PREVALENCE OF COMMON MUSCULOSKELETAL DISORDER AMONG THE SITTING AND STANDING POSITION OF GARMENTS WORKER AT A SELECTED GARMENTS FACTORY IN SAVAR CITY

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PREVALENCE OF COMMON MUSCULOSKELETAL DISORDER AMONG THE SITTING AND STANDING POSITION OF GARMENTS WORKER AT A SELECTED GARMENTS FACTORY IN SAVAR CITY

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Declaration

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own. I also declare that for any publication, presentation or dissemination of information of the study. I would be bound to take written consent of my supervisor& Head of the Physiotherapy Department Bangladesh Health Professions Institute (BHPI).

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Acronyms

BHPI : Bangladesh Health Professions Institute.

BMRC : Bangladesh Medical Research council

CRP : Center for the Rehabilitation of the Paralyzed.

CTS : Carpal Tunnel Syndrome.

EU : European Union.

IRB : Institutional Review Board

MSD : Musculoskeletal Disorder.

RMI : Repeated Motions Injury.

ROM : Range Of Motion.

RSI : Repetitive Strain Injury.

SPSS : Statistical Package for the Social Sciences.

UK : United Kingdom.

USA : United State of America.

WHO : World Health Organization

WRMD : Work Related Musculoskeletal Disorder.

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Abstract

Purpose: The study was done to identify the prevalence of common musculoskeletal disorder among sitting and standing position in the garments worker. *Objective:* To identify the prevalence of common musculoskeletal disorder among sitting and standing position in the garments worker .*Method:* The study design was cross-sectional. Total 100 samples were selected conveniently for this study from a selected garments factory, at Savar. Data was collected by using mixed type of questionnaire. Descriptive statistic was used for data analysis. *Result:* The result of the study shows that, participants had age range between 25-36 years (42%) years is more vulnerable. Most of the participant's education level was below primary (39%). The duration of job experience 0-1 years (32.1%) most commonly suffered by the WRMDs. In this research, the researcher found the participants had musculoskeletal disorders with higher prevalence of pain. The result indicates that most pain of the body regions is in the lower back (23.4%), upper back (17.2%) and neck (17.2%). The maximum severity of symptom was moderate (45.3%). The most common risk factors were working in same position for long time in pushing (51.6%) during standing and most common risk factor in sewing (40.6%) during sitting. Only 32% participants had taken physiotherapy treatment for their condition. The percentages of prognosis were improved in (64%). *Conclusion:* The study was represents the strong evidence that prevalence of common musculoskeletal disorder among sitting and standing position in the garments worker. In order to reduce musculoskeletal problems, correct postural practices, proper design of tools and equipment significantly can prevent MSDs.

Key words: WRMDs, garments worker.

CHAPTER-I INTRODUCTION

Background

Jahan et al. (2015) said that "Disorders of the musculoskeletal system are the single largest group of work-related illness in the developing and developed world. Sedentary working style with wrong posture for long time can be important risk factor for the development of this disorder. Substantial number of Garment workers in Bangladesh suffered from musculoskeletal disorder". The workers in this sector are living from hand to mouth and they are unable to maintain their basic needs from their income. They cannot afford to maintain minimum health care, medical services, hygienic accommodation as well as access to other amenities is a dream to them. So they had to suffer from different types of physical complexity. In addition to this, the working environment of the garment factories is not congenial to ensure good health. Furthermore, garment workers are frustrated about their future due to less earning which also affect on their mental and social stability.

Work is essential for men and women and it can become harmful for health if done in an inappropriate way. Musculoskeletal disorders are one of the most common health problems in both developed and developing countries (Yue et al., 2012).

Musculoskeletal disorders (MSDs) affect the muscles, bones, and joints and its severity may interrupt everyday activities (Dul and Weerdmeester, 2008). Discomfort, minor aches, and sprains are some of more serious health problems of musculoskeletal symptoms which require medical treatment (Darwish and Al-Zuhair, 2013).

Shafiq (2009) discovered that when female workers in the garment factories work over night, they are most time likely victim of sexual assault or rapes inside the factory after work ends. T he women do not complain of sexual harassment in many cases because if they do, their relatives will not permit them to work outside. Anam (2005) said, if proper action is taken against those who are involved in sexual harassment, the rate of harassment will be reduced significantly but in majority of the cases garment authority do

not want to listen to such complaint. He argued that globalization and sexual harassment cannot be inter linked. Sexual harassment is a result of large scale industrialization in the private sector where job security is minimum. On the other hand, the employers of the garment factory do not want to appoint female workers who have baby. In this case it is found that when a female worker became pregnant she does abortion so that she can continue to work.

This long working time and keen concentration to work caused a lot of health problems for the workers. Neck pain, back pain, tingling and numbness of fingers and arms, musculoskeletal problem, continuous headache, joint and body pain, eye problem, conjunctivitis and so on can be mention significantly (Darwish and Al-Zuhair, 2013).

Nahar et al. (2010) found that workers in the readymade garment industry suffer from some health problems that are related to the food they usually take like malnutrition, less appetite, diarrhoea, hepatitis (jaundice), food poisoning and so on. The workplace of the garment industry is not favorable as it should expect. In most of the cases it is seen that the factory buildings are damped and ventilation system is very poor to pass the air. Due to unhygienic and damped workplace the workers suffer from different health problems like purities, common cold, skin allergies, dermatitis, fungal infection, frequent body ache, asthma etc. On the other hand, due to confined workplace the workers generally suffer from diseases like nausea and vomiting, breathing problem, respiratory problem, fainting at the workplace etc. She found that occupational health hazard is concerned with health hazard in relation to work environment. The science of occupational health hazards covers a wide field, like work physiology, occupational hygiene, occupational psychology, occupational toxicology etc.

Mehta (2012) showed that various illnesses and diseases were widespread among the workers in the garment industry. A large number of workers were found to continue their work even doe they were suffering from various diseases and illness. The workers in the garment industry need to keep high concentration to their work especially in the cutting, stitching and finishing section. In making dress accurate, cutting of cloth and stitching them are important. So workers keeping high concentration in doing their job caused eye related problems like visual discomfort, eye irritation, and conjunctivitis and eye strain.

In the study conducted by Mehta (2012), it showed that 5 percent workers in cutting section and 2 percent workers in stitching section are suffering from visual discomfort. This study also showed that in the quality section, there is a lot of stress on the eyes caused by headache and visual discomfort.

"Musculoskeletal disorders'' include a wide range of inflammatory and degenerative conditions affecting the muscles, tendons, ligaments, joints, peripheral nerves, and supporting blood vessels. These include clinical syndromes such as tendon inflammations and related conditions (tenosynovitis, epicondylitis, bursitis), nerve compression disorders (carpal tunnel syndrome, sciatica), and osteoarthrosis, as well as less well standardized conditions such as myalgia, low back pain and other regional pain syndromes not attributable to known pathology. Body regions most commonly involved are the low back, neck, shoulder, forearm, and hand, although recently the lower extremity has received more attention (Jahan et al., 2015)

Shafiq (2009) found in his study that excessive workload and mental pressure at the workplace increased the health problems and medical expenses. Workers in the readymade garment industry work in a crowded and confined place in the factory where proper ventilation of air is absent in most of the cases. For this, it becomes warm and gloomy as well as movements of fabric dust trim down the normal provision to work. Due to this, vomiting tendency of the workers are very common and sometime fainting in the factory. In addition to this such workplace is also responsible for breathing and respiratory problems. He showed that within the garment factories women work in the low- skilled jobs of operator and helper, where health hazards are high. In these jobs they have to continuously inhale toxic substances emitted from dye used in fabric as well as dust and small particles of fiber caused serious health problems.

Drusilla et al. (2011) identified that the hazardous conditions of work ranges from the exposure to lint dust in an apparel factory to exposure to toxic chemicals in the recycling of electronic waste.

1.2 Rationale

Rationale Work-related musculoskeletal disorders were one of the most important occupational health problems and grossly joint disorders for garments workers. The disorders cause long periods of work disability and treatment was often necessary. From this study garments workers will able to identify the risks that can control and review their activities. This study will also help to discover the lacking area of a garments workers, especially about their posture before doing any activities. Beside this it will help to professional development which is mandatory for current situation. From this study researcher can identify the abnormal postures and activity which are harmful. So, this study can help them to teach and give proper education about the posture the condition and prevention method.

MSDs may cause a great deal of pain and suffering among afflicted workers. These were the most common lost time injuries and most costly occupational problems. Job activities that may cause MSDs span diverse workplaces. MSDs may decrease productivity and the quality of products and services. Although some studies have dealt with low back pain among garment workers in other countries, the exact nature and prevalence of this important health problem has not been studied before in Bangladesh. MSDs among the garments worker are the common health problems in Bangladesh. Most of the workers come from low socio economic condition level and most of them are unaware about their health condition. Garments worker have an increase risk of developing MSDs pain. Occupational environment of garments are not so much well. Population density and dusty environment are the main cause of developing MSDs pain among the garments worker. This study was formulated to fill the gap of knowledge in this area. The aims of the study were to assess the pattern of back among garment workers and to identify the impact of demographic, occupational, psychological and social factors on them. Beside this it will help to established ergonomic guidelines for space, equipment, and environmental conditions which are mandatory in the design of working place of the garment workers.

1.3 Research Question

What is the prevalence MSDs among the garments workers who are working in floor sitting and standing at a selected garment factory in Savar?

