

Developing a curriculum for health professionals working in Bangladesh's RMG industries to learn how to deal with common work-related and occupational diseases

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BANGLADESH BUSINESS AND DISABILITY
NETWORK (BBDN)

REPORT ON

Developing a curriculum for health
professionals working in Bangladesh's
RMG industries to learn how to deal with
common work-related and occupational
diseases

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Murteza R. Khan

BANGLADESH BUSINESS AND DISABILITY NETWORK (BBDN)

Abstract

Developing a curriculum for health professionals working in Bangladesh's RMG industries to learn how to deal with common work-related and occupational diseases

Bangladesh's Ready-made Garment (RMG) industry, which began four decades ago, is currently the country's economic engine, accounting for more than 80% of the country's total export revenues. It contributes significantly to the national economy by offering many job opportunities and alleviating poverty through socioeconomic development. The BGMEA and BKMEA, as the two apex bodies in the sector, have been instrumental in introducing factory monitoring mechanisms which are well and above the required legal regime. While many aspects of occupational health and safety have been improved in recent years in RMG sectors, several aspects of the nature of work and working environment still need to be improved. At present, nearly 2.5% (approximately 4 million) of the total population is working in the RMG industry of Bangladesh, where more than 60% of employees are female workers. Basic healthcare facilities and personnel (nurses, doctors and others) are required by law in factories employing more than 300 workers. However, no data on the number of healthcare professionals employed in the RMG sectors and their skills has been evaluated. Most healthcare workers in the RMG sectors are expected to be in their early careers and have little exposure to the management of occupational diseases. As a result, the goal of this research is to develop a training curriculum for health professionals working in the RMG industries to address prevalent work-related and occupational diseases.

Many work-related diseases were discovered among workers, according to the literature review, including hearing impairment, dry skin dermatoses, hepatitis viruses, fungal infections, asthma, COPD, skin diseases, musculoskeletal disorders (i.e., low back pain, upper back pain, neck pain, shoulder pain, pain in hip joint and others). Most of the diseases are already been listed in the Bangladesh Labour Act (BLA) occupational diseases list. According to a qualitative survey of healthcare professionals, musculoskeletal problems are reported as the most common complaint among workers. Besides, respiratory illness, anemia and malnutrition were reported. Finally, we provided a health practitioner training curriculum on the management of work-related and occupational diseases. We urged that healthcare workers participate in a five-day training session to better understand work-related and occupational diseases.

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This is indeed a prominent initiative towards the identification and development of work-related and occupational diseases in the RMG industries of Bangladesh. We would like to express our utmost gratitude to Professor Dr. Andreas Kranig; Social Policy and Social Security Expert, University of Applied Sciences Bonn-Rhein Sieg, Germany, Professor Gert van der Laan, MD; Senior consultant in Occupational Medicine, Visiting Professor of the University of Milan, Italy for their outstanding support and supervision of the entire study process. Cordial Thanks to Dr. Silvia Popp, Program manager, EIPS, GiZ for giving her insightful comments and suggestions to keep the work in the direction of its purpose. We would also like to thank other national and international experts, CRP staff and volunteers for contributing their knowledge, valuable time, hard work and active participation throughout the study.

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- Export Processing Zones (EPZ) Management Team
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Contents

Contributors	iii
Executive Summary	v
Acknowledgements	vi
1 Introduction	1
1.1 The project	1
1.2 About BBDN	1
1.3 About CRP	1
1.4 About NGHI	2
1.5 Goal and Objective of this study	2
1.6 Garments Industries in Bangladesh	3
1.7 Healthcare professionals in garments industries	3
1.8 Justification of the study	4
2 Literature review on workplace injury and occupational diseases	5
2.1 Causes of work-related and occupational injuries or diseases	5
2.2 Workplace injuries	6
2.3 Morbidity patterns among RTW workers	6
2.4 Literature review on occupational diseases	8
2.5 Literature review on gaps in the healthcare system in RMG sectors	11
3 Qualitative survey	13
3.1 Key Informant Interviews	13
3.2 Limitation of the survey	13
3.3 Data collection and analysis	14
3.4 Access to Health Service Facility	14
3.5 Reporting of diseases among garments workers	15
3.6 Work environment and perceived factors influencing health problems	16
3.6.1 From the field	16
3.7 Challenges of providing health-care services.	17
4 Training curriculum on managements of WR&ODs in the RMG sector	18
4.1 Aim of the training curriculum	18
4.2 Training participants	18
4.3 Training layouts	18
Bibliography	19

List of Figures

2.1	Bar chart shows the percentage of the RTW by source of injuries (GIZ Report by Hossain et al. (2020).	6
2.2	Prevalence of self-reported medical conditions from medical records of 1906 garments workers (Solinap et al., 2019 [8]).	7
2.3	Prevalence of morbidity among RTW employees (GIZ Report by Hossain et al. (2020) [10].	8
2.4	Prevalence of complaints about musculoskeletal pain among RTW workers, by age and gender (GIZ Report by Hossain et al. (2020) [10].	9

List of Tables

3.1	Distribution of Key Informant Interviews (KII).	13
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List of Abbreviations

BBDN	Bangladesh Business Disability Network
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
BKMEA	Bangladesh Knitwear Manufacturers and Exporters Association
BLA	Bangladesh Labour Act
CRP	Centre for the Rehabilitation of the Paralysed
DGUV	Deutsche Gesetzliche Unfallversicherung (German Social Accident Insurance)
DIFE	Department of Inspection for Factories and Establishments
DoL	Department of Labour
EIPS	Employment Injury Protection Scheme for workers in the textile and leather industries
EPZ	Export Processing Zones
FGD	Focus Group Discussion
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ICD	International Statistical Classification of Diseases and Related Health Problems
ICOH	International Commission on Occupational Health
ILO	International Labour Organization
KII	Key Informant Interview
LDOH	Foundation for Learning and Developing of Occupational Health
MSDs	Musculoskeletal Disorders
NIPSOM	National Institution for Preventive and Social Medicine
ODs	Occupational Diseases
OPs	Occupational Physicians
OSH	Occupational Safety and Health
RMG	Ready-Made Garments
RTI	Respiratory Tract Infections
WHO	World Health Organization
UTI	Urinary Tract Infections
WR&ODs	Work-Related and Occupational Diseases

Chapter 1

Introduction

This chapter provides a concise overview of the project, BBDN and RMG industries in Bangladesh. We want to give a brief orientation before moving to the methods for identifying levels of prevalence of health indicators among garments workers in Bangladesh.

