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PREVALENCE OF WORK-RELATED MUSCULOSKELETAL DISORDERS AMONG GOVERNMENT OFFICE WORKERS IN BANGLADESH ADMINISTRATION TRAINNING CENTRE

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"PREVALENCE OF WORK-RELATED MUSCULOSKELETAL DISORDERS AMONG GOVERNMENT OFFICE WORKERS IN BANGLADESH ADMINISTRATION TRAINNING CENTRE"

Submitted by **MD. Mokaddes Reza**, for the partial fulfillment of the requirements for the degree of Bachelor of Science in Physiotherapy.

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Declaration

I declare that the work presented here is my own. All source used have been cited appropriately. Any mistakes or inaccuracies are my own. I also declare that for any publication, presentation or dissemination of the study. I would be bound to take written consent from the Department of Physiotherapy of BHPI.

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Contents

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Acronyms

BHPI	Bangladesh Health Professions Institute
BPATC	Bangladesh Administration Training Centre
CCOHS	Canadian Centre for Occupational Health & Safety
CRP	Centre for the Rehabilitation of the Paralysed
ILO	International Labor Organization
IRB	Institutional Review Board
LBP	Low Back Pain
SPSS	Statistical Package for the Social Sciences.
WHO	World Health Organization
WMSDs	Work Related Musculoskeletal Disorders

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Abstract

Purpose: The study was conducted to identify the prevalence of common work-related musculoskeletal disorders among the government office workers in Bangladesh Public Administration Training Center.

Objective: To estimate the prevalence of musculoskeletal disorders among govt. workers according to their job nature. To identify the influencing demographic factors for such exposure group in relation to age, sex, weight and job experience. To identify different body regions involved with musculoskeletal disorders due to office work.

Method: The cross-sectional study conducted by using convenience sampling procedure. the study population was all the government employees working in BPATC. Total 150 employees were selected conveniently for this study from BPATC within 25 to 60 of age range. Data was collected by using a questionnaire named as OSH Answers Fact Sheets developed by Canadian Centre for Occupational Health and Safety. Data were descriptive statistics.

Result: In this study, researcher found that the prevalence of WMSDs among Office Workers in BPATC is 83% where. The most affected part of body is lower back (54.4%), followed by neck (49.6%), upper back (41%), shoulder (37.6%), foot (36%), hand (24%), wrist (20%), elbow (4.8%). Maximum participants were from 50-55 years of age group. Significance differences had been found between WMSDs and age of respondents, work duration, work performance and sleep at night considering ($p \leq o.o5$).

Conclusion: Work related musculoskeletal disorders represent a significant burden for government office workers. The study was representing the strong evidence that WMSDs was common among office workers. In order to reduce musculoskeletal problems, correct postural practices, reduction of prolonged working hours significantly can prevent WMSDs.

***Key words*: WMSDs, Office Workers**

CHAPTER-I INTRODUCTION

1.1 Introduction

Musculoskeletal disorders (MSDs) is defined as connective tissue or musculoskeletal diseases that causes muscles pain or injuries from sudden or sustained contact to repetitive motion, force, vibration or wrong postural movement. MSDs involve injuries or disorders to the muscles, joints, tendons, cartilage, nerves and spinal area of the upper limbs (UL) and lower limbs (LL), neck and lower back (Yosef et al., 2019).

Commonness of musculoskeletal issue turns out to be progressively basic all through the world during the previous decades. Work Related Musculoskeletal Disorders (WRMD) have harmful impact that produce work related inability among the laborers with significant budgetary outcomes because of laborers remuneration and clinical costs (OSHAEU,202). Different work-related variables have been distinguished as inclining the disarranges (Al Azzawi et al., 2021).

Work-related Musculo-Skeletal Disorders (WMSDs) in the bankers have increased significantly over recent years (Sithipornvorakul et al., 2014). MSDs are more common among waiters and helpers who usually bear load (Gregoris et al., 2017).Risk factors of WMSDs include workplace activities such as heavy load lifting, repetitive tasks, and awkward working postures, demographic characteristics factors are also known to be important predictive variables (Robertson et al., 2015). Work-related musculoskeletal disorders (discomforts) are especially regular among laborers who invest a lot of their energy in the workplace, and office-based government employees are no special case (Nwaogazie et al., 2016).

Musculoskeletal disorders are named by the body parts influenced. The body parts much of the time influenced are arm, neck, shoulder and lower back, and various names are given to arm, neck and shoulder musculoskeletal clutters relying upon the nation of cause. For instance, cervicobrachial disorder in Japan, repetitive strain injury in Australia, cumulative trauma disorders of the upper extremity in North America and work-related upper extremity musculoskeletal disarrange (Lee et al., 2020).

Musculoskeletal Disorders (MSD) are ordinarily influencing the human emotionally supportive networks, for example, muscles, ligaments, nerves, veins, bones and joints. MSD can happen from a solitary occasion or rehashed injury (Erick & Smith, 2011). The most generally perceived MSDs are muscle aggravation, strain, carpal tunnel disorder (CTS), low back pain (LBP), sprain and connective tissue injury realized persuasively or injury 2. MSDs are the greatest work-related issue that record to around 1/3 of all the enlisted word related afflictions and they are also seen as the most broadly perceived work-related clinical issue in Europe, United States of America and Asia (Daniels et al., 2011).

Musculoskeletal Disorders (MD) are regular grievances that lead to a significant effect on the wellbeing related personal satisfaction just as execution and efficiency grinding away. Work related musculoskeletal issue that represents countless incapacities and specialist remuneration days in numerous nations (Herin et al., 2014). In the developed and industrially developing nations MSDs are a main source of work-related injury and disability (Byl et al., 2016). Among all infections 37% affect work related hazard factors all inclusive, bringing about significant handicap (Dahlqvist et al., 2018).

Musculoskeletal disorders (MSDs) can influence the body's muscles, joints, tendons, ligaments, bones and nerves. Commonly, Musculoskeletal Disorders (MSDs) or Musculoskeletal injuries (MSI) influence the neck, shoulder, upper extremities and back, less frequently they influence the lower appendages. Musculoskeletal disorders problems extend from inconvenience, minor throbbing painfulness, to more significant clinical conditions need rest from work and even medical managements. In increasingly interminable cases, treatment and recovery are most of the time inadmissible – sometimes led to permanent disability and loss of employment (Bernard et al., 2014)

The economic misfortune because of those disorders influences the worker or laborer as well as the association and the general public as a whole. Poor working conditions and the non-attendance of a compelling work injury avoidance program in modernly developing nations has brought about a high pace of MSDs (Yazdanirad et al., 2018).It is commonly concurred that the etiology of work-related neck disorders are multidimensional which is related with, and impacted by, an unpredictable exhibit of individual, physical and psychosocial factors (An et al., 2020).

Among these different risk factors, business related psychosocial factors seem to assume a significant role. Work related psychosocial factors may incorporate parts of the work substance, association, and relational connections grinding away, accounts and financial matters (Mayerl et al., 2017)

Individual factors are considered as confounding factors that influence the relation between psychosocial demands and the occurrence of MSD (Campos et al., 2016). Besides, psychosocial demands might be exceptionally associated with physical demands, which likewise demonstrate a perplexing impact of physical factors on the connection between work related psychosocial factors and the event of neck pain (Linaker & Walker, 2015)

On account of Europe, WMSDs has involved 49% of the reasons for non-attendance, and 100 million laborers endured WMSDs (Hossain et al., 2018)

WMSDs are the most pernicious incendiary and degenerative conditions that influence the joints, delicate tissues, peripheral nerves and supporting veins (Rai et al., 2021). Musculoskeletal injuries resulting from a work-related event is called work-related musculoskeletal disorder (Akrouf, et al. 2010). It can cause ensuing torment and incapacity in the elements of neck, shoulders, elbow, arms, wrists and hands (K Abledu, 2012). These disorders occur when there is a mismatch between the physical requirements of the job and the physical capacity of the human body (Kokane & Tiwari, 2011).

Ergonomics basic principle is “Alter the task to suit human capability, rather than force human to adapt to an inappropriate task” (Henriksen & Albolino, 2010).Musculoskeletal pain is that which affects the muscles, ligaments, tendons and bones (Arendt et al., 2011).

Awareness and use of ergonomics standards which incorporate among others occupation and workstation structure, sufficient break time, great stance while working, utilization of ergonomics seats and desk can decrease the chance of work-related musculoskeletal disorders. Also, legitimate arrangement of document, writing materials, monitor and console for simple reach might be a guide for setting up sufficient control measures that can dispense with the evasiveness of musculoskeletal

disorders which are experienced by office-based government employees generally (Nwaogazie et al., 2016).

Ergonomic hazards are identified to the work/office conditions. The components incorporate among others are office furniture and office plan and space. The association among sickness and work environment factors is ordinarily identified unless a particular exertion is made to connect exposure to disease (Govaerts et al., 2021).Again, reviews on the recognition of risk factors for the advancement of work-related musculoskeletal disorders have indicated that these disorders may not only caused by job demands those are physically high demands but also by psychological demands (Costa et al., 2010).

The control of occupational hazards diminishes the frequency of accidents and work-related diseases/sickness and also improves the wellbeing and general spirit of the work force. This thusly prompts expanded effectiveness and diminishes non-attendence from work. Most of the cases, the monetary advantages far exceed the expenses of disposing hazards (Asogwa, 2007).

1.2 Justification

Work-Related Musculoskeletal Disorders represent one of the most common and important occupational health problems in working populations in both developed and developing countries. Work related musculoskeletal disorders may cause a great deal of pain and suffering among afflicted workers. These are the most common injuries and costliest occupational problems. Job activities that may cause work related musculoskeletal disorders span diverse workplaces. Workers experiencing aches and pains on the job may not be able to do quality work. WMSD decrease productivity of work due to sick leave, absenteeism, and early retirement and are also costly in terms of treatment and individual suffering. Moreover, WMSD represent a common health-related reasons for discontinuing work and for seeking health care. In some researches, it has found that office workers are at risk for developing musculoskeletal disorders.

Government office workers usually do their job for a prolong period of time. Literature showed that prolong static posture like stooping, bending, sitting, standing as well as prolong squatting proposed to be associated with work related musculoskeletal disorders. Moreover, the government office workers generally do repetitive works and sometimes they do need to do lifting heavy boxes of files, books or sometimes other office materials. These regular heavy weight lifting and repetitive activity seem to be associated with work related musculoskeletal disorders. So, Government office workers are also vulnerable to develop WMSDs like other office workers.

The study aimed to find out these work-related musculoskeletal disorders among the government office workers who are working in Bangladesh Public Administration Training Center. This study would show the relationship between work related musculoskeletal disorders and participant's socio demographic factors. Moreover, researcher would also try to figure out the possible significance between duration of work, work interference, sleep disturbance and WMSDs.

Throughout the study, it would be also identified by the researcher whether WMSDs reduces the performance of an office worker due to WMSDs. This study would help to build up a basic understanding for participants of the study towards musculoskeletal disorders causing due to their work techniques and environment.

1.3 Research Question

What is the prevalence of work-related musculoskeletal disorders among Government office workers in Bangladesh Public Administration Training Center?

Operational Questions

Work-related musculoskeletal disorder

Work-related musculoskeletal disorders (WMSD) are the disorders of muscles, tendons, ligaments, and nerves that develop due to work-related factors such as repetitive work or activities with awkward postures with symptoms of pain, aches, paresthesia, tingling sensation, numbness, and stiffness, etc. Some examples of musculoskeletal disorders include back pain, neck pain, carpal tunnel syndrome, tendonitis and tenosynovitis etc. (CCOHS, 2014).

Government Employees

Government employee can be defined as any employee, including independent contractors, of the state executive branch, the state legislative branch, a state agency, a public institution of higher education, or any local government, except a member of the general assembly or a public officer (ColoradoSOS, 2021).

Bangladesh Public Administration Training Centre

A center committed to excellence and a premier regional hub dedicated to provide effective, inclusive and self-mandated and bespoke training for civil servants, the Bangladesh Public Administration Training Centre (BPATC), is the apex public sector training institute in Bangladesh-meeting the challenges of the 21st century. The center offers innovative training courses across subjects, from public administration and governance to leadership training, Sustainable Development Goals (SDGs), office management, gender and development, financial management, project management, conflict management and negotiation, e-government management, Total Quality Management (TQM), training of trainers (TOT) and personal development. It also arranges of seminars and workshops on various issues of national and global concerns. All courses can be customized to fit specific training needs (BPATC, 2015).

CHAPTER-II LITERATURE REVIEW

The musculoskeletal disorders are portrayed by the nearness of distress, incapacity or constant torment in the joints, muscles, ligaments, and other delicate parts. They are caused or bothered by repeated movements and delayed ungainly or constrained body postures (Samat et al., 2011).

WMSDs are the most widely recognized self-reported, work related disease in numerous work environments that is described by distress, impedance, incapacity, or determined agony in joints, muscles, ligaments or other delicate tissues (Mixter et al., 2020).

Office workers are forming a very significant part of the risk bunch of musculoskeletal system disorders as they are spending long working hours in front of a computer or sitting at a desk. Long-term utilization of computers, working at a desk and sitting for a long time in a chair in workplaces are the primary reasons that may play a role in the musculoskeletal framework disorders of office workers (Ardahan & Simsek, 2016).It was discovered that musculoskeletal disorders were common among office workers in Iran, Thailand, Estonia, India, Turkey, Malaysia and the United States (Besharati et al., 2020)

The risk factors for the improvement of MSDs are: redundant work; excruciating positions, conveying or moving substantial burdens and delayed standing or strolling (Johnos, 2011).

At the point when laborer start exhaustion, it beats their body's recuperation framework and build up a musculoskeletal unevenness, if weariness helps to surpass recuperation and the musculoskeletal lopsidedness continues, it will cause to create musculoskeletal disorder (Besharati et al., 2020).

WMSDs incorporate all MSDs that are actuated or exasperated fundamentally by work and the conditions of its presentation. Most WMSDs are total issue, for the most part influence the back, neck, shoulders and upper appendages, yet can also influence the lower appendages. Some MSDs, for example, carpal tunnel syndrome in the wrist, are explicit in view of their very much characterized signs and side effects (Johnos, 2011).

As indicated by Mahler & Westergren, (2019) there are 150 million desktop computers clients worldwide and for doing PC based movement an individual should be more deskbound and required more mental consideration than non-electronic assistance holders.

Improper working posture and movement, commanding and forceful effort on extension, redundant work, imbalanced temperature, lacking breaks lead to WMSD (Roman, 2013).

The danger of developing musculoskeletal manifestations relies upon which risk factor is working alongside certain qualities, for example, over the top force, long length and extraordinary temperature. At the point when more than one risk factors work the danger of creating MSD expanded at a tremendous sum (Chahraghran & Tabatabaei, 2019).

Force is the mechanical exertion required to do a development or to forestall development. Force might be applied against a work piece or apparatus, or against gravity, to settle body sections. The power that a specialist applies on an item is an essential risk factor. Muscles and ligaments can be over-burden when a solid (high) force is applied against the article load (Lilley et al., 2019). The dynamic demonstration of lifting a work piece and the static demonstration holding that piece in position both require power, created by muscles, transmitted through ligaments and applied by body sections on the work piece workers need power for doing their action and over the excessive power can cause muscle fiber damage (Clemes et al., 2014). Performing work by doing powerful efforts of muscles will make them exhaustion quickly and by applying more power, the muscle will be weariness or stressed more frequently (Kumar et al., 2011). Overuse of muscles through mighty efforts lead to strain or harm muscles, disturb ligaments, joints and disks. The conclusive outcome of excessive power prompts to create aggravation, fluid buildup, and narrowing of veins and nerves in the territory. Scatters of sensory system, for example, carpal tunnel syndrome and other nerve entanglement disorder can occur through expanded pressure on nerves (Ginanneschi et al., 2012).

There are scopes of various phrasings used to portray WMSDs issues, for example, cumulative trauma disorders (CTDs), repetitive strain injury (RSI), repeated motions injury (RMI) and word occupational overuse disorders (OODs) (Iqbal & Alghadir, 2017).

There is general understanding that the recurrence of neck torment in different populations is very high and this manifestation significantly influences the individual's personal satisfaction and requirement for medicinal services. Neck problems additionally represent a huge extent of work-related illness and handicap and spot an overwhelming burden on the remuneration protection frameworks. An imminent investigation on predominance of neck torment are not so much practically identical on account of contrasts in their plans (Schaafsma et al., 2013).

Authoritative factors, for example, remaining burdens and long periods of work, additional time, term of time spent utilizing the console and mouse, working environment plan, for example, work area and seat tallness, legroom, keyboard and mouse surface, screen stature and so on have huge relationship with musculoskeletal clutters in the event that it have any miasmas with the fitting measurements (Areeudomwong & Buttagat, 2019).

