

# Influencing factors of occupational safety and health in Readymade Garments Industry - a systematic literature review

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## Abstract

**Objectives:** This systematic literature review contributes with the occupational safety and health (OSH) issues in Bangladesh especially in Ready Made Garments (RMG) industry. The objectives of this systematic literature review is to investigate the present status of OSH available in practical and according to policy.

**Method:** This systematic literature review has designed according to PRISMA guidelines. Investigators screened and abstracted related to RMG and garments sector that individually published papers and journals from the electronic database especially in PubMed and google scholar. The searching keywords Papers were selected that published between 2002 and 2017.

**Result:** Most of the studies relate to occupational safety and health which are available in Bangladesh. This review is related to OSH services available for the RMG workers in Bangladesh. Out of 230 papers, only 09 papers met the criteria. Data has been extracted from the selected studies.

**Conclusion:** Most of the studies carried among the female. Occupational safety and health problems among RMG workers was identified workers in this systematic literature review.

**Keywords:** Occupational safety and health (OSH), Readymade garment (RMG), Bangladesh, knowledge.

## 1. INTRODUCTION

The readymade garments industry acts as a compound for the development of Bangladesh. Bangladesh has the limited resources to maintain 6% annual average GDP growth rate but has brought about remarkable social and human development. The readymade garment (RMG) industry which is now the single biggest export earner for Bangladesh that accounts for 81% of total export earnings of the country [1]. Regardless of absolute success story, RMG sector has got a number of terrible challenges for the future growth. The present study has made a search present status and challenges of occupational safety and health available in RMG industry in Bangladesh [2]. RMG industries faced many challenges for getting success in this sector. The growth of this industrial sector has changed the status of Bangladesh from low to middle income country [3].

The new form of compliance assurance has been experienced by the stakeholders of RMG in 2013 for the first time. Types of buyers and international trade unions involved to ensure workplace safety at the manufacturers' end. In addition, local entrepreneurs also have to ensure high level of safety standards and maintenance at their own factories. RMG workers have been able to understand the safety-related issues and concerns to respond in case of emergencies in the factories [4]. Not only safety but also occupational health is

the most important section which need to be improved.

Occupational safety and health is the science of anticipation, recognition, evaluation and control of hazards arising in or from the workplace, which could impair the health and well-being of workers, and also impact the surrounding communities and the environment [5].

### Research questions:

1. What are the influencing factors of occupational safety and health for RMG workers?
2. What is the level of practice in readymade garments workers about Occupational safety and health in Bangladesh?

### Research Objectives:

The aim of this systematic literature review was to evaluate peer reviewed journals to investigate not only the Knowledge about RMG workers which is essential to know but also the practices of occupational safety and health available in RMG industry in Bangladesh.

## 2. DESIGN

We conducted this systematic literature review according to the requirement of preferred reporting items for systematic reviews and meta-analyses (PRISMA) [6] which is transparent reporting in literature review. Thus PRISMA statement consists of a 27-item checklist and a four-phase flow diagram [7] and an evidence-based systematic literature review that focused on reviewing to evaluate recent research studies. Since the PRISMA checklist “decouples” several items present in the QUOROM [8] checklist, we used the PRISMA check list to do this review.

## 3. MATERIALS AND METHODS

In this systematic literature review, we searched for relevant English language papers from the electronic database like PubMed and google scholar by using the key terms. The following keywords are used during the searching like knowledge about occupational health and safety, readymade garment’s worker, practice about OSH. We have also used mesh words to search the databases. After this initial steps, we used DistillerSR [9], one of the best SLR evidence based software’s to do screening the title and abstract. We also studied the references list of the relevant research papers to search for more studies. Nearly, 230 research papers were found during searching different electronic databases. 35 papers were selected in this review after analysing full paper. According to inclusion criteria, 09 papers are selected finally for the data extraction in this systematic literature review.