1.1 The project

An occupational disease is a disease the primary cause of which is a physical factor or a chemical or biological agent present in the afflicted individual's work. The definition of an occupational disease is not purely medical but also has a legal dimension. On the other hand, a work-related disease is one whose cause can be traced back to the afflicted person's job. As a result, work-related diseases encompass not only occupational diseases, but also diseases whose primary cause is not a factor present in the sufferer's workplace.

The safety of Bangladeshi garment workers against the risk of a workplace accident and the management of occupational diseases both need to be enhanced. Thus, the goal of the project is to provide a training curriculum for health care professionals working in the garments sector so that they may better assess the landscape of occupational and work-related diseases among garment workers.

1.2 About BBDN

The Bangladesh Business and Disability Network (BBDN) is a voluntary group of representatives from business, industry, employers' organizations and selected non-governmental and disabled peoples' organizations. BBDN has a primary purpose of facilitating disability and work place diversity in Bangladesh from the perspective of the business and human rights cases. Please visit <https://www.bbdn.com.bd/> for more details about the organization.

1.3 About CRP

CRP provides medical treatment, rehabilitation and support services focusing on physical, emotional, social, psychological and economic aspects. It promotes the development of skilled personnel in health care and rehabilitation in the country. CRP

has developed centres in different parts of the country to expand the services for disabled people in collaboration with other organizations. It promotes empowerment of disabled people through community based services, advocacy and networking on disability issues and empowerment of disabled girls and women. CRP also raises awareness on disability issues nationally, regionally and internationally. Please visit <https://www.crp-bangladesh.org/> for more details about the organization.

1.4 About NGHl

Global Health Institute of North South University (NGHI) was established in the year 2016 with the vision of becoming a center of excellence for public health leadership. North South University's mission was to create a global platform for the next generation of health-researchers in Bangladesh to address the present-day health and well-being-related concerns and find solutions through collaborative research, innovation, and advocacy. All the project coordinators at NGHI are from amongst internationally accomplished academicians and researchers with extensive health research experience. They strive to instill their knowledge and expertise into the next generation of Bangladeshi health researchers. Six Ph.D. researchers and eight MPH researchers are currently associated with NGHI and work in four large areas: maternal and child health, infectious diseases, non-communicable diseases, and occupational health. As a non-profit academic-research institution, NGHI can conduct research projects across various health sciences and social welfare schemes. To date, the NGHI has partnered with many national and international partners (e.g., DGHS, BMRC, HMBD, GIZ and CDD joint venture, University of Maryland, University College London, McMaster University and NASA collaboration, etc.). Please visit <http://www.northsouth.edu/research-innovation/nghi/> for more details about the organization.

1.5 Goal and Objective of this study

The study's purpose was to learn about the most common work-related and occupational diseases among garment workers. This study provides identifying gaps of management of occupational diseases and establishing action items for designing a training curriculum for health care professionals who work with garment workers. It is going to contribute to these goals by designing a training curriculum for achieving the following four key objectives:

- Objective-1: To identify the common work-related and occupational diseases (WR&ODs) among workers in RMG sectors.
- Objective-2: To understand the cause of the WR&ODs in RMG sectors.
- Objective-3: To develop a training curriculum for healthcare professionals who are involved in RMG sectors to learn the management of WR&ODs.
- Objective-4: To grasp the difficulties in implementing the training program in health-care professionals.

1.6 Garments Industries in Bangladesh

The RMG industry of Bangladesh is a foremost garment manufacturing industry in the world, which has been growing continuously with enormous strength during the last couple of decades. This industry has been showing its ability as the main source of export for the last 25 years [1]. In the recent past, it emerged as the second-largest garment exporter in the world after China that represents 79.60% of the total industry's contribution to the national income [2], where average annual growth is about 15% from the fiscal year 2009 to 2014 [3]. It also contributes to more than 23% of Bangladesh's GDP [3].

According to a report of the World Bank, Bangladesh is experiencing approximately 6% annual economic growth since the mid-1990s, which has been combined with substantial improvements in other human development measures. The garment industry in Bangladesh is one of the strongest drivers of the economy, having given employment to almost 2.8% of the country's 165 million people. Nearly 70% (3.3 million) of these are women. After the beginning of its journey in the late 1970s, the garment industry has also been contributing to decreasing the country's poverty rate from 70% to less than 40% along with increased life expectancy at birth, literacy rate, and per capita food intake [4].

This industry is the largest formal employer of Bangladesh, which employs more than 4 million people [1], who are directly or indirectly depending on this industry for their immediate livelihoods [3]. The labor intensiveness, cheap labor cost and the easy availability of the female workers are considered as major contributing factors to the flourishing of this industry [5]. Due to its excellent combination of cost and quality, the tag "Made in Bangladesh" has earned the confidence of the major global players of garments [6]. Nowadays, the United States and the countries from European Union (EU) are becoming the leading and fastest growing RMG importer from Bangladesh, and this industry earned US\$ 24.5 billion in 2014 from those countries [3]. With an 8.54% growth target, the Export Promotion Bureau (EPB) stated Bangladesh would be able to earn \$35.14 billion in the fiscal year 2021-22.

After the Rana Plaza building collapse in 2013, the compliance issue of Bangladesh RMG industry has attained new attention from its stakeholders like consumers, national and international trade unions, human and labor rights organizations, and, most importantly, from the buyers. Therefore, the garments exporters of Bangladesh were under pressure to implement work-place safety and international standards of labor. This industry has now overcome many of these challenges. Many factories, mostly located in export processing zones (EPZs), currently comply with the expected level of labor and occupational safety and health standards. Though compliance standards of garments factories have improved in recent years, the practice has not been replicated throughout the industry.

1.7 Healthcare professionals in garments industries

Every workplace with more than 300 employees is required by law to have a full-time doctor. Unfortunately, many of the garments factories do not meet this standard, and simply have a nurse, a clinic area, and some basic medications. There is a part-time visiting doctor on occasion. There is no available data on the number of healthcare professionals employed in these sectors. However, it is thought that

the healthcare professionals working in the industry are in their early stages of their careers.

The number of healthcare professionals in the garments industry is usually determined by the industry's size as well as the number of individuals it employs. On the other hand, the majority of female manufacturing employees are unable to attend government hospitals due to the combination of lengthy working hours and long waiting times. Furthermore, government health institutions are frequently understaffed and under-equipped. Furthermore, government health spending accounts for 33% of total health spending, with the remainder covered by own. As a result, the industry faces a significant challenge in providing healthcare to its employees.

