PREVALENCE OF RESPIRATORY DISEASES AMONG HEALTHCARE PROVIDER IN DHAKA CITY

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PREVALENCE OF RESPIRATORY DISEASES AMONG HEALTHCARE PROVIDER IN DHAKA CITY

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DECLARATION

This work has not previously been accepted in substance for any degree and isn't concurrently submitted in candidature for any degree. This dissertation is being submitted in partial fulfillment of the requirements for the degree of B.Sc. in Physiotherapy.

I confirm that if anything identified in my work that I have done plagiarism or any form of cheating that will directly awarded me fail and I am subject to disciplinary actions of authority. I confirm that the electronic copy is identical to the bound copy of the Thesis.

In case of dissemination the finding of this project for future publication, research supervisor will highly concern, it will be duly acknowledged as graduate thesis and consent will be taken from the physiotherapy department of Saic college of medical science and technology.

Signature: **Date:**

CONTENTS

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Acronyms

AR	Allergic Rhinitis
CB	Chronic Bronchitis
CI	Confidence interval
COPD	Chronic Obstructive Pulmonary Disease
CRDs	Chronic Respiratory Diseases
IRB	Institutional review board
MBBS	Bachelor of Medicine, Bachelor of Surgery
N	Number
SCMST	Saic College of Medical Science and Technology
SD	Standard Deviation
SPSS	Statistical Package for the Social Sciences
TB	Tuberculosis
WHO	World Health Organization
$\chi 2$	Chi-square

List of Tables

List of Figures

Abstract

Introduction: Respiratory diseases are a significant global health concern, affecting millions of people every year. While exposure to pollutants, allergens, and infections are common causes, medical practitioners, especially those working in hospital environments, are potentially at a higher risk due to their consistent exposure to patients with respiratory illnesses. This research aims to investigate the prevalence of respiratory diseases among medical practitioners working in hospitals within Dhaka city.

Design: A cross-sectional study was conducted over a period of six months. A structured questionnaire was distributed to medical practitioners across different hospitals in Dhaka city. The questionnaire collected information on demographics, medical history, and respiratory symptoms and diseases.

Results: Out of the 114 medical practitioners who participated in the study, 63% were females and 37% were males, with an age range of 24to 55 years. The majority (72%) worked in public hospitals, while the remaining 28% worked in private hospitals. The prevalence of self-reported respiratory symptoms and diseases was alarmingly high, the percentage of patients with asthma was 21.9%, Allergic Rhinitis 26.3% & Pneumonia 8.8%. reporting persistent cough, 27.2% reporting shortness of breath, and 7% reporting wheezing.

Keywords: Medical practitioner, respiratory diseases, COPD, Tuberculosis, Pneumonia.

CHAPTER-I INTRODUCTION

1.1 Background

There are many factors, including smoking, air pollution, and a history of illness, that contribute to respiratory disease. The primary early symptom was air pollution (Lorensia et al., 2019).

Over the past few decades, allergy and asthmatic illness prevalence have substantially increased, not just in industrialized nations. One of the main risk factors for this growth has been identified as urban air pollution from motor vehicles. Even so, genetics play a significant role in the onset of allergy and asthmatic conditions (D' Amato et al., 2013). Air pollution is the modification of the natural features of the atmosphere by any chemical, physical, or biological factor in either the indoor or outdoor environment. Influence of air pollution on the emergency of respiratory conditions. People with respiratory issues may experience worsening lung function from air pollution, whereas healthy individuals may see a decline in lung function. Lung cancer, heart attacks, strokes, and, in the worst cases, early death are all risks associated with exposure to air pollution (Brajer et al., 2022).

The prevalence of chronic respiratory diseases such interstitial lung disease, bronchiectasis, COPD, and asthma is rising, and they are a major source of morbidity and mortality worldwide. Many nations, including the UK, struggle with bronchiectasis, although complete data on the disease worldwide are still scarce. Only a few prior investigations examined the mortality rates and underlying conditions in bronchiectasis patients (Gayle et al., 2019).

Respiratory health problems affect the respiratory tract and lungs. WHO states that four major potentially fatal respiratory problems will account for about one in five deaths worldwide by 2030 (Gautam & Jnawali, 2019).

In addition to the interstitial disease presentations classically associated with coal mining, coal miners are also at risk for dust-related diffuse fibrosis (DDF) and chronic airways disease including emphysema and chronic bronchitis (Laney & Weissman, 2014).

Respiratory symptoms and increased allergen susceptibility of Indian tea industry workers due to occupational exposures warrant routine systematic surveillance of their workplace air quality and health monitoring. The garden workers remain exposed to a

wide variety of air borne allergens including pollen grains, pesticides, microbes and microbial products such as endotoxins and gleans while processing of tea leaves in the production units emits reparable dusts in the breathing zone of the workers engaged in the processes. The dust practices may contain a wide range of allergens and sensitizing agents that may cause various hypersensitivity reactions and respiratory ailments in the workers (Moitra et al., 2016).

Air pollution is a significant health risk factor in Europe, and all over the world. A global study of diseases showed that air pollution is one of the top ten global health risk factors. Approximately 7 million people in the world and 400.00 people in the European Union (EU) experience early death due to air pollution (Unver et al., 2019).

The respiratory health effects have been documented in workers exposed to a variety of dusts in small and large production process. Grain dust has a long history of association with disease, and its adverse effects on various organs such as eyes, nose, skin, lung and airways have been described (Ghosh et al., 2014).

Chronic respiratory disease (CRDs) are recognized as being the major cause for premature death in adult populations worldwide. Preventable and treatable CRDs include chronic obstructive pulmonary disease (COPD), asthma, and respiratory allergies (Chuchalin et al., 2014).

In the few years, use of e- cigarettes has increased rapidly, especially among middle school and high school students. This increase in use is coupled with a perception of safety that has yet to be proven. Although e-cigarette is obviously safer than conventional cigarettes, there are several areas of concern about e-cigarette safety. Concerns include the potential for lifetime addiction to nicotine, eventual transition to conventional tobacco use, and the health effects of nicotine by itself (Spindal & McEvoy, 2015).

The identification of occupational causes may pose challenges due to delayed reactions that transpire after work and years of inactivity between working exposure and the development of an illness. Asthma has become the most common occupational lung disease in post industrialized nations while the prevalence of disorders brought on by mineral dust has decreased recently. New compounds are brought into the workplace every year, and some of them have been linked to lung diseases. Allergic occupational rhinitis often precedes occupational asthma (Beckett & William, 2000). People who work in dusty environments or in the mining, processing, storage, and

chemical industries are more likely to get bronchitis of feedstuffs and grains, welding, and cotton textile milling. (Fishwick et al., 1997).

The main cause of chronic obstructive pulmonary disease is still cigarette smoking, although a variety of occupational dusts can also induce or aggravate emphysema or chronic airflow limitation. Occupational asthma and chronic bronchitis can be brought on by cotton dust, a complicated combination including bacterial endotoxin. (Bouhuys et al., 1967).

Previous studies have consistently found that exposure to indoor air pollutants is higher inside buildings and buses. However, there are very few studies conducted in Malaysia related to indoor air pollutant in long distance express buses. Poor Indoor Air Quality that contain air contaminants such as volatile organic compounds, particular matter, metal, toxic gaseous and airborne bacteria can be hazards to our health (Firdaus & J, 2014).

Severe risk factors for community acquired pneumonia are recognized, including age >65 years, smoking, alcoholism, immunosuppressive conditions, and conditions such as COPD, cardiovascular disease, chronic liver or renal disease. (Torres et al., 2013). First Nations and Inuit children are disproportionately affected by respiratory infections such as viral bronchiolitis, pneumonia and tuberculosis. Rates of long term lung disease following severe respiratory infections early in life, such as bronchiectasis are also elevated (Kovesi, 2012).

1.2 Rationale

The paramount significance of investigating the prevalence of respiratory diseases among medical practitioners is evident in both the healthcare industry and the public health domain. This research aims to illuminate a matter that impacts not only the well-being of medical professionals but also holds far-reaching implications for patient care and the overall sustainability of the healthcare system. Medical practitioners, along with other healthcare workers, face exposure to numerous environmental and occupational factors that have the potential to contribute to respiratory ailments. These factors encompass prolonged exposure to airborne pathogens, hazardous chemicals, and allergens present in healthcare settings. The risk is further heightened by the continuous interaction with patients harboring contagious respiratory infections. The relevance of this study is underscored by the reciprocal relationship between the health of medical practitioners and patient outcomes. Decreased work efficiency, absenteeism, and burnout are more likely to be experienced by ailing healthcare workers, ultimately compromising the quality of patient care. A comprehensive approach that considers various factors is necessary to understand the prevalence of respiratory diseases among medical practitioners. This includes evaluating the frequency and severity of conditions such as occupational asthma, allergic rhinitis, chronic obstructive pulmonary disease (COPD), and even COVID-19. Patterns and correlations that elucidate the root causes of these ailments can be discerned by gathering data on symptoms, medical histories, and exposure risks. In addition to immediate healthcare implications, this research also holds significance for healthcare policy and preventive measures. The findings can inform the development of tailored interventions aimed at reducing exposure risks and promoting the respiratory well-being of medical practitioners. Strategies such as the implementation of improved ventilation systems, utilization of personal protective equipment, and conducting awareness campaigns can be derived from the research outcomes. Furthermore, this study contributes to the existing body of knowledge by addressing a gap in the literature. While substantial research exists on the prevalence of respiratory diseases in specific occupational settings, the focus on medical practitioners, who stand at the forefront of healthcare delivery, remains relatively limited. Thus, the results of this research can serve as a foundation for future studies and as a catalyst for healthcare institutions to prioritize the health of their workforce.

1.3 Research Question

What is the prevalence of respiratory diseases among healthcare provider in Dhaka city?

1.4 Objectives of the study

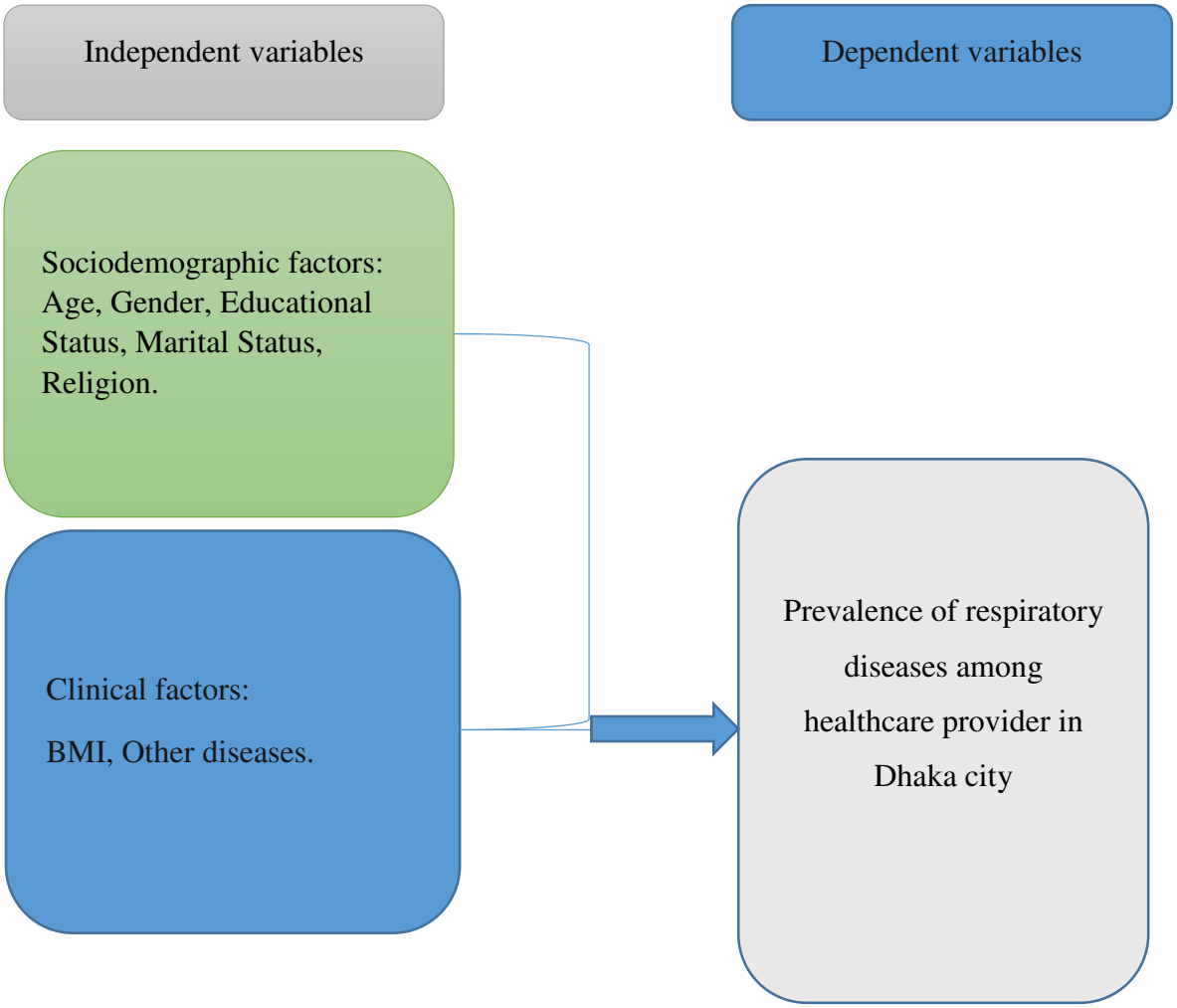
1.4.1 General objective:

- To determine the prevalence of respiratory diseases among healthcare provider.

1.4.2 Specific objectives:

- To identify respiratory diseases among the healthcare provider working in different hospitals in Dhaka city.
- To explore association between Gender and presence of Asthma among the participants
- To find out Educational status and presence of Pneumonia among the participants.
- To evaluate the sociodemographic characteristics among healthcare provider.

1.5 List of variables of the study



1.6 Operational definitions of the variables

Operational Definition:

Respiratory disease: Respiratory diseases, or lung diseases, are pathological conditions affecting the organs and tissues that make gas exchange difficult in air-breathing animals. They include conditions of the respiratory tract including the trachea, bronchi, bronchioles, alveoli, pleurae, pleural cavity, the nerves and muscles of respiration. Respiratory diseases range from mild and self-limiting, such as the common cold, influenza, and pharyngitis to life-threatening diseases such as bacterial pneumonia, pulmonary embolism, tuberculosis, acute asthma, lung cancer, and severe acute respiratory syndromes, such as COVID-19.

Medical practitioners: A physician medical practitioner, medical doctor, or simply doctor, is a health professional who practices medicine, which is concerned with promoting, maintaining or restoring health through the study, diagnosis, prognosis and treatment of disease, injury, and other physical and mental impairments.

Asthma: Asthma is a chronic respiratory condition characterized by inflammation and narrowing of the airways, which results in recurrent episodes of difficulty breathing, coughing, wheezing, and chest tightness. These symptoms occur due to the airways' increased sensitivity to various triggers, leading to the constriction of the muscles surrounding the airways and the production of excess mucus.

