) blockage [has also been](#) called into question. The formation of an airflow blockage may be influenced by long-term changes in the airways. Numerous factors, both genetic and environmental, may have an impact on asthma phenotypes. As well as discussing the importance of [Th-1 and Th-2 lymphocyte-mediated immunity, inflammatory mechanisms leading to chronic airway inflammation are discussed](#). Edwards, M. R., Bartlett, N. W., Hussell, T., Openshaw, P., & Johnston, S. L. (2012). The microbiology of asthma. *Nature Reviews*

Microbiology, 10(7), 459-471. Asthma is still a significant human illness that causes significant morbidity and mortality on a global scale. [The causes of asthma are](#) multifaceted [and](#) comprise [a](#) complicated concoction [of](#) host genetic, [immunological, and](#) environmental variables. Furthermore, epidemiological research indicates a strong correlation between respiratory pathogen infection and asthma. These pathogens include bacteria, fungi, and common respiratory viruses like the [human respiratory syncytial virus, adenoviruses, coronaviruses, and influenza viruses](#). In this review, we outline the numerous contributions that microbes make to asthma risk, pathogenesis, and protection against the condition. We also go over the ways in which infections influence the prevalence and severity of asthma. Cochrane, G. M., Horne, R., & Chanez, P. (1999). Compliance in Asthma. *Respiratory medicine*, 93(11), 763-769. Most chronic illnesses, including asthma, are more challenging to manage when patients refuse to take their prescriptions as directed. There appear to be no effective solutions to cope with noncompliance, which has high medical and societal consequences. This difficult subject gotten more attention recently. There are two basic [categories of non-compliance that have been identified: unintentional \(or "accidental"\) and intentional \(or "planned"\) non-compliance](#). [Unintentional](#) errors could [result from](#) ineffective [doctor-patient communication or a failure to follow](#) directions. non-compliance. [Intentional non-compliance](#) is defined as [when a patient is](#) aware of the expectations but nonetheless disobeys them. [Healthcare professionals need to be aware](#) that a number [of](#) variables may have an impact on patient compliance. Non-compliance [is influenced by a number of factors, such as the](#) complexity of the treatment plan, the delivery method, the way the patient views the therapy, and other psychological elements. Purpose of the study Your airways swell and tighten as a result of the disorder asthma, which increases mucus production. Breathing becomes more difficult when you start coughing, wheezing, or feel short of breath. Some people only experience a slight annoyance from their asthma. My aim of this study is, • To determine which age group is most susceptible to asthma. • To learn about asthma's treatment regimen. • In order to observe how asthma affects a person's daily routine. • To identify the root cause of asthma. • To create a new field of study. 4. METHODOLOGY Type of study It was a cross-sectional descriptive research. The study's findings are used to survey on Asthma: it's causes, management and creation of patients awareness in Daffodil International University Place of the study Both the study group and the intended audience are university students. Daffodil International University (Ashulia) was chosen as the study's location. Selection of the study place The following criteria were used to choose the study location. • Feasible to study. • Easy to approach. • Young generation. Sampling Technique The study's population consisted primarily of university students. A single open-ended and closed- ended questionnaire was