1.8 Justification of the study

The RMG industry has grown rapidly in Bangladesh within the context of the limited social or physical infrastructure to support garments workers to improve health related quality of life. Also, the high cost of medical care is a critical issue in Bangladesh. About 40% of the country's RMG industry's workers, out of 5 million, are deprived of medical treatment due to the high cost of healthcare [7]. This makes the workers unhealthy and less productive which affects the overall economy. The existing healthcare systems cannot provide full protection to RMG workers because there is a large-scale shortage of qualified healthcare providers in Bangladesh. For instance, the nurse to population ratio is 1:7788 and the doctor to population ratio is 1:46457 in the country. The long working hours of many workers also constrain them from availing external health services during normal operating hours. It is seen that enormous potential to better leverage factory-based nurses and on-site clinics to bridge some of these gaps and efficiently link RMG sector workers, especially women, to the health products and services that they need. As a result, it has become necessary to comprehend the workers' health issues in order to effectively assist them within the sector. The goal of the project was to provide a training curriculum for health care professionals working in the garments sector so that they may better assess the landscape of occupational and work-related diseases among garment workers.

Chapter 2

Literature review on workplace injury and occupational diseases

This chapter provides a literature review on work-related and occupational diseases along with the exposures causing these diseases in the context of the RMG industries in Bangladesh.

2.1 Causes of work-related and occupational injuries or diseases

The increase of the workforce has been continuing in the RMG industries of Bangladesh. In line with this boom of employment in the RMG industry, work-related and occupational injuries are significantly increasing and becoming a major public health concern in Bangladesh [8].

The management of some of the garment factories are commonly focusing on substantial productivity and with this characteristic, their workers continuously face physical and mental health hazards. Long-term repetitive movement of hands and shoulders, along with rising workloads, are directing many workers towards developing strains and musculoskeletal injuries [9]. The work environment along is often restricting workers from consuming consistently healthy food, while there also exists a lack of healthy living accommodations,. The majority of the workers are unable to intake nutrient rich food or are consuming unhealthy food and suffering from malnutrition, diarrhoea or other adverse health conditions [10]. The most concerning exposures of common occupational and work-related diseases are sitting or standing for long periods of time, sewing, manual handling, heat discomfort, lack of proper ventilation and lighting, continuing excessive noise and dust hazard [11-13]. In the clothing section of the garment industries, workers are also exposed to clothing chemicals, wet and thermal stimulation, and it was found that these are the common exposures causing occupational skin diseases [14-16].

2.2 Workplace injuries

According to the survey conducted in 2020, most frequent sites of injury were in the hand among RTW workers. The other two common sites of injuries among the RTW participants were in the leg and hip. Most workers in garments industries work by hand, and so it is expected that most injuries would be in the hand.

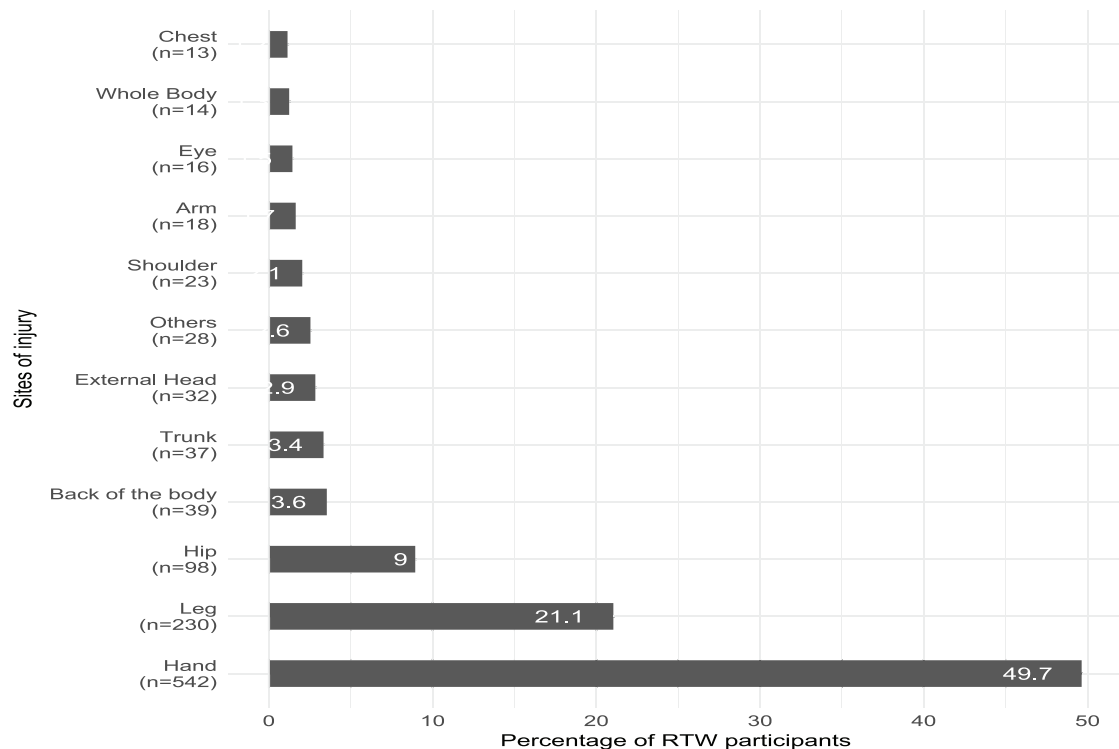


FIGURE 2.1: Bar chart shows the percentage of the RTW by source of injuries (GIZ Report by Hossain et al. (2020).

2.3 Morbidity patterns among RTW workers

Information on existing morbidity pattern (both acute and chronic diseases) among the garments workers is essential to provide need-based health care to them. Hossain et al. (2020) conducted a survey among 1090 return to work (RTW) employees and the morbidity pattern was identified from the study. Figure 2.3 demonstrates the morbidity pattern among the participants. It appears from the bar diagram that the majority (413, 37%) of the participants reported musculoskeletal pain. Approximately 9% of all workers were suffering from skin disease (8.9%) and 8.6% from hypertension. Additionally, the study estimated the prevalence of garments workers having other morbid conditions; digestive diseases (7%), neurological or sensory diseases (6.8%), respiratory disease (6.4%), endocrine or metabolic diseases (5.2%), genitourinary diseases (4.5%) and blood diseases (4.3%).

Figure 2.2 demonstrates the symptoms from medical records and the study was conducted by Solinap et al. (2019) [8]. It appears that general conditions (Low-grade

fever, fatigue, excessive sweats, chills, changes in appetite, changes in weight and so on) were more common symptoms to visit the healthcare facility. It was followed by musculoskeletal problem and many women reported neurological problems. It is evident from both the study that garments workers were less likely to suffer from mental health symptoms such as depression.

Figure 2.4 illustrates the percentage of garments workers complaining about musculoskeletal pain by age and gender. It is evident from the line diagram that the rates of complaints about pain are noticeably different in male and female workers. It may also have something to do with differences in how and when men and women acquire disabilities. Additionally, a drastic increase in complaining is observed among the female RTW participants aged more than 50 years (60%). Whereas, the age group distribution in men remained almost constant after the spike at 31-40 years (40%) from ≤ 30 years (30%).