Tuberculosis: Tuberculosis (TB) is a contagious infectious disease caused by the bacterium Mycobacterium tuberculosis. It primarily affects the lungs (pulmonary tuberculosis) but can also target other parts of the body (extra pulmonary tuberculosis). TB spreads through the air when an infected person coughs, sneezes, or talks, releasing tiny droplets containing the bacteria into the air. When another person inhales these droplets, they can become infected.

Pneumonia: Pneumonia is a respiratory infection that inflames the air sacs in one or both lungs. It is often caused by bacterial, viral, or fungal infections, although other factors such as aspiration of liquids or chemical irritants can also lead to pneumonia. This inflammation causes the air sacs to fill with fluid or pus, making it difficult to breathe and causing symptoms such as cough, fever, chills, and difficulty breathing.

COPD: Chronic obstructive pulmonary disease (COPD) is a chronic inflammatory lung disease that causes obstructed airflow from the lungs. Emphysema and chronic bronchitis are the two most common conditions that contribute to COPD.

Chronic bronchitis is inflammation of the lining of the bronchial tubes, which carry air to and from the air sacs (alveoli) of the lungs. It's characterized by daily cough and mucus (sputum) production.

CHAPTER – II LITERATURE REVIEW

Workers exposed to various dusts in both small- and large-scale enterprises have been shown to experience negative impacts on their respiratory health. which produce dust throughout the course of manufacture. The type of dust and length of exposure have an impact on occupational dusts, and the pathologic reaction of the workers to their workplace is what causes occupational disease (Ghosh et al., 2014). Pedicabs have a number of risk factors for respiratory illnesses, including smoking, air pollution, and a history of illness. The most frequent risk factor and the most prevalent early symptom in pedicab drivers with respiratory diseases were air pollution and dyspnea, respectively (Lorensia et al., 2019). There is proof that living near busy highways is linked to poor respiratory health, especially asthma (D' Amato et al., 2013). Exercise in polluted places increases the amount of air pollutants, especially those that transport allergens, that are deposited in the lower airways, thus it is vital to keep this in mind (Brajer et al., 2022).

Air pollution can irritate the breathing system, which can cause chest pain, bronchial asthma, coughing, and wheezing (Brajer et al., 2022). Chonic cough, wheezing, tightness, decreased physical activity, and a heaviness in the chest are some of the early signs of COPD (Lorensia et al., 2019). Asthma, bronchiectasis, COPD, and interstitial lung disease are common chronic respiratory conditions that have a large global morbidity and mortality rate (Gayle et al., 2019). Patients suffering from pleurisy, pneumonia, bronchitis, and other pulmonary illnesses (Davies et al., 2018). The most common respiratory illnesses that result in pleural inflammation are tuberculosis and pneumonia. The gap between the lungs and the visceral surface of the ribs is known as the pleural cavity and is bordered with a thin membrane. Therefore, it has been suggested that swelling and inflammation within the pleural cavity are caused by an accumulation of fluid or pus. lower respiratory tract conditions are frequently the cause (Davies et al., 2018). People are always seriously threatened by respiratory conditions like middle east respiratory syndrome and severe acute respiratory syndrome (Kang et al., 2020). Any chemical, physical, or biological factor that affects the atmospheric properties constitutes air pollution and can affect either the indoor or outdoor environment. Air pollution has the potential to both improve and worsen lung function in persons who already have breathing issues. Lung cancer, heart attacks, strokes, and,

in severe cases, premature death are all risks associated with exposure to air pollution (Brajer et al., 2022).

The second leading contributor to respiratory disease is smoking. Since clove cigarettes have a higher tar and nicotine content than white cigarettes, they are more hazardous than kretek cigarettes. Additionally, clove cigarettes don't have filters, allowing for the whole inhalation of the combustion products and passage into the respiratory system. The prevalence of COPD and respiratory symptoms was lower in former smokers who had abstained from smoking for ten years than in current smokers. Smokers can be classified as non-smokers, ex-smokers, or smokers who are different based on how many cigarettes they smoke each day by using cumulative cigarette intake in the future to demonstrate a consistent association between pulmonary disease and smoking (Lorensia et al., 2019).

The capacity of the lungs to fill with air and empty it out is known as lung function. Due to constant exposure to airborne particles, chemicals, and infectious organisms, the lung is the internal organ that is most susceptible to infection and damage from the outside environment. Respiratory disease can cause disability and death in all racial and ethnic groups around the world. The top 5 causes of death worldwide are respiratory diseases. The majority of air pollution is produced by transportation vehicles, which account for around 70% of all environmental exposure (Lorensia et al., 2019). Over the past few decades, allergies and asthma have become far more common, and not just in developed nations. One of the main risk factors for this exercise has been identified as urban air pollution from moving cars (D' Amato et al., 2013). Cardiovascular disease is significantly increased by obesity. Type 2 diabetes mellitus and several forms of cancer. Additionally, it is well-known that central obesity is linked to a number of respiratory disorders, including those that affect breathing patterns, gas exchange, resistance to airflow, and respiratory mechanics. Eventually, this will lead to abnormalities in pulmonary function tests. A persistent cough is linked to a deteriorating obstruction to airflow and a steady decline in pulmonary function (Sony et al., 2017). When a person inhales and exhales, a high-pitched whistling sound is made, which is known as wheezing. Inflammation in the airways can cause them to become tiny and narrow, which can lead to wheezing. When air is forced into a small opening, it gets turbulent and vibrates the airway wall, producing a wheezing sound (Gidaris & Cunningham., 2013). Sense of chest tightness is similar to when the chest is compressed by a large

object or is knotted tightly, making breathing difficult (Lorensia et al., 2019). Air pollutants build up and cause similar air pollution-related episodes of rhinitis and asthma aggravation. However, the impact of air pollutants on lung function depends on the pollutant's ambient concentration (D' Amato et al., 2013). The association between air pollution and allergic respiratory illness is commonly studied using pollen allergy (D' Amato et al., 2013). Current climate change scenarios predict that over the next few decades, there will be an increase in the intensity and frequency of heavy rainfall episodes, including thunderstorms, which can be expected to be linked to an increase in the frequency and severity of asthma attacks in both adults and children (D' Amato et al., 2013). Interpretations People with asthma have a relatively low risk of developing severe COVID-19. People who have both COPD and interstitial lung disease seem to be slightly more likely to develop serious illness (Avayard et al., 2013). Comparison to patients without these disorders, we looked at the risk of severe COVID-19 in relation to COPD, Asthma, Bronchiectasis, Cystic Fibrosis, Pneumonitis, and other interstitial lung diseases (Avayard et al., 2013). There is mounting evidence that people with chronic liver illness are more susceptible to developing severe COVID-19 infections. Chronic liver disease is characterized by a steady decline in liver function over more than six months. Alcoholic, metabolic, and autoimmune liver diseases are the most frequent etiologies. Cirrhosis of the liver is the final stage of these conditions (Garrido et al., 2022). The COVID-19 virus can cause heart and lung damage as well as respiratory failure. According to reports, older COVID-19 patients have a higher mortality rate and a more severe illness than younger patients (Sun et al., 2020). As a result of exposure to dust at work, rice mill employees have more respiratory symptoms and have lower lung function scores. Grain dust has a long history of illness associations and negative effects on many organs, including the eyes, nose, skin, lungs, and airways (Ghosh et al., 2019). Peak expiratory flow rate (PEFR) is a crucial criterion to assess in the treatment of bronchial asthma as it shows the resistance and severity of airflow blockage. Agriculture workers confront a wide range of health issues due to exposure to particulate pollution and hazardous dangers from chemicals used as pesticides and fertilizers, as well as dust exposure in the fields (Ghosh et al., 2019).

In addition to the interstitial disease manifestations that are traditionally linked to coal mining, coal miners also run the risk of diffuse fibrosis due to dust exposure and chronic respiratory illnesses including emphysema and chronic bronchitis. For many years, it

has been known that breathing coal mine dust can lead to COPD (Laney et al., 2014). The near future, mining coal will still be a significant business and coal is still a valuable worldwide commodity. In the East of the country, more bituminous coal is mined underground than in the West, which mostly mines sub-bituminous coal on the surface. CMDLD, a group of diseases caused by exposure to coal mine dust, can occur while mining (coal mining dust lung disease). Emphysema and chronic bronchitis are two common examples of this spectrum of chronic obstructive pulmonary disease, or CWD. The prevalence of CMDLD has grown in the last year in the United States. Younger miners under the age of 50 who have serious illnesses have been affected (Laney et al., 2014). Lung infections are the number one killer of children under the age of five, especially in low-income nations. The most frequent cause of bronchiolitis and pneumonia in babies is respiratory syncytial virus, and seasonal influenza virus epidemics around the world are expected to cause three to five million severe infections each year. Numerous microbiome researchers are looking into how the gut microbiota may affect lung infections because of how significant respiratory infections are to world health. (Groves et al., 2018). The world health agency has set the 2030 deadline for completely eliminating silicosis, the most prevalent form of pneumoconiosis. Silicosis is caused by prolonged exposure to silica-containing repairable dust. lung cancer risk and increased susceptibility to TB (Refeemanesh et al., 2014). Spirometry is one of the most significant diagnostic techniques for occupational respiratory disorders. It is the most popular and effort-dependent pulmonary function test (PFT), and it may assess how lung function is impacted by blockage or restriction (Ghosh et al., 2019). The majority of medications used to treat asthma, chronic obstructive pulmonary disease (COPD), cystic fibrosis, and other acute or chronic respiratory diseases should be administered by inhalation (Emeryk et al., 2021). The best inhaler possible for each patient, not just one inhaler that works for everyone. Every type of inhaler has unique usage instructions, and a patient may experience issues with a new inhaler. The therapeutic impact could get worse if the inhaler is changed. However, switching in clinically appropriate situations for patients with asthma or COPD may lessen exacerbations, increase adherence, and/or be a more affordable treatment option (Bloom et al., 2019). The respiratory system was then thoroughly examined by systematic inspection, palpation, percussion, and auscultation after a full clinical examination that included examination of the ears, nose, and throat using the standard head mirror (Ghosh et al., 2019). The 9th-highest risk factor for cardiopulmonary death

is direct exposure to air pollution. Influence of specific air contaminants on respiratory illnesses such lung cancer, bronchial asthma, and chronic obstructive pulmonary disease Direct contact with a variety of outdoor air pollutants, particularly those with the most severe effects, appears to increase respiratory disorders such asthma, COPD, lung cancer, and COPD, among others (Brajer et al., 2022). Chronic bronchitis is an increased risk of developing COPD, but its symptoms are often underestimated. Demographic and socio-economic conditions might influence its prevalence reporting and impact. The prevalence of symptoms and diagnosis of chronic bronchitis was 3.5% and 3.4% respectively. Chronic bronchitis was associated with impaired health status and activity and in women work loss. Among subjects with symptoms of Chronic bronchitis only 28.6% declared a known diagnosis of respiratory disease. Factors associated with symptoms of Chronic bronchitis in multivariate analysis were male gender active smoking Although the symptoms of chronic bronchitis are frequently underappreciated, it increases the chance of developing COPD. The reporting of its incidence and impact may be influenced by socioeconomic and demographic factors. The prevalence of chronic bronchitis diagnoses and symptoms was 3.5% and 3.4%, respectively. Chronic bronchitis was linked to decreased activity levels, a decline in health status, and job loss in women. Only 28.6% of respondents who reported having chronic bronchitis symptoms gave a confirmed diagnosis of a respiratory condition. In a multivariate analysis, male gender, active smoking, and chronic bronchitis symptoms were all related with these variables (Ferre et al., 2011).

There was less evidence that smoking altered the risks of COPD and asthma. People with COPD who smoked were more likely to be admitted to the hospital with COVID-19 than those with COPD who did not smoke at the time (Aveyard et al., 2021). Male smokers made up 47.1% of the smoking population in Indonesia, compared to female smokers' 1.1%. The majority of respondents—28.89% or 39—were in the 50–54 age group and had respiratory illnesses (Lorensia et al., 2019). The most common malignant neoplasm and the leading cause of cancer-related death in both sexes globally is lung cancer. Tobacco use, the primary etiological factor in lung carcinogenesis, dominates the geographic and temporal patterns of lung cancer incidence as well as lung cancer mortality on a population level. The descriptive epidemiology of lung cancer may be shaped by additional factors such as genetic vulnerability, poor diet, occupational exposures, and air pollution acting alone or in combination with tobacco use. The main

risk factor for lung cancer is tobacco use (Malhotra et al.,2016). Significant histological forms of lung cancer are most commonly caused by tobacco use. Since the early 1950s, epidemiological studies have shown that tobacco smoking causes lung cancer, and this has been acknowledged by the public health community. Although cigarettes are the most popular tobacco product smoked in western countries, pipes, cigars, and cigarillos have also been linked to an increased risk of lung cancer, indicating a potential carcinogenic influence of such products (Malhotra et al.,2016).

Controlling tobacco use is the most crucial preventive measure for lung cancer (Malhotra et al.,2016). The big European Community Respiratory Health (ECRH) survey from Mumbai, which reported a 3.5% prevalence of asthma with a physician diagnosis, was only conducted in one location. Due to the vast epidemiological variability, these results cannot be applied to the entire nation. The prevalence among adults is reported to be 2.8% and 2.4%, respectively, in two earlier investigations from this center. It was therefore obvious that a national study was required to determine the burden of chronic respiratory diseases caused by asthma and COPD in India. In India, chronic respiratory disease is responsible for 7% of fatalities and 3% of disability losses (Jindal et al., 2012). In industrialized countries, community acquired pneumonia (CAP) causes significant morbidity and mortality in adults and is a major factor in high hospitalization rates, particularly in the elderly. The fourth most frequent cause of death worldwide, according to the 2010 Global Burden of Disease Study, is lower respiratory tract infections, including pneumonia (Torres et al., 2013).

The prevalence of bronchiectasis is highest in a population. The majority of occurrences occur after a severe bout of pneumonia or bronchiolitis in a young child (Kovesi & Thomas, 2012). Many nations, including the UK, struggle with bronchiectasis, although complete data on the disease worldwide are still scarce. Only a few prior investigations examined the mortality rates and underlying conditions in bronchiectasis patients (Gayle et al., 2019). In FN/I children and adults, particularly among the Inuit, TB rates continue to be alarmingly high. Ratios of tuberculosis (TB) was 5.0 per 100,000 in the general Canadian population and 26.8 per 100,000 in the Aboriginal community in 2005. In Canada, 21% of cases of tuberculosis (TB) in Aboriginal people are in children under the age of 15, compared to 6% in Non-Aboriginal persons who were born in Canada (Kovesi & Thomas, 2012). Asthma, rhinitis, and hay fever are the most prevalent chronic immune system diseases that cause allergic respiratory illness.

Environmental risk factors for these illnesses include indoor and outdoor allergens, tobacco smoke, air pollution, cold air, and even rapid urbanization. Asthma affects more than 272 million people worldwide, and allergic rhinitis affects millions more. According to estimates, 4.2% of adults in China over 20 are believed to have asthma, with southeastern regions having a higher frequency than northwestern ones. From 2007 to 2017, there was a 19.3% global increase in asthma, compared to an 8.0% increase from 1997 to 2007 (Deng et al., 2020). The prevalence of work-related respiratory symptoms was relatively high (67.5%) among Indian tea sector employees who were regularly exposed to a variety of airborne contaminants, including aeroallergens and organic and inorganic particulate matter. Nearly 78% of the tea workers had allergies to the common allergens in their workplace (Moitra et al.,2016).