used to collect data from 100 university students at Daffodil International University. Period of study: The time frame for this study was just one month, from February 10 to March 10, 2023. Sample size: The sample included about 100 Daffodil International University college students. Selection criteria: Undergraduate and graduate students who were running. Data collection instrument Both an open-ended and a closed-ended questionnaire were prepared as part of a structured interview schedule. On the basis of the Asthma: it's causes, management and creation of patients awareness in Daffodil International University, the questionnaire was created. The questionnaire was quite straightforward and simple to comprehend. Procedure of data collection A self-introduction session was held prior to data collection to explain the aim of data collection and ask for oral assent in order to ensure that the respondents understood the goals and objectives of the study. Data were acquired through in-person conversations and an online Google form using open-ended and closed-ended questions from the respondents. There is only one questionnaire used for one respondent. Once the interviewer has the

respondents' answers to the questions, they complete the questionnaire. Data processing and analysis The questions were organized on a Google Form using the correct headings and sections. Consequently, a logical and practical automatic summary has been generated. The results were presented using graphs, percentages, and connections between the knowledge attitude and behaviors and the different components. Gender Figure: Gender According to the survey's findings, 53.4 percent of men have asthma. 46.6 percent of women with asthma have respiratory system issues. As a result, it seems that asthma affects men more frequently than women. The condition of having asthma Figure: The condition of having asthma According to the survey's findings, 84.5 percent of people have asthma. 15.5 % of people in the population are asthma-symptom-free. Duration Figure: Duration The results of this study show that 69.4 % of the individuals have had an asthma diagnosis for less than a year. Asthma has been identified in 13.9 % of people within the past three years. Asthma has been identified in 16.7 % of people within more than 5 years. Caused By Figure: Cause According to the survey, 88.3 percent's of participants believed that asthma is primarily brought on by allergies. 52.4 % of people think the common cold is to blame for it. According to 56.3 % of respondents, air pollution is to blame. 32 percent of people think that a specific dish is to blame. One particular medication was blamed for it, according to 20.4 % of respondents. Taking Medication Figure: Medication 24.3 % of the participants in this study reported using medication. 75.7 % of people don't take any medication at all. Family History Figure: Family History According to this survey, 39.8 percent of respondents had experienced asthma in the past. 60.2 % of participants report that asthma has never run in their families. Genetically Diseases Figure: Genetically Diseases 44.7 percent of respondents to this survey believe that asthma is a genetic disease. A whopping 36.9 % of people believe it is not a genetic condition. Follow Up Doctor Figure: Follow Up Doctor This poll found that 65% of patients follow up with doctors on a frequent basis. Only 35% of patients receive routine follow-up. Type Of Drug Figure: Type Of Drug Leukotriene modifiers are a common form of medication, used by 24.4% of respondents. 68.9% of respondents report using corticosteroids for inhalation. 