### Selection Criteria

- We set few criteria to select papers into our selection criteria, which are as follows
- Papers published on occupational safety and health of RMG workers.
- We have chosen the paper published from January 2002 to March 2017.
- We also included those papers that were on RMG workers related to Bangladesh.

### Exclusion Criteria

- The exclusion criteria of the research papers were as follows
- Papers were not published between 2002 and 2017
- Papers published in other languages except English.
- Papers are not related to the occupational safety and health and RMG workers.

## 4. DATA EXTRACTION

For the data extraction, we used author names, publication year (which was published recently), study design (those contained about knowledge about OSH and practice about OSH in RMG workers). We summarise this review based on the research articles published on occupational safety and health of RMG workers [10]. We have also extract the knowledge and practice about occupational safety and health of RMG workers in Bangladesh. I did not contact with any

author for further information but we use the references of the selected papers for further studies.

The research papers are selected for this systematic literature review to extract data from Journal of the Faculty of Economics and Administrative Sciences, International Journal of Scientific & Technology Research, Journal of Mechanical Engineering, Journal of Asian Development Studies, Journal of Dhaka Medical college, Developing Country Studies, Public Library of Science and Journal of Applied and Advanced Research.

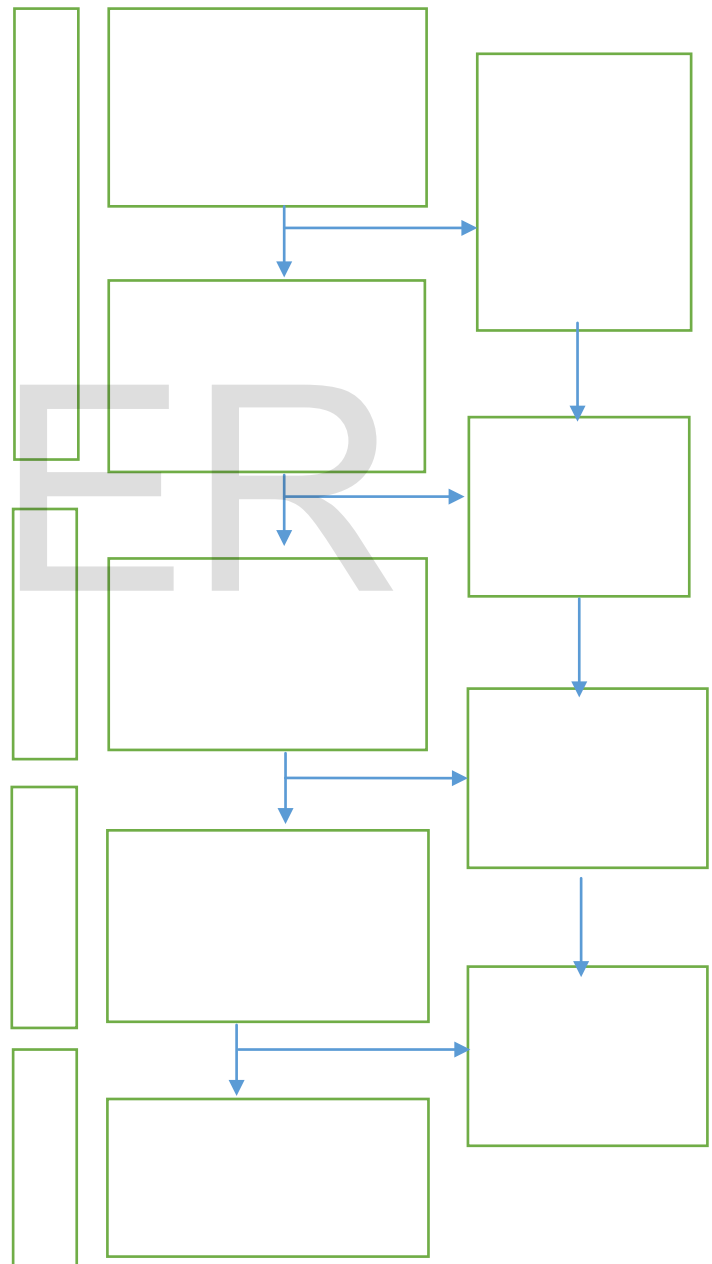


Figure 1: PRISMA format to select papers

### 5. RESULT AND DISCUSSION

There are a lot of criteria about occupational safety and health set by the ILO and other international buyers. But it very unfortunate that most of the RMG workers did not get the OSH facilities in the RMG industry [10].