With 45.7% of the population reporting that they had ever smoked, and 73.1% of those reporting that they were currently smoking, smoking was highly prevalent. Patients with a smoking history of at least 200 packs over the course of their lifetime were considered. In response to the question of whether they have been exposed to workplace dust for longer than a year, 22.2% of the overall population said they had. A total of 34.0% of the population said they used an open fire indoors for cooking or heating. respiratory symptoms' relationship with these chosen risk variables (Chuchalin et al., 2014).

CHAPTER – III METHODOLOGY

3.1 Study design

It was a cross sectional type of descriptive study.

3.2 Study place

Data was collected from Bangabandhu Sheikh Mujib Medical college, OGSB Maternity Hospital, Mirpur 13, Marks Medical college and Hospital, Mirpur 14, Firoza Bari Disable Children Hospital, Topkhana Road, Dhaka 1000. National Institute of Traumatology and Orthopedic Rehabilitation, Sayed Mahbub Morshed Road, MH Samorita Hospital & Medical College, 117 Tejgoan.

3.3 Study Area: Dhaka city.

3.4 Study period

The duration of the study was 12 months from 1st July 2022 to 30th June 2023.

3.5 Study population

Healthcare provider in Dhaka city.

3.6 Sample size

We know that,

$$n = \frac{z^2pq}{d^2}$$

Here,

n = required sample size

z = confidence level of at 95% (standard value of 1.96)

P =P is the expected rate of prevalence, here researcher taken the prevalence rate of 0.21% from the previous published by (Chuchalin et al., 2014).

q = 1 - p

d = margin of error at 5% (0.05).

$$n = \frac{z^2pq}{d^2}$$

$$= \frac{1.96^2 \times 0.21 \times (1-0.21)}{(0.05)^2}$$

$$= \frac{3.84 \times 0.21 \times 0.79 \times}{0.0025}$$

$$= 254.8$$

So, Sample size 254.8

3.7 Sampling technique

Convenience sampling technique applied for this study.

3.8 Eligibility criteria

3.8.1 Inclusion criteria

- Age of 24-55 years
- Doctors, Physiotherapists, nurses were included
- Only healthcare provider in Dhaka cities were included
- Subjects who were willingly participate

3.8.2 Exclusion criteria

- People who were not healthcare provider
- Medically unstable
- Retired healthcare provider

3.9 Method of data collection

Convenient sampling technique applied for this study.

3.10 Instrument and tools of data collection

Self structured questionnaire for collecting socio demographic information.

3.10.1 Data Collection procedure

The data was collected through face-to-face interview. Data were collected after receiving permission from the ethical review board. A participant required around 15-20 minutes to gather responses to questions. The researcher also explained to all participants the goal of the study. Participants were guaranteed that their private information would never be disclosed. The questions were formulated in English. Both open and close ended questions were included in this questionnaire.

3.10.2 Data analysis

Data were analyzed by using statistical package for the social science (SPSS) program (25 version) and used both descriptive (mean, standard deviation, frequency, percentage) and inferential statistics (eg: Pearson Chi-square test) and MS Excel.

3.11 Ethical consideration

The investigator obtains written permission from ethical review board (SCMST). Ethical review board informed by written document about aims and objectives of the study and that the patients of the study not harmed or the clients name, address and personal information was kept confidential by the investigator mentally and the dates will not be shared with others.

CHAPTER – IV RESULTS

The Purpose of this study was to find out the Prevalence of Respiratory disease and risk factor among medical practitioner who work in the hospital in Dhaka city. Data were numerically coded and analysis the data by using an SPSS 25.0 version software program and the result captured in Microsoft Excel and calculated as percentages and presented by using graphs and in table.

Part one

Section 1: Socio Demographic Related Question

4.1.1: Age of the participants-

114 participants mean and standard deviation of participants age where mean ±SD=31.51±6.267; about 50.9%(n=58) participant age 20-29 years; 37.7%(n=43) participant age 30-39 years; 8.8%(n=10) participant age 40-49; 2.6%(n=3) participant age 50-59.

Table No: 4.1.1: Age of the participants

Age group	Frequency (n)	Percentage(%)	Mean ± SD
20 – 29	58	50.9%	31.51 ± 6.267
30 – 39	43	37.7%	
40 – 49	10	8.8%	
50 – 59	3	2.6%	
Total	114	100%	

4.1.2: Gender of the participant-

114 participants of medical practitioner were selected. In this study there were 37%(42) male , on the other hand there were 63%(72) of female participants.

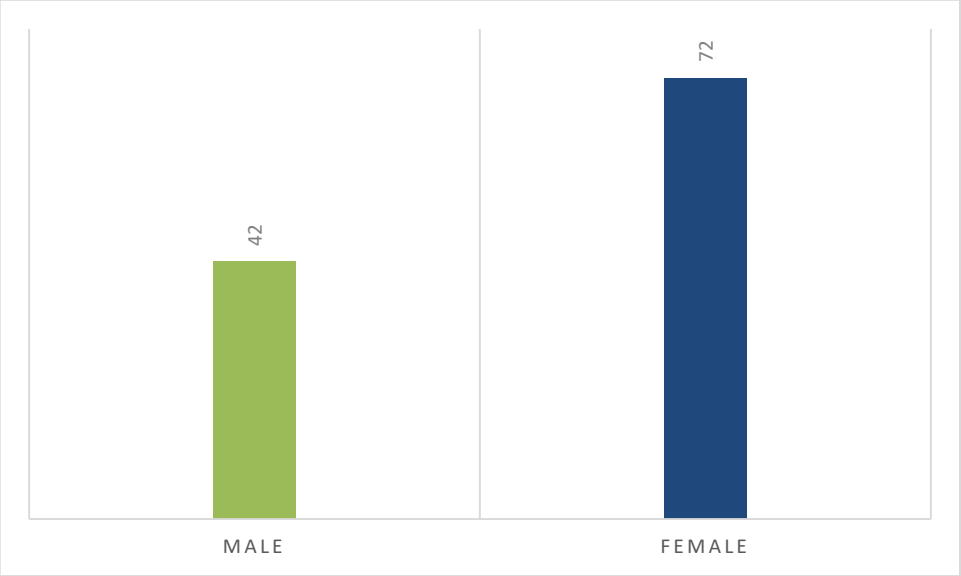


Figure 4.1.2: Gender of the participant

4.1.3: Educational status of the participant-

This studies among 114 participants, there were 33.3% (38) of MBBS, 13.2%(15) of the participants were Physiotherapists and 52.6%(60) of them were Nurses, and 0.9%(1) others.

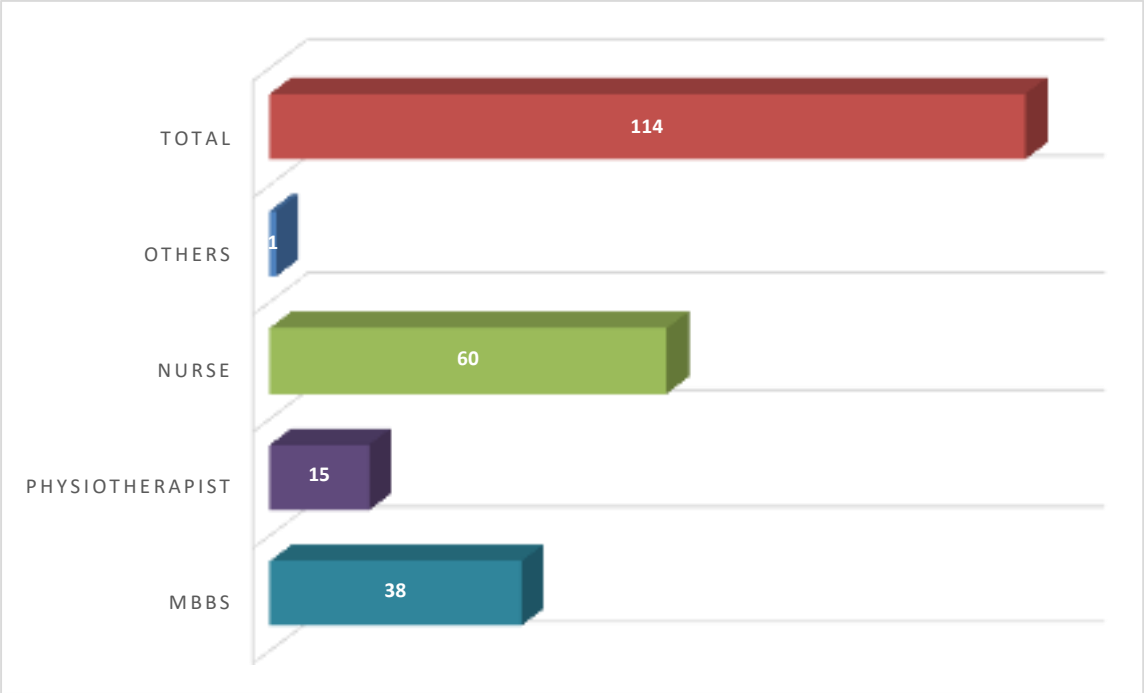


Figure 4.1.3: Educational status of the participant

4.1.4: Working hospital-

Among the 114 participants, there were 20.2% (23) were in Government hospital, 47.4% (54) of the participants were in Private hospital, and there were 32.5% (37) in other hospital.

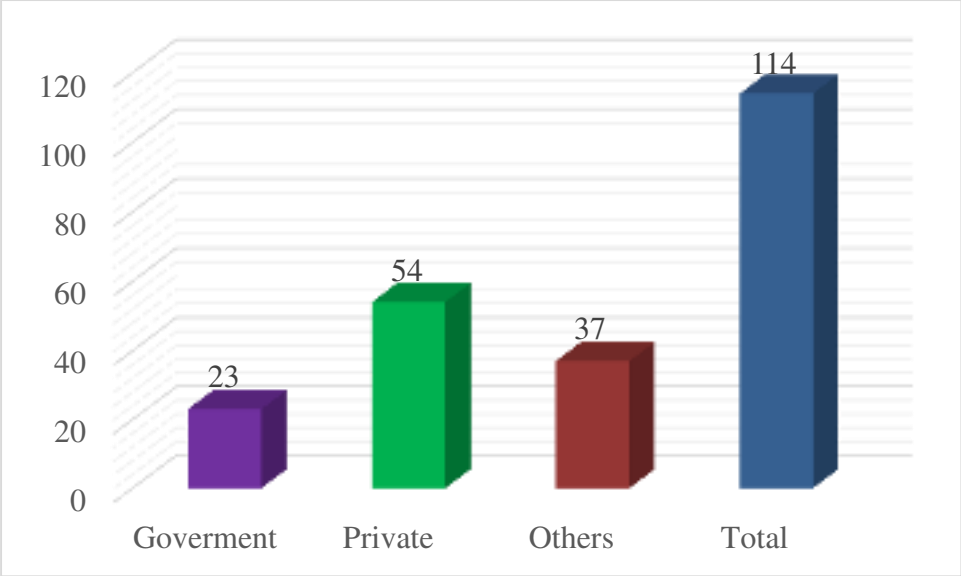


Figure 4.1.4: Working hospital

4.1.5: Religion of the participants-

In this study, about 69.3%(79) participants were Islam; 26.3%(30) were Hindu; 3.5%(4) were Christian and 0.9%(1) were Buddhist.

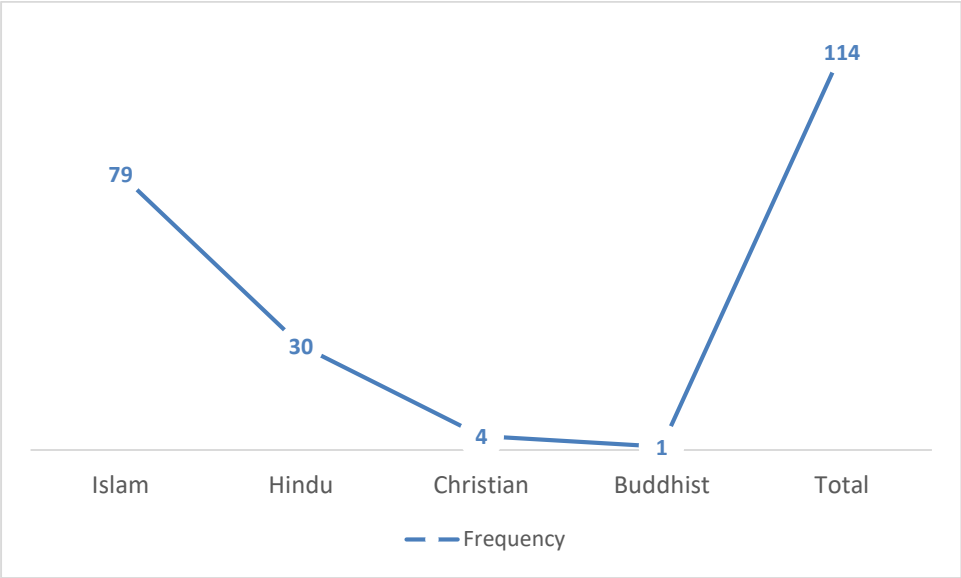


Figure 4.1.5: Religion of the participants

4.1.6: Marital Status of the participant-

In this research, among all the participants 65.8% (75) were Married and on the other hand 34.2%(39) participants were Unmarried.

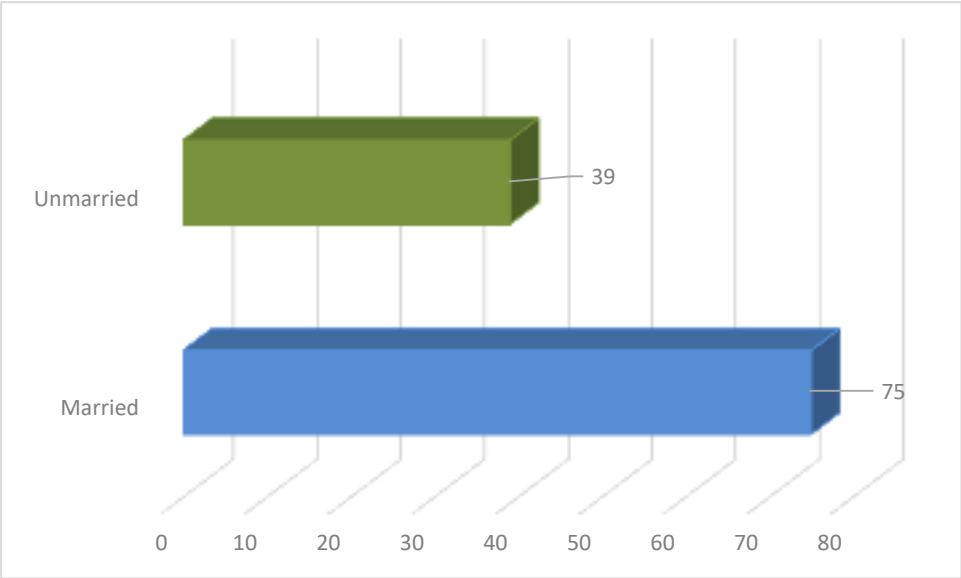


Figure 4.1.6: Marital Status of the participant

Part two

4.2.1: BMI of the participants-

This study's showed that, the mean and standard deviation of 114 participants BMI where mean ±SD=22.978±3.3562; about 2.6%(n=3) participants were underweight; 74.6%(n=85) participants were normal in weight; 22.8%(n=26) participants were overweight.

