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POSTURE RELATED MUSCULOSKELETAL DISCOMFORT AND OCCUPATIONAL HEALTH HAZARDS EXPERIENCED BY THE HOTEL STAFF OF VADODARA CITY

APRIL 2025 **Ms. Ravina Rathod**

POSTURE RELATED MUSCULOSKELETAL DISCOMFORT AND OCCUPATIONAL HEALTH HAZARDS EXPERIENCED BY THE HOTEL STAFF OF VADODARA CITY

A DISSERTATION

SUBMITTED TO

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA,

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(HOSPITALITY AND RESOURCE MANAGEMENT)

By

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CERTIFICATE

This is to certify that the thesis entitled " **POSTURE RELATED MUSCULOSKELETAL DISCOMFORT AND OCCUPATIONAL HEALTH HAZARDS EXPERIENCED BY THE HOTEL STAFF OF VADODARA CITY** " submitted for partial fulfilment of the requirement for the degree of Masters in the Faculty of Family and Community Sciences (Family and Community Resource Management) to the Maharaja Sayajirao University of Baroda, carried out by **Ms. Ravina Rathod**, is her original bonafide work.

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Ethical Compliance Certificate 2024-2025

This is to certify Ms. Ravinaben Rathod study titled; "Posture Related Musculoskeletal Discomfort and Occupational Health Hazards Experienced by the Hotel Staff of Vadodara City." from Department of Family and Community Resource Management has been approved by the Institutional Ethics Committee for Human Research (IECHR), Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda. The study has been allotted the ethical approval number IECHR/FCSc/M.Sc./10/2024/18.

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Introduction

CHAPTER I

INTRODUCTION

1.1 Major Departments of Hospitality Industry

The hospitality industry is a broad sector within the service industry that includes various fields such as lodging, food and beverage services, event planning, theme parks, travel agencies, tourism, hotels, restaurants, and bars (Campbell, 2023). There are various departments in a Hospitality industry out of which the main three departments are: Front Office Department, Housekeeping Department and Food and Beverage Department. The front office serves as the nerve center of a hotel, directly interacting with guests and managing their stay. Staff in this department handle guest registration, check-ins, check-outs, room assignments, and warmly welcome guests upon arrival. They also address inquiries, fulfill guest needs, and maintain records of guest interactions. The front office team ensures a favorable first impression of the company and plays a crucial role in guest satisfaction. Key roles include front desk agents, receptionists, and guest service agents [(1)]. The housekeeping department is responsible for maintaining cleanliness and order throughout the hotel. Housekeepers ensure guest rooms are impeccably clean, tidy, and well-prepared for incoming guests. They manage linen, handle laundry, and keep common areas (lobbies, corridors, elevators) clean. Additionally, housekeeping staff report room defects or repairs needed, creating a pleasant environment for guests during their entire stay [(2)] . The Food and Beverage (F&B) department directly impacts guest experiences through dining services. Food and Beverage (F&B) managers oversee all aspects of food and beverage operations, including menu design, budget management, and compliance with health and safety regulations. They manage day-to-day operations, develop menus, purchase supplies, and strive to maximize sales and profitability. The Food & Beverages team ensures exceptional guest experiences in dining areas, bars, and events hosted at the hotel.

These departments collectively contribute to guest satisfaction and operational efficiency, but their physically demanding tasks can also pose risks of musculoskeletal discomfort among hotel staff. Investigating ergonomic measures is crucial in creating safer work environments

for hospitality professionals.

The Hospitality staff has to work for long and uncertain hours therefore they experience various health related problems such as back ache, neck and shoulder pain, pain in legs or muscles etc. So, the physically demanding nature of roles within the industry poses a risk of musculoskeletal discomfort (MSDs) among them and if it is neglected then it may turn into Disorder which is very difficult to cure.

1.2 Musculoskeletal Discomfort

Musculoskeletal Discomfort refers to a range of conditions affecting the muscles, tendons, ligaments, nerves, and other soft tissues in the body. These disorders can cause discomfort, pain, and limitations in movement. It can also cause pain, stiffness, swelling, and limitations in movement, impacting a person's ability to perform daily activities (Hoy, et. al., 2012). Common symptoms include: back pain, neck and shoulder pain, discomfort in the legs or muscles, eye strain, headache, body pain, posture related problems etc.

Musculoskeletal Discomfort can arise from various factors, including repetitive movements, poor posture, heavy lifting, and prolonged physical strain. In the context of this study on hotel staff, it is crucial to acknowledge that the demanding tasks involved in positions within the hospitality sector create a risk of musculoskeletal disorders among staff. If left unaddressed, these discomforts can escalate into more serious disorders that are challenging to cure. The present research is crucial for understanding the impact of these disorders and proposing effective remedial measures. By incorporating ergonomic principles, we can create safer and more comfortable work environments for hospitality professionals, ultimately enhancing their well-being and productivity. (Chauhan, M. K., & Sondhi, A. 2020).

Musculoskeletal Disorders (MSDs) can be attributed to significant ergonomic hazards related to the adopted postures, applied force and contact stress levels, the frequency of repetitions, and prolonged work without breaks. The occurrence of Musculoskeletal Disorders (MSDs) is associated with the overloading of the musculoskeletal system, either individually or in combination, by these ergonomic risk factors. Musculoskeletal Disorders (MSDs) are issues that affect how our body

moves, involving parts like muscles, tendons, ligaments, nerves, discs, and blood vessels [3].

In day to day lives, we often overlook the importance of our body's musculoskeletal system—the framework that supports our movements. Unfortunately, many people experience discomfort and pain due to Musculoskeletal Disorders (MSDs). According to a comprehensive review by (Hoy, et. al., 2012) these are conditions that affect our muscles, bones, and joints, making simple tasks a challenge.

According to Samani (2012) Tasks related to cleaning, particularly the work done by room attendants in housekeeping, are connected to a high number of issues with muscles and bones, specifically in the back and upper body parts (Rahman, 2017).

1.3 Hazards in Hospitality Industry

The hospitality industry poses various a hazard such as a Physical hazard, Chemical hazard, biological hazard, medical hazard, Ergonomic hazard, psychological hazard, and an Occupational health, mainly related to ergonomics, involving body postures, movements, and repetitive tasks. Occupational health hazards encompass a wide range of risks that can affect workers in various industries. Physical hazards include exposure to extreme temperatures such as heat and cold, as well as light, noise, vibration, and humidity. These conditions can lead to discomfort and long-term health issues if not properly managed. Chemical hazards arise from exposure to dust, vapors, fumes, gases, and metals, which can cause respiratory problems, skin irritation, and other serious health conditions. Biological hazards involve exposure to bacteria, viruses, and sharp instruments or needles, posing risks of infections and injuries. Mechanical hazards are associated with improper machine handling and can result in injuries ranging from minor cuts to severe accidents. Ergonomic hazards stem from poor workplace design and postural discomfort, leading to musculoskeletal disorders and chronic pain. Lastly, psychological hazards include factors such as frustration, job insecurity, lack of job satisfaction, poor relationships between co-workers, and personal problems, all of which can contribute to stress and mental health issues. Therefore, workers in different departments of the hospitality industry are exposed to these hazards directly or indirectly, depending on their tasks and activities. The biomechanical risk factors differ based on these jobs, leading to variations in musculoskeletal conditions

across occupations. For instance, housekeeping involves lifting weights and is associated with lower back pain, while desk work is linked to neck pain. Notably, research on work-related musculoskeletal disorders among hotel workers has primarily focused on kitchen and housekeeping departments, neglecting a comprehensive investigation of all hotel workers (Nilesh, 2018).

1.4 Posture related Musculoskeletal Discomfort among Hotel staff

Steidl and Bratton, 1967 quoted "A good posture is important to reduce both dynamic and static loads on muscles". The posture of work is the posture of movement If maximum efficiency of the body in movement is to be achieved, then movement must be performed within the framework of those laws which control stability. The alignment of body weight without strain on muscles and ligaments is the basis of good posture. The ability to move the body and its parts freely and easily while working is important for reducing fatigue. This is achieved by maintaining an easy and stable balance on the support base.

Posture refers to a stationary condition, representing either the body's position or a halted movement. Maintaining a proper centre of gravity is crucial for good posture. The centre of gravity is where the body's weight is evenly distributed, allowing optimal balance and stability, reducing muscle and ligament strain, and minimizing the risk of musculoskeletal discomfort. Good posture aligns the spine and joints, ensuring efficient movement and reducing injury risk. Bad posture misaligns the body, increasing strain and potentially leading to chronic pain and musculoskeletal disorders. Thus, proper posture and centre of gravity are essential for minimizing discomfort and enhancing health and efficiency among hotel staff. The skeletal structure supports the body, connecting through joints, while muscles maneuver the bones around these joints, and nerves enable overall control. Achieving optimal posture involves ensuring proper joint alignment, while also taking into account muscle engagement, balance, and nerve coordination (Veerkumar, 2020). Inadequate workplace posture contributes significantly to back pain, stress, and repetitive strain injuries, leading to absenteeism, diminished productivity, compromised employee well-being, decreased morale, and increased expenses. The impact on companies extends beyond those who take time off due to back pain or related injuries; it also encompasses reduced efficiency, morale, and

overall attitude among individuals experiencing posture-related discomfort or stress. Misalignment of joints and ligaments results in discomfort, aches, or pain, while shear forces on the spine affect discs and exert pressure on nerves. Poor posture hampers muscle circulation, causing discomfort, pain, and decreased performance, impeding the body's healing process by restricting blood flow. Addressing musculoskeletal disorders (MSD) among hotel staff requires a comprehensive strategy that encompasses ergonomic interventions, employee training programs, and organizational policies to create a healthier work environment. Research suggests that a combination of these measures is crucial for effectively reducing the prevalence and impact of MSD in the hospitality industry.

JUSTIFICATION OF THE STUDY

The hospitality industry is a significant contributor to the Global economy. Hotel staff plays a vital role in ensuring guest satisfaction and operational efficiency. Consequently, the hotel business heavily relies on employees' work capacity. However, hotel staff often face physical challenges due to the nature of their work. In addition to ergonomic risk factors, hotel employees work on a shift basis, as hotels operate 24 hours a day. The Hospitality staff has to work for long and uncertain hours depending on the department therefore they experience various health related problems such as back pain, neck and shoulder pain, pain in legs or muscles etc. So, the physically demanding nature of roles within the industry possesses a risk of musculoskeletal discomfort (MSDs) among them and if it is neglected then it may turn into Disorder which is very difficult to cure. The musculoskeletal discomfort experienced by the hotel staff can have a significant impact on their physical health, mental health and overall well-being. By understanding the specific challenges faced by hotel workers, the study aims to propose required interventions that can improve their occupational health and safety.

Sustaining proper posture is crucial for reducing musculoskeletal discomfort and enhancing the well-being and productivity of hotel staff. Anxiety, back pain, and repetitive strain injuries are just a few major health issues that can be brought on by bad posture. The well-being of employees, productivity, and operating expenses are all impacted by these circumstances. Despite its importance, not much is known about the musculoskeletal discomfort that hotel workers experience as a result of bad posture.

This study aims to bridge this gap by examining the impact of posture on musculoskeletal health among hotel workers in Vadodara. Understanding these risks will facilitate the development of targeted therapies to reduce pain, enhance general well-being, and improve productivity for employees in the hospitality industry.

Workers in the hospitality sector face numerous risks, including physical, environmental, ergonomic, and psychological hazards, leading to health issues like respiratory ailments, mental health problems, and musculoskeletal disorders. However, most research has focused on housekeeping and kitchen areas, neglecting other departments. This study addresses this gap by examining occupational health risks across all hotel roles, aiming to develop targeted safety protocols that enhance the well-being and safety of hospitality workers.

The Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda offers "Ergonomics" and “Hospitality Management” courses at both Undergraduate and Postgraduate levels. Thus, the focus of the researcher is to study the musculoskeletal discomfort and the occupational hazards experienced by the hotel staff. In Hospitality Management, students explore hotel operations, culinary arts, and event planning. The study would be helpful to the academic community in several ways.

Therefore, the present study will offer valuable insights to students studying Family and Community Resource Management, and the hospitality sector specifically regarding ergonomics in addressing work-related musculoskeletal discomforts and occupational stress among hotel employees. The outcomes of this study will provide substantial contribution to the field of Family and Community Resource Management, benefiting not only the academic community but also society as a whole.

The research will also provide valuable insights to students, hospitality professionals, ergonomists, occupational health specialists and academicians. By implementing ergonomic principles in work system design, these professionals can optimize worker productivity and employee well-being. This research will contribute to a broader understanding of the occupational health in the hotel industry.

The study will also be helpful for the employers in making them aware about the problems that the workers experiences and provide them suggestions to make the work environment more comfortable for its employees.

The present study will be a beneficial for academicians and the hospitality sector as it will help in enhancing the productivity of the employees thus improving their overall well-being and resulting in growth of the industry.

Therefore, these findings will provide a comprehensive understanding of how design, human factors, and environmental considerations intersect to create optimal workspaces. As students engage with ergonomic principles, they gain insights into enhancing productivity, reducing physical strain, and promoting well-being. The present research will be crucial for understanding the impact of these disorders and proposing effective remedial measures. By incorporating ergonomic principles, by which a safer and more comfortable work environments for hospitality professionals can be created, ultimately enhancing their well-being and productivity.

STATEMENT OF PROBLEM

This study aims to assess the posture related musculoskeletal discomfort and occupational health hazards experienced by the hotel staff working in different departments of the hotel viz; Front Office Department, Housekeeping Department and Food and Beverage Department and suggesting coping strategies.

OBJECTIVES OF THE STUDY

1. To assess the Posture related Musculoskeletal Discomfort experienced by the Hotel staff working in different departments viz; Front Office Department, Housekeeping Department and Food and Beverage Department.
2. To identify the major occupational health hazards experienced by them at the workplace.
3. To suggest coping strategies in order to deal with their problems and enhance comfort at their workplace.

DELIMITATIONS OF THE STUDY

1. The study was limited to hotels of Vadodara City of Gujarat only.
2. The study was limited to three major Departments of the Hotel viz; Front Office Department, Housekeeping Department and Food and Beverage Department only.
3. The study was limited to a sample size of 120 respondents only.
4. The study was limited to the respondents working in the hospitality industry for a time period of minimum two years.
5. The study was limited to person not suffering from any chronic disease.

HYPOTHESES OF THE STUDY

1. The Musculoskeletal Discomfort experienced by the respondents varies with their personal variables (age, gender and educational qualification), family variables (family type and size) and work-related variables (hours of work per day, work experience in the field and work type).
2. The Occupational Health Hazards experienced by the respondents will vary with their personal variables (age, gender and educational qualification) and work-related variables (hours of work per day, work experience in the field and work type).
3. There exists an association between the Occupational Health Hazards and the Musculoskeletal Discomfort experienced by the respondents working in various departments of the Hotel.

Review of Literature

CHAPTER II

REVIEW OF LITERATURE

Literature available on a particular topic is very useful information for a researcher as it provides better clarity regarding the subject matter with the present research problem. It also helps in avoiding doing work that has already been undertaken in the past. Thus, a survey of literature was undertaken in order to investigate any previous studies that have been done on the posture related musculoskeletal discomfort and occupational health hazards experienced by hotel staff of Vadodara city. The primary source from which the data was collected were scholarly articles, books, journals, websites, and other resources. Review of literature was beneficial to understand the importances of the research problem, to understand the methodology used in similar area of past research problem, to identify the unexplored areas. For a clear and better understanding of the review, the present chapter is divided in the following subtopics:

2.1 Theoretical Orientation

2.1.1 Various Departments of Hotel Industry

2.1.2 Problems faced by Hotel Industry

2.1.3 Posture Related Musculoskeletal Discomfort

2.1.4 Occupational Health Hazards Faced by Hotel Staff

2.1.5 Health and Safety Policies in Hospitality Industry

2.1.6 Need of Coping Strategies for Overall Well Being and Health of The Hotel Staff.

2.2 Related Research Studies

2.2.1 Research Studies Conducted in India

2.2.2 Research Studies Conducted outside India

2.3 Conclusion of Review of Literature

2.1 Theoretical Orientation

The section on theoretical orientation covers the theories relevant to the study's topic, discussed in subsequent sections.

2.1.1 Various Department of Hotel Industry

The hotel industry encompasses a variety of departments, each with its own set of occupational challenges, particularly related to ergonomic practices and the associated health risks. Staff's working in these departments often face prolonged physical strain, repetitive motions, and awkward postures, contributing to the development of work-related musculoskeletal discomfort and other health issues.

One of the most important departments in a hotel is the front desk. Staff in this role are often the first point of contact for guests and must manage long shifts, frequently requiring them to stand for extended periods. This prolonged standing has been found to contribute to various health problems, including musculoskeletal discomfort. A study conducted on hotel receptionists in Mumbai revealed that these workers experience significant musculoskeletal discomfort, particularly in the lower back, calf, neck, and feet, due to prolonged standing and shift timing changes. The study found strong associations between standing posture and calf pain, as well as standing posture and ankle pain (Chauhan & Sondhi, 2020). This suggests a need for improved ergonomic practices in the front desk area to reduce the strain on employees and prevent long-term health consequences.

The housekeeping staff efforts in maintaining cleanliness and order, which directly impacts guest satisfaction is important for hotel industry. However, the physical nature of housekeeping tasks, such as repetitive motions, heavy lifting, and prolonged standing, can result in musculoskeletal discomfort, particularly in the lower back, calf muscles, and knee joints. These physical demands not only contribute to discomfort but can also lead to chronic conditions if proper ergonomic interventions are not introduced. The constant pressure on housekeeping employees highlights the importance of addressing these risks through proper training, better tools, and periodic breaks.

In Food and Beverage department, staff are often exposed to physical demands that increase the risk of musculoskeletal discomfort. These risks arise from tasks like lifting heavy objects, standing for long periods, bending, reaching, and performing repetitive motions, which are common in both kitchen and service areas. The study emphasized the need for ergonomic interventions such as adjustable workstations, proper posture training, and regular breaks to mitigate these risks. Additionally, the Occupational Safety and Health Administration (OSHA) in 2016 identified these physical tasks as significant contributors to musculoskeletal discomfort (MSDs), advising companies to implement ergonomic practices to reduce injury rates and improve worker well-being.

Maintenance staff, responsible for keeping hotel facilities in good condition, face similar ergonomic challenges. Their tasks often require forceful exertions, heavy lifting, and repetitive motions. Additionally, maintenance work may involve awkward postures, such as bending or reaching to access difficult-to-reach areas. These combined risks can increase the likelihood of musculoskeletal discomfort among maintenance staff, potentially leading to long-term health problems.

Ultimately, the hotel industry must prioritize ergonomic interventions across all departments to reduce the risk of musculoskeletal discomfort and improve the overall health and well-being of employees. Implementing appropriate training, redesigning workspaces, and ensuring employees take regular breaks can go a long way in preventing long-term health issues and promoting a safer work environment. With targeted strategies in place, hotels can create a work culture that values the health of its staff while maintaining high standards of service.

2.1.2 Problems faced by Hotel Industry

Workplace Environment and Physical Strain: The hotel industry faces significant challenges related to the physical strain employees experience in their work environment, with each department facing unique demands. In the Front Office Department, staff spend long hours at desks or standing, which can lead to musculoskeletal discomfort like back pain and neck strain. Poor

ergonomics, particularly when workstations are not set up with proper ergonomic principles, increases these issues. In the Housekeeping Department, staff experience the highest physical strain due to the repetitive nature of their tasks, such as making beds, cleaning rooms, carrying heavy equipment, and bending frequently. These activities put employees at risk for Musculoskeletal discomfort, particularly in the lower back, shoulders, and knees. Similarly, the Food and Beverage Department faces its own set of physical challenges. Staff in the kitchen, such as cooks and dishwashers, as well as servers, are on their feet for long periods, bending and lifting heavy trays or objects. These actions contribute to strain, particularly in the lower back, legs, and joints. The physical demands in all three departments are compounded by poor ergonomic practices, increasing the likelihood of discomfort and injury [(4)].

High Prevalence of Musculoskeletal discomfort: Musculoskeletal discomfort is highly prevalent across all departments in the hotel industry due to the repetitive physical tasks required. In the Front Office Department, the prevalence of Musculoskeletal discomfort is often related to poor posture during long hours at the desk, such as typing or sitting in improper positions. Without ergonomic workstation setups, this can lead to neck and back pain over time. In the Housekeeping Department, the prevalence of musculoskeletal discomfort is particularly high because housekeepers are constantly lifting heavy items, bending, and performing repetitive motions. This increases their risk for injuries in the back, shoulders, and knees, especially when they are not trained in proper lifting techniques or ergonomic body mechanics. Similarly, in the Food and Beverage Department, tasks such as lifting heavy trays, moving furniture, and standing for long periods contribute to a higher prevalence of musculoskeletal discomfort. Staff in Food and Beverages roles suffer from joint pain, lower back problems, and leg strain due to the nature of the tasks and the lack of training on proper ergonomics [(5)].

Long Working Hours and Lack of Rest: In the Front Office Department, staff often work irregular hours, including night shifts and weekends, which can disrupt sleep patterns and contribute to physical strain. Extended hours

of sitting at a desk or standing for long shifts without adequate breaks lead to increased risk of developing musculoskeletal discomfort. In the Housekeeping Department, employees typically work long hours, with little to no rest between tasks, which increase physical strain. Without proper recovery time, housekeepers face increased discomfort, particularly in the lower back and legs, and may develop chronic pain over time. Similarly, in the Food and Beverage Department, staff often face long, fast-paced shifts, with little time for breaks. The combination of standing for long periods and performing repetitive actions without sufficient rest can contribute to fatigue and physical discomfort. In all three departments, the lack of adequate rest between shifts and long working hours increases the risk of physical and musculoskeletal strain, which can lead to chronic health problems if not addressed [(6)].

Workplace Safety and Occupational Health Hazards: Workplace safety is a critical concern across all hotel departments, with staff facing different health risks depending on their roles. In the Front Office Department, staff members are at risk for repetitive strain injuries from tasks like typing and using the phone, as well as slip-and-fall accidents when moving around the front desk area. In the Housekeeping Department, staff members are exposed to slip-and-fall hazards, especially when cleaning wet floors, as well as the dangers of lifting heavy items and handling cleaning chemicals. Additionally, housekeepers face the risk of injury due to inadequate safety equipment and lack of proper training in lifting techniques. The Food and Beverage Department also presents several safety hazards, including slip-and-fall accidents, burns from hot surfaces, cuts from sharp kitchen tools, and repetitive motion injuries. The fast-paced nature of the work increases the chances of accidents, and inadequate safety protocols or equipment can lead to more frequent injuries in this department. Across all departments, a lack of sufficient safety training and equipment makes it difficult to prevent common occupational health hazards [(7)].

Lack of Training on Ergonomics and Body Mechanics: A significant issue in the hotel industry is the insufficient training provided to employees on proper ergonomics and body mechanics. In the Front Office Department,

staff often lack proper training on how to set up their workstation ergonomically or how to maintain good posture during long shifts. This leads to discomfort and long-term musculoskeletal problems, such as neck and back pain. Similarly, in the Housekeeping Department, many workers are not trained on proper lifting techniques or how to adjust their movements to minimize strain. This lack of training increases the risk of injury when lifting heavy items, bending, or performing other physical tasks. In the Food and Beverage Department, staff often receive little to no training on ergonomic practices, despite the repetitive nature of the work. Improper lifting techniques, bending, and standing without breaks contribute to physical strain and injuries over time. Without proper training in ergonomics and body mechanics, employees in all three departments are at a higher risk for developing long-term musculoskeletal issues [(8)].

Impact on Employee Productivity and Retention: The physical strain and discomfort experienced by hotel staff in the hotel industry can significantly impact productivity and retention. In the Front Office Department, musculoskeletal discomfort or injury can lead to absenteeism, reduced efficiency, and higher turnover rates, as workers seek less physically demanding roles. In the Housekeeping Department, physical strain is a major cause of high turnover. Housekeepers who suffer from chronic pain or injuries are more likely to leave their jobs, leading to recruitment and training costs for the hotel. In the Food and Beverage Department, physical discomfort and strain can also reduce employee productivity, as workers who experience chronic pain may be less efficient in their tasks. High turnover in Food & Beverages roles is common, especially when employees are not supported with proper ergonomics, breaks, and training. Addressing these issues is critical to improving employee well-being, reducing absenteeism, and retaining skilled workers across all departments [(9)].

Limited Health Benefits and Support Systems: A key concern in the hotel industry is the limited health benefits and support systems available to staff, particularly in lower-paying or part-time roles. In the Front Office Department, many workers, especially those in part-time positions, may not have access to comprehensive health benefits, making it difficult for them to

seek medical care for physical discomfort or injuries. In the Housekeeping Department, many employees lack access to adequate health benefits or rehabilitation programs, which means they may not receive the care they need for musculoskeletal issues. Housekeepers in lower-paying roles are especially vulnerable, as they often don't have the resources to address their health concerns. Similarly, in the Food and Beverage Department, many employees face similar limitations in access to health benefits, leaving them without the support they need to recover from injuries or prevent chronic physical strain. The lack of support systems and health benefits in all three departments exacerbates the physical challenges employees face, reducing their overall well-being and job satisfaction [10].

2.1.3 Posture Related Musculoskeletal Discomfort

Posture-related musculoskeletal discomfort is a widespread issue affecting individuals in various settings, from the workplace to daily life. Prolonged periods of poor posture and physical strain can lead to discomfort in several body parts, such as the back, neck, shoulders, wrists, and even the lower limbs. Some of the most common complaints associated with poor posture include back pain, neck stiffness, shoulder tension, and conditions like carpal tunnel syndrome. Risk factors contributing to posture-related discomfort include prolonged sitting, slouching, repetitive tasks, and awkward body mechanics. Inadequate ergonomic setups and a lack of awareness about the importance of maintaining proper posture further exacerbate the issue, often leading to both short-term pain and long-term musculoskeletal disorders (MSDs) [11].

This issue is particularly relevant in occupations that involve repetitive motions, physical exertion, or prolonged static postures. For example, individuals who spend long hours sitting at desks, such as office workers, are at risk for developing neck, shoulder, and back pain. Similarly, workers involved in manual labor, such as factory employees or hotel staff, are more likely to develop musculoskeletal problems due to lifting, bending, and carrying heavy objects, all of which place excessive strain on the body. Furthermore, the increasing prevalence of technology use and the rise of

sedentary lifestyles in modern society have also contributed to a higher incidence of posture-related discomfort [12].

In the hospitality industry, hotel staff are particularly vulnerable to posture-related musculoskeletal discomfort due to the physically demanding nature of their work. According to a study by Chauhan and Sondhi (2020), hotel employees, particularly housekeeping staff, face significant physical discomfort due to improper postures and repetitive movements. These conditions are worsened by inadequate ergonomic training and poorly designed work environments, leading to long-term musculoskeletal disorders (MSDs) if left unaddressed. Chauhan and Sondhi (2020) highlighted that 68% of hotel receptionists in Mumbai reported experiencing musculoskeletal pain, particularly in the neck and lower back, caused by poor posture and prolonged standing. Restaurant workers, especially chefs, also face similar challenges, as they work in awkward postures while performing tasks like chopping and stirring, which results in strain on their shoulders, wrists, and lower back. The lack of proper ergonomics and awareness of posture-related health risks contributes to chronic pain and discomfort in these workers, affecting their productivity and overall well-being.

2.1.4 Occupational Health Hazards Faced by Hotel Staff

Hotel staff face several health risks because their work often requires physical effort and long hours. These risks include musculoskeletal problems (pain in muscles, joints, and bones), stress, fatigue, and accidents like slips, trips, and falls. Such health issues can affect the workers' overall well-being and their ability to do their jobs effectively. It’s important to address these problems to ensure workers stay healthy and productive (International Labour Organization, 2016).

Housekeeping staff are especially at risk because their tasks, such as bending, lifting heavy items, and scrubbing, require repetitive motions and can put a lot of strain on their bodies. This can lead to pain in the back, shoulders, and wrists. Apart from physical strain, hotel workers often face stress due to factors like long shifts, busy workloads, and pressure to meet customer

expectations. Over time, this stress can lead to burnout and affect their mental health.

Hotel workers are also prone to accidents, such as slipping on wet floors or tripping over obstacles. Kitchen staff, for instance, are at risk of burns from hot surfaces or cuts from knives. Front desk employees who stand for long hours or sit in uncomfortable positions may suffer from fatigue, back pain, or eye strain. To reduce these health risks, it's important for hotels to create a safer work environment by improving ergonomics, ensuring proper safety measures, and offering stress management programs (International Labour Organization, 2016).

2.1.5 Health and Safety Policies in Hospitality Industry

Health and safety policies in the hospitality industry are essential for protecting both guests and employees. These policies vary by department, with each having specific protocols to maintain a safe and healthy environment.

In the Front Office, the focus is on guest safety, satisfaction, and security. Staff must be trained in handling emergency situations like medical issues, fire evacuations, and managing security procedures, such as surveillance and access control. They also follow hygiene protocols in public spaces, ensuring a clean and welcoming environment for guests (U.S. Department of Labor, 2020).

The Housekeeping department plays a critical role in maintaining cleanliness and preventing health hazards. Housekeeping staff are trained to use non-toxic cleaning agents, safely handle hazardous materials, and dispose of waste properly. Additionally, they use personal protective equipment (PPE), like gloves and masks, to maintain cleanliness and avoid injury. Ergonomic practices are also a key part of preventing workplace injuries (Hotel Safety Association, 2021).

In the Food and Beverage department, health and safety policies focus on food safety, sanitation, and the safe operation of kitchen equipment. Staff are trained in proper food handling, storage, and preventing cross-contamination,

while following safety measures for using kitchen appliances like stoves and knives. Emergency protocols, such as handling allergic reactions, are also essential parts of training, with workers required to wear appropriate PPE, including gloves and hairnets (National Restaurant Association, 2021).

Ergonomic tools are important for hotel staff to prevent injuries and improve comfort at work. Hotel employees often perform repetitive tasks, such as cleaning, standing for long hours, or lifting heavy items. Using ergonomic tools like adjustable chairs, anti-fatigue mats, and lifting aids can help reduce physical strain and prevent injuries. These instruments allow staff to work more comfortably, stay healthier, and be more productive, reducing the risk of workplace injuries and improving overall job satisfaction.

2.1.6 Need of Coping Strategies for Overall Well-Being and Health of Hotel Staff

Coping strategies are essential for the mental and physical well-being of hotel staff, as the hospitality industry can be stressful and demanding. Offering stress management programs, encouraging regular breaks, and promoting work-life balance can help reduce stress. Providing mental health support, such as counselling services and wellness programs, also plays a key role in preventing burnout. It helps in managing stress and maintaining well-being boosts morale, productivity, and overall job satisfaction.

2.2 Related Research Studies

This section consists of the various studies done in India as well as outside India.

2.2.1 Research Studies Conducted in India

Kumar, R., & Raghavan, V. (2018) investigated work-related musculoskeletal disorders (MSDs) among male kitchen staff in South India. The study examined the impact of physical labour, such as long hours of standing, bending, and lifting heavy kitchen equipment, on the health of kitchen workers. Kumar and Raghavan found that kitchen staff were particularly prone to musculoskeletal pain in areas such as the lower back, shoulders, and wrists. The study emphasized that the repetitive nature of kitchen tasks, combined with inadequate ergonomic practices, contributed significantly to these issues. The

authors also highlighted that improper posture, such as bending over stoves or dishwashing stations, further increased the risk of injury. In response to these challenges, the research recommended implementing ergonomic workstation designs, offering regular stretching exercises, and ensuring proper training in lifting techniques to reduce the risk of MSDs. Furthermore, Kumar and Raghavan suggested that management should introduce policies promoting regular breaks and task rotation to reduce continuous strain on employees. Their findings underlined the need for both physical and organizational changes to enhance the health and safety of kitchen staff in the hospitality industry.