1.4 Study Objectives

1.41 General objective

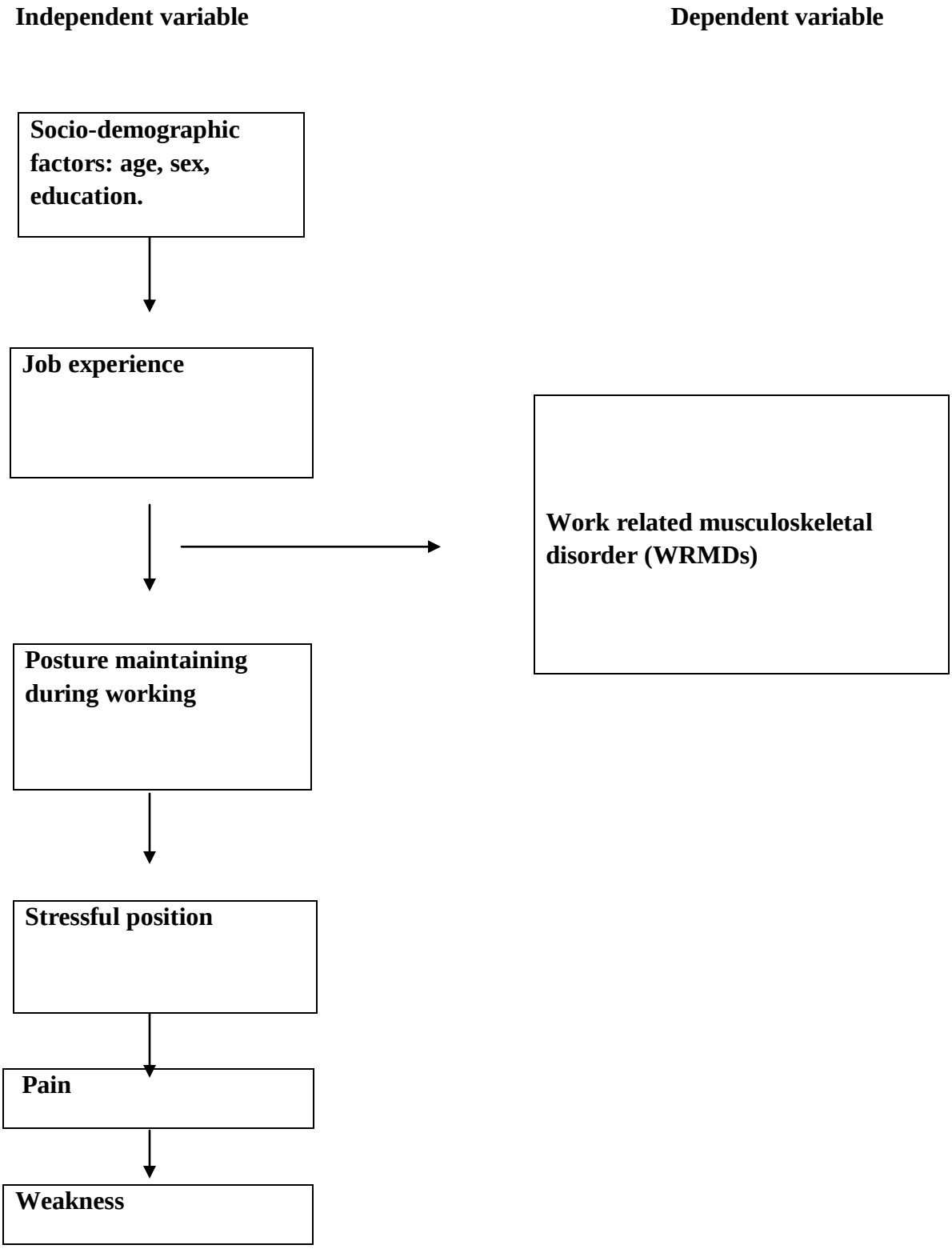
To find out the prevalence of prevalence MSDs among the garments workers who are working in floor sitting and standing at a selected garment factory in Savar.

1.42 Specific objectives

1. To know the percentage of prevalence MSDs among the garments workers who are working in sitting and standing position at a selected garment factory in Savar.
2. To investigate the socio demographic information.
3. To explore the pain ratio among prevalence MSDs among the garments workers who are working in sitting and standing.
4. To establish different body parts involved with musculoskeletal disorders & the risk associated with such disorders.
5. To figure out the risk factor common MSDs.
6. To evaluate the severity of symptom by using Visual Analogue Scale.
7. To determine the received treatment options and consequence.
8. To find out the absenteeism from work due to pain.

1.5: List of variable

Conceptual framework



1.6 Operational definition

Prevalence

Measures the proportion of the population that experiences MSDs at a given time, which can be at any specified point (point prevalence) or in a past period such as 1 month, 1 year, or a lifetime.

Musculoskeletal disorders

MDSs are involved any soft tissues and bones.

Work related musculoskeletal disorder

Work related musculoskeletal disorders develop when the same muscles are used over and over again, usually applying force, and with little recovery time away from the task. They also develop when workers have to maintain a same position while working.

Garment-workers

Garment factory workers refers to employees working in the garment factory.

CHAPTER-II Literature review

The term musculoskeletal disorder denotes health problems of the locomotors apparatus, i.e. muscles, joints tendons, the skeleton, cartilage, the vascular system, ligaments, nerves and the localized blood circulation system. MSDs are disorders that affect the musculoskeletal system, resulting from a repetitive exposure to loading. Upper limbs (the hand, wrist, elbow and shoulder), the neck and lower back are particularly vulnerable to MSDs. Lower limbs and the upper back may also be affected (Kumar et al., 2011).

The musculoskeletal disorders are characterized by the presence of discomfort, disability or persistent pain in the joints, muscles, tendons, and other soft parts. They are caused or aggravated by repeated movements and prolonged awkward or forced body postures. Work related musculoskeletal disorders are the most common self-reported, work related illness in many workplace that is characterized by discomfort, impairment, disability, or persistent pain in joints, muscles, tendons or The risk factors for the development of musculoskeletal disorders are: repetitive work; painful positions, carrying or moving heavy loads, other risk factors such as, and prolonged standing or walking (Samat et al., 2011).

Musculoskeletal disorders are sometimes called ergonomic injuries and illnesses. Ergonomics is the study of the worker's interaction with tools, equipment, environment, jobs, tasks, work methods, work rates etc. Musculoskeletal symptoms are caused by multi-factorial different physical influences. Different socio-demographic factors such as age, gender, working conditions, and working hours are associated with developing musculoskeletal disorders (Korkmaz, Cavlak and Telci, 2011). The highest prevalence of musculoskeletal pain among garments workers was found in the 40 to 49 ages group (Jahan et al., 2015).

Musculoskeletal disorders can developed when the same muscles are used over and over again or for a long time without taking time to rest. The chance of getting this type of injury increases if the force exerted is high and/or the job requires an awkward posture.

Some examples of musculoskeletal disorders include back pain, carpal tunnel syndrome, tendonitis and tenosynovitis (Korkmaz, Cavlak and Telci, 2011).

The workers in this sector are living from hand to mouth and they are unable to maintain their basic needs from their income. They cannot afford to maintain minimum health care, medical services, hygienic accommodation as well as access to other amenities is a dream to them. So they had to suffer from different types of physical complexity. In addition to this, the working environment of the garment factories is not congenial to ensure good health. Furthermore, garment workers are frustrated about their future due to less earning which also affect on their mental and social stability.Over 1000 million people worldwide are employed in small-scale industries. Workers with high physical work demands are well documented to be at elevated risk for impaired work ability, musculoskeletal disorders, cardiovascular disease, all-cause mortality, long term sickness absence and early retirement from the labour market. Specifically, prolonged standing, highly repetitive work, heavy lifting, working with the hands lifted to shoulder height or higher, and working with the back twisted or bent forward are physical exposures, that have been shown to predict impaired work ability, musculoskeletal disorders and enhance long term sickness absence. Therefore, workers in job groups exposed to these physical factors at work are at particular need for health promoting initiatives for preserving or improving their work ability (Jahan et al., 2015).

The risk of the Musculoskeletal system depends on a great in the operator. Especially twisting or bending the risk of the trunk can result in a increased for the development of diseases of the lower back. Postural demands play an important role, particularly when working in confined spaces. Working for a long time in the sitting position is called ‘forced position’. It has been suggested that prolonged working in forced position causes musculoskeletal disorders (MSDs) (Pensri et al., 2010).

The work is monotonous and the employees are frequently exposed to manual handling tasks, such as lifting goods of different weight, and experience stress, especially at rush hours in the store (Pensri et al., 2010).

Handling of fabric roll and poorly designed furniture and awkward posture caused musculoskeletal problems. It affects the body muscles, joints, tendons, ligaments, bones and nerves (Mehta, 2012). Musculoskeletal symptoms, as work-related musculoskeletal discomfort and pain in different body regions are common complaints in individuals whose occupations are characterized by repetitiveness and monotonous work .

Zahir and Majumder stated that (2006) the workers in the garment industry had to work in the factory for a long time. Sometime they work till midnight especially when the shipment comes closer. This long working time and keen concentration to work caused a lot of health problems for the workers. Neck pain, back pain, tingling and numbness of fingers and arms, musculoskeletal problem, continuous headache, joint and body pain, eye problem, conjunctivitis and so on can be mention significantly. An empirical study of Zohir and Majumder (2006) showed that the workers in the apparel units suffer from work related musculoskeletal disorders, particularly of neck, back and upper extremities are the most frequent work related health problems among workers in garment industry.

Mehta (2012) found that due to continuous use of cutting machines, the workers complain about vibration induced syndrome and headache. His study also found that the musculoskeletal disorders (MSDS) are the most common work related problems of the workers in readymade garment industry. The monotonous work lead to increased worker fatigue due to continuous handling of loads, prolonged standing, repetitive movement of both hands and wrists and awkward postures.

Part (2009) started that the income level of the workers in the readymade garment industry is very poor to survive. They could not buy the required calories with their income. For this reason, they had to take less or unhygienic food which causes various types of health problems like food poisoning, diarrhea, gastric pain, malnutrition, abdomen pain etc. Nahar et al. (2010) found that workers in the readymade garment industry suffer from some health problems that are related to the food they usually take like malnutrition, less appetite, diarrhea, hepatitis (jaundice), food poisoning and so on.

Choobineh and Tabatabaee (2009) stated that Physical environmental factors such as unsuitable climate conditions can interacts with mechanical load and aggravate the risk of

MSDs. Unsuitable, uneven, unsteady or slippery working surface floors are the cause of MSDs.

The garment worker in Bangladesh had to work from dawn to dusk in a confined environment where proper ventilation of air is absent. For this, they are affected by the disease bearing virus and bacteria that cause various types of diseases in their bodies. Vibration affects tendons, muscles, joints and nerves. Workers can be exposed to either whole body vibration or localized vibration. Common symptoms are numbness of the fingers, loss of touch and grip, and pain (Part, 2009).

This is difficult to predict to measure the time to develop a WRMD. An employee may notice symptoms such as muscle, joint or tendon soreness within the first several weeks of a new job. Workers with pre- existing medical problems may be at higher risk of developing symptoms those healthy workers. Some disorders may take several years before symptoms are identified. Some employees may never develop a WRMD (Choobineh and Tabatabaee, 2009).

Some of the studies that examined repetition as a risk factor for shoulder MSDs had several concurrent or interacting physical work load factors (Part, 2009). Studies that examined force or forceful work or heavy loads to the shoulder, or described exposure as strenuous work involving the shoulder abduction, flexion, extension, or rotation that could generate loads to the shoulder region were also included (Toomingas, 2005).