Beginning period is the aching and tiredness of the influenced limb occurs during the work shift however vanish around evening time and during days off work. No decrease of work execution. Intermediate stage is aching and tiredness occurs early in the work shift and perseveres around night, decreased limit of repetitive work. Late stage is aching, weariness, and weakness persist at rest, obligations in sleep and to perform light duties. Not every person experiences these phases similarly. In fact, it might be hard to state precisely when one phase ends and the following stage begins. The first pain is a sign that the muscles and tendons should rest and recuperate. Something else, an injury can become longstanding, and sometimes, irreversible. The prior individuals perceive indications, the faster they ought to react to them. WMSDs don't occur because of a solitary accident or injury. Rather, they develop step by step as a result of repeated trauma. Excessive stretching of muscles and tendons can cause injuries that only last a brief lifetime. But repeated episodes of stretching causing tissue irritation can prompt dependable injury or WMSDs (Worldgbc, 2014).

The musculoskeletal problems related with redundant work have become a worry to certain work-related gatherings such as computer users. Keyboard operators exert peak forces in the range of 2 to 3 Newton, around three to nine times more than the power required to actuate the key. The utilization of this amount of force implies that keyboard keys are moved downward to their limit. Long duration of keyboard and mouse use may bring about in redundant movement & high force. Office workers with more noteworthy regular and severity applied higher levels of key force while composing than those who revealed less and less extreme indications (Gangopadhyay et al., 2010).

The environmental risk factors allude to temperature, enough lighting, great workplace, kind of ventilation (dry, cold, undesirable or fresh air), sort of condition of work (loud, excessively splendid) inside the workplace, area of screen or screen reflects the office light and so on (Areeudomwong & Buttagat, 2019) .

A very essential environmental factor is Temperature. Workers become tired rapidly in an office that is excessively warm. An expansion in temperature may create excessive sweating, reduce efficiency in both physical and mental tasks, rise in heart rate and blood pressure, and reduce digestive organ activity (CCOHS, 2014).

The accompanying work-related psychosocial factors demonstrated a constructive relationship with MSDs and drowsiness toward the finish of the workday, lack of staff, not being refreshed after break; no variety at work, accomplishing a similar work throughout the day, getting irritated about others. Ladies have a just about two-overlap chance contrasted with men. Individuals over 30 years have more than two- and one-half times more possibility of having neck pain than more youthful people.(Ghosh & Das, 2010).

Being truly dynamic decreases the probability of having neck torment. Frequently holding the neck in a forward bent posture for a long time, regularly sitting for a long time and frequently making similar developments every moment is take an enormous risk of neck pain. The risk of neck torment is around two-overlap for those encountering mental sleepiness toward the finish of the workday in contrast with the individuals who don't encounter sluggishness. Deficiency of staff expands an enormous risk of neck pain (Mayerl et al., 2017).

Working for long time similarly situated way will cause the workers to feel stiffness, soreness and tiredness. Static stances are those stances that are held over a significant stretch of time that oppose the power of gravity or balance out a work piece or body part. It includes a drawn-out condition of withdrawal during which no developments is being performed. During static contractions, the inner weight of muscle tissue packs veins and diminishes blood stream to the muscle so the oxygen and vitality flexibly to the effort and span of powers (Khandan et al., 2017).

Working with desktop computer in static stance has been recognized as major work-related risk factor. Long time sitting requires the muscles to hold the trunk, neck and shoulders in a fixed position. This presses the veins in the muscles, decreasing the blood gracefully. A lacking blood flexibly quickens weakness and makes the muscles inclined to injury. At the point when the spine is in its normal position, powers are coordinated along the hard structure and dispersed into the tissue as the spine bends. In any case, bowing and curving sidetracks the powers, putting increasingly compressive and shear powers on the plates (Faryza1 et al., 2015). However ongoing investigations have shown that repine of arm, neck, shoulder, back and lower appendage have a multi-factorial root; conceivable risk factors are of a physical, psychosocial or individual inception (Arendt et al., 2011).

Physical exercises, for example, manual material dealing with (e.g., overwhelming weight lifting) and abnormal working stances are exceptionally normal. In this circumstance, a high pace of WMSD is normal (Choobineh & Tabatabaee, 2009).

Substantial, static or dreary work, extraordinary or obliged stances, repetitive movements, unsatisfactory working environments and gear, powers and so on. Lifting overwhelming items that shouldn't be lifted by one individual without the assistance of gadgets or partners. Working in unnatural or abnormal positions can prompt strains, hyper-extends, muscle agony and nerve harm in the neck, upper and lower back, shoulders, elbows, lower arms, wrists and fingers. Representing extensive stretches of time in one situation on a hard surface can prompt muscle weariness, back torment and irritation in legs and feet (Rai et al., 2021).

Works sorted themselves as performing overwhelming work. Variables that Contributed to substantial heavy workload as seen in the work place were that the

joints were not in impartial position while playing out the work. The workers kept up those strange stances for quite a while, which added to their simple fatigability. Work was not near the body of the bankers and they needed to receive off-kilter stances to perform such works. Different elements that additional up to the strain were bowing forward, turning trunk and stressing the back alongside unexpected developments. These kinds of developments were constantly found to deliver top pressure (Priya et al., 2010).

Individual factor are sexual orientation, age, status, practice propensities, way of life, mental attributes and limits viewpoints into account as risk factors and work led by the National Institute for Occupational Safety and Health (NIOSH) that characterized a few expansive parts of the lifting task identified with the danger of back injury (Daniels et al., 2011).

These parts were characterized into four classifications: worker qualities, attributes of the material or article to be lifted, task attributes, and work rehearses. Significant specialist attributes incorporate age, sex, and anthropometry, and coordination, level of formal preparing in manual material taking care of, work experience, general wellbeing, and general degree of physical action (Priya et al., 2010).

Age is a genuine confounder with long stretches of business, so these components must be balanced for while deciding relationship to work. MSD issues are considerably progressively normal among more seasoned workers (An et al., 2020).

A few examinations have discovered a higher commonness of musculoskeletal manifestations in ladies than men. Ladies are presented to dreary biomechanical weights on the upper limb more oftentimes than men as in Taiwan female working individuals 39.5% had an altogether higher generally speaking commonness than male workers 35.2% (Martinez et al., 2020).

Signs and Symptoms of WMSDs are shortcoming in the hands or forearms that make it hard to lift or convey as ordinary. Shivering, tingling sensation, Clumsiness, dropping or focusing on holding things, Difficulty utilizing hands for ordinary exercises, awakening around evening time with furthest point pain Hands cold or delicate, Chronic torment that deteriorates Symptoms may show up in body parts distal to where stress or harm has happened. Incessant low back torment is torment in the lower back,

frequently alluding into the hip, buttock or one leg. The reason might be muscle strains or trigger focuses, unsteadiness because of powerless postural muscles, hypo portable spinal feature joints, or degeneration or herniation of spinal disks (Sahin et al., 2017).

Low back pain is one of the most widely recognized musculoskeletal issue identified with office related work such as bank job. The association between indications, inability and evident pathology is regularly not satisfactory or requires a lot of focused examination. A wide scope of occupations, work assignments, work environment factors and mental variables has been related with low back pain, with heavy lifting the task most commonly associated. These incorporate, an examination that researched that factors which influenced the probability of the low back torment getting constant over time being (Yang et al., 2016).

Neck pain or stiffness is another common WMSDs. Disturbance of the levator scapulae and trapezium, all muscles of the neck which causes snugness of the muscle in the neck. Neck stiffness just as headaches likewise presents. Headaches are regularly depicted as a pressure sensation around the head. Pain may manufacture and escalate toward the finish of day (Page, 2011).

Fortifying activities assist increment with muscling tone and improve the nature of muscles. Muscle quality and perseverance give vitality and a sentiment of health to assist you with performing day by day, schedule exercises. Sufficient core strength that returns from abdominal and back muscles balances out the spine, permits appropriate spinal development, and makes it simpler to keep up right posture. Strengthened hip and leg muscles are essential to perform legitimate lifting procedures and body mechanics (Spineuniverse., 2011).

Appropriate plan of devices and hardware essentially diminishes the power expected to finish the work or task. Giving the worker the best possible jigs or gadgets for undertakings that require holding components spares a ton of strong exertion in awkward positions. Great instruments, kept up cautiously and where fundamental as often as possible changed, can also spare a ton of muscle strain and forestalling WMSD. A very much structured activity, bolstered by a well-designed work environment and legitimate apparatuses, permits the worker to dodge pointless

movement of the neck, shoulders and upper appendages. Be that as it may, the genuine exhibition of the undertakings relies upon people (Samaei et al., 2016).

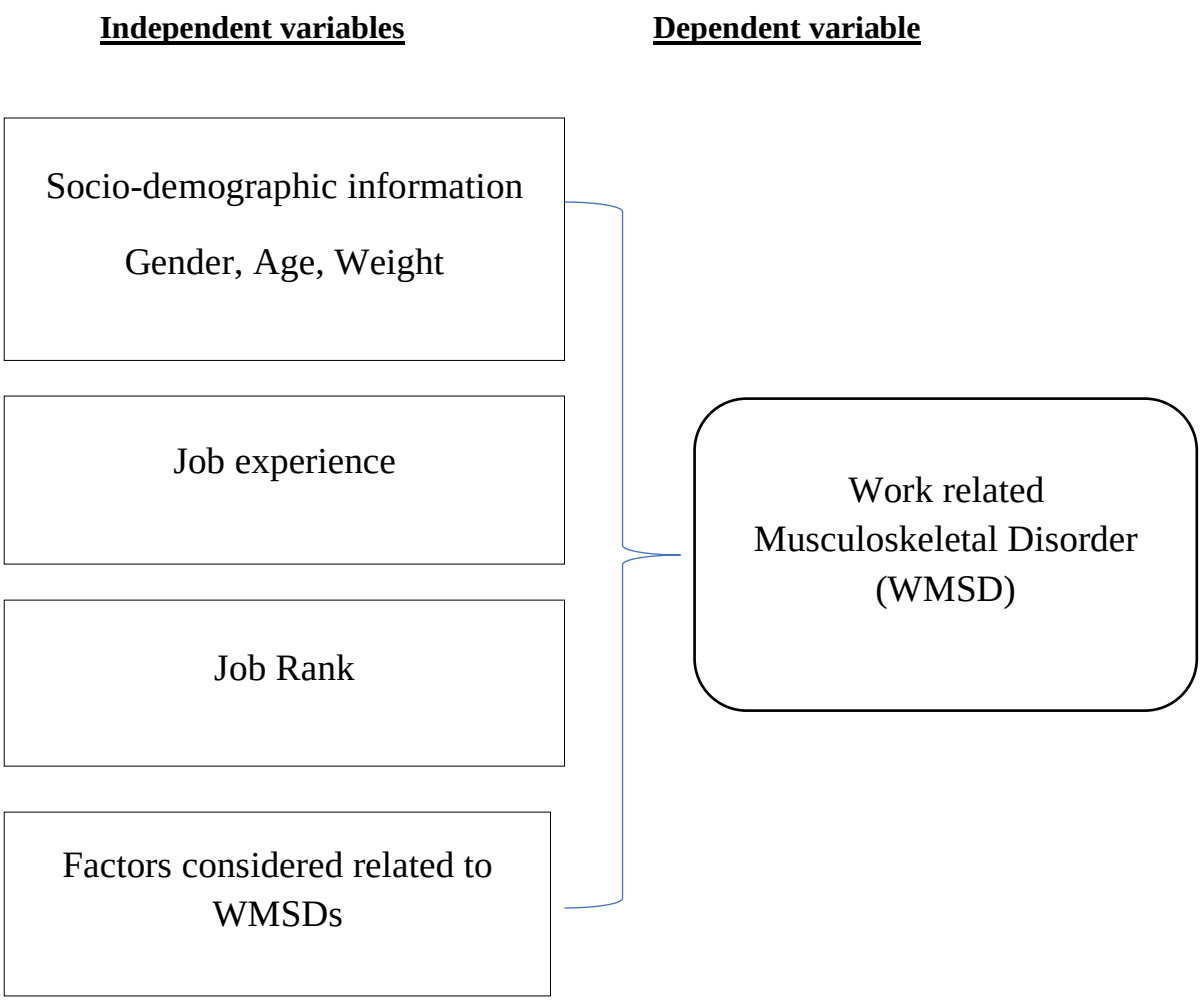
To forestall repeat or compounding of MSDs, office workstations ought to be surveyed and adjusted. Protection may cover workstation appraisals performed by physiotherapists or ergonomists (Author et al., 2011).

Weight training should concentrate on balance and evenness that is left to right, front to back and chest area to bring down body, profound and shallow. Our body is comprised of numerous tissues which act synergistically to adjust us. Try not to compound this by reinforcing previously shorted muscles, for example, the pectorals, perhaps making stretched muscles, similar to trapezoids, more vulnerable (Nagahi et al., 2020).

CHAPTER-III METHODOLOGY

This chapter represents the theoretical frameworks and analytical tools working to address the research objectives. Data requirements and data collection techniques employed are also discussed in this chapter. The aim of this chapter is to explore the research design according to the nature of this research purpose.

3.1 Conceptual Frame Work



3.2 Study Objectives

3.2.1 General objectives

To identify the common work-related musculoskeletal disorders among the Govt. workers of Bangladesh Public Administration Training Centre.

3.2.2 Specific objectives

- To estimate the prevalence of musculoskeletal disorders among govt. workers according to their job nature
- To identify the influencing demographic factors for such exposure group in relation to age, sex, weight and job experience.
- To establish different body regions involved with musculoskeletal disorders and the risk associated with such disorders.

3.3 Study design

The aim of this study was to find out the prevalence of WMSDs among Government Workers. For this reason, a cross sectional study was conducted as because the cross-sectional study is the best way to determine prevalence. The most important advantage of cross-sectional study is it need not more time and also cheap as there was no follow up, fewer resources required running the study (Mann, 2003).

The defining feature of a cross-sectional study is that it can compare different population groups at a single point in time. Think of it in terms of taking a snapshot. Findings are drawn from whatever fits into the frame. The benefit of a cross-sectional study design is that it allows researchers to compare many different variables at the same time, for example, we can look at age, gender, income and educational level in relation to walking and cholesterol levels, with little or no additional cost (Zheng, 2015)

On other hand Quantitative research method can help to use a large number of participants and therefore collect the data objectively. Through this way, data was reduced to numbers for statistical analysis in order to draw conclusion (Hicks, 2009)

3.4 Study Site

The research conducted in Bangladesh Administration Training Centre. It's an organization under Ministry of Public Administration, conducts training to the civil servants mainly. There are different departments here such as service department, library department, ICT department, ITC department where a bunch of hard worker staffs are doing their job sincerely.

3.5 Study population

In most studies study population would be a finite one that consists of elements which conform to some designated set of specifications. These specifications provide clear guidance as to which elements are to be included in the population and which are to be excluded (Kenneth, 2005).

In order to prepare a suitable description of a population it is essential to distinguish between the population for which the results are ideally required, the desired target population, and the population which is actually studied, the defined target population. An ideal situation, in which the researcher had complete control over the research environment, would lead to both of these populations containing the same elements.

In this study the population is the workers from different departments of BPATC. A sample is a finite part of a statistical population whose properties are studied to gain information about the whole (Werner et al., 2005). When dealing with people, it can be defined as a set of respondents (people) selected from a larger population for the purpose of a survey.

3.6 Inclusion Criteria

- Both male and female workers were selected.
- People within 25 to 60 of age were selected.
- Educational qualifications: Hon's or Bachelor degree, Master's degree.
- Working experience: not less than 1 year.
- Worked at office minimum 7 hours in a working day.

3.7 Exclusion Criteria

- Any type of postural deformities.
- Any history of recent trauma or accident.
- Spinal surgery or any other surgery in any part of the body
- Retired persons
- Severely fallen ill recently due to any pathological disease or condition.

3.8 Sampling Procedure

The study was conducted by using the convenience sampling methods. According to Kenneth, (2005) a sample of convenience is the terminology used to describe a sample in which elements have been selected from the target population on the basis of their accessibility or convenience to the researcher. It will be easy to get those subjects according to the criteria concerned with the study purpose through the convenience sampling procedure.

3.9 Sample Size

Sample is a group of subjects would be selected from population, who are used in a piece of research (Hicks, 2009). A sample is a smaller group taken from the population. Sometimes the sample size may be big and sometimes it may be small, depending on the population and the characteristics of the study (Bettany-Saltikov, 2012).

Prevalence formula was adopted as per the study design, that is:

$$\boldsymbol{N = \frac{Z^2 P(1-P)}{T^2}}$$

Where T is tolerance error (0.05), P is the prevalence taken as 14% (Nwaogazie et al., 2016) and Z is the level of significance that corresponds to 95% confidence level (that is, Z = 1.96). Thus, direct substitution of Equation yields,

$$N = \frac{1.96^2(0.14)(1-0.14)}{0.05^2 \approx} = \mathbf{185.001 \approx 185}$$

As the study was performed as a part of fourth professional academic research project and there were some limitations because of covid – 19 pandemics, the sample size will be **150** instead of **185.**

3.10 Data collection method and tools

In this study data were collected through face-to-face interview. There are three parts in the questionnaire – i) Personal Information ii) Job Details iii) Symptoms and Risks. The questionnaire named as OSH Answers Fact Sheets was developed by Canadian Centre for Occupational Health and Safety.