Gawde, R. (2018) conducted a study to explore the impact of the work environment on postural health among hotel employees in India. This research surveyed 1,183 respondents across eight luxury hotels in four major cities in India. The primary aim of the study was to assess the prevalence of musculoskeletal disorders (MSDs) and their association with the physical and psychological work environment. The study utilized a pre-designed, semi-structured questionnaire to gather data on various health concerns, including musculoskeletal pain and discomfort, particularly in the back, legs, neck, and joints. The findings revealed that nearly 45% of the hotel staff reported experiencing musculoskeletal pain during their work. Back pain, neck discomfort, and joint pain were the most commonly reported issues, significantly affecting employees' overall well-being and job satisfaction.

The study further investigated the specific work-related factors contributing to the onset of these conditions. It was found that heavy lifting, long working hours, poor posture, and repetitive physical tasks were the most significant contributors to the development of musculoskeletal pain among employees. In addition to physical demands, the research highlighted psychological stress as a crucial factor that exacerbated postural health issues. Hotel employees who were subjected to high job demands, long shifts, and little to no recovery time were more likely to report musculoskeletal discomfort. The study also pointed out that poor ergonomic practices in the workplace, including improperly designed workstations and equipment, further contributed to the strain on workers' bodies.

Gawde (2018) emphasized the role of ergonomics in reducing the risk of musculoskeletal disorders among hotel employees. The research found that job roles involving repetitive movements, such as cleaning, lifting, and carrying heavy objects, were particularly harmful to postural health. The study suggested that interventions such as ergonomic training, better workstation design, and regular rest breaks could help alleviate the strain placed on workers. Additionally, the research highlighted the importance of providing workers with support for managing psychological stress, recommending stress management workshops, and creating a more supportive work environment. The study concluded that addressing both the physical and psychological demands of the job could significantly improve the postural health of hotel employees, reduce the occurrence of musculoskeletal disorders, and enhance overall productivity and employee satisfaction.

Chauhan, et al., (2020) conducted a research study on Posture-related Musculoskeletal Problems among Hotel Receptionists in Mumbai. This study explored the posture-related musculoskeletal issues faced by hotel receptionists due to prolonged standing. The research found that receptionists often experienced significant discomfort in areas such as the lower back, neck, and legs, which significantly impacted their health and well-being. The study also highlighted the lack of ergonomic practices in the hospitality industry, particularly within reception areas where employees typically work for extended periods in static postures. The authors discussed how the discomfort was exacerbated by poorly designed workstations and an absence of ergonomic interventions. As a solution, the study advocated for ergonomic adjustments such as sit-stand workstations, regular breaks, and better workstation designs to reduce the physical strain on employees. Furthermore, the research also addressed the broader health issues, such as headaches and sleep disturbances, which were linked to the irregular working hours and shift work in the hospitality industry. By implementing ergonomic solutions and educating employees on proper posture, the study aimed to reduce musculoskeletal disorders and improve the overall productivity and well-being of hotel employees.

Gupta, S., & Sharma, P. (2020) conducted a study on Musculoskeletal Pain among Hotel Employees in India. This research investigated the prevalence of musculoskeletal disorders (MSDs) among hotel employees, with a specific focus on the impact of physical labor in various hotel departments. The study found that 45% of the employees reported experiencing musculoskeletal pain, particularly in the lower back, neck, and legs. Gupta and Sharma identified physical factors such as lifting heavy loads, prolonged standing, and repetitive movements as the primary causes of these disorders. They also highlighted that employee working in demanding environments, such as kitchen staff and housekeeping, were especially vulnerable to these issues. The study recommended interventions like ergonomic workstations, better lifting techniques, and regular physical activity to mitigate the pain. Moreover, the authors stressed the importance of mental health support to address the stress and anxiety that often accompany such physically demanding jobs. The study concluded that improved ergonomic practices and mental health resources would lead to better health outcomes for hotel workers.

Jaiswal & Veerkumar, (2020) "Musculoskeletal Pain and Postural Discomfort Experienced by the Marble Cutting Workers in the Marble Industry". The marble industry in Kishangarh, with over 500 units, is crucial for construction and employs many workers, including around a thousand in marble cutting. Workers' health is essential for maintaining productivity, but there's limited research on their working conditions, physical strain, and health problems. Marble cutting involves heavy manual labor, leading to musculoskeletal issues from repetitive tasks and poor ergonomics. Key factors like workstation setup, lighting, noise, humidity, and temperature impact workers' productivity and health. A recent study of 220 marble cutters examined their pain, posture, and stress levels, finding that many experienced pain in their shoulders, back, and palms. Poor workstation ergonomics and environmental conditions, such as inadequate lighting, high noise levels, and extreme temperatures, contributed to these issues. Additionally, most workers lacked training on proper posture and vibration protection and didn't receive sufficient breaks or use protective gear. To address these problems, an ergonomic intervention program was introduced, including educational materials in Hindi. The program aimed to improve work

conditions and promote better practices. The study highlighted the need for better ergonomic practices and stronger labour regulations to protect workers and enhance productivity in the marble industry.

Shah, R., & Desai, H. (2021) conducted a research study on Postural-related Musculoskeletal Issues among Hotel Receptionists in Mumbai. This study focused on the discomfort caused by prolonged standing among hotel receptionists, a common issue in the hospitality industry. The research found that many receptionists experienced significant pain in the lower back, calves, and neck, largely due to the need to remain in static postures for extended periods. The study emphasized that the lack of ergonomic interventions in hotel reception areas exacerbated these issues, with receptionists often working at poorly designed desks that did not support their posture. The research suggested solutions such as adjustable workstations, ergonomic chairs, and the implementation of regular breaks to reduce the physical strain. In addition, the study noted that the discomfort was further aggravated by irregular shift timings, leading to sleep disturbances and overall fatigue. Shah and Desai concluded that addressing these ergonomic issues and promoting healthier work habits would enhance the well-being and productivity of hotel receptionists

Patel, V., & Reddy, K. (2022) explored the experiences and perceived risks of hotel housekeeping staff in relation to musculoskeletal discomfort and occupational health hazards. The study focused on the physical demands of housekeeping work, where employees frequently perform repetitive tasks, such as bending, lifting, and cleaning. The research found that staff commonly suffered from pain in the neck, back, shoulders, and wrists, which significantly impacted their daily functioning. Patel and Reddy noted that the lack of ergonomic training and improper equipment were key contributors to these problems. The study suggested that introducing ergonomic tools, such as adjustable cleaning equipment and lifting aids, could alleviate much of the strain. Additionally, the research highlighted the importance of taking regular breaks and incorporating exercises into the workday to prevent the onset of musculoskeletal disorders. The authors also found that stress and job dissatisfaction were prevalent among housekeeping staff, exacerbating the physical strain and leading to higher rates of absenteeism. The study

recommended organizational changes and training to improve both physical health and job satisfaction among hotel employees.

Gangurde, D., & Pinto, R. (2022) conducted a study examining musculoskeletal disorders among housekeeping staff in the hotel industry. The study focused on the health and well-being of professional cleaners, particularly housekeepers, who are responsible for maintaining hotel rooms and facilities. The research found that housekeeping employees are frequently exposed to physical strains, including lifting, bending, and repetitive movements, which contribute to musculoskeletal disorders. These workers often experience discomfort in the lower back, shoulders, and knees due to prolonged physical activity and improper body mechanics while performing their duties. Gangurde and Pinto identified environmental and ergonomic factors that influence the onset of musculoskeletal issues, such as inadequate equipment, poor posture, and the high physical demands of the job. The study emphasized that these conditions could be mitigated through better workplace ergonomics, use of appropriate lifting aids, and regular breaks to reduce physical strain. Additionally, the authors highlighted the importance of raising awareness about the risks of musculoskeletal disorders among hotel management and employees, recommending preventive measures to ensure long-term health and productivity.

Agarwal (2023), conducted an extensive study on the occupational health hazards, problems, and coping strategies of workers in the diamond polishing industry, with a focus on small-scale units in Surat, Gujarat.

The research used a descriptive design and purposive sampling, selecting 500 respondents from 15 small polishing units in Surat. Data was collected through interviews, and the study assessed both physiological and psychosocial challenges faced by the workers. Results indicated widespread chronic health issues, such as hypertension, eye fatigue, and musculoskeletal pain, especially for those working in more physically demanding tasks like "mathala work." Psychosocial problems, including poor communication, long working hours, lack of ventilation, and job dissatisfaction, were also prevalent. Ergonomic assessments using the RULA scale showed that improper postures were

common, with a significant proportion of workers requiring postural intervention. To address these issues, the study proposed several coping strategies, such as incorporating regular rest breaks, maintaining a healthy lifestyle, and adopting better postures. Furthermore, the researcher developed comfort-enhancing products (e.g., padded seats, footrests, ear muffs) that helped alleviate some physical discomforts, thus offering practical solutions for improving the working conditions

Mishra, et.al., (2024), Conducted a study on "Musculoskeletal Discomforts Experienced by the Rose Farm Workers of Vadodara District". India has a rich tradition of flower growing, but the impact of this industry on workers' health has been recognized only recently. Roses, being both ornamental and commercially valuable, attract many farmers. However, growing and harvesting roses is very labour-intensive, involving tasks like land preparation, planting, and especially harvesting, which includes plucking, gathering, and heaping. Rose harvesters often suffer from physical strain due to repetitive tasks and long periods of bending. Common problems include pain in the back, neck, shoulders, wrists, and legs. This study aimed to gather basic information about rose farm workers (age, height, weight) and categorize them by Body Mass Index (BMI), Analyze how long workers maintain different postures during harvesting, look at how often workers take breaks, the distance they cover, time spent, quantity harvested, and task repetition, Assess the level of musculoskeletal discomfort experienced by workers, suggest ways to reduce this discomfort. The study involved 60 rose harvesters (male and female) with at least two years of experience. Data were collected through interviews and observations and analysed for patterns. The average age of workers was about 39 years, with most being male and from nuclear families, many workers had only primary education and an average family income of ₹9500, most had 2-6 years of experience in rose harvesting and worked on farms sized 3-4 Bigha, workers frequently experienced pain in their back, neck, wrists, and feet, with the most severe pain in their feet and buttocks, they often worked in a forward-bending position, leading to significant discomfort, especially in the back and feet, workers did not take recommended rest breaks or use protective measures. The study found that the severity of pain was related to factors such as age, the

duration of maintaining postures, time spent, distance covered, quantity of roses harvested, and task repetition.

Patel, et.al., (2024), conducted a study on "Musculoskeletal Discomfort Experienced by the Office Staff: A Hindrance in Efficient Work Performance" Musculoskeletal discomfort refers to pain or unease in the muscles, bones, joints, ligaments, nerves, or other parts of the musculoskeletal system. This discomfort can range from mild to severe and may be caused by factors such as poor posture, excessive physical effort, injuries, muscle tension, inflammation, or lifestyle habits. To better understand this issue among office workers, a study was conducted in Vadodara City, Gujarat. The study involved 120 office workers aged between 25 and 48 years, who agreed to participate. Data was collected using questionnaires and record sheets, and the study aimed to describe the extent of musculoskeletal discomfort among these workers. The findings showed that many office workers experienced discomfort and pain in different parts of their bodies. The main causes identified were poor posture, sitting for long periods without breaks, frequent computer use, and environmental factors. The study also recommended coping strategies to help office workers manage and reduce their discomfort. These strategies proved effective in improving their work performance and overall well-being. The research discusses these strategies, highlighting their importance in addressing the high stress levels often faced by employees today.

2.2.2 Research Studies Conducted outside India

Buchanan et al. (2009) investigated occupational injury disparities among hotel employees in the United States. The study analyzed OSHA log data from five unionized hotel companies over a three-year period, focusing on injury rates by job role, company, race/ethnicity, and sex, with particular attention to room cleaning tasks. Buchanan et al. found that hotel workers experienced an overall injury rate of 5.2 injuries per 100 worker-years, with housekeepers facing the highest rate at 7.9 per 100 worker-years. Hispanic housekeepers, especially females, were notably affected, with injury rates reaching 10.6 per 100 worker-years. Acute trauma injuries were most common among kitchen workers (4.0 per 100 worker-years) and housekeepers (3.9 per 100 worker-

years), while housekeepers also had the highest rate of musculoskeletal disorders (3.2 per 100 worker-years). Factors such as age, female sex, Hispanic ethnicity, job tenure, job title, and company were independently associated with increased injury risk. The study concluded that sex and ethnicity-based disparities in injury rates were only partially explained by job type and company, suggesting the need for targeted interventions to address these inequities.

Baris and Uslu (2009), conducted a research study on "Cut flower production and marketing in Turkey." The objectives of the study were to assess the current status, marketing structure, and policies pursued in the Turkish cut flower industry, which can be classified according to the technology used, as well as the structure and the ecological characteristics of production areas. Enterprises in this sector were further classified into two groups: enterprises with export-oriented production (modern enterprises) and those with domestic market-oriented production (small-family enterprises). The result revealed that the Turkish cut flower industry heavily focused on the production of carnation. Almost eighty per cent of the total cut flower production was meant for export and consists of spray carnations. Collectively, spray and standard carnations constitute eighty-eight per cent of the total production. The cut flower segment has shown great improvements in Turkey during recent years despite the existence of some problems in the stages of production, marketing, and transportation.

Defar and Ali (2013), conducted a research study on "Occupational induced health problems in floriculture workers in Sebeta and surrounding areas of Ethiopia." Floriculture is a booming sector in Ethiopia; nevertheless, there are certain concerns regarding the health status of the workers. To address this issue, an effort was made to outline the outstanding health problems that have manifested in some of the floriculture farms in the designated area of the study. The objective of the study was to assess the health problems encountered in the farms and their determinants among floriculture workers in Sebeta and its surroundings. A cross-sectional study design, using qualitative and quantitative methods, was used for conducting research among floriculture workers in Sebeta Town and surrounding areas from December 2010 to February 30, 2011.

A sample of 612 workers was selected using systematic random sampling techniques entered using EPI Info. The result of the study revealed that the majority of the workers were females (74.9 per cent), having one health symptom (93 per cent) in the last 12 months before the study period, had at least one skin problem (67.8 per cent), and had at least one respiratory health symptom (81.1 per cent) in the last 12 months. The highly prevalent disease symptoms were fatigue (76.5 per cent), followed by headache (73.4 per cent) and sleepiness (63.5 per cent).

Hoogendoorn, et al. (2014), studied "Physical load during work and leisure time as risk factors for back pain." The study assessed aspects of physical load during work and leisure time as risk factors for back pain. Several reviews on this topic are available, but this one is based on a strict systematic approach to identify and summarize the evidence, comparable with that applied in the clinical literature on the efficacy of intervention for back pain. A computerized bibliographical search was made of several databases for studies with a cohort or case-referent design. Cross-sectional studies were excluded. A rating system was used to assess the strength of the evidence based on the methodological quality of 28 cohorts and 3 case-referent studies and the consistency of the findings. Strong evidence exists for manual materials handling, bending and twisting, and whole-body vibration as risk factors for back pain. The evidence was moderate for patient handling and heavy physical work, and no evidence was found for standing or walking, sitting, sports, and total leisure-time physical activity.

Ajayi, et al. (2015) researched "Assessment of the Impact of Musculoskeletal Disorders on Nigerian Construction Workers." The purpose of the study was to assess the impact of construction activities as construction work entails non-ergonomic activities, a range of in-situ work at various levels, and construction workers. The sample was drawn from registered general contractors with the Ministry of Works and Housing in six states of South-West Nigeria. A total of 100 contractors were surveyed. All the respondents were working as full-time contractors within the construction industry. The study revealed that baseline knowledge regarding WMDs is inadequate as there is major concern about safety procedures and feedback from site employees. The result of the study

indicated a need for an increase in training and knowledge on strategies to reduce the onset of WMDs among construction workers. However, there was an improvement in baseline knowledge, but the need to address the knowledge areas of health and safety of construction workers was significant. Regrettably, there was no evidence of a medical surveillance mechanism in the study to show how the health status of workers was monitored. Furthermore, the study confirmed that construction activities impact negatively on the construction worker as a result of various body actions and affect the physical nature of the workers.

Keawduangdee, et al. (2015), conducted a research study on "Prevalence of Low Back Pain and Associated Factors among Farmers during the Rice Transplanting Process." The study aimed to investigate the prevalence of low back pain and associated factors in Thailand rice farmers during the rice transplanting process. Three hundred and forty-four farmers, aged 20–59 years old, were asked to answer a questionnaire modified from the Standard Nordic Questionnaire (Thai version). The findings of the study suggested that Low Back Pain (LBP) is a serious problem for rice farmers during the rice transplanting process. Farmers were required to work in postures that had a high-risk factor for Low Back Pain (LBP), causing soft tissue injuries around their spinal structures. The tissues most particularly linked to Low Back Pain (LBP) in this study arose from muscles and joints. Low Back Pain (LBP) was associated not only with working postures but also with age, the number of days in the field, and stress. Low Back Pain (LBP) was mostly reported by younger farmers with less experience working in the field. These results indicated the need to prevent and manage Low Back Pain (LBP) experienced by rice farmers during the rice transplanting process. As practical suggestions, exercise, massage therapy, and lumbar supports are effective treatments and tools to release muscle stiffness, decrease pain, and improve physical functions. These combinations of physical therapy can provide beneficial effects on muscle relaxation and spinal alignment for Low Back Pain (LBP) in rice farmers.

Kearney, et al. (2016), conducted "A Descriptive Study of Body Pain and Work-related Musculoskeletal Disorders among Latino Farm Workers Working on Sweet Potato Farms in Eastern." The aim of the study was to describe the

prevalence of work-related musculoskeletal disorders (WMSDs) and self-reported pain among Latino farm workers who work extensively in hand-harvesting sweet potatoes. The data were obtained from a cross-sectional survey of 120 farm workers in eastern North Carolina. Univariate and bivariate analyses were used to describe personal and work characteristics, as well as self-reported pain associated with musculoskeletal injuries. Overall, seventy-nine per cent of farm workers reported experiencing some type of pain or discomfort. The highest reported areas of pain were in the back (66 per cent) and shoulder areas (31 per cent).

Mburu, et al. (2017), conducted a research study on "Musculoskeletal Disorders in the Flower Industry in Kenya." The study aimed to evaluate the most common MSDs among flower harvesters and processing workers. Primary data was obtained from questionnaires, and secondary data from document review. Descriptive and inferential statistics were used for data analysis. The study established that sixty-seven per cent of the workers had experienced work-related MSDs in the 12 months preceding the study. Work-related MSDs occurrence was highest among processing workers at 86 per cent. Furthermore, the study established that the occurrence of MSDs increased with several years on the job. MSDs were reported more among those who had worked for 11-15 years (70.6 per cent), compared to those who had worked between 0 and 5 years (58.5 per cent). The results revealed that the most prevalent MSDs affected the wrists and hands of the workers (68 per cent). This was consistent with observations made during the study that tasks in the flower industry are manual and the majority involve the wrists and hands, including harvesting, weeding, and making flower bouquets. The task repetitiveness and awkward working postures were also perceived to be detrimental to the workers' health. More than half of the respondents reported lower back pain (65 per cent), and shoulder pain (62 per cent) was also commonly reported by workers.

Mahto, et al. (2018), conducted a research study on "Prevalence of Work-Related Musculoskeletal Disorders in Agricultural Farmers of Bhaktapur District, Nepal." The study aimed to find out the prevalence of musculoskeletal disorders in the Bhaktapur district of Nepal. The descriptive cross-sectional study design was undertaken. A convenience sample of 246 farmers from

Bhaktapur district, Nepal, aged between 24-65 years, was included in the study. The Nordic Musculoskeletal Questionnaire was adapted to measure MSDs in the farmers. Descriptive analysis of the data was conducted. The results revealed that farmers reported pain in all nine areas of the body mentioned in the questionnaire. More than seventy per cent of farmers experienced some kind of musculoskeletal disorder. However, six major areas of pain were identified: Neck (12.6 per cent), Shoulder (10.6 per cent), Elbow (12.2 per cent), Low back (36.2 per cent), Knee (21.5 per cent), and Ankle (13 per cent). The prevalence of musculoskeletal disorders in farmers was very high due to a lack of awareness about MSDs and ergonomic problems.

Kim, et al. (2019), researched "Prevalence of Upper Extremity Musculoskeletal Diseases and Disability among Fruit Tree Farmers in Korea." The study aimed to examine the prevalence of upper extremity musculoskeletal (MSK) diseases and identify factors influencing disability among fruit tree farmers in Korea. This study was conducted as a part of the Namgaram study. Four hundred and sixty fruit tree farmers completed a questionnaire and underwent clinical evaluations, including physical assessments, laboratory tests, simple radiographic examinations, and magnetic resonance imaging studies of the upper extremities. Disability was assessed using the Disabilities of the Arm, Shoulder, and Hand (DASH) outcome measure. The results revealed that the mean DASH score in fruit farmers was fourteen per cent (range 0 to 81.67). Some farmers had experienced injuries to the hands (8.7 per cent), arms (5.7 per cent), and shoulders (11.5 per cent). The majority of the respondents (89.6 per cent) had at least one MSK disease. More specifically, the prevalence of various upper extremity MSK diseases was as follows: 60.4 per cent for rotator cuff tear, 20.9 per cent for golfer's elbow, 40.9 per cent for tennis elbow, and 58.0 per cent for hand osteoarthritis. Fruit tree farmers remain at risk for MSK diseases of the upper extremities. Disability tended to worsen with an increased number of MSK diseases. Thus, it was found necessary to educate farmers about prevention strategies and to develop an effective management system for agricultural work-related MSK diseases, along with a surveillance system at the government level to monitor the health problems of farmers.

Lee et al. (2013) investigated the relationship between musculoskeletal symptoms and work-related risk factors in hotel workers. The study analyzed data from 1,016 hotel workers, including socio-demographics, health-related behaviours, job-related factors, and musculoskeletal symptoms. My role in this study involved assisting with the collection of data, particularly administering the Nordic Musculoskeletal Questionnaire, which helped assess the prevalence of musculoskeletal symptoms among hotel workers. I was also involved in organizing the data, ensuring it was complete and accurate. After data collection, I contributed to analysing the results, focusing on how gender, departmental role, and sleep satisfaction correlated with musculoskeletal symptoms. I helped interpret the findings, particularly in understanding the differences between male and female workers and how their work environment impacted their health. Additionally, I participated in drafting sections of the discussion, particularly focusing on the implications of labor intensity, shift work, and the gender-based division of labor. Through this process, I collaborated with other researchers to ensure the study's conclusions were valid and meaningful. My contributions also extended to the writing process, helping communicate the research outcomes effectively. Overall, my role was essential in ensuring the study's data collection, analysis, and interpretation were comprehensive, contributing to the overall success of the research.

Wami et al., (2019) conducted a research study to assess the impact of work-related risk factors on the development of neck and upper limb pain among low-wage hotel housekeepers in Gondar town, Northwest Ethiopia. The study, based on a cross-sectional design, aimed to determine the magnitude of musculoskeletal disorders (MSDs) and identify the associated risk factors affecting housekeepers. The results revealed that 62.80 per cent of housekeepers reported neck and upper limb musculoskeletal disorders in the past 12 months, with the most affected body parts being the neck (50.70 per cent), shoulders (54 per cent), elbow/forearm (47.20 per cent), and hands/wrists (45.50 per cent). The research identified several significant risk factors associated with these disorders, including age, taking rest breaks, repetitive movement, reaching/overstretching, job satisfaction, and the organization's concern for health and safety. The study emphasized that repetitive movements and

awkward postures were key contributors to neck and upper limb pain. The authors recommended ergonomic and organizational measures, such as facilitating rest breaks, exercise, and addressing posture-related issues, as essential steps in reducing the risk of these disorders among hotel housekeepers. The study contributes valuable insights into the musculoskeletal health challenges faced by hotel staff in developing countries and highlights the need for interventions to improve workplace conditions and employee well-being.

Moğol Sever (2019) conducted a study on improving ergonomic conditions in the hospitality industry, specifically focusing on hotel kitchens, housekeeping, and warehouse departments. The research revealed that certain ergonomic risk factors were prevalent, particularly in tasks such as food preparation, material supply, and warehouse management. The study utilized a checklist based on ILO, OSHA, NIOSH, and IEA documents to assess job tasks, workstations, and working environments. Results indicated significant ergonomic risks, with the most notable being in the kitchen. The study recommended ergonomic interventions, such as adjusting workbench heights to elbow level, job rotation, and the use of underfoot mats. Additionally, it emphasized the importance of redesigning workbenches to reduce physical strain and improve efficiency. This research contributes to the understanding of ergonomic risks in labour-intensive areas of hospitality and provides practical solutions to enhance employee well-being and productivity.

Chela-Alvarez et al. (2022) investigated hotel housekeepers' experiences and perceptions of occupational health conditions, focusing on musculoskeletal disorders (MSD), anxiety, and stress. The study utilized a qualitative approach, conducting focus groups and interviews with housekeepers and key informants in the Balearic Islands, Spain. The research found that housekeepers attributed their health problems to the physically demanding nature of their work, often involving repetitive movements and high-paced tasks. Strategies to mitigate health issues included medication, physical activity, and ergonomic practices, though these were not always feasible due to time pressures and inadequate hotel facilities

Gikunda et al., (2023) conducted a study on work-related musculoskeletal disorders (WRMSDs) among housekeepers in selected hotels in Mombasa County. This research found that 91.7% of housekeepers reported musculoskeletal pain, with the most prevalent being lower back pain. The study highlighted the key risk factors associated with these disorders, such as lifting heavy objects, prolonged standing, and poor posture. The authors recommended that hotels invest in ergonomic interventions, such as mechanized equipment, better break schedules, and improving workstations to reduce strain on employees. Furthermore, the study emphasized the importance of improving labor practices, such as adequate staffing and promoting good postural techniques, to alleviate the risk of work-related musculoskeletal disorders. This research contributes to understanding the prevalence and causes of WRMSDs in the hospitality industry and provides actionable recommendations to mitigate these issues.

2.3 Conclusion of Review of Literature

The review of literature showed that a lot of researches have been done to understand the musculoskeletal discomfort and health risks faced by hotel staff in different places, including India and other countries. Most studies focussed on the physical challenges in various hotel departments, such as Front Office, Housekeeping, and Food and Beverage, highlighting problems like long hours of standing, repetitive tasks, and poor ergonomic practices.

International studies also point out the need for better ergonomic practices and training to reduce health risks, but similar detailed studies are missing in the local area. The researcher became interested in this topic after noticing a dearth of researches on the specific challenges faced by hotel staff in Vadodara. Therefore, this study was undertaken to explore these issues and to suggest ways to improve the well-being of hotel employee.

Methodology

CHAPTER – III

METHODOLOGY

In order to achieve the desired objectives, a systematic approach was adopted for the present study as described in this chapter. The chapter discusses about the research design of the study. The sampling size, sampling procedure, development of tool, data collection and data analysis are also presented. The present chapter deals with the methodological procedure carried in the investigation which is explicitly described under the following sections:

3.1 Research Design

3.2 Operational Definitions

3.3 Variables of the Study

3.4 Locale of the Study

3.5 Unit of Enquiry

3.6 Sample Size and Sampling Procedure

3.7 Selection and Construction of the Tool

3.8 Establishment of Validity of the Tool

3.9 Establishment of Reliability of the Tool

3.10 Data collection

3.11 Data Analysis

3.12 Development of a Booklet Suggesting coping strategies for the Hotel Staff

3.1 Research Design

A research design is an arrangement of condition for collection and analysis of data in manner that aims to combine relevance to the research purpose with scientific procedures. A descriptive study determines and reports the way things are (Kothari, 2008). Descriptive research design is most suitable for the present study as focuses on assessing the Posture related Musculoskeletal Discomfort experienced by the hotel staff.

3.2 Operational Definitions

The following terms were operationally defined for the present study:

a. **Musculoskeletal Discomfort –** For the present study, it was operationally defined as pain, discomfort, or physical strain experienced in the muscles, tendons, ligaments, and nerves by hotel staff due to their work-related postures and repetitive tasks.
b. **Hotel Staff –** It was operationally defined as individuals employed in various departments of hotels, including Front Office Department, Housekeeping Department, and Food and Beverage Department, with at least two years of work experience.
c. **Front Office Department –** It was operationally defined as the department responsible for managing guest services such as check-ins, check-outs, reservations, guest relations, and payment processing.
d. **Housekeeping Department –** It was operationally defined as the department responsible for maintaining cleanliness, orderliness, and overall upkeep of guest rooms and public areas within the hotel.
e. **Food and Beverage Department –** It was operationally defined as the department responsible for the preparation, presentation, and service of food and beverages to hotel guests.
f. **Occupational Health Hazards –** It was operationally defined as any physical, chemical, biological, ergonomic, mechanical, or psychological factors at the workplace that could pose risks to the health and safety of hotel staff.
g. **Coping Strategies –** For the present study, it was operationally defined as techniques or methods employed by hotel staff to manage stress, reduce

h. discomfort, or mitigate the effects of occupational health hazards in their work environment.

3.3 Variables of the Study

Two sets of variables were identified for the present study i.e. Independent and Dependent variables. The following variables were considered for the present investigation:

3.3.1 Independent variables:

Independent variables are those variables, which are antecedent to the dependent variables and cannot be changed (Kothari, 2014). For the present research the independent variables were categorized under two sub-heads:

- **Personal Variables**: Personal Variables of the respondents included age, personal monthly income (in Rupees), marital status, gender and educational qualification.
- **Family Variables:** Family Variables of the respondents considered were, type of family and number of family members.

3.2.2 Dependent variables:

Dependent variables are those that are affected by the independent variables. For the present study the dependent variable was extent of musculoskeletal discomfort experienced by the respondent working in different department viz; Front Office Department, Housekeeping Department, and Food and Beverages Department.