Studies from the United States have generally classified neck disorders separately from shoulder disorders when evaluating work- related risk factors. Scandinavian studies examining work-related factors, on the other hand, have often combined neck and shoulder MSDs into one health outcome variable. This was based on the concept that several muscles act on both the shoulder girdle and the upper spine together (Part, 2009).

Studies that addressed posture or examined workers in those activities or occupations that require repeated pronation and supination, flexion/ extension of the wrist, either singly or in combination with extension and flexion of the elbow have chance to being attacked by MSDs (Stevens, 2008).

Evidence for Work-Related Cyclical or repetitive work activities that involved either repetitive hand/finger or wrist movements such as hand gripping or wrist extension/flexion, ulnar / radial deviation, and supination or pronation may cause the MSDs. (Stevens, 2008).

Different studies show about 50% of workers have been or will be affected by knee pains and complaints will be more frequent as the population ages and careers will be longer. The increase in prevalence depends on mechanical or morphological causes as well as psychosocial state and work organization. Lesions of the meniscus, well known for a long time, seem to be stable in the statistics of Social Security as well as the hygroma; the use of knee-pads (overalls with built-in cushions) is strongly recommended while working in kneeling or squatting position. The squatting or kneeling position extended for longer than one hour a day, often recovering from these two positions (more than 30 times a day), lifting or carrying heavy loads, often climbing (around 30 times per day) stairs or ladders. These gestures and postures are unavoidable in some jobs; in those cases, advices given by the specialist of occupational medicine and the ergonomist may improve or alter the habits of the worker or of his entire team (Part, 2009).

Foot pain is very common, especially in women, owing to inappropriate footwear. Overuse, repetitive strain and minor, easily forgettable injuries may result in chronic foot and ankle pain (Part, 2009).

Inflammation or irritation of a tendon, from repeated stressful movement's .Occurs most often in the flexor and extensor tendons of the fingers, thumb, forearm, elbow, shoulder or wrist (Part, 2009).

Compression of the median nerve in the carpal tunnel of the wrist is caused by repeated bending and twisting of the wrist, especially when force is applied (Stevens , 2008).

Inflammation of tendons and/or tendon sheaths because of repetitive movements, often non-strenuous (Pan, 2009).

Irritation of the levator scapulae and trapezium, all muscles of the neck. Causes tightening of the muscles in the neck. Neck stiffness as well as headaches also presents.

Headaches are often described as a pressure sensation around the head. Pain may build and intensify at the end of day (Pan, 2009).

Inflammation of tendons and/or tendon sheaths of the fingers. Due to repetitive movements and griping too long, too tightly, or too frequently. Characterized by inability to move fingers smoothly, with or without pain (United Food and Commercial Workers International Union, 2013).

Inflammation of the bursa (sack-like cavity) between skin and bone, or bone and tendon can occur at the knee, elbow, or shoulder due to kneeling, pressure at the elbow repetitive shoulder movements. Characterized by pain and swelling at the site of the injury (Jahan, 2015).

In the neck and upper back Heavy feeling, aching pain, stiffness in upper back and neck, due to overhead activity of arms in extended position (Jahan, 2015).

Compression of the ulnar nerve below the notch of the elbow. Often occurs in combination with medial epicondylitis. Excessive flexion of the elbow creating tension on the nerve (Mehta, 2012).

De Quervain's disease is one of the most common tendon disorders of the hand. It develops when the tendons on the side of the wrist and at the base of the thumb become irritated from repetitive bending of the wrist. De Quervain's Disease can usually be diagnosed by using a simple test this involves closing the fist around the thumb and bending the wrist towards the little finger. A person with this disorder will feel acute pain or tensing of the tendons on the side of the wrist (Jahan, 2015).

Rotator cuff tendinitis is the most common tendon disorder of the shoulder. Shoulder pain, Stiffness and also problem in reaching behind on upper back (Pan, 2009).

This term issued to describe the condition caused by the pinching or squeezing of the nerves and blood vessels between the neck and shoulder. This can happen when work tasks require frequent reaching above the shoulder (Janna, 2008).

Due to the nature of job the back pain is a common phenomenon to the majority of female workers (Janna, 2008).

Pain in the low back, often referring into the hip, buttock or one leg. The cause may be muscle strains or trigger points, instability due to weak postural muscles, hypomobile spinal facet joints, or degeneration or herniation of spinal disks (Okunribido et al., 2006).

Previous studies have indicated that constant sitting affects mostly the neck and lower back region (Okunribido et al., 2006).

Mehta (2012) showed a statistics of how many workers were suffering from diseases in stitching section which provide a general idea about the health status of the workers. The study proved that majority of workers (55%) complained about musculoskeletal problem. This was followed by neural problem such as headache (40%), respiratory (30%), skin problem (13%), numbness of hands and fingers (8%), hearing (5%) and visual discomfort (2%).

Nahar et al. (2010) found that work pattern in the garment factory severely affected worker's health, as they were restrained in a closed environment. In their study they concluded that the particular nature of work in garments create various types of health hazards among the garment workers such as headache, malnutrition, musculoskeletal pain, eye strain, less appetite, chest pain, fainting, diarrhoea, hepatitis (jaundice), food poisoning, asthma, fungal infection, helminthiasis, dermatitis.

This was followed by neural problem such as headache (40%), respiratory (30%), skin problem (13%), numbness of hands and fingers (8%), hearing (5%) and visual discomfort (2%) (Mehta, 2012).

Adler et al. (2006) Many body parts can be affected by the job a worker is doing. The back is the most common, followed by the shoulders, neck, elbow, hands and wrists. The symptoms from MSDs generally include:

1. Pain with or without movement.
2. Swelling and tenderness .
3. Reduced range of motion and/or stiffness and

4. Tingling and/or numbness.

Physiotherapy plays an important role in the treatment of work related musculoskeletal disorders. Physical therapists assess an individual's physical ability to do a specific job or activity and aids in developing a safe return to work program. A program of stretching, aerobic exercise and apply therapeutic modalities will improve your overall fitness level. Research has shown that people who are physically fit are more resistant to back injuries and pain and recover quicker when they do have injuries than those who are less physically fit. Physical therapy can reduce the recurrence of back pain and neck-shoulder pain. In order to be effective, however, the exercise should include vigorous exercise. And be repeated at least three times a week (Podniece, 2008). The identification and measurement of the various risk factors for these complaints is an important initial step in recognizing high risk subgroups also for developing targeted and effective intervention plans (Eltayeb et al., 2007).

Jana (2008) suggested that recognizing ergonomic risk factors in the workplace is an essential first step in correcting hazards and improving worker protection.

Adler et al. (2006) Offer adjustable equipment:

1. Chairs, tables, scaffolds.

2. Supply rooms of sufficient size to avoid constrained postures.

3. Arrange tools within reach.

4. Set time limits when constrainer postures are unavailable and or alternate task of different nature.

5. Avoid continuous loading for longer periods of time.

6. Change body postures frequently in order to reduce static loading.

7. Avoid unsuitable, uneven, unsteady or slippery working surfaces, floors and transportation room whenever it possible.

CHAPTER-III METHODOLOGY

3.1 Study design

The aim of this study was to find out the prevalence of common MSDs among the garments workers. For this reason, choose a cross sectional study because the cross sectional study was the best way to determine prevalence. The most important advantage of cross sectional study was it need not more time and also cheap. As there was no follow up, fewer resources required to run the study. A cross- sectional design provides a snapshot of the variables included in the study, at one particular point in time (Fraenkel, 2005).

3.2 Study site

The sites of the study at Savar city among musculoskeletal Conditions of the garments workers who are work in sitting and standing position. Because having not any previous research regarding garments workers in Savar city. For this reason i am interested about this topic.

3.3 Study population and sampling

A population refers to the members of a clearly defined set or class of people, objects or events that was the focus of the investigation. So, all of garments workers in Savar city, Bangladesh who fulfill the inclusion and exclusion criteria of this study were the population of this study. But it was not possible to study the total population within the time of this study, so took only 100 garments workers as sample that were selected conveniently from selected area according to the inclusion and exclusion criteria. Use the convenience sampling technique due to the time limitation and also for the small size of population and as it was the one of the easiest, cheapest and quicker method of sample selection.

3.4 Sampling procedure

The study was conducted by using the convenience sampling methods because it was the easiest, cheapest and quicker method of sample selection.

3.5 Subject inclusion criteria

1. Both male and female were included in this study, the wanted to explore work related musculoskeletal disorders among the garments workers who are work in sitting and standing.

2. All ages were included as there was objective of the study to explore the relationship between age and work related musculoskeletal disorders, so samples are selected from all age group.

3. Subject who are willing to participate in the study otherwise they will not give

exact information that was helpful to the study.

3.6 Subject exclusion criteria

1. Subject who were not willing to participate in the study.

2. Subject who were medically unstable.

3.7 Sample size

$$N = \left\{\frac{z\left(1-\frac{\alpha}{2}\right)}{d}\right\} \times pq$$

$Z(1-\frac{\alpha}{2}) = 1.96$

p=0.78

d=0.05

q = 1-p

= (1-0.78) = 0.22

According to this formula of sample size calculation, the actual sample size was about 263.

3.8 Data collection method and tools

In this study data were collected by using both structured and semi structured mixed type questionnaire. Mixed type questionnaire include only close ended questions. Firstly, introduced her 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, the wrote down field notes and observed the facial expression to collect accurate data from the participants because in grounded theory of qualitative research observation and interviewing both were commonly used for data collection. During the interview use pen, paper, written questionnaire, file, Consent paper.

3.9 Data analysis

Data was analyzed with the software named Statistical Package for Social Sciences (SPSS) Version 16.0. Data resolve numerically coded and captured in Microsoft Excel, using an SPSS 16.0 version software program. Microsoft Office Excel 2007 used to decorate the table, bar graph and pie charts.

3.10 Ethical consideration

The aims and objectives of this study must be informed to the subjects verbally. So, gave the consent from to the subject and explained them. The subjects had the rights to withdraw themselves from the research at any time. It supposed to assured the participant that her name or address would not be used. The information of the subjects might be published in any normal presentation or seminar or writing but they would not be identified. The participant must be informed or given notice that the result would not be harmful for them. It would be kept confidential and also ensuring the confidentiality of participant's information, sharing information only with the research supervisor. At any time the researcher available to answer any additional questions in regard to the study. The proposal of the study was approved by the ethical committee of the member of faculty of physiotherapy Department. The study had done by following the guide line given by local ethical review committee and also followed WHO, BMRC and IRB

guidelines. Strictly maintained the confidentiality and informed consent must be taken. All the interviews were taken in a confidential to maximize the participant's comfort and feelings of security.