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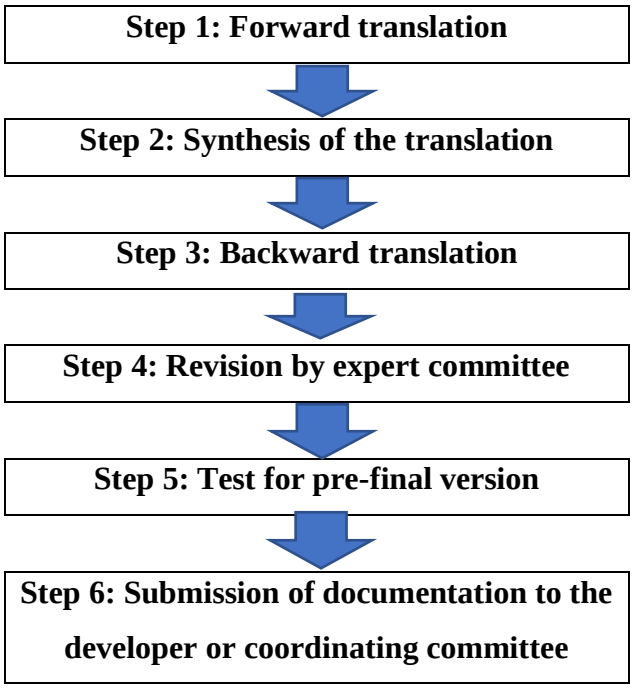
For forward translation, one undergraduate student of physiotherapy from final year and one professional physiotherapist with 2 years of experience were asked to translate the questionnaire. Both translations were further compared with each other for synthesis and then by the help the synthesized version, the researcher himself formed the third version of the translation. Then a person from other profession, working as a Lecturer of Public Administration Department in Bangladesh Sheikh Mujibur Rahman Science and Technology University, had been requested to do the backward translation. She was not related to Physiotherapy profession and also unaware of the real version of the questionnaire were invited. After completing the backward translation, a new harmonized translation was created by the expert committee that includes the supervisor of the research who is a lecturer of Department of Rehabilitation Science, both forward and backward translators, and the researcher. The pre-final Bengali version was tested through pilot study with 15 participants to ensure that the equivalence of adapted version remains stable in applied situation.

Linguistic validation framework is given below-



(Varni, 2002)

The linguistic validation process guideline was followed according to research conducted by Nipa et al., (2019) which was done for the linguistic validation of Incontinence Severity Index (ISI) questionnaire in Bengali language. After linguistic validation the data collection procedure had been started.

Firstly, introduced with each other and describe the project study as well its purpose and also provided consent form to the participant and explained that to build a trustful relationship. After obtaining consent by sign and asked pre-determine question to the participant and gave time to understand the questions fully so that they might be answered accurately. During the interview use pen, paper, written questionnaire, file and consent form.

3.11 Data analysis

The result of this survey consisted of quantitative data. By this survey, a lot of information was collected. All these results gave a basic idea about the work-related common musculoskeletal disorders among government office workers in BPATC. The investigator used the raw data in SPSS to find out the percentage of sociodemographic factors, prevalence of musculoskeletal symptoms in different body regions & associated risk factors. Moreover, the investigator used frequencies in SPSS for finding the percentage of sociodemographic factors & musculoskeletal symptoms in body regions. If there is a relationship between two categorical variables, the chi-square test for association will use to discover categorical variables. Therefore, the Chi-square test was used to find out the statistically significant association between socio-demographic factors and musculoskeletal symptoms among office workers. Chi-square test was conducted with $p < 0.05$ to find out the correlation between the demographic factors and common work-related musculoskeletal disorders

Data was analyzed with the software named Statistical Package for Social Sciences (SPSS) Version 20. Data resolve numerically coded and captured in Microsoft Excel, using an SPSS 20 version software program. Microsoft Office Excel 2016 used to decorate the table, bar graph and pie charts. In the result section all the value was formulated by standard deviation and mean value of the data. SPSS is a comprehensive and flexible statistical analysis and data management solution. SPSS can take data from almost any type of file and use them to generate tabulated reports, charts, and plots of distributions and trends, descriptive statistics, and conduct complex statistical analyses.

3.12 Inform consent

At first, the aims and objectives of this study was informed to the subjects in a descriptive verbal way. The consent form was delivered to the subject and it was ensured that they understood it properly. The subjects had the rights to withdraw themselves from the research whenever they want to. It was assured to the participants that their name or address would not be used. It was also be assured to the participants that their information might be shared in any normal presentation or seminar or writing but they would not be identified. The participants were informed by the researcher that the result would not be harmful for them. Ensuring the confidentiality of participant's

information, no information has been shared without the research supervisor. At any time, the researcher was available to answer any additional questions in regard to the study.

3.13 Ethical consideration

The proposal of the study was approved by IRB (Institutional Review Board) of BHPI (Bangladesh Health Professions Institute). The study had done by following the guide line given by local ethical review committee and also followed WHO and BMRC (Bangladesh Medical and Research Council) guidelines. Then all data was promptly filed in order to maintain confidentiality and avoiding cross contamination as prescribed by Sultan, (2013). Researcher strictly maintained the confidentiality and all the interviews were taken in a confidential to maximize the participant's comfort and feelings of security

CAPTER-IV RESULT & ANALYSIS

4.1 Participants Socio-Demographic Characteristics:

The study was conducted on 150 participants. The mean age of those respondents was 47.61(SD ± 7.631).

Table-1: participants Socio-Demographic Characteristics

Characteristics	Number	Percentage (%)
Sex		
Male	108	74
Female	42	26
Age Group		
26-30	3	2
31-35	8	5.3
36-40	10	6.7
41-45	29	19.3
46-50	38	25.3
51-55	38	25.3
56-60	24	16
Weight(kg)		
31-40 kg	4	2.7
41-50 kg	24	16.0
51-60 kg	59	39.3
61-70 kg	43	28.7
71-80 kg	16	10.7
81-90 kg	4	2.7
Educational Status		
Hon’s or Bachelor degree	105	70
Master’s degree	45	30

Table 1: participants Socio-Demographic Characteristics (Continued...)

Characteristics	Number	Percentage (%)
Job Class		
1st Class	22	22
2nd Class	42	28
3rd Class	75	50
Job Experience		
0-5 years	1	1
5-10 years	10	8
10-20 years	59	46
>20 years	56	45

The Socio-Demographic attributes of in individuals who participated in the research has been given in Table 1.

From the distribution of data, it has been seen that most of the participants were male (74%) and the female participants were 26%. The participant of 46-50 and 51-55 group of age was equal in number. 70% (n=105) participants were graduated and 30% (n=45) had completed their post-graduation. Among 150 participants 46% (n=59) participants had been doing their job for 10 to 20 years and this group of people were maximum in number.

4.2 Prevalence of common WMSDs:

The present study included 150 respondents. Among them majority of the respondents 83%; (n=125) were suffered with WMSDs. The study revealed only 17%; (n=25) respondents didn't have WMSDs. (Figure 1)

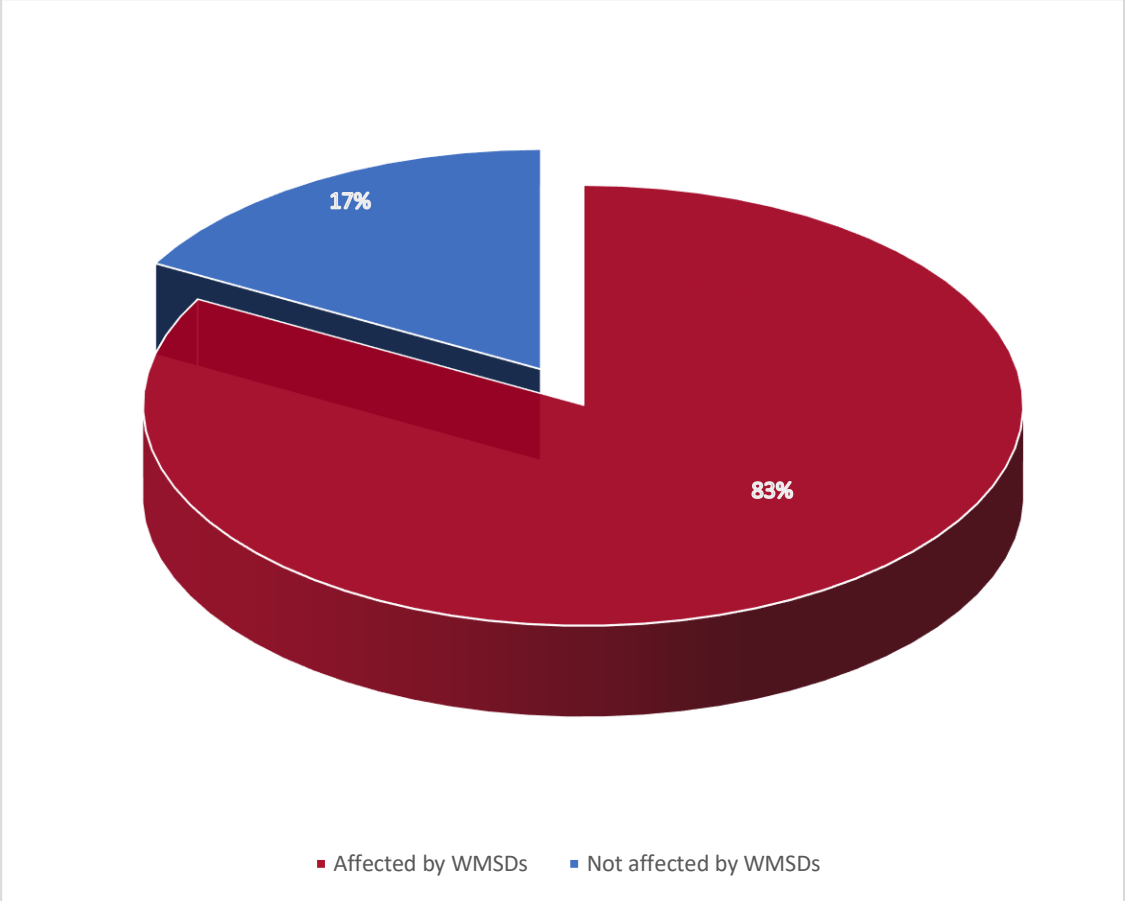


Figure-1: Prevalence of WMSDs.

4.3.1 Percentage of WMSDs within The Different Age Range

Respondents:

Analysis reveals that among the 125 participants who had suffered from WMSD lowest age was 27 years and highest age was 60 years. Their mean age was 48.80(SD ± 6.823) years and mean age of the unaffected group were 40.28 (SD ± 8.359) years. Frequency of WMSD were 1.6% (n=2) participants in between 26-30 years, 3.2% (n=4) participants in between 31-35 years, 4.8% (n=6) participants in between 36-40 years, 18.4% (n=23) participants in between 41-45 years, 25.6% (n=32) participants in between 46-50 years, 28.8% (n=36) participants in between 51-55 years and the rest of 17.6%(n=22) participants in between 56 – 60% (Figure 2).

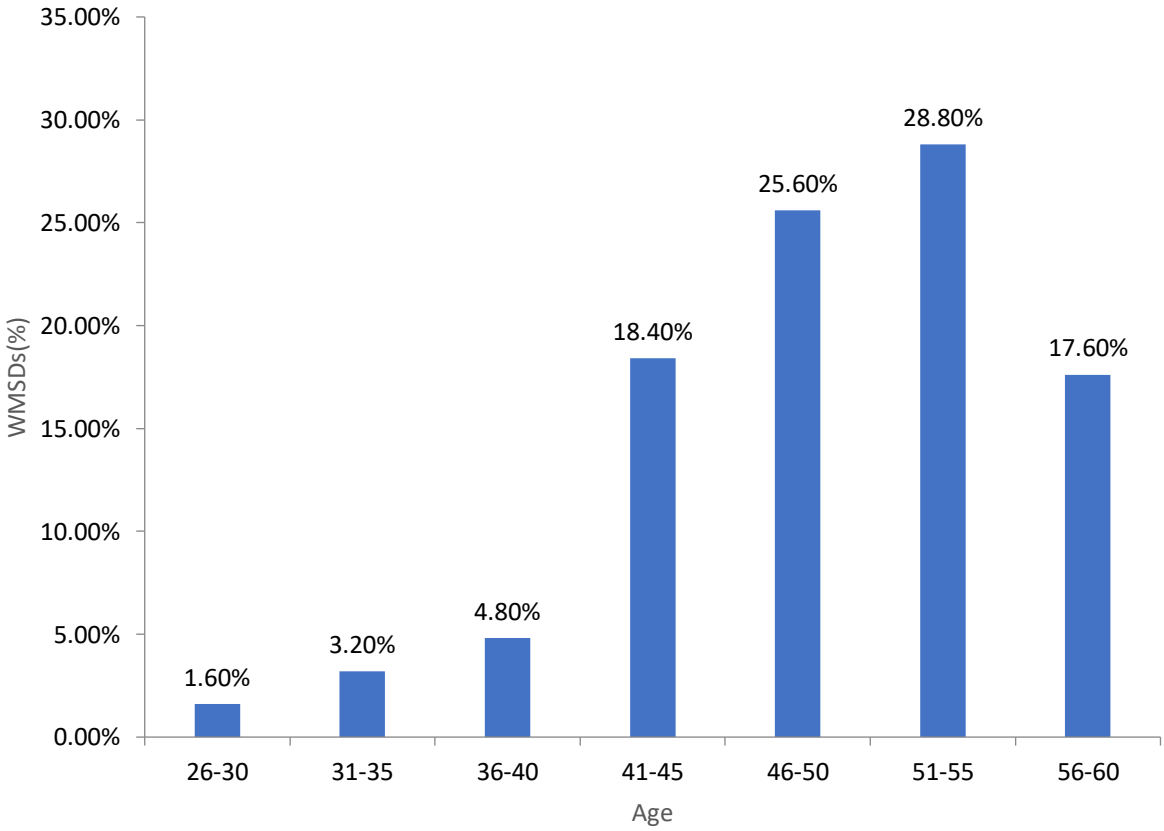


Figure-2: Age &WMSD relationship.

4.3.2 Association between Age of The Respondents and Work-Related Musculoskeletal Disorders:

Table-2: Cross Tabulation between Age and WMSDs

Age group	Work-related Musculoskeletal Disorder		$\chi 2$	p-value
	Yes n (%)	No n (%)		
26-40 years	19 (15.2%)	15 (60%)		
41-60 years	106 (84.8%)	10 (40%)	*30.00*	0.001
Total	125 (83%)	25 (17%)		

Among the 125 participants 15.2% (n=19) participants were between 26-40 years of age and 84%(n=106) participants were between 41=60 years who had WMSDs. On the other hand, 25 participants were not affected by WMSDs where 71%(n=15) participants were in between 26-40 years of age and 39%(n=10) participants were in between 41-60 years of age (Table 2).

Significant (p=0.001) age difference has been found for age group with work related musculoskeletal disorder among the study subject as shown in Table 2.

From this cross tabulation, it is found that there is a significant relation between age and WMSDs. As the age value is raised, the number of affected people by WMSDs is increased.

4.4.1 Percentage of WMSDs within Male and Female Participants:

The result of the study showed that among the 150 participants 108 were male and 42 were female. And among the 125 participants who had suffered from WMSD 74% (n=92) were male and 26% (n=33) were female (Figure 3).

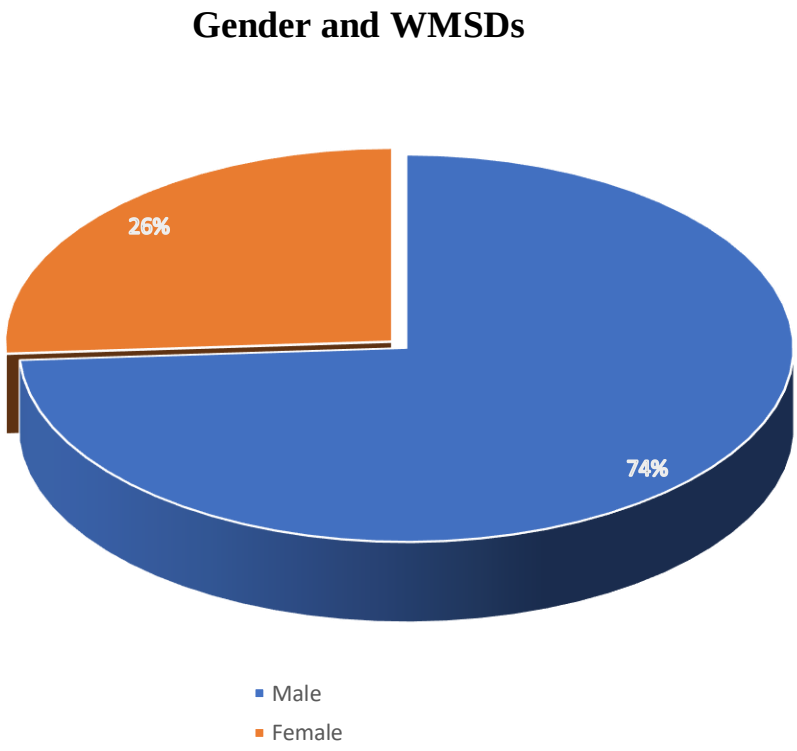


Figure-3: Prevalence of Male and Female among The WMSDs Respondents

4.4.2 Association between Sex of The Respondents and between Gender of The Respondents and Work-Related Musculoskeletal Disorders:

Table-3: Cross tabulation between Sex and WMSDs

Sex of the Participants	Work-related Musculoskeletal Disorder		χ^2	p-value
	Yes n (%)	No n (%)		
Male	92(85.2%)	16(14.8%)	*0.95*	0.329
Female	33 (78.6%)	9 (21.4%)		

Among the 150 participants 74% were male where 85.2% participants had work related musculoskeletal disorders and 14.8% participants had not. 26% participants were female where 78.6% participants had work related musculoskeletal disorders and 21.4% participants had not (Table 3).