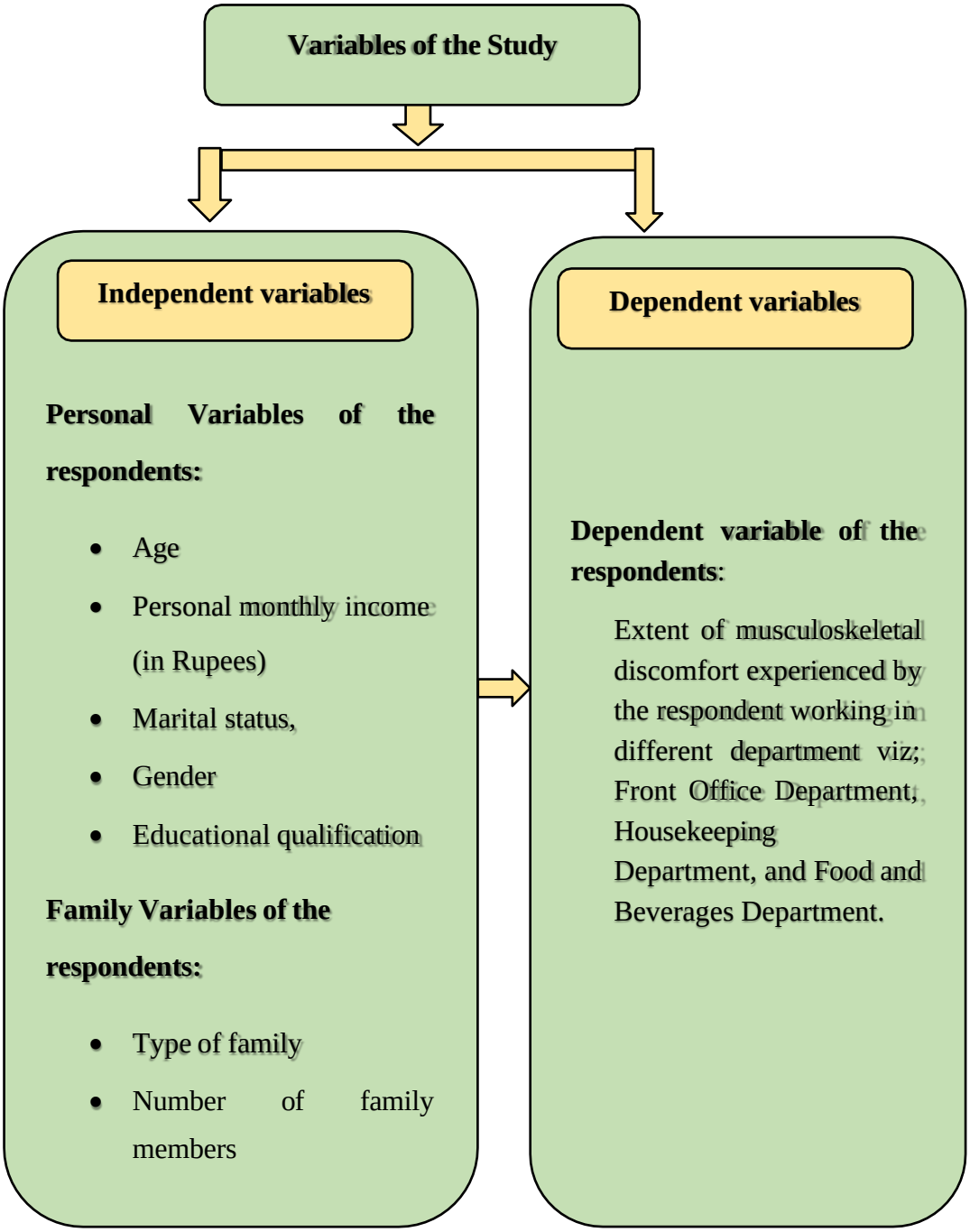


Figure 1: Schematic presentation of variables

3.4 Locale of the Study

The study was conducted in Vadodara City, Gujarat State. A total of 120 hotel staff were identified as the sample for the study, representing employees from various departments, including the Front Office, Housekeeping, and Food and Beverage departments.

3.5 Unit of Enquiry

The unit of enquiry for the study consisted of hotel staff working in various departments, such as the Front Office, Housekeeping, and Food and Beverage departments, within hotels in Vadodara City.

3.6 Sample Size and Sampling Procedure

3.6.1 Sample Size

For the present study, the sample comprised of 120 hotel staff from Vadodara City who had at least two years of working experience in the hospitality industry.

3.6.2 Sampling procedure

For the present study, Purposive Sampling technique was used to selected hotel and Snowball Technique to select hotel staff from Vadodara city.

3.6.3 Inclusion Criteria

1. The hotel staff were limited to hotels of Vadodara City, working in Front Office Department, Housekeeping Department and Food and Beverage Department only.
2. The study comprised 120 hotel staff who consented to participate in the study and were working in hotel for time period of minimum two years.
3. The study included only respondents not suffering from any chronic disease.

3.7 Selection and Construction of the Tool

3.7.1 Selection of the Tool

Questionnaire was used as a tool for survey it was considered appropriate for the research because of the following advantages:

1) Respondents had enough time to think and answer.
2) The answers were unbiased and written in the respondents' own words.
3) It made it easy to reach people who are hard to contact.

3.7.2 Description of the Tool

Based on the objectives of the study, a questionnaire was prepared. While preparing the questionnaire, care was taken to include all the necessary questions that would gather the information needed to attain the objectives of the study.

The questionnaire comprised of two sections: -

Section I Background information of the respondents: This section dealt with the background information of the respondents i.e. age, personal monthly income (in Rupees), marital status, gender, education, type of family, number of family members, and educational qualification.

Section II Posture-related Musculoskeletal Discomfort experienced by the hotel staff: This section dealt with the extent of musculoskeletal discomfort experienced by the hotel staff working in different Departments of hospitality industry (viz; Front desk department, housekeeping management department and Food and beverage department) while performing various job tasks. The respondents were asked to respond to a 3-point continuum scale in terms of "Always", "Sometime" and, "Never" and the scores from 3 through 1 were given to the respondents respectively. To obtain the categories of extent of discomfort, the score range was divided on an equal interval basis.

Section III Occupational Health Hazard

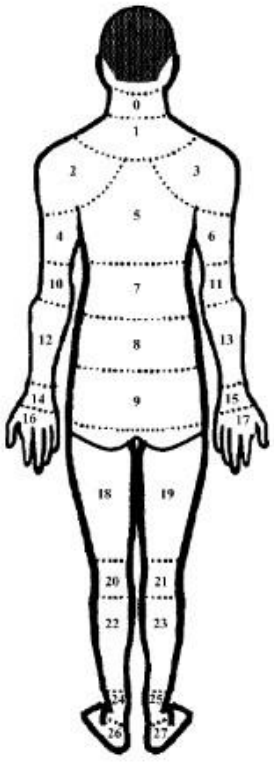
Under this section the perceived musculoskeletal pain was analysed.

a. Perceived Musculoskeletal Pain: In order to study the perceived musculoskeletal pain experienced by the Hotel staff in the Hotel industry, the Nordic Body Map (NBM) was used. Nordic Body Map assesses the musculoskeletal problems occurring due to non-ergonomic work postures.

It helps in determining the extent to which pain is experienced in 28 different locations of the body encompassing major areas like neck, shoulders, upper back, elbows, wrist/hands, low back, hips/thigh, knees

and ankles/feet. Scores are to be assigned on a four-point scale with 'no pain' (1 point), 'moderate pain' (2 point), 'pain' (3 point) and 'very painful'' (4 point). The individual total score defines the degree of risk associated with it and also proposes the level of improvement required for the same.

Individual score range of 28-49 is categorised under 'low risk whichdoesn't need improvement. Score ranging from 50-70 comes under 'medium risk which may need improvement. Score range of 71-91 is associated with a "high degree of risk which needs improvement and a score between 92-112 is categorised as a 'very high degree of risk which needs improvement as soon as possible.



No	Location	Grade of complaints			
0	Pain/stiff in the upper neck	A	B	C	D
1	Pain in the lower neck				
2	Pain in the left shoulder				
3	Pain in the right shoulder				
4	Pain in the left upper arm				
5	Pain in the back				
6	Pain in the right upper arm				
7	Pain in the waist				
8	Pain in the buttock				
9	Pain in the bottom				
10	Pain in the left elbow				
11	Pain in the right elbow				
12	Pain in the left lower arm				
13	Pain in the right lower arm				
14	Pain in the left wrist				
15	Pain in the right wrist				
16	Pain in the left hand				
17	Pain in the right hand				
18	Pain in the left thigh				
19	Pain in the right thigh				
20	Pain in the left knee				
21	Pain in the right knee				
22	Pain in the left calf				
23	Pain in the right calf				
24	Pain in the left ankle				
25	Pain in the right ankle				
26	Pain in the left foot				
27	Pain in the right foot				

Plate 1: Nordic Body Map

3.8 Establishment of Validity of the Tool

Validity indicates the degree to which a tool measures what it is supposed to measure. “Content validity is the extent to which a measuring instrument provides adequate coverage of the topic under study” (Kothari, 2014).

The content validity of the tool developed on Posture-related Musculoskeletal Discomfort Experienced by Hotel Staff was established. To test the validity of the statements prepared, the scales were given to a panel of 11 judges comprising of teachers from the field of Hospitality Management, Ergonomics and Department of Family and Community Resource Management. They were requested to check the clarity and relevance of the content for each subsection. They were also requested to state whether each statement fell in the category under which it was listed and to check the clarity and relevance for each scale.

The suggestions of judges were taken into consideration for the inclusion of the statement in the final tool. Changes were made according and the final tool was prepared.

3.9 Establishment of reliability of the tool

Reliability is the accuracy or precision of a measuring instrument. The reliability of the scale was established through split-half method. For split half method the scale was divided in two using odd and even method. The coefficient of correlation was found between the two halves. Spearman-Brown correction formula was applied to estimate the reliability coefficient for the entire scale.

The overview of the reliability coefficient of the scale used in present study is given in table 1. The reliability value was found to be high for the scale as reported here.

Table 1: Overview of the scale with Reliability value

Sr. No.	Scale Reliability	Reliability Value
1.	Posture-Related Musculoskeletal Discomfort Experienced by Hotel Staff	0.85

3.10 Data collection

The data was collected using questionnaire. Data were gathered by the investigator from October to December 2024. Respondents were identified using the snowball sampling technique in Vadodara city. The purpose of the research was explained, and prior to data collection, a rapport was established to ensure full cooperation from the respondents and obtain true responses. The investigator personally distributed and collected the completed questionnaires to ensure respondents clearly understood the terms used, thereby avoiding misinterpretations and eliciting reliable data.

3.11 Data Analysis

Different data analysis procedure like categorization, coding, tabulation and statistical analysis were utilized to analyze the data.

3.11.1 Categorization

The following categorization were made to enable researcher to analyse the data.

Section I: Background information: It was categorised as follows:

1) Age of the respondents (in years)
    1) 20 - 29 years
    2) 30 - 39 years
    3) 40 - 49 years

2) Gender of the respondents
    1) Male
    2) Female

3) Marital status of the respondents
    1) Unmarried
    2) Married

4) Type of family
    1) Nuclear family
    2) Joint family

5) Number of Family members
    1) 2 to 4 members
    2) 5 to 7 members
    3) 8 to 10 members

6) Monthly Personal Income

    1) ₹10000 - ₹50000
    2) ₹50001 - ₹100000
    3) ₹100001 - ₹150000

7) Educational Qualification of the respondents
    1) Illiterate
    2) 10^{th} pass
    3) Diploma
    4) Graduate
    5) Postgraduate

8) Type of hotel of the respondents
    1) 5 Star
    2) 4 Star
    3) 3 Star
    4) 2 Star
    5) 1 Star

Part B: Work Related Information: It included information on the following:

1) Working Hours (per day)
    1) 5 – 7 hours
    2) 8 – 10 hours
    3) 10 hours – 13 hours

2) Years of working
    1) 2 – 4 years
    2) 4 – 6 years
    3) 6 – 8 years

3) Types of tasks performed
    1) Heavy lifting
    2) Repetitive motions
    3) Prolonged standing
    4) Carrying loads over distances
    5) Frequent walking
    6) Pushing and pulling objects
    7) Manual handling of materials
    8) Use of hand tools
    9) Prolonged sitting
    10) Maintaining awkward postures
    11) Frequent crouching
    12) Frequent kneeling

4) Types of work and physical demand
    1) Light (e.g., administrative tasks)
    2) Moderate (e.g., customer service, housekeeping)
    3) Heavy (e.g., maintenance, kitchen staff)

5) Opportunity given to learn new skills in the hotel
    1) Regularly
    2) Occasionally
    3) Never

6) Frequency of Shift changes
    1) Daily
    2) Every 3 days
    3) Weekly
    4) Monthly
    5) Occasionally

7) Number of breaks taken during a shift
    1) 1 Break
    2) 2 Breaks
    3) 3 or more breaks

8) Overtime shifts
    1) Daily
    2) Weekly
    3) Monthly
    4) Occasionally

9) Shift duration
    1) 8 hours
    2) 9 hours
    3) 10 hours

10) Duration of Breaks
    1) 10 minutes - 15 minutes
    2) 15 minutes – 20 minutes
    3) 20 minutes - 30 minutes

11) Degree of Comfortability of work place
    1) Very comfortable
    2) Somewhat comfortable
    3) Not at all comfortable

12) Use personal protective equipment (PPE)
    1) Always use PPE
    2) Occasionally use PPE
    3) Never use PPE

13) Types of Personal Protective Equipment (PPE) do you use in workplace.
    1) Gloves
    2) Masks/ Respirators
    3) Safety Goggles/Glasses
    4) Protective Clothing (e.g., uniforms, aprons)
    5) Face Shields
    6) Safety Footwear

3.11.2 Section II: Posture-Related Musculoskeletal Discomfort Experienced by Hotel Staff

The scale consisted of statements related to musculoskeletal discomfort experienced by the staff working in different department of hospitality industry viz. Front desk department, Housekeeping department, Food and Beverage department. The respondents were asked to respond on a 3-point Likert scale in terms of Always, Sometime and Never where 3, 2, 1 were the scores assigned to them. Minimum and maximum possible scores were divided into 3 categories of equal interval to determine the extent of discomfort into Low, Medium and High category. Lower scores indicated low extent of discomfort of the respondents.

Table 2: Categorization and range scores for Extent of Musculoskeletal Discomfort experienced by the respondents regarding Front desk Department.

Sr. No	Extent of discomfort	Range of Score
1.	To Low Extent	39 – 66
2.	To Moderate Extent	67 – 93
3.	To High Extent	94 - 120

This section dealt with the extent of posture related musculoskeletal discomfort experienced by the hotel staff working in different Departments of hospitality industry. The respondents were asked to respond to a 3-point continuum scale in terms of “Always”, “Sometimes” and, “Never” and the scores from 3 through 1 were given to the respondents respectively. For Front

Desk Department, the minimum score was 40 and the maximum score was 120.

Table 3: Categorization and range scores for Extent of Musculoskeletal Discomfort Experienced in the Housekeeping Department

Sr. No	Extent of discomfort	Range of Score
1.	To Low Extent	34 -56
2.	To Moderate Extent	57 – 79
3.	To High Extent	80 - 102

This section dealt with the extent of posture related musculoskeletal discomfort experienced by the hotel staff working in different Departments of hospitality industry. The respondents were asked to respond to a 3-point continuum scale in terms of “Always”, “Sometimes” and, “Never” and the scores from 3 through 1 were given to the respondents respectively. For Housekeeping Department, the minimum score was 38 and maximum was 102.

Table 4: Categorization and range scores for extent of Musculoskeletal Discomfort experienced in the Food and Beverage Department

Sr. No.	Extent of Discomfort	Range of Score
1.	To Low Extent	35 -58
2.	To Moderate Extent	59 – 82
3.	To High Extent	82 - 105

This section dealt with the extent of posture related musculoskeletal discomfort experienced by the hotel staff working in different Departments of hospitality industry. The respondents were asked to respond to a 3-point continuum scale in terms of “Always”, “Sometimes” and, “Never” and the scores from 3 through 1 were given to the respondents respectively. For Food and Beverage Department the minimum score was 35 and maximum score was 105.

3.11.3 Coding

Coding operation is usually done at this stage through which the categories of data are put in the form of tables, and then the information from each section of the questionnaire was transferred on the Excel sheet.

3.11.4 Tabulation

Tabulation is part of the technical procedure where in the classified data are put in the form of tables. The data were transferred from raw form into tabular form to give a clear picture of the findings.

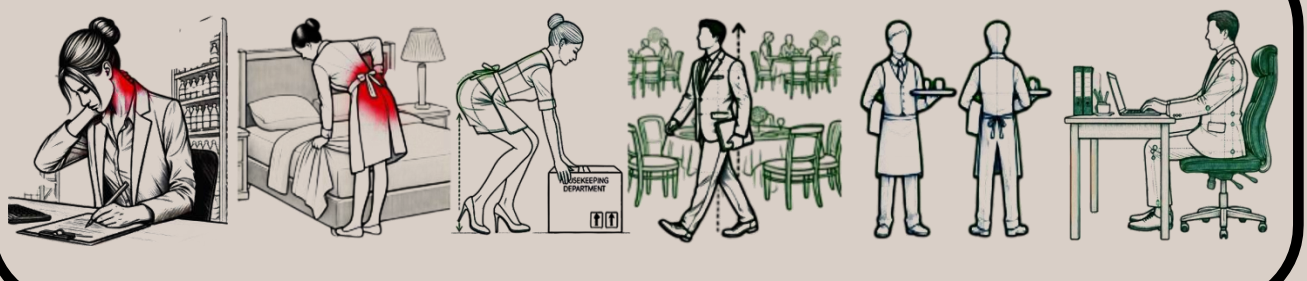
3.11.5 Statistical analysis

Data were analysed using descriptive statistics such as mean, frequency, percentage, and relational statistics (t test, and F test).

3.12 Development of a Booklet Suggesting coping strategies for the Hotel Staff

A booklet was developed for suggesting coping strategies for Hotel staff of three Departments viz. Front Office, Housekeeping, and Food & Beverage in order to deal with their problems and enhance comfort at their workplace. The booklet highlights specific challenges faced by various departments and provides solutions to enhance their physical and mental well-being. The content of the booklet was developed with the aid of Review of Literature. A panel of experts from the Department of Family and Community Resource Management were requested to validate the importance of topic, content and language clarity of the content. The suggestions given by the experts were incorporated and changes were done accordingly.

Findings & Discussion



CHAPTER IV

FINDINGS AND DISCUSSION

This chapter deals with the findings of the data collected. The findings of the present investigation, as obtained after the analysis of the collected data through the questionnaire, are described and discussed in this chapter. The findings have been supported by relevant discussions and interpretations. For systematic presentation, this chapter has been divided into the following sections:

Section I

4.1 Background Information of the Respondents

Part A: Demographic Profile

Part B: Work Related Information

Section II

4.2 Posture-Related Musculoskeletal Discomfort Experienced by Hotel Staff

4.2.1 Front Office Department

4.2.2 Housekeeping Department

4.2.3 Food and Beverage Department

Section III

4.3 Occupational health hazard

Section IV

4.4 Testing of Hypotheses

Section V

4.5 Development of a Booklet Suggesting coping strategies for the Hotel Staff

Section I

4.1 Background Information of the Respondents

The background information included all aspects related to the respondents that were important for the study, such as age, department, years of experience in related field, and working hours. The background information was collected through Questionnaires filled out by the respondents.

PART A: Demographic Profile

4.1.1 Age of the respondents (in years)

Age of the respondents ranged from 20 years to 49 years.

Table 5: Frequency and percentage distribution of the respondents according to their Age n=120

Sr. No.	Age of the respondents (in years)	Respondents (n = 120)	
		f	%
1.	20 - 29 years	**98**	**81.67**
2.	30 - 39 years	12	10.00
3.	40 - 49 years	10	08.33
Total		**120**	**100**
Mean Age		**27 years**	

The data from the above table 5 showed that the respondents were categorized into three distinct age groups of 20-29 years, 30-39 years, and 40-49 years. The distribution of respondents revealed that the majority of the respondents fall within the age group of 20-29 years, accounting for 81.67 per cent of the total sample followed by 10 per cent of the respondents under the age group of 30-39 years, and only 8.33 per cent of respondents fall within the category of 40-49 years age group.

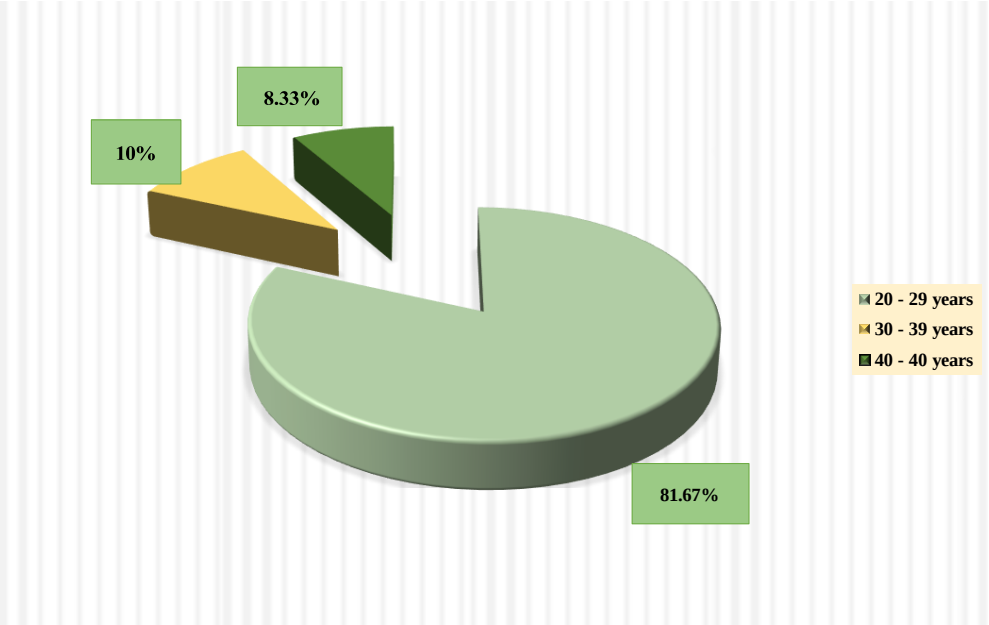


Figure 2: Percentage Distribution of Respondents according to their Age

4.1.2 Gender of the respondents

The gender of the respondents was divided into two group, male and female.

Table 6: Frequency and percentage distribution of the respondents according to their Gender

Sr.No.	Gender of the respondents	Respondents (n = 120)	
		f	%
1.	Male	**91**	**75.83**
2.	Female	29	24.17
	Total	**120**	**100**

The data from the table 6 revealed that 75.83 per cent of the respondents were male while 24.17 per cent of the respondents were female.

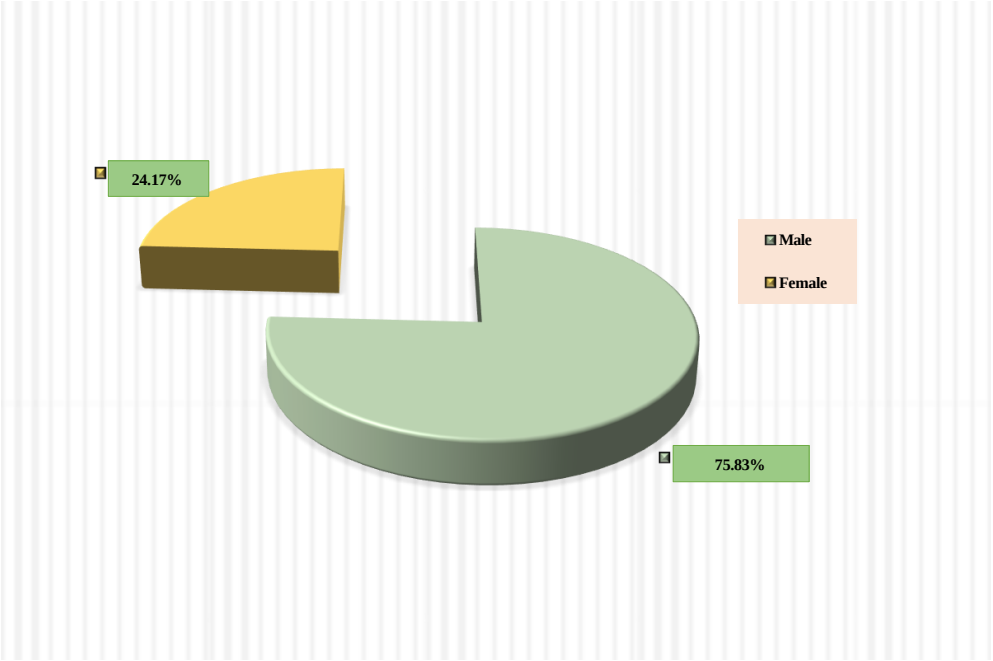


Figure 3: Percentage Distribution of Respondents according to their Gender

4.1.3 Marital status of the respondents

The marital status of the respondents was divided into two group, unmarried and married.

Table 7: Frequency and percentage distribution of the respondents according to their Marital status

Sr. No.	Marital status of the respondents	Respondents (n = 120)	
		f	%
1.	Unmarried	**61**	**50.83**
2.	Married	59	49.17
	Total	**120**	**100**

The data from the table 7 represented that 50.83 per cent of the respondents were unmarried whereas 49.17 per cent of the respondents were married.

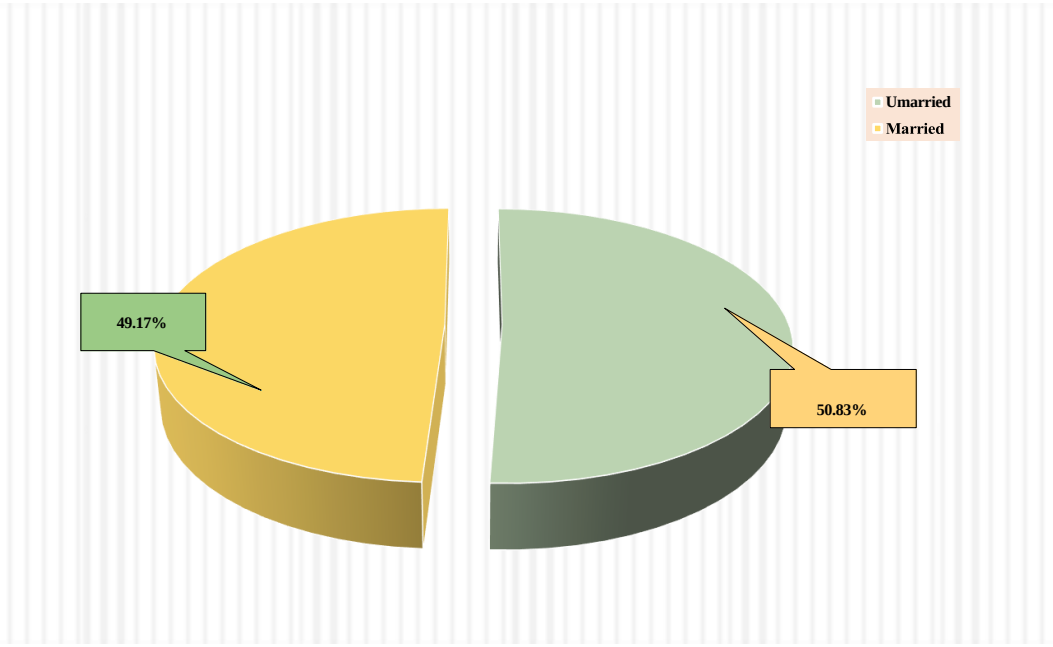


Figure 4: Percentage Distribution of Respondents according to their Marital Status

4.1.4 Type of Family of the Respondents

The types of family of the respondents were divided into two groups, joint family and nuclear family.

Table 8: Distribution of the respondents according to the types of family

Sr. No.	Type of family	Respondents (n = 120)	
		f	%
1.	Nuclear family	55	45.83
2.	Joint family	**65**	**54.17**
	Total	**120**	**100**

The analysis of the type of family depicted that 54.17 per cent of the respondents belonged to joint families, whereas 45.83 per cent of the respondents were from nuclear families.

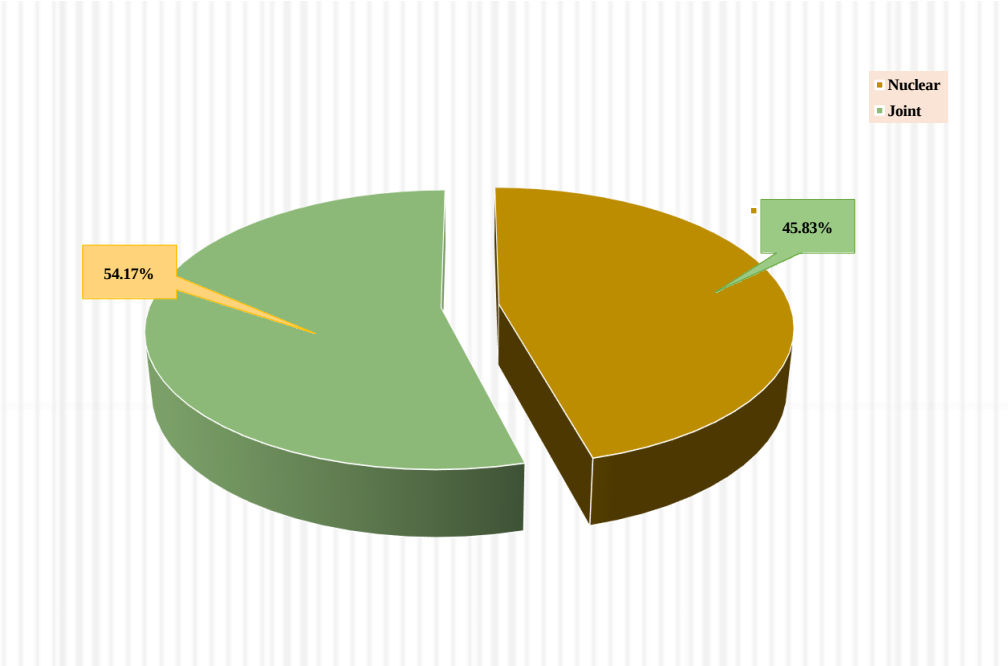


Figure 5: Percentage Distribution of respondents according to their Type of family

4.1.5 Number of Family size

The Number of family of the respondents was divided into three categories, 2 to 4 members, 5 to 7 members and 8 to 10 members.

Table 9: Distribution of the respondents according to the number of family members

Sr. No.	Number of Family members	Respondents (n = 120)	
		f	%
1.	2 to 4 members (small)	35	29.17
2.	5 to 7 members (medium)	**67**	**55.83**
3.	8 to 10 members (large)	18	15.00
Total		**120**	**100**

The distribution of respondents regarding the family size depicted that 29.17 per cent had 2 to 4 members in their family, 55.83 per cent had 5 to 7 members, and 15.00 per cent reported having 8 to 10 members in their family

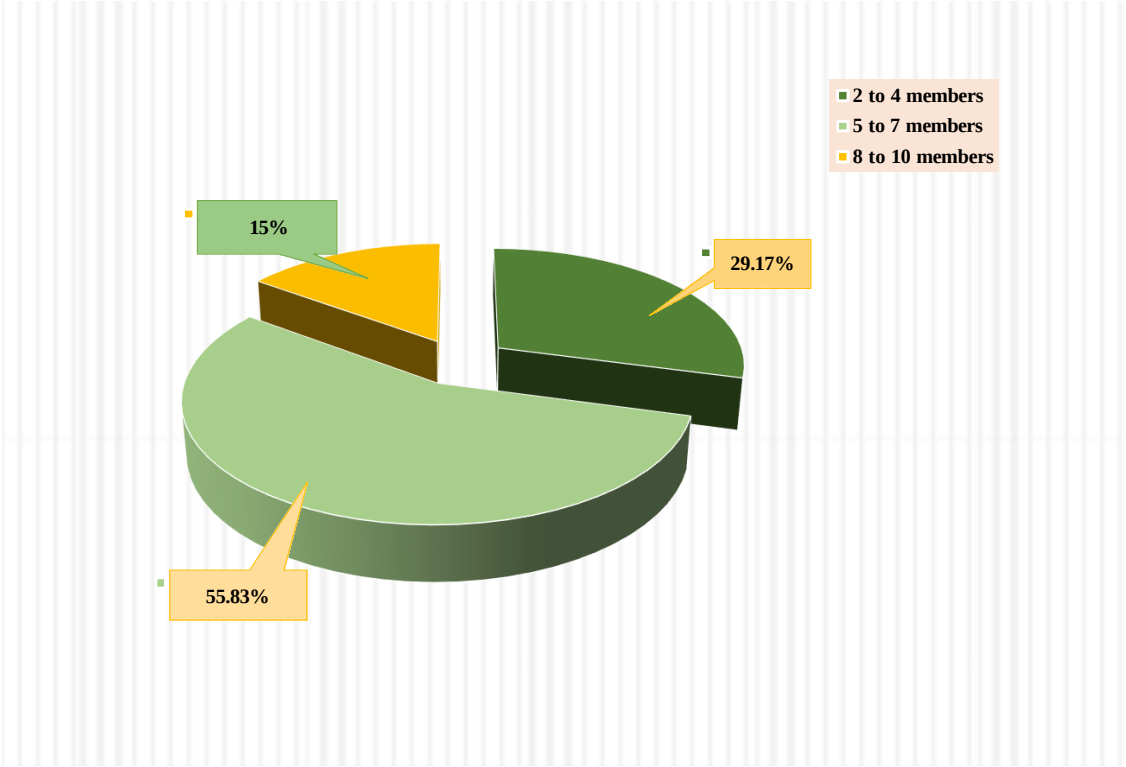


Figure 6: Percentage distribution of the respondents according to the Number of Family Members

4.1.6 Monthly Family Income of the respondents (in Rupees)

The monthly family income of the respondents was divided into three categories, ₹10000 - ₹50000, ₹50001 - ₹100000, ₹100001 - ₹150000.