CHAPTER-IV	RESULT

Socio-demographic information

Prevalence of WRMDs

The result of the study reveals that 64% (n=64) participants out of 100 participants had suffered from work related musculoskeletal disorders (WRMDs) and 36% participants were not suffer from MSDs (Figure 1).

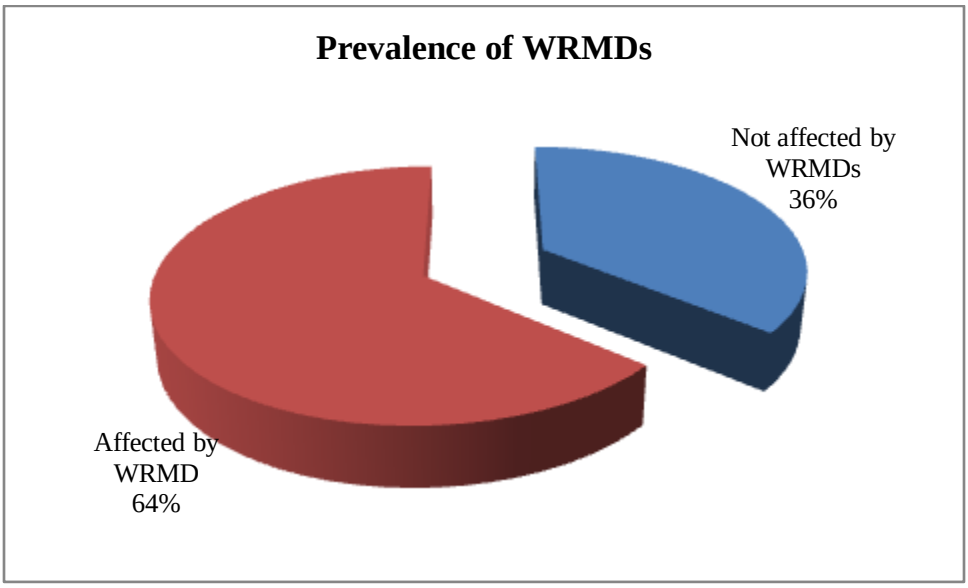


Figure -1: Prevalence of WRMDs musculoskeletal disorder

Age & WRMD relationship

Analysis reveals that among the 100 participants who had suffered from WRMD lowest age were 18 years and highest age were >36 years. Among the 64 participants were 23.04% participants in between 18-24 years, 26.88% participants in between 25-36 years, 14.08% participants in >36 (Figure 2).

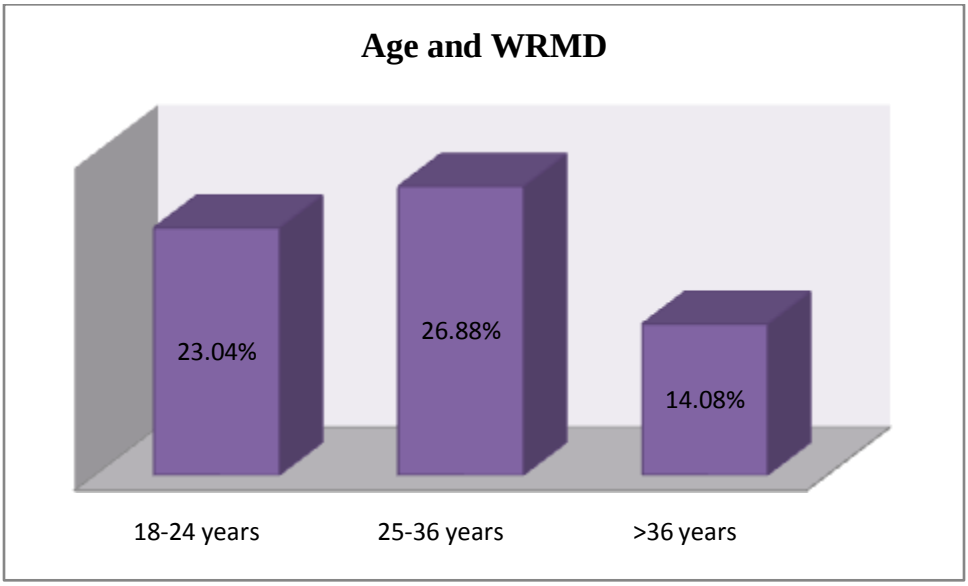


Figure- 2: Age and WRMDs relationship

Percentages of WRMD were out of 100 participates 36% (n=30) participants in between 18-24 years, 42% (n=35) participants in between 25-36 years, 22% (n=18) participants in >36.

Age Group	Percentages (%)
18-24 years	36%
25-36 years	42%
>36 years	22%
Total	**100%**

Table-1: Cross tabulation between age and WRMDs

Gender and WRMD relationship

Analysis showed that among the 100 participants 48 were male and 52 were female. Among the 64 participants who had suffered from WRMD 48% (n=30) were male and 52% (n=34) were female (Figure 3).

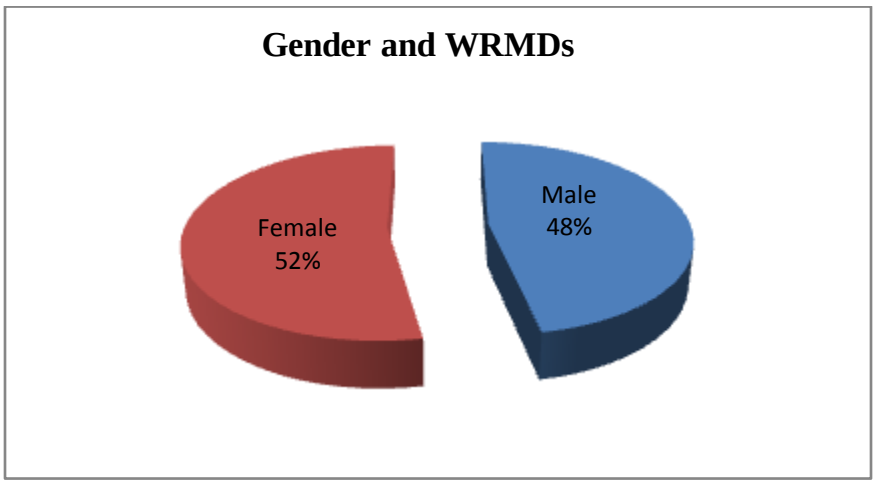


Figure-3: Gender and WRMD of the participant

Among the 100 participants 48% were male where 30% participants had work related musculoskeletal disorders and 18% participants had not. 52% participants were female where 34% participants had work related musculoskeletal disorders and 18% participants had not (Table 2).

Sex of the participant	**Experience of WRMDs of the participant**		**Total (%)**
	Yes	**No**	
Male	30%	18%	48%
Female	34%	18%	52%
Total	**64%**	**36%**	**100%**

Table-2: Cross Tabulation between Sex and Work Related Musculoskeletal Disorder

Educational status

Among the 100 participants, 39% (n=39) participants had below primary, 33% (n=33) participants were up to primary, 18% (n=18) participants had up to SSC, 10% (n=10) participants were up to HSC or above (Figure 4).

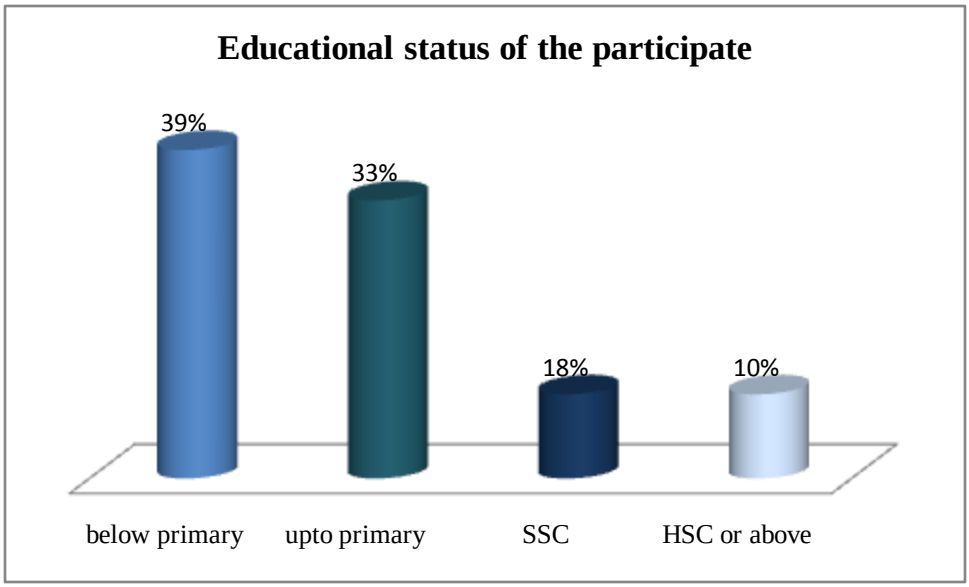


Figure-4: Educational status of the participant

Job experience and WRMDs

Outcome reveals that among 100 participants 32.1% (n=27) participants had job experience 0-1 year, 28.5% (n=24) participants 1-5 years, 15.4% (n=13) participants 5-10 years, 16.6% (n=14) participants were 10-15 years and 7.14% (n=9) participants were >15 years (Figure 5).

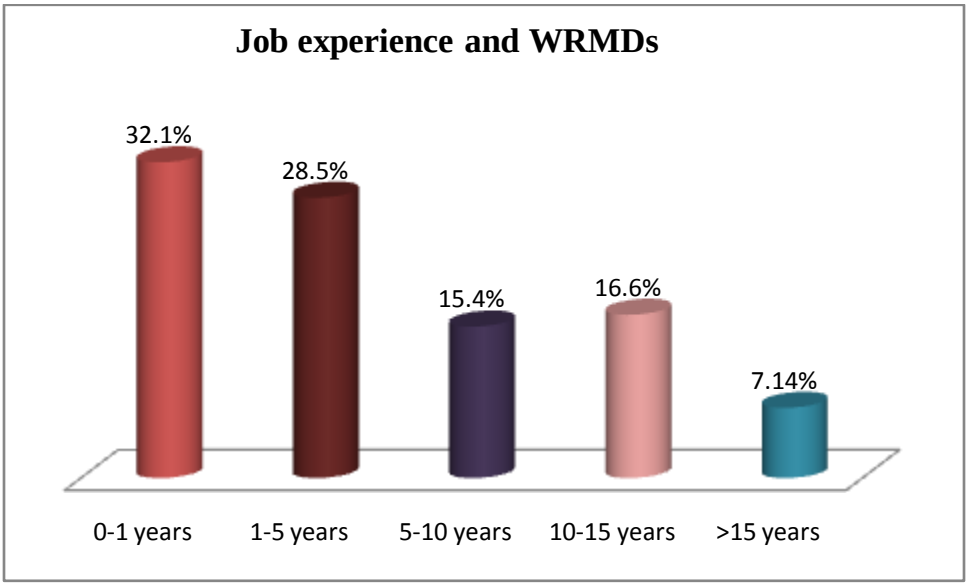


Figure-5: Job experience of the participant

Posture maintain during working in case of most time

Analysis demonstrated that among the 64 participants out of 100 were 54.7% (n=35) participant were working in standing and 45.3% (n=29) participants were working in sitting position (Figure 6).