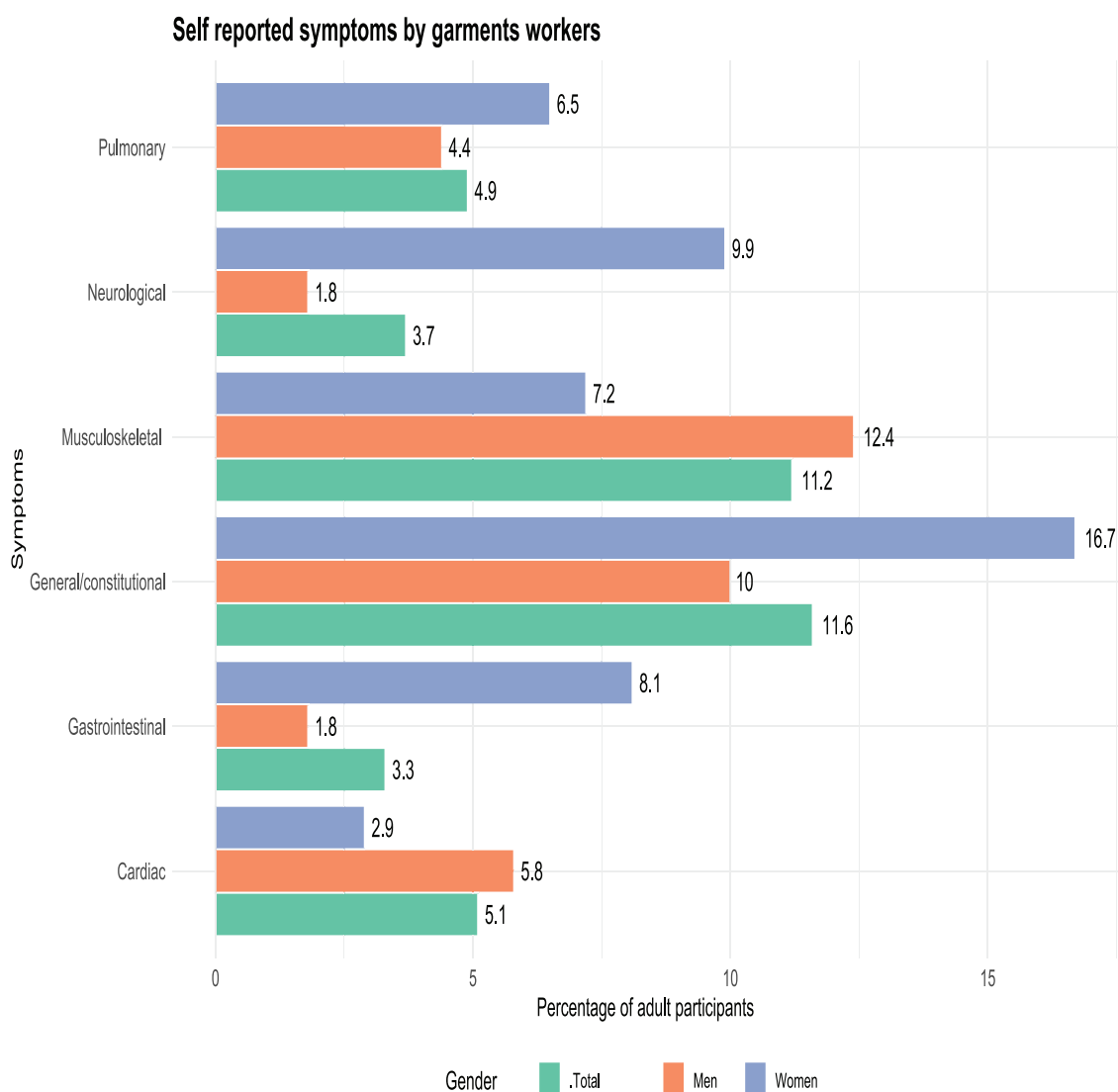


FIGURE 2.2: Prevalence of self-reported medical conditions from medical records of 1906 garments workers (Solina et al., 2019 [8]).