Table No: 4.2.1: BMI of the participants

BMI	Frequency(n)	Percentage(%)	Mean ± SD
Underweight	3	2.6%	22.978 ± 3.3562
Normal	85	74.6%	
Overweight	26	22.8%	
Total	114	100%	

4.2.2: Suffering diseases of the participants-

In this survey, among the 114 participants there were 5.3% (6) of them were suffering from High blood pressure 3.5% (4) of the participants were suffering from other diseases and on the other hand No known diseases were found in the 91.2% (104) of the participants.

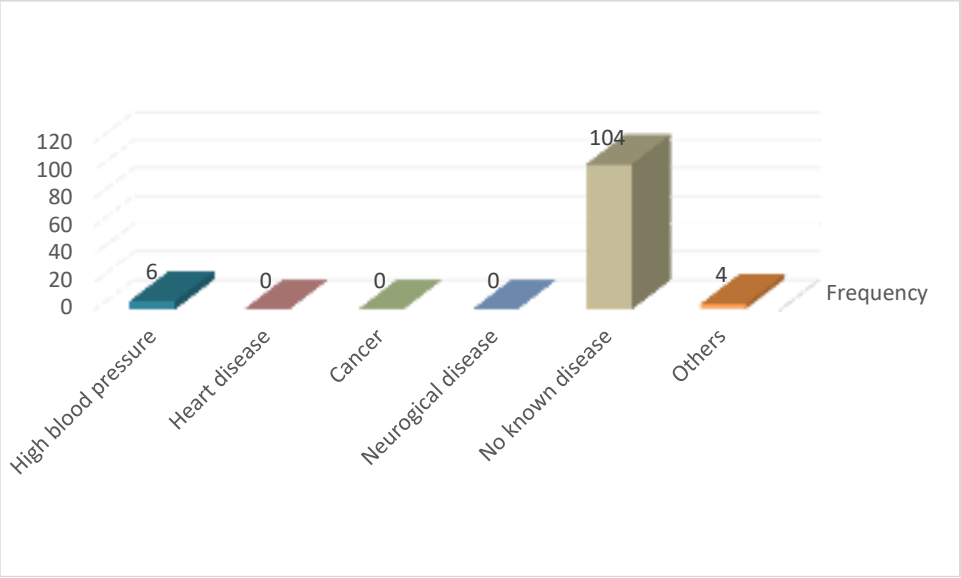


Figure 4.2.3: Suffering diseases of the participants

Section 2: Respiratory Diseases information related Question

4.3.1: Respiratory symptoms (coughing) of the participants-

In this chart, as we saw that there were 9.6% (11) of the participants were suffering from coughing among the 114 participants. And 90.4% (103) of them were not suffering from cough.

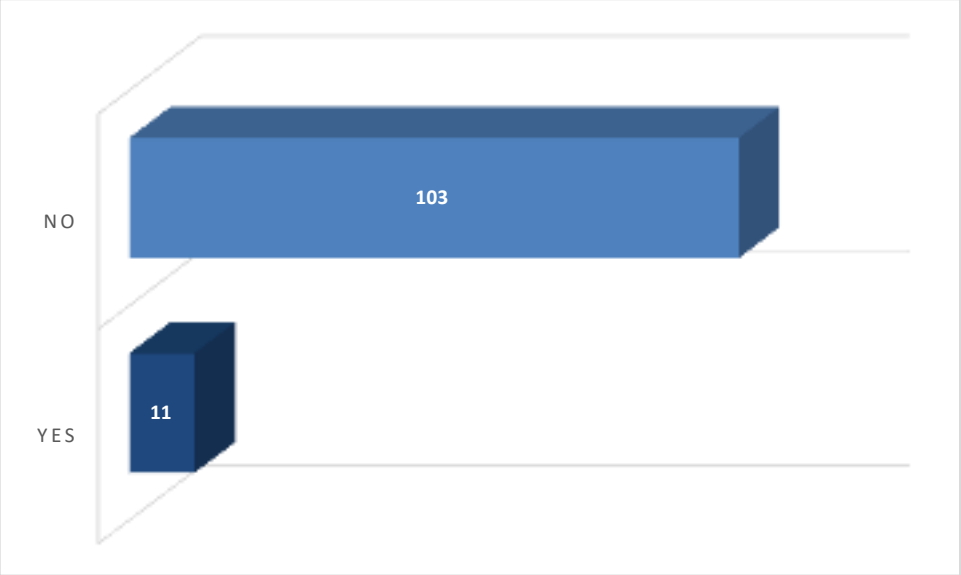


Figure 4.3.1: Respiratory symptoms (coughing)

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4.3.2: Frequency of coughing issue of participants-

In this survey, 7.0% (8) of the participants were cough as much as 4 to 6 times a day and while 93.0%(106) of them were not cough as much as 4 to 6 times a day.

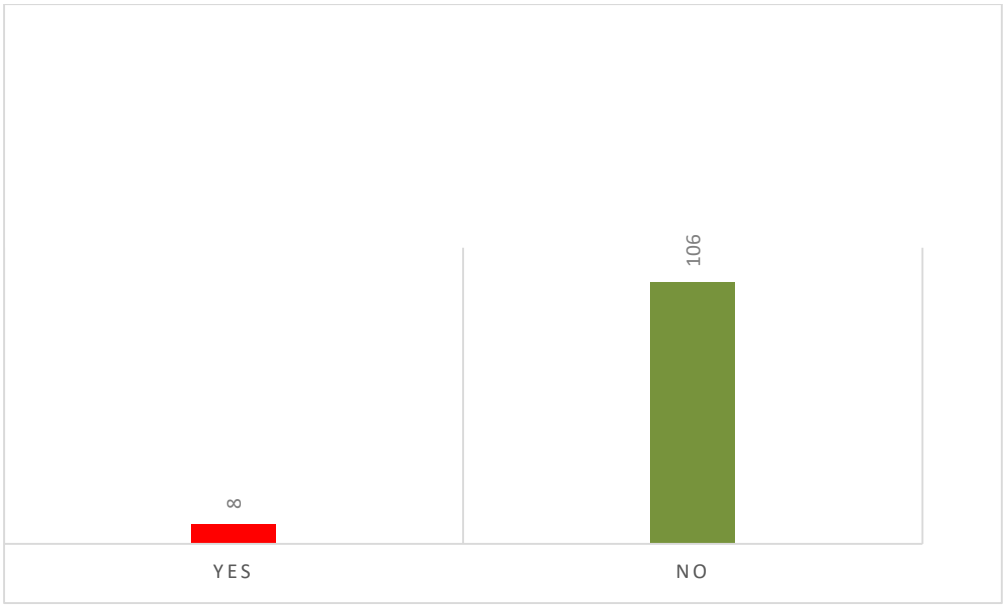

Figure 4.3.2: Frequency of coughing issue of participants

4.3.3: Duration of the cough among the participants-

In this survey, 3.5%(4) of the participants were cough as much as 4 to 6 times on most of the days for 3 consecutive months or more during the year, and while 96.5%(110) of them were not cough as much like that for 3 consecutive months or more during the year.

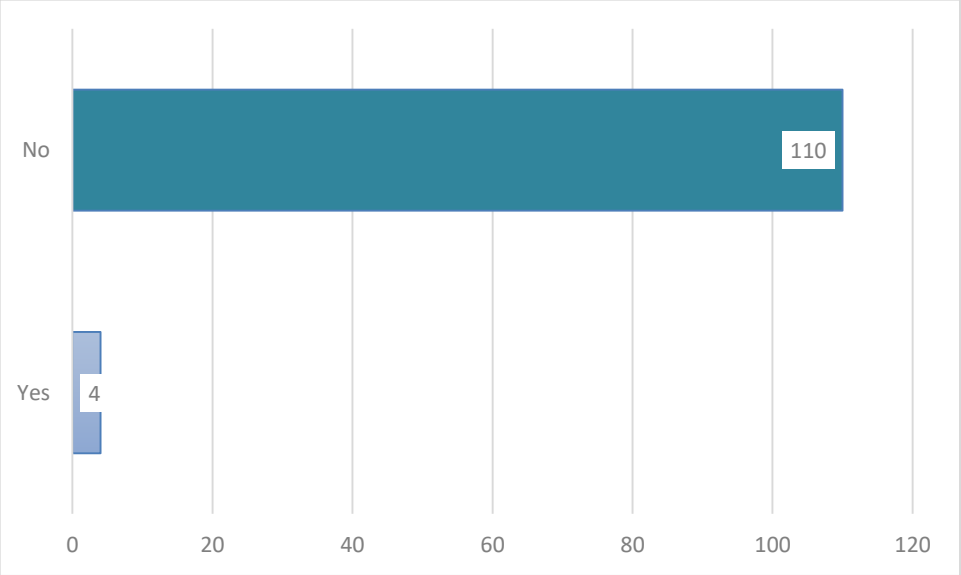

Figure 4.3.3: Duration of the cough among the participants

4.3.4: Duration of the Cough among the participants in years-

This study's shows that, the mean and standard deviation of 114 participants Cough in years, where mean ±SD=4.456±0.322; about 7.0%(n=8) participants were coughing for 1-5 years; 2.6%(n=3) participants were coughing for 6-10 years; 0.9%(n=1) participants were coughing for 16-20 years.

Table No: 4.3.4: Duration of the Cough among the participants in years

Coughing of the years	Frequency(n)	Percentage(%)	Mean ± SD
1-5	8	7.0%	4.456 ± 0.322
6-10	3	2.6%	
16-20	1	0.9%	
Total	114	100%	

4.3.4 Phlegm bring up chest of the participants-

In the survey, 6.1% (7) of the participants were bring up Phlegm from their chest while 93.9%(107) participant didn't bring up Phlegm from their chest.

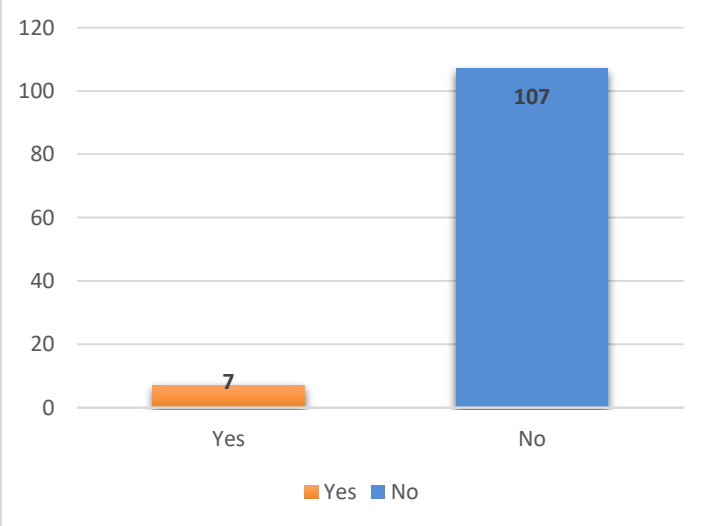

Figure 4.3.4 Phlegm bring up chest of the participants

4.3.5 Frequency of Phlegm bring up among the participants-

Among the 114 participants 110 responded no to usually bring up Phlegm like this as much as twice a day, 4 or more days out of the week which were 96.5% (110); and 4 responded to yes while the percentage were 3.4%(4).

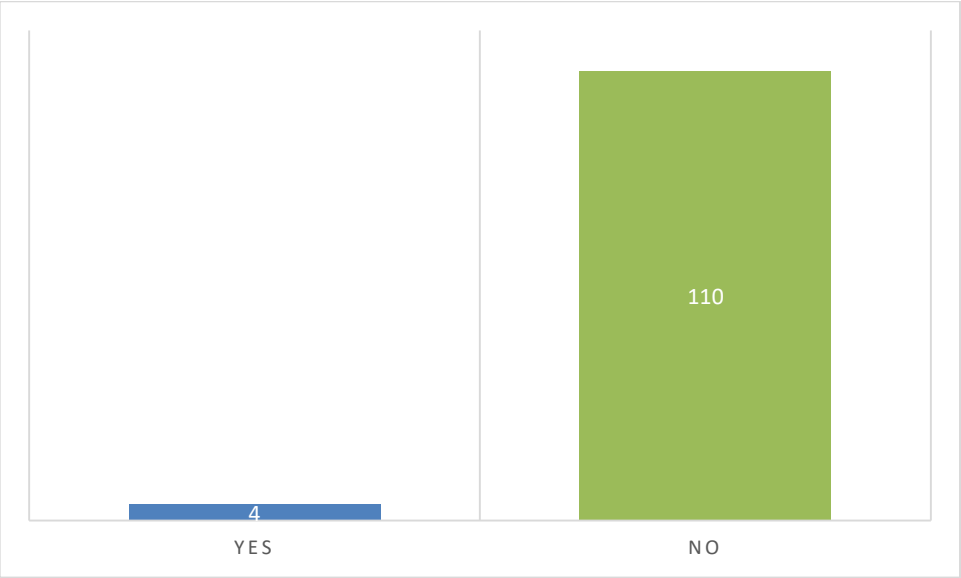

Figure 4.3.5 Frequency of Phlegm bring up among the participants

4.3.6 Duration of the Phlegm among the participants –

In this column, we saw that among the 114 participants 2 responded yes to bring up Phlegm like this on most days for 3 consecutive months or more during the year which were 1.8% (2); and 112 responded no to bring up phlegm like this whose percentage were 98.2%(112).

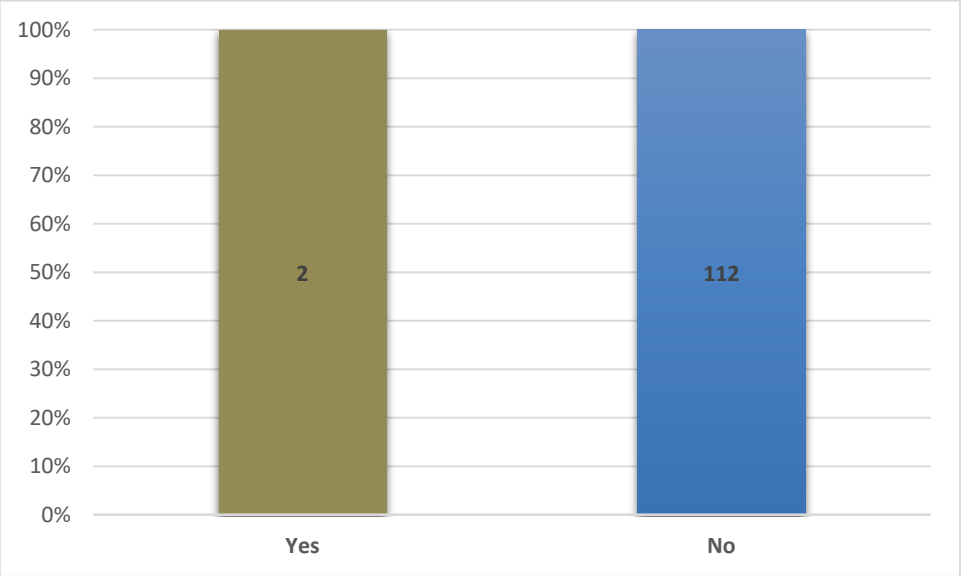

Figure 4.3.6 Duration of the Phlegm among the participants

4.3.7: Duration of the Phlegm among the participants in years-

This table showed that, the mean and standard deviation of 114 participants Phlegm in years, where mean ±SD=3.007±0.24; about 5.3%(n=6) participants were Phlegm Coughing for 1-5 years; 0.9%(n=1) participants were Phlegm coughing for 6-10 years.