Table 10: Distribution of the respondents according to their Monthly Personal Income

Sr. No.	Monthly Personal Income (in ₹)	Respondents (n = 120)	
		f	%
1.	₹10000 - ₹50000	01	00.83
2.	₹50001 - ₹100000	**67**	**55.83**
3.	₹100001 - ₹150000	52	43.33
	Total	**120**	**100**
	Mean	**₹88,500.71**	

The distribution of respondents based on their monthly personal income revealed that 55.83 per cent of the respondents' personal monthly income was between ₹50,001 and

₹100,000 per month followed by 43.33 per cent of the respondents having income of ₹100,0001 and 1,50,000 per month. Only 0.83 per cent of the respondents indicated that their monthly income was ₹10,000 to 50,000.

The average monthly personal income of the respondents was ₹88,500.71.

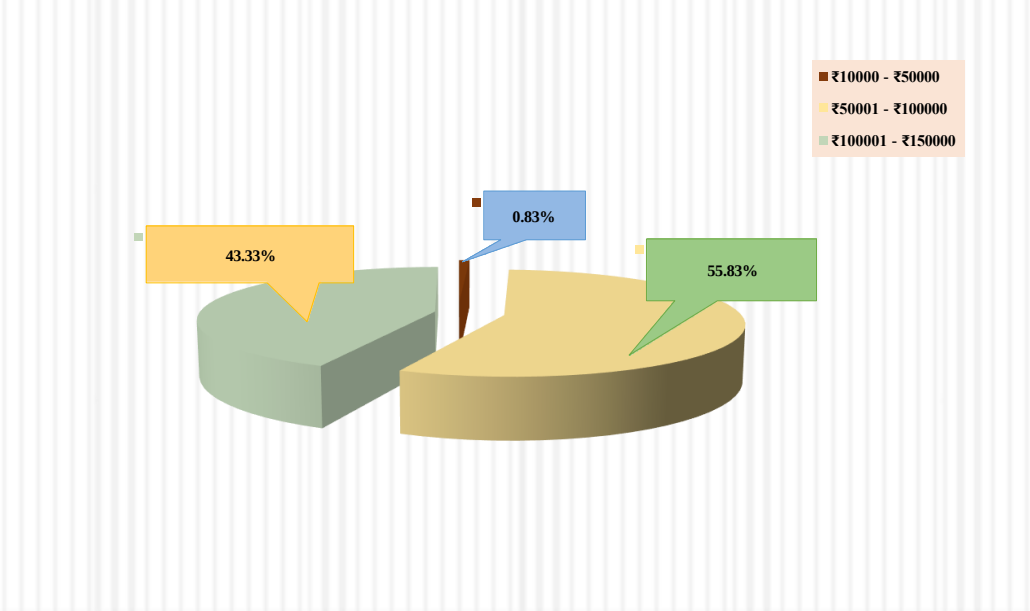


Figure 7: Percentage Distribution of Respondents according to their monthly personal income (in Rupees)

4.1.7 Educational Qualification of the respondents

Education of the respondents was studied in terms of formal education obtained by the respondents.

Table 11: Distribution of the respondents according to their Educational Qualification

Sr. No.	Educational Qualification	Respondents (n = 120)	
		f	%
1.	Diploma	23	19.17
2.	Graduate	**52**	**43.33**
3.	Postgraduate	45	37.50
	Total	**120**	**100**

The distribution of respondents based on their educational qualifications, as shown in the table above, reveals that the largest proportion (43.33 per cent) were graduates. This is followed by 37.50 per cent who held a postgraduate degree, while 19.17 per cent had obtained a diploma qualification.

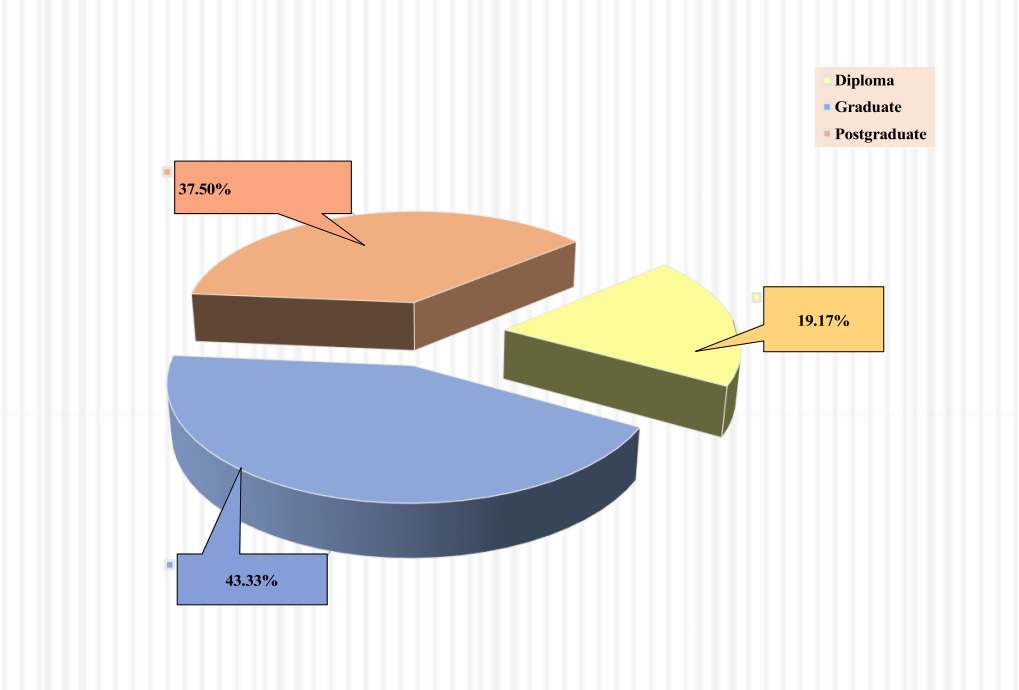


Figure 8: Percentage distribution of the respondents according to their Educational Qualification

4.1.8 Types of hotels of the respondents

The information collected on the types of hotels of the employees.

Table 12: Distribution of the respondents according to their Type of hotel

Sr.No.	Type of hotel	Respondents (n = 120)	
		f	%
1.	5 Star	17	14.17
2.	4 Star	**50**	**41.67**
3.	3 Star	41	34.17
4.	2 Star	10	8.33
5.	1 Star	02	01.67
	Total	**120**	**100**

The data presented in table 12 showed the distribution of respondents based on the type of hotel they were employed in. 41.67 per cent worked in 4-star hotels, 34.17 per cent in 3-star hotels, 14.17 per cent in 5-star hotels, 8.33 per cent in 2-star hotels, and 1.67 per cent in 1-star hotels.

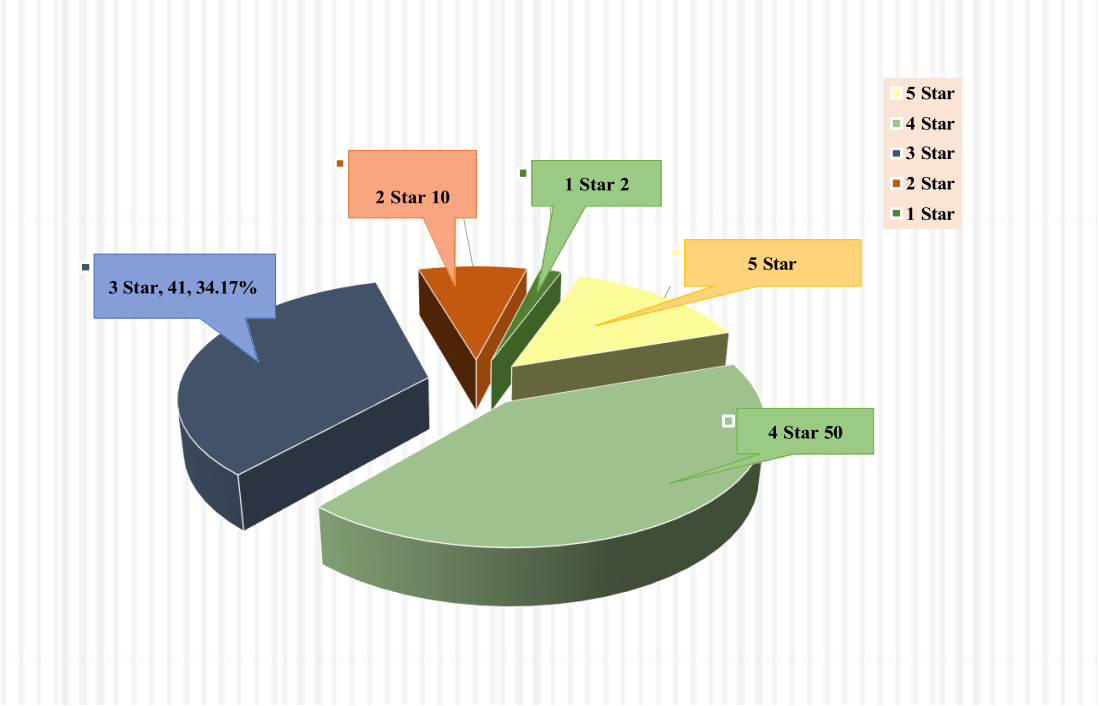


Figure 9: Percentage distribution of the respondents according to the Type of hotel

Part B: Work Related Information: It included information on the following:

4.1.9 Working Hours (per day)

Working hours (per day) of the respondents ranged from 5 to 13 hours

Table 13: Percentage distribution of Respondents according to their working hours (per day) n = 120

Sr. No.	Working Hours (per day)	Departments					
		Front office (n = 40)		Housekeeping (n=40)		Food and Beverages (n=40)	
		f	%	f	%	f	%
1.	5-7 hours	06	15.00	01	02.50	02	05.00
2.	8-10 hours	**32**	**80.00**	**33**	**82.50**	**35**	**87.50**
3.	11 - 13 hours	02	05.00	06	15.00	03	07.50
Total		**40**	**100**	**40**	**100**	**40**	**100**

The distribution of working hours per day for respondents depicted that in the Front Office department, only 05 per cent worked between 11 to 13 hours per day, only 15 per cent worked between 5 to 7 hours per day, and 80 per cent worked between 8 to 10 hours per day.

In the Housekeeping department, only 2.50 per cent worked between 5 to 7 hours per day, only 15 per cent worked between 11 to 13 hours per day, and 82.50 per cent worked between 8 to 10 hours per day.

In the Food and Beverages department, only 05 per cent worked between 5 to 7 hours per day, only 7.50 per cent worked between 11 to 13 hours per day, and 87.50 per cent worked between 8 to 10 hours per day.

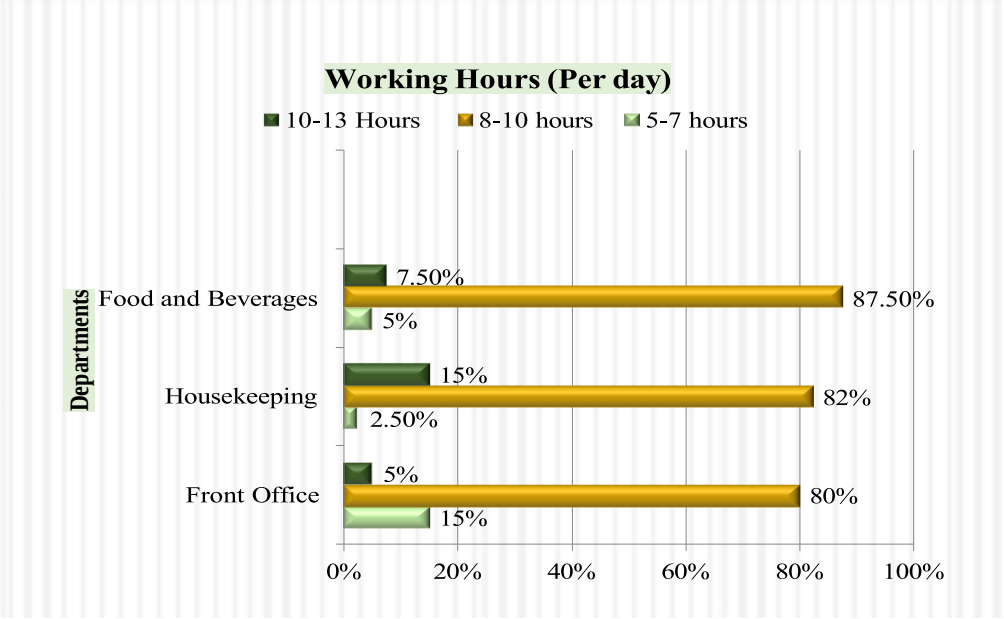


Figure 10: Percentage distribution of the respondents according to the Working Hours (per day)

4.1.10 Work experience in years

Work experience (in years) of the respondents ranged from 2 years to 8 years

Table 14: Percentage Distribution of the Respondents According to Their work experience **n = 120**

Sr. No.	Working experiences (per day)	Departments					
		Front office (n = 40)		Housekeeping (n=40)		Food and Beverages (n=40)	
		f	%	f	%	f	%
1.	2-4 years	11	27.50	09	22.50	13	32.50
2.	4-6 years	**28**	**70.00**	**26**	**65.50**	**25**	**62.50**
3.	6 - 8 years	01	02.50	05	12.50	02	05.00
Total		**40**	**100**	**40**	**100**	**40**	**100**

The distribution of work experience per day for respondents across different departments is shown in table 14. As observed, most respondents in the Front Office department, (70 per cent) had 4-6 years of experience, followed by 27.50 per cent with 2-4 years and only 2.50 per cent with 6 - 8 years. Similarly, in the housekeeping department, most respondents, (65.50 per cent) had 4-6 years of experience, while 22.50

per cent had 2-4 years, and 12.50 per cent had 6 - 8 years. In the Food and Beverages department, 62.50 per cent had 4-6 years of experience, 32.50 per cent had 2-4 years, and 5 per cent had 6 -8 years.

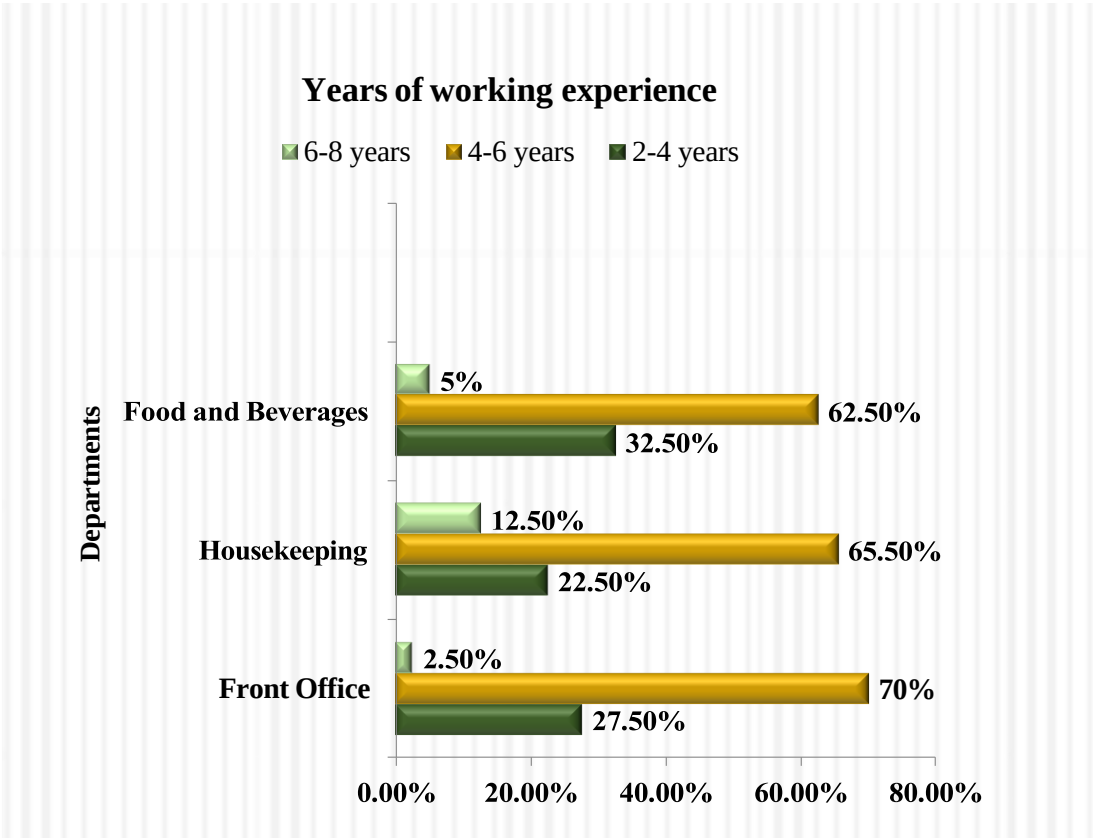


Figure 11: Percentage distribution of the respondents according to their work experience

4.1.11 Types of tasks

The information collected on the types of tasks performed by the employees.

Table 15: Percentage Distribution of the Respondents according to Types of tasks performed by hotel staff **n = 120**

Sr. No.	Types of Tasks	Departments					
		Front office (n = 40)		Housekeeping (n=40)		Food and Beverages (n=40)	
		f	%	f	%	f	%
1.	Heavy lifting	06	15.00	**31**	**77.50**	28	70
2.	Repetitive motions	23	57.50	**25**	**62.50**	26	65
3.	Prolonged standing	**25**	**62.50**	18	45.00	18	45
4.	Carrying loads over distances	07	17.50	**20**	**50.00**	07	17.50
5.	Frequent walking	27	67.50	31	77.50	**36**	**90.00**
6.	Pushing and Pulling objects	05	12.50	**18**	**45.00**	09	22.50
7.	Manual handling of materials	04	10.00	**19**	**47.50**	19	47.50
8.	Use of hand tools (e.g., vacuum cleaners, mope, or kitchen utensils	02	05.00	**26**	**65.00**	11	27.50
9.	Prolonged sitting (e.g., at the front desk)	**14**	**35.00**	10	25.00	11	27.50
10.	Maintaining awkward postures (e.g., reaching for high shelves)	05	12.50	**08**	**20.00**	07	17.50
11.	Frequent crouching	07	17.50	10	25.00	**17**	**42.50**
12.	Frequent kneeling	08	20.00	10	25.00	**16**	**40.00**
	Total	**40**	**100**	**40**	**100**	**40**	**100**

The distribution of tasks performed by hotel staff across the Front Office, Housekeeping, and Food and Beverage departments is shown in table 15. In the Front

Office, the most common tasks were walking (67.5 per cent) and standing (62.5 per cent). Repetitive motions were reported by 57.5 per cent of respondents, while less common tasks included sitting (35 per cent), carrying loads (17.5 per cent), and maintaining awkward postures (12.5 per cent).

In Housekeeping, most respondents reported walking (77.5 per cent) and heavy lifting (77.5 per cent). Other common tasks included repetitive motions (62.5 per cent) and using hand tools (65 per cent). Less common tasks were crouching, kneeling (25 per cent each), and awkward postures (20 per cent).

In Food and Beverage, the majority of respondents reported walking (90 per cent), followed by heavy lifting (70 per cent) and repetitive motions (65 per cent). Other tasks included standing (45 per cent), kneeling (40 per cent), and using hand tools (27.5 per cent). Only 17.5 per cent tasks included carrying loads and awkward postures.

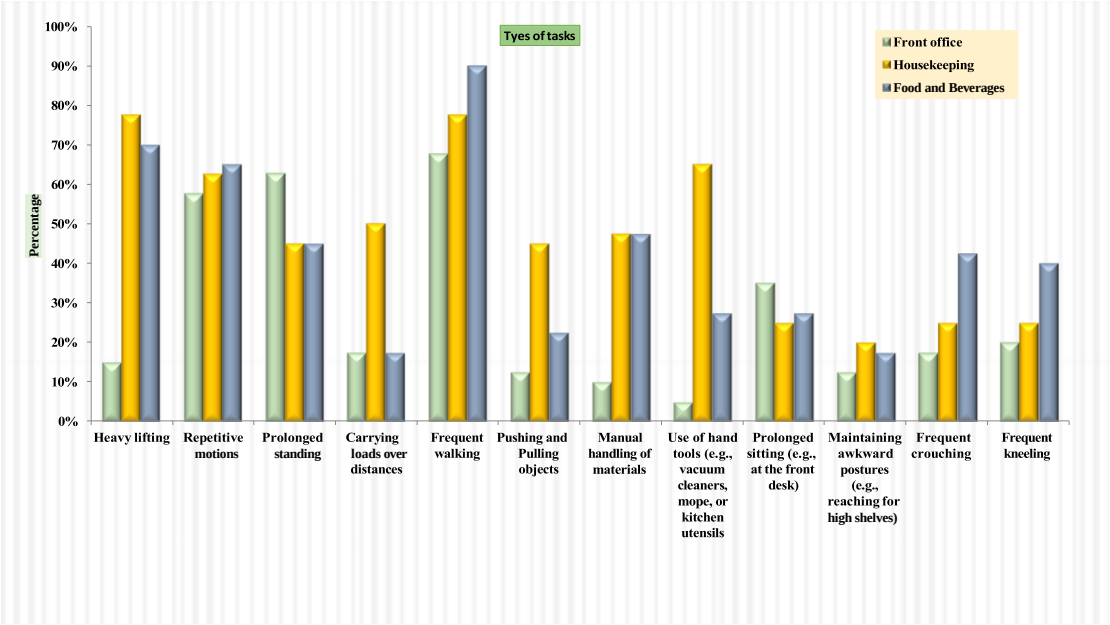


Figure 12 Percentage distribution of the respondents according to the Types of Tasks

4.1.12 Use of personal protective equipment (PPE)

The information was collected on the distribution of personal protective equipment (PPE) usage reported by staff.

Table 16: Percentage distribution of respondents according to the use of personal protective equipment (PPE) n = 120

Sr. No.	Personal Protective equipment (PPE)	Departments					
		Front office (n = 40)		Housekeeping (n=40)		Food and Beverages (n=40)	
		f	%	f	%	f	%
1.	Always use PPE	12	30.00	08	20.00	**21**	**52.50**
2.	Occasionally use PPE	26	65.00	**32**	**80.00**	19	47.50
3.	Never use PPE	**02**	**05.00**	-	-	-	-
Total		**40**	**100**	**40**	**100**	**40**	**100**

The distribution of personal protective equipment (PPE) usage reported by staff in the Front Office, Housekeeping, and Food and Beverage (F&B) departments depicted that in the Front Office department, 30 per cent of respondents indicated they always used personal protective equipment (PPE), most (65 per cent) mentioned they sometimes used it, and 5 per cent noted they never used personal protective equipment (PPE). In the Housekeeping department, only 20 per cent of respondents indicated they always used personal protective equipment (PPE), while the majority (80 per cent) mentioned they sometimes used it, and none noted they never used personal protective equipment (PPE).

The Food and Beverage department showed the highest use of personal protective equipment (PPE), with 52.5 per cent of respondents indicating they always used personal protective equipment (PPE) and 47.5 per cent mentioning they sometimes used it, while none noted they never used personal protective equipment (PPE).

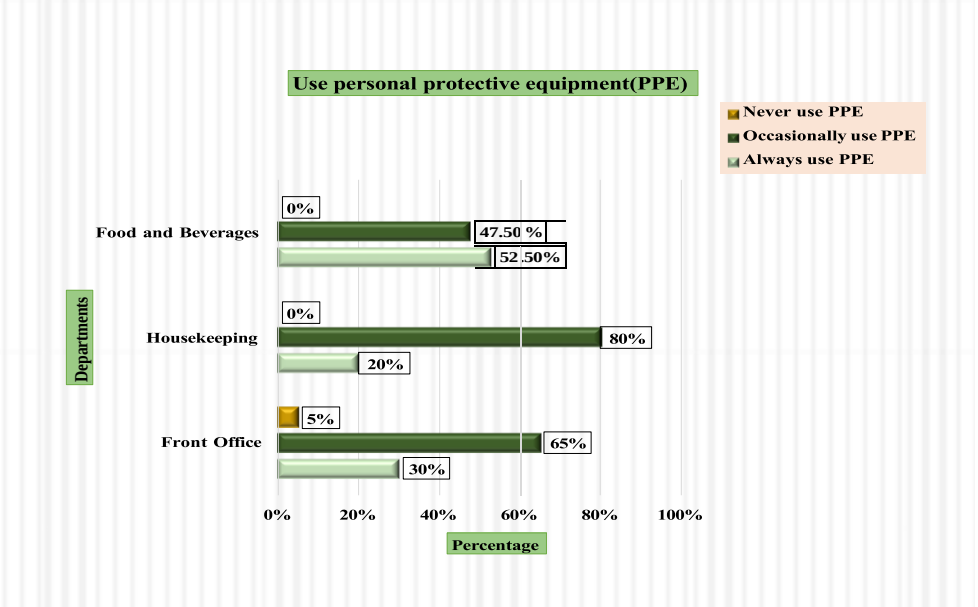


Figure 13: Percentage distribution of the respondents according to the Use of personal protective equipment (PPE)

4.1.13 Types of personal protective equipment (PPE) use in workplace

The information on the types of personal protective equipment (PPE) used by hotel staff is presented here

Table 17: Percentage Distribution of Respondents according to types of personal protective equipment (PPE) used by hotel staff n = 120

Sr.No.	Personal Protective Equipment (PPE)	Departments					
		Front office (n=40)		Housekeeping (n=40)		Food and Beverages (n=40)	
		f	%	f	%	f	%
1.	Gloves	10	25.00	**32**	**80.00**	31	77.50
2.	Masks/ Respirators	30	75.00	29	72.50	26	65.00
3.	Safety Goggles/Glasses	05	12.50	26	65.00	06	15.00
4.	Protective Clothing (e.g., uniforms, aprons)	**34**	**85.00**	30	75.00	**38**	**95.00**
5.	Face Shields	01	02.50	14	35.00	09	22.50
6.	Safety Footwear	10	25.00	21	52.50	23	57.50
7.	Sleeve protectors	-	-	-	-	03	07.50
	Total	**40**	**100**	**40**	**100**	**40**	**100**

The information collected on the types of personal protective equipment (PPE) used by hotel staff in the Front Office, Housekeeping, and Food and Beverage (F&B) departments depicted that Gloves were most frequently used in the Housekeeping department, with the majority (80 per cent) of respondents indicating their use, followed closely by the Food and Beverage department at 77.5 per cent. In contrast, only 25 per cent of respondents in the Front Office used gloves. Masks or respirators were widely used across all departments, with 75 per cent in the Front Office,72.5 per cent in Housekeeping, and 65 per cent in the Food and Beverage department indicating their use. Safety goggles or glasses were more frequently used in the Housekeeping department (65 per cent) compared to the Food and Beverage department (15 per cent) and the Front Office (12.5 per cent).

Protective clothing, such as uniforms and aprons, was the most commonly used personal protective equipment (PPE) in all departments, with 95 per cent of respondents in the Food and Beverage department, 85 per cent in the Front Office, and 75 per cent in the Housekeeping department indicating its use. Face shields were used less frequently, with the highest usage reported in the Housekeeping department (35 per cent), followed by the Food and Beverage department (22.5 per cent) and the Front Office (2.5 per cent). Safety footwear was used by 57.5 per cent of respondents in the Food and Beverage department, 52.5 per cent in the Housekeeping department, and 25 per cent in the Front Office department.

A minimal number of respondents indicated the use of other personal protective equipment (PPE), with only 2.5 per cent in the Front Office and 5 per cent in the Food and Beverage department. No respondents in the housekeeping department reported using other types of personal protective equipment (PPE).

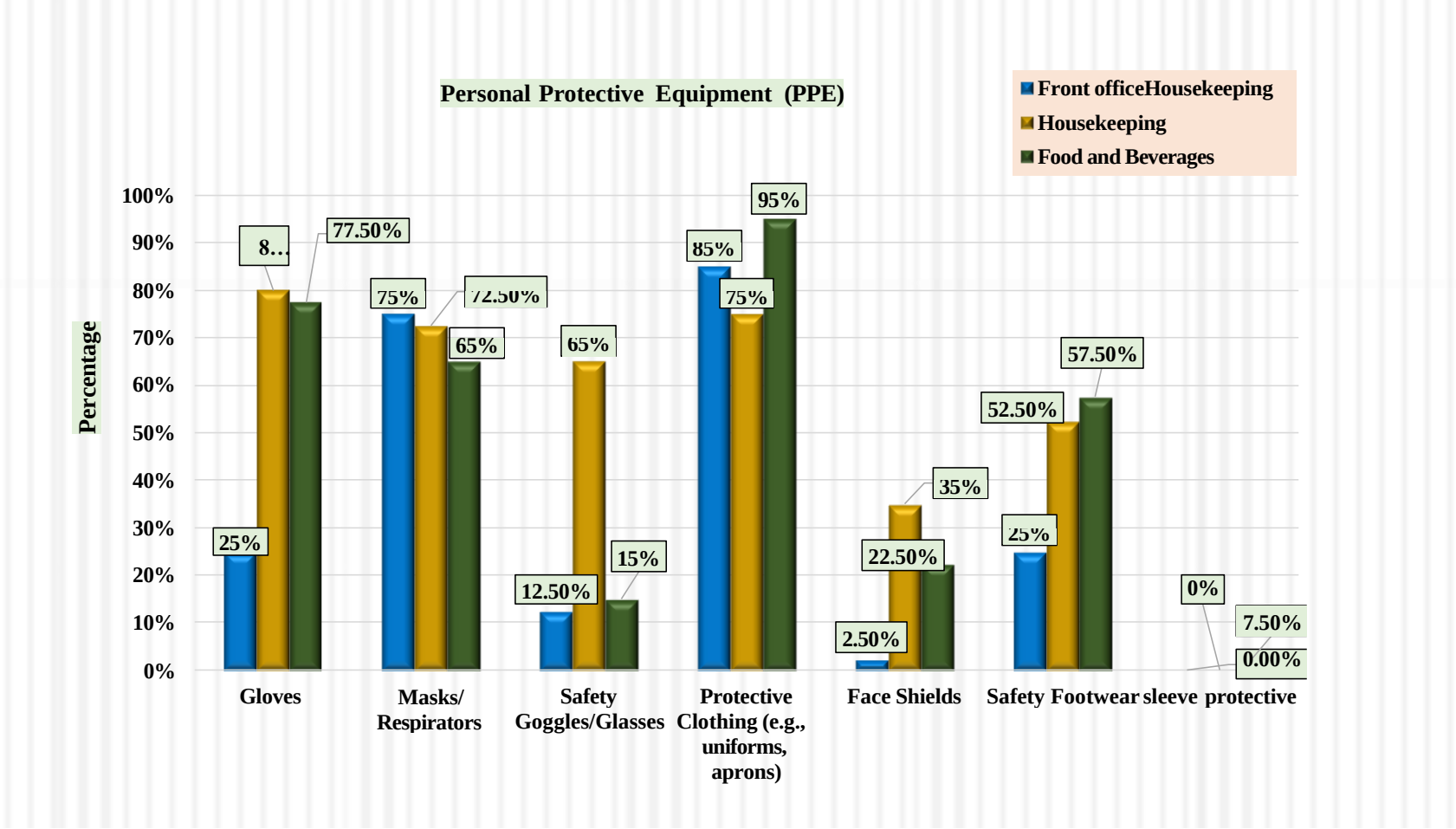


Figure 14: Percentage distribution of the respondents according to the Types of personal protective equipment (PPE) use in workplace

Section II

4.2 Posture-Related Musculoskeletal Discomfort Experienced by Hotel Staff

In order to find out the posture related musculoskeletal discomfort experienced by Hotel Staff, questionnaire was used. The questionnaire included three sections covering musculoskeletal discomfort experienced by the respondents working in three Departments namely Front Office, Housekeeping and Food & Beverage. This was assessed through a summated rating scale where the respondents were asked to respond to the musculoskeletal discomfort “Always”, “Sometimes” and “Never”. High scores reflected high extent of posture related musculoskeletal discomfort experienced by the respondents.