No Significant (p=.329) difference has been found for Gender group with work related Musculoskeletal disorder among the study subject as shown in Table 3.

From this cross tabulation, it is observed that female and male may equally likelihood to the affection to the WMSDs.

4.5.1 Job Experience and WMSDs relationship:

Outcome reveals that among the 125 participants out of 150 participants 46% (n=59) participants 10-20 years, 45% (n=56) were more than 20 years, 8% (n=10) participants 5-10 years and 1% (n=1) participants had job experience 0-5 year. Their mean job experiences were more than 19 years. Their mean job experiences were 3.35. Mean job experience of the unaffected group was 2.78. So, bankers suffered from WMSD were in between (10-20) years and more than 19 years (Figure 4).

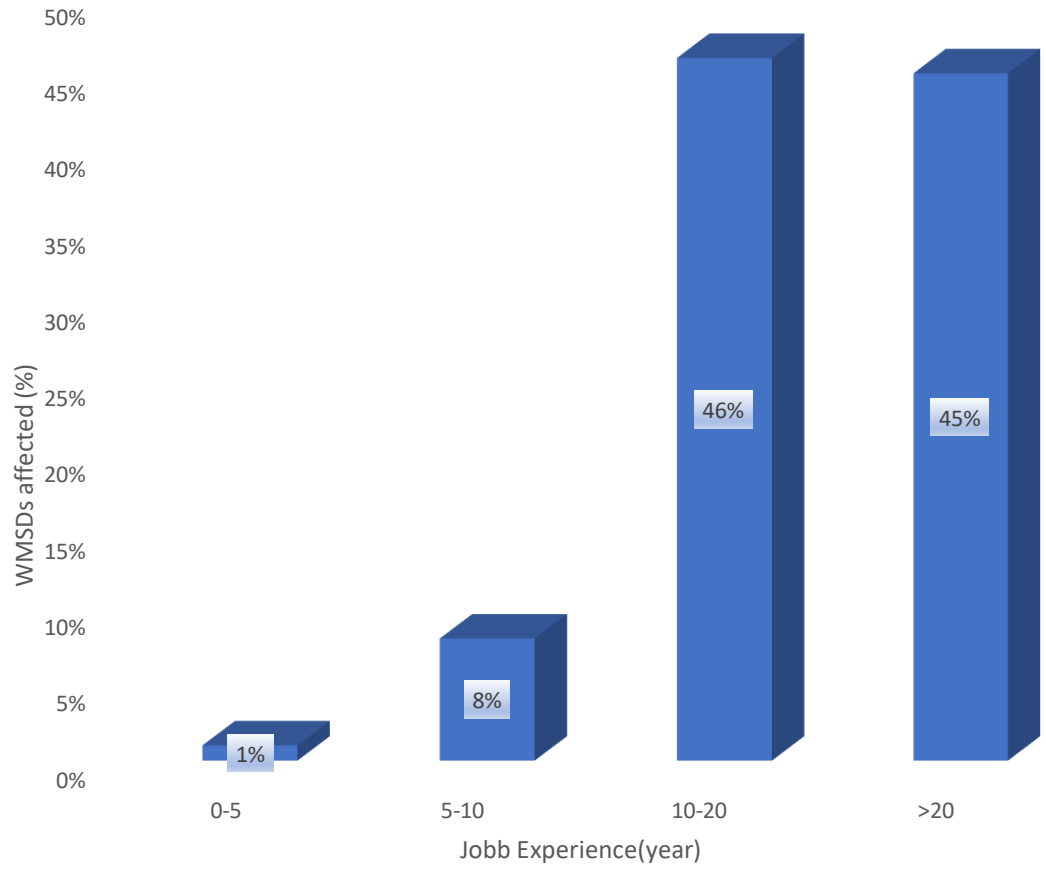


Figure-4: Percentage of WMSDs Respondents within Their Job Experience.

4.5.2 Association between Job Experience of The Respondents and Work-Related Musculoskeletal Disorders:

Table-4: Relationship between Job experience and WMSDs

Job Experience	Work-related Musculoskeletal Disorder		χ^2	p-value
	Yes n (%)	No n (%)		
0-5 year	1(33%)	2 (67%)		
5-10 years	9(59%)	8 (41%)		
10-20 years	59(86%)	9 (14%)	*19.18*	0.001
> 20 years	56(92%)	6` (8%)		

Among the 125 participants 2% were between 0-5-year job experience where 33% participants had work related musculoskeletal disorders and 67% participants had not. 11% participants were between 5-10 years job experience where 59% participants had work related WMSDs and 41% participants had not. 45% participants were between 10-20 years job experience where 86% participants had work related musculoskeletal disorders and 14% participants had not. 42% participants were between >20 years job experience where 92% participants had work related musculoskeletal disorders and 8% participants had not (Table 4).

Significant (p=0.001) Job experience difference has been found for Job experience with work related musculoskeletal disorder among the study subject as shown in Table 4.

From the cross tabulation, it is learned that there is a significant relation between job experience and WMSDs. The ignorance about correct posture, staying in same position for prolong time and poor ergonomics knowledge can be the reason of WMSDs in late stages of the job.

4.6.1 Relationship between Job Class and WMSDs:

Among 150 participants 22%(n=33) are 1st class staffs, 42%(n=42) are 2nd class staffs are 28%(n=42) and 50%(n=75) are 3rd class staffs. In WMSDs affected group 24% are 1st class employees, 29% are 2nd class employees and other 47% are 3rd class employees. (Figure 5).

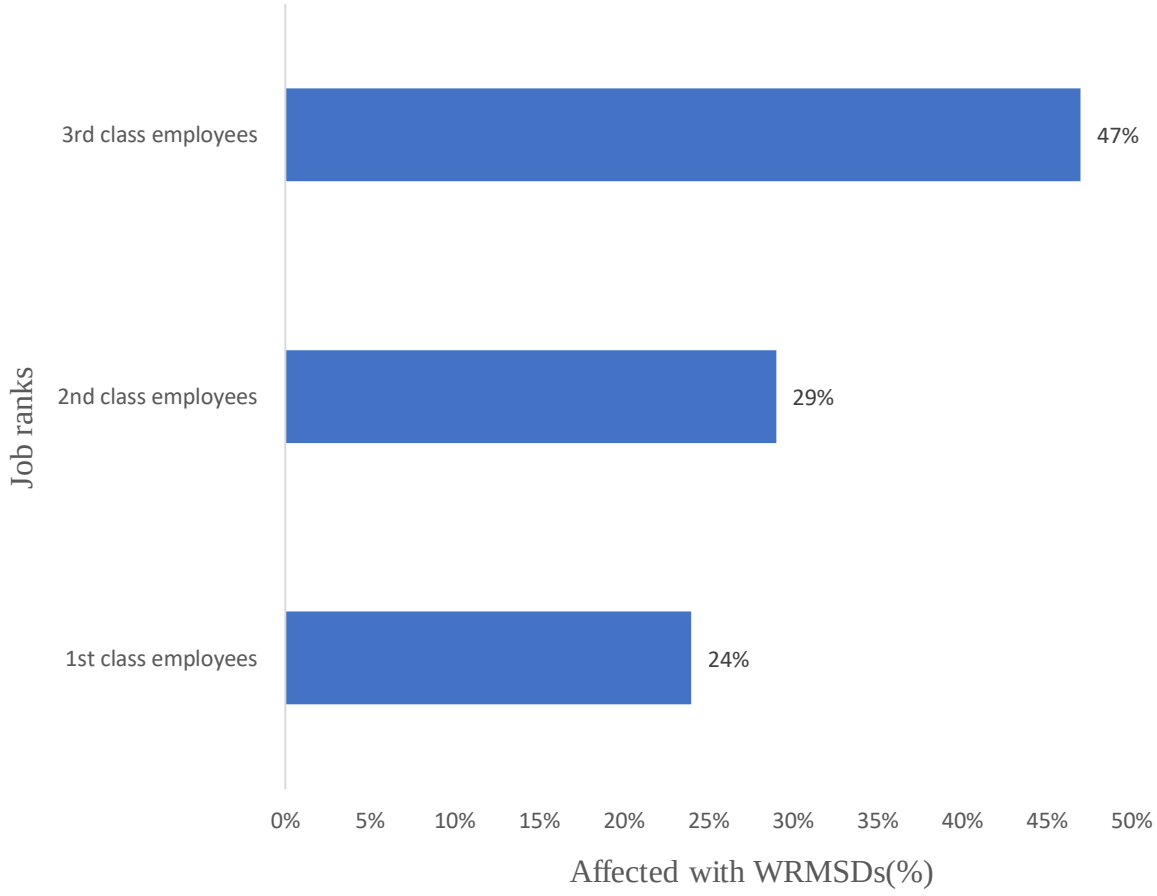


Figure-5: Percentage of WMSDs Respondents according to Their Job Class.

4.6.2 Association between Job Class of The Respondents and Work-Related Musculoskeletal Disorders:

Table-5: Cross tabulation between Job Class and Work-related Musculoskeletal Disorders

Job Class	Work-related Musculoskeletal Disorder		χ^2	p-value
	Yes n (%)	No n (%)		
3rd Class	1(33%)	2 (67%)		
2nd Class	9(59%)	8 (41%)	*2.71*	0.258
1st Class	59(86%)	9 (14%)		

No Significant (*p*=.329) difference has been found for Job class group with work related Musculoskeletal disorder among the study subject as shown in Table 5.

From the cross tabulation, it is acknowledged that there is no relation between rankings of the employees in an office like Bangladesh Administration Training Centre.

4.7.1 Work Interference due to WMSDs:

Among 150 participants, there were 125 participants who suffered from WRMDS and it caused work interruptions in their job life. It was seen that 74.4% employees had faced some interference to their duties in office. 12.8% people could do their work without any interference caused by WMSDs. But on the other hand, same amount of people (12.8%) had serious issues with their job because of the intensity of WMSDs and they needed to take time off from the work because of that. The summery of Work interference due to WMSDs is displayed in Figure 6.

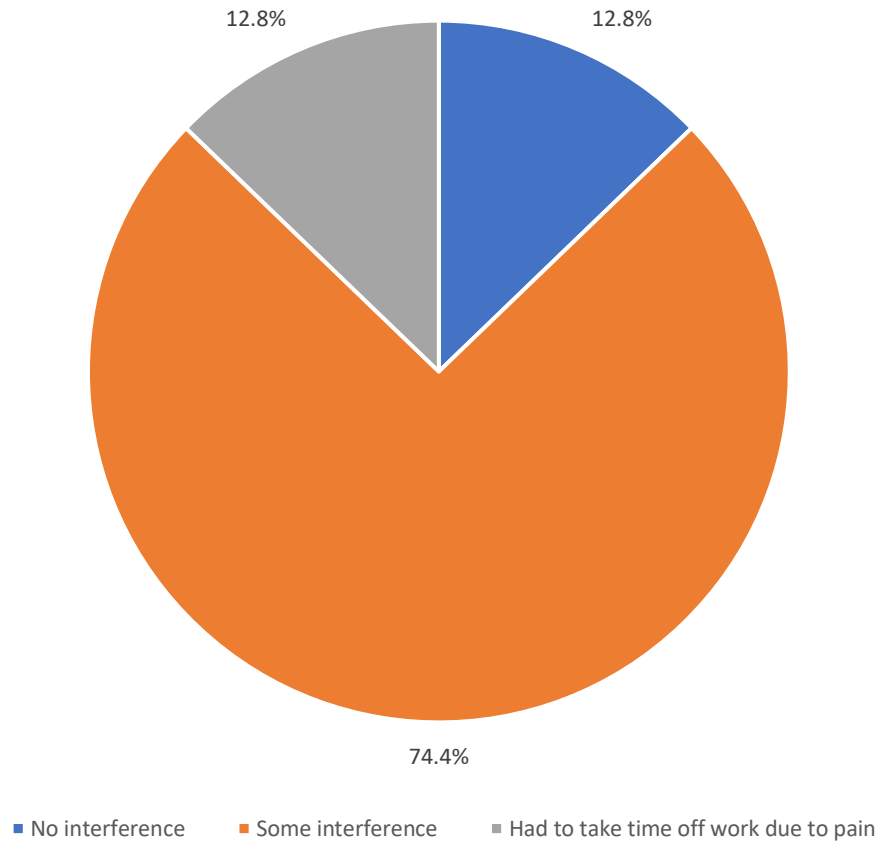


Figure-6: Summery of Work interference due to WMSDs

4.7.2 Association between Work Interference of The Respondents and Work-Related Musculoskeletal Disorders:

Table-6: Cross Tabulation between work interference and WMSDs

How much does it interfere with your work?	Work-related Musculoskeletal Disorder		χ^2	p-value
	Yes n (%)	No n (%)		
No interference	16(39%)	25(61%)		
Some interference	93(100%)	0 (0%)	*79.76*	0.001
Had to take time off work due to pain	16(100%)	0 (0%)		

Among 150 people working in BPATC, there were 125 people who had been found affected by WMSDs. Researcher found no interference in the group of people who are not affected by WMSDs. 16 people from the affected group also said that they had no interference to the job due to pain or any discomfort. But a major group of people had been faced interference due to WMSDs.

Significant (p=0.001) difference has been found between job interference and WMSDs among the study subject as shown in Table 6.

From the cross table, we can see that WMSDs can be a vital cause of work interference and taking leave from the job for the employees who are working in BPATC.

4.8.1 Effect of WMSDS on Work performance:

Among 125 affected participants, 57.60% participants felt that the WMSDs had some effect on their work performance. But there were 30.40% employees who had suffered from WMSDs greatly and they stopped enjoying their activities in the office and their work performance had been reduced greatly. No interruptions in work performance had been found in 12% employees (Figure 7).

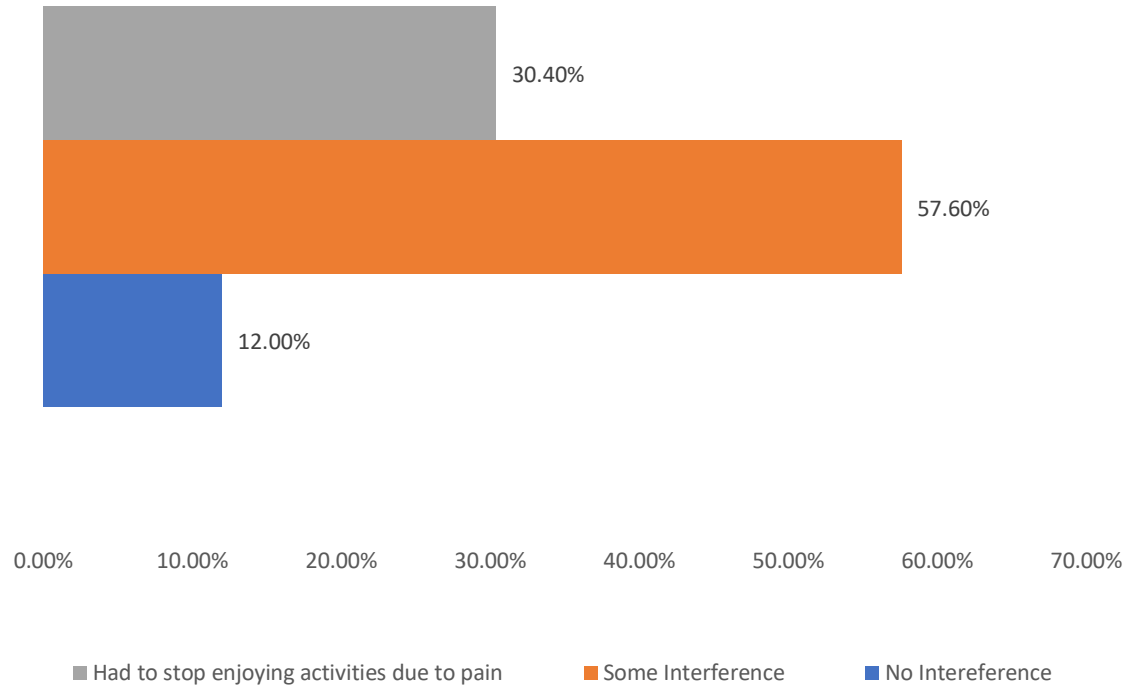


Figure-7: Effects of WMSDs on Work Performance.

4.8.2 Association between Work Performance of The Respondents and Work-Related Musculoskeletal Disorders:

Table-7: Cross Tabulation between work performance and WMSDs

How much does it affect your work performance?	Work-related Musculoskeletal Disorder		χ^2	p-value
	Yes n (%)	No n (%)		
No interference	15(37.5%)	25(62.5%)		
Some interference	72 (100%)	0 (0%)	*82.50*	0.001
Had to stop enjoying activities due to pain	38(100%)	0 (0%)		

Significant (p=0.001) difference has been found between work performance and WMSDs among the study subject as shown in Table 7.