20 % of persons (LABAs) utilize long-acting beta-agonists. Theophylline is a medication that 15.6% of people use. A corticosteroid and a LABA-containing inhaler is used by 26.7% of persons. Effect On Lifestyle Figure: Effect On Lifestyle 40 % of respondents to this study believe that asthma has an impact on their way of life. 60 % of respondents believe it has no impact. Conclusion Asthma is a severe, long-term condition that can lead to clinically significant morbidity, missed days of work or school, substantial costs for emergency care and hospitalization, and in some circumstances, even death. People who have asthma may benefit from the current treatments to control their symptoms and prevent long-term airway abnormalities. I wanted to see how asthma affected someone's daily activities in this study. This poll found that 68% of respondents believe asthma impacts their way of life. Reference 1. Ramya, A., Geetha, P., Nandhini, M., & Raja, M. (2019). The Role of Leukotriene Receptor Antagonist as an add on therapy to β 2-Agonists in Acute Asthma. *Research Journal of Pharmacy and Technology*, 12(4), 1974-1978. 2. Martinez, F. D. (2007). Genes, environments, development and asthma: a reappraisal. *European Respiratory Journal*, 29(1), 179-184. 3. Lemanske Jr, R. F., & Busse, W. W. (2010). Asthma: clinical expression and molecular mechanisms. *Journal of allergy and clinical immunology*, 125(2), S95-S102. 4. Harlow, K. E., Africa, J. A., Wells, A., Belt, P. H., Behling, C. A., Jain, A. K., ... & Yates, K. (2018). Clinically actionable hypercholesterolemia and hypertriglyceridemia in children with nonalcoholic fatty liver disease. *The Journal of pediatrics*, 198, 76-83. 5. Laskey, W. K., Jenkins, C., Selzer, F., Marroquin, O. C., Wilensky, R. L., Glaser, R., ... & NHLBI Dynamic Registry Investigators. (2007). Volume-to-creatinine clearance ratio: a pharmacokinetically based risk factor for prediction of early creatinine

increase after percutaneous coronary intervention. *Journal of the American College of Cardiology*, 50(7), 584-590. 6. Teixeira, T. M. B. (2022). *Farmácia Saúde, Porto e Serviços Farmacêuticos do Hospital CUF Porto, Porto*. 7. Mulukutla, S. R., Marroquin, O. C., Vlachos, H. A., Selzer, F., Toma, C., Kip, K. E., ... & Williams, D. O. (2013). Benefit of long-term dual anti-platelet therapy in patients treated with drug-eluting stents: from the NHLBI dynamic registry. *The American journal of cardiology*, 111(4), 486-492. 8. Koolen, B. B., Pijnenburg, M. W. H., Brackel, H. J. L., Landstra, A. M., Van den Berg, N. J., Merkus, P. J. F. M., ... & Vaessen-Verberne, A. A. P. H. (2011). Comparing global initiative for asthma (GINA) criteria with the childhood asthma control test (C-ACT) and asthma control test (ACT). *European respiratory journal*, 38(3), 561-566. 9. Yawn, B. P. (2008). Factors accounting for asthma variability: achieving optimal symptom control for individual patients. *Primary Care Respiratory Journal*, 17(3), 138-147. 10. Jazz, A. M., Wali, M. K., & Fayadh, R. A. (2023, March). Respiratory temperature measurement to monitor asthma patients. In *AIP Conference Proceedings* (Vol. 2591, No. 1, p. 040003). AIP Publishing LLC. 11. . *Stedman's Medical Dictionary* (28 ed.). Lippincott Williams & Wilkins. 2005. ISBN 978- 0-7817-3390-8. 12. Koolen, B. B., Pijnenburg, M. W. H., Brackel, H. J. L., Landstra, A. M., Van den Berg, N. J., Merkus, P. J. F. M., ... & Vaessen-Verberne, A. A. P. H. (2011). Comparing global initiative for asthma (GINA) criteria with the childhood asthma control test (C-ACT) and asthma control test (ACT). *European respiratory journal*, 38(3), 561-566. 13. Koolen, B. B., Pijnenburg, M. W. H., Brackel, H. J. L., Landstra, A. M., Van den Berg, N. J., Merkus, P. J. F. M., ... & Vaessen-Verberne, A. A. P. H. (2011). Comparing global initiative for asthma (GINA) criteria with the childhood asthma control test (C-ACT) and asthma control test (ACT). *European respiratory journal*, 38(3), 561-566. 