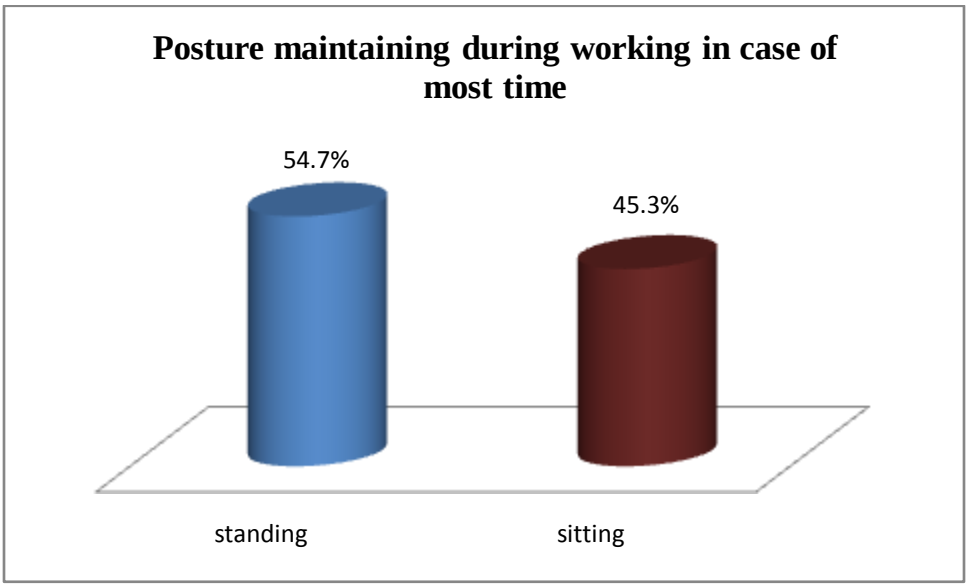


Figure-6: Posture maintain during working in case of most time

Type of activity during standing

Analysis demonstrated that among 64 participants out of 100 participants were 51.6% (n=33) participant were working in pushing and 48.4% (n=31) participants were working in pulling during standing position (Figure 7).

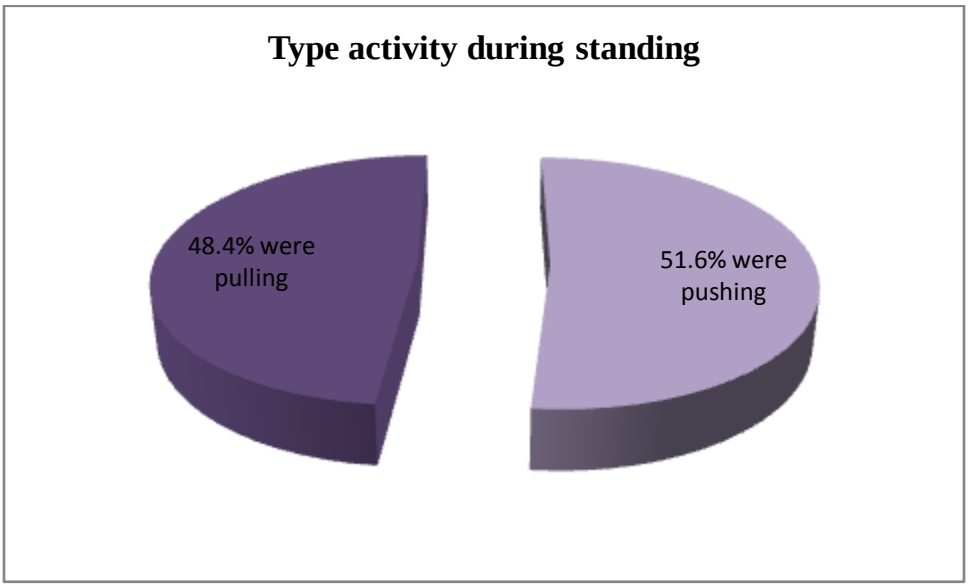


Figure-7: Type of activity perform during standing

.Type of activity during sitting

Analysis demonstrated that among 64 participants of 100 participants were 35.9% (n=23) participant were working in counting materials, 23.4% (n=15) participants were working in attach the bottom and 40.6% (n=26) are working in sewing during sitting position (Figure 8).

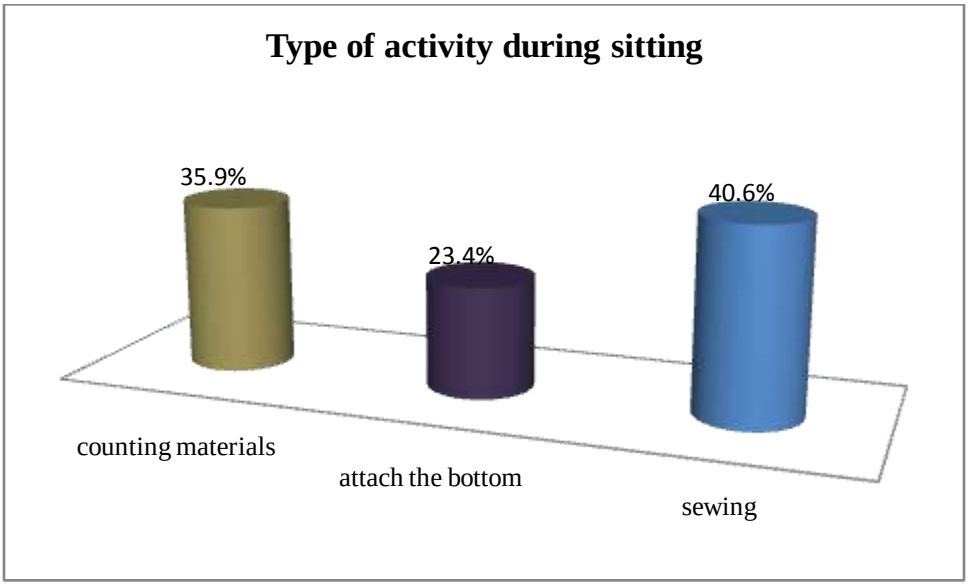


Figure-8: Type of activity during sitting

Type of pain of the participant

Analysis demonstrated that among 64 participants out of 100 participants mild type of pain in 25% (n=16), moderate type of pain 45.3 % (n=29) and severe type of pain 29.7% (n=19) (Figure 9).

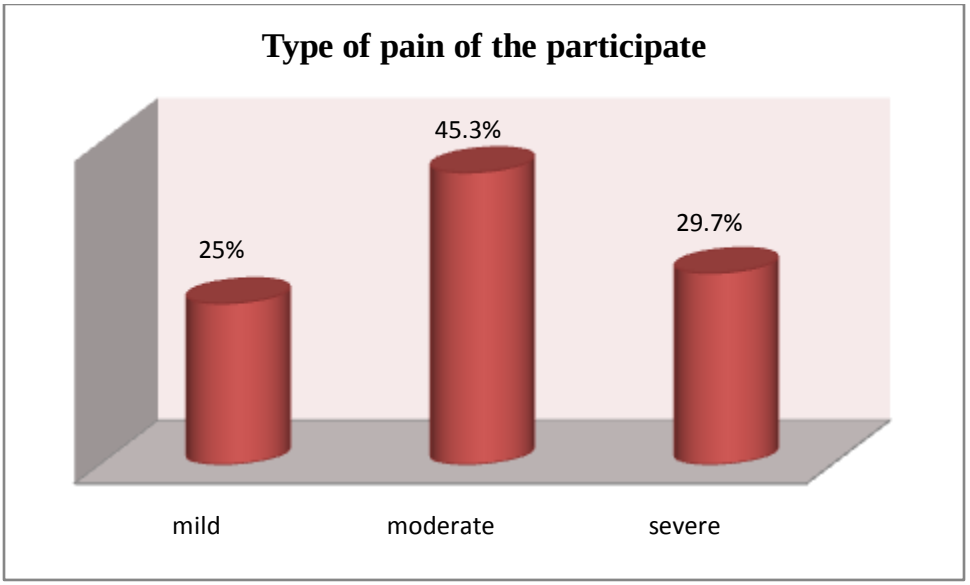


Figure-9: Type of pain of the participant

Pattern of pain of the participant

Analysis demonstrated that among 64 participants out of 100 participants temporary type of pain in 18.8% (n=12), continuous type of pain 57.8% (n=37) and on movement type pain 23.4% (n=15) (Figure 10).

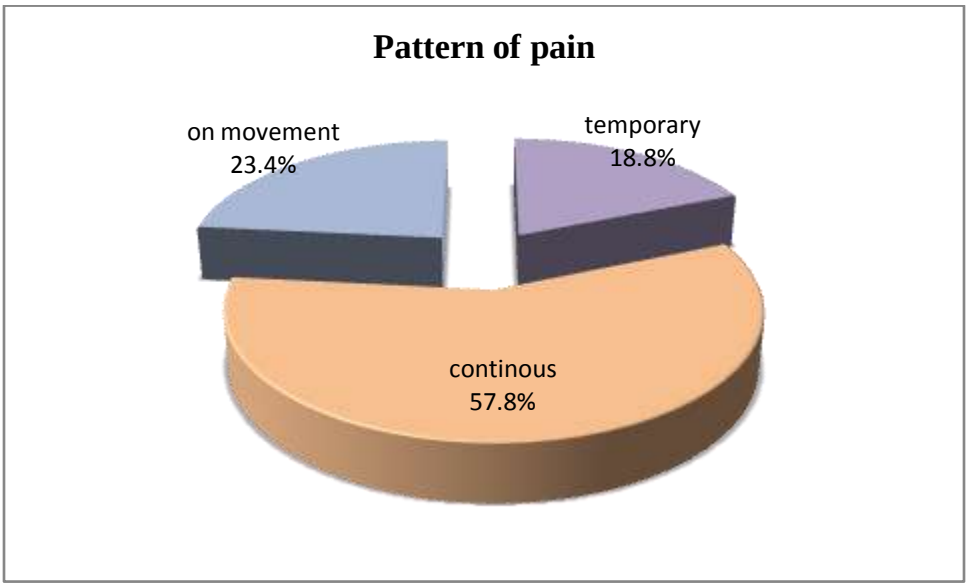


Figure-10 Pattern of pain of the participant

Site of pain

Among 100% participants out of 64 were pain in the neck region in 17.2% (n=11), shoulder 7.8% (n=5), elbow 7.8 (n=5) %, wrist 9.4% (n=6), upper back 17.2% (n=11), lower back 23.4% (n=15), knee 10.9% (n=7), ankle 6.3% (n=4) Figure 11).