In Table 7, it is seen that there is relationship between reducing work performance and WMSDs. Among 125 respondents, 88%(n=110) people had been found affecting their work performance due to WMSDs. only 12% (15) had been found that they didn't feel any disturbance in their day-to-day permeance in office. Again, in no affected group, no persons had been found hampering their performance.

4.9.1 Sleep Disturbance caused by WMSDs:

Among 125 affected participants, there were 29.30% participants who had faced no interference during sleep. There were 56% participants who faced some interference like during the pain periods, one or two days in a week. But it was worse for some participants. There were 14.70% participants who had difficulties due to pain or discomfort during sleep at every night (Figure 8).

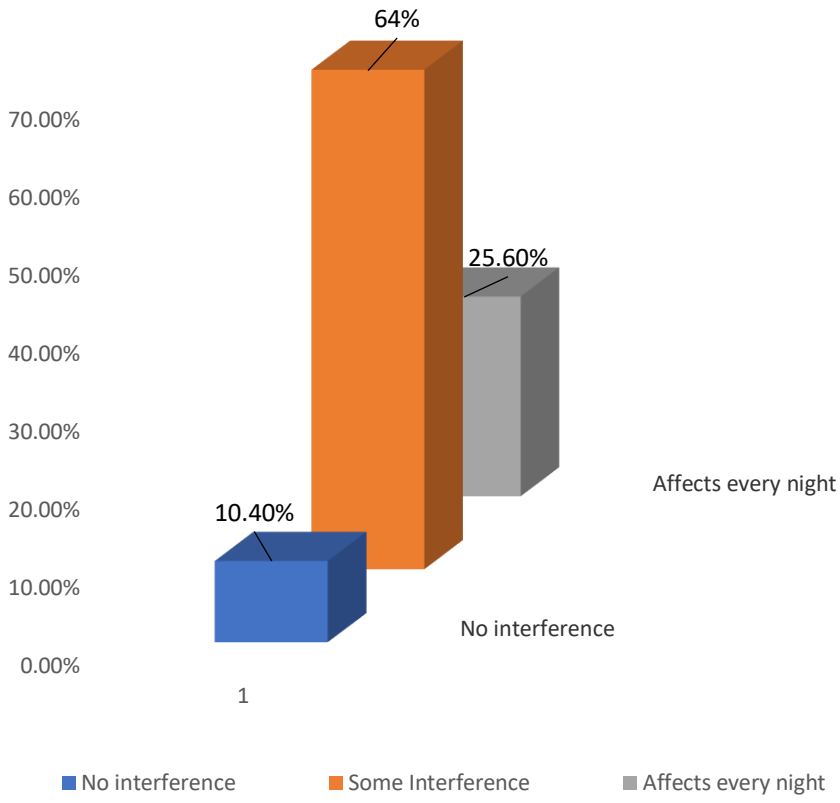


Figure-8: Sleep disturbance and WMSD relationship.

4.9.2 Association between Disturbance During Sleep of The Respondents and Work-Related Musculoskeletal Disorders:

Table-8: Cross Tabulation between sleep disturbance and WMSDs

How much does it interfere with your sleep?	Work-related Musculoskeletal Disorder		χ^2	p-value
	Yes n (%)	No n (%)		
No interference	13(34.2%)	25(65.8%)		
Some interference	80(100%)	0 (0%)	*88.4*	0.001
Affects every night	32(100%)	0 (0%)		

Significant (p=0.001) difference has been found between Sleep and WMSDs among the study subject as shown in Table 8.

From the Table 8, it can be found that sleep can be interfered by WMSDs. Among 125 respondents who had suffered by WMSDs, 89.6%(n=112) individuals complained that their sleep had been interfered due to WMSDs. Among them 28.6%(n=32) respondents felt that their sleep was hampered every night. Only 10.4%(n=13) individuals had no interference during sleep due to WMSDs.

4.10 Left away from Job Due to WMSDs:

Among the 125 participants, 83% who had suffered from WMSD in this study, about 7.2% participants had leave in job due to work related musculoskeletal disorder and 92.8% participants said that they didn't need to take day off from the job (Figure-9).

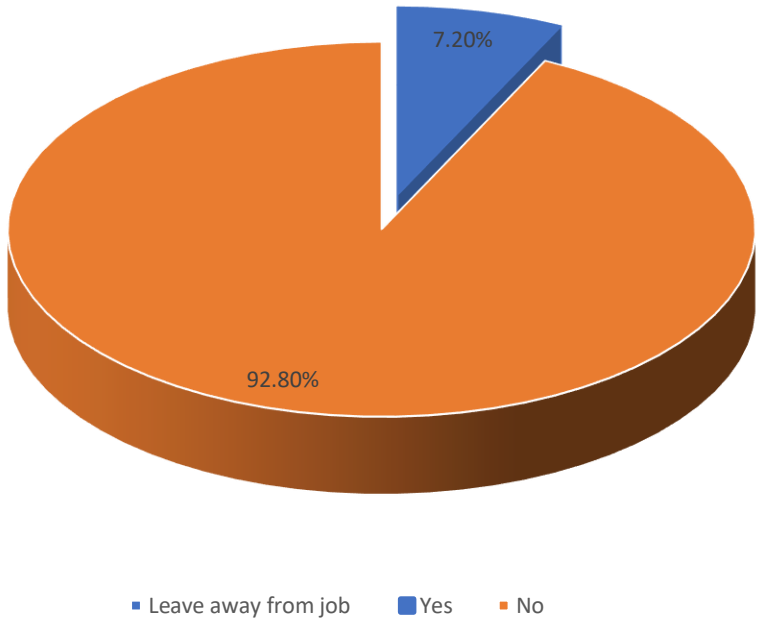


Figure-9: Percentage of WMSDs affected respondents.

4.11 Affected Body Parts:

Table-9: Affected body parts with their chronological percentage.

Affected body parts	Number (n)	Percentage (%)
Lowe back	68	54.4%
Neck	62	49.6%
Upper back	51	41%
Shoulder	47	37.6%
Foot	45	36%
Hand	30	24%%
Wrist	25	20%
Elbow	6	4.8%

After analysis researcher found that among 125 participants who suffered from WRMD 54.4%; (n=68) participants affected in lower back 49.6%; (n=62) participants affected in neck, 41%; (n=51) participants had WRMDs in upper back, 37.6%; (n=47) participants affected in shoulder. The foot was affected in 36%; (n=45) cases. There were 24%; (n=30) participants who had WRMDs in hand, 20%; (n=25) participants who had suffered in with WMSDs in wrist and Only 4.8%; (n=6) participants had WRMDs in elbow (Table 9).

4.12.1 Intensity of Pain due to WMSDs:

Answers the 125 participants out of 150 analyses demonstrated that there were significant differences of feeling pain or discomfort during working time, after shift and after a week away from the job (Figure 9).

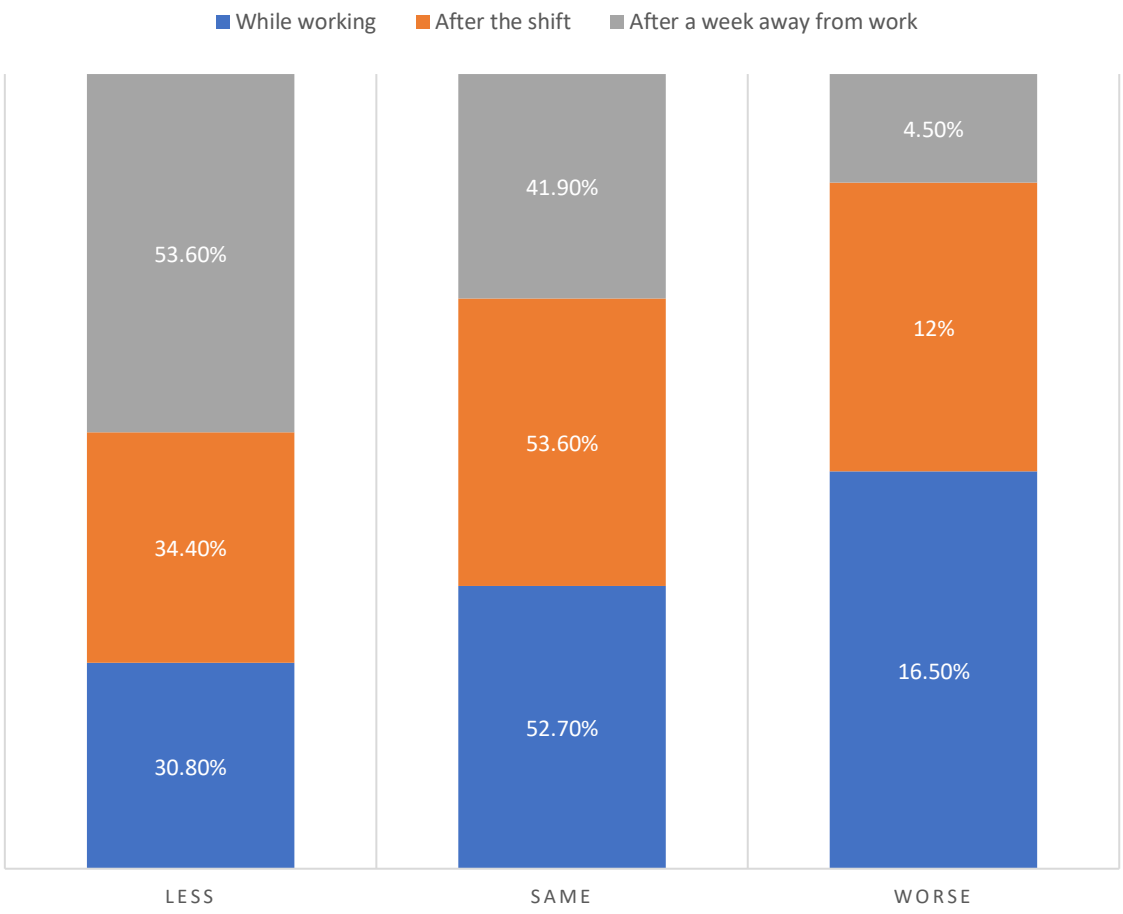


Figure-10: Percentage of respondents according to pain intensity.

4.12.2 Pain Intensity of The Respondents and Work-Related Musculoskeletal Disorders Relationship:

Table- 10: Relationship between Pain and WMSDs.

Pain Intensity	Less	Same	Worse
While working	30.8%	52.7%	16.5%
After the shift	34.4%	53.6%	12%
After a week away from work	53.6%	41.9%	4.5%

The pain become more worsen in 16.5% participants during the work time. But when participants had the chance to leave from the work for a week it had been seen that the pain or discomfort became much less in 53.6% participants. Approximately 53% participants said that the pain or discomfort they felt in their day-to-day life remained same condition either working time or after the shift. But after a week break from the job, 41.9% participants felt same type of pain or discomfort which is lower than their working days (Table 10).

4.13.1 Risk Factors for WMSDs:

Analysis showed that among the 125 participants who had suffered from WMSD stressful position were working in same position for long periods mostly sitting for 88% (n=110) participants. As a result, there was a high rate of LBP in the participants (54.4%). The other participants usually worked in standing position, which caused them foot pain (36%) (Figure – 10).

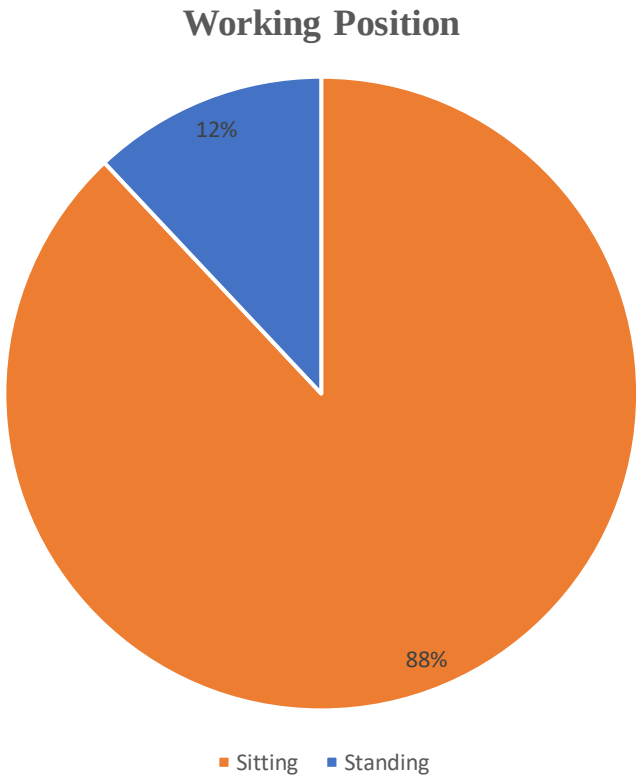


Figure-11: percentage of WMSDs according to working position

4.13.2 Factors Influencing WMSDs and Their Chronological Percentage:

Table-11: Risk factors of WMSDs with their chronological percentage

Risk factors	Percentage (%)
Working in same position(sitting)	88%
Repetitive works	67.2%
Reach away from the body to do the tasks	48%
Handling objects above shoulder or near the floor	36%

There are other risk factors. Such as performing same task over and over for 67.2% (n=84) participants, bending or twisting back or neck in an awkward way to reach away from body caused WMDs in 48% (n=60) participants. Moreover, handling objects above shoulder and near floor is the cause of 36%(n=45) participants WMSDs. (Table - 11).

CHAPTER-V DISCUSSION

The main aim of this study was to identify the prevalence of WMSDs among Government Office Workers of Bangladesh Administration Training Center (BPATC). In this study researcher found that the prevalence of WMSDs among Office Workers in BPATC is 83% where. The most affected part of body is lower back (54.4%), followed by neck (49.6%), upper back (41%), shoulder (37.6%), foot (36%), hand (24%), wrist (20%), elbow (4.8%).Chyuan et al. (2004) conducted a study about MSDs among office worker and found prevalence is 84% percent which is quite similar to this study (83%). Similarly, A study of Loghmani et al. (2013) indicate that the prevalence of MSD 's among Office workers ranges from 60% to 80%, indicating that they have a high susceptibility to these kinds of injuries. Whereas, Sulaiman et al. (2015) did a study in India and found annual prevalence of the MSD was 33.8%, with a disability rate of 8.5%. In their study the body region mostly affected was the lower back (51.8%) followed by the neck (48.2%), shoulder (40.2%) and upper back (39.6%).

In a study with Nigerian government workers there were two group of people, local government employees were in group 1 and ministry employees were in group 2. In both groups, the age range of over 40 years had the highest prevalence of WMSDs, 28 persons out of 67 in group 1 and 39 out of 73 persons in group 2. While the age group of (18 – 25) had the least, 4 out of 67 in group 1 and 2 out of 73 in group 2 (Nwaogazie et al., 2016).

A cross-sectional observational study done by Akrouf et al. (2010) assessed the pattern of musculoskeletal disorder (MSDs) suffered by office workers in Kuwait. A self-administered validated questionnaire was used that included the Nordic musculoskeletal questionnaire and 12-item general health questionnaire (GHQ12). Of 750 employees, 80% suffered at least 1 episode of MSD during the previous year which is higher in compare to present study (69.3%) and 42% suffered at least 1 disabling episode which is lower in compare to current study (51.7%). The most affected body parts were the neck (53.5%), lower back (51.1%), shoulders (49.2%) and upper back (38.4%) which is quite higher to present study. These differences are may be the geographical reason.

In favor of this finding different research articles support that musculoskeletal disorders have been found to manifest in individuals with higher psychosocial stress as psychosomatic disorder, as well as in individuals with excessive job stress (Author et al., 2011).

According to Abledu (2012) psychological distress was positively associated with MSDs. An association between musculoskeletal disorders.

(Mahmud et al., 2011) did a study with office workers about effectiveness of ergonomic training for reduction of MSDs and found a significant improvement in workstation habits and the differences remained significant at the follow-up time point for keyboard, mouse, chair, and desk use. The largest reduction in the percentage of musculoskeletal disorders was in the neck region (-42.2%, 95% CI -60.0 to -24.4). After adjusting for baseline values, significant differences were found at the follow-up time point in the neck, right shoulder, right and left upper limbs, lower back, and right and left lower limbs. No significant differences were found for the days and episodes of sick leave or the psychological well-being among workers after the intervention.

Moreover, there are several studies support that female bank workers are more vulnerable than their male counterpart in case of occurring WMSDs (Sulaiman et al., 2015).

An association between MSDs and longer job tenure has been reported by other researchers (Warren, 2015).

Similar result was found by Abledu, (2012) who revealed that more musculoskeletal symptoms were likely to be reported in individuals with more years of work in the bank. More supporting article found in the study of Samaei et al. (2016) who stated that one unit increase in job tenure (years) the probability of incidence of MSDs gone up 17.2 percent.

There are more articles in favor of this finding which showed that musculoskeletal disorders have been found to manifest in individuals with higher psychosocial stress as psychosomatic disorder, as well as in individuals with excessive job stress (Author et al., 2011).

In India musculoskeletal problems were reported by 76.5% (Talwar et al., 2009). 84% WMSD reported in Europe countries (OSHAEU, 2007). In Iran 87.1% experienced some form of MSD symptoms (Sayed et al., 2009). In America Work related pain was experienced by 75% (Scherzer et al., 2005).