14. Calapai, G., Casciaro, M., Miroddi, M., Calapai, F., Navarra, M., & Gangemi, S. (2014). Montelukast-induced adverse drug reactions: a review of case reports in the literature. *Pharmacology*, 94(1-2), 60-70. 15. Glauser, T. A., Roepke, N., Stevenin, B., Dubois, A. M., & Ahn, S. M. (2015). Physician knowledge about and perceptions of obesity management. *Obesity research & clinical practice*, 9(6), 573-583. 16. Anandan, C., Nurmatov, U., Van Schayck, O. C. P., & Sheikh, A. (2010). Is the prevalence of asthma declining? Systematic review of epidemiological studies. *Allergy*, 65(2), 152- 167. 17. Manniche, L. (1999). *Sacred luxuries: fragrance, aromatherapy, and cosmetics in ancient Egypt*. Cornell University Press. 18. M Al Musawi, Z., Mahdi, A., Matrood, M., & AN Abood, H. (2017). Assessment of asthma severity by history and lung function study in school age children. *Kerbala Journal of Medicine*, 10(1), 2607-2612. 19. Rosner, F. (2002). The life of Moses Maimonides, a prominent medieval physician. *Einstein Quart J Biol Med*, 19, 125-8. 20. Thorowgood JC (November 1873). "On Bronchial Asthma ." *British Medical Journal*. 2 21. (673): 600. doi:10.1136/bmj.2.673.600. PMC 2294647. PMID 20747287. 22. Gaskoin, G. (1872). On the treatment of asthma. *British Medical Journal*, 1(587), 339. 23. Berkart, J. B. (1880). The treatment of asthma. *British medical journal*, 1(1017), 960. 24. Bosworth, F. H. (1885). Hay fever, asthma, and allied affections. In *Transactions of the Annual Meeting of the American Climatological Association* (Vol. 2, p. 151). American Clinical and Climatological Association. 25. Doig, R. L. (1905). Epinephrin; especially in asthma. *California state journal of medicine*, 3(2), 54. 26. von Mutius, E., & Drazen, J. M. (2012). A patient with asthma seeks medical advice in 1828, 1928, and 2012. *New England Journal of Medicine*, 366(9), 827-834. 27. Crompton, G. (2006). A brief history of inhaled asthma therapy over the last fifty years. *Primary care respiratory journal*, 15(6), 326-331. 28. McCullough, D. (2001). *Mornings on Horseback: The Story of an extraordinary family, a vanished way of life and the unique child who became Theodore Roosevelt*. Simon and Schuster. 29. Opolski, M., & Wilson, I. (2005). Asthma and depression: a pragmatic review of the literature and recommendations for future research. *Clinical Practice and*

Epidemiology in Mental Health, 1, 1-7. 30. "Bangladeshi man with asthma wins France deportation fight ."The Guardian. January 12, 2021. Retrieved January 12, 2021. 31. Weiss, A. J., Wier, L. M., Stocks, C., & Blanchard, J. (2014). Overview of emergency department visits in the United States, 2011. 32. Martin, M. A., Press, V. G., Nyenhuis, S. M., Krishnan, J. A., Erwin, K., Mosnaim, G., ... & CHICAGO Plan Consortium. (2016). Care transition interventions for children with asthma in the emergency department. *Journal of Allergy and Clinical Immunology*, 138(6), 1518-1525. 33. Grant, E. N., Wagner, R., & Weiss, K. B. (1999). Observations on emerging patterns of asthma in our society. *Journal of Allergy and Clinical Immunology*, 104(2), S1-S9. 34. Haque, M. A., Tarafder, M. K. H., Kabir, A. L., Pramanik, D., & Ahmed, M. U. (2017). Association of Nasal Polyposis with Bronchial Asthma. *Bangladesh Journal of Otorhinolaryngology*, 23(1), 11-18. 35. Anderson, H. R., Gupta, R., Strachan, D. P., & Limb, E. S. (2007). 50 years of asthma: UK trends from 1955 to 2004. *Thorax*, 62(1), 85-90. 36. Masoli, Matthew (2004). *Global Burden of Asthma* (PDF). p. 9. Archived from the original (PDF) on 2013-05-02. 