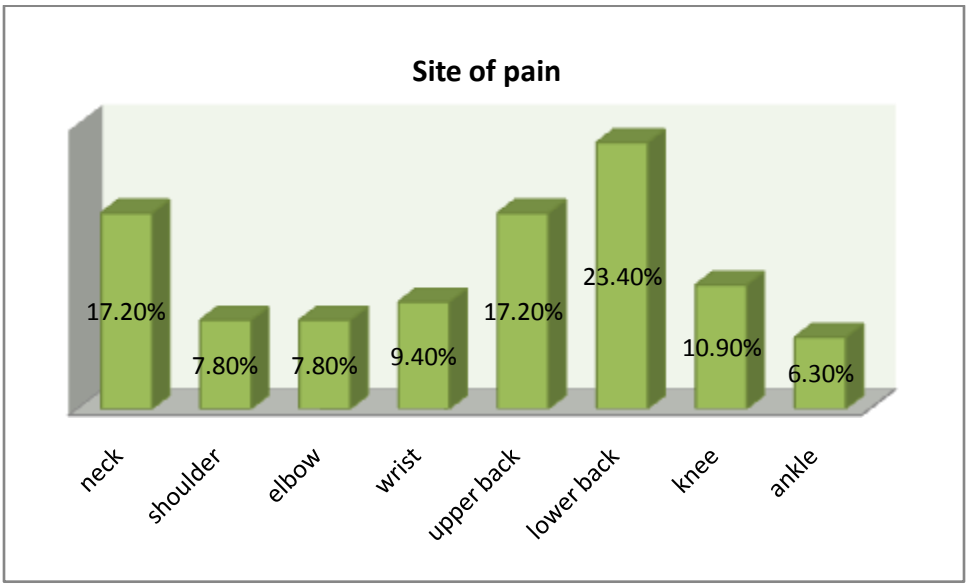


Figure 11: Site of pain of the participant

Site of muscular weakness

Among 100% participants out of 64 were muscular weakness in the neck region in 21.9% (n=14), shoulder 10.9% (n=7), elbow 6.3% (n=4), wrist 7.8% (n=5), upper back 10.9% (n=7), lower back 21.9% (n=14), hip 14.1% (n=9), knee 6.3% (n=4) (Figure 12).

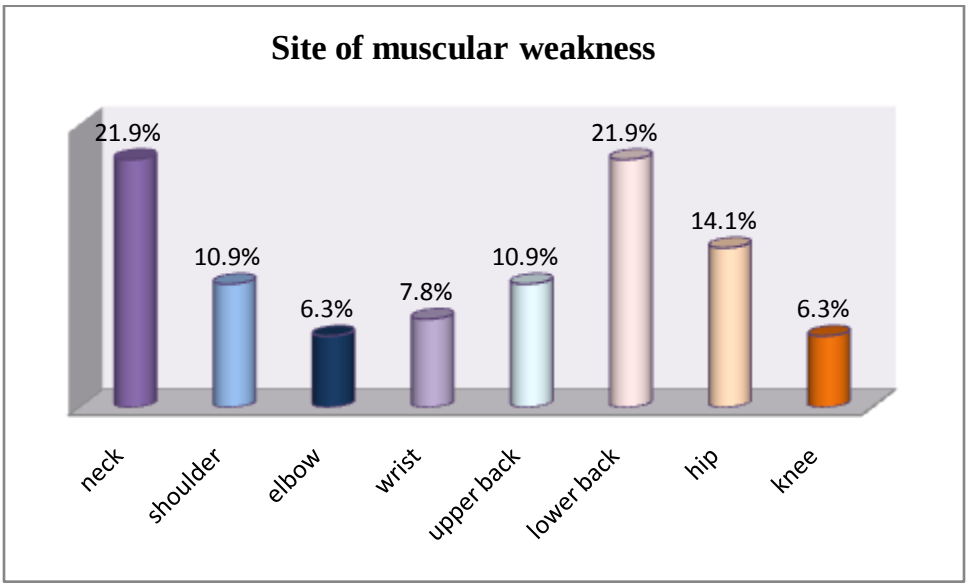


Figure 12: Site of muscular weakness

Type of feeling of sensation

Among 100% participants out of 64 were feeling tingling sensation 1.6% (n=1), numbness 6.4% (n=6), paresthesia 7.8% (n=5), cramp 12.5% (n=8), aching 4.7% (n=3) , pain 64% (n=41) (Figure 13).

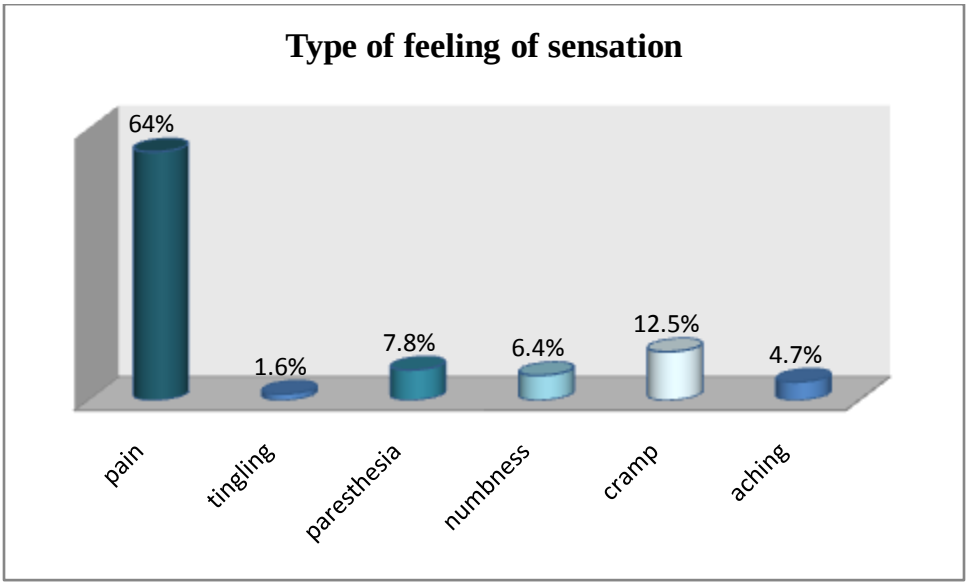


Figure 13: Type of feeling of sensation

Receiving any type of treatment

Among 64 participant 39.1% (n=25) receiving treatment and 60.9 % (n=39) were not receiving treatment **(**Figure 14).

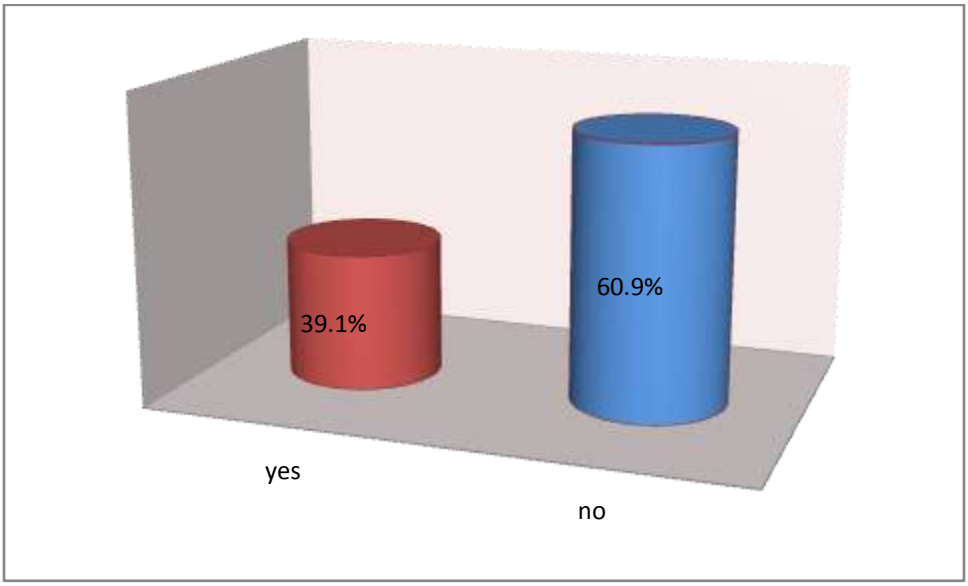


Figure 14: Receiving any type of treatment

Type of treatment received by the participant

Among 64 participant out of 100 participant receiving medication 56% (n=14), physiotherapy 32% (n=8) and others 12% (n=3) (Figure 15).

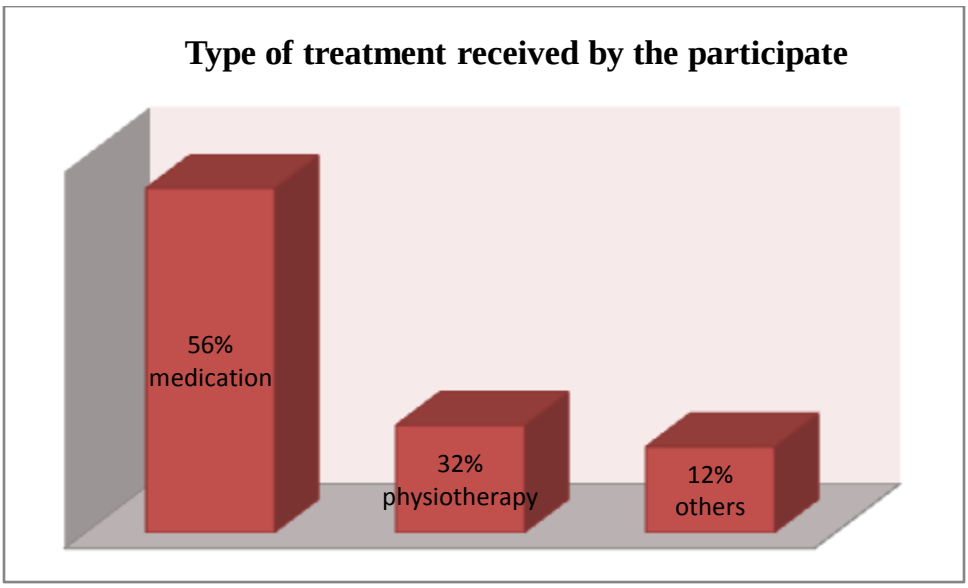


Figure 15: Type of treatment received by the participant

Result of this treatment after physiotherapy

Analysis showed that among 64 participants who suffered from WRMD only improve 64% (n=16), worse 20% (n=5) and unchanged 16% (n=4) (Figure 16).