Musculoskeletal diseases affect more than one out of every two persons in the United States age 18 and over, and nearly three out of four age 65 and over (Boneandjointburden, 2015).

A cross-sectional survey had been done by Delp, (2013) among 2,310 clerical workers investigated MSD cases, defined as musculoskeletal discomfort and seeking treatment for that discomfort in the past 12 months. Over half of respondents reported musculoskeletal discomfort. The prevalence of MSD cases was: 37.2% neck/shoulders, 21.7% upper extremities, 18% lower extremities, and 34.3% back region.

There is a significance (p=.001) deference has been found in relation between WMSDs and age which is given in Table 2.

Researcher has found that, among 26-40 aged group of people, only 15% are affected by WMSDs. But in 40-60 aged group, 84.8% people are affected which is greater percentage than that of the previous.

A study done by Choobineh et al., (2007) found that the mean age was 34.63(SD ± 11.07) years. The workers in the age range of 41-50 years had the height prevalence of WMSDs (90%) whereas 21- 30 years had the lowest (66.66%). This is almost similar to this research.

Although the sample size is not similar but the prevalence rate of musculoskeletal symptoms is quite similar. Both the studies have complied that the prevalence rate of musculoskeletal symptoms is increasing gradually from younger to older age group.

Another research of Jafari nodoushan et al., (2011) comprised that old people in comparison with young individuals are more at risk of these disorders.

In this research, it is found that among 150 employees, male persons are 108 and 42 persons are female. Among 108 males, 92(86%) persons were affected by WMSDs and among 42 females, the number of affected persons were 33(78.6%) (Figure 3).

Near about two third (72%) were male and (38%) were female suffered from WMSD. Literature says that men are more vulnerable to WMSDs then female. In Chennai, India 77.5% male and 22.5% suffered from WMSD (Priya, 2010).

In Korea KH et al. (2010) found that 74.2% male and 25.8% female suffered from WMSD.

No Significant (p=.329) difference has been found for Gender group with work related Musculo-skeletal disorder among the study subject as shown in Table 3.

Similar cases had found in a research of Valipour et al., 2015 . In this research researchers found that Sex of the people showed no statistical significance with WMSDs ($P > 0.05$).

Significant (p=0.001) Job experience difference had been found for Job experience with work related Musculo-skeletal disorder among the study subject as shown in Table 4.

According to the result, people with job duration higher than 10 years, in comparison to people with job duration lower than 10 years have 1.85 times more back disorders ($P < 0.004$, OR = 1.85) and people with job duration longer than 10 years, have 2.33 times more chance for developing neck disorders ($P < 0.004$, OR =2.33) (Nagahi et al., 2020).

In Europe, Low back pain (LBP) is one of the most common causes of musculoskeletal disorders related to work status and conditions. In Europe, 30% of the general worker population, namely 44million workers suffer from LBP, whereas in Greece 44% of workers present with work related LBP .The loss of 600 million working days annually, lower production rates, the financial compensation of the injured workers, and the cost of hiring and training new personnel are only a few of the consequences of LBP (Spyropoulos et al., 2007).

According to a research conducted by Valipourm et al., (2015) backache is shown by 51% of prevalence of disorders among office workers, which forced 18.9% of individuals to hinder and become absent from daily works.

Significant (p=0.001) difference had been found for work performance with work related musculoskeletal disorders among the study subject as shown in Table 7.

Musculoskeletal disorders have great and direct economic burden on health systems and indirectly affect and decrease work efficiency (Valipour et al., 2015).

Musculoskeletal disorders have great and direct economic burden on health systems and indirectly affect and decrease work efficiency (Khandan et al., 2017).

Findings of the study suggested that among the 125 participants out of 150 participants who suffered from WMSD, 72 persons had experienced some effectiveness of their WMSDs to their work performance. Other 38 respondents said that they had stop enjoying their works and reduced work performance greatly.

In the research, the researcher has found that 110 persons among 150 had affected from WMSDs because they are working in same position mostly in sitting for prolong time. Besides, repetitive work, reach away from the body to do the tasks and handling objects above shoulder or near the floor are the other risk factors those are responsible for the pain and discomfort among respondents. The chronological percentage of risk factors are shown in Table 11.

A study by Koch & Hänsel., (2019) who found that heavy physical jobs including lifting, twisting and repetitive tasks were associated with acute back pain.

Babatunde, (2008) showed in his research that among the all risk factor performing excessive surgery in one day (83.5%), working in same position for long period (71.3%), performing manual techniques (67.8%), working in awkward or cramped position (64.6%), bending or twisting back in awkward way (62.6%), not having enough rest break during the day (61.7%), continuing to work when injured (52.2%), performing same task over (52.2%) and inadequate training in injury prevention (29.6%).

Palmer & Smedley, (2007) claimed that repetitive work, static loading is responsible for most of the WRMD.

Booth et al., (2012) found in his research the common risk factors were performing the same tasks over and over, working in the same position for long periods' and performing excessive surgery of patients in one day.

The biomechanical risk factors associated with musculoskeletal injuries have been identified as high prehension forces during instrumentation, repetitive use of small

muscle groups, awkward and static postures, vibration from ultrasonic instruments and dental hand pieces, ill-fitting glove, and limited time for recovery (Abdolalizadeh & Jahanimoghadam, 2015).

Back pain is caused by various factors including poor posture, degenerative changes, and psychological states. The principal factor is a bio-mechanical factor because of mechanical stress, particularly heavy weight-handling work(Kim et al., 2013).

A positive relationship between fixed postures and musculoskeletal disorders (including pain, weakness, and paranesthesia) has been documented for a number of occupations (Pejcic et al., 2017).

Amer, (2020) found in his research that only 21.62% missed work due to neck pain and only 24.66% due to back pain. 57.7%(n=45) of the participants had work performance reduce due to WMSDs.

According to OSHAEU, (1999) 61% of work performance reduces due to WMSDs. Most of the common risk factors were working in same position for (38%) participants and doing the same task over and over for (35%) participants, performing same task over and over for 18% participants, bending or twisting back or neck in an awkward way for 6% participants, repetitive movement of upper limb for 3% participants, carry heavy load for 35% participants. Working in same position for long period (71.3%), bending or twisting back or neck in an awkward way (62.6%), performing same task over and over (52.2%). In many studies, it was reported that light computer users complain less musculoskeletal symptoms than heavy users (Yu and Wong, 1996).

In another study of bank workers in Nigeria, it identified that over work, insufficient rest time during whole working day, moving heavy objects, working in same position are the most prevalent risk factors (Maduagwu, 2014).

Stress of work in the office affects the intensity of pain. In this research, it is found that the pain become worse during work and after the shift 12% people felt the worsen condition of pain. But when they took break from the work for a week, only 4.5% had the worsen condition of pain (Table 10).

Similarly, a research conducted by Kim et al., (2013) revealed that, work demand and stress significantly affect WMSDs. Also, work demand has a significant positive effect

on work stress. It was further found that work stress partially mediates the relationship between work demand and WMSDs.

In this research researcher has found that there is a significant relation between WMSDs and sleep disturbance (Table 8).

Only 13 among 125 WMSDs affected persons said that pain or discomfort due to WMSDs did not affect their sleep at all. But there was a huge percentage of people felt that their sleep had been interfered sometimes, may be a day or two in a week. On the other hand, there was 32 number of people who suffered from sleep disturbance because of the severity of WMSDs (Figure 12).

In a study done by Zhang et al., (2017) revealed that nearly half of the participants reported short sleep duration (≤6 hours/day), or a prolonged sleep onset latency (≥30 minutes). One third of the participants reported sleep disturbances, with 11.4% reporting moderate to severe sleep disturbances. Pain was reported in the following body regions: low back (63.0%), shoulder (42.4%), neck (50.6%), wrist/forearm (24.2%), knee (35.0%), and ankle/feet (39.3%). Nearly half of the respondents (47.4%) reported moderate, severe, or extreme musculoskeletal pain in one or more body regions, and 16.8% reported moderate, severe, or extreme musculoskeletal pain in three or more body regions.

5.1 Limitation of the study:

Although the findings indicated high rates of WMSDs in some parts of bodies among the government employees in Bangladesh Administration Training Center, the present study had some limitations. Some socio demographics characteristics such as height, BMI of the respondents, social and cultural could not be analyzed. Moreover, the sample number was not large enough to bring completely accurate data for the work-related musculoskeletal disorders in the government workers because the sampling area was short. As most of the employees in BPATC were in their retirement period researcher could not took their data as it was excluded. Meanwhile, it was not adequate to establish a system to prevent the incidence of musculoskeletal disorders in the office workers. In future, it should be focused on the study of preventing the WMSDs in the government working class population.

CHAPTER-VI CONCLUSION & RECOMMENDATION

The study was aimed to investigate the status of work-related musculoskeletal disorders among government office workers in Bangladesh Public Administration Training Centre (BPATC). Analyzing the data, it was found that age, working experience and working performance were significantly related to WMSDs.

Based on the results in the present study, it is necessary to adopt interventional program to prevent WMSDs regarding the rate in some parts of the body and its significant association with specific demographic characteristics related to the government office workers. Therefore, not only BPATC but also other government institutions and organizations should come forward to improve quality of care for office workers and should design necessary plans to manage physical strains, improve working conditions, and increase more break time.

It is found that a high number of office workers (83%) has responded to WMSDs. Lower back is the most prevalent part of the body as 54.4% (n=68) respondents have suffered with pain or discomfort in that area. WMSDs have also affected their normal life, for example significant (p=0.001) difference has been found between respondent's sleep time and WMSDs.

Further research should be conducted to establish the epidemiology of WMSDs among the government office workers and support the need to develop prevention and control programs in offices like BPATC that includes organizational, technical and even individual measures to promote the active participation of government workers of all classes in a process that definitely leads to a change of preventing work related musculoskeletal disorders.

6.2 Recommendation:

- In any further study, it would be useful to identify the factors, which might influence the government employees to affect with WMSDs and identify the differences from other occupation.
- No significance had been found in this study between gender and WMSDs. But there were evidences that male employees are more vulnerable than female employees in terms of WMSDs. So, further study recommended to find out the true picture.
- Because of covid-19 pandemic, it was not possible to fulfill the actual sample size. So, further should be needed to make the analysis more precise.
- Future research should use standardized, validated and more readily comparable methods

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Appendix

Verbal Consent Statement

(Please read out to the participants)

Assalamualaikum/Namasker,

My name is MD Mokaddes Reza, I am conducting this study as a part of my academic work of BSc in Physiotherapy under Bangladesh Health Professions Institute (BHPI), which is affiliated to University of Dhaka. My study title is **"Prevalence of Work-Related Musculoskeletal Disorders among Government Office Workers in BPATC"**

I would like to know about some personal and other related information regarding musculoskeletal disorders among government office workers. I will need you to answer some questions which are mentioned in this form. It will take approximately 20-25 minutes.

I would like to inform you that this is a purely academic study and will not be used for any other purpose. The researcher is not directly related with BPATC, so your participation in the research will have no impact on your present or future profession. All information provided by you will be treated as confidential and in the event of any report or publication it will be ensured that the source of information remains anonymous.

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 interview.

If you have any query about the study or your right as a participant, you may contact with me, and/or **Ms. Shamima Islam Nipa**, Lecturer**,** Department of Rehabilitation Science, BHPI, CRP, Savar, Dhaka.

Do you have any questions before I start? Yes / No

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

Yes: …… No: ……..

Signature of the participant……..Date ……..

Signature of the Interviewer ……Date ……..

Signature of the witness ……..…....Date ……..

মৌখিক সম্মতিপত্র

আসসালামু আলাইকুম/ আদাব,

আমি মোঃ মোকাদ্দেস রেজা। আমি এই গবেষণা প্রকল্পটি করছি যা আমার ফিজিওথেরাপিত স্নাতক কার্যক্রম এর অংশ। যার শিরোনাম **‘বিপিএটিসিতে সরকারী অফিস কর্মীদের মধ্যে কাজের সাথে সম্পর্কিত মাংশপেশীর ব্যাধিগুলির প্রচুরতা’** এর মাধ্যমে আমি বিপিএটিসিতে চাকুরীরত সরকারী অফিস কর্মীদের তাদের অফিসের কাজের কারনে সৃষ্ট মাংশপেশীর ব্যাধিগুলো সম্প্রর্কে জানতে আগ্রহী । এখন আমি আপনাকে ব্যক্তিগত তথ্য, চাকুরীর বিস্তারিত তথ্য এবং যদি কনো ব্যধি থাকে তবে সে বিষয় সম্পর্কে কিছু প্রশ্ন করতে চাই । এতে মোটামুটি ১৫ – ২০ মিনিট লাগবে।

আমি আপনাকে অবহিত করতে চাই যে, এটি একটি সম্পূর্ণ একাডেমিক গবেষণা এবং অন্য কোন উদ্দেশ্যের জন্য এটি ব্যবহার করা হবে না । আপনার প্রদত্ত সমস্ত তথ্য গোপন থাকবে এবং কোন রিপোর্ট বা প্রকাশনার ক্ষেত্রে এর উৎস গোপন থাকবে।

এই গবেষণায় আপনার অংশগ্রহণ স্বেচ্ছাধীন এবং আপনি কোন নেতিবাচক প্রশ্ন ছাড়াই যে কোন সময় এই গবেষণা থেকে নিজেকে প্রত্তাহার করে নিতে পারবেন । আপনার অধিকার আছে কোন প্রশ্নের উত্তর না দেয়ার বা আপনার পছন্দ মত বা ইচ্ছেমত উত্তর দেয়ার।

যদি আপনার এই গবেষণা সম্পর্কে অথবা অংশগ্রহণকারী হিসেবে কিছু জানার থাকে তবে, আপনি আমার সাথে অথবা আমার গবেষণা অধীক্ষক, মিসেস শামিমা ইসলাম নিপা , প্রভাষক , রিহ্যাবিলিটেসন সাইন্স বিভাগ, বাংলাদেশ হেলথ প্রফেসন্স ইন্সটিটিউট (বিএইচপিআই) এর সাথে যোগাযোগ করতে পারেন।

আমি কি সাক্ষাৎকার শুরু করার জন্য আপনার সম্মতি পেলাম?

হ্যাঁ Δ না Δ

অংশগ্রহণকারীর স্বাক্ষর এবং তারিখ .....

সাক্ষাৎকার গ্রহণকারীর স্বাক্ষর এবং তারিখ .....

প্রত্যক্ষদর্শীর স্বাক্ষর এবং তারিখ .....

Questionnaire

Part (i) Personal Details

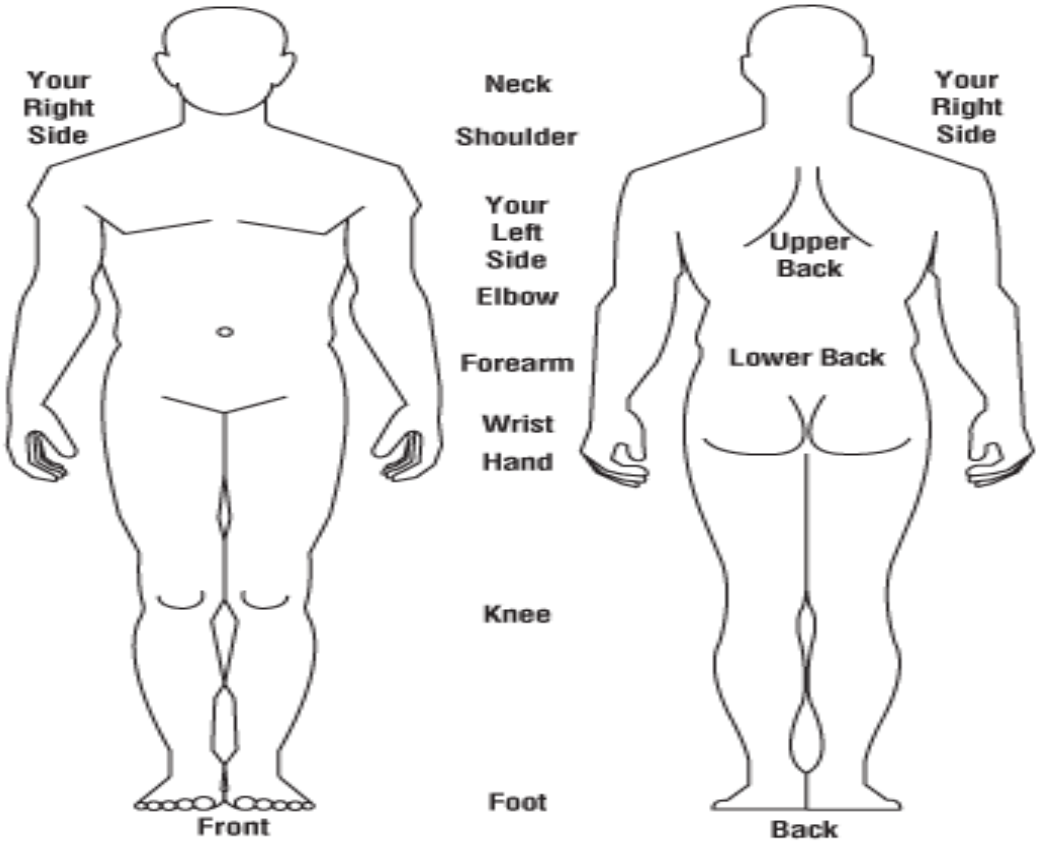
Name:	Age(year):
Gender: ☐ Male ☐ Female	Weight(kg):
Educational Qualification: ☐ Hon's/Bachelor degree ☐ Master's degree	

Part (ii) Job details

1.	What is your current job title?
2.	What are your main work tasks?
3.	How long have you been performing these tasks?
4.	What is your main body/work position? ☐ Sitting ☐ Standing
5.	What are the tools you work with most often?
6.	Do you often have to reach away from your body? ☐ Yes ☐ No
7.	Do you often handle objects or tools above shoulder height or near the floor? ☐ Yes ☐ No
8.	Do you do repetitive movements? ☐ Yes ☐ No
9.	Among the tasks that you do, which ones do you find the most difficult?
10.	Have there been any changes at work recently (job, tasks, tools)?

