

# To Study the Relationship Between Ergonomics & Efficiency of the Housekeeping Employees at Workplace

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## Abstract

Housekeeping is a very physically demanding job that includes many tasks. Evaluating the housekeeping services, one finds that many of the tasks are repetitive in nature such as bed making, buffing, and vacuuming, emptying garbage, tidying, dusting and cleaning floors. Housekeeping room attendants are required to carry or move tons of trash and used linen every day and it is easy to see that many of the injury types are directly related to the tasks performed in housekeeping operations. Ergonomics is the practice of designing equipment and works tasks to suit to the capability of the worker. It would definitely reduce the risk of musculoskeletal disorders to the housekeeping staff. The primary goal of this research work was to study, the awareness about the Ergonomics in the current hotels and its direct relationship with the efficiency of the housekeeping staff. The study was carried out on the basis of evaluating the awareness, the application and the effects of Ergonomics in the housekeeping department. The overall conclusion of presented studies is that housekeeping job consists of tasks which may easily lead to muscular injuries which effect on the efficiency of the housekeeping staff. The hotels can make combine efforts to consider ergonomics principles in their work environment to suit the working conditions of the housekeeping staff.

**Keywords:** Housekeeping, Ergonomics, Musculoskeletal Disorders

## Introduction

### Hotel Housekeeping

Housekeeping is one of the major revenue generating departments of the hotel. The major function of the

housekeeping department is to maintain the cleanliness and the aesthetic appeal of the hotel. The first impression that the guest generates is when he enters the hotel room and judges it in terms of décor and comfort in the room. The housekeeping room attendant in a shift of nine hours is expected to clean sixteen rooms under various status. Thus the job of room attendants is of repetitive nature and is very tiring. To add to the current scenario, hotels are increasing the burden on the housekeeping staff to survive the increase in the competition which includes Heavenly beds and extra room amenities, etc.

### Musculoskeletal Disorders (MSD)

Musculoskeletal injuries most associated with housekeepers. Musculoskeletal (also known as soft tissue) defines anything to do with the relationships of bones and various tissues, ligaments, tendons and muscles in the body. Injury occurs when the body part is called on to work harder, stretch farther, lift more or otherwise function at a greater level than it is prepared for, resulting in strains or tears to the soft tissue. Without enough time between exertions to heal and / or repair, the muscles, tendons and joints can be damaged. When the activity occurs repeatedly, the constant trauma may cause serious damage. Repetitive-motion injuries are soft tissue injuries that usually occur gradually over a long period of repeated exposure to low-level harmful conditions, but they can occur more quickly based on rate, intensity and severity of the exposure. In hospitality, musculoskeletal injuries account for nearly 62 percent of all housekeeping injuries and often result in loss of flexibility and strength, overexertion, muscle fatigue and functional disability. The major injuries are caused during bed making process.

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## Injuries from Bed-Making

When lifting, your back works on a lever principle of a 10-to-one ratio to the object you are lifting. Bed-making duties, by nature, put the back in its weakest position because it involves awkward lifting, twisting and holding up the mattress while tucking in linens. Many of the motions used during bed-making tasks require the muscles to work at the same time as they are being stretched, making them more susceptible to risk of developing musculoskeletal disorders. To complicate matters further, many mattresses in today's hotels are placed close to side walls and nightstands, creating an even more awkward, dangerous and strenuous lift. Following images gives a clear picture of the awkward postures during various housekeeping tasks.

## Ergonomics

Ergonomics (from the Greek word *ergon* meaning *work*, and *nomoi* meaning *natural laws*), is the science of refining the design of products to optimize them for human use. Human characteristics, such as height, weight, and proportions are considered, as well as information about human hearing, sight, temperature preferences, and so on. Ergonomics is sometimes known as human factors engineering. According to Merriam Webster dictionary, it is an applied science concerned with designing and arranging things people use so that the people and things interact most efficiently and safely —called also biotechnology, human engineering, human factors.

In general it provides a means for adjusting the work environment and work practices to prevent injuries before they occur. Effective ergonomic design provides work procedures, tools and equipments which are comfortable and efficient for the worker to use. It also creates a work environment that is healthy, and it reorganizes the work process to control or eliminate hazards. Inappropriate and poor working postures, lack of task variation, poor ergonomic design of work places, poor design of cleaning tools and work organization (e.g., long working hours, low salaries and awkward schedules) are all areas where relatively simple interventions can significantly reduce the rate of exposure to occupational disease.

## Objectives of The Study

1. To understand the application of Ergonomics in Housekeeping department of a hotel.
2. To explore the awareness of Ergonomics amongst the Housekeeping staff.
3. To analyze the extent to which Ergonomics is followed by the hotels.
4. To study the impact of Ergonomics on the efficiency of the Housekeeping staff.

## Scope of Research

The scope of the research is applicable to the following:

1. Housekeeping staff of the five, four, star category hotels in Pune.
2. It is applicable to the cleaning practices followed in the guest room.
3. It is applicable to the guest room furniture and housekeeping equipment used for cleaning.
4. Health hazards related to the housekeeping staff.