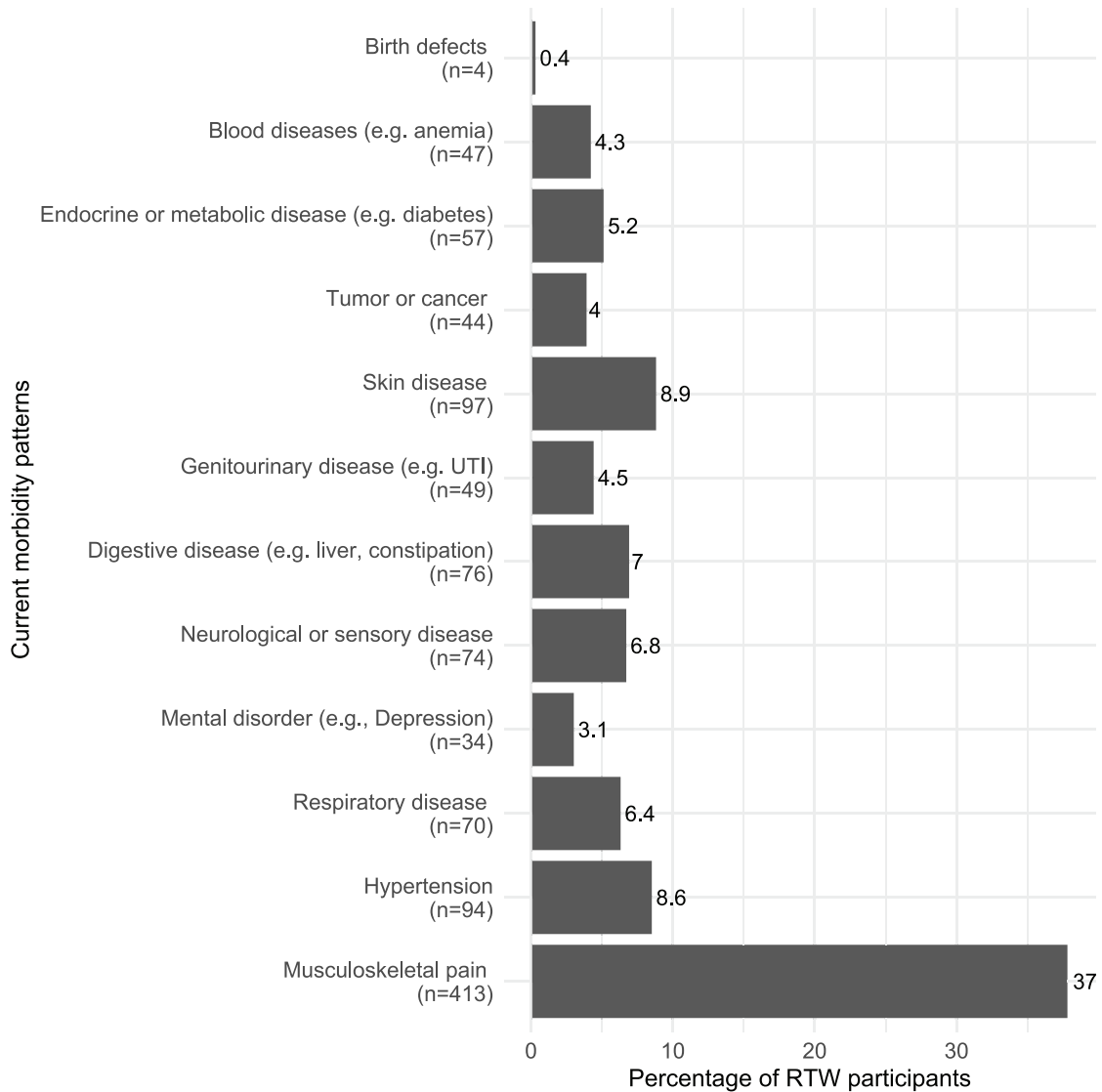


FIGURE 2.3: Prevalence of morbidity among RTW employees (GIZ Report by Hossain et al. (2020) [10].

2.4 Literature review on occupational diseases

In the year 2010, ILO has published a comprehensive list of common occupational diseases. Bangladesh Labour Act-2010 contains a list of 33 occupational diseases, but not specified for the RMG industries.

Based on the findings of literature review, we correlate the health problems with the International statistical classification of diseases-10th revision (ICD-10) list of World Health Organization (WHO) [17]. Physical facilities in the work place including infrastructures, working environment, in house sound production are important for work-related occupational health and safety. Noise hazard exists in the weaving, spinning and knitting occupations where noise level was recorded at 130 dB. This kind of noise hazard refers to hearing impairment (ILO listed in 1.2.1. section; and

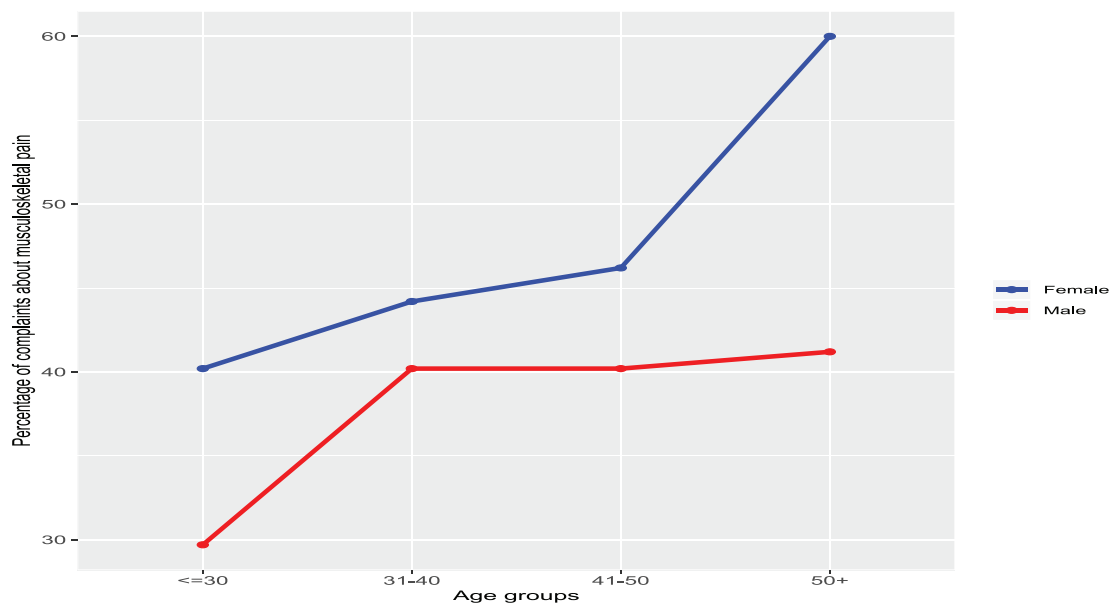


FIGURE 2.4: Prevalence of complaints about musculoskeletal pain among RTW workers, by age and gender (GIZ Report by Hossain et al. (2020) [10].

ICD-10 listed code: H83.3), which is irreversible. However, it is possible to control this excessive noise source through engineering and maintenance (e.g. lubricating) measures [18]. Besides hearing protection like ear plugs could be useful to reduce the burden of hearing problem.

The working environment including proper ventilation system needs to be controlled. In the dyeing section, employees are using hot water and detergents for washing cloths which have induced dry skin dermatitis (ILO listed in 1.2.6. section; and ICD-10 listed code: L85.3). In some factories, similar effects have been found in the garments sections because of an extreme temperature and lack of proper ventilation system, particularly in the cloth ironing section [13].

The nature of work in the garments industries has also influenced to intake unhealthy food. That kind of food causes liver diseases such as hepatitis (jaundice) (ILO listed in 1.3.2. section; and ICD-10 listed code: B15-B19).

It was also found that poor working conditions such as closed environment, common washroom for over 500 employees, lack of space between two employees and overall working pattern in the garment industries led to several bacterial or infectious diseases (i.e. fungal infections) (ILO listed in 1.3.6. section; and ICD-10 listed code: A00-A49) among the garments employees [14].

The employees in the RMG (jeans) industry can be affected by silicosis also (ILO listed in 2.1.1. section; and ICD-10 listed code: J62), because some of the jeans industries used sandblasting process to remove dark indigo pigment as well as to soften the jeans product. That kind of techniques causes health hazards among the employees through inhaling silica dust. There is a limited evidence of silicosis in the RMG industries in Bangladesh. Besides, Barmania (2016) reported that silicosis is rare in the RMG sector [18].

Several studies reported that, majority of the garments employees claimed that

they are always feeling headache, cough and abnormalities of breathing. According to ICD-10 (ICD-10 code R05-R06), these symptoms could be the sign of respiratory diseases. Similarly, the cotton and fabric dust is very common in the RMG industries. Several studies mentioned that garments workers were affected by bronchopulmonary disease (byssinosis) due to cotton dust (ILO listed in 2.1.6. section; and ICD-10 listed code: J66.0) [16]. In line with this finding, Tasnim et al. (2016) found chronic respiratory disease (asthma) which was caused by work environment (ILO listed in 2.1.7. section; and ICD-10 listed code: J45.0). Chronic obstructive pulmonary disease (ILO listed in 2.1.9. section; and ICD-10 listed code: J44.0) was also found in the RMG workers. It was caused by inhalation of dust arising from work activities [17-18]. In this point of view, proper ventilation and cleaning system helps to reduce that kind of work-related respiratory diseases by removing as much of the respiratory diseases oriented health hazards as possible.