37. . "Asthma-related death rate in the UK among highest in Europe, charity analysis finds ."Pharmaceutical Journal. May 3, 2018. Archived from the original on July 26, 2020. Retrieved August 13, 2018. 38. "Asthma attacks triple when children return to school in September NHS." The UK. July 3, 2019. Archived from the original on July 26, 2020. Retrieved August 23, 2019 39. Rantala, A., Jaakkola, J. J., & Jaakkola, M. S. (2011). Respiratory infections precede adult-onset asthma. *PLoS One*, 6(12), e27912. 40. Yeh, J. J., Wang, Y. C., Hsu, W. H., & Kao, C. H. (2016). Incident asthma and *Mycoplasma pneumoniae*: A nationwide cohort study. *Journal of Allergy and Clinical Immunology*, 137(4), 1017-1023. 41. Silva, G. E., Sherrill, D. L., Guerra, S., & Barbee, R. A. (2004). Asthma as a risk factor for COPD in a longitudinal study. *Chest*, 126(1), 59-65. 42. Boulet, L. P., & Boulay, M. È. (2011). Asthma-related comorbidities. *Expert review of respiratory medicine*, 5(3), 377-393. 43. George, R. B. (Ed.). (2005). *Chest medicine: essentials of pulmonary and critical care medicine*. Lippincott Williams & Wilkins. 44. British Guideline 2009, p. 14 45. Kaplan, A., van Boven, J. F., Ryan, D., Tsiligianni, I., Bosnic-Anticevich, S., & REG Adherence Working Group. (2021). GINA 2020: Potential Impacts, Opportunities, and Challenges for Primary Care. *The Journal of Allergy and Clinical Immunology: In Practice*, 9(4), 1516-1519. 46. Boulet, L. P. (2009). Influence of comorbid conditions on asthma. *European Respiratory Journal*, 33(4), 897-906. 47. Petsky, H. L., Kew, K. M., Turner, C., & Chang, A. B. (2016). Exhaled nitric oxide levels to guide treatment for adults with asthma. *Cochrane Database of Systematic Reviews*, (9). 48. Choudhry, S., Seibold, M. A., Borrell, L. N., Tang, H., Serebrisky, D., Chapela, R., ... & Burchard, E. G. (2007). Dissecting complex diseases in complex populations: asthma in latino americans. *Proceedings of the American Thoracic Society*, 4(3), 226-233. 49. Dietert, R. R. (2011). Maternal and childhood asthma: risk factors, interactions, and ramifications. *Reproductive toxicology*, 32(2), 198-204. 50. Tan, D. J., Walters, E. H., Perret, J. L., Lodge, C. J., Lowe, A. J., Matheson, M. C., & Dharmage, S. C. (2015). Age-of-asthma onset as a determinant of different asthma phenotypes in adults: a systematic review and meta-analysis of the literature. *Expert review of respiratory medicine*, 9(1), 109-123. 51. NHLBI Guideline 2007, p. 42 52. GINA 2011, p. 20 53. American Academy of Allergy, Asthma, and Immunology. "Five things physicians and patients should question" (PDF). *Choosing Wisely*. ABIM Foundation. Archived from the original (PDF) on November 3, 2012. Retrieved August 14, 2012. 54. National Asthma Education, Prevention Program (National Heart, Lung, & Blood Institute). *Second Expert Panel on the Management of Asthma*. (1998). Expert panel report 2: guidelines for the diagnosis and management of asthma (No. 98). National Institutes of Health, National Heart, Lung, and Blood Institute. 55. Welsh EJ, Bara A, Barley E, Cates CJ (January 2010). Welsh EJ (ed.). "Caffeine for asthma" (PDF). *The Cochrane Database of Systematic Reviews* (1): CD001112. doi:10.1002/14651858.CD001112.pub2.

PMC 7053252. PMID 20091514. 56. NHLBI Guideline 2007, p. 58 57. Pinnock H, Shah R (April 2007). "Asthma BMJ.". 334 (7598): 847-50. doi:10.1136/bmj.39140.634896.BE. PMC 1853223. PMID 17446617. 58. NHLBI Guideline 2007, p. 59 59. Khan, D. A. (2012, January). Exercise-induced bronchoconstriction: burden and prevalence. In *Allergy & Asthma Proceedings* (Vol. 33, No. 1). 60. Khan, D. A. (2012, January). Exercise-induced bronchoconstriction: burden and prevalence. In *Allergy & Asthma Proceedings* (Vol. 33, No. 1). 