Table No: 4.3.7: Duration of the Phlegm among the participants in years

Phlegm of the years	Frequency(n)	Percentage(%)	Mean ± SD
1-5	6	5.3%	3.007±0.24
6-10	1	0.9%	
Total	114	100%	

4.3.8 Wheezing attack that has made feel short of breath of the participants-

In this chart, 7%(8) participants had wheezing attack and 93%(106) did not.

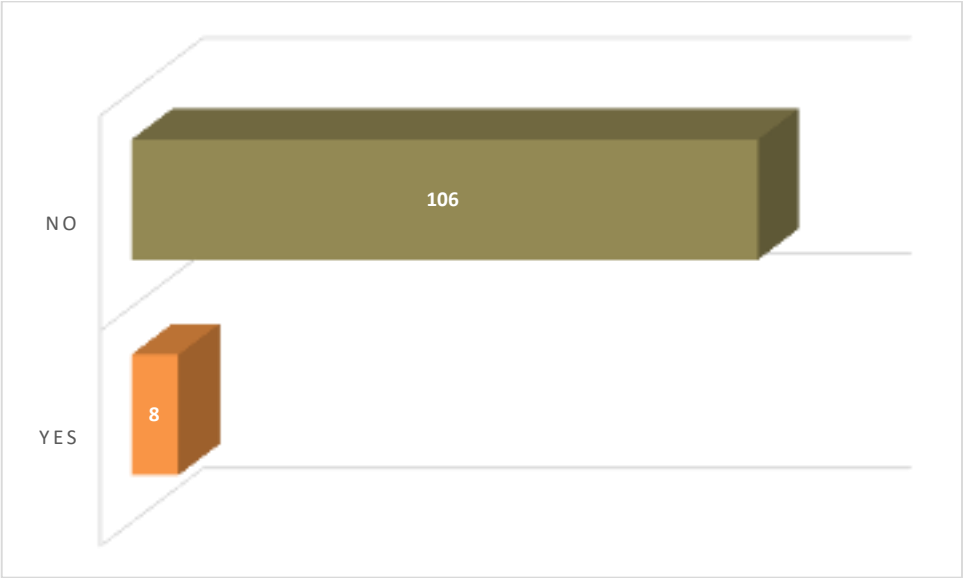

Figure 4.3.8 Wheezing attack that has made feel short of breath of the participants

4.3.9 Wheezing that had 2 or more such episodes of the participants-

Among the 114 participants 109 responded no to Wheezing that had 2 or more such episodes and their percentage were 95.6%(109); while 5 responded yes to Wheezing that had 2 or more such episodes and their percentage were 4.4%(5).

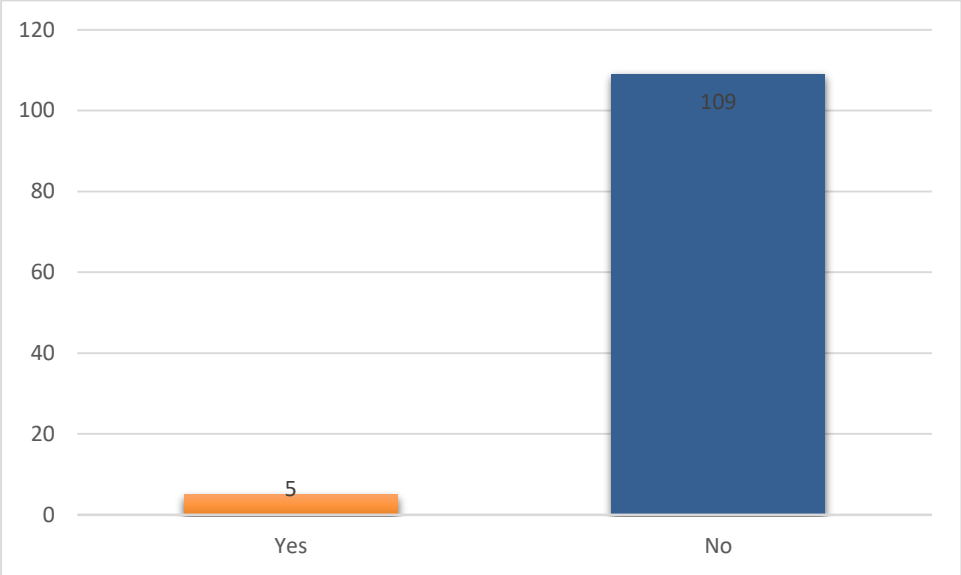

Figure 4.3.9 Wheezing that had 2 or more such episodes of the participants

4.3.10 Required medicine or treatment for wheezing attack among the participants-

This figure showed that, Among the 114 participants 93.0%(106) responded no to taking medicine or treatment for the wheezing attack; 7.0%(8) responded yes to taking medicine or treatment for the wheezing attack.

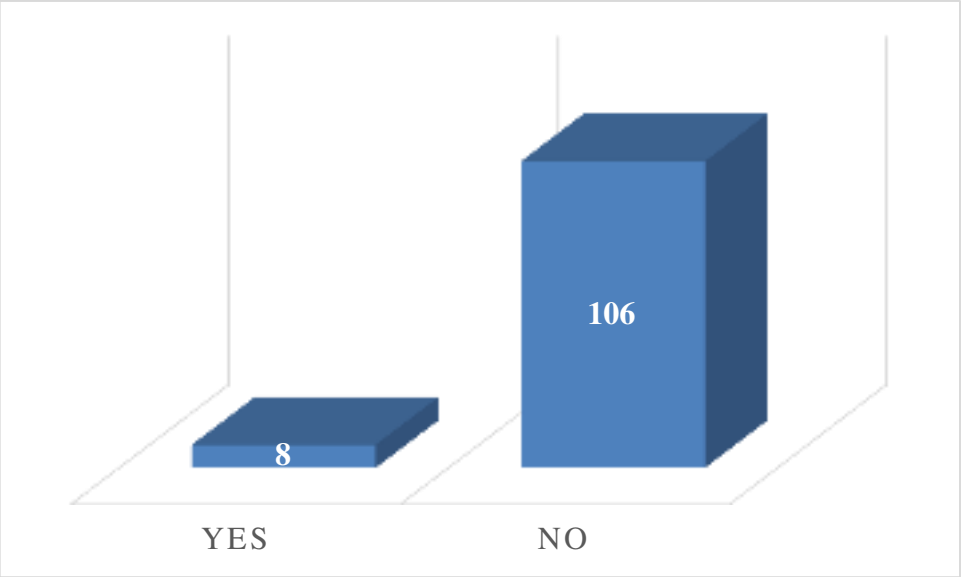

Figure 4.3.10 Required medicine or treatment for wheezing attack among the participants

4.3.11 Participants troubled by shortness of breath when hurrying on the level or walking up a slight hill-

In the survey, 27.2%(31) participants had troubled by shortness of breath when hurrying on the level or walking up a slight hill; while 72.8%(31) participants didn't had troubled by shortness of breath when hurrying on the level or walking up a slight hill.

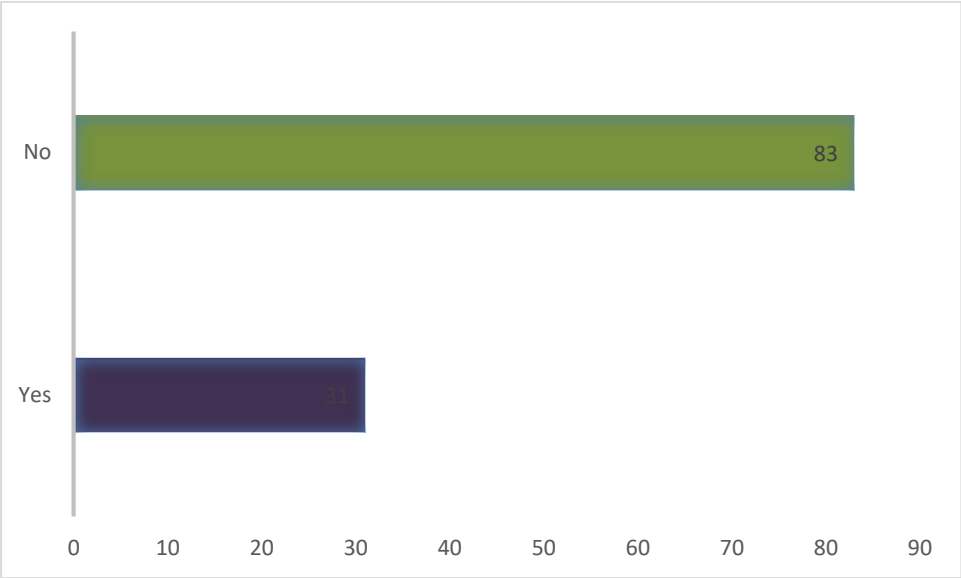

Figure 4.3.11 Participants troubled by shortness of breath when hurrying on the level or walking up a slight hill

4.3.12 Participants walk slower than people of similar age because of breathlessness-

Among the 114 participants 16.7%(19) responded yes to walk slower than people of their similar age on the level because of breathlessness; while 83.3%(95) responded no to walk slower than people of their similar age on the level because of breathlessness.

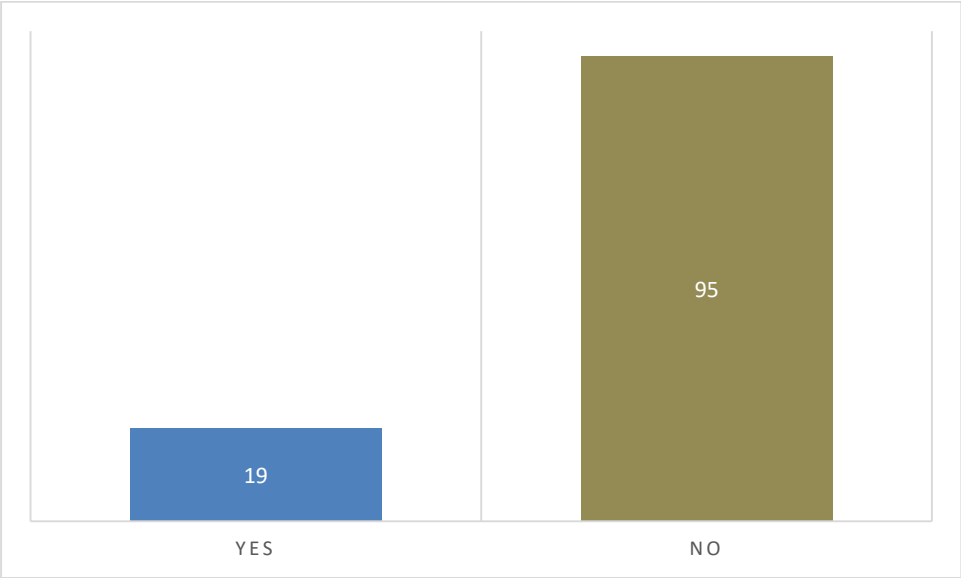

Figure 4.3.12 Participants walk slower than people of similar age because of breathlessness

4.3.13 Participants that had Emphysema-

Among the 114 participants, 1.8%(2) participants had Emphysema; and 98.2%(112) participants didn't have Emphysema.

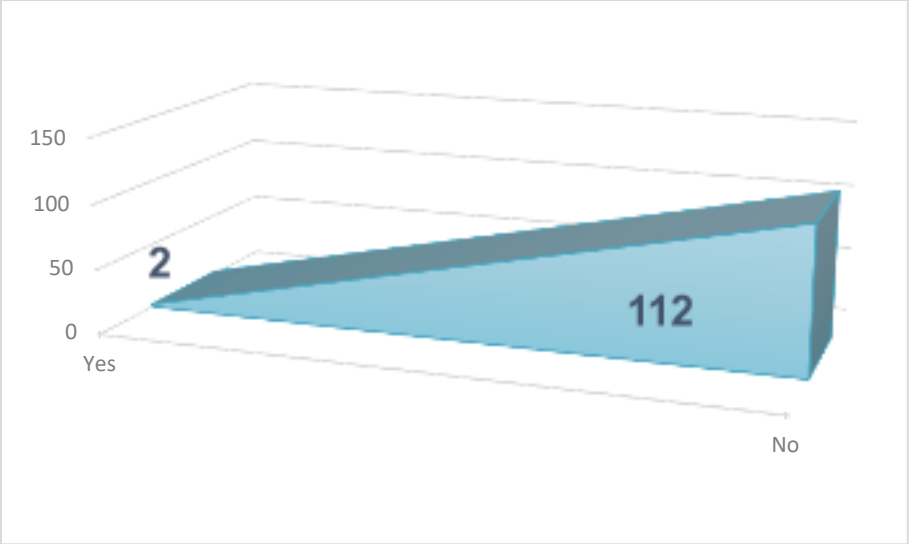

Figure 4.3.13 Participants that had Emphysema

4.3.14 Participants that had Asthma-

Among the 114 participants, 21.9%(25) participants had Asthma; and 78.1%(89) participants didn't have Asthma.

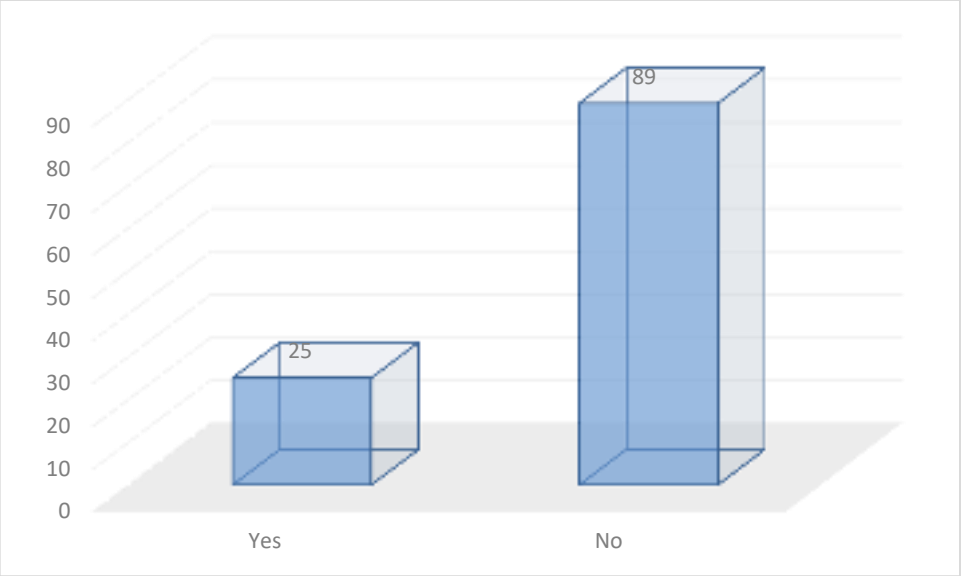

Figure 4.3.14 Participants that had Asthma

4.3.15 Participants that still have Asthma-

By doing the survey, among the 114 participants, 6.1%(7) participants still had Asthma; while 93.9%(107) participants didn't have Asthma.