Health hazard relating to occupational contact dermatitis (OCD) is very common in the cloth manufacturing industries [13]. Generally, repetitive contact with certain chemical hazards in the dyes and finishing sections induced allergic contact dermatitis (ILO listed in 2.2.4. section; and ICD-10 code L23.4) and irritant contact dermatitis due to frequent use of washing detergents (ILO listed in 2.2.2. section; and ICD-10 code L24.0). Chen et al. (2017) also claimed that the following preventive measures could contribute to the reduction of contact dermatitis: proper education on skin diseases of all employees about washing hands and others exposed areas of the body as well as advocating the garments employers to keep the working environment neat and clean.

Ergonomics health hazards are becoming a very important exposure causing musculoskeletal disorders (MSDs) in the RMG industries. Sitting is important to work for long period of time without consuming heavy energy but, prolonged sitting with abnormal or physically detrimental position induced work-related musculoskeletal disorders such as back pain (ICD-10 code M54.5), hip joint pain (ICD-10 code M65.8), neck (ICD-10 code M54.0) and shoulder pain (ICD-10 code M75.0) [8, 12, 14, 17, 18-20]. Sewing, cutting, knitting and linking workers in the RMG industries are working for long period of time with a static posture and repetitively moving their wrist joint and elbow joint, which have been resulting in carpal tunnel syndrome of the wrist and tenosynovitis of the hand and wrist (ILO listed in 2.3.7., 2.3.1. & 2.3.2. sections; and ICD-10 code M70.0-M70.1) and olecranon bursitis of the elbow (ILO listed in 2.3.3. section; and ICD-10 code M70.2-M70.3) [11-13]. Besides the employees of some sections in the RMG industries have to work in kneeling position for a long period of time which can lead to prepatellar bursitis in knees (ILO listed in 2.3.4. section; and ICD-10 code M70.4) and meniscus lesions in knees (ILO listed in 2.3.6. section; and ICD-10 code M70.5) [18-21].

Workers who contracted WRD's were going through the psychological disturbance because of the fear of losing their job. In addition, the current study revealed that there are many employees in the garments industries who have been suffering from post-traumatic stress disorder (ILO listed in 2.4.1. section; and ICD-10 code F43.1) caused by several damaging exposures like harassment, rape and other physical, sexual, verbal and psychological distress [22]. The employees in the RMG industries, in particular female workers were experiencing depression, anxiety (ICD-10 code F41) and behavioral problems (ILO listed in 2.4.2. section; and ICD-10 code F59.0) due to long working hours and physical and psychological abuses from the male employees [9]. Therefore, it is also important to educate all the employees about gender sensitivity and women rights in the working environment.

Additionally, this study found some general diseases which are not specifically

listed in the ILO occupational diseases and in the OD list of the Bangladesh Labour Act. Hossain et al. (2019) and Solinap et al. (2019) reported that maximum employees in the garments industries were young women and they are suffering from anemia, dyslipidemia, malnutrition and reproductive complications due to their poor diet chart or lack of consumption of healthy foods. Similarly, this kind of life styles such as long working hours, lack of sleep, and hypertension (ILO listed in 4.2. section; and ICD-10 code I10-I15) are enhancing the risk of cardiovascular diseases (ILO listed in 4.2. section; and ICD-10 code I60-I69).

2.5 Literature review on gaps in the healthcare system in RMG sectors

BSR, a non-profit organization, in 2014 presented a working paper to identify the gaps in healthcare services and facilities inside factories in the RMG industry in Bangladesh. The working paper identified five main gaps in the healthcare system available at RMG factories:

1. Nurses lack necessary skills and qualifications to perform their job optimally;
2. Insufficient attention is given to health education and promotion of women's health issues;
3. Clinic facilities require upgrading to better serve health needs;
4. Factories' healthcare management systems require strengthening; and
5. Healthcare staffs are insufficiently prepared to respond to emergencies.

Summary

- The most common form of injury among employees is cut injury in fingers due to needle punctures. Many workers are involved in operating machinery, which is the leading source of injury, with the hand being the most common site.
- The morbidity pattern shows that musculoskeletal pain is the most common form of illness among garment workers.
- Many women had neurological problems.
- Malnutrition and anemia and exposure to infections are all problems that many female employees face in garments industry.
- Respiratory/ pulmonary illness was also found common among garments workers.
- Healthcare professionals including nurses and doctors are insufficiently prepared to respond to emergencies.

Chapter 3

Qualitative survey

Each year, many occupational injuries occur in garments factories in Bangladesh. This chapter mainly focused on identifying the occupational injuries and morbidity pattern among the garments workers and the challenges of health management in the industry. Thus we conducted a thematic analysis based on the interviews from healthcare providers practicing in garments industry.

3.1 Key Informant Interviews

Key informant interviews were conducted with 18 participants, including male and female participants from healthcare providers who are currently working or employee from the garments industry. The distribution of Key Informant Interviews (KII) is given in the Table 3.1. The highlights from their perceptions and observations on health and health services, occupational diseases, and gender-based violence (GBV) are elucidated below.

TABLE 3.1: Distribution of Key Informant Interviews (KII).

Identity	Number (n=18)	Gender Distribution	Roles
Big and Compliant factories with ≥ 1000 employees	8	M: 2, F: 6	Current doctors: 6(M:2, F: 4) Ex-employee: 2 (F:2)
Small and Compliant factories with ≤ 500 employees	4	M: 2, F: 2	Current doctors: 2 (M:1, F:1), Ex-employee: 2 (M:1, F:1)
Nurses	2	F: 2	Current: 2
Management professional	4	M: 3; F: 1	Manager/ Administration: 4

3.2 Limitation of the survey

- A small number of KII was conducted with healthcare professionals.
- Due to COVID-19 situation, telephone interview was conducted.
- Inclusion of the participants might introduce selection bias due to a snowball technique was applied.

- No in-depth-interview was conducted with garments workers.
- No FGD was conducted with healthcare professionals and managements.

3.3 Data collection and analysis

The BBDN advised that the KIs with healthcare professionals be done. The discussions began with a brief explanation of the research's goal. During the interviews, the following topics were raised: (1) access to healthcare for garment workers (2) employment health issues (3) work environment and perceived factors influencing health problems (4) challenges of providing health-care services. Over the phone, appointments were set to do the KIs in a zoom meeting or a straight phone call.