61. GINA 2011, p. 17 62. Carlsen, K. H., Anderson, S. D., Bjermer, L., Bonini, S., Brusasco, V., Canonica, W., ... & Van Cauwenberge, P. (2008). Exercise-induced asthma, respiratory and allergic disorders in elite athletes: epidemiology, mechanisms and diagnosis: Part I of the report from the Joint Task Force of the European Respiratory Society (ERS) and the European Academy of Allergy and Clinical Immunology (EAACI) in cooperation with GA2LEN. *Allergy*, 63(4), 387-403. 63. Kindermann, W. (2007). Do inhaled B2-agonists have an ergogenic potential in non- asthmatic competitive athletes?. *Sports Medicine*, 37, 95-102. 64. Pluim, B. M., de Hon, O., Staal, J. B., Limpens, J., Kuipers, H., Overbeek, S. E., ... & Scholten, R. J. (2011). β 2-Agonists and physical performance: a systematic review and meta-analysis of randomized controlled trials. *Sports Medicine*, 41, 39-57. 65. Baur, X., Aasen, T. B., Burge, P. S., Heederik, D., Henneberger, P. K., Maestrelli, P., ... & Wilken, D. (2012). The management of work-related asthma guidelines: a broader perspective. *European Respiratory Review*, 21(124), 125-139. 66. Kinnamon I, ed. (2005). *Evidence-based medicine guidelines*. Chichester: Wiley. p. 214. ISBN 978-0-470-01184-3. 67. Frew AJ (2008). "Chapter 42: Occupational Asthma". In Castro M, Kraft M (eds.). *Clinical Asthma*. Philadelphia: Mosby / Elsevier. ISBN 978-0-323-07081-2. 68. Chang, J. E., White, A., Simon, R. A., & Stevenson, D. D. (2012, March). Aspirin- exacerbated respiratory disease: burden of disease. In *Allergy and asthma proceedings* (Vol. 33, No. 2, p. 117). OceanSide Publications. 69. "Aspirin Exacerbated Respiratory Disease (AERD)." www.aaaai.org. American Academy of Allergy Asthma & Immunology. August 3, 2018. Archived from the original on September 18, 2018. Retrieved August 2, 2018. 70. Kennedy, J. L., Stoner, A. N., & Borish, L. (2016). Aspirin-exacerbated respiratory disease: prevalence, diagnosis, treatment, and considerations for the future. *American Journal of Rhinology & Allergy*, 30(6), 407-413. 71. Adams, K. E., & Rans, T. S. (2013). Adverse reactions to alcohol and alcoholic beverages. *Annals of Allergy, Asthma & Immunology*, 111(6), 439-445. 72. Peters, S. P. (2014). Asthma phenotypes: nonallergic (intrinsic) asthma. *The Journal of Allergy and Clinical Immunology: In Practice*, 2(6), 650-652. 73. Burrows, B. (1989). Martinez FD, Halonen M, Barbee RA, Cline MG. Association of asthma with serum IgE levels and skin-test reactivity to allergens. *N Engl J Med*, 320, 271- 277. 74. Hahn, D. L. (2021). Chlamydia pneumoniae and chronic asthma: Updated systematic review and meta-analysis of population attributable risk. *PLoS One*, 16(4), e0250034. 75. Hahn, D. L. (1995). Infectious asthma: a reemerging clinical entity?. *Journal of Family Practice*, 41, 153-153. 76. Hahn, D. L., Peeling, R. W., Dillon, E., McDonald, R., & Saikku, P. (2000). Serologic markers for Chlamydia pneumoniae in asthma. *Annals of Allergy, Asthma & Immunology*, 84(2), 227-233. 77. Wagshul, F. A., Brown, D. T., Schultek, N. M., & Hahn, D. L. (2021). Outcomes of antibiotics in adults with "difficult to treat" asthma or the overlap syndrome. *Journal of Asthma and Allergy*, 703-712. 78. NHLBI Guideline 2007, p. 46 79. Lichtenstein, Richard (2013). *Pediatric emergencies*. Philadelphia: Elsevier. p. 1022. 80. ISBN 978-0-323-22733-9. Archived from the original on 2017-09-08. 81. Gibson, P. G., McDonald, V. M., & Marks, G. B. (2010). Asthma in older adults. *The lancet*, 376(9743), 803-813. 82. Hargreave, F. E., & Parameswaran, K. (2006). Asthma, COPD and bronchitis are just components of airway disease. *European Respiratory Journal*, 28(2), 264-267. 83. Diaz, P. Knoell (2009). "23. Chronic obstructive pulmonary disease". *Applied herapeutics: the clinical use of drugs* (9th ed.). Philadelphia: Lippincott Williams & Wilkins. 84.