As shown in Figure 2, out of 9 papers included in this SLR paper, 23.0% of the papers were published in Public library of science journal. Meanwhile, 22.0% of the papers were published in Journal of applied and advanced research. The rest of papers were published in Journal of The Faculty of Economics and Administrative Sciences (11.0%), International Journal of Scientific & Technology Research (11.0%), Journal of Asian Development Studies (11.0%), Journal of Dhaka Medical College (11.0%) and Developing Country Studies (11.0%).

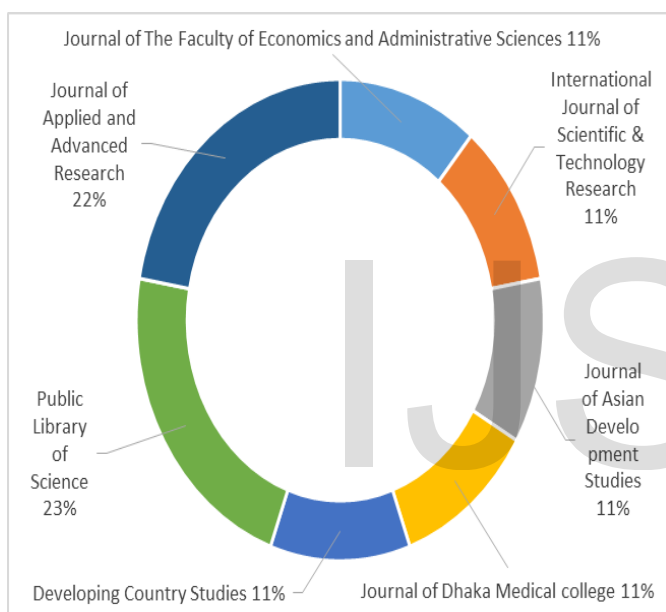


Figure 2: Statistics of reviewed papers for this SLR

Occupational safety is a multidisciplinary field concerned with the safety, health, and welfare of people at work. In addition, occupational health refers to the identification and control of the risks arising from physical, chemical, and other workplace hazards in order to establish and maintain a safe and healthy working environment.

According to the ILO standard, the influencing factors of occupational health and safety are listed in the table 1. In addition, data extracted from the selected papers on OHS. Table 1 shows that, the list OHS facilities are provided in ready made garment’s workers in Bangladesh, according to published papers from the secondary sources. From the data of this table 1, it is indicated that very few OHS facilities like first aid box and enough light in workplace, are provided to the RMG workers. There are many other OHS facilities like sanitation system, proper air circulation, Health and safety training, cleanness of the workplace etc. are not available in the workplace for the RMG workers.