The KIs were conducted by two female researchers: one facilitated the discussion while the other assisted with the logistics of gathering the healthcare professionals and taking notes as needed. Each interview lasted 15 to 20 minutes and was recorded with a digital audio recorder. All of the KIs were conducted in Bengali by a native speaker, with data translation done by the other researcher.

A qualitative thematic analysis approach was used to examine the data. All audio recordings were transcribed and validated before beginning the investigation. Before coding, all interview transcripts were entered into Atlas-ti version 5.2. By reading and re-reading the transcripts, the data was coded based on categories and trends. For this investigation, two researchers independently coded these transcripts and created a codebook. The researchers were able to explore problems relevant to the study of how the working environment and gender roles may affect the health of garment workers and challenges of giving services.

3.4 Access to Health Service Facility

The healthcare professionals urged for easier access to specialized or emergency health services for garments workers. They believe that the workers are only given primary care and referred to hospitals where the relevant service is available. The management and health professionals believed that referrals to hospitals outside the workplace are not a cost-effective measure. Inside the workplace, treatment and medicines are free, and anyone can access them regardless of their age, gender, location of residence, etc. Healthcare professionals believed that nobody is given additional preference in terms of quality service or good behavior by the health service providers inside the factory; rather all are treated equally. This response should be validated by taking in-depth interview from the garments workers.

On asking a female healthcare professional (at age 26 in her early career) if equal treatment is provided to all, she answered,

The garments workers are valued more than us. We give extra preference in the health service facilities to them.

An ex-employee (at age 32) who worked earlier in the industry mentioned a need of smooth access to primary health services. He said,

Here, strict monitoring was regulated in taking health service due to avoid false visit to the facility and female employees were reluctant to take health services since he was a male doctor.

Another female healthcare professional (at age 27 and working in garments industry for 2 years) commented on disease diagnosis,

We do not have diagnostic facilities here, so we refer many patients to other secondary or tertiary hospitals.

Highlights

- Both male and female healthcare professionals should be employed in the garments industries.
- In the industry, only primary healthcare treatments are accessible. No dental care, emergency care or public health services are available in the industry.
- Female employees are hesitant to see a male doctor, despite the fact that all employees are treated similarly at the institution.

3.5 Reporting of diseases among garments workers

The healthcare workers of this study shared their own experience of reporting health complaints from garments workers. Most workers usually come for acute diseases like fever, headache, eating disorder and so on. The injury is also prevalent in the industry especially in fingers. The back pain, respiratory illness and infectious disease are also common in some instances.

A 26-years female healthcare provider working in the industry mentioned that

Most of the female workers usually came at her to report that they suffer from headaches, eye complaints, body aches, and fatigue.

Another ex-employee male healthcare professional stated that

Dysuria, joint discomfort, hypertension, vision problems, sleeplessness, asthma, anxiety, gout, diabetes, and cardiovascular diseases were identified to be the most common health problems among garment workers.

Highlights

- Back pain is very common in the garments workers.
- It is not surprising that a health condition like dysuria (painful or difficult urinating) is so common among young female garment workers. Dysuria is linked to urinary tract infection, vaginitis, urine retention, and sexually transmitted diseases.
- Skin diseases and respiratory illness was mentioned by many healthcare workers.
- There were no reports for mental health assistance to the healthcare workers, however there was reports with insomnia.

3.6 Work environment and perceived factors influencing health problems

3.6.1 From the field

Working environment is critical to the industry's performance since it influences not just employees' physical health but also their mental health. Gender-based violence (GBV) created a massive problem in any society, yet it is a much less visible human rights violation globally. It includes physical, sexual, mental, or economic harm inflicted on a person because of socially ascribed power imbalances between males and females. It also includes the threat of violence, compulsion, and deprivation of liberty, either in public or private. Questions were asked how GBV was addressed in the garments workers and how offenders were punished. The response from a female healthcare worker was:

People in this industry have no idea what GBV is. For example, many people believe that being criticized (or verbal abuse) by coworkers or managers in public is quite acceptable.

On being asked about how the work environment impact on health issues in the industry, a female nurse said,

The garments workers are perpetually exhausted due to their persistent sitting in one posture without a backrest and the incessant noise from hundreds of machines. Thus, musculoskeletal injuries, pain, and fatigue are common here.

On the same question, a male doctor said,

The poor lighting, inhaling the fabric dust, and heat in the factory environment may contribute to the headaches and eye irritation. Also, many of them have been working in the sector for a long time and are suffering from malnutrition.

Another healthcare worker elucidated on the matter,

Every day, workers come to health facility with needle punctured finger injuries. Workers, on the other hand, were given needle guards to wear on their fingers, although they dislike wearing them because the needle guards slow down their work.

Highlights

- It is critical to raise awareness and distribute knowledge about GBV. In the case of GBV, a health-seeking attitude must be promoted so that occurrences can be brought to the attention of authorities as soon as possible, and appropriate actions can be taken. In addition, the entire process must be defined, including where to seek assistance, how to file such complaints, and so on.
- It is also important to address the problem of malnutrition among the garments workers.
- Factory management can conduct health education and launch initiatives to raise awareness about these avoidable problems.

3.7 Challenges of providing healthcare services.

Access to healthcare services is critical to good health, yet garments workers face a variety of service barriers. A number of the difficulties were highlighted by the caregivers, and here are a few of the statements that reflect the challenges.

A male doctor who left the job from a garments industry mentioned that

Within a given industry, garment workers have only access to limited number of primary care physicians. They are frequently referred to emergency situations or for chronic disease management. Patients may find traveling to an outside hospital to be costly and inconvenient.

A nurse currently working in an industry mentioned,

Only minor injuries and a few acute illnesses are treated here; otherwise, they are referred to outside facilities. We are unable to screen or treat them because we lack the necessary resources.

Highlights

- Shortage of healthcare professionals for many garments workers.
- Lack of trainings to manage many health issues.
- Lack of preventive and screening services and medication of illnesses.

Chapter 4

Training curriculum on managements of WR&ODs in the RMG sector

The manual is developed through conducting a literature review, and key informant interviews in health care professionals who had experience working in the environment of garments factory. Beside we took advise from occupational experts from CRP before finalising the document.

4.1 Aim of the training curriculum

To provide healthcare providers at garments industries with the necessary knowledge and skills to understand work-related and occupational diseases and provide health care in order to prevent and manage the illnesses.

4.2 Training participants

The training will be provided to the health care providers, employers, and compliance and safety professionals of ready-made garments industries in Bangladesh.

4.3 Training layouts

The Appendix provides a draft template of a training curriculum on identification and management of WR&ODs. This proposed training template will be used to provide healthcare providers and other stakeholders with training. The first two days will be spent learning about health issues, and the last three days will be spent learning about disease management, which will be led by expert health professionals.