Petsky, H. L., Kew, K. M., & Chang, A. B. (2016). Exhaled nitric oxide levels to guide treatment for children with asthma. *Cochrane Database of Systematic Reviews*, (11). 85. Keeney, G. E., Gray, M. P., Morrison, A. K., Levas, M. N., Kessler, E. A., Hill, G. D., ... & Jackson, J. L. (2014). Dexamethasone for acute asthma exacerbations in children: a meta-analysis. *Pediatrics*, 133(3), 493-499. 86. Ali, K. M., Amin, A. F., & Muhammed, A. K. (2019). An investigation into the effect of cigarette smoking on the severity and control of asthma in adults in Sulaimani City. *Revista Latinoamericana de Hipertensión*, 14(6), 675-681. 87. ^ Jump up to a b c d e NHLBI Guideline 2007, p. 213 88. British Thoracic Society. (2016). Scottish intercollegiate guidelines network. British guideline on the management of asthma, 58. 89. Rabe, K. F., Adachi, M., Lai, C. K., Soriano, J. B., Vermeire, P. A., Weiss, K. B., & Weiss, S. T. (2004). Worldwide severity and control of asthma in children and adults: the global asthma insights and reality surveys. *Journal of Allergy and Clinical Immunology*, 114(1), 40-47. 90. Demoly, P., Gueron, B., Annunziata, K., Adamek, L., & Walters, R. D. (2010). Update on asthma control in five European countries: results of a 2008 survey. *European respiratory review*, 19(116), 150-157. 91. FitzGerald, J. M., Boulet, L. P., McIvor, R. A., Zimmerman, S., & Chapman, K. R. (2006). Asthma control in Canada remains suboptimal: the Reality of Asthma Control (TRAC) study. *Canadian respiratory journal*, 13(5), 253-259. 92. Herland, K., Akselsen, J. P., Skjøsberg, O. H., & Bjermer, L. (2005). How representative are clinical study patients with asthma or COPD for a larger "real life" population of patients with obstructive lung disease?. *Respiratory medicine*, 99(1), 11-19. 93. Travers, J., Marsh, S., Williams, M., Weatherall, M., Caldwell, B., Shirtcliffe, P., ... & Beasley, R. (2007). External validity of randomised controlled trials in asthma: to whom do the results of the trials apply?. *Thorax*, 62(3), 219-223. 94. Lazarus, S. C., Chinchilli, V. M., Rollings, N. J., Boushey, H. A., Cherniack, R., Craig, T. J., ... & Fahy, J. V. (2007). Smoking affects response to inhaled corticosteroids or leukotriene receptor antagonists in asthma. *American journal of respiratory and critical care medicine*, 175(8), 783-790. 95. Stapleton, M., Howard-Thompson, A., George, C., Hoover, R. M., & Self, T. H. (2011). Smoking and asthma. *The Journal of the American Board of Family Medicine*, 24(3), 313- 322. 96. Hayes, C. E., Nuss, H. J., Tseng, T. S., & Moody-Thomas, S. (2015). Use of asthma control indicators in measuring inhaled corticosteroid effectiveness in asthmatic smokers: a systematic review. *Journal of Asthma*, 52(10), 996-1005. 97. Kew, K. M., Yorke, J., & Nashed, M. (2015). Cognitive behavioural therapy (CBT) versus usual care for adults and adolescents with asthma. *Cochrane Database of Systematic Reviews*, (8). 98. Ali, K. M., Amin, A. F., & Muhammed, A. K. (2019). An investigation into the effect of cigarette smoking on the severity and control of asthma in adults in Sulaimani City. *Revista Latinoamericana de Hipertensión*, 14(6), 675-681. 99. ^ Jump up to a b c d e NHLBI Guideline 2007, p. 213 100. British Thoracic Society. (2016). Scottish intercollegiate guidelines network. British guideline on the management of asthma, 58. 