Table 1: Present status of Current OHS in RM Garments

Selected Papers	(Samaddar., 2016) [11]	(Nasima, 2016) [12]	(Akhter et al., 2010) [13]	(Alam, 2016) [14]	(Ahmed et al., 2014) [15]	(Khan et al., 2015) [16]	(Hossain et al. 2018) [17]	(Roy et al., 2015) [18]	(Islam et al., 2016) [2]
<b>First aid box</b>	1	1	1	1	1	1		1	1
<b>Light</b>	1	1	1	1	1	1		1	1
<b>Width of stairs</b>	1	0	0	0	0	0		0	0
<b>Air circulation</b>	1	1	0	1	0	1		0	1
<b>Sanitation system</b>	1	0	0	1	1	1		0	0
<b>Pure drinking water</b>	1	0	0	0	0	1		0	0
<b>Safety sign</b>	1	0	0	0	0	0		0	0
<b>Eye Guard</b>	1	0	0	1	1	0		0	0
<b>Apron</b>	1	0	0	0	0	0		1	1
<b>Face mask</b>	1	0	1	0	0	0		1	0
<b>Regular health in- spection</b>	1	0	0	1	0	0		1	0
<b>Safety operating procedure</b>	1	0	1	0	0	0		1	0
<b>Heat insulator</b>	1		1	1	0	0		1	0
<b>Health &amp; safety train- ing</b>	1	0	0	0	1	0		0	0
<b>Working time</b>	1	1	0	0	0	0		0	0
<b>Noise level</b>	1	0	1	0	0	0		0	0
<b>Temperature level</b>	1	0	0	0	0	0		1	0
<b>Dust control system</b>	1	0	0	0	1	0		0	1
<b>Cleanness of Work- place</b>	1	0	0	0	0	0		0	0
<b>Hand Gloves</b>	1	0	0	0	1	0		0	0
<b>Working space</b>	1	0	0	0	0	0		0	0

In order to answer second research questions, I have extracted data from the selected papers and that is showed in the Figure 2. Readymade Garment (RMG) Sector in Bangladesh has been playing a vital role in creating employment opportunity for the rural marginal people for the last two decades. From the selected reviewed papers, most of the research was conducted on occupational safety and health. Among them 62.5% studies found that Readymade Garments were provided first aid and pure drinking water services. 50.0% of the readymade garments available in Bangladesh have the emergency exit facilities. In addition, Proper waste management facilities were available in 37.5% RMG’s. Since, more than 80 % workers of RMG’s are female, garments must have Hygienic environment and proper training are also required. Only 25.0% RMG’s have hygienic working environment, clean toilets and medical

support facilities. Most of the RMG's didn't have training program to make awareness of occupational safety and health and first. Only 12.5% RMG's were providing training on OSH and first aid.

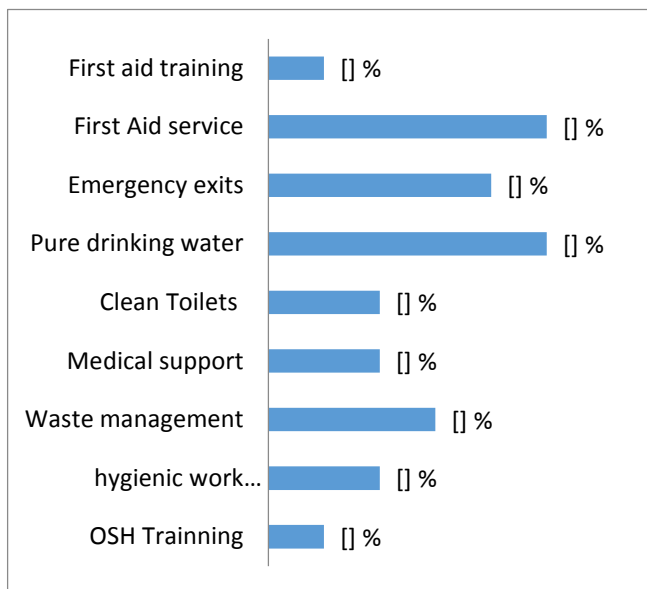


Figure 3: OHS practice in RMG workers in Bangladesh

## 6. CONCLUSION

The Systematic literature review has extracted an overall scenario of the selected peer reviewed research papers which was published on the context of occupational safety and health condition of readymade garments. In this SLR, I have justified the influencing factor of OSH among the RMG workers in Ashulia and the practice level of OSH in these RMG workers. The worst findings among the eight investigated papers are OSH training and hygiene working environments which are require immediate attention from the regulators. In health hazard condition, the factor named cleanliness is worst compared to other factors in the RMG's in Ashulia. In addition, most of the garments have no proper dust control system which has an injurious impact on workers' health especially respiratory problem and leads to overall inefficiency.

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