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Training Layout

Time	Topic	Objective	Methods and Materials	Outcome	Trainer/s
Day 1	Opening ceremony	To make trainers and trainees to meet and greet each other and to give an overview of the training.	Presentation on training and trainers of the program	Positive and adult-learning friendly training environment	Host organisation and experts
Session 1 Time: 4 hours	Introduction to trainers and participants				
	Explanation of training program				
	Pre-evaluation of knowledge on Occupational Disease (OD)	To identify the knowledge gap	Short survey questionnaire	Baseline measurement	Health Care Professionals
	Introduction to occupational disease	To get an overview of occupational diseases	Presentation on the topics	Increased knowledge on OD	Occupational Physician
	OD prescribed by the ILO	To increase the theoretical perspective of OD based on ILO	Presentation on the topics	Increased knowledge on OD	Industrial physician
Lunch Break					
Session 2	OD prescribed by the Bangladesh Labour Act	To increase the theoretical perspective of OD based on BLA	Presentation on the topics	Increased knowledge on OD	Industrial physician
Time: 3 hours	Workplace hazard identification, assessment, and preventive measures to improve the physical environment	Get to know the steps involved in hazard identification, assessment and preventive measures to improve the physical environment	Presentation and Assessment on the topics	General knowledge about the exposures and how to identify them	Occupational Health and Safety Specialist and Occupational Therapists

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	Health professionals working for OD management	Get to know the available services and gaps	Presentation and video on the topics	General knowledge and understanding about the referral system	All Trainers/ Health care professionals
	Q & A Session	To clarify thoughts and understanding	Discussion		
Day 2	Summarise/ review lectures				
Session 1 Time: 4 hours	Essentials of ODs in ready-made garments sector	To know the current practice and challenges in the sector		General knowledge and understanding of OD in national perspective	Industrial physician
	Health hazards in the RMG sector: Overview of all the agents found in the narrative review	Get to know the current evidence		General knowledge and understanding of OD in international perspective	Industrial physician
	Identification of the ODs (six step approach of measuring work related disease)	To know the systemic approach	Presentation and practical demonstration on the topic	Increased understanding regarding identification of ODs	Industrial physician
	Reporting, Compensation and/or health insurance available for OD treatment				Employers
Lunch Break					
Session 2	Diseases caused by physical agents	To know the overview of the disease, causes, symptoms, types (if any), management and	Presentation on the topics	General knowledge, understanding, prevention	Industrial physician

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Time: 3 hours	Hearing impairment	prevention of diseases caused by physical agents		and management of the diseases	ENT Specialist and Speech and Language Therapist
	Disease caused by exposure to extreme temperature				Industrial physician
	Skin diseases	To know the overview of the disease, causes, symptoms, types (if any), management and prevention of skin diseases.	Presentation and illustrations available on the topics	General knowledge, understanding, prevention and management of the diseases	Dermatologist
	Irritant contact dermatoses				Dermatologist
	Other skin disease caused by chronic use of chemical agents at work activities				Dermatologist
	Q & A Session	To clarify thoughts and understanding	Discussion		
Day 3	Summarise/ review lectures				
Session 1 Time: 4 hours	Biological agents and infectious or parasitic diseases	To know the overview of the disease, causes, symptoms, types (if any), management and prevention of diseases caused by biological agents	Presentation on the topics	General knowledge, understanding, prevention and management of the diseases	Dermatologist
	Hepatitis viruses (Jaundice)				Dermatologist
	Fungal infections				Dermatologist
	Q & A Session	To clarify thoughts and understanding	Discussion		
	Respiratory diseases	To know the overview of the disease, causes, symptoms, types (if any), management and prevention of diseases caused by respiratory agents	Presentation on the topics	General knowledge, understanding, prevention and management of the diseases	Pulmonologist/ Respirologist
	Silicosis				Pulmonologist/ Respirologist

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	Bronchopulmonary disease				Pulmonologist/ Respirologist
	Asthma				Pulmonologist/ Respirologist
	Chronic obstructive pulmonary disease				Pulmonologist/ Respirologist
Lunch Break					
Session 2 Time: 3 hours	Mental and behavioral disorders	To know the overview of the disease, causes, symptoms, types (if any), management and prevention of mental illness and behavioural disorders and reporting the mental health issues if arise	Presentation on the topics	General knowledge, understanding, prevention, management and reporting of the diseases	Psychiatrist, Psychologist and Occupational Therapist
	Post-traumatic stress disorder				
	Sleep disorder				
	Anxiety				
	Depression				
	Q & A Session	To clarify thoughts and understanding	Discussion		
Day 4	Summarise/ review lectures				
Session 1 Time: 4 hours	Musculoskeletal disorders	To know the overview of the disease, causes, symptoms, types (if any), management and prevention of musculoskeletal disorders	Presentation and video on the topics	General knowledge, understanding, prevention and management of the diseases	Occupational Therapists and Physiotherapists
	Radial styloid tenosynovitis of the wrist				Occupational Therapists
	Chronic tenosynovitis of hand and wrist				Occupational Therapists
	Olecranon bursitis of the elbow				Occupational Therapists
	Prepatellar bursitis in kneeling position				Physiotherapists

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	Epicondylitis of elbow				Occupational Therapists
	Meniscus lessons in a kneeling or squatting position				Physiotherapists
	Carpal tunnel syndrome of the wrist				Occupational Therapists
	Back pain (Low Back Pain & upper back pain)				Occupational Therapists and Physiotherapists
	Neck pain				Occupational Therapists and Physiotherapists
	Shoulder pain				Occupational Therapists and Physiotherapists
	Pain in hip joint				Physiotherapists
	Q & A Session	To clarify thoughts and understanding	Discussion		
Lunch Break					
Session 2 Time: 3 hours	Other diseases	Getting to know the overview of the disease, causes, symptoms, types (if any), management and prevention of other diseases.	Presentation on the topics	General knowledge, understanding, prevention and management of the diseases	Industrial physician
	Cardiovascular diseases (CVDs)				
	Obesity				
	Hypertension				
	Diabetics				
	Dyslipidaemia				

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	Anaemia				
	Malnutrition				
	Women's Health				
	Q & A Session	To clarify thoughts and understanding	Discussion		
Day 5	Summarise/review lectures				
Total Session Time: 4 hours	Q & A Session	To clarify thoughts and understanding	Discussion		
	Post-training evaluation	To measure the overall knowledge about the topic		New knowledge and skillsets	Trainers/ Health Care Professionals
	Written test		Short questionnaire		
	Case presentation		Group work		
Closing remarks of the training					

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