101. Rabe, K. F., Adachi, M., Lai, C. K., Soriano, J. B., Vermeire, P. A., Weiss, K. B., & Weiss, S. T. (2004). Worldwide severity and control of asthma in children and adults: the global asthma insights and reality surveys. *Journal of Allergy and Clinical Immunology*, 114(1), 40-47. 102. Demoly, P., Gueron, B., Annunziata, K., Adamek, L., & Walters, R. D. (2010). Update on asthma control in five European countries: results of a 2008 survey. *European respiratory review*, 19(116), 150-157. 103. FitzGerald, J. M., Boulet, L. P., McIvor, R. A., Zimmerman, S., & Chapman, K. R. (2006). Asthma control in Canada remains suboptimal: the Reality of Asthma Control (TRAC) study. *Canadian respiratory journal*, 13(5), 253-259. 104. Herland, K., Akselsen, J. P., Skjøsberg, O. H., & Bjermer, L. (2005). How representative are clinical study patients with asthma or COPD for a larger "real life" population of patients with obstructive lung disease?. *Respiratory medicine*, 99(1), 11-19. 105. Travers, J., Marsh, S., Williams, M., Weatherall, M., Caldwell, B., Shirtcliffe, P., ... & Beasley, R.

(2007). External validity of randomised controlled trials in asthma: to whom do the results of the trials apply?. *Thorax*, 62(3), 219-223. 106. Lazarus, S. C., Chinchilli, V. M., Rollings, N. J., Boushey, H. A., Cherniack, R., Craig, T. J., ... & Fahy, J. V. (2007). Smoking affects response to inhaled corticosteroids or leukotriene receptor antagonists in asthma. *American journal of respiratory and critical care medicine*, 175(8), 783-790. 107. Stapleton, M., Howard-Thompson, A., George, C., Hoover, R. M., & Self, T. H. (2011). Smoking and asthma. *The Journal of the American Board of Family Medicine*, 24(3), 313-322. 108. Hayes, C. E., Nuss, H. J., Tseng, T. S., & Moody-Thomas, S. (2015). Use of asthma control indicators in measuring inhaled corticosteroid effectiveness in asthmatic smokers: a systematic review. *Journal of Asthma*, 52(10), 996-1005. 109. Kew, K. M., Yorke, J., & Nashed, M. (2015). Cognitive behavioural therapy (CBT) versus usual care for adults and adolescents with asthma. *Cochrane Database of Systematic Reviews*, (8). © [Daffodil International University](#) 1 © [Daffodil International University](#) 2 © [Daffodil International University](#) 4 © [Daffodil International University](#) 5 © [Daffodil International University](#) 6 © [Daffodil International University](#) 9 © [Daffodil International University](#) 10 © [Daffodil International University](#) 11 © [Daffodil International University](#) 14 © [Daffodil International University](#) 15 © [Daffodil International University](#) 17 © [Daffodil International University](#) 19 © [Daffodil International University](#) 20 © [Daffodil International University](#) 23 © [Daffodil International University](#) 24 © [Daffodil International University](#) 25 © [Daffodil International University](#) 26 © [Daffodil International University](#) 27 © [Daffodil International University](#) 28 © [Daffodil International University](#) 29 © [Daffodil International University](#) 30 © [Daffodil International University](#) 31 © [Daffodil International University](#) 32 © [Daffodil International University](#) 33 © [Daffodil International University](#) 34 © [Daffodil International University](#) 35 © [Daffodil International University](#) 36 © [Daffodil International University](#) 37 © [Daffodil International University](#) 38 © [Daffodil International University](#) 39 © [Daffodil International University](#) 40 © [Daffodil International University](#) 41 © [Daffodil International University](#) 42