## Hypothesis

- H0** There is no relation between the ergonomics practices and the efficiency of the housekeeping staff.
- H1** There is a relationship between the ergonomics and the efficiency of the housekeeping staff.

## Literature Review

1. **Amrik Singh, April 2015** in his research paper based on Hotel Housekeeping Innovative trends & modern practices mentioned about the challenges faced by the housekeeping department. One of them being the practice of following ergonomics techniques in hotels. The paper suggests that if hotels start following ergonomic techniques, it will lead to the growth of the hotel and in turn long term profitability.
2. **Amrik Singh, April 2014**, has presented an article to explore the challenges faced by the housekeeping department, modern practices and opportunities available.

3. **Montross & Chris, March (2013)**, focused on the musculoskeletal injuries of the **housekeeping** employees in United States. It mentions that recent trend of hospitality to remodel rooms for luxurious accommodations, leads hotels to use heavier, more cumbersome mattresses. It suggests the use of **ergonomic** systems that promote the use of safer body mechanics.
4. **A Booklet Prepared by UC System-Wide Ergonomics Project Team, May (2011)**. The objective of the project was to identify the problem areas and develop strategies to encounter with those problems. The project has confirmed that the housekeeping cleaners are exposed to a variety of ergonomics problems while working.
5. **Driessen, Maurice T., Proper, Karin I et al (2010)** in their research in participatory Ergonomics at workplace discovered that neck pain and lower back pain are major occupational health problems. They derived at the conclusion that PE can be a successful method to develop and to prioritize ergonomic measures to prevent Lower Back Pain and Neck Pain.
6. **Coşkuner, Selda; Hazer, Oya, March (2009)** Studied that housekeeping department involves repetitive jobs such as mopping, sweeping, emptying garbage, etc. where people are required to do a heavy jobs. These tasks results in musculoskeletal disorders. However effective Ergonomic practices would be worker friendly and increases the efficiency of the staff. .
7. **Ana María Seifert, Karen Messing, June, (2006)**, in their study did an ergonomic analysis of work activity of hotel cleaners. It mentioned that due to globalization and increased competition, the work load for the housekeeping cleaners has eventually increased.
8. **Rupesh Kumar (2006)** studied in their research practices the cleaning work processes, cleaning tools, working environment and psychosocial aspects amongst professional cleaners. The study concluded that by using an ergonomics approach and user centered design, cleaning related problems can be solved to a great extent.
9. **BC Research Inc Printed a Pamphlet**. The pamphlet contains general information about the tasks that contribute to Musculoskeletal Injuries (MSI). It

also gives tips to prevent high muscle forces, to prevent repetitive work, to prevent awkward postures, etc. According to it, the MSI prevention program is the responsibility of the employer.

10. **In the Studies Done by Hotel Workers Rising (2005)**, it was revealed that Hotel housekeeping area is more prone to health injuries than any other department of the hotel. This is because of the ever increasing demand from the guests, where hotel keeps amenities like heavy mattresses, thicker linen, etc. In the survey it was found that 91% of the people experience workplace pain.

## Research Methodology

**Primary Data Collection:** The first set of primary data can be collected with the help of information based on the structured questionnaire to the housekeeping employees who actually does the heavy task of cleaning, etc. and faced many musculoskeletal diseases or health injuries.

The second set of questionnaire would be floated to the management of the hotel who is responsible for the designing of the cleaning equipment and the SOP for cleaning procedures.

**Secondary Data Collection:** Secondary data is collected with the help of articles from literature reviews from published journals, published research papers, newspapers, magazines, etc.

## Data Analysis and Findings

### Data Collection

The primary data for the research was collected with the help of questionnaire as a tool for collecting data. The set of questionnaire comprising of five questions under various parameters was circulated to the housekeeping staff which includes the supervisors and the room attendants of the five star and four star hotels in Pune region. The questionnaire was comprising of five questions which were broadly classified under the following heads:

1. Awareness about Ergonomics amongst the Housekeeping staff of the hotel.
2. Application of Ergonomics in Housekeeping department.
3. Impact of ergonomics in Housekeeping department.

4. The first question is based on the general awareness of the concept of ergonomics.
5. The third question is the practice of ergonomics at work place.

The first question was based on the awareness about the concept of Ergonomics amongst the Housekeeping staff of the hotel.

### Findings

1. From the above pie chart it shows that 96 % of the Housekeeping staff is aware about the concept of ergonomics in Hotel Housekeeping.
2. It is noticed that there are very few about 4 % who are not aware about this concept.

The second question is about the study of Ergonomics based on its awareness. It is judged on five point rating scale ranging from most aware to least aware.

### Findings

1. Maximum housekeeping staff is aware that the musculoskeletal disorders (MSD) are related to the housekeeping tasks like bed making, cleaning, etc.
2. Maximum housekeeping staff is aware that ergonomics is the practice which can be followed to reduce the musculoskeletal disorders (MSD).
3. About 48% of housekeeping staff is aware that ergonomics is a practice of designing equipments.
4. About 44 % of housekeeping staff is aware that Ergonomics is a means for adjusting the work environment as per the convenience of the cleaning staff.
5. About 62% of the housekeeping staff is aware that Ergonomics is used for improving the efficiency of the Housekeeping staff.