4.2.1 Posture-Related Musculoskeletal Discomfort Experienced by Respondents working in Front Office Department

Table 18: Distribution of the respondents according to Posture-Related Musculoskeletal Discomfort Experienced in Front Office Department

Front Office Department (n=40)								
Sr. No.	**Statements**	**Always**		**Sometime**		**Never**		**Weighted Mean Score**
		f	**%**	**f**	**%**	**f**	**%**	
1.	Experienced neck discomfort while supervising the front desk.	07	17.50	33	82.50	-	-	2.18
2.	Felt pain in lower back due to prolonged standing during peak check-in times.	07	17.50	33	82.50	-	-	2.18
3.	Experienced pain in wrist due to extensive used of the computer.	07	17.50	33	82.50	-	-	2.18
4.	Experienced eye strain while monitoring multiple screens.	07	17.50	26	65.00	07	17.50	2.00
5.	Felt pain in upper back pain because of frequently moving between workstations.	07	17.50	33	82.50	-	-	2.18
6.	Experienced pain or discomfort because of walking back and forth to assist guests.	18	45.00	22	55.00	-	-	2.45
7.	Experienced pain in hands due to typing continuously.	18	45.00	22	55.00	-	-	2.45
8.	Experienced wrist pain while used the computer or phone.	15	37.50	17	42.50	08	20.00	2.18
9.	Experienced upper back pain because of frequently reaching for items across the desk.	17	42.50	17	42.50	06	15.00	2.28

Front Office Department (n=40)								
Sr. No.	**Statements**	**Always**		**Sometime**		**Never**		**Weighted Mean Score**
		f	**%**	**f**	**%**	**f**	**%**	
10.	Experienced headaches or eye strain because of staring at the computer screen.	22	55.00	03	07.50	15	37.50	2.30
11.	Experienced lower back pain due to standing for prolong time period.	20	50.00	08	20.00	12	30.00	2.10
12.	Experienced numbness in fingers due to excessive computer use.	27	67.50	13	32.50	-	-	2.68
13.	Experienced discomfort in knees because of prolonged standing.	-	-	40	100	-	-	2.00
14.	Felt wrist strain from frequently handling guest requests and documents.	40	100	-	-	-	-	**3.00**
15.	Felt upper back pain due to standing in a fixed position for long time period.	-	-	40	100	-	-	2.00
16.	Experienced strain due to looking up local information for guests.	26	65.00	14	35	-	-	2.65
17.	Felt upper back pain because of frequently reaching for brochures or maps.	14	35.00	13	32.50	13	32.50	2.03
18.	Experienced musculoskeletal discomfort due to handling luggage and deliveries.	27	67.50	13	32.50	-	-	2.68
19.	Felt physical discomfort in maintaining a fixed posture for hours.	20	50.00	20	50.00	-	-	2.50
20.	Experienced lower back discomfort from bending frequently to assist guests.	20	50.00	20	50.00	-	-	2.50
21.	Felt discomfort in the arms or shoulders because of reaching over the counter.	20	50.00	20	50.00	-	-	2.50

Front Office Department (n=40)								
Sr. No.	**Statements**	**Always**		**Sometime**		**Never**		**Weighted Mean Score**
		f	**%**	**f**	**%**	**f**	**%**	
22.	Suffered from discomfort due to the height or positioning of the computer monitor.	20	50.00	20	50.00	-	-	2.50
23.	Experienced discomfort in the feet because of standing on hard surfaces.	20	50.00	20	50.00	-	-	2.50
24.	Experienced discomfort in foot or leg fatigue because of standing during night shift.	40	100	-	-	-	-	**3.00**
25.	Suffered from upper back discomfort due to carrying audit reports and paperwork.	-	-	40	100	-	-	2.00
26.	Experienced lower back pain because of lifting heavy luggage.	20	50.00	20	50.00	-	-	2.50
27.	Felt discomfort in shoulder or neck because of carrying guest bags.	40	100	-	-	-	-	**3.00**
28.	Experienced muscle strain from handling oversized or unusually shaped items.	20	50.00	20	50.00	-	-	2.50
29.	Experienced discomfort due to maintaining a professional posture (ergonomics) throughout the shift.	25	62.50	15	37.50	-	-	2.63
30.	Felt strain in the arms or shoulders due to lifting luggage onto high shelves or racks.	40	100	-	-	-	-	**3.00**
31.	Felt fatigue from lack of movement during shifts.	16	40.00	24	60.00	-	-	2.40
32.	Experienced discomfort because of sitting too high or too low on desk.	16	40.00	16	40.00	8	20.00	2.20

Front Office Department (n=40)								
Sr. No.	**Statements**	**Always**		**Sometime**		**Never**		**Weighted Mean Score**
		f	**%**	**f**	**%**	**f**	**%**	
33.	Experienced pain in the neck or shoulders from cradling the phone between ear and shoulder.	20	50.00	10	25.00	10	25.00	2.25
34.	Suffered from eye strain due to prolonged computer use.	16	40.00	16	40.00	8	20.00	2.20
35.	Felt discomfort from insufficient space or cluttered work area.	24	60.00	8	20.00	8	20.00	2.40
36.	Experienced leg fatigue due to standing during peak check-in/check-out times.	40	100	-	-	-	-	**3.00**
37.	Experienced physical strain due to managing multiple tasks at once.	40	100	-	-	-	-	**3.00**
38.	Felt eye strain from monitoring multiple screens and reports.	40	100	-	-	-	-	1.00
39.	Felt upper back pain from frequently moving between different front desk areas.	23	57.50	15	37.50	2	5.00	2.53
Overall Weighted Mean								**2.37**

The data revered that 100 per cent of the respondents always experience wrist strain from frequently handling guest requests and documents, discomfort in the shoulder or neck because of carrying guest bags, experience leg discomfort in musculoskeletal discomfort due to standing during peak check-in/check-out times, and experience physical strain due to managing multiple tasks at once.

The data also reported that, 82.50 per cent of respondents sometimes experienced shoulder discomfort while supervising the front desk, pain in the lower back due to prolonged standing during peak check-in times, pain in the wrist due to extensive use of the computer, and upper back pain from frequently moving between workstations.

Furthermore, a similar age of respondents (67.50 per cent) sometimes experienced numbness in fingers due to excessive computer use, and musculoskeletal discomfort due to handling luggage and deliveries. The data also reported, only 20 per cent of respondents, never experienced wrist pain while using the computer or phone, upper back pain because of frequently reaching for items across the desk, lower back pain due to standing for prolonged periods, and eye strain while monitoring multiple screens.

4.2.2 Extent of Posture related Musculoskeletal Discomfort Problems experienced by the Respondents while working in Front Office Department

This section dealt with the extent of posture related musculoskeletal discomfort (MSD) problems experienced by the respondents related to posture while working in the front office. The respondents were asked to respond to a 3-point continuum in terms of “Always,” “Sometime,” and “Never,” with scores from 3 through 1 assigned to the respondents, respectively. The possible score ranged from 39 to 120, with three categories having almost equal intervals based on a total of 39 statements in the scale. Lower scores indicated a lower extent of musculoskeletal discomfort problems experienced by the respondents, while higher scores indicated a higher extent of musculoskeletal discomfort problems.

Table 19: Distribution of Respondents according to the extent of Posture Related Musculoskeletal Discomfort experienced while working in Front Office Department.

Sr. No.	Extent of discomfort	Range of Score	Distribution of the Respondents (n=120)	
			f	%
1.	To Low extent	39 – 66	01	02.50
2.	To Moderate extent	**67 – 93**	**24**	**60.00**
3.	To High extent	94 - 120	15	37.50

The data showed that 2.50 per cent of the respondents had experienced a low extent of musculoskeletal discomfort, 60.00 per cent had experienced a moderate extent, and 37.50 per cent had experienced a high extent of musculoskeletal discomfort problems related to posture in the front office department.

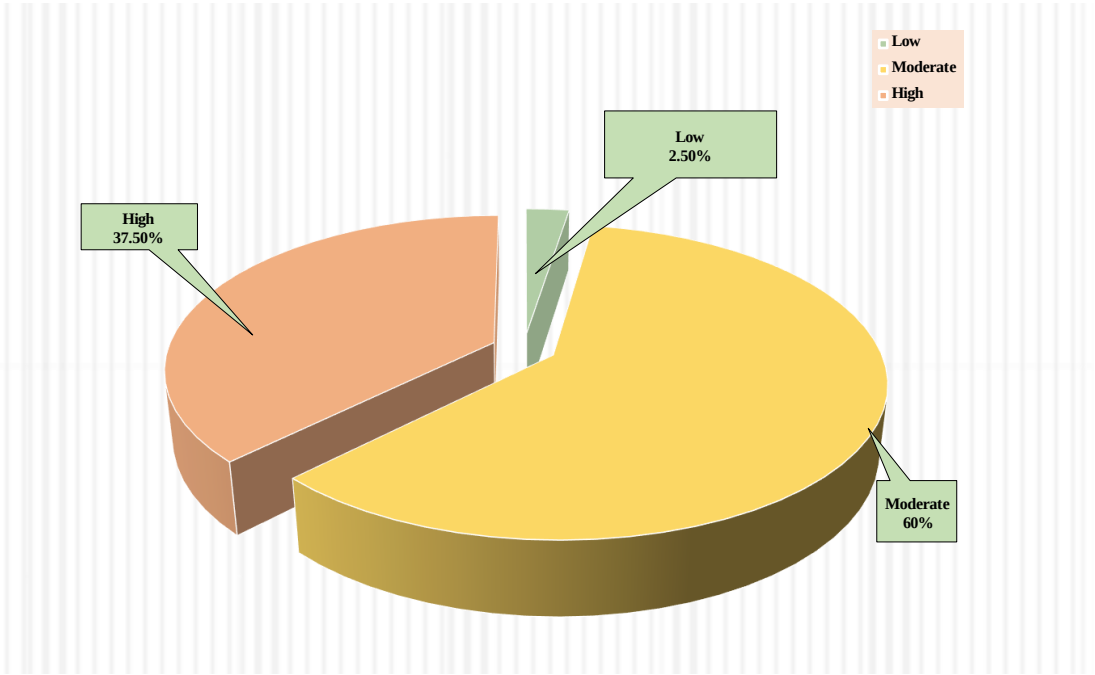


Figure 15: Extent of Posture Related Musculoskeletal Discomfort Experienced by the respondents Working in Front desk Operations

4.2.3 Posture Related Musculoskeletal Discomfort Experienced by the respondents Working in Housekeeping Department

Table 20: Distribution of the respondents according to Posture-Related Musculoskeletal Discomfort Experienced in Housekeeping Department

Housekeeping Department (n=40)								
Sr. No.	**Statements**	**Always**		**Sometime**		**Never**		**Weighted Mean Score**
		f	**%**	**f**	**%**	**f**	**%**	
1.	Experienced lower back pain while performing cleaning tasks.	40	100	-	-	-	-	2.18
2.	Felt fatigue while inspecting rooms and facilities.	-	-	-	-	40	100	2.18
3.	Experienced leg fatigue from walking long distances within the hotel.	20	50.00	20	50.00	-	-	2.18
4.	Felt discomfort while working in environments with poor ventilation or temperature control.	22	55.00	10	25.00	08	20.00	2.00
5.	Felt discomfort due to irregular work hours and shifts.	25	62.50	10	25.00	05	12.50	2.18
6.	Felt lower back pain because of bending and lifting heavy items.	13	32.50	26	65.00	01	02.50	2.45
7.	Experienced wrist pain because of repetitive cleaning motions.	40	100	-	-	-	-	2.45
8.	Felt leg or foot pain due to prolonged standing and walking.	26	65.00	14	35.00	-	-	2.18
9.	Felt strain in the wrists due to repetitive cleaning tasks for extended periods.	22	55.00	15	37.50	03	07.50	2.28
10.	Experienced lower back pain while making beds.	16	40.00	24	60.00	-	-	2.30
11.	Felt shoulder or neck discomfort while dusting or cleaning high surfaces.	24	60.00	16	40.00	-	-	2.10

Housekeeping Department (n=40)								
Sr. No.	**Statements**	**Always**		**Sometime**		**Never**		**Weighted Mean Score**
		f	**%**	**f**		**f**	**%**	
12.	Experienced body pain because of cleaning tasks.	24	60.00	08	20.00	08	20.00	2.68
13.	Experienced knee discomfort due to prolonged walking or standing.	22	55.00	15	37.50	03	07.50	2.00
14.	Felt strain in the arms because of pushing heavy cleaning carts.	24	60.00	08	20.00	08	20.00	**3.00**
15.	Experienced wrist pain because of writing reports and using checklists.	30	75.00	10	25.00	-	-	2.00
16.	Experienced lower back pain because of frequently bending or stretching during inventory checks.	10	25.00	20	50.00	10	25.00	2.65
17.	Felt upper back pain from bending during inspections.	20	50.00	10	25.00	10	25.00	2.03
18.	Experienced lower back pain while sweeping and mopping floors.	30	75.00	10	25.00	-	-	2.68
19.	Felt shoulder or neck discomfort while cleaning windows and high surfaces.	20	50.00	10	25.00	10	25.00	2.50
20.	Suffered from wrist pain when using cleaning tools and equipment.	10	25.00	20	50.00	10	25.00	2.50
21.	Experienced foot pain due to due to extended walking and standing.	30	75.00	05	12.50	05	12.50	2.50
22.	Felt upper back strain while moving furniture to clean the surfaces.	20	50.00	10	25.00	10	25.00	2.50
23.	Experienced lower back pain while lifting heavy laundry bags.	-	-	40	100	-	-	2.50
24.	Felt shoulder or neck discomfort because of loading and unloading machines.	40	100	-	-	-	-	**3.00**

Housekeeping Department (n=40)								
Sr. No.	**Statements**	**Always**		**Sometime**		**Never**		**Weighted Mean Score**
		f	**%**	**f**		**f**	**%**	
25.	Suffered from wrist and arm pain in folding and ironing linens.	-	-	-	-	40	100	2.00
26.	Experienced leg or foot pain because of prolonged standing while sorting laundry.	30	75.00	10	25.00	-	-	2.20
27.	Felt upper back pain when reaching into machines.	25	62.50	10	25.00	05	12.50	2.50
28.	Experienced neck or shoulder discomfort because of answering phones and coordinating tasks.	40	100	-	-	-	-	2.63
29.	Felt lower back pain due to prolonged sitting at the desk.	20	50.00	20	50.00	-	-	**3.00**
30.	Experienced wrist pain due to data entry and scheduling.	22	55.00	10	25.00	08	20.00	2.40
31.	Experienced eye strain because of monitoring schedules and reports.	20	50.00	20	50.00	-	-	2.20
32.	Felt upper back pain due to maintaining posture while working.	-	-	40	100	-	-	2.25
33.	Felt shoulder or neck discomfort due to setting up event spaces.	24	60.00	11	27.50	05	12.50	2.20
34.	Felt upper back strain due to carrying and lifting supplies.	24	60.00	13	32.50	03	07.50	2.20
Overall Weighted Mean								**2.37**

The data revered that 100 per cent of the respondents always experienced pain in lower back pain while performing cleaning tasks and wrist pain from repetitive cleaning motions, felt upper back pain due to maintaining posture while working, Experienced neck or shoulder discomfort because of answering phones and coordinating tasks, and felt shoulder or neck discomfort because of loading and unloading machines. Additionally, 75 per cent of the respondent experience in feet always pain from extended walking and standing, and 62.5 per cent of the respondent always had shoulder or neck discomfort while loading and unloading machines.

Moreover, 65 per cent of the respondents sometimes experienced lower back pain from bending and lifting heavy items, while 60 per cent of the respondent experience had body pain from cleaning tasks and arm strain from pushing heavy carts. 50 per cent of the respondents sometimes felt fatigue while inspecting rooms and leg fatigue from walking long distances.

Further, 50 per cent of the respondents sometimes experienced discomfort from irregular work hours or poor ventilation, and 37.5 per cent of the respondents had knee discomfort from prolonged standing. 12.5 per cent of the respondents never felt discomfort from poor ventilation, and 20 per cent of the respondents never experienced discomfort from cleaning high surfaces.

The overall weighted mean for musculoskeletal discomfort was 2.37, indicating moderate discomfort among the respondents.

4.2.4 Posture Related Musculoskeletal Discomfort experienced by The Respondents while Working in Housekeeping Department

This section provides an analysis of the extent of Posture related musculoskeletal discomfort experienced by the respondents while working housekeeping department. The data is based on a summated rating scale where the respondents were asked to respond to a 3-point continuum: “Always,” “Sometimes,” and “Never,” with the scores of 3, 2, and 1, respectively. The total score for each respondent ranged from 34 to 102, based on their responses to 34 statements related to musculoskeletal discomfort. A higher score indicated a greater extent of discomfort experienced by the staff, while a lower score indicated less discomfort.

The distribution of the respondents according to the extent of musculoskeletal discomfort is as follows:

Table 21: Distribution of the Respondents According to the Extent of Posture Related Musculoskeletal Discomfort Experienced while Working in the Housekeeping Department

Sr. No.	Extent of discomfort	Range of Score	Distribution of the Respondents (n=120)	
			F	%
1	To Low extent	34 -56	6	15.00
2	To Moderate extent	57 – 79	**20**	**50.00**
3	To High extent	80 - 102	14	35.00

The data showed that 15.00 per cent of the respondents had experienced a low extent of musculoskeletal discomfort, 50 per cent had experienced a moderate extent, and 35.00 per cent had experienced a high extent of musculoskeletal discomfort problems in the housekeeping department.

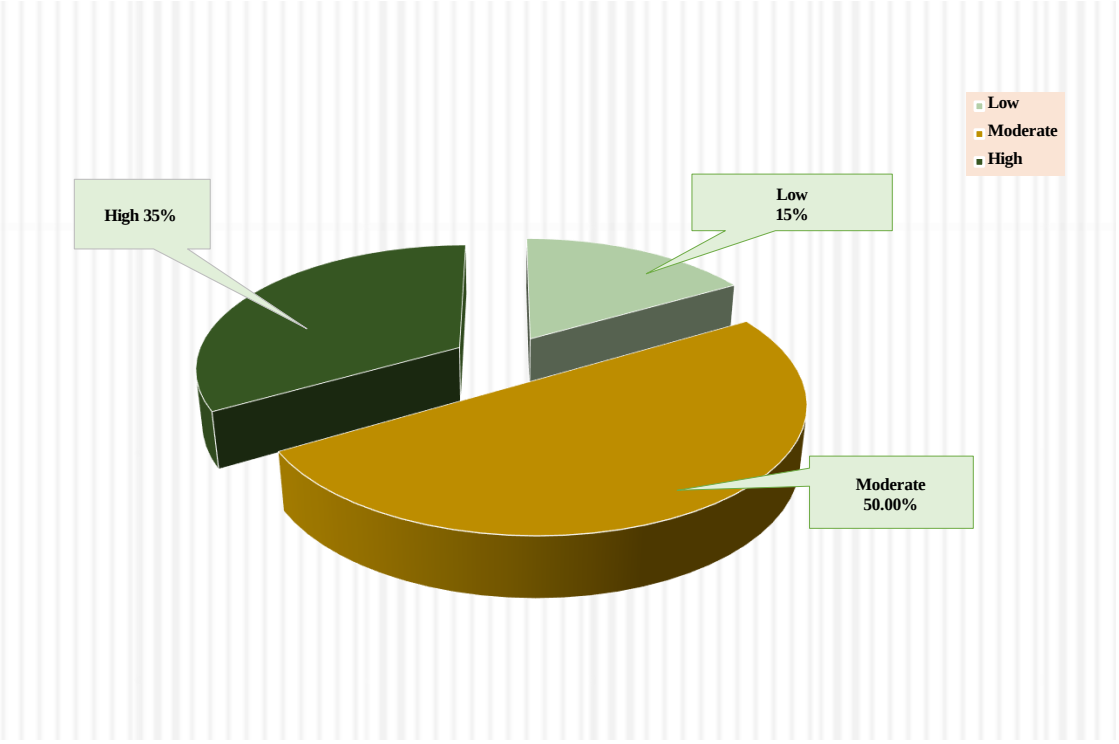


Figure 16: Extent of Posture Related experience by the respondents working in the Housekeeping Department

4.2.5 Posture Related Musculoskeletal Discomfort Experienced by the respondents working in the Food and Beverage Department

Table 22: Distribution of the respondents according to Posture-Related Musculoskeletal Discomfort Experienced

Food And Beverage Department (n=40)								
Sr. No.	**Statements**	**Always**		**Sometime**		**Never**		**Weighted Mean Score**
		f	**%**	**f**	**%**	**f**	**%**	
1.	Experienced neck or shoulder discomfort because of overseeing restaurant operations.	30	75.00	10	25.00	-	-	2.75
2.	Suffered from lower back pain due to prolonged standing and walking.	30	75.00	10	25.00	-	-	2.75
3.	Experienced wrist pain due to handling reports and schedules.	20	50.00	20	50.00	-	-	2.50
4.	Felt eye strain in monitoring multiple screens and reports.	30	75.00	10	25.00	-	-	2.75
5.	Felt upper back pain due to frequently moving between different areas.	30	75.00	10	25.00	-	-	2.75
6.	Experienced neck or shoulder discomfort while supervising restaurant activities.	26	65.00	13	32.50	01	02.50	2.63
7.	Felt lower back pain due to prolonged standing during service hours.	13	32.50	26	65.00	01	02.50	2.30
8.	Felt eye strain while inspecting the environment of the restaurant.	26	65.00	07	17.50	7	17.50	2.48
9.	Felt upper back pain due to bending to check under tables and chairs.	14	35.00	26	65.00	-	-	2.35
10.	Experienced lower back pain because of lifting heavy pots and pans.	35	87.50	05	12.50	-	-	2.88
11.	Felt shoulder or neck discomfort while chopping or food preparation tasks.	29	72.50	06	15.00	05	12.50	2.60

Food And Beverage Department (n=40)								
Sr. No.	**Statements**	**Always**		**Sometime**		**Never**		**Weighted Mean Score**
		f	**%**	**f**	**%**	**%**	**f**	
12.	Suffered from wrist pain during repetitive tasks like stirring or mixing.	22	55.00	11	27.50	07	17.50	2.38
13.	Felt physical strain due to maintaining a fast-paced work environment during busy periods.	22	55.00	11	27.50	07	17.50	2.38
14.	Felt upper back strain due to reaching for items on high shelves.	28	70.00	11	27.50	01	2.50	2.68
15.	Felt shoulder or neck discomfort due to supervising food preparation tasks.	22	55.00	08	20.00	10	25.00	2.30
16.	Suffered from wrist pain due to repetitive cooking activities.	28	70.00	12	30.00	-	-	2.70
17.	Experienced leg or foot pain because of prolonged standing while assisting the chef.	22	55.00	18	45.00	-	-	2.55
18.	Felt upper back strain due to reaching for ingredients and supplies.	28	70.00	06	15.00	06	15.00	2.55
19.	Felt shoulder or neck discomfort due to overseeing banquet operations.	14	35.00	13	32.50	13	32.50	2.03
20.	Suffered from wrist pain while handling banquet materials and equipment.	27	67.50	13	32.50	-	-	2.68
21.	Experienced leg or foot pain because of prolonged walking and standing during events.	14	35.00	13	32.50	13	32.50	2.03
22.	Felt upper back strain while moving and arranging furniture.	15	37.50	12	30.00	13	32.50	2.05
23.	Experienced hand discomfort because of frequently handling hot dishes and utensils.	28	70.00	11	27.50	01	2.50	2.68
24.	Felt shoulder or neck discomfort while serving food and beverages.	17	42.50	17	42.50	06	15.00	2.28

Food And Beverage Department (n=40)								
Sr. No.	**Statements**	**Always**		**Sometime**		**Never**		**Weighted Mean Score**
		f	**%**	**f**	**%**	**f**	**%**	
25.	Suffered from wrist pain due to repetitive pouring or serving.	25	62.50	08	20.00	07	17.50	2.45
26.	Felt wrist or hand pain because of repetitive tasks such as writing orders and carrying plates.	12	30.00	12	30.00	16	40.00	1.90
27.	Felt upper back strain due to bending over tables to serve guests.	17	42.50	14	35.00	09	22.50	2.20
28.	Experienced lower back pain because of carrying heavy trays to guest rooms.	40	100	-	-	-	-	**3.00**
29.	Felt shoulder or neck discomfort while delivering food and beverages.	-	-	40	100	-	-	2.00
30.	Suffered from wrist pain due to holding and serving items.	26	65.00	14	35.00	-	-	2.65
31.	Experienced leg or foot pain because of prolonged walking between rooms.	27	67.50	13	32.50	-	-	2.68
32.	Felt upper back strain due to bending to set up trays in guest rooms.	40	100	-	-	-	-	**3.00**
33.	Suffered from wrist pain due to repetitive motions of grinding, brewing, steaming milk, and operating espresso machines.	40	100	-	-	-	-	**3.00**
34.	Experienced leg or foot pain due to prolonged standing behind the counter.	26	65.00	14	35.00	-	-	2.65
35.	Felt discomfort in the feet due to wearing shoes that lack proper support.	27	67.50	13	32.50	-	-	2.68
							Overall Mean	**2.30**

The data was found that 100 per cent of the respondents always experienced lower back pain from carrying heavy trays to guest rooms and wrist pain from repetitive motions with espresso machines. Additionally, 75 per cent of the respondents always experienced neck or shoulder discomfort from overseeing restaurant operations and lower back pain from prolonged standing and walking. The data also reverted 70 per cent of the respondent always had upper back pain from frequently moving between areas and shoulder or neck discomfort during food preparation.

Moreover, 65 per cent always experienced wrist pain from repetitive tasks like stirring, mixing, and handling banquet materials. The data also highlighted that 62.5 per cent always felt wrist pain while holding and serving items, and 55 per cent always felt physical strain from the fast-paced work environment.

Further, 50 per cent of the respondents always experienced discomfort from repetitive cooking activities and foot pain from prolonged standing and walking. 65 per cent of the respondents sometimes experienced lower back pain from standing during service hours, and 32.5 per cent of the respondents experienced discomfort due to improper shoes.

4.2.6 Posture Related Musculoskeletal Discomfort experienced by the respondents working in the Food and Beverage Department.

This section analysed the overall extent of Posture related musculoskeletal discomfort experienced by the staff working in food and beverage department. The data was collected using a summated rating scale, where respondents answered on a 3-point continuum: “Always,” “Sometimes,” and “Never,” with scores of 3, 2, and 1, respectively. The total score for each respondent ranged from 35 to 105, based on their responses to 35 statements related to musculoskeletal discomfort. A higher score indicated a greater extent of discomfort, while a lower score suggested less discomfort.

To categorize the extent of discomfort, three intervals were established based on the possible score range, with nearly equal intervals for all respondents. The classification was as follows:

Table 23: Distribution of the Respondents According to the extent of Posture related Musculoskeletal Discomfort experienced while Working in the Food and Beverages Department

Sr. No.	Extent of discomfort	Range of Score	Distribution of the Respondents (n=40)	
			f	%
1.	To Low extent	35 -58	13	32.50
2.	To Moderate extent	**59 – 81**	**15**	**37.50**
3.	To High extent	82 - 105	12	30.00

The data showed that 32.50 per cent of the respondents experienced low extent of Posture related musculoskeletal discomfort while working in food and beverages department. Followed by 37.50 per cent of the respondent experienced moderate extent of posture related musculoskeletal discomfort while working in food and beverages department. the data also revealed that 30 per cent of respondents experienced high extent of Posture related musculoskeletal discomfort while working in food and beverages department.

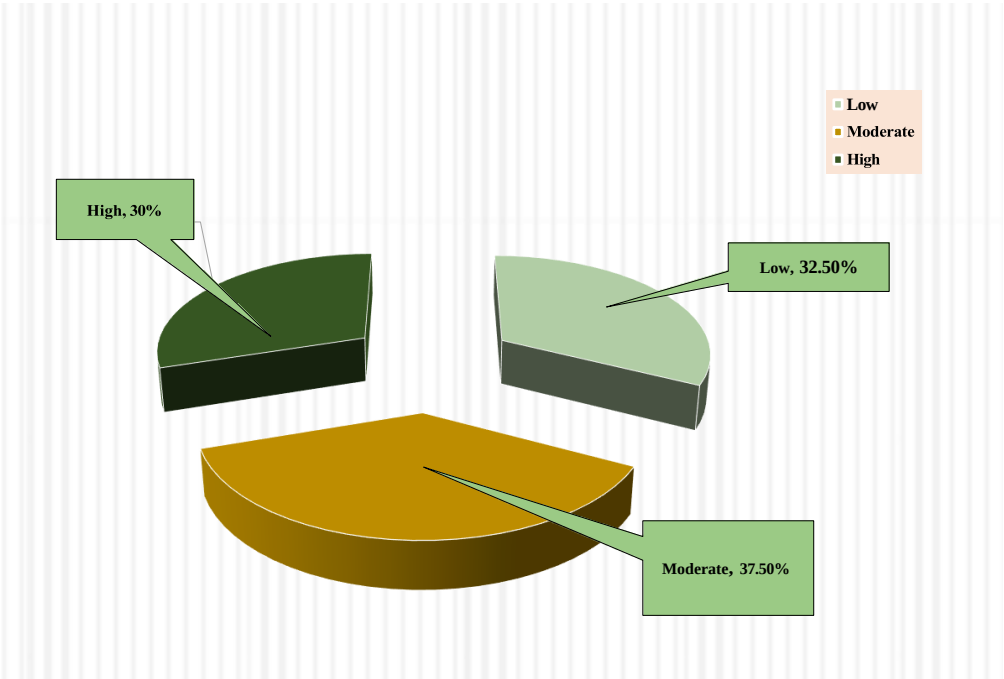


Figure 17: Extent of Posture Related Musculoskeletal Discomfort Experienced while Working in the Food and Beverages Department

Section III

4.3 Occupational Health Hazard

This section was assessed based on the respondents' perceived musculoskeletal discomfort using the Nordic Body Map

4.3.1 Perceived Musculoskeletal Pain

In order to study the perceived musculoskeletal pain experienced by the Hotel staff in the Hotel industry, the Nordic Body Map (NBM) was used to determine the perceived musculoskeletal pain experienced by them at 28 different locations in the body. The respondents were instructed to rate the level of pain experienced by them on a 4-point scale ranging from ‘no pain’, ‘moderate pain’, ‘very painful’.