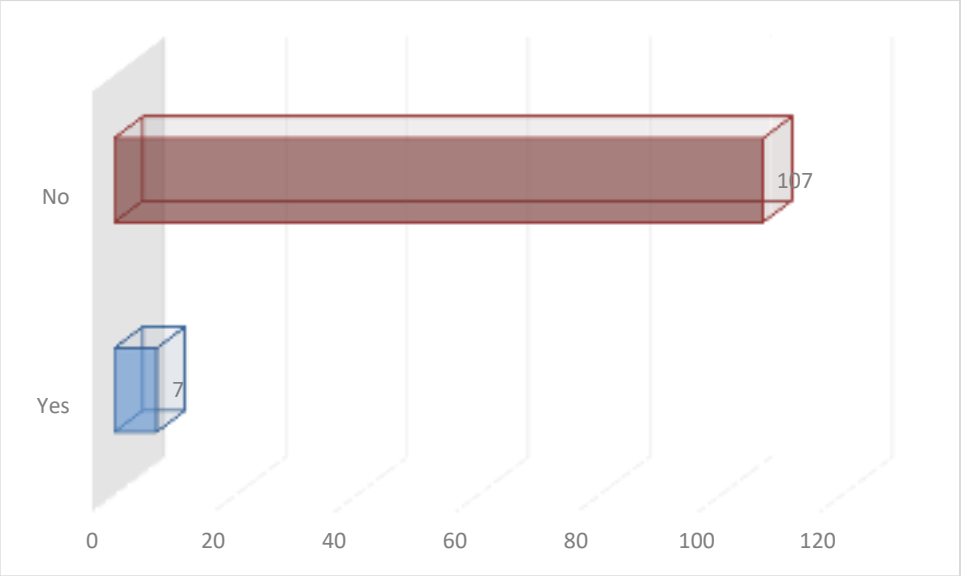

Figure 4.3.15 Participants that still have Asthma

4.3.16 Participants that have Tuberculosis-

Among the 114 participants, 1.8%(2) participants still had Tuberculosis; and 98.2%(112) participants didn't have Tuberculosis.

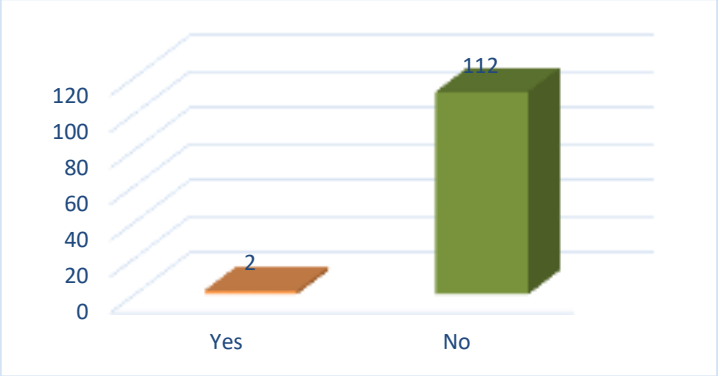

Figure 4.3.16 Participants that have Tuberculosis

4.3.17 Participants that still have Tuberculosis-

Among the 114 participants, 1.8%(2) participants had Tuberculosis; and 98.2%(112) participants didn't have Tuberculosis.

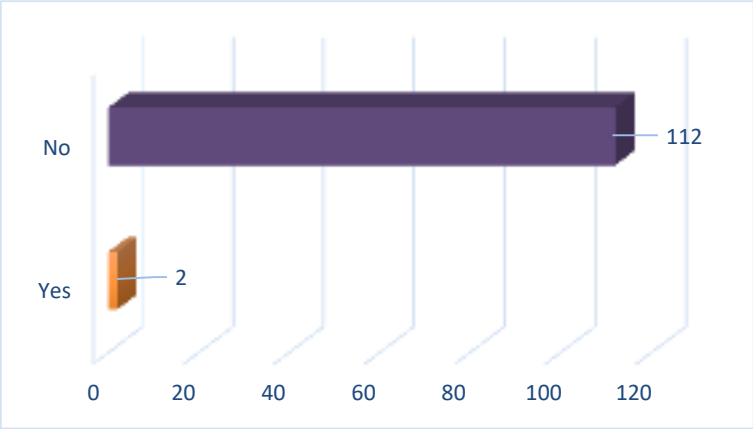

Figure 4.3.17 Participants that still have Tuberculosis

4.3.18 Participants that have Pneumonia-

Among the 114 participants, 8.8%(10) participants had Pneumonia; and 91.2%(104) participants didn't have Pneumonia.

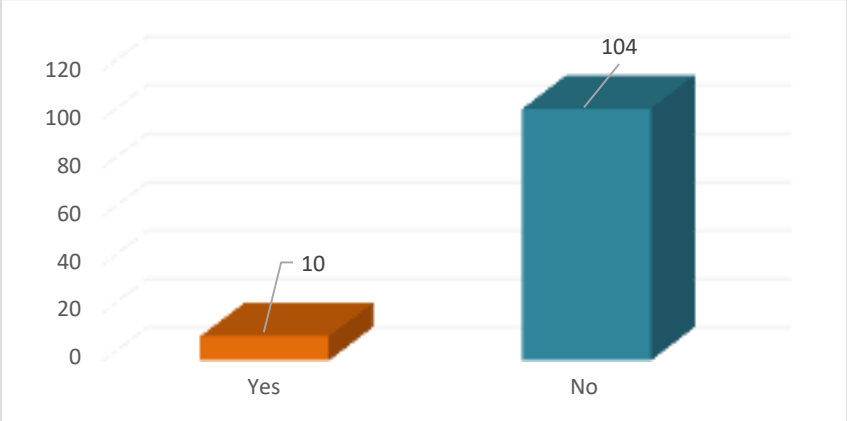

Figure 4.3.18 Participants that have Pneumonia

4.3.19 Participants that still have Pneumonia-

Among the 114 participants, 8.8%(10) participants still had Pneumonia; and 91.2%(104) participants didn't have Pneumonia.

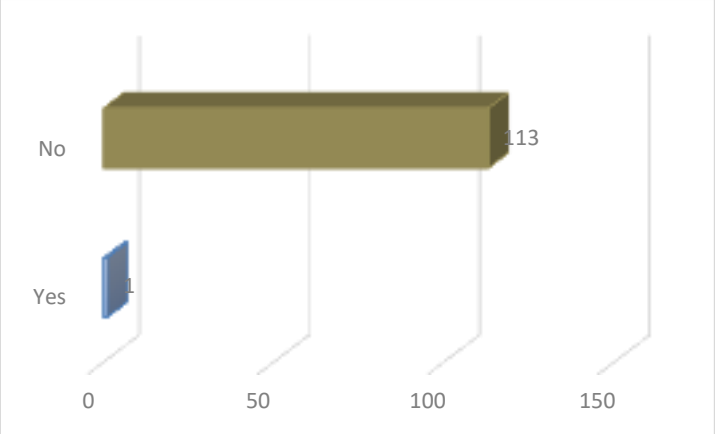

Figure 4.3.19 Participants that still have Pneumonia

4.3.20 Participants that have Allergic Rhinitis-

The study's showed that, Among the 114 participants, 26.3%(30) participants had Allergic Rhinitis; and 73.7%(84) participants didn't have Allergic Rhinitis.

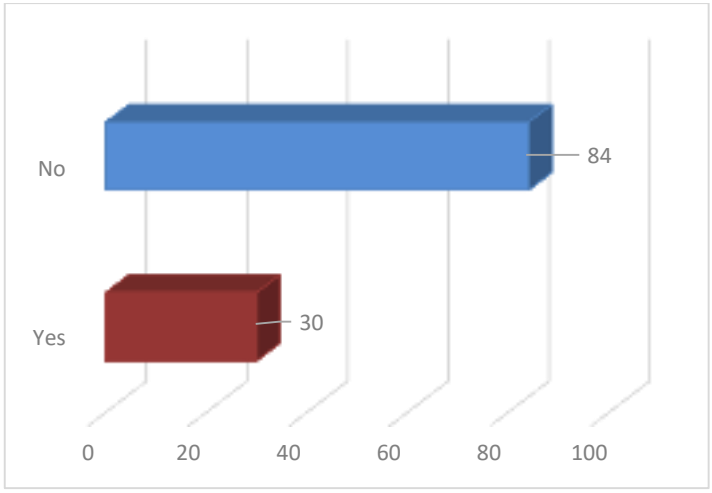

Figure 4.3.20 Participants that have Allergic Rhinitis

4.3.21 Participants that still have Allergic Rhinitis-

In this survey, Among the 114 participants, 19.3%(22) participants still had Allergic Rhinitis; and 80.7%(92) participants didn't have Allergic Rhinitis.

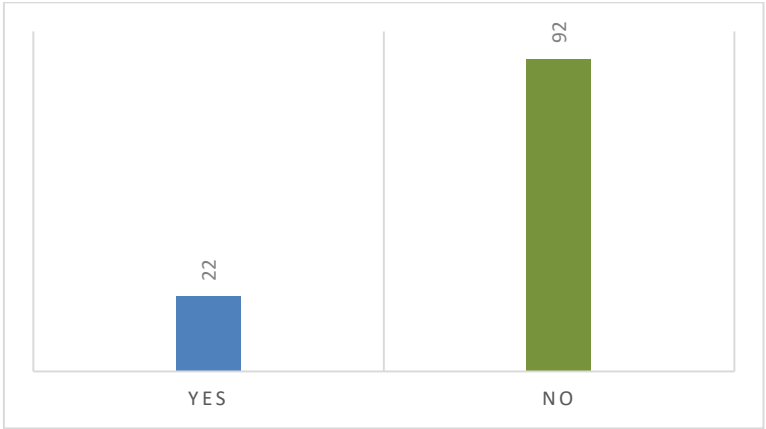

Figure 4.3.21 Participants that still have Allergic Rhinitis

Table 4.3.22: - Age that Allergic Rhinitis started-

This table showed that, the mean and standard deviation of 114 participants age that Allergic Rhinitis started, where Mean ±SD=5.988±2.89; about 14.9%(n=17) participants were affected with Allergic Rhinitis at the age of 1-10 years; where 310.5%(n=12) participants were affected with Allergic Rhinitis at the age of 11-20 years; and 0.9%(n=1) participants were affected with Allergic Rhinitis at the age of 31-40 years.

Table No: 4.3.22: - Age that Allergic Rhinitis started

What age Allergic Rhinitis started of the participants in years	Frequency(n)	Percentage(%)	Mean ± SD
1-10	17	14.9%	5.988 ± 2.89
11-20	12	10.5%	
31-40	1	0.9%	
Total	114	100%	

4.3.23 Participants that have Another Respiratory disease-

The study's showed that, Among the 114 participants, 1,8%(2) participants had Another Respiratory disease; and 98.2%(112) participants didn't have Another Respiratory disease.

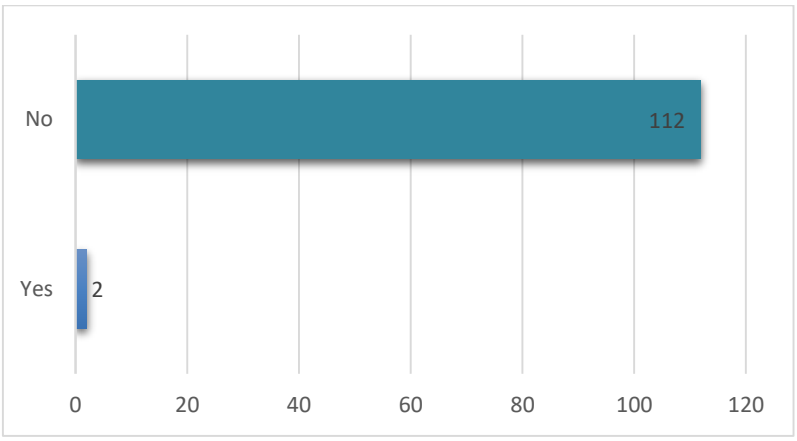

Figure 4.3.23 Participants that have Another Respiratory disease

4.3.24 Participants that still have Another Respiratory disease-

The pie chart showed that, Among the 114 participants, 0.9%(1) participant still had Another Respiratory disease; and 99.1%(113) participants didn't have Another Respiratory disease.

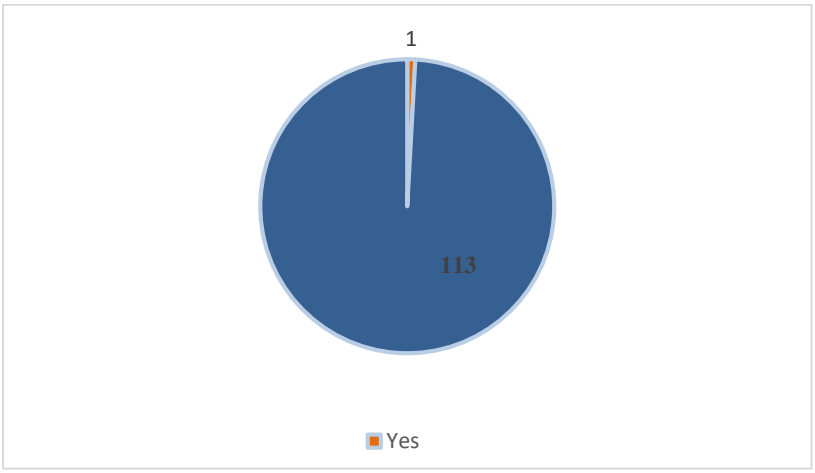

Figure 4.3.24: Participants that still have Another Respiratory disease

4.4.1: - Association between Gender and Asthma among the participants (Pearson chi-square test)

Among the 114 participants, 8 male participants said yes to Asthma and 34 male participants said no to it. While 17 female participants said yes to Asthma and 55 female participants said no to it. The chi square value was 0.570 and P value was 0.323.

Table No: 4.4.1: - Association between Gender and presence of Asthma among the participants

Gender	Yes	No	Total	Chi-Square value (χ^2)	P Value
Male	8	34	42	0.570	0.323
Female	17	55	72		
Total	25	89	114		

4.4.2: - Association between Educational Status and Presence of Pneumonia among the participants (Pearson chi-square test)

Among the 114 participants, 2 MBBS doctor said yes to Pneumonia and 36 said no to it. 4 Physiotherapist said yes to Pneumonia and 11 said no to it. 4 Nurse said yes to Pneumonia and 56 said no to it. The chi square value was 7.015 and P value was 0.071.