Part (ii) Symptoms and risks

11.	In this diagram the body parts are shown approximately. Please indicate where your pain or discomfort is located, if any. Shade in any area(s) where you have had pain or discomfort that lasted 2 days or more in the last year which was caused by your job. If you did not shade in any area, go to question #46.



Type of pain

5.	In last few days, have you had pain or discomfort caused by your job that lasted 2 days or more?if you felt pain then please give tick where you felt pain in your body.		
	a) Neck	☐ Yes	☐ No
	b) Shoulder	☐ Yes	☐ No
	c) Elbow	☐ Yes	☐ No
	d) Wrist/forearm	☐ Yes	☐ No
	e) Hand	☐ Yes	☐ No
	f) Upper back	☐ Yes	☐ No
	g) Lower back	☐ Yes	☐ No
	h) Foot	☐ Yes	☐ No
	If you answered "no" to all of these questions, go to question #46. If you answered "yes" to any of the points in a-h above, please answer the following questions for that particular part(s) of the body.		

	Neck pain		
6.	While working is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
7.	After your shift, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
8.	After a week away from work, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
9.	Has the pain or discomfort caused you to take time off from work?		
	☐ Yes	☐ No	
	If yes, how many days off in all? _____ days		
10.	To what degree has your pain or discomfort interfered with your work, your life outside of work, and your sleep in the past year?		
	1) How much does it interfere with your work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to take time off work due to pain		
	If you had to take time off work, how many days you take off from the work? _____		
	2) How much does it interfere with your life outside of work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to stop enjoying activities due to pain		
	If you had to stop activities, how many days in the past year did you stop it? _____		
	3) How much does it interfere with your sleep?		
	☐ No interference		
	☐ Some interference		
	☐ It affects me every night		

Shoulder pain			
11.	While working is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
12.	After your shift, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
13.	After a week away from work, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
14.	Has the pain or discomfort caused you to take time off from work?		
	☐ Yes	☐ No	
	If yes, how many days off in all? _____ days		
15.	To what degree has your pain or discomfort interfered with your work, your life outside of work, and your sleep in the past year?		
	1) How much does it interfere with your work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to take time off work due to pain		
	If you had to take time off work, how many days you take off from the work? _____		
	2) How much does it interfere with your life outside of work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to stop enjoying activities due to pain		
	If you had to stop activities, how many days in the past year did you stop it? _____		
	3) How much does it interfere with your sleep?		
	☐ No interference		
	☐ Some interference		
	☐ It affects me every night		

	Elbow pain		
16.	While working is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
17.	After your shift, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
18.	After a week away from work, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
19.	Has the pain or discomfort caused you to take time off from work?		
	☐ Yes	☐ No	
	If yes, how many days off in all? _____ days		
20.	To what degree has your pain or discomfort interfered with your work, your life outside of work, and your sleep in the past year?		
	1) How much does if interfere with your work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to take time off work due to pain		
	If you had to take time off work, how many days you take off from the work? _____		
	2) How much does it interfere with your life outside of work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to stop enjoying activities due to pain		
	If you had to stop activities, how many days in the past year did you stop it? _____		
	3) How much does it interfere with your sleep?		
	☐ No interference		
	☐ Some interference		
	☐ It affects me every night		

	Wrist/forearm pain		
21.	While working is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
22.	After your shift, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
23.	After a week away from work, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
24.	Has the pain or discomfort caused you to take time off from work?		
	☐ Yes	☐ No	
	If yes, how many days off in all? _____ days		
25.	To what degree has your pain or discomfort interfered with your work, your life outside of work, and your sleep in the past year?		
	1) How much does if interfere with your work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to take time off work due to pain		
	If you had to take time off work, how many days you take off from the work? _____		
	2) How much does it interfere with your life outside of work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to stop enjoying activities due to pain		
	If you had to stop activities, how many days in the past year did you stop it? _____		
	3) How much does it interfere with your sleep?		
	☐ No interference		
	☐ Some interference		
	☐ It affects me every night		

Hand pain			
26.	While working is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
27.	After your shift, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
28.	After a week away from work, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
29.	Has the pain or discomfort caused you to take time off from work?		
	☐ Yes	☐ No	
	If yes, how many days off in all? _____ days		
30.	To what degree has your pain or discomfort interfered with your work, your life outside of work, and your sleep in the past year?		
	1) How much does if interfere with your work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to take time off work due to pain		
	If you had to take time off work, how many days you take off from the work? _____		
	2) How much does it interfere with your life outside of work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to stop enjoying activities due to pain		
	If you had to stop activities, how many days in the past year did you stop it? _____		
	3) How much does it interfere with your sleep?		
	☐ No interference		
	☐ Some interference		
	☐ It affects me every night		

Upper back pain			
31.	While working is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
32.	After your shift, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
33.	After a week away from work, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
34.	Has the pain or discomfort caused you to take time off from work?		
	☐ Yes	☐ No	
	If yes, how many days off in all? _____ days		
35.	To what degree has your pain or discomfort interfered with your work, your life outside of work, and your sleep in the past year?		
	1) How much does if interfere with your work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to take time off work due to pain		
	If you had to take time off work, how many days you take off from the work? _____		
	2) How much does it interfere with your life outside of work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to stop enjoying activities due to pain		
	If you had to stop activities, how many days in the past year did you stop it? _____		
	3) How much does it interfere with your sleep?		
	☐ No interference		
	☐ Some interference		
	☐ It affects me every night		

Lower back pain			
36.	While working, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
37.	After your shift, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
38.	After a week away from work, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
39.	Has the pain or discomfort caused you to take time off from work?		
	☐ Yes	☐ No	
	If yes, how many days off in all? _____ days		
40.	To what degree has your pain or discomfort interfered with your work, your life outside of work, and your sleep in the past year?		
	1) How much does if interfere with your work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to take time off work due to pain		
	If you had to take time off work, how many days you take off from the work? _____		
	2) How much does it interfere with your life outside of work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to stop enjoying activities due to pain		
	If you had to stop activities, how many days in the past year did you stop it? _____		
	3) How much does it interfere with your sleep?		
	☐ No interference		
	☐ Some interference		
	☐ It affects me every night		

Foot pain			
41.	While working is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
42.	After your shift, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
43.	After a week away from work, is the pain or discomfort:		
	☐ Less	☐ Same	☐ Worse
44.	Has the pain or discomfort caused you to take time off from work?		
	☐ Yes	☐ No	
	If yes, how many days off in all? _____ days		
45.	To what degree has your pain or discomfort interfered with your work, your life outside of work, and your sleep in the past year?		
	1) How much does if interfere with your work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to take time off work due to pain		
	If you had to take time off work, how many days you take off from the work? _____		
	2) How much does it interfere with your life outside of work?		
	☐ No interference		
	☐ Some interference		
	☐ Had to stop enjoying activities due to pain		
	If you had to stop activities, how many days in the past year did you stop it? _____		
	3) How much does it interfere with your sleep?		
	☐ No interference		
	☐ Some interference		
	☐ It affects me every night		

	Other health problems
46.	Do you experience any other health problems related to your work?
	☐ Yes ☐ No
	If yes, please describe:

ব্যক্তিগত বিবরণ

নাম :	বয়স(বছর):
লিঙ্গ: ১) পুরুষ ২) মহিলা	ওজন(কেজি):
শিক্ষাগত যোগ্যতা: ১) স্নাতক ২) স্নাতকোত্তর	

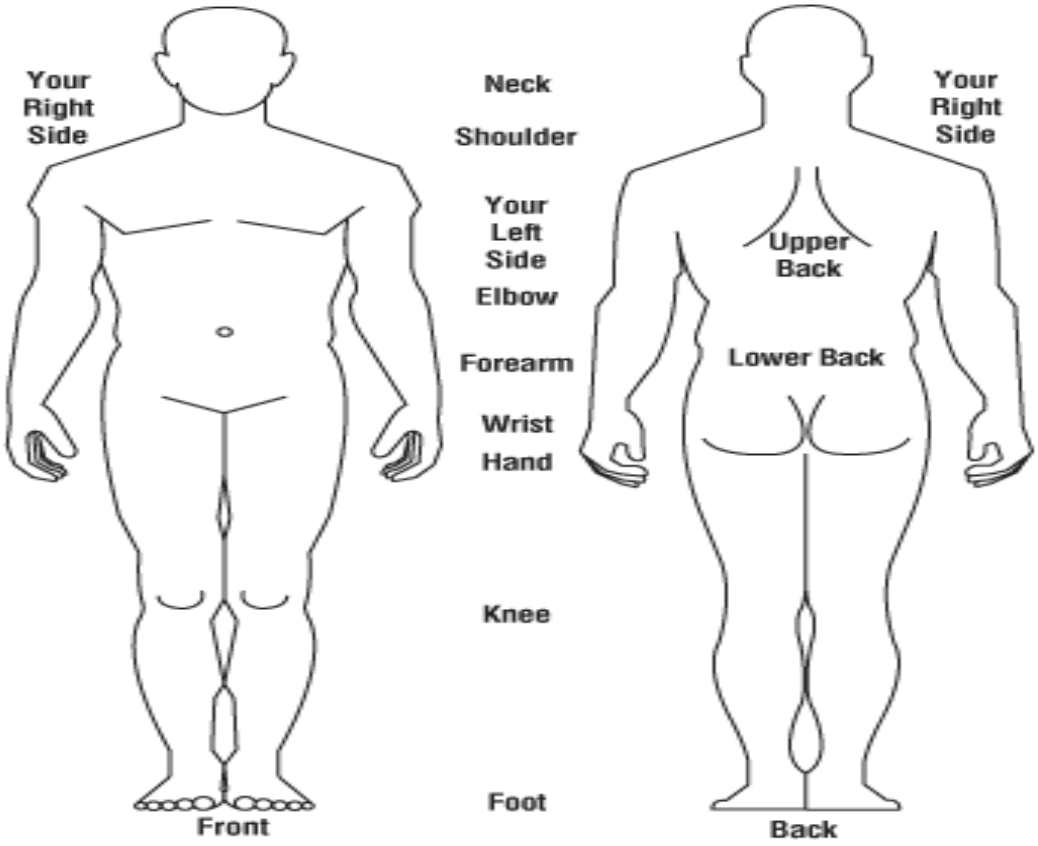
চাকরীর বিস্তারিত

১	**কর্মস্থলে আপনার পদবী কী?**
২	**কর্মস্থলে আপনার প্রধান কাজগুলি কি?**
৩	**আপনি কতদিন যাবৎ এই কাজগুলি সম্পাদন করছেন?**
৪	**কাজের সময় প্রধানত আপনার শরীর কেমন অবস্থায় থাকে?/ আপনি সাধারনত কিভাবে কাজ সম্পাদনা করেন?** ১) **বসে** ২) **দাঁড়িয়ে**
৫	**আপনি সাধারনত কী কী সরঞ্জাম দিয়ে কাজ করেন?**
৬	**কাজের প্রয়োজনে আপনার কি বসার জায়গা থেকে দূরের কিছু ধরতে হয় ?** ১) **হ্যাঁ** ২) **না**
৭	**আপনি কি প্রায়শই কাঁধের উচ্চতার উপরে বা মেঝের কাছের জিনিসগুলি বা সরঞ্জামগুলি পরিচালনা করেন?** ১) **হ্যাঁ** ২) **না**
৮	**বার বার করতে হয় এমন কনো কাজ কি করেন ?** ১) **হ্যাঁ** ২) **না**
৯	**আপনি যেই কাজগুলো করেন তার মধ্যে কোন কোন কাজ করতে আপনার সমস্যা হয়?**
১০	**আপনার কাজের স্থানে কি কয়েকদিনের মধ্যে কনো পরিবর্তন হয়েছে?** ১) **হ্যাঁ** ২) **না**

রোগের লক্ষণ

১১	**এই চিত্রে শরীরের বিভিন্ন অংশ দেখানো হয়েছে। শরীরের যে যে অংশে ব্যথা বা অস্বস্তি অনুভুত হয় তা চিহ্নিত করুন(যদি থাকে)। আপনার**

	অফিস এর কাজের কারনে গত দুই দিনে শরীরের কোথাও ব্যথা বা অস্বস্তি যদ থাকে তাহলে তা গাঁড় করে দাগ দিন। যদি এরকম কনো ব্যথা বা অস্বস্তি না থাকে তাহলে ৪৬ নাম্বার প্রশ্নে চলে যান।



	ব্যথার স্থান		
১২	**আপনার অফিস এর কাজের কারনে গত কয়েকদিনে আপনি শরীরের যে যে অংশে ন্যুনতম ২ দিন ধরে ব্যথা অনুভব করেছেন তা টিক দিন।**		
	১) ঘাড়	**১)** হ্যাঁ	**২)** না
	২) কাঁধ	**১)** হ্যাঁ	**২)** না
	৩) কনুই	**১)** হ্যাঁ	**২)** না
	৪) কব্জি	**১)** হ্যাঁ	**২)** না
	৫) হাত	**১)** হ্যাঁ	**২)** না
	৬) পিঠ	**১)** হ্যাঁ	**২)** না
	৭) কোমর	**১)** হ্যাঁ	**২)** না
	৮) পা	**১)** হ্যাঁ	**২)** না

	যদি সব প্রশ্নের উত্তর ‘‘না’’ হয় তাহলে ৪৬ নাম্বার প্রশ্নে চলে যান।যদি কোন একটির উত্তর ‘‘হ্যাঁ’’ হয় তবে শরীরের সেই নির্দিষ্ট অঙ্গের জন্য প্রদত্ত প্রশ্নগুলোর উত্তর দিন।

	ঘাড়ের ব্যথা
৬	কাজের সময় কেমন ব্যথা বা সমস্যা অনুভুত হয় ? ১) কম ২) একই রকম ৩) অনেক বেশি
৭	অফিস এর কাজ শেষে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
৮	এক সপ্তাহ কাজের বাহিরে থাকলে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
৯	ব্যথা বা সমস্যার কারনে কি অফিস এর কাজ থেকে ছুটি নেয়ার প্রয়োজন হয়েছিল? **১)** হ্যাঁ **২)** না
	উত্তর যদি ‘‘হ্যাঁ’’ হয়, তাহলে কতদিন ছুটি নিতে হয়েছিল উল্লেখ করুন _____
১০	এরকম ব্যথা বা সমস্যা আপনার কাজের ক্ষেত্রে,কাজের বাহিরে এবং ঘুমানর সময় কেমন বাধার সৃষ্টি করেছে ?
	১) ব্যথার কারনে আপনার কাজের কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার তীব্রতার কারনে ছুটি নিতে হয়েছে
	ব্যথার তীব্রতার কারনে একবারে কতদিন কাজ থেকে ছুটি নিতে হয়েছে? _____
	২) ব্যথার কারনে অফিস এর বাহিরে প্রতিদিন এর জীবন যাপনে কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার কারনে সাচ্ছন্দভাবে কাজ করা যায়নি
	ব্যথা বা সমস্যার কারনে কি সাধারন কাজ করা বন্ধ করতে হয়েছিল? কতদিন বন্ধ রাখতে হয়েছিল? _____
	৩) ব্যথা বা সমস্যার কারনে আপনার ঘুমের কেমন ব্যঘাত ঘটেছে?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে

	৩) প্রতি রাতেই ঘুমের ব্যাঘাত ঘটেছে

	কাঁধের ব্যথা
১১	কাজের সময় কেমন ব্যথা বা সমস্যা অনুভুত হয় ? ১) কম ২) একই রকম ৩) অনেক বেশি
১২	অফিস এর কাজ শেষে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
১৩.	এক সপ্তাহ কাজের বাহিরে থাকলে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
১৪	ব্যথা বা সমস্যার কারনে কি অফিস এর কাজ থেকে ছুটি নেয়ার প্রয়োজন হয়েছিল? **১)** হ্যাঁ **২)** না
	উত্তর যদি ‘‘হ্যাঁ’’ হয়, তাহলে কতদিন ছুটি নিতে হয়েছিল উল্লেখ করুন _____
১৫	এরকম ব্যথা বা সমস্যা আপনার কাজের ক্ষেত্রে,কাজের বাহিরে এবং ঘুমানর সময় কেমন বাধার সৃষ্টি করেছে ?
	১) ব্যথার কারনে আপনার কাজের কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার তীব্রতার কারনে ছুটি নিতে হয়েছে
	ব্যথার তীব্রতার কারনে একবারে কতদিন কাজ থেকে ছুটি নিতে হয়েছে? _____
	২) ব্যথার কারনে অফিস এর বাহিরে প্রতিদিন এর জীবন যাপনে কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার কারনে সাচ্ছন্দভাবে কাজ করা যায়নি