The third question is based on whether Ergonomics principles are practised at their workplace or not.

### Findings

1. From the above pie chart it shows that 96 % of the Hotels surveyed follow the practice of ergonomics in Hotel Housekeeping.
2. It is noticed that there are very few about 4 % who do not follow the practices of ergonomics.

The fourth question is based on the application of ergonomics in Housekeeping department.

### Findings

1. From the above chart it is observed that more than 50% of the hotels studied apply the principles of ergonomics while selecting the housekeeping equipment.
2. It is also observed that more than 50 % of the hotels train the housekeeping staff to reduce the impact of musculoskeletal disorders (MSD).
3. Some hotels about 46% consider ergonomics principles while designing the guest room furniture.
4. Most of the hotels, about 74 % consider the application of ergonomics principles while standardizing the operating procedure for the housekeeping tasks.
5. A few hotels consider this while allocating the work to the housekeeping staff.

The fifth question is based on the impact of practicing ergonomics principles at the housekeeping department.

### Findings

1. It is observed that about 48% hotels agree that if ergonomics principles are applied in the hotel guest room, they provide comfort to the Guest room attendants.
2. It is also agreed by the hotels that, if ergonomics principles are applied while cleaning of the guest rooms, it improves the efficiency of the housekeeping staff.
3. About 60% of the hotels agree that if ergonomics principles are followed, they reduce the working time of the room attendants.
4. It is also observed that it reduces the fatigue while working in guest rooms.
5. This ultimately reduces the absenteeism amongst the housekeeping staff which may otherwise occur due to absence of ergonomics practices.
6. A few hotels believe that ergonomics could be one of the factors to reduce the turnover amongst the housekeeping staff.
7. A few hotels see guest comfort as an impact of following housekeeping practice.



## Observations and Findings

From the above study following observations can be drawn:

- 1 Most of the hotels studied are aware about the concept of Ergonomics and its application in hotel housekeeping.
- 2 Hotel housekeeping staff is aware that the musculo-skeletal disorders (MSD) are caused due to repetitive and heavy housekeeping tasks like bed making, cleaning, etc.
- 3 Hotel housekeeping staff is aware that Ergonomics is the practice which can be followed to reduce these injuries to a great extent.
- 4 They are also aware that Ergonomics can be considered while designing housekeeping cleaning equipment for comfortable working.
- 5 They are aware that Ergonomics can help adjusting the work environment as per the convenience of the housekeeping staff.
- 6 That it helps in improving the efficiency of the Housekeeping staff.
- 7 Most of the hotels follow Ergonomics principles at their workplace.
- 8 Some hotels consider ergonomics while selecting the housekeeping equipments.
- 9 Hotels also train the housekeeping staff to reduce the impact of musculoskeletal disorders (MSD).
- 10 Some hotels consider it while designing the guest room furniture.
- 11 Most of the hotels, apply ergonomics principles while standardizing the operating procedure for the housekeeping tasks.
- 3 Job rotation in other housekeeping areas is required to avoid overtime.
- 4 Backup staffing should be done to accommodate unplanned absences.
- 5 Frequent rest breaks to avoid the monotonous and heavy housekeeping job should be provided.
- 6 While considering selection of housekeeping equipments, automated equipments like floor cleaning should be selected to reduce physical risks associated with manual mopping.
- 7 No-touch cleaning systems and automatic scrubbers can significantly reduce ergonomic risks and provide a higher level of cleaning, especially for larger areas.
- 8 For bathrooms cleaning consider using upright mops with long handles.
- 9 Consider adjustable mop handles with a curved & swiveling handle for larger areas that do not require automatic scrubbers.
- 10 Appropriate sized casters should be selected for easy rolling and maneuverability.
- 11 Toilet brushes (Johnny mops) with angled brushes and longer handles reduce bending and awkward wrist postures when cleaning toilets.
- 12 Ergonomists should be consulted before buying housekeeping cleaning equipment.

## Suggestions and Recommendations

Based on the above study based on Ergonomics in housekeeping following suggestions and recommendations can be made:

- 1 On the job training should be provided to the housekeeping staff to make them aware about the ergonomics practices.
- 2 The training should be based on proper use of equipment so as they do not exert the body.

## Conclusion

This study has confirmed that the housekeeper service workers are exposed to a variety of ergonomic risk factors and have a high risk of injury. In order to reduce injuries, both physical and psychosocial risk factors must be considered when developing system-wide strategies. These strategies should focus guest room cleaning procedures, trash/recycle and linen handling, mopping and bathroom cleaning and vacuuming and lifting/moving furniture.

Though hotels are aware about the physical injuries caused to their housekeeping staff for not following the ergonomics principles, less attention is given to the root cause. This ultimately causes issues like absentism, high turnover of the housekeeping staff, fatigue and low productivity. This way the inefficiency of the staff to perform as per the standards of the hotels reduces which may lead to further loss to an organization.

Proper intervention by the hotels should be taken by the hotels to ensure that the least problems are caused and that safe cleaning methods are followed to improve the efficiency of the staff.

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