Table 24: Distribution of the respondents according to the perceived Musculoskeletal pain experienced by them

n=120

Sr. No.	Body part	No Pain		Moderate Pain		Pain		Very Painful		Weighted Mean Score
		f	%	f	%	f	%	F	%	
1.	Pain/stiff in the upper neck	57	47.50	26	21.67	29	24.17	08	6.67	1.89
2.	Pain in the lower neck	34	28.33	44	36.67	33	27.50	07	5.83	2.12
3.	Pain in the left shoulder	11	9.17	37	30.83	42	35.00	30	25.00	2.77
4.	Pain in the right shoulder	17	14.17	41	34.17	49	40.83	13	10.83	2.48
5.	Pain in the left upper arm	17	14.17	40	33.33	50	41.67	13	10.83	2.62
6.	Pain in the back	15	12.50	22	18.33	41	34.17	42	35.00	2.92
7.	Pain in the upper back	22	18.33	43	35.83	40	33.33	15	12.50	2.42
8.	Pain in the lower back	27	22.50	39	32.50	39	32.50	15	12.50	2.34
9.	Pain in the buttock	14	11.67	31	25.83	37	30.83	38	31.67	2.83
10.	Pain in the bottom	14	11.67	33	27.50	37	30.83	36	30.00	2.79
11.	Pain in the left elbow	23	19.17	40	33.33	41	34.17	16	13.33	2.43
12.	Pain in the right elbow	28	23.33	47	39.17	37	30.83	08	6.67	2.19
13.	Pain in the left lower arm	16	13.33	31	25.83	47	39.17	26	21.67	2.70

Sr. No.	Body part	No Pain		Moderate Pain		Pain		Very Painful		Weighted Mean Score
		f	%	f	%	f	%	F	%	
14.	Pain in the right lower arm	19	15.83	52	43.33	37	30.83	12	10.00	2.35
15.	Pain in the left wrist	17	14.17	27	22.50	46	38.33	30	25.00	2.73
16.	Pain in the right wrist	23	19.17	43	35.83	39	32.50	15	12.50	2.39
17.	Pain in the left hand	21	17.50	42	35.00	41	34.17	16	13.33	2.44
18.	Pain in the right hand	32	26.67	52	43.33	27	22.50	09	7.50	2.12
19.	Pain in the left thigh	26	21.67	51	42.50	33	27.50	10	8.30	2.23
20.	Pain in the right thigh	24	20.00	49	40.83	33	27.50	14	11.67	2.33
21.	Pain in the left knee	19	15.83	50	41.67	40	33.33	10	8.33	2.34
22.	Pain in the right knee	18	15.00	51	42.50	42	35.00	10	8.33	2.36
23.	Pain in the left calf	14	11.67	52	43.33	32	26.67	22	18.33	2.51
24.	Pain in the right calf	15	12.50	52	43.33	31	25.83	22	18.33	2.50
25.	Pain in the left ankle	21	17.50	49	40.83	37	30.83	13	10.83	2.35
26.	Pain in the right ankle	21	17.50	49	40.83	37	30.83	13	10.83	2.35
27.	Pain in the left foot	22	18.33	43	35.83	47	39.17	08	6.67	2.34
28.	Pain in the right foot	22	18.33	43	35.83	47	39.17	08	6.67	2.34

The calculation of the weighted mean score reported that pain in the highest musculoskeletal discomfort in the back (2.92), buttock (2.83), and bottom (2.79), by the prolonged sitting or standing contributes to significant strain. Pain in the left shoulder (2.77) and left wrist (2.73) was also frequently reported, indicating repetitive tasks and improper posture as major concerns. Additionally, pain in the left lower arm (2.70) and left upper arm (2.62) was noted, likely due to continuous lifting and carrying activities. Discomfort in the knees (2.34 – 2.36) and calves (2.50 – 2.51) further highlighted the impact of extended standing and walking.

Table 25: Comparative Table of weighted mean score (out of 3) of the perceived Musculoskeletal Pain experienced by the respondents

Sr. No.	Body Part	Front Office department	Housekeeping department	Food and Beverages department
1.	Pain/stiff in the upper neck	1.87	1.93	1.91
2.	Pain in the lower neck	2.06	2.23	2.16
3.	Pain in the left shoulder	2.44	2.94	2.72
4.	Pain in the right shoulder	2.40	2.64	2.35
5.	Pain in the left upper arm	2.16	2.74	2.69
6.	Pain in the back	2.23	2.98	2.92
7.	Pain in the right upper arm	2.03	2.74	2.49
8.	Pain in the waist	2.06	2.98	2.52
9.	Pain in the buttock	2.08	2.98	2.82
10.	Pain in the bottom	2.34	2.98	2.82
11.	Pain in the left elbow	2.05	2.73	2.32
12.	Pain in the right elbow	1.96	2.49	2.06
13.	Pain in the left lower arm	1.83	2.98	2.52
14.	Pain in the right lower arm	1.81	2.63	2.49
15.	Pain in the left wrist	2.24	2.94	2.69
16.	Pain in the right wrist	1.93	2.66	2.52
17.	Pain in the left hand	1.65	2.78	2.59
18.	Pain in the right hand	1.41	2.45	2.36
19.	Pain in the left thigh	1.54	2.51	2.45
20.	Pain in the right thigh	1.54	2.66	2.45
21.	Pain in the left knee	1.80	2.53	2.45
22.	Pain in the right knee	1.80	2.56	2.45
23.	Pain in the left calf	1.97	2.78	2.75
24.	Pain in the right calf	1.97	2.78	2.75
25.	Pain in the left ankle	1.78	2.55	2.39
26.	Pain in the right ankle	1.78	2.55	2.39
27.	Pain in the left foot	1.61	2.59	2.48
28.	Pain in the right foot	1.61	2.59	2.48
Total Weighted Mean		**1.93**	**2.68**	**2.50**

On calculating the weighted mean score of the three departments individually, it was observed that the respondents working in the Housekeeping department experienced the highest amount of musculoskeletal pain. This was closely followed by the Food and

Beverage (F&B) department, which reported moderate levels of pain. Respondents working in the Front Office department reported the least amount of pain.

Table 26: Distribution of Respondents according to the Level of Risk based on the Nordic Body Map

Sr. No.	Level of Risk	Front Office department (n = 40)	Housekeeping department (n = 40)	Food and Beverages department (n = 40)
1.	Low	06	10	08
2.	Medium	12	14	14
3.	High	14	18	16
4.	Very High	04	06	02

Table 26 presents the distribution of respondents according to their perceived level of risk based on the Nordic Body Map across three departments Front Office, Housekeeping, and Food and Beverage. In the Food and Beverages department, 14 respondents reported medium risk and 16 reported high risk. In the Housekeeping department, 14 respondents reported medium risk and 18 reported high risk. In the Front Office department, 12 respondents reported medium risk and 14 reported high risk. The data indicates that the Housekeeping department has the highest numbers in both the medium and high-risk categories.

According to the Nordic Body Map, for respondents experiencing high-risk levels, "improvement is needed," while those in the medium-risk level "may require improvement." For low-risk levels, "no improvement" was required, whereas for the very high-risk level, "improvement was needed as soon as possible.

Section IV

4.4 Testing of Hypotheses

Based on the objectives of the study a number of hypotheses were formulated. For the present investigation, as per the nature of the variables, Coefficient of Correlation, t Test and F Test were computed. For the purpose of statistical analysis, the hypotheses were formulated in null forms. The results are discussed as under.

HO1: There exists no variation in the Musculoskeletal Discomfort experienced by the respondents with their age, gender, education level, family type, number of family members, work experience and work type.

To find out the difference between Musculoskeletal Discomfort experienced by the respondents with their Age, Gender, Marital Status, Education Level, Family type, Number of Members in the Family, Work Experience and Work type t-test was computed.

Table 27: t-test showing the variation in the Musculoskeletal Discomfort experienced by the respondents with their gender and family type

Variables	Mean score of Musculoskeletal Discomfort	t-value	df	Level of significance
Gender				
Male	158.50	**3.69**	66	0.05
Female	146.28			
Family type				
Nuclear	144.00	**2.63**	105	0.05
Joint	150.86			

For Gender and Family type, the t-value were found to be significant at 0.05 level of significance (table 27). Hence, the null hypothesis was rejected. Hence, it can be concluded that the Musculoskeletal Discomfort among the respondents differed with the gender and type of family. Male respondents experienced high Musculoskeletal Discomfort as compared to the female.

To find out the difference between Musculoskeletal Discomfort experienced by the respondents with their Age, Education Level, Number of Members in the Family and Work experience ANOVA was computed.

Table 28: F-test showing the variation in the Musculoskeletal Discomfort experienced by the respondents with their Age, Education Level, Number of Members in the Family and Work Experience.

Variables	Mean score of Musculoskeletal Discomfort	df	F-value	Level of significance
Age				
Between groups	110.98	2	**3.73**	0.05
Within groups	41.94	117		
Education Level				
Between groups	23.12	2	2.09	N.S.
Within groups	11.04	117		
Number of Members in the Family				
Between groups	20.33	2	2.02	N.S.
Within groups	10.04	117		
Work Experience				
Between groups	125.26	2	**6.81**	0.05
Within groups	18.40	117		

For Age, and Work Experience, ANOVA was found to be significant at 0.05 level of significance (table 28). Hence, the null hypothesis was rejected. Hence, it can be concluded that the Musculoskeletal Discomfort differed with the Age, and Work Experience of the respondents whereas for Education Level and Number of family members, F test was found to be non-significant hence it was concluded that the Musculoskeletal Discomfort did not differ with the Education Level and Number of Members in the Family.

Further Scheffe's test was applied for age and work experience.

Table 29: Scheffe's test showing the mean significant in the Musculoskeletal Discomfort of the respondents with their age (in years).

Sr. No.	Selected Variable	Mean	df	Level of significance
	Age (in years)			
1	20 Years - 29 Years	49.94	137	0.01
2	30 Years - 39 Years	52.00		
3	40 Years - 49 Years	42.62		

The statistical analysis in Scheffe's test on various categories of age of the respondents stated that respondents between age group of 20 to 29 years significantly differed in the Musculoskeletal Discomfort of the respondents with their age. Hence, it can be concluded that the extent of Musculoskeletal Discomfort experienced by the respondents was more among respondents who were 30 to 39 years of age (table 29).

Table 30: Scheffe's test showing the mean significant in the extent of Musculoskeletal Discomfort of the respondents with their work experience

Sr. No.	Selected Variable	Mean	df	Level of significance
	Experience (in years)			
1	2 Years - 4 Years	96.40	137	0.05
2	4 Years - 6 Years	88.20		
3	6 Years - 8 Years	76.46		

The statistical analysis in Scheffe's test on various categories of experience of the respondents showed that the respondents between work experience of 2 to 4 years significantly differed with the extent of musculoskeletal discomfort experienced by the respondents with experience of 2 to 4 years, 4 to 6 years and of 6 to 8 years. Hence, it can be concluded that the extent of musculoskeletal discomfort experienced by the respondents was more among respondents who were above 6 to 8 years of experience (table 30).

HO2: There exists no variation in the Occupational Health Hazards experienced by the respondents with their Age, Gender, Education Level, Family Type, Number of Members in the Family and Work Experience.

To find out the difference between Occupational Health Hazards experienced by the respondents with their Gender and Family Type 't Test' was computed.

Table 31: t-test showing the variation in the Occupational Health Hazards experienced by the respondents with their Gender and family type.

Variables	Mean score of Occupational Health Hazards	t-value	df	Level of significance
Gender				
Male	148.50	0.69	60	N.S.
Female	146.28			
Family type				
Nuclear	148.00	1.63	102	N.S.
Joint	151.06			

The results of the computation of t- test did not show any significant difference in the Occupational Health Hazards experienced by the respondents with their Gender and family type. Hence, the null hypothesis was accepted. It was concluded that the Occupational Health Hazards did not have any effect with the Gender and family type.

To find out the difference between Occupational Health Hazards experienced by the respondents with their Age, Education Level, Number of Members in the Family, Work Experience and Work Type 'F Test' was computed.

Table 32: F-test showing the variation in the Occupational Health Hazards experienced by the respondents with their Age, Education Level, Number of Members in the Family and Work Experience.

Variables	Mean score of Occupational Health Hazards	df	F-value	Level of significance
Age				
Between groups	131.99	2	0.73	N.S.
Within groups	40.652	117		
Education Level				
Between groups	163.25071	2	1.97	N.S.
Within groups	66.981	117		
Number of Members in the Family				
Between groups	192	2	2.45	N.S.
Within groups	47	117		
Work Experience				
Between groups	306	2	**2.75**	N.S.
Within groups	57	117		

For Age, Education Level, Number of family members it was not found significant and hence the null hypothesis was accepted. Therefore, it can be concluded that the Occupational Health Hazards did not differ with the Age, Education Level, Number of family members and work experience.

HO3: There exists no relationship between Occupational Health Hazards and the Musculoskeletal Discomfort experienced by the respondents.

In order to find the relationship between Occupational Health Hazards and the Musculoskeletal Discomfort experienced by the respondents, Coefficient of Correlation was computed.

Table 33: Co-efficient of correlation showing relationship between the Occupational Health Hazards and the Musculoskeletal Discomfort.

Sr. no.	Selected variables	n	r-value	Level of significance
I.	Occupational Health Hazards	120	**0.58**	0.05
	Musculoskeletal Discomfort experienced			

The Correlation coefficient (r) was found significant between the Occupational Health Hazards and the Musculoskeletal Discomfort experienced by the respondents (table 33). Hence, the null hypothesis was rejected. Hence it can be concluded that there was a relationship between the Occupational Health Hazards and the Musculoskeletal Discomfort experienced by them.

Section V

4.5 Development of a booklet suggesting coping strategies for the hotel staff.

In this section, coping strategies were suggested through a booklet prepared from personal observations and data collected on the challenges faced by hotel staff across different departments. The booklet suggested the coping strategies to address the physical and mental difficulties encountered in their daily work. Front Office staff experienced prolonged standing, repetitive tasks, and emotional stress due to continuous guest interactions. To manage these issues, strategies such as taking scheduled breaks, using ergonomic furniture, and practicing stress management techniques were suggested. Housekeeping staff faced physically demanding tasks, including heavy lifting, repetitive bending, and exposure to cleaning chemicals, leading to musculoskeletal discomfort. Coping strategies such as proper lifting techniques, the use of assistive cleaning equipment, and task rotation were recommended to reduce physical strain. In the Food and Beverage (F&B) department, employees dealt with challenges like carrying heavy trays, working in high temperatures, and fast-paced service. Strategies such as efficient workflow planning, staff rotation, hydration breaks, and maintaining proper posture were proposed to improve working conditions.

Additionally, the coping strategies suggested in the booklet aimed to create a healthier and more productive work environment for hotel staff.

Summary & Conclusion

CHAPTER V

SUMMARY AND CONCLUSION

The hospitality industry is a significant contributor to the Global economy. Hotel staff plays a vital role in ensuring guest satisfaction and operational efficiency. Consequently, the hotel business heavily relies on employees' work capacity. However, hotel staff often face physical challenges due to the nature of their work. In addition to ergonomic risk factors, hotel employees work on a shift basis, as hotels operate 24 hours a day. The Hospitality staff has to work for long and uncertain hours depending on the department therefore they experience various health related problems such as back pain, neck and shoulder pain, pain in legs or muscles etc. So, the physically demanding nature of roles within the industry possess a risk of musculoskeletal discomfort (MSDs) among them and if it is neglected then it may turn into Disorder which is very difficult to cure. The musculoskeletal discomfort experienced by the hotel staff can have a significant impact on their physical health, mental health and overall well-being. By understanding the specific challenges faced by hotel workers, the study aims to propose required interventions that can improve their occupational health and safety.

Sustaining proper posture is crucial for reducing musculoskeletal discomfort and enhancing the well-being and productivity of hotel staff. Anxiety, back pain, and repetitive strain injuries are just a few major health issues that can be brought on by bad posture. The well-being of employees, productivity, and operating expenses are all impacted by these circumstances. Despite its importance, not much is known about the musculoskeletal discomfort that hotel workers experience as a result of bad posture.

This study aims to bridge this gap by examining the impact of posture on musculoskeletal health among hotel workers in Vadodara. Understanding these risks will facilitate the development of targeted therapies to reduce pain, enhance general well-being, and improve productivity for employees in the hospitality industry.

Workers in the hospitality sector face numerous risks, including physical, environmental, ergonomic, and psychological hazards, leading to health issues like respiratory ailments, mental health problems, and musculoskeletal disorders. However, most research has focused on housekeeping and kitchen areas, neglecting other departments. This study addresses this gap by examining occupational health risks

across all hotel roles, aiming to develop targeted safety protocols that enhance the well-being and safety of hospitality workers.

The Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda offers "Ergonomics" and “Hospitality Management” courses at both Undergraduate and Postgraduate levels. Thus, the focus of the researcher was to study the musculoskeletal discomfort and the occupational hazards experienced by the hotel staff. In Hospitality Management, students explore hotel operations, culinary arts, and event planning. The study would be helpful to the academic community in several ways.

Therefore, the present study will offer valuable insights to students studying Family and Community Resource Management, and the hospitality sector specifically regarding ergonomics in addressing work-related musculoskeletal discomforts and occupational stress among hotel employees. The outcomes of this study will provide substantial contribution to the field of Family and Community Resource Management, benefiting not only the academic community but also society as a whole. The research will also provide valuable insights to students, hospitality professionals, ergonomists, occupational health specialists and academicians. By implementing ergonomic principles in work system design, these professionals can optimize worker productivity and employee well-being. This research will contribute to a broader understanding of the occupational health in the hotel industry. The study will also be helpful for the employers in making them aware about the problems that the workers experiences and provide them suggestions to make the work environment more comfortable for its employees.

Statement of problem

This study aimed to assess the posture related musculoskeletal discomfort and occupational health hazards experienced by the hotel staff working in different departments of the hotel viz; Front Office Department, Housekeeping Department and Food and Beverage Department and suggesting coping strategies.

Objectives of the study

1. To assess the Posture related Musculoskeletal Discomfort experienced by the Hotel staff working in different departments viz; Front Office Department, Housekeeping Department and Food and Beverage Department.
2. To identify the major occupational health hazards experienced by them at the workplace.
3. To suggest coping strategies in order to deal with their problems and enhance comfort at their workplace.

Delimitations of the study

1. The study was limited to hotels of Vadodara City of Gujarat only.
2. The study was limited to three major Departments of the Hotel viz; Front Office Department, Housekeeping Department and Food and Beverage Department only.
3. The study was limited to a sample size of 120 respondents only.
4. The study was limited to the respondents working in the hospitality industry for a time period of minimum two years.
5. The study was limited to person not suffering from any chronic disease.

Hypotheses of the study

1. The Musculoskeletal Discomfort experienced by the respondents varies with their personal variables (age, gender and educational qualification), family variables (family type and size) and work-related variables (hours of work per day, work experience in the field and work type).
2. The Occupational Health Hazards experienced by the respondents will vary with their personal variables (age, gender and educational qualification) and work-related variables (hours of work per day, work experience in the field and work type).
3. There exists an association between the Occupational Health Hazards and the Musculoskeletal Discomfort experienced by the respondents working in various departments of the Hotel.

Methodology

For the present study, a Descriptive research design was used. Sample comprised of 120 hotel staff selected using purposive and snowball sampling technique. The Questionnaire was used as a tool for collecting the data which comprised of 3 sections. Section I comprised of Background information of the respondents, which dealt with the personal information of the respondents i.e. age, personal monthly income (in Rupees), marital status, gender, education, type of family, number of family members, and educational qualification. Section II included the Posture-related Musculoskeletal Discomfort experienced by the hotel staff**.** This section dealt with the extent of musculoskeletal discomfort experienced by the hotel staff working in different Departments of hospitality industry (viz; Front desk department, housekeeping management department and Food and beverage department) while performing various job tasks. The respondents were asked to respond to a 3-point continuum scale in terms of “Always”, “Sometime” and, “Never” and the scores from 3 through 1 were given to the respondents respectively. To obtain the categories of extent of discomfort, the score range was divided on an equal interval basis. Section III consisted of Occupational Health Hazard, experienced by the respondents. Under this section the ergonomic hazards were studied using observation sheet. The observation sheet included Perceived Musculoskeletal Pain and for studying the perceived musculoskeletal pain experienced by the Hotel staff in the Hotel industry, the Nordic Body Map (NBM) was used. Nordic Body Map assesses the musculoskeletal problems occurring due to non-ergonomic work postures. It helps in determining the extent to which pain is experienced in 28 different locations of the body encompassing major areas like neck, shoulders, upper back, elbows, wrist/hands, low back, hips/thigh, knees and ankles/feet. Scores were assigned on a four-point scale with 'no pain' (1 point), 'moderate pain' (2 point), 'pain' (3 point) and 'very painful'' (4 point). The individual total score defines the degree of risk associated with it and also proposes the level of improvement required for the same. The procedure used for analysing the collected data was categorization, coding, tabulation, and statistical analysis. For analysing the data, t-test, F- test and Coefficient of correlation was used.

Finally, the data obtained from the questionnaire was tabulated and statistical analysis was conducted. On the basis of the analysed data, coping strategies were suggested to the hotel staff to deal with their problems.

Major Findings of the Study

The major findings of the study are presented below:

Section 1: Background Information of the Respondents

Data regarding the background information of the respondents revealed that the largest percentage i.e. 81.67 per cent of them belonged to the age group of 20 -29 years. The mean age being 27 years. It was observed that 75.83 per cent of the respondents were male workers and very less percentage were female. Information regarding their marital status showed that 50.83 per cent of them were unmarried and educational level revealed that 43.33 per cent had received education up till graduation and monthly personal income of 55.83 per cent of the respondents was between ₹50,001 and ₹100,000 per month.

Family related information revealed that 54.17 per cent of them stayed in joint families, 55.83 per cent of the respondents had 5 - 7 members in their family, 41.67 per cent worked in 4-star hotels. The data revealed that most staff worked between 8 to 10 hours per day, with 80 per cent in the Front Office, 82.3 per cent in Housekeeping, and 87.5 per cent in Food and Beverage. In terms of experience, 70 per cent of Front Office staff, 65.50 per cent in Housekeeping, and 62.50 per cent in Food and Beverage had 4 to 6 years of experience. Walking was the most common task across all departments, with the highest in Food and Beverage at 90 per cent. Heavy lifting was significant in Housekeeping at 77.5 per cent and Food and Beverage at 70 per cent, while repetitive motions were frequently reported in all areas, peaking at 65 per cent in Food and Beverage. Standing was notably high in the Front Office at 62.5 per cent, whereas awkward postures and carrying loads were the least common tasks. Hotel Staff occasionally used Personal Protective Equipment (PPE) the most in Housekeeping at 80 per cent and Front Office at 65 per cent. Food and Beverage had the highest percentage of staff always using Personal Protective Equipment (PPE) at 52.50 per cent. Types of Personal Protective Equipment (PPE) used in the workplace varied across departments. Protective clothing was the most used, highest in Food and Beverage at 95 per cent. Gloves were mainly used in

Housekeeping at 80 per cent, while masks or respirators were highest in the Front Office at 75 per cent. Safety goggles or glasses were most used in Housekeeping at 65 per cent, and safety footwear had the highest use in Food and Beverage at 57.5 per cent.

Section II: Posture-Related Musculoskeletal Discomfort Experienced by Hotel Staff

This section dealt with the extent of musculoskeletal discomfort experienced by the hotel staff working in different departments of hospitality industry (viz; Front desk department, housekeeping management department and Food and beverage department) while performing various job tasks. The respondents were asked to respond to a 3-point continuum scale in terms of "Always", "Sometime" and, "Never" and the scores from 3 through 1 were given to the respondents respectively. To obtain the categories of extent of discomfort, the score range was divided on an equal interval basis.

1. **Front desk department**: The data revealed that 60 per cent of the respondents had moderate extent of posture related musculoskeletal discomfort while working in front desk department.
2. **Housekeeping department**: The data revealed that 50 per cent of the respondents experienced moderate extent of posture related musculoskeletal discomfort while working in housekeeping department.
3. **Food and beverage department**: The data revealed that 37.50 per cent of the respondents had moderate extent of posture related musculoskeletal discomfort while working in food and beverages department.

Section III: Occupational health hazard

This section dealt with Ergonomic hazards experienced by the respondents.

In order to assess the perceived musculoskeletal pain experienced at 28 main locations of the body, a Nordic Body Map (NBM) was used. The Level of Risk Based on the Nordic Body Map showed that the Housekeeping department experienced the highest musculoskeletal pain. Housekeeping had the highest number of respondents, with 18, followed by Food and Beverage with 16, and Front Office with 14.

Section IV: Testing of Hypotheses

Based on the objectives of the study a number of hypotheses were formulated. For the present investigation, as per the nature of the variables, Coefficient of Correlation, t Test and f Test were computed.

To find out the difference between Musculoskeletal Discomfort experienced by the respondents with their Age, Gender, Marital Status, Education Level, Family Type, Number of Members in the Family, Work Experience and Work Type t was computed. For Gender and Family type, the t-value was found to be significant at 0.05 level of significance (table). Hence, it can be concluded that the Musculoskeletal Discomfort among the respondents differed with the Gender and type of family. Male respondents experienced high Musculoskeletal Discomfort as compared to the female. To find out the difference between Musculoskeletal Discomfort experienced by the respondents with their Age, Education Level, Number of Members in the Family and Work Experience ANOVA was computed. For Age, and Work Experience, ANOVA was found to be significant at 0.05 level of significance (table). Hence, it can be concluded that the Musculoskeletal Discomfort differed with the Age, and Work Experience of the respondents whereas for Education Level and Number of family members, F test was found to be non-significant hence it was concluded that the Musculoskeletal Discomfort did not differ with the Education Level and Number of Members in the Family. Further Scheffe's test was applied for age and work experience. The statistical analysis in Scheffe's test on various categories of age of the respondents stated that respondents between age group of 20 to 29 years significantly differed in the Musculoskeletal Discomfort of the respondents with their age. Hence, it can be concluded that the extent of Musculoskeletal Discomfort experienced by the respondents was more among respondents who were 30 to 39 years of age. The statistical analysis in Scheffe's test on various categories of experience of the respondents showed that the respondents between work experience of 2 to 4 years significantly differed with the extent of musculoskeletal discomfort experienced by the respondents with experience of 4 to 6 years andof 4 to 6 years and of 6 to 8 years. Hence, it can be concluded that the extent of musculoskeletal discomfort experienced by the respondents was more among respondents who were above 6 to 8 years of experience. To find out the difference between Occupational Health Hazards experienced by the respondents with their Gender and Family Type 't Test' was

computed. The results of the computation of t- test did not show any significant difference in the Occupational Health Hazards experienced by the respondents with their Gender and family type. It was concluded that the Occupational Health Hazards did not have any effect with the Gender and family type. To find out the difference between Occupational Health Hazards experienced by the respondents with their Age, Education Level, Number of Members in the Family, Work Experience and Work Type 'F Test' was computed. ANOVA was found to be significant for Work Experience at 0.05 level of significance. Hence null hypothesis was rejected. Therefore, it can be concluded that the Occupational Health Hazards differed with Work Experience of the respondents. For Age, Education Level, Number of family members it was not found significant. Therefore, it can be concluded that the Occupational Health Hazards did not differ with the Age, Education Level, Number of family members. In order to find the relationship between Occupational Health Hazards and the Musculoskeletal Discomfort experienced by the respondents, coefficient of correlation was computed. The Correlation coefficient (r) was found significant between the Occupational Health Hazards and the Musculoskeletal Discomfort experienced by the respondents. Hence it can be concluded that there was a relationship between the Occupational Health Hazards and the Musculoskeletal Discomfort experienced by them.

Section V: Development of a booklet suggesting coping strategies for the hotel staff

Based on personal observations and the data collected, a booklet was prepared to suggest effective coping strategies for hotel staff across different departments. The booklet highlights department-specific challenges and provides solutions to enhance their physical and mental well-being. Front Office staff often experience prolonged standing, repetitive tasks, and emotional stress due to continuous guest interactions. To manage these issues, taking scheduled breaks, using ergonomic furniture, and practicing stress management techniques are recommended. Housekeeping staff perform physically demanding tasks such as heavy lifting, repetitive bending, and exposure to cleaning chemicals, leading to musculoskeletal discomfort. Coping strategies like proper lifting techniques, the use of assistive cleaning equipment, and task rotation can help reduce physical strain. In the Food and Beverage (F&B) department, employees face challenges such as carrying heavy trays, working in high temperatures, and fast-paced service. Implementing efficient workflow planning, staff

rotation, hydration breaks, and maintaining proper posture can improve their working conditions. Additionally, the booklet emphasizes the importance of maintaining a healthy lifestyle by eating nutritious food, staying hydrated, and avoiding harmful habits like smoking or excessive caffeine intake. Incorporating relaxation techniques such as meditation, seeking social support from colleagues and supervisors, and maintaining a positive attitude can further contribute to overall well-being. The coping strategies outlined in the booklet aimed to create a healthier and more productive work environment for hotel staff.

Conclusion

The hospitality industry is a cornerstone of the global economy, and the well-being of hotel staff is crucial for maintaining operational efficiency and guest satisfaction. This study has highlighted the posture related musculoskeletal discomfort and occupational health hazards faced by hotel employees, particularly in the Front Office, Housekeeping, and Food and Beverage departments. The findings indicate that a substantial percentage of hotel staff experience moderate to severe musculoskeletal discomfort, with the Housekeeping department reporting the highest levels of pain.

The research has established a clear link between personal and work-related variables and the extent of musculoskeletal discomfort experienced by hotel staff. Factors such as age, gender, and work experience were found to significantly influence the level of discomfort, underscoring the need for targeted interventions. The study also revealed that occupational health hazards are prevalent across all departments, with ergonomic risks contributing to the overall health challenges faced by employees.

By identifying the specific challenges and discomforts experienced by hotel staff, this research provides a foundation for developing effective coping strategies and interventions. These strategies are essential for enhancing employee well-being, reducing health-related issues, and ultimately improving productivity within the hospitality sector. The proposed coping strategies, tailored to the unique duties and challenges of each department, aim to create a safer and more comfortable work environment for hotel staff.

In conclusion, addressing the ergonomic and health-related challenges faced by hotel employees is not only vital for their well-being but also for the sustainability and growth of the hospitality industry. The insights gained from this study will serve as a

valuable resource for employers, ergonomists, and health professionals, guiding them in implementing effective measures to enhance the occupational health and safety of hotel staff.

IMPLICATIONS OF THE STUDY

The finding of the present study had the following implications:

• For Educational Institutes

The Department of Family and Community Resource Management offers subjects such as Hospitality Management, and Ergonomics at Bachelor's, and Master's levels. This research will be highly beneficial to students as it provides insights into posture-related musculoskeletal discomfort and occupational health hazards experienced by hotel staff. Understanding these issues will equip students with the knowledge necessary to create safer work environments. The study can serve as a valuable resource for academicians and hospitality programs, helping them develop targeted modules and training sessions to educate students and interns about ergonomic practices and occupational health strategies, preparing them for careers in the hospitality sector.

• For Hotel Staff

The study will help hotel staff, understand the risks of posture-related musculoskeletal discomfort and other occupational health hazards associated with their daily tasks. By increasing awareness, staff members can adopt proper ergonomic practices, participate in workplace wellness programs, and seek timely medical interventions, ultimately contributing to their physical well-being and job satisfaction.

• For the Hospitality Industry

The present study will assist the hospitality industry in identifying and addressing posture-related musculoskeletal discomfort and occupational health hazards faced by hotel staff. By highlighting the physical and mental challenges encountered in various departments, this research will enable hotel management to implement preventive measures, ergonomic solutions, and wellness programs. Consequently, the hospitality industry can foster a healthier work environment, reduce employee absenteeism, and enhance overall productivity by acquiring and retaining skilled and healthy employees.

• **For Policy Makers**

The study's findings can guide policymakers in framing occupational health and safety regulations specific to the hospitality sector. This may include setting ergonomic standards, mandating regular health check-ups, and ensuring proper training for hotel staff. Such policies will not only safeguard employee well-being but also improve service quality and operational efficiency in the hospitality industry.