Table No: 4.4.2: - Association between Educational Status and Presence of Pneumonia among the participants

Educational Status	Yes	No	Total	Chi-Square value (χ^2)	P Value
MBBS	2	36	38	7.015	0.071
Physiotherapist	4	11	15		
Nurse	4	56	60		
Others	0	1	1		
Total	10	104	114		

CHAPTER – V DISCUSSION

THE GARD study was the first cross sectional population based epidemiological study among a representative sample, using a standardized methodology and validated questionnaire, to evaluate the prevalence of respiratory diseases in several regions of the Russian Federation. Partial use of data collected from previously completed study steering committee. The GARD questionnaire has been used in several studies and has been shown to be an accurate and reliable diagnostic tool. The prevalence of respiratory symptoms in the population sampled was found to be high. The percentage of patients with asthma related symptoms was 21.9%, AR 26.3% and Pneumonia 8.8%. CRDs are recognized as a major public health problem with an increasing morbidity and mortality. With such a high burden on the health care system, emphasis on better diagnosis and management of these diseases must be achieved, and reliable epidemiological data on the prevalence and severity of diseases, such as COPD and its exacerbations, are crucial to guide health care policy. In the Russian Federation, it has been estimated from earlier epidemiological studies that the prevalence of CRD ranges from 17% to 21%. This includes the prevalence of asthma which ranges from 6%–8% for adults and up to 12% for children, and for COPD between 6%–7%, and other miscellaneous disease of 2%. COPD is the fourth cause of death worldwide. An estimation from the World Health Organization suggests that COPD will be the third cause of death by 2030. The association between COPD and CB may lead to a more severe COPD prognostic, which encompasses a poorer lung function, exacerbation, a worse quality of life and, consequently, a higher economic burden. We used the Global Initiative for Obstructive Lung Disease strategy definition of COPD in symptomatic subjects, which represents a simplified case definition for epidemiological purposes, rather than a definitive clinical diagnosis; this may have resulted in patients with COPD not being diagnosed. The limitation of our study is that a large proportion of patients with COPD are asymptomatic. As the main objective of the GARD study was to assess COPD prevalence in symptomatic patients, the estimation of crude prevalence of 15.3% should be analyzed carefully, even though our results are compatible with what has been seen in different populations. Asthma is one of the estimated to be accountable for about one in every 250 deaths worldwide.41 A study performed by Brogger et al., suggested a 3-fold increase in the prevalence of self-reported diagnosis in 26 years, which could be due to a better standard of care and an easier access to physicians most

common chronic diseases in the world and it is estimated As for other CRDs, AR is also experiencing an increase of epidemic proportion which leads to an intensification in the socioeconomic burden of the disease across the world. Prevalence of AR has been reported as high as 21% in Europe. Asthma and rhinitis have been reported to similarities related to their epidemiological and pathophysiological background If untreated, rhinitis may have considerable economic and quality of life implications. A possible consequence near in the future may occurs thus be an increasing proportion of such diseases in the elderly, also given the decreasing prevalence of cigarette smoking, which is the most important risk factor for other COPD. The World Health Organization has recently issued a global status report on tobacco and health. A two-threefold increase in asthma morbidity has been reported in repeated surveys in children in Norway, in Israel in the UK, in New Zealand and Australia. In adults, increases in asthma morbidity range from 0.5 to nearly 6-fold according to reports from Finland, Sweden, Australia, and Canada. Children have higher asthma prevalence than adults and are more sensitive to environmental exposures. During the critical phase of lung development, exposure of the airway epithelium to environmental insults may lead to persistent and life-long changes in lung structure and metabolism. A birth cohort study reported that exposure to allergens in the first 3 years of life impaired lung function at school age and affected the development of asthma in adulthood. Prenatal and perinatal exposure to air pollutants has been linked to increase respiratory symptoms and the risk of developing childhood asthma. Both heat exposure and air pollution to pregnant women are associated with pre-term birth younger gestational age and prematurity are risk factors for the incidence of pre-school wheezing and asthma. On the other hand, almost 78% of the workers had hypersensitivity to the allergens commonly present, either in the plantation areas or in the indoor air. This observation was concomitant with other findings where investigators observed higher prevalence of sensitization among herbal tea, although the relation between sensitization and respiratory symptoms has not been very clear. Another study reported a higher prevalence of chronic bronchitis and asthma in tea workers compared to what was expected in general population. Respiratory diseases often share symptoms, for example, COPD and asthma. The overlap symptomatic workers also underscored a causal association between work-related exacerbations and respiratory impairments of asthma and COPD diagnoses can reach 20% of all patients with chronic respiratory disease. A previous diagnosis of a respiratory disease is also associated with an increased risk of future diagnoses of

another respiratory disease. Prior tuberculosis infection has been associated with irreversible airway obstruction and an increased risk of COPD, and childhood pneumonia is linked to an increased risk of major. The major effects of smoking on CRDs have been extensively recorded over more than 40 years. But in this study 100% no smoking habit. The associations found in this study were generally consistent with findings from other epidemiological studies where the GARD questionnaire has been used. Diagnosis of emphysema requires sensitive pulmonary function tests compared with a sputum test for tuberculosis. Studies that have compared self-reported data and medical records of chronic respiratory diseases have found good agreement for the absence or presence of asthma and moderate to poor agreement for COPD, emphysema, pneumonia, and tuberculosis Given the high proportion of patients with multiple pulmonary diseases, it is important to account for multiple diagnoses when investigating the independent contribution of each respiratory disease to cancer risk. In other research, when respondents were asked if they had ever experienced attacks of wheezing or whistling accompanied with the feeling of breathlessness, 25.7% responded affirmatively. Out of those, 78.7% confirmed they had two or more attacks. The presence of a running nose along with the presence of at least one of the symptoms of sneezing or nasal congestion was reported among 18.2% of them study population. Cough and expectoration, occurring in the majority of the week for more than three consecutive months in a year, lasting more than 2 years, was experienced by 8.6% of all respondents. AR diagnosis was also reported by 6.5% of respondents. The highest percentage was found among those respondents who had a previous diagnosis of CB. The prevalence of smoking was quite high, with 45.7% of the total population responding that they had a smoking history, of which 73.1% were current smokers. Smoking history was measured if patients have consumed at least 200 packs in their life-time. Regarding workplace dust, 22.2% of the total population responded that they had been exposed to workplace dust for more than a year. In my research coughing issue in of the participants 9.6% , Amount the coughing issue 4 to 6 times a day 7.0% , 3.5% of the participants were cough as much as 4 to 6 times on most of the days for 3 consecutive months or more during this year 3.5%. Phlegm bring up chest 6.1%. Amount of phlegm bring up 2.3% among 114 participants. Phlegm like this on most days for 3 consecutive months or more during this year 1.8%. Had an attack of wheezing that has made you feel short of breath 7% responded said yes. Wheezing attack 2 or more such episodes 5% responded said yes. Required medicine or treatment

for wheezing attack 7.0% responded yes. Are you troubled by shortness of breath when hurrying on the level or walking up a slight hill 27.2% said yes. Had to walk slower than people of similar age because of breathlessness said 16.7% yes. Participants that had emphysema 1.8%. asthma had 21.9%. 6.1% still had .1.8% had Tuberculosis. 1.8 % still had Tuberculosis. Pneumonia had 8.8% responded. Still had pneumonia 8.8%. Allergic Rhinitis had responded 26.3% said yes. Still had 19.3%. Other respiratory diseases 1.8% said yes. Furthermore, as for any questionnaire based study, the study outcomes are based on the willingness of the respondents to report their diseases. Furthermore, by also having the prevalence of self-reported symptoms I minimized the subjectivity of self-report diagnosis due to the different diagnosis criteria that may be used by physicians. There is also a potential bias of non/incomplete-responders, as I did not adjust for subjects who did not complete all of the questions during the visit. In addition, no adjustments for age or gender have been made. In my sample includes 63% females which could have an impact on prevalence as there may be important gender differences on the perception of dyspnea, health status, and physical activity limitation.

CHAPTER – VI LIMITATIONS

There were a number of limitation and barriers in this research project which had affected the accuracy of the study, these were as follow:

- There was no specific score in questionnaire which to measure the prevalence of respiratory diseases among healthcare provider.
- Since data collection were through structured questionnaire, it was not possible to add more question due to lack of time consuming.
- 114 data collection were possible despite a sample size of 254.
- Generalizability of the result of quite difficult due to small sample size.
- This study has provided for the first time data on prevalence of respiratory diseases among healthcare provider in Dhaka city. No research has been done before on it.

CHAPTER – VII CONCLUSION AND RECOMMENDATION

7.1 Conclusion: The findings underscore the reciprocal relationship between the health of medical practitioners and the quality of patient care. Ailing healthcare workers not only experience personal challenges in terms of decreased efficiency and increased absenteeism but also pose potential risks of transmitting respiratory diseases to vulnerable patients. This emphasizes the urgent need to address and mitigate the prevalence of respiratory ailments among medical professional. We had found in other article that Tuberculosis diagnosed 2–4 years' prior had of 3.76 for men and for women 5.31, the effect estimates remaining in the adjusted model and for men and women, respectively. In this investigation we pooled data from case–control studies in Europe and Canada to examine the association between multiple previous respiratory disease and lung cancer. In particular, respiratory diseases tend to be more frequent in men than in women, in older than in younger age, in smokers than in nonsmokers and in urban than in rural areas. The higher rates in men as they age have often been ascribed to the higher frequency of cigarette smoking and noxious occupational exposures, as well as to longer duration of exposure to risk factors and to age-related decrease in host defenses. This does not apply to dyspnea, which is more frequently reported by women, perhaps due to a different perception of the difficulty of breathing due to lack of exercise (especially in the elderly), besides the influence of excess weight and cardio-vascular comorbidity. But in my research most of the women was affected than men because in my population the number of woman was greater than men. According to the research most elderly person affected by respiratory disease, but in my research middle age person was affected. They were nonsmoker & lived in an urban area of Dhaka city in Bangladesh. Respiratory disease in Dhaka city was found to be high because of environmental factors, such as air pollution, population, awareness etc. In the group of my research respondents the percentage of emphysema was 1.8%, Asthma was 21.9%, Tuberculosis was 1.8%, Pneumonia was 8.8%, Allergic Rhinitis was 19.3%, Shortness of breath was 27.2% and cough 9.6%. In conclusion, this research endeavors to shed light on the critical issue of the prevalence of respiratory diseases among medical practitioners and its far-reaching implications.

7.2 Recommendation: After going through the research, I would like to offer several recommendations which were given below:

- Promoting education and awareness among medical practitioners regarding respiratory health is a critical step.
- Developing educational programs and awareness campaigns can improve early symptom recognition and management. Adherence to infection protocols are essential.

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Appendix - A

SAIC COLLEGE OF MEDICAL SCIENCE AND TECHNOLOGY

Approved by Ministry of Health and Family Welfare
Affiliated with Dhaka University

Ref : *Date :* .....

Ref.No: *SCMST/PT/ERB-2017-18/1-2023/03*

3rd January'2023

To

Kanak Chapa Hritu

4th Professional B.Sc. in Physiotherapy

Saic College of Medical Science and Technology (SCMST)

Mirpur-14, Dhaka-1216.

Sub: Permission to collect data

Dear Hritu,

Ethical review board (ERB) of SCMST pleased to inform you that your proposal has been reviewed by ERB of SCMST and we are giving you the permission to conduct study entitled "Prevention of respiratory disease and risk factors among medical practitioner who work in the hospital" and for successful completion of this study you can start data collection from now.

Wishing you all the best.

Thanking You,

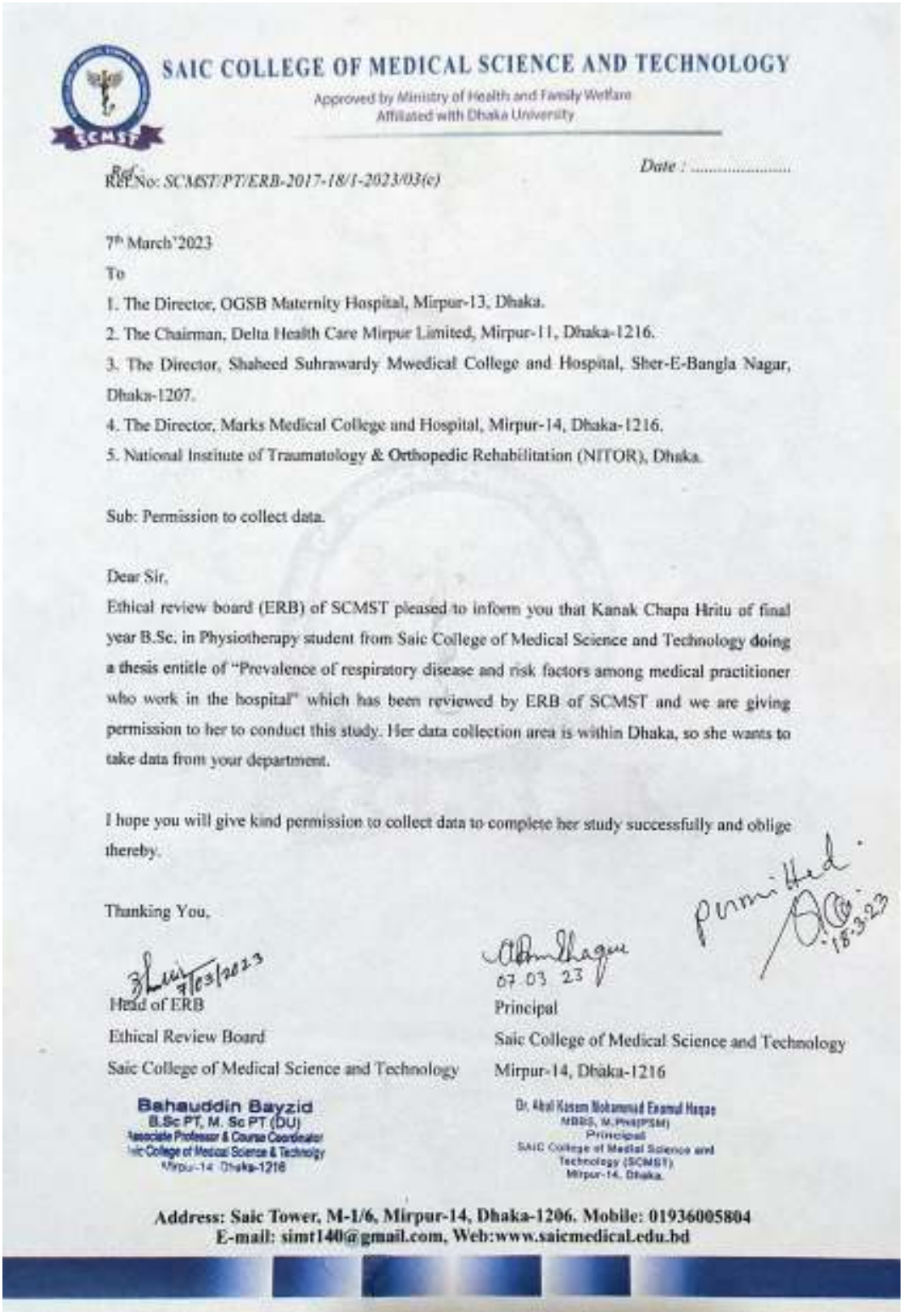
11.01.23
Head of ERB
Ethical Review Board
Saic College of Medical Science and Technology

11.01.23
Principal
Saic College of Medical Science and Technology
Mirpur-14, Dhaka-1216

Address: Saic Tower, M-1/6, Mirpur-14, Dhaka-1216.Mobile:01936005804
E-mail: simt140@gmail.com, Web:www.saicmedical.edu.bd

Appendix - B

Permission letter for data collection



SAIC COLLEGE OF MEDICAL SCIENCE AND TECHNOLOGY

Approved by Ministry of Health and Family Welfare
Affiliated with Dhaka University

Ref. No: SCMST/PT/ERB-2017-18/1-2023/03(c)

Date : .....