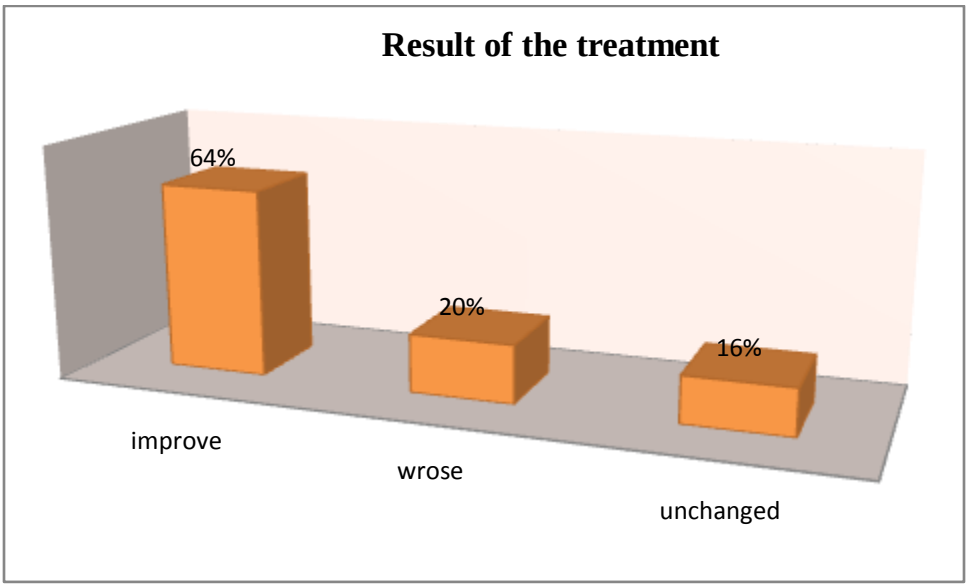


Figure 16: Result of the treatment after physiotherapy

CHAPTER-V DISCUSSION

This study examined the prevalence of work related musculoskeletal disorder (WRMD) among the garments worker. This study found that more than three fourth (64%) suffered from WRMD. This result was comparable at Taiwan (84%) reported experience of WMSD (Chyuan et al., 2005).In India musculoskeletal problems were reported by 76.5% (Talwar et al., 2009). The European Agency for Safety and Health at Work (2007) found that 84% WRMD reported in Europe countries. Priya et al. (2010) found that With MSD 76.25 % and Without MSD 23.75 %. In Iran 87.1% experienced some form of MDS symptoms (Choobineh and Tabatabaee, 2009). In America Work-related pain was experienced by 75% (Scherzer et al., 2005). The higher number of age ranges of participants 27% had suffered from WRMDs between 42-52 years and lower number of age ranges of participants 23% had suffered from WRMDs in between 28-34 years. European Agency for Safety and Health at Work (1999) the higher number of age ranges suffered from WRMDs between 55-64 years and lower number of age ranges suffered from WRMDs 25-34 years. The mean age was 35.05(SD ± 8.135) years. Chyuan et al. (2002) the mean Age was 33.3 ± (SD ± 11.3) years. Choobineh & Tabatabaee (2009) the mean age was 34.63(SD ± 11.07) years. Near about two third (72%) were male and (28%) were female suffered from WRMD. Literature says that men are more vulnerable to WRMDs then female. In Chennai, India 77.5% male and 22.5% suffered from WRMD (Priya et al., 2010). In Korea Kun et al. (2010) found that 74.2% male and 25.8% female suffered from WRMD. The symptoms of WRMDs were 7% (5) participants suffered from aching, 1% (1) participants has cramp, 1% (1) has numbness, 82% (64) had pain, 4% (3) had weakness, 5% (4) had restricted ROM. So, most garments workers suffered from WRMD symptoms was pain. Chyuan et al. (2004) 84% participants reported experience of WRMD related pain. Scherzer et al. (2005) found that 75% was experienced Work-related pain.

The most affected body parts were neck in 17.2% (11) participants, shoulder in 7.8% (5) participants, upper back 17.2% (11), lower back 23.4% (15), elbow in 7.8%(5) participants, wrist in 9.4% (6) participants, knee in 10.9%(7) participants.

In India most of the workers were affected body parts were neck (80%), shoulder (20%), wrist (45%), and low back (75%) (Ghosh & Das, 2010). Alexopoulos et al. (2005) found that prevalence of affected body parts were head/neck (42%), low back (34%), upper back (28%), wrists/hands (20%), shoulders (16%), ankles/feet (13%), knees (12%), hips (6%) and elbows (5%). Work-related musculoskeletal disorders mostly affecting the lower back (97%), knees (85%) and shoulders (77%) (Gangopadhyay et al., 2010). Work interruption due to WRMD in 20.5%. In Germany work interruption due to WRMD in 28.7% (Prins et al., 2008). Al-wazzan et al. (2005) found in his research at Riyadh in 2001 that only 21.62% missed work due to neck pain and only 24.66% due to back pain. (57.7%) 45 of the participants had work performance reduce due to WRMDs. According to European Agency for Safety and Health at Work (2007), 61% of work performance reduces due to WRMDs. Most of the common risk factors were working in same position for (38%) participants and carry heavy load 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%). Palmer (2007) claimed that repetitive work, static loading are responsible for most of the WRMDs. A positive relationship between fixed postures and musculoskeletal disorders (including pain, weakness, and paraesthesia) had documented for a number of occupations.In this study 19.2% participants had taken physiotherapy treatment for their condition. 60% participants had taken medical treatment for their condition.

After discussion the limitation of though the expected sample size was 263 for this study but due to resource constrain researcher could manage just 100 samples which is very small to generalize the result for the wider population of the garments workers. The research was able to collect data from one selected garment for a short period of time which had affected the result of the study to generalize for wider population. The questionnaire was developed only through searching sufficient literature but considering the context of the demography of the population a pilot study would substantial before developing questionnaire.

CHAPTER-VI CONCLUSION AND RECOMMENDATION

6.1: Conclusion

In the garment sector of Bangladesh a large number of female workers are found to continue their work even they suffer from various diseases and illness as they have no other alternative to survive in the society. The growth and development of the garment sector largely depends on the female worker because female workers are the main contributor to this sector. We should believe that ill workers can not give us healthy economy. The competitive strength of the garment sector in the world market is seriously affected by the health problems of the workers, since it decreases the productivity of the workers to a great extent. Most of the garments factories do not have standard working hours. Forced labors common in Bangladesh especially in the RMG sector. Workers are often given a quota to fulfill. In the case of workers unable to fulfill their quota during work hours, they have to stay behind and work without pay. Regular two hours overtime is compulsory, and if any one refuses to work him or she is dismissed, terminated, has wages deducted or receives verbal harassment, sometimes escalating into physical punishment. Furthermore the factory management rarely informs workers in advance if they have overtime; it is only announced at the end of the working day. Workers don't receive any notice of overtime. In some of the factories, workers are forced to do night shift duty, up to 12 to 3am.and then start the next shift at 7am. In many factories, the factory gates are locked to enforce overtime. Forced labour constitutes the antithesis to decent work and violates all core labour standards. In Australia, the law does not explicitly prohibit forced or compulsory labour, including by children (Palmer, 2007).The Australian Council of Trade Unions (ACTU) is monitoring the law (Case study 6). In consequence, the government should take effective initiatives with assistance garments manufactures, international agencies and other stakeholders work in synergy under the supervision of effective and extensive monitoring system program.

Though most work until after dark, there are no safety measures for them and no residential facilities or transportation facilities provided. As a result, they frequently feel insecure, and for good reason many female garments workers are raped and abused

(Mehta, 2012). Female workers should be equipped with preventive measures while working with chemical compound. In addition to this, factory should have safety policy to practice and female workers should be given safety training, precaution in handling load, advice workers from awkward postures, ensure first aid box and trained workers to utilize it, and psychological counseling is essential to minimize the MSDs and pain.

6.2 Recommendations

The aim of the study was to find out the prevalence of common MSD among the sitting and standing position in garment factory. Though the study had some limitations but study conductor identified some further step that might be taken for the better accomplishment of further study. The main recommendations would be as follow:

1. The random sampling technique rather than the convenient would be chosen in further in order to enabling the power of generalization the results.

2. The duration of the study was short, so in future wider time would be taken for conducting the study.

3. Investigator use only 100 participants as the sample of this study, in future the sample size would be more.

4. In this study, the investigator took the sample from Pacific blue (jeans wear) ltd-Savar Bazar Bus stand. It was small area to take available sample. So for further study investigator strongly recommended to include every garments factory in Bangladesh and so the results would be generalized in wider population.

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Appendix:

English Consent form

Consent statement

(Please read out to the participant)

Assalamualaikum/Namasker, my name is Nusrat Jahan , a final year student of Department of Physiotherapy at Bangladesh Health Professions Institute (BHPI) under the University of Dhaka and I am conducting this study to Research about garments worker. The title of the study is **''Prevalence of common musculosketel disorder among sitting and standing position of garments worker at a selected garments factory in Savar city.''** I would like to know about some personal and other related information . This will take approximately 20 - 30 minutes.

I would like to inform you that this is a purely academic study and will not be used for any other purpose. All information provided by you will be kept confidential place and it will not be disclosed to others without your permission and your name will not used any where of this study. No any financial incentive will be provided. 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, you may contact with Nusrat Jahan, and/or the supervisor of this study Md. Sohrab Hossain Associate Professor and Head of the Programs, Department of Physiotherapy, BHPI, CRP, Savar, Dhaka-1343.

Do you have any questions before I start?

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

YES

NO

Signature of the Participate with date:…….....

Signature of the Interviewer with date:…….....