• **For Health Practitioners**

Healthcare professionals, including physiotherapists and occupational health specialists, can utilize this research to design effective intervention programs aimed at alleviating musculoskeletal discomfort among hotel staff. These programs may focus on posture correction exercises, stress management techniques, and preventive care, thereby enhancing employee health and reducing work-related injuries.

RECOMMENDATIONS FOR FUTURE STUDY

1. A study can be conducted on a larger sample size for broader insights.
2. A study can be conducted in different cities or regions for comparison.
3. A study can be conducted to explore other occupational health issues in hotels.
4. A study can be conducted on various hotel categories to assess differences.
5. A study can be conducted in other service industries for a comparative analysis.

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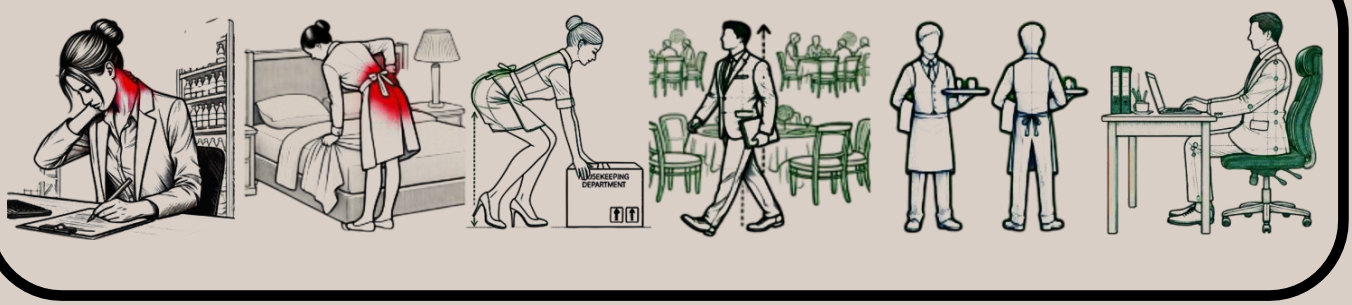
Appendices



APPENDIX I

Ethical Compliance Certificate 2024 -2025

Institutional Ethics
Committee for Human
Research
(IECHR)

FACULTY OF FAMILY AND COMMUNITY SCIENCES
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

Ethical Compliance Certificate 2024-2025

This is to certify Ms. Ravinaben Rathod study titled; "Posture Related Musculoskeletal Discomfort and Occupational Health Hazards Experienced by the Hotel Staff of Vadodara City." from Department of Family and Community Resource Management has been approved by the Institutional Ethics Committee for Human Research (IECHR), Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda. The study has been allotted the ethical approval number IECHR/FCSc/M.Sc./10/2024/18.

Komal

Prof. Komal Chauhan
Member Secretary
IECHR

Prof. Mini Sheth
Chairperson
IECHR

Chair Person
IECHR
Faculty of Family & Community Sciences
The Maharaja Sayajirao University of Baroda

APPENDIX II

Informed Consent Form for respondents

DEPARTMENT OF FAMILY & COMMUNITY RESOURCE MANAGEMENT
FACULTY OF FAMILY & COMMUNITY SCIENCES
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA
VADODARA
Accredited 'A+' by NAAC

Date: 27/12/2024

Respected Sir/Madam,

The Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda supports the practice of protecting human participants in research. This form provides you with information about the study that will help you decide whether or not you wish to participate. If you agree to participate, please be aware that you are free to withdraw at any point during the research. The title of the research study is **"Posture Related Musculoskeletal Discomfort and Occupational Health Hazards Experienced by the Hotel Staff of Vadodara City."** In this study, we will assess your posture-related musculoskeletal discomfort and identify occupational health hazards you may experience at work. We will also suggest coping strategies to help manage these problems and enhance your comfort at the workplace. All information you provide will remain confidential and will not be associated with your name. If, at any point during the study, you feel uncomfortable, you may leave the study. Your participation in this study will require approximately 15 minutes.

If you have any further questions concerning this study, please feel free to contact the researcher via phone or email provided below. Please indicate with your signature on the space below that you understand what participation in the study involves and agree to participate. Your participation is strictly voluntary, and all information will be kept confidential with no association to your name.

I Dinesh Varma, freely agree to participate in the research entitled **"Posture Related Musculoskeletal Discomfort and Occupational Health Hazards Experienced by the Hotel Staff of Vadodara City.''**

Signature of the Respondent

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APPENDIX III

Data Collection Tool-Questionnaire

QUESTIONNAIRE

SECTION I: BACKGROUND INFORMATION OF THE EMPLOYEES(RESPONDENTS)

PART A: DEMOGRAPHIC PROFILE

Kindly provide the following details:

1. Gender
   i. Male ☐
   ii. Female ☐
2. Age (years)_____
3. Marital Status
   i. Unmarried
   ii. Married
4. Types of family
   i. Nuclear
   ii. Joint
5. Number of Family members
   i. 2 to 4 members
   ii. 5 to 7 members
   iii. 8 t0 10 members
6. Monthly personal income (in ₹)
   i. 10000 – 50000
   ii. 50001 – 100000
   iii. 100001 – 150000

14) Educational Qualification
   i. Illiterate
   ii. 10th pass
   iii. 12th pass
   iv. Diploma
   v. Graduate
   vi. Postgraduate

15) Designation (Please specify the specific job role or type of work you perform, such as Receptionist, Houseman, Waiter, or Chef etc.,): _____

16) Type of hotel in which you are working: _____

PART B: WORK RELATED INFORMATION

1. Working Hours (per day)
   i. 5 – 7 hours
   ii. 8 – 10 hours
   iii. 10 – 13 hours

2. Years of Working in this Field
   i. 2 – 4 years
   ii. 4 – 6 years
   iii. 6 – 8 years

3. Types of tasks
   i. Heavy lifting
   ii. Repetitive motions
   iii. Prolonged standing
   iv. Carrying loads over distances
   v. Frequent walking
   vi. Pushing and pulling objects
   vii. Manual handling of materials
   viii. Use of hand tools (e.g., vacuum cleaners, mops, or kitchen utensils)
   ix. Prolonged sitting (e.g., at the front desk)
   x. Maintaining awkward postures (e.g., reaching for high shelves)
   xi. Frequent crouching
   xii. Frequent kneeling

4. Types of work and physical demand
   i. Light (e.g., administrative tasks)
   ii. Moderate (e.g., customer service, housekeeping)
   iii. Heavy (e.g., maintenance, kitchen staff)

5. The chances to learn new skills in the hotel can varies:
   i. Regularly
   ii. Occasionally
   iii. Never

6. Shift changes occur at the following frequencies:
   i. Daily
   ii. Every 3 Days
   iii. Weekly
   iv. Monthly
   v. Occasionally

7. The number of breaks taken during a shift
   i. 1 Break
   ii. 2 Breaks
   iii. 3 or more breaks

8. Overtime shifts can happen:
   i. Daily
   ii. Weekly
   iii. Monthly
   iv. Occasionally

9. Shift duration is typically:
   i. 8 hours
   ii. 9 hours
   iii. 10 hours

10. Breaks and Recovery Time
   i. 10 minutes - 15 minutes
   ii. 15 minutes - 20 minutes
   iii. 20 minutes – 30 minutes

11. How comfortable and well-designed is your workplace?

   Kindly tick mark on your department

   Front Office ☐

   Housekeeping ☐

   Food And Beverages Department ☐

   i. Very comfortable
   ii. Somewhat comfortable
   iii. Not at all comfortable

12. Do you use personal protective equipment (PPE)?
   i. Always use PPE
   ii. Occasionally use PPE
   iii. Never use PPE

13. What types of Personal Protective Equipment (PPE) do you use in your workplace?

   Follow-up:
   Please select all that apply:
   i. Gloves
   ii. Masks/ Respirators
   iii. Safety Goggles/Glasses
   iv. Protective Clothing (e.g., uniforms, aprons)
   v. Face Shields
   vi. Safety Footwear
   vii. Other (please specify) _____

SECTION II: Posture related Musculoskeletal Discomfort experienced by the Hotel staff

Front Office Department				
Sr. No.	**Statements**	**Always**	**Sometime**	**Never**
1.	Experience neck or shoulder discomfort while supervising the front desk.			
2.	Feel pain in lower back due to prolonged standing during peak check-in times.			
3.	Experience pain in wrist due to an extensive use of the computer.			
4.	Experience eye strain while monitoring multiple screens.			
5.	Feel pain in upper back pain because of frequently moving between workstations.			
6.	Experience pain or discomfort because of walking back and forth to assist guests.			
7.	Experience pain in hands due to typing continuously.			
8.	Experience wrist pain while using the computer or phone.			
9.	Experiencing upper back pain because of frequently reaching for items across the desk.			
10.	Experience headaches or eye strain because of staring at the computer screen.			
11.	Experience lower back pain due to standing for prolong time period.			
12.	Experience numbness in fingers due to excessive computer use.			
13.	Experience discomfort in knees because of prolonged standing.			
14.	Feel wrist strain from frequently handling guest requests and documents.			
15.	Feel upper back pain due to standing in a fixed position for long time period.			
16.	Experience strain due to looking up local information for guests.			
17.	Feel upper back pain because of frequently reaching for brochures or maps.			
18.	Experience musculoskeletal discomfort due to handling luggage and deliveries.			
19.	Feel physical discomfort in maintaining a fixed posture for hours.			
20.	Experience lower back discomfort from bending frequently to assist guests.			

21.	Feel discomfort in the arms or shoulders because of reaching over the counter.			
22.	Suffer from discomfort due to the height or positioning of the computer monitor.			
23.	Experience discomfort in the feet because of standing on hard surfaces.			
24.	Experience discomfort foot or leg fatigue because of standing during night shift.			
25.	suffering upper back discomfort from carrying audit reports and paperwork.			
26.	Experience lower back pain because of lifting heavy luggage.			
27.	Feel discomfort in shoulder or neck because of carrying guest bags.			
28.	Experience muscle strain from handling oversized or unusually shaped items.			
29.	Experience discomfort due to maintaining a professional posture (ergonomics) throughout the shift.			
30.	Feel strain in the arms or shoulders due to lifting luggage onto high shelves or racks.			
31.	Feel fatigue from lack of movement during shifts.			
32.	Experience discomfort because of sitting too high or too low on desk.			
33.	Experience pain in the neck or shoulders from cradling the phone between ear and shoulder.			
34.	Suffering from eye strain due to prolong computer use.			
35.	Feel discomfort from insufficient space or cluttered work area.			
36.	Experience leg fatigue due to standing during peak check-in/check-out times.			
37.	Experience physical strain due to managing multiple tasks at once.			
38.	Feel eye strain from monitoring multiple screens and reports.			
39.	Feel upper back pain from frequently moving between different front desk areas.			

Housekeeping Department				
Sr. No.	**Statements**	**Always**	**Sometime**	**Never**
1.	Experience lower back while performing cleaning tasks.			
2.	Feel fatigue while inspecting rooms and facilities.			
3.	Experience leg fatigue from walking long distances within the hotel.			
4.	Feel discomfort while working in environments with poor ventilation or temperature control.			
5.	Feel discomfort due to irregular work hours and shifts.			
6.	Feel lower back pain because of bending and lifting heavy items.			
7.	Experience wrist pain because of repetitive cleaning motions.			
8.	Feel leg or foot pain due to prolonged standing and walking.			
9.	Feel strain in the wrists due to repetitive cleaning tasks for extended periods**.**			
10.	Experience lower back pain while making beds.			
11.	Feel shoulder or neck discomfort while dusting or cleaning high surfaces.			
12.	Experience body pain because of cleaning tasks.			
13.	Experience knee discomfort due to prolonged walking or standing.			
14.	Feel strain in the arms because of pushing heavy cleaning carts.			
15.	Experience wrist pain because of writing reports and using checklists.			
16.	Experience lower back pain because of frequently bending or stretching during inventory checks.			
17.	Feel upper back pain from bending during inspections.			
18.	Experience lower back pain while sweeping and mopping floors.			
19.	Feel shoulder or neck discomfort while cleaning windows and high surfaces.			
20.	Suffer from wrist pain when using cleaning tools and equipment.			
21.	Experience foot pain due to extend walking and standing.			

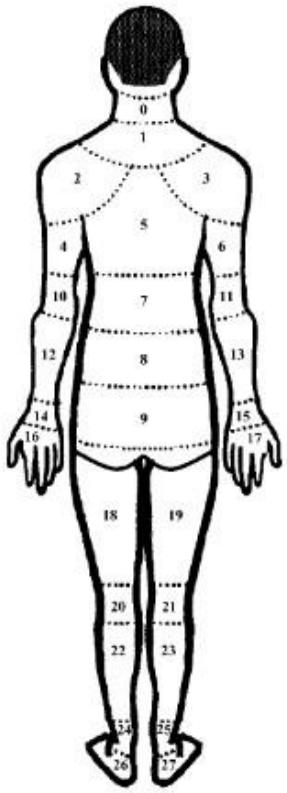
22.	Feel upper back strain while moving furniture to clean the surfaces.			
23.	Experience lower back pain while lifting heavy laundry bags.			
24.	Feel shoulder or neck discomfort because of loading and unloading machines.			
25.	Suffer from wrist and arm pain in folding and ironing linens.			
26.	Experience leg or foot pain because of prolonged standing while sorting laundry.			
27.	Feel upper back pain when reaching into machines.			
28.	Experience neck or shoulder discomfort because of answering phones and coordinating tasks.			
29.	Feel lower back pain due to prolonged sitting at the desk.			
30.	Experience wrist pain due to data entry and scheduling.			
31.	Experience eye strain because of monitoring schedules and reports.			
32.	Feel upper back pain due to maintaining posture while working.			
33.	Feel shoulder or neck discomfort due to setting up event spaces.			
34.	Feel upper back strain due to carrying and lifting supplies.			

Food And Beverage Department				
Sr. No.	**Statements**	**Always**	**Sometime**	**Never**
1.	Experience neck or shoulder discomfort because of overseeing restaurant operations.			
2.	Suffer from lower back pain due to prolonged standing and walking.			
3.	Experience wrist pain due to handling reports and schedules.			
4.	Feel eye strain in monitoring multiple screens and reports.			
5.	Feel upper back pain due to frequently moving between different areas.			
6.	Experience neck or shoulder discomfort while supervising restaurant activities.			
7.	Feel lower back pain due to prolonged standing during service hours.			
8.	Feel eye strain while inspecting the environment of the restaurant.			
9.	Feel upper back pain due to bending to check under tables and chairs.			
10.	Experience lower back pain because of lifting heavy pots and pans.			
11.	Feel shoulder or neck discomfort while chopping or food preparation tasks.			
12.	Suffer from wrist pain during repetitive tasks like stirring or mixing.			
13.	Feel physical strain due to maintaining a fast-paced work environment during busy periods.			
14.	Feel upper back strain due to reaching for items on high shelves.			
15.	Feel shoulder or neck discomfort due to supervising food preparation tasks.			
16.	Suffer from wrist pain due to repetitive cooking activities.			
17.	Experience leg or foot pain because of prolonged standing while assisting the chef.			
18.	Feel upper back strain due to reaching for ingredients and supplies.			
19.	Feel shoulder or neck discomfort due to overseeing banquet operations.			
20.	Suffer from wrist pain while handling banquet materials and equipment.			

21.	Experience leg or foot pain because of prolonged walking and standing during events.			
22.	Feel upper back strain while moving and arranging furniture.			
23.	Experience hand discomfort because of frequently handling hot dishes and utensils.			
24.	Feel shoulder or neck discomfort while serving food and beverages.			
25.	Suffer from wrist pain due to repetitive pouring or serving.			
26.	Feel wrist or hand pain because of repetitive tasks such as writing orders and carrying plates.			
27.	Feel upper back strain due to bending over tables to serve guests.			
28.	Experience lower back pain because of carrying heavy trays to guest rooms.			
29.	Feel shoulder or neck discomfort while delivering food and beverages.			
30.	Suffer from wrist pain due to holding and serving items.			
31.	Experience leg or foot pain because of prolonged walking between rooms.			
32.	Feel upper back strain due to bending to set up trays in guest rooms.			
33.	Suffer from wrist pain due to repetitive motions of grinding, brewing, steaming milk, and operating espresso machines.			
34.	Experience leg or foot pain due to prolonged standing behind the counter.			
35.	Feel discomfort in the feet due to wearing shoes that lack proper support.			

APPENDIX IV

Nordic Body Map - Kuorinka et al. (1987)



No	Location	Grade of complaints			
0	Pain/stiff in the upper neck	A	B	C	D
1	Pain in the lower neck				
2	Pain in the left shoulder				
3	Pain in the right shoulder				
4	Pain in the left upper arm				
5	Pain in the back				
6	Pain in the right upper arm				
7	Pain in the waist				
8	Pain in the buttock				
9	Pain in the bottom				
10	Pain in the left elbow				
11	Pain in the right elbow				
12	Pain in the left lower arm				
13	Pain in the right lower arm				
14	Pain in the left wrist				
15	Pain in the right wrist				
16	Pain in the left hand				
17	Pain in the right hand				
18	Pain in the left thigh				
19	Pain in the right thigh				
20	Pain in the left knee				
21	Pain in the right knee				
22	Pain in the left calf				
23	Pain in the right calf				
24	Pain in the left ankle				
25	Pain in the right ankle				
26	Pain in the left foot				
27	Pain in the right foot				

Kuorinka, I., Jonsson, B., Kilbom, Å., Vinterberg, H., Biering-Sørensen, F., Andersson, G., & Jørgensen, K. (1987). Standardised Nordic questionnaires for the analysis of musculoskeletal symptoms. Applied Ergonomics, 18(3), 233–237. https://doi.org/10.1016/0003-6870(87)90010-X

Abstract

ABSTRACT

The hospitality industry is recognized for its physically demanding work environments, often leading to musculoskeletal discomfort (MSD) and various occupational health hazards among employees. This present study aims to assess the prevalence and impact of MSD among hotel staff across different departments, specifically Front Office, Housekeeping, and Food and Beverage, and to identify the primary occupational health hazards encountered by these employees. A purposive and snowball sampling approach was employed to select 120 hotel staffs from various hotels in Vadodara City. Data collection was conducted through a structured questionnaire covering demographic factors, work-related conditions, the extent of musculoskeletal discomfort and coping methods. Additionally, the Nordic Body Map was utilized to evaluate discomfort across different regions of the body. The results revealed that housekeeping staff reported the highest levels of musculoskeletal discomfort, followed by hotel staffs in the Food and Beverage and Front Office departments. The most commonly affected areas were the lower back, neck, shoulders, and legs, attributed to repetitive tasks, prolonged standing, awkward postures, and inadequate rest breaks. Beyond physical discomfort, staff also reported feelings of fatigue, reduced productivity, and increased psychological stress, particularly in high-pressure roles like housekeeping and food service. These findings emphasize the need for a holistic approach to workplace ergonomics and employee health. Based on the findings, the study recommends several ergonomic interventions, including adjustable workstations, lifting aids, and anti-fatigue mats to reduce physical strain. It also suggests the implementation of employee training programs focusing on posture correction, safe lifting techniques, and stress management. Furthermore, workplace policies promoting regular breaks, job rotation, and access to mental health support are proposed to foster a healthier, more resilient workforce. Implementing these strategies is expected to not only alleviate physical discomfort but also enhance job satisfaction, staff retention, and service quality in the hospitality industry. This study contributes valuable insights to support hotel management in developing more employee-centered policies while paving the way for future research on occupational health and safety in the sector.

Coping Strategies for Musculoskeletal Discomfort and Occupational Health Hazards for the Hotel staff

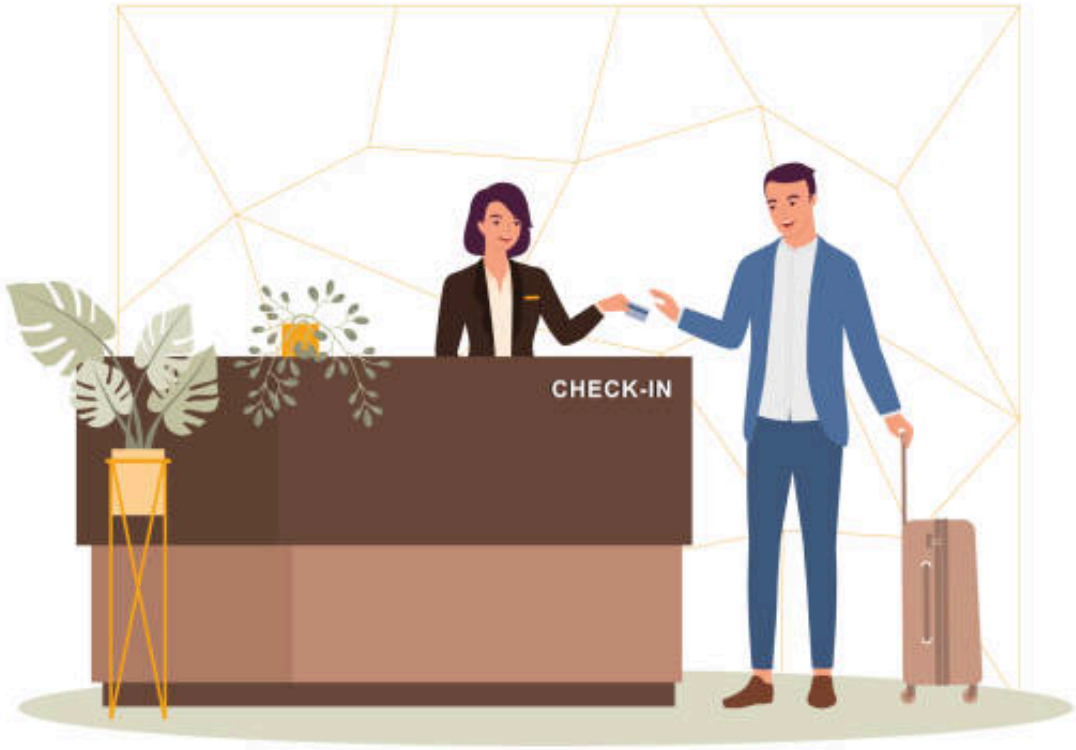
PREFACE

The hospitality industry is known for its demanding nature, requiring hotel staff to be on their feet for long hours, lift heavy objects, and perform repetitive tasks that often lead to musculoskeletal discomfort and other occupational health challenges. Prioritizing health and safety in the workplace not only benefits employees but also contributes to the smooth and efficient operation of the hospitality industry as a whole. The researcher has suggested certain coping strategies through this booklet for fostering a safer and healthier work environment for hotel staff everywhere. By adopting the suggested coping strategies, hotel staff can reduce the risk of injury, improve workplace comfort, and enhance overall productivity and job satisfaction.

Research Scholar
Ms. Ravina Rathod

Dr. Sarjoo Patel
Research Guide

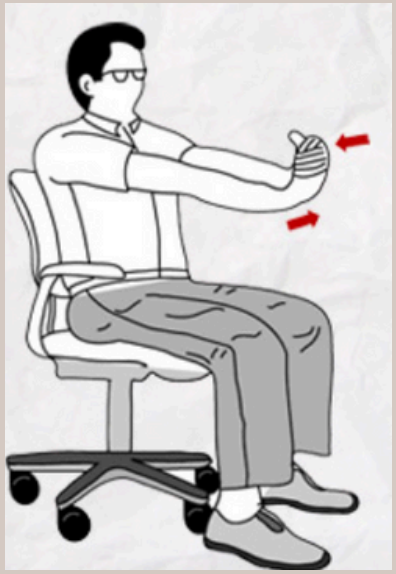
CONTENTS



COPING STRATEGIES FOR MUSCULOSKELETAL DISCOMFORT AND OCCUPATIONAL HEALTH HAZARDS FOR FRONT OFFICE DEPARTMENT








FRONT OFFICE MANAGER

Duties:

- Supervising overall front office operations and handling complaints.
- Conducting meetings, administrative work, and audits.
- Monitoring team performance.

Ergonomic Problems:

- Prolonged sitting and desk work leads to back, neck, and shoulder pain.
- Frequent walking or standing may cause leg fatigue and discomfort.
- Stress from multitasking can increase mental fatigue.

Coping Strategies:

- Use adjustable chairs with lumbar support and ergonomic desk setups.
- Schedule regular breaks and practice stretches for back and neck.
- Use task prioritization strategies to reduce stress.
- Wear supportive shoes for walking or standing tasks.

RECEPTIONIST

Duties:

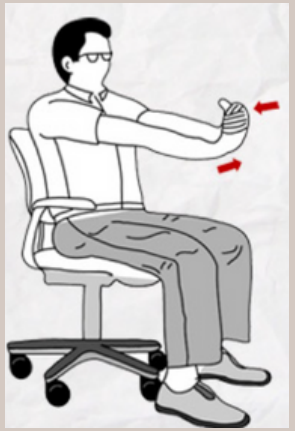
- Managing guest check-ins, check-outs, and reservations.
- Answering phone calls and attending to guest inquiries.
- Handling cash, invoices, and data entry.

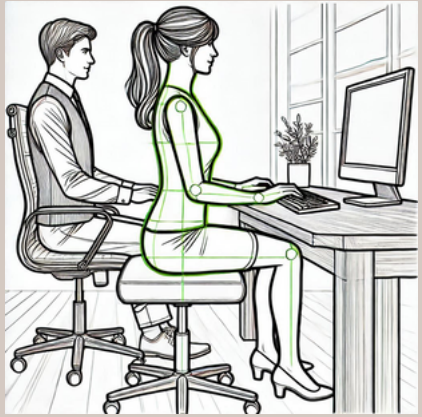
Ergonomic Problems:

- Poor posture due to forward-leaning while typing or attending calls.
- Prolonged sitting causes lower back pain and poor circulation.
- Repeated typing or writing strains wrists and forearms.

Coping Strategies:

- Position computer monitors at eye level and maintain an upright posture.
- Use wrist supports for typing and phone headsets to avoid neck strain.
- Stand and stretch every 30 minutes to improve circulation.
- Invest in ergonomic seating for long desk hours.





Wrist supports help keep the wrist straight, reduce strain, and ease discomfort, but using them too long can weaken muscles or hide other problems.

CONCIERGE

Duties:

- Assisting guests with information about tours, transportation, and tickets.
- Coordinating requests and handling bookings.
- Communicating with multiple departments for guest needs.

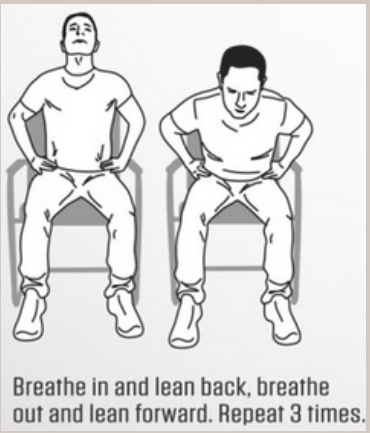
Ergonomic Problems:

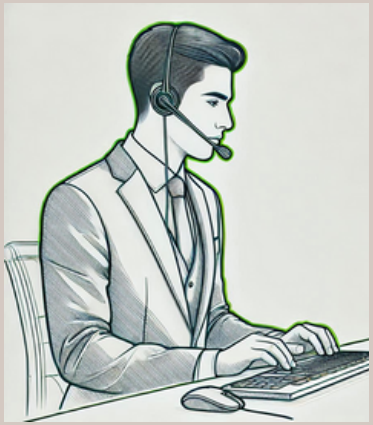
- Prolonged sitting at the desk causes lower back stiffness.
- Extended phone or computer use strains the neck and wrists.
- Stress from multitasking leads to mental fatigue.

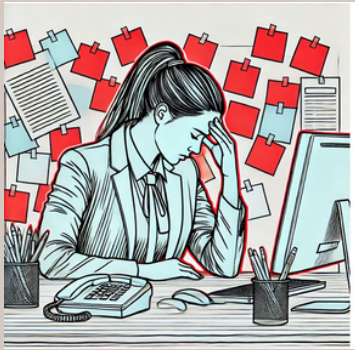
Coping Strategies:

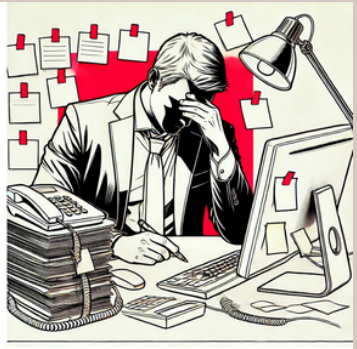
- Use ergonomic chairs and sit with feet flat on the ground.
- Take regular micro-breaks for stretching neck, wrists, and shoulders.
- Use hands-free devices for phone communication.
- Implement stress management techniques like deep breathing exercises.

Using hands-free devices for phone communication helps reduce neck and wrist strain during extended or frequent calls.

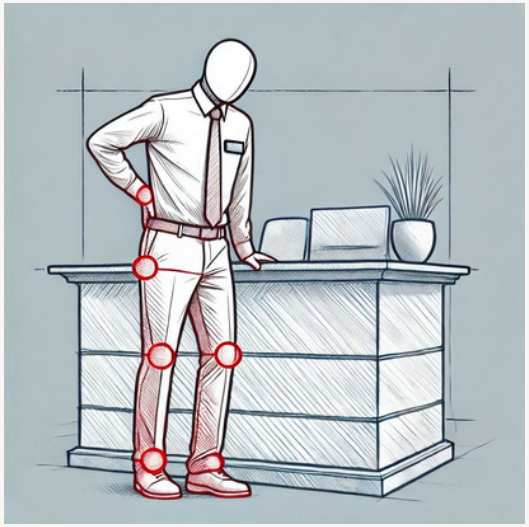








GUEST SERVICE AGENT



Duties:

- Addressing guest concerns and requests.
- Facilitating smooth guest experiences from arrival to departure.
- Handling complaints and coordinating solutions.

Ergonomic Problems:

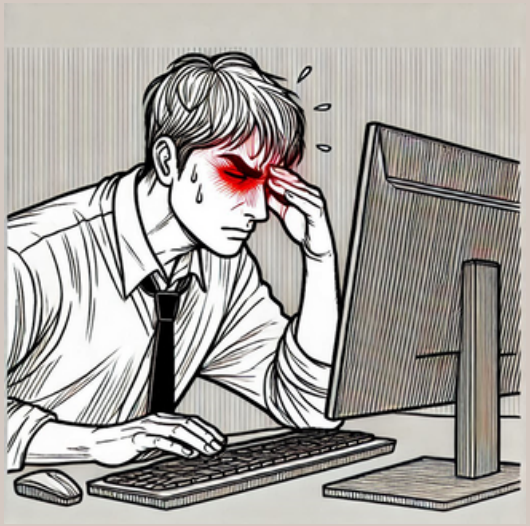
- Prolonged standing causes leg and foot pain.
- Leaning while interacting with guests can lead to back strain.
- Walking frequently may cause fatigue and joint stress.

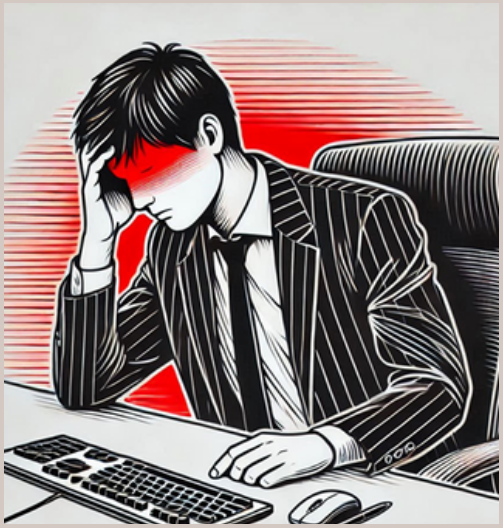
Coping Strategies:

- Use anti-fatigue mats for prolonged standing.
- Maintain upright posture and shift weight evenly when standing.
- Schedule short breaks to stretch legs and back.
- Wear supportive footwear with shock absorption.