7th March'2023

To

1. The Director, OGSB Maternity Hospital, Mirpur-13, Dhaka.
2. The Chairman, Delta Health Care Mirpur Limited, Mirpur-11, Dhaka-1216.
3. The Director, Shaheed Suhrawardy Mwedical College and Hospital, Sher-E-Bangla Nagar, Dhaka-1207.
4. The Director, Marks Medical College and Hospital, Mirpur-14, Dhaka-1216.
5. National Institute of Traumatology & Orthopedic Rehabilitation (NITOR), Dhaka.

Sub: Permission to collect data.

Dear Sir,

Ethical review board (ERB) of SCMST pleased to inform you that Kanak Chapa Hritu of final year B.Sc. in Physiotherapy student from Saic College of Medical Science and Technology doing a thesis entitle of "Prevalence of respiratory disease and risk factors among medical practitioner who work in the hospital" which has been reviewed by ERB of SCMST and we are giving permission to her to conduct this study. Her data collection area is within Dhaka, so she wants to take data from your department.

I hope you will give kind permission to collect data to complete her study successfully and oblige thereby.

Thanking You,

Permitted. 15.3.23

7/03/2023

Head of ERB
Ethical Review Board
Saic College of Medical Science and Technology

Bahauddin Bayzid
B.Sc PT, M. Sc PT (DU)
Associate Professor & Course Coordinator
Saic College of Medical Science & Technology
Mirpur-14, Dhaka-1216

07.03.23

Principal
Saic College of Medical Science and Technology
Mirpur-14, Dhaka-1216

Dr. Abul Kasem Mohammad Enamul Haque
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Principal
SAIC College of Medical Science and Technology (SCMST)
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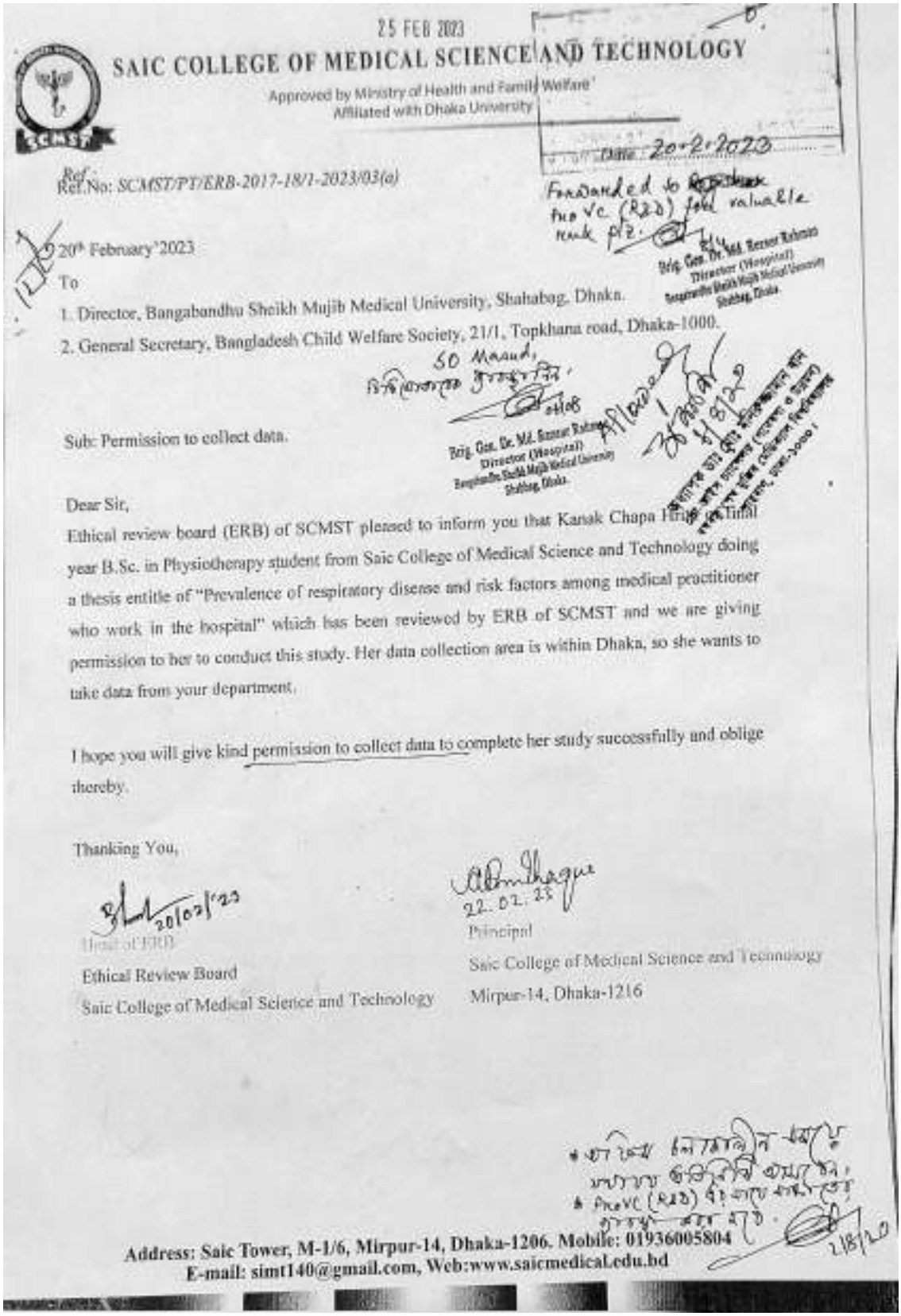
E-mail: simt140@gmail.com, Web:www.saicmedical.edu.bd

Permission letter for data collection



25 FEB 2023

SAIC COLLEGE OF MEDICAL SCIENCE AND TECHNOLOGY

Approved by Ministry of Health and Family Welfare
Affiliated with Dhaka University

Date 20.2.2023

Ref.No: SCMST/PT/ERB-2017-18/1-2023/03(a)

Forwarded to the VC (R&D) for valuable rank pl2.

Brig. Gen. Dr. Md. Nasser Rahman
Director (Hospital)
Bangabandhu Sheikh Mujib Medical University
Shahbag, Dhaka.

20th February'2023

To

1. Director, Bangabandhu Sheikh Mujib Medical University, Shahabag, Dhaka.
2. General Secretary, Bangladesh Child Welfare Society, 21/1, Topkhana road, Dhaka-1000.

SO Maaud,

Brig. Gen. Dr. Md. Nasser Rahman
Director (Hospital)
Bangabandhu Sheikh Mujib Medical University
Shahbag, Dhaka.

Sub: Permission to collect data.

Dear Sir,

Ethical review board (ERB) of SCMST pleased to inform you that Kanak Chapa Hrid, a final year B.Sc. in Physiotherapy student from Saic College of Medical Science and Technology doing a thesis entitle of "Prevalence of respiratory disease and risk factors among medical practitioner who work in the hospital" which has been reviewed by ERB of SCMST and we are giving permission to her to conduct this study. Her data collection area is within Dhaka, so she wants to take data from your department.

I hope you will give kind permission to collect data to complete her study successfully and oblige thereby.

Thanking You,

20/02/'23

Head of ERB
Ethical Review Board
Saic College of Medical Science and Technology

22.02.23

Principal
Saic College of Medical Science and Technology
Mirpur-14, Dhaka-1216

ProVC (R&D)

Address: Saic Tower, M-1/6, Mirpur-14, Dhaka-1206. Mobile: 01936005804
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Appendix - C

সম্মতিপত্র

আসসালামু আলাইকুম/নমস্কার,

আমি কনক চাঁপা ঋতু, ঢাকা বিশ্ববিদ্যালয় অধিভুক্ত সাইক কলেজ অফ মেডিকেল সায়েন্স এন্ড টেকনোলজি বিএসসি ইন ফিজিওথেরাপি বিভাগের একজন ছাত্রী। আমি একটি গবেষণা করছি যা হলো, **"ঢাকার হাসপাতালে কর্মরত চিকিৎসকদের মধ্যে শ্বাসযন্ত্রের রোগের প্রাদুর্ভাব এবং ঝুঁকির কারণ"** শিরোনামের অধ্যয়নটি পরিচালনা করছি। এটা আমার বিএসসি ইন ফিজিওথেরাপি ডিগ্রির একটা অংশ। উল্লেখ্য যে নিচে অধ্যয়ন পরিচালনা করার জন্য প্রয়োজনীয় প্রশ্নপত্রের একটি তালিকা রয়েছে। এই তালিকাটি আপনাকে গবেষণা সম্পর্কে তথ্য দেওয়ার জন্য নির্বাচিত করা হয়েছে। আমি আপনাকে এই গবেষণার জন্য বর্ণনা দিতে চাই এবং আপনাকে যেকোনো প্রশ্নের উত্তর দিতে চাই। এটা প্রায় ৫ থেকে ১০ মিনিট সময় নিবে।

সাক্ষাৎকারের সময় আপনি যদি কোন মানসিক অশান্তি, সামাজিক এবং সাথে সাথে অর্থনৈতিক ঝুঁকি অন্য কোন অসস্তি বা শারীরিক ঝুঁকি অনুভব করেন দয়া করে আমাকে বলুন তাহলে আমি সাক্ষাৎকার নেওয়া বন্ধ করে দিব। আমি প্রতিশ্রুতি বদ্ধ যে অধ্যয়ন আপনার জন্য ক্ষতিকর বা ঝুঁকিপূর্ণ হবে না এই অধ্যয়নে আপনার অংশগ্রহণ স্বেচ্ছায় এবং যেকোনো মুহূর্তে কোন ব্যাখ্যা ছাড়াই আপনার সাক্ষাৎকার থেকে প্রত্যাহার করার অধিকার রয়েছে। সাক্ষাৎকারের সময় আপনি পছন্দ করেন না বা উত্তর দিতে চান না এমন একটি নির্দিষ্ট প্রশ্নের উত্তর না দেওয়ার অধিকার আপনার রয়েছে। অধ্যয়ন বা অংশগ্রহণকারী হিসেবে আপনার অধিকার সম্পর্কে আপনার কোন প্রশ্ন থাকলে আপনি আমার সাথে বা আমার সুপারভাইজারের সাথে যোগাযোগ করতে পারেন।

তাহলে সাক্ষাৎকার নিয়ে এগিয়ে যেতে আমি কি আপনার সম্মতি পেতে পারি?

হ্যাঁ ☐ না ☐

উত্তর দাতার নাম: স্বাক্ষীর স্বাক্ষর:

স্বাক্ষর এবং তারিখ: স্বাক্ষর এবং তারিখ:

Consent Form

Assalamualaikum/Namashkar,

I am Kanak Chapa Hritu, a Student of B.Sc. In the physiotherapy program in the department of Saic College of Medical Science & Technology, which is affiliated with Dhaka University. I am conducting a study entitled **"Prevalence of respiratory disease and risk factors among medical practitioners who work in the hospital in Dhaka city".** It is a part of my B.Sc. in physiotherapy degree. Note that the following is a list of question papers required to conduct the study. This list has been selected to give you information about this study. I would like to give you a description of this study and answer any of your questions. It is about 5 to 10 minutes.

During the interview period, if you feel any emotional disturbance, social and economic risk, any other discomfort, or physical risk please tell me, and I will stop the interview immediately. I am committed that the study will not harmful or risky for you. Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences. You also have the right not to answer a particular question that you don't like or do not want to answer during the interview. If you have any queries about the study or your right as a participant, you may contact me or my research supervisor, Abid Hasan Khan , Lecturer, Department of Physiotherapy, Saic College of Medical Science & Technology Mirpur-14, Dhaka. Do you have any questions before I start?

So, may I have your consent to proceed with the interview?

YES ☐ NO ☐

Respondent name: Witness name:

Signature and date: Signature and date:

Appendix - D

QUESTIONNAIRE (ENGLISH)

PREVALENCE OF RESPIRETORY DISEASE AND RISK FACTORS AMONG MEDICAL PRACTITIONERS WHO WORK IN THE HOSPITAL IN DHAKA CITY

Respondent ID: ……

Date……/……/…….

Name of respondent: ……

Address: ……. Mobile number: ……..…

Email address: ……..

Section 1: Socio Demographic Related Questions

Part-1

Q. NO	Question	Answer
1.	Age	……..Years
2.	Gender 1. Male 2. Female 3. Others	
3.	Educational Status? 1. MBBS 2. Physiotherapist 3. Dentist 4. Nursing 5. Others	
4.	Working Hospital 1. Government 2. Private 3. Others	

5.	Religion 1. Islam 2. Hindu 3. Christian 4. Buddhist	
6.	Marital status 1. Married 2. Unmarried	

Part-2

Q. NO	Question	Answer
7.	Height	
8.	Weight	
9.	BMI	
10.	Do you Smoke? 1. Yes 2. No	
11.	Are you suffering from any of the following diseases? 1. High Blood Pressure 2. Heart disease 3. Cancer 4. Neurological disease 5. No known diseases 6. Others	

Section 2: Respiratory Diseases information related Question

12. COUGH

Q. NO	Question	Answer
12A.	Do you usually have a cough? 1. Yes 2. No	
12B.	Do you usually cough as much as 4 to 6 times a day, 4 or more days out of the week? 1. Yes 2. No	
12C.	Do you usually cough like this on most days for 3 consecutive months or more during the year? 1. Yes 2. No	
12D.	For how many years have you had this cough	…….. Years

13. PHLEGM

13A.	Do you usually bring up phlegm from your chest? 1. Yes 2. No	
13B.	Do you usually bring up phlegm like this as much as twice a day, 4 or more days out of the week? 1. Yes 2. No	
13C.	Do you bring up phlegm like this on most days for 3 consecutive months or more during the year? 1. Yes 2. No	
13D.	For how many years have you had trouble with phlegm	…….. Years

14. WHEEZING

14A.	Have you ever had an attack of wheezing that has made you feel short of breath? 1. Yes 2. No	
14B.	Have you had 2 or more such episodes? 1. Yes 2. No	
14C.	Have you ever required medicine or treatment for the attack? 1. Yes 2. No	

15. BREATHLESSNESS

15A.	Are you troubled by shortness of breath when hurrying on the level or walking up a slight hill? 1. Yes 2. No	
15B.	Do you have to walk slower than people of your age on the level because of breathless? 1. Yes 2. No	

16. EMPHYSEMA

16A.	Has a doctor ever told you that you had emphysema? 1. Yes 2. No	

17. ASTHMA

17A.	Has a doctor ever told you that you have asthma? 1. Yes 2. No	
17B.	Do you still have it? 1. Yes 2. No	

18. TB

18A.	Has a doctor ever told you that you have TB? 1. Yes 2. No	
18B.	Do you still have it? 1. Yes 2. No	

19. PNEUMONIA

19A.	Has a doctor ever told you that you have Pneumonia? 1. Yes 2. No	
19B.	Do you still have it? 1. Yes 2. No	

20. ALLERGIC RHINITIS

20A.	Has a doctor ever told that you have Allergic Rhinitis? 1. Yes 2. No	
20B.	Do you still have it? 1. Yes 2. No	
20C.	At what age did it start?	…….. Age in Years

21. OTHER RESPIRATORY DISEASE

21A.	Has a doctor ever told that you have had another respiratory disease? 1. Yes 2. No	

21B.	Do you still have it? 1. Yes 2. No	
21C.	At what age did it start?	……..… Age in Years
21D.	If you no longer have it, at what age did it stop?	... Age in Years