Informed Consent (Bengali)

মৌখিক অনুমতি পত্র

(অংশগ্রহনকারীকে পড়ে শোনাতে হবে)

আসসালামুয়ালাইকুম,

আমি নুসরাত জাহান, ঢাকা বিশ্ববিদ্যালয়ের চিকিৎসা অনুষদ এর অধীনে, বাংলাদেশ হেলথ প্রফেশনস ইন্সিটিউটের ফিজিথেরাপি বিভাগের শেষ বর্ষের ছাত্রী। আমি গার্মেন্টস শ্রমিকদের নিয়ে গবেষণা করতে আগ্রহী এবং এই বিষয়টা আমাদের পড়াশুনার আন্তর্ভুক্ত।আমার বিষয়ের নাম "সাভার সিটি তে গার্মেন্টস কর্মীদের মধ্যে যারা বসে এবং দাঁড়িয়ে কাজ করে তাদের সাধারন পেশী-কঙ্কাল সংক্রান্ত রোগের প্রাদুর্ভাব নির্নয়"। এই কারনে আমি কিছু ব্যাক্তিগত এবং আপনার সম্পর্কে কিছু আনুষাঙ্গিক প্রশ্ন করতে ইচ্ছুক, যদি আপনার সম্মতি থাকে। এই কারনে আমি ২০-৩০ মিনিট সময় নিব।

এই বিষয়টা সম্পুরনভাবে আমাদের বিশ্ববিদ্যালয়ের অধিনে চালিত এবং অন্য কোন উদ্দেসে আপনার তথ্য গুলো ব্যবহার করা হবে না। সমস্ত তথ্য গুলো গোপনীয়তা বজায় রাখবো এবং আপনার অনুমুতি ছাড়া অন্য কোথাও প্রকাশ করব না। কোন রকম আর্থিক উদ্দীপনা সরবারহ করা হবে না। এই বিষয়ে অংশগ্রহন করা সম্পূর্ণ ভাবে আপনার ইচ্ছার উপর নির্ভর করছে এবং আপনি ইচ্ছা পোষণ করলে যে কোন সময় অনশগ্রহন করা থেকে ত্যাগ করতে পারেন। সাক্ষতকারের সময় আপনি আমার নির্দিষ্ট প্রশ্নের উত্তর দেওয়া থেকেও ত্যাগ করতে পারেন এই অধিকার আপনি রাখেন।

এই সম্বন্ধে যদি আপনার কোন প্রশ্ন জানার থাকে আপনি আমার সাথে জগাজগ করতে পারেন এবং / অথবা আমার তত্বাবধায়ক বাংলাদেশ হেলথ প্রফেশন ইন্সিটিউটের সহযোগী অধ্যাপক এবং ফিজিথেরাপি বিভাগের হেড অফ দ্যা প্রগ্রমাসসম্মানিত স্যার মোঃ সোহরাব হুসাইন এর সাথেও যোগাযোগ করতে পারেন।

আমি শুরু করার আগে আপনার কি কোন প্রশ্ন করার আছে?

যদি না থাকে তাহলে আমি প্রশ্ন করতে পারি?

-হ্যাঁ

-না

অংসগ্রহনারির সাক্ষরঃ.....

সাক্ষাতকারীর সাক্ষরঃ.....

Questionnaire (English)

English Questionnaire

Prevalence of common musculoskeletal disorders among standing and sitting position of garments workers at a selected garments factory in Savar city

PART –A: SOCIO-DEMOGRAPHIC INFORMATION

S.I	Type of question	Response
1.	Name:	
2.	Age:	1. 18-24 2. 25-36 3. >36
3.	Sex:	1. Male 2. Female
4.	Living area:	1. Urban 2. Rural
5.	Marital status:	1. Married 2. Unmarried
6.	Family members:	1. <5 2. >5
7.	Monthly income:	1. <5000 2. >5000
8.	Educational status:	1. Below primary 2. Up to primary 3. Up to SSC 4. Up to HSC and Above

9.	Job experience:	1. 0-1 years 2. 1-5 years 3. 5-10 years 4. 10-15 years 5. >15 years

PART- B (SAMPLE RELATED QUESTIONS)

S.I	Type of question	Response
1.	Which posture do you maintained during working?	1. Standing 2. Sitting
2.	What type of activity do you perform by standing?	1. Pushing 2. Lifting
3.	What type of activity do you perform by sitting?	1. Swing 2. Counting the materials 3. Put on the bottoms
4.	What type of pain do you feel?	1. Mild 2. Moderate 3. Severe
5.	Site of pain	1. Neck 2. Shoulder 3. Elbow 4. Wrist 5. Upper back 6. Lower back 7. Hip 8. Knee 9. Ankle

6.	Pattern of pain	1. Temporary 2. Continuous 3. On movement
7.	Muscular weakness	1. Yes 2. No
8.	Site of muscular weakness	1. Neck 2. Shoulder 3. Elbow 4. Wrist 5. Upper back 6. Lower back 7. Hip 8. Knee 9. Ankle
9.	Feeling of any tingling, numbness, paresthesia?	1. Yes 2. No
10.	What's type of feeling of any sensation?	1. Tingling 2. Numbness 3. Paresthesia 4. Cramp 5. Aching 6. Pain
11.	Did you receive any treatment?	1. Yes 2. No
12.	What type of treatment do you receive?	1. Medication 2. Physiotherapy 3. others
13.	What is the result of this treatment?	1. Improve 2. Worse 3. Unchanged

গবেষণা শিরোনামঃ "সাভার শহরে গার্মেন্টস কর্মীদের মধ্যে যারা দাঁড়িয়ে এবং বসে কাজকরে তাদের সাধারন পেশী-কঙ্কাল সংক্রান্ত রোগের প্রাদুর্ভাব নির্নয়" ।

বাংলা প্রশ্নাবলী

পর্ব-১: (রোগীর সমাজ কাঠামো ভীক্তক তথ্যসমূহ)

ক্রমিক নং.	প্রশ্ন	উত্তর
১।	অংশগ্রহণকারীর নাম	
২।	বয়স	(১) ১৮-২৪ (২) ২৫-৩৬ (৩) >৩৬
৩।	লিঙ্গ	(১) পুরুষ (২) মহিলা
৪।	বাসস্থান	(১) শহর (২) গ্রাম
৫।	বৈবাহিক অবস্থা	(১) বিবাহিত (২) অবিবাহিত
৬।	পরিবারের সদস্য সংখ্যা	(১) <৫ (২) >৫
৭।	মাসিক আয়	(১) <৫০০০ (২) >৫০০০
৮।	শিক্ষাগত যোগ্যতা	(১) প্রাথমিকের নিচে (২) প্রাথমিক পর্যন্ত (৩) এস এস সি (৪) এইচ এস সি ও তার উপরে
৯।	চাকরির অভিজ্ঞতা	(১) ০-১ বছর (২) ০-৫ বছর (৩) ৫-১০ বছর (৪) ৫-১৫ বছর (৫) >১০ বছর

পর্ব-২ (নমুনা সংক্রান্ত প্রশ্নসমূহ)

ক্রমিক নং.	প্রশ্ন	উত্তর
১।	কাজ করার সময় কোন আবস্থানে থাকেন?	(১) দাঁড়িয়ে (২) বসে
২।	দাঁড়িয়ে কোন ধরনের কাজ করে থাকেন?	(১) ধাক্কা (২) টানা

৩।	বসে কোন ধরনের কাজ করে থাকেন?	(১) উপাদান গোনা (২) বোতাম লাগানো (৩) সেলাই করা
৪।	কোন ধরনের ব্যাথা অনুভব করে থাকেন?	(১) হালকা (২) সহনীয় (৩) তীব্র
৫।	ব্যাথার স্থান	(১) ঘাড় (২) কাধ (৩) কনুই (৪) কব্জি (৫) পিছনের উপর ভাগ (৬) পিছনের নিচ ভাগ
৬।	ব্যাথার নমুনা	(১) সাময়িক (২) টানা
৭।	মাংস পেশীর দুর্বলতা আছে?	(১) হ্যাঁ (২) না
৮।	মাংস পেশীর দুর্বলতার স্থান	(১) ঘাড় (২) কাধ (৩) কনুই (৪) কব্জি (৫) পিছনের উপর ভাগ (৬) পিছনের নিচ ভাগ
৯।	আপনার কি ধরনের অনুভূতি হয়?	(১) সংকুচিত ভাব (২) অবশ ভাব (৩) আংশিক পক্ষাঘাত (৪) শিথিল ভাব (৫) টান লাগা (৬) ব্যাথা
১০।	আপনি কি সংকুচিত ভাব, অবশ ভাব, আংশিক পক্ষাঘাত অনুভব করেন?	(১) হ্যাঁ (২) না
১১।	আপনি কি কোন চিকিৎসা নিয়েছেন?	(১) হ্যাঁ (২) না
১২।	কোন ধরনের চিকিৎসা নিয়েছেন?	(১) ঔষধ (২) ফিজিওথেরাপি (৩) অন্যান্য
১৩।	চিকিৎসার ফলাফল?	(১) উন্নতি (২) খারাপের দিকে (৩) একই রকম

Permission letter

17th September,2015
Head
Department of Physiotherapy
BHPI, CRP-Chapain, Savar, Dhaka-1343

Subject: Seeking permission for data collection to conduct my research project.

Dear Sir,

With due respect and humble submission to state that I am Nusrat Jahan, student of 4th year B.Sc. in Physiotherapy at Bangladesh Health Professions Institute (BHPI). The Ethical Committee has approved my research title on "Prevalence of common musculoskeletal disorder among sitting and standing position of garments worker at a selected garment factory in Savar city" under the supervision of Sohrab Hossain, Associate Professor, BHPI and Head of the Programs in CRP. For this I need permission from Pacific blue (jeans wear) ltd.B-120, Jaleshwar, Savar Bazar Bus Stand , Razzak Plaza (5th Floor), Savar, Dhaka.

I, therefore, pray and hope that you would be kind enough to grant my application and give me the permission for data collection and oblige thereby.

Yours sincerely

Nusrat Jahan

Nusrat Jahan
4th year B.Sc. in Physiotherapy
Session: 2010-11
Bangladesh Health Professions Institute
CRP- Chapain, Savar, Dhaka- 1343.

She is allowed to date collection.
17.09.15
Md. Obaidul Haque
Associate Professor & Head of the Department
Department of Physiotherapy
Bangladesh Health Professions Institute (BHPI)
CRP, Chapain, Savar, Dhaka-1343

17.09.15