Anti-fatigue mats help reduce discomfort and fatigue for workers standing for long periods by providing cushioning and support, improving comfort and productivity.

NIGHT AUDITOR





Duties:

- Performing end-of-day financial audits and preparing reports.
- Handling overnight guest requests and reservations.
- Monitoring hotel security during nighttime hours.

Ergonomic Problems:

- Night shifts disrupt sleep patterns and cause fatigue.
- Sitting for long hours during audits causes back discomfort.
- Eye strain from excessive computer use under artificial lighting.

Coping Strategies:

- Use ergonomic chairs with back support and proper desk heights.
- Take small breaks to stretch and reset posture.
- Adjust lighting to reduce eye strain and use anti-glare screens.
- Follow sleep hygiene practices to manage night shift fatigue.

Look up and hold for 3 seconds then look down and hold for another 3 seconds. Repeat 3 times in total.

Look right and hold for 3 seconds then look left and hold for another 3 seconds. Repeat 3 times in total.

Look to the top left corner of your eye and hold for 3 seconds. Look to the top right and hold for another 3 seconds. Repeat 3 times.

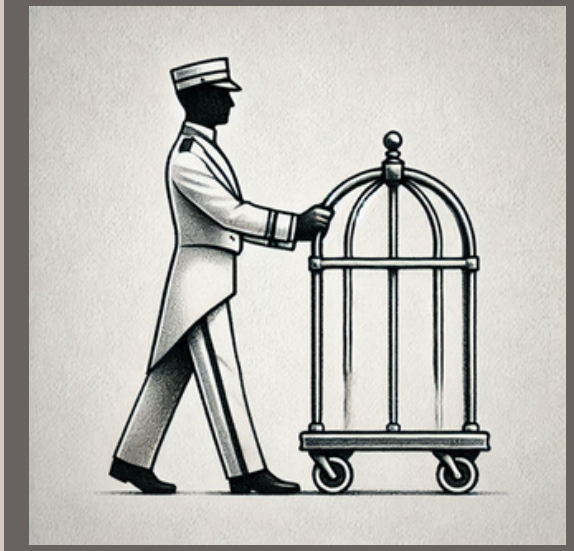
Rotate your eyeballs 3 times to the right and then 3 times to the left. Blink several times to relax

Rotate your eyeballs 3 times to the right and then 3 times to the left. Blink several times to relax

Open your eyes wide and hold for 10 seconds. Blink repeatedly to relax and complete the workout

Anti-glare or blue light filtering glasses mitigate visual discomfort by reducing screen-induced digital eye strain and blocking UV radiation, enhancing visual clarity and safeguarding ocular health.

BELLHOP/BELLBOY



Duties:

- Assisting guests with luggage and room guidance.
- Delivering items and messages to rooms.
- Standing for long periods in the lobby area.

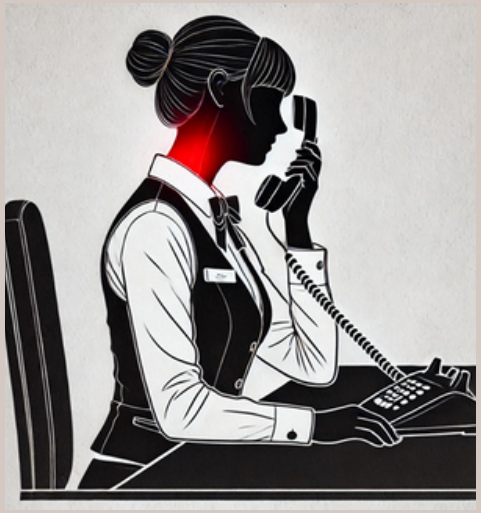
Ergonomic Problems:

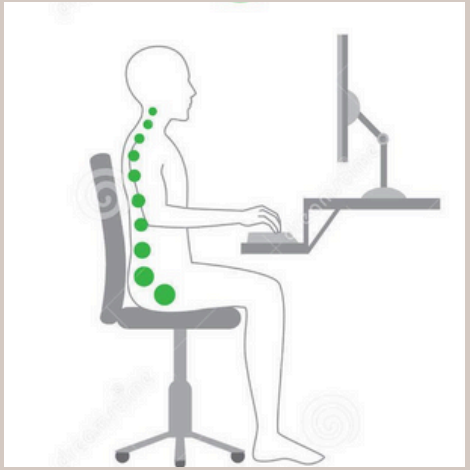
- Heavy lifting causes back, shoulder, and arm strain.
- Prolonged standing can lead to fatigue and joint pain.
- Repetitive walking with heavy loads may cause foot discomfort.

Coping Strategies:

- Use luggage carts or trolleys to reduce heavy lifting strain.
- Lift properly: bend knees, keep back straight, and avoid twisting.
- Stretch regularly to ease muscle tension.
- Wear cushioned and supportive shoes to prevent foot pain.

RESERVATION AGENT





Duties:

- Managing room reservations and guest information.
- Handling booking confirmations and cancellations.
- Working extensively with computer systems and phone calls.

Ergonomic Problems:

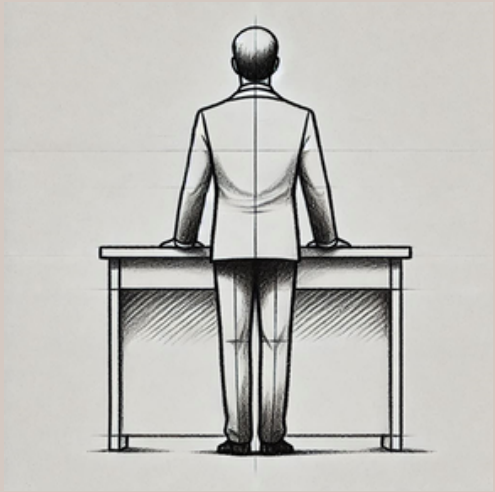
- Prolonged sitting causes back and neck stiffness.
- Repetitive typing leads to wrist strain.
- Long phone calls without proper equipment strain the neck.

Coping Strategies:

- Use ergonomic keyboards and chairs to maintain a healthy posture.
- Implement wrist supports and hand stretches.
- Use phone headsets to reduce neck strain during calls.
- Take short breaks for stretching every hour.

Using ergonomic keyboards and chairs promotes proper alignment and reduces strain on the musculoskeletal system, helping to maintain a healthy posture and prevent discomfort or injury during extended periods of sitting or typing.

FRONT DESK SUPERVISOR



Duties:

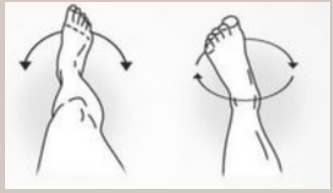
- Supervising front desk staff and operations.
- Assisting in check-ins, check-outs, and guest relations.
- Coordinating with other departments for smooth operations.

Ergonomic Problems:

- Alternating between sitting, standing, and walking causes fatigue.
- Prolonged standing can lead to foot and back pain.
- Multitasking stress impacts mental and physical well-being.

Coping Strategies:

Use an adjustable desk to alternate sitting and standing.
Practice proper posture and avoid leaning.
Take regular walking breaks to reduce stiffness.
Wear supportive footwear and encourage stress-relief exercises.



COPING STRATEGIES FOR MUSCULOSKELETAL DISCOMFORT AND OCCUPATIONAL HEALTH HAZARDS FOR HOUSEKEEPING DEPARTMENT

EXECUTIVE HOUSEKEEPER

Duties:

- Supervising overall housekeeping operations.
- Planning, budgeting, and managing staff schedules.
- Ensuring cleanliness standards across the property.

Ergonomic Problems:

- Prolonged sitting while preparing reports and schedules leads to back and neck stiffness.
- Walking frequently for inspections may cause leg fatigue.
- Stress due to multitasking and meeting high cleanliness standards.

Coping Strategies:

- Use an ergonomic chair with lumbar support to reduce back strain.
- Schedule breaks for short stretches during desk tasks.
- Prioritize tasks with time management to reduce stress.
- Use cushioned footwear during walking-intensive inspections.

ASSISTANT HOUSEKEEPER

Duties:

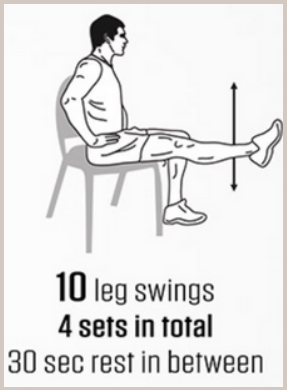
- Assisting the Executive Housekeeper in managing daily operations.
- Supervising room attendants and monitoring tasks.
- Ensuring supplies and equipment are available for operations.

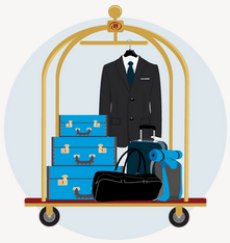
Ergonomic Problems:

- Frequent bending or walking causes lower back strain and leg fatigue.
- Long hours standing during inspections lead to joint pain.
- Carrying supplies can strain arms, shoulders, and back.

Coping Strategies:

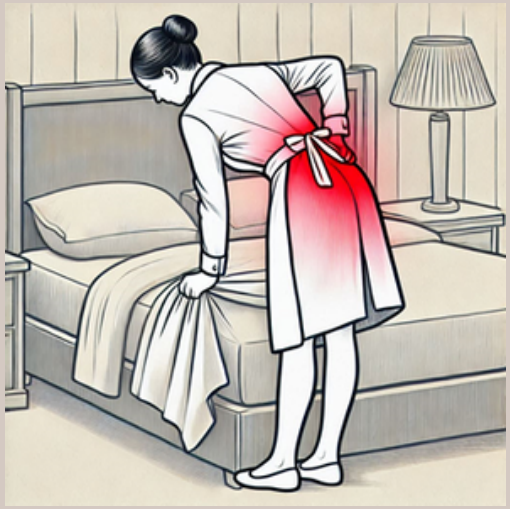
- Use ergonomic tools like trolleys to transport supplies.
- Follow proper lifting techniques: bend knees and avoid twisting.
- Schedule rest intervals and perform leg stretches between rounds.
- Wear supportive shoes to minimize foot and joint discomfort.





Using ergonomic tools like trolleys for transporting supplies reduces physical strain, minimizes the risk of injury, and enhances efficiency by promoting proper posture and minimizing repetitive lifting or carrying tasks.

ROOM ATTENDANT



Duties:

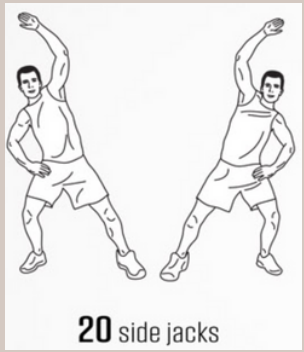
- Cleaning guest rooms, bathrooms, and replenishing amenities.
- Making beds, vacuuming, and deep cleaning rooms.
- Handling heavy equipment like vacuum cleaners.

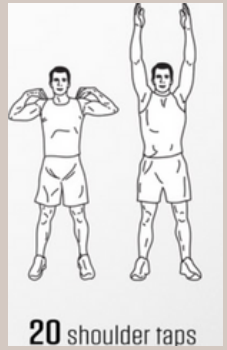
Ergonomic Problems:

- Repetitive bending while making beds causes back and knee strain.
- Overhead reaching to clean high areas leads to shoulder discomfort.
- Pushing/pulling heavy carts strains arms, shoulders, and back.

Coping Strategies:

- Use tools like extendable dusters to reduce overhead reaching.
- Bend at the knees (not the waist) to minimize back strain while making beds.
- Limit cart load weights and use lightweight cleaning equipment.
- Stretch muscles before and after shifts to reduce tension.





Using tools like extendable dusters minimizes overhead reaching, reducing strain on the shoulders and arms while promoting safer and more ergonomic cleaning practices.

HOUSEKEEPING SUPERVISOR

Duties:

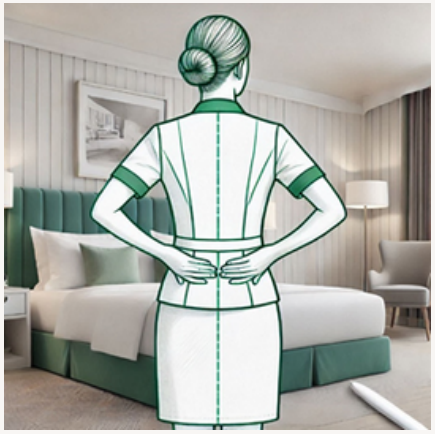
- Supervising room attendants and ensuring cleaning standards.
- Performing quality checks and managing work schedules.
- Coordinating with other departments for guest needs.

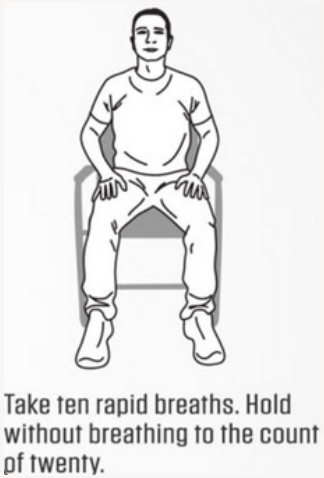
Ergonomic Problems:

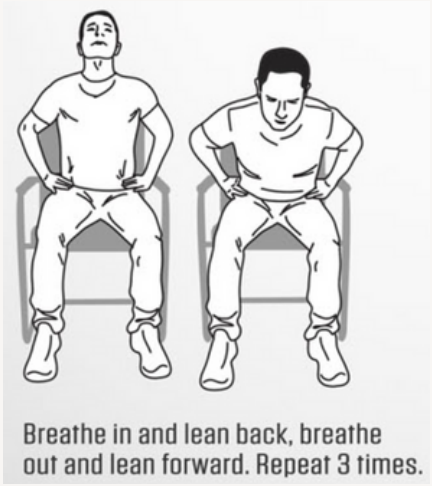
- Prolonged walking and standing cause leg and back fatigue.
- Stress from managing multiple tasks leads to mental fatigue.
- Frequent bending during inspections can strain the lower back.

Coping Strategies:

- Alternate walking with short rest periods.
- Incorporate desk breaks to avoid continuous standing.
- Use proper posture while inspecting rooms to prevent back strain.
- Employ stress management techniques like deep breathing exercises







Incorporating desk breaks helps prevent the adverse effects of continuous standing by reducing fatigue, improving circulation, and minimizing the risk of musculoskeletal discomfort.

PUBLIC AREA ATTENDANT

Duties:

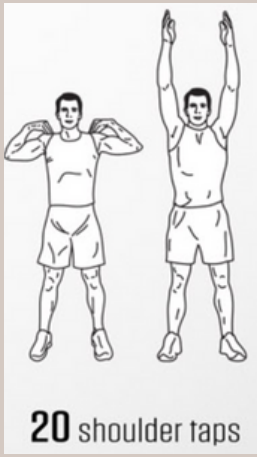
- Cleaning and maintaining lobbies, corridors, and public restrooms.
- Polishing floors and dusting furniture.
- Collecting and disposing of waste in public areas.

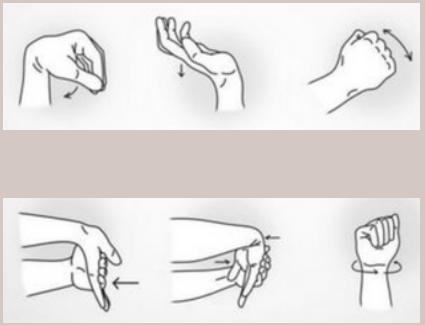
Ergonomic Problems:

- Continuous standing and walking cause leg and foot pain.
- Repetitive reaching while dusting causes shoulder and arm fatigue.
- Bending frequently for waste disposal strains the lower back.

Coping Strategies:

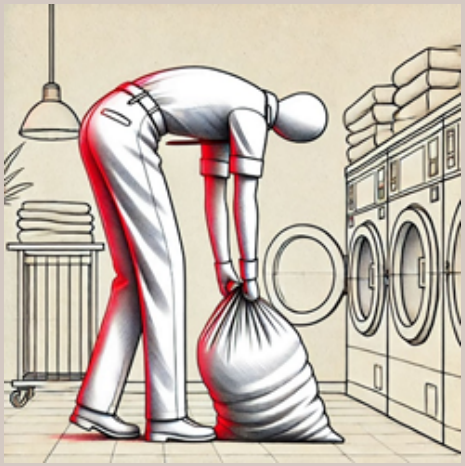
- Use lightweight mops and dusters to reduce arm strain.
- Alternate tasks to avoid repetitive motions.
- Take short breaks and stretch legs and back muscles.
- Wear cushioned shoes and anti-fatigue mats in stationary work areas.





Alternating tasks helps reduce repetitive motions, minimizing the risk of musculoskeletal disorders and improving overall efficiency and comfort.

LAUNDRY ATTENDANT



Duties:

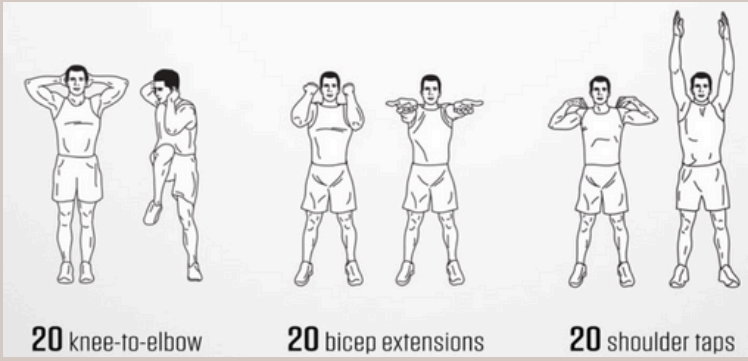
- Sorting, washing, drying, and folding linen and uniforms.
- Operating laundry equipment like washers, dryers, and presses.
- Managing linen storage and inventory.

Ergonomic Problems:

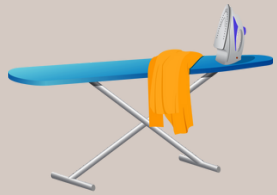
- Lifting heavy laundry bags and pushing carts strains back and shoulders.
- Prolonged standing near laundry machines causes leg fatigue.
- Repetitive motions while folding or ironing lead to wrist discomfort.

Coping Strategies:

- Use trolleys and carts to minimize heavy lifting.
- Follow proper lifting techniques to prevent back injuries.
- Alternate tasks between folding, ironing, and standing for variety.
- Wear compression stockings to improve circulation during prolonged standing.



Using ergonomic tools like trolleys for transporting supplies and height-adjustable iron tables reduces physical strain, minimizes the risk of injury, and enhances efficiency by promoting proper posture and reducing repetitive lifting or awkward bending tasks.



HOUSEKEEPING COORDINATOR

Duties:

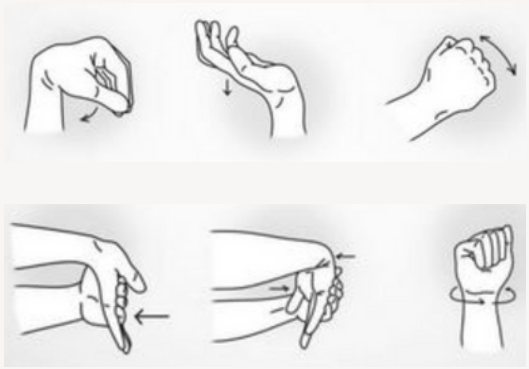
- Managing housekeeping staff schedules and records.
- Communicating with departments and guests for service requests.
- Handling inventory and administrative work.

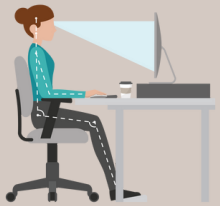
Ergonomic Problems:

- Prolonged sitting for administrative tasks causes back and neck pain.
- Continuous computer usage may result in eye strain and wrist discomfort.
- Stress from coordinating multiple tasks can lead to mental fatigue.

Coping Strategies:

- Use ergonomic chairs and position screens at eye level.
- Take short breaks for stretches and eye relaxation.
- Use wrist supports for keyboard and mouse usage.
- Practice time management to avoid stress overload.





Use ergonomic chairs and position screens at eye level to maintain proper posture, reduce strain on the neck and back, and enhance overall comfort during prolonged work hours.

HOUSEMAN

Duties:

- Assisting housekeeping with moving furniture, cleaning equipment, and delivering supplies.
- Performing heavy cleaning tasks, such as carpet shampooing and window washing.
- Supporting room attendants and cleaning public areas.

Ergonomic Problems:

- Heavy lifting leads to back, shoulder, and arm strain.
- Repetitive bending and pushing equipment cause lower back discomfort.
- Prolonged standing leads to leg fatigue and joint pain.

Coping Strategies:

- Use proper lifting techniques and team assistance for heavy tasks.
- Employ tools like wheeled carts to transport heavy equipment.
- Alternate between physically demanding tasks and lighter duties.
- Take breaks to stretch and relieve back and leg tension.

Alternate between physically demanding tasks and lighter duties to prevent fatigue, reduce the risk of overuse injuries, and maintain consistent productivity.

COPING STRATEGIES FOR MUSCULOSKELETAL DISCOMFORT AND OCCUPATIONAL HEALTH HAZARDS FOR FOOD AND BEVERAGE DEPARTMENT

FOOD AND BEVERAGES MANAGER

Duties:

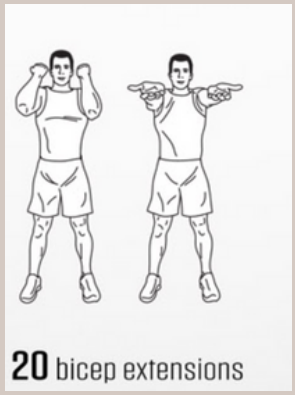
- Overseeing all F&B operations, ensuring high-quality service.
- Managing staff schedules, budgets, and inventory.
- Ensuring customer satisfaction and resolving complaints.

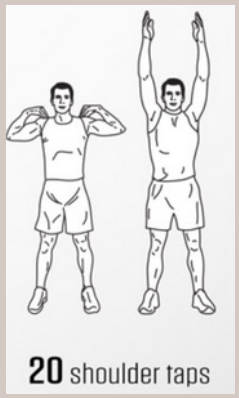
Ergonomic Problems:

- Prolonged sitting during administrative tasks leads to back and neck pain.
- Frequent standing and walking during operations cause leg and foot fatigue.
- Stress from multitasking and meeting operational targets leads to mental strain.

Coping Strategies:

- Use an ergonomic chair with lumbar support while working at a desk.
- Alternate between sitting and standing to reduce prolonged strain.
- Wear cushioned, supportive footwear to minimize fatigue.
- Manage tasks using a planner to reduce stress and improve time management.





Wear cushioned, supportive footwear to reduce fatigue, improve comfort, and prevent strain on the feet and lower body during prolonged standing or walking.

RESTAURANT MANAGER

Duties:

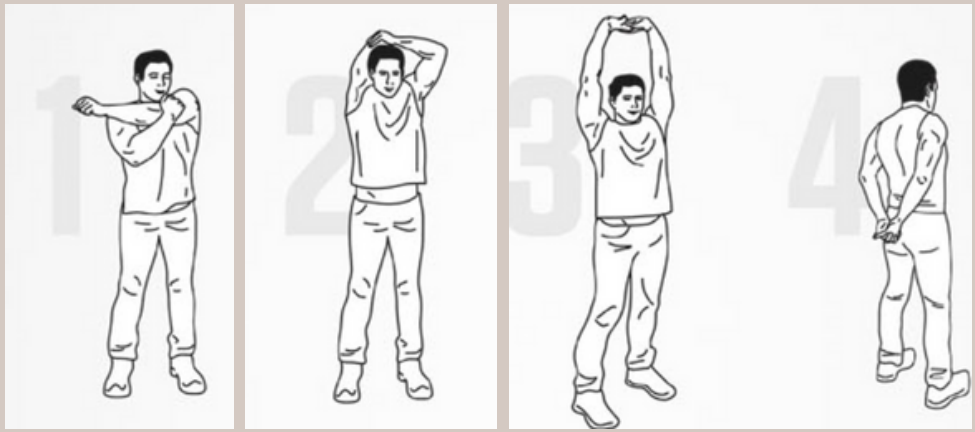
- Supervising restaurant operations and staff performance.
- Coordinating reservations, seating, and customer satisfaction.
- Managing stock and ensuring service efficiency.

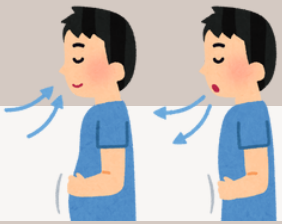
Ergonomic Problems:

- Prolonged standing during busy shifts causes back and leg fatigue.
- Repetitive walking while monitoring the floor leads to joint pain.
- Stress from managing guest expectations and resolving complaints leads to mental exhaustion.

Coping Strategies:

- Alternate standing with short seated breaks when possible.
- Use anti-fatigue mats in areas where standing is prolonged.
- Wear compression stockings to improve circulation and reduce leg fatigue.
- Employ relaxation techniques like deep breathing to manage stress.





Employ relaxation techniques like deep breathing to alleviate stress, enhance focus, and promote overall mental and physical well-being.

CHEF/COOK

Maintain neutral wrist positions while chopping to reduce strain, prevent repetitive stress injuries, and ensure better ergonomic hand alignment.

Duties:

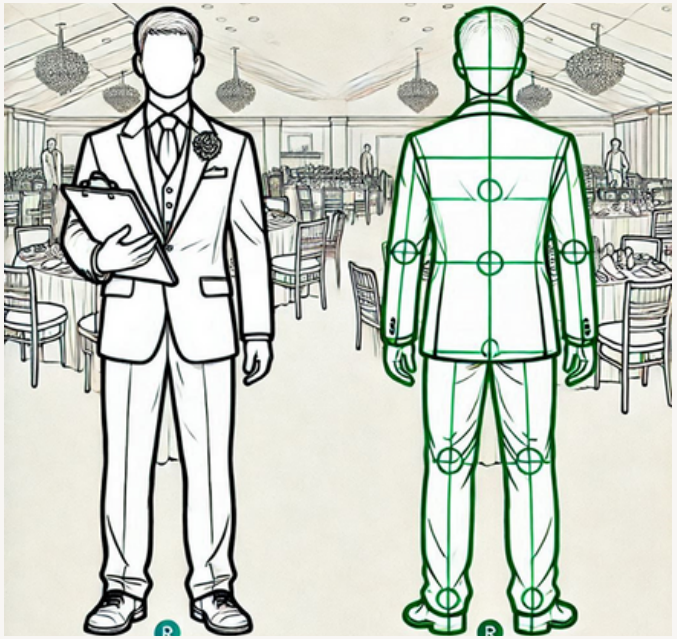
- Preparing and cooking meals as per quality and safety standards.
- Operating kitchen equipment and ensuring kitchen cleanliness.
- Managing food inventory and coordinating with kitchen staff.

Ergonomic Problems:

- Prolonged standing while cooking causes back and leg strain.
- Repetitive chopping and stirring lead to wrist and shoulder discomfort.
- Reaching overhead for supplies or bending for lower shelves strains the back.

Coping Strategies:

- Use anti-fatigue mats to reduce pressure on feet and legs.
- Maintain neutral wrist positions while chopping to avoid strain.
- Store commonly used items at waist height to minimize reaching and bending.
- Alternate heavy tasks with lighter duties to reduce muscle fatigue.



BANQUET MANAGER

Duties:

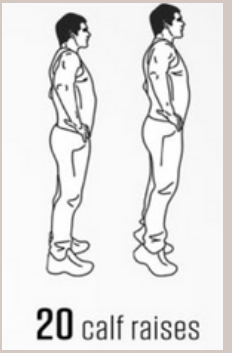
- Coordinating and managing banquet events, from setup to service.
- Supervising staff and ensuring event standards are met.
- Managing equipment and logistics for smooth operations.

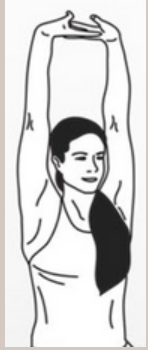
Ergonomic Problems:

- Prolonged standing and walking during event supervision cause joint and leg fatigue.
- Heavy lifting of tables, chairs, or equipment leads to back strain.
- Stress from managing event timelines and guest satisfaction causes mental fatigue.

Coping Strategies:

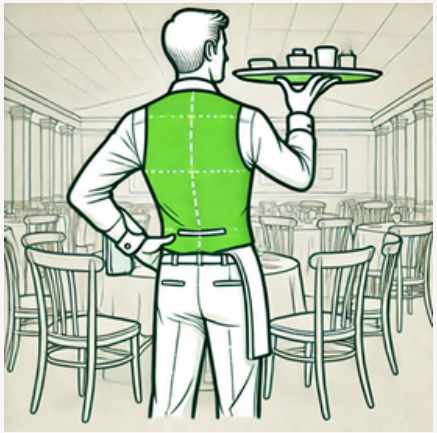
- Use team assistance and trolleys for moving heavy items to reduce back strain.
- Incorporate short rest intervals or seated breaks during long events.
- Wear supportive shoes with cushioning for prolonged standing.
- Use checklists and delegate tasks to manage stress effectively.

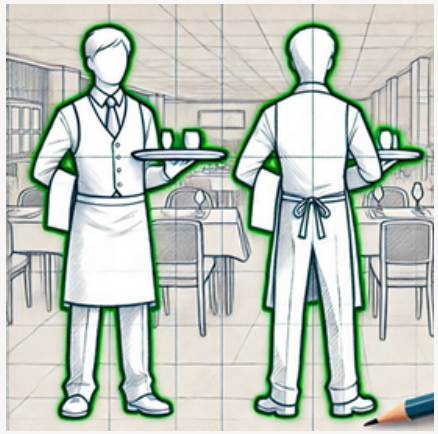




Use team assistance and trolleys for moving heavy items to minimize back strain, reduce injury risk, and ensure safe and efficient handling.

WAITER/WAITRESS





Duties:

- Taking orders, serving food and beverages to guests.
- Carrying trays and clearing tables efficiently.
- Ensuring a positive dining experience for guests.

Ergonomic Problems:

- Prolonged standing and walking causes foot and leg pain.
- Carrying heavy trays strains the wrists, shoulders, and back.
- Repeated bending while serving or clearing tables leads to back discomfort.

Coping Strategies:

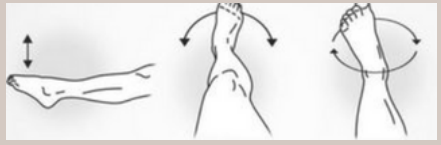
- Use smaller, lighter trays and carry them close to the body to minimize strain.
- Maintain proper posture while bending, using knees instead of the waist.
- Wear comfortable, non-slip shoes with arch support.
- Perform gentle stretches for wrists, back, and legs before and after shifts.

Maintain neutral wrist positions while chopping to reduce strain, prevent repetitive stress injuries, and ensure better ergonomic hand alignment.

ROOM SERVICE ATTENDANT





Duties:

- Delivering food and beverages to guest rooms promptly.
- Carrying trays, trolleys, and managing guest requests.
- Ensuring cleanliness of trays and equipment.

Ergonomic Problems:

- Carrying heavy trays and trolleys causes arm, shoulder, and back strain.
- Frequent bending while placing trays and cleaning up leads to back discomfort.
- Long hours standing or walking result in leg and foot fatigue.

Coping Strategies:

- Use wheeled trolleys to minimize carrying heavy trays.
- Follow proper lifting techniques to reduce back strain.
- Wear supportive shoes to absorb shock during long walking shifts.
- Perform stretches for back and