	ব্যথা বা সমস্যার কারনে কি সাধারন কাজ করা বন্ধ করতে হয়েছিল? কতদিন বন্ধ রাখতে হয়েছিল? _____
	৩) ব্যথা বা সমস্যার কারনে আপনার ঘুমের কেমন ব্যঘাত ঘটেছে?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) প্রতি রাতেই ঘুমের ব্যাঘাত ঘটেছে

	কনুইয়ের ব্যথা
১৬	কাজের সময় কেমন ব্যথা বা সমস্যা অনুভুত হয় ? ১) কম ২) একই রকম ৩) অনেক বেশি
১৭	অফিস এর কাজ শেষে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
১৮	এক সপ্তাহ কাজের বাহিরে থাকলে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
১৯	ব্যথা বা সমস্যার কারনে কি অফিস এর কাজ থেকে ছুটি নেয়ার প্রয়োজন হয়েছিল? **১)** হ্যাঁ **২)** না
	উত্তর যদি ‘‘হ্যাঁ’’ হয়, তাহলে কতদিন ছুটি নিতে হয়েছিল উল্লেখ করুন _____
২০	এরকম ব্যথা বা সমস্যা আপনার কাজের ক্ষেত্রে,কাজের বাহিরে এবং ঘুমানর সময় কেমন বাধার সৃষ্টি করেছে ?
	১) ব্যথার কারনে আপনার কাজের কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার তীব্রতার কারনে ছুটি নিতে হয়েছে
	ব্যথার তীব্রতার কারনে একবারে কতদিন কাজ থেকে ছুটি নিতে হয়েছে? _____

	২) ব্যথার কারনে অফিস এর বাহিরে প্রতিদিন এর জীবন যাপনে কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার কারনে সাচ্ছন্দভাবে কাজ করা যায়নি
	ব্যথা বা সমস্যার কারনে কি সাধারন কাজ করা বন্ধ করতে হয়েছিল? কতদিন বন্ধ রাখতে হয়েছিল? _____
	৩) ব্যথা বা সমস্যার কারনে আপনার ঘুমের কেমন ব্যঘাত ঘটেছে?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) প্রতি রাতেই ঘুমের ব্যাঘাত ঘটেছে

	কব্জির ব্যথা
২১	কাজের সময় কেমন ব্যথা বা সমস্যা অনুভুত হয় ? ১) কম ২) একই রকম ৩) অনেক বেশি
২২	অফিস এর কাজ শেষে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
২৩	এক সপ্তাহ কাজের বাহিরে থাকলে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
২৪	ব্যথা বা সমস্যার কারনে কি অফিস এর কাজ থেকে ছুটি নেয়ার প্রয়োজন হয়েছিল? **১)** হ্যাঁ **২)** না
	উত্তর যদি ‘‘হ্যাঁ’’ হয়, তাহলে কতদিন ছুটি নিতে হয়েছিল উল্লেখ করুন _____
২৫	এরকম ব্যথা বা সমস্যা আপনার কাজের ক্ষেত্রে,কাজের বাহিরে এবং ঘুমানর সময় কেমন বাধার সৃষ্টি করেছে ?

	১) ব্যথার কারনে আপনার কাজের কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার তীব্রতার কারনে ছুটি নিতে হয়েছে
	ব্যথার তীব্রতার কারনে একবারে কতদিন কাজ থেকে ছুটি নিতে হয়েছে? _____
	২) ব্যথার কারনে অফিস এর বাহিরে প্রতিদিন এর জীবন যাপনে কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার কারনে সাচ্ছন্দভাবে কাজ করা যায়নি
	ব্যথা বা সমস্যার কারনে কি সাধারন কাজ করা বন্ধ করতে হয়েছিল? কতদিন বন্ধ রাখতে হয়েছিল? _____
	৩) ব্যথা বা সমস্যার কারনে আপনার ঘুমের কেমন ব্যঘাত ঘটেছে?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) প্রতি রাতেই ঘুমের ব্যাঘাত ঘটেছে

	হাতের ব্যথা
২৬	কাজের সময় কেমন ব্যথা বা সমস্যা অনুভুত হয় ? ১) কম ২) একই রকম ৩) অনেক বেশি
২৭	অফিস এর কাজ শেষে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
২৮	এক সপ্তাহ কাজের বাহিরে থাকলে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি

২৯	ব্যথা বা সমস্যার কারনে কি অফিস এর কাজ থেকে ছুটি নেয়ার প্রয়োজন হয়েছিল? **১)** হ্যাঁ **২)** না
	উত্তর যদি ‘‘হ্যাঁ’’ হয়, তাহলে কতদিন ছুটি নিতে হয়েছিল উল্লেখ করুন _____
৩০	এরকম ব্যথা বা সমস্যা আপনার কাজের ক্ষেত্রে,কাজের বাহিরে এবং ঘুমানর সময় কেমন বাধার সৃষ্টি করেছে ?
	১) ব্যথার কারনে আপনার কাজের কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার তীব্রতার কারনে ছুটি নিতে হয়েছে
	ব্যথার তীব্রতার কারনে একবারে কতদিন কাজ থেকে ছুটি নিতে হয়েছে? _____
	২) ব্যথার কারনে অফিস এর বাহিরে প্রতিদিন এর জীবন যাপনে কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার কারনে সাচ্ছন্দভাবে কাজ করা যায়নি
	ব্যথা বা সমস্যার কারনে কি সাধারন কাজ করা বন্ধ করতে হয়েছিল? কতদিন বন্ধ রাখতে হয়েছিল? _____
	৩) ব্যথা বা সমস্যার কারনে আপনার ঘুমের কেমন ব্যঘাত ঘটেছে?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) প্রতি রাতেই ঘুমের ব্যাঘাত ঘটেছে

	পিঠের ব্যথা
৩১	কাজের সময় কেমন ব্যথা বা সমস্যা অনুভুত হয় ?

	১) কম ২) একই রকম ৩) অনেক বেশি
৩২	অফিস এর কাজ শেষে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
৩৩	এক সপ্তাহ কাজের বাহিরে থাকলে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
৩৪	ব্যথা বা সমস্যার কারনে কি অফিস এর কাজ থেকে ছুটি নেয়ার প্রয়োজন হয়েছিল? **১)** হ্যাঁ **২)** না
	উত্তর যদি ‘‘হ্যাঁ’’ হয়, তাহলে কতদিন ছুটি নিতে হয়েছিল উল্লেখ করুন _____
৩৫	এরকম ব্যথা বা সমস্যা আপনার কাজের ক্ষেত্রে,কাজের বাহিরে এবং ঘুমানর সময় কেমন বাধার সৃষ্টি করেছে ?
	১) ব্যথার কারনে আপনার কাজের কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার তীব্রতার কারনে ছুটি নিতে হয়েছে
	ব্যথার তীব্রতার কারনে একবারে কতদিন কাজ থেকে ছুটি নিতে হয়েছে? _____
	২) ব্যথার কারনে অফিস এর বাহিরে প্রতিদিন এর জীবন যাপনে কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার কারনে সাচ্ছন্দভাবে কাজ করা যায়নি
	ব্যথা বা সমস্যার কারনে কি সাধারন কাজ করা বন্ধ করতে হয়েছিল? কতদিন বন্ধ রাখতে হয়েছিল? _____
	৩) ব্যথা বা সমস্যার কারনে আপনার ঘুমের কেমন ব্যঘাত ঘটেছে?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) প্রতি রাতেই ঘুমের ব্যাঘাত ঘটেছে

	কোমরে ব্যথা
৩৬	কাজের সময় কেমন ব্যথা বা সমস্যা অনুভুত হয় ? ১) কম ২) একই রকম ৩) অনেক বেশি
৩৭	অফিস এর কাজ শেষে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
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৩৯	ব্যথা বা সমস্যার কারনে কি অফিস এর কাজ থেকে ছুটি নেয়ার প্রয়োজন হয়েছিল? **১)** হ্যাঁ **২)** না
	উত্তর যদি ‘‘হ্যাঁ’’ হয়, তাহলে কতদিন ছুটি নিতে হয়েছিল উল্লেখ করুন _____
৪০	এরকম ব্যথা বা সমস্যা আপনার কাজের ক্ষেত্রে,কাজের বাহিরে এবং ঘুমানর সময় কেমন বাধার সৃষ্টি করেছে ?
	১) ব্যথার কারনে আপনার কাজের কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার তীব্রতার কারনে ছুটি নিতে হয়েছে
	ব্যথার তীব্রতার কারনে একবারে কতদিন কাজ থেকে ছুটি নিতে হয়েছে? _____
	২) ব্যথার কারনে অফিস এর বাহিরে প্রতিদিন এর জীবন যাপনে কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার কারনে সাচ্ছন্দভাবে কাজ করা যায়নি
	ব্যথা বা সমস্যার কারনে কি সাধারন কাজ করা বন্ধ করতে হয়েছিল? কতদিন বন্ধ রাখতে হয়েছিল? _____

	৩) ব্যথা বা সমস্যার কারনে আপনার ঘুমের কেমন ব্যঘাত ঘটেছে?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) প্রতি রাতেই ঘুমের ব্যাঘাত ঘটেছে

	পায়ের ব্যথা
৪১	কাজের সময় কেমন ব্যথা বা সমস্যা অনুভুত হয় ? ১) কম ২) একই রকম ৩) অনেক বেশি
৪২	অফিস এর কাজ শেষে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
৪৩	এক সপ্তাহ কাজের বাহিরে থাকলে ব্যথা বা সমস্যা কেমন থাকে ? ১) কম ২) একই রকম ৩) অনেক বেশি
৪৪	ব্যথা বা সমস্যার কারনে কি অফিস এর কাজ থেকে ছুটি নেয়ার প্রয়োজন হয়েছিল? **১)** হ্যাঁ **২)** না
	উত্তর যদি ‘‘হ্যাঁ’’ হয়, তাহলে কতদিন ছুটি নিতে হয়েছিল উল্লেখ করুন _____
	এরকম ব্যথা বা সমস্যা আপনার কাজের ক্ষেত্রে,কাজের বাহিরে এবং ঘুমানর সময় কেমন বাধার সৃষ্টি করেছে ?
	১) ব্যথার কারনে আপনার কাজের কেমন ব্যঘাত ঘটেছে ?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার তীব্রতার কারনে ছুটি নিতে হয়েছে
	ব্যথার তীব্রতার কারনে একবারে কতদিন কাজ থেকে ছুটি নিতে হয়েছে? _____
	২) ব্যথার কারনে অফিস এর বাহিরে প্রতিদিন এর জীবন যাপনে কেমন ব্যঘাত ঘটেছে ?

	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) ব্যথার কারনে সাচ্ছন্দভাবে কাজ করা যায়নি
	ব্যথা বা সমস্যার কারনে কি সাধারন কাজ করা বন্ধ করতে হয়েছিল? কতদিন বন্ধ রাখতে হয়েছিল? _____
	৩) ব্যথা বা সমস্যার কারনে আপনার ঘুমের কেমন ব্যঘাত ঘটেছে?
	১) কোন ব্যঘাত ঘটেনি ২) সামান্য ব্যঘাত ঘটেছে ৩) প্রতি রাতেই ঘুমের ব্যাঘাত ঘটেছে

	অন্য কোন শারীরিক সমস্যা
৪৬	আপনি কি অফিসের কাজের সাথে সম্পর্কিত আর কোন সমস্যায় ভুগছেন? **১)** হ্যাঁ **২)** না
	যদি উত্তর ‘‘হ্যাঁ’’ হয় তবে সমস্যাটি বর্ণণা করুন

Date: August 10, 2020

The Chairman

Institutional Review Board (IRB)

Bangladesh Health Professions Institute (BHPI)

CRP-Savar, Dhaka-1343, Bangladesh

Subject: Application for review and ethical approval.

Sir,

With due respect and humble submission to state that I am MD Mokaddes Reza, student of 4th Professional B.Sc. in Physiotherapy at Bangladesh Health Professions Institute (BHPI). This is a 4(four) year full time course. Conducting thesis project is partial fulfillment of the requirement for the degree of B.Sc. in physiotherapy. I have to conduct a thesis entitled, **"Prevalence of work related musculoskeletal disorders among Government office workers in BPATC"** under the supervision of Ms. Shamima Islam Nipa, Lecturer, Department of Rehabilitation Science, BHPI, CRP, Savar, Dhaka-1343. The purpose of this study is to explore What is the prevalence of common work related musculoskeletal disorders among Government office workers in BPATC. I would like to assure that anything of my study will not be harmful for the participants. Informed consent will be received from all participants, data will be kept confidential.

I, therefore pray and hope that your honor would be kind enough to approve my thesis proposal and give me permission to start data collection and oblige thereby.

Sincerely,

Mokaddes

MD Mokaddes Reza
4th professional B.Sc. in Physiotherapy
Roll: 50, Session: 2015-16, ID: 112150321
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Recommendation from the thesis supervisor:

Ms. Shamima Islam Nipa
Lecturer
Department of Rehabilitation Science
BHPI, CRP, Savar, Dhaka

Attachment: Thesis Proposal, Questionnaire (English version), Informed consent.

বাংলাদেশ হেল্‌থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)
(The Academic Institute of CRP)

Ref: *Date:*

CRP-BHPI/IRB/08/2020/400

10th August 2020

To
Md Mokaddes Reza
4th year B.Sc. in Physiotherapy
Session: 2015-16, Student ID:112150321
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal "**Prevalence of work related musculoskeletal disorders among Government office workers in BPATC**" by ethics committee.

Dear Mokaddes Reza,
Congratulations!
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above mentioned dissertation, with yourself, as the principal investigator. The Following documentshave been reviewed and approved:

Sr.No.	**Name of the Documents**
1	Dissertation Proposal
2	Questionnaire (Bengali & English version)
3	Information sheet & consent form.

The study involves use of a questionnaire to explore the nature of physiotherapy practice in Bangladesh that may take 15 to 20 minutes to answer the questionnaire and there is no likelihood of any harm to the participants. Data collectors will receive informed consents from all participants Any data collected will be kept confidential. The members of the ethics committee have approved the study to be conducted in the present form at the meeting held at **8:30AM on 1st March, 2020 at BHPI (23rd IRB Meeting)**.

The institutional Ethics committee expects to be informed about the progress of the study, any changesoccurring in the course of the study, any revision in the protocol and patient information or informedconsent and ask to be provided a copy of the final report. This Ethics committee is working accordance toNuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964-2013 and other applicable regulation

Best regards,

Muhammad Millat Hossain
Assistant Professor, Dept. of Rehabilitation Science
Member Secretary, Institutional Review Board (IRB)
BHPI, CRP, Savar, Dhuka-1343, Bangladesh

Gmail Niloy Reza <patcnlloy@gmail.com>

[Case #129924] CCOHS Inquiries Service – Copyright Authorization [753192]

1 message

CCOHS Inquiries Service <inquiries@ccohs.ca> Thu, Jun 24, 2021 at 6:10 PM
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To: "Reza Mokaddes, Mr." <Patcnlloy@gmail.com>

Dear Mokaddes Reza

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Thank you,

Emma Ashurst

Manager, Inquiries Service

Canadian Centre for Occupational Health and Safety / Government of Canada

emma.ashurst@ccohs.ca / Tel: 905-572-2981 x4487

Hello, I am from Bangladesh.I am an undergraduate final year student of Bangladesh Health Professions Institute (BHPI). I am conducting a research on "Prevalence of work related musculoskeletal disorders among Government office workers in BPATC" for my final year thesis purpose.So, I would like to use the the Questionnaire in "Medical History Checklist: Symptoms Survey for Work-Related Musculoskeletal Disorders (WMSDs)". Thank You

---

IP Address: 103.110.115.153
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Title: Mr.
First Name: Mokaddes
Last Name: Reza
Position: Student
Organization: Bangladesh Health Profession Institute
Country: BD
Province/State: Dhaka
Phone: 01515658226
E-mail: Patcnlloy@gmail.com
CCOHS Publication Number or URL: https://www.ccohs.ca/oshanswers/diseases/work_related_WMSD.html
Document Title: Medical History Checklist: Symptoms Survey for Work-Related Musculoskeletal Disorders (WMSDs)
Planned use of information: Final year thesis project, Bsc In Physiotherapy
Number of Copies: 1
Target Audience: The Institutional Review Board (IRB) of BHPI
Additional Comments: Hello, I am from Bangladesh.I am an undergraduate final year student of Bangladesh Health Professions Institute (BHPI). I am conducting a research on "Prevalence of work related musculoskeletal disorders among Government office workers in BPATC" for my final year thesis purpose.So, I would like to use the the Questionnaire in "Medical History Checklist: Symptoms Survey for Work-Related Musculoskeletal Disorders (WMSDs)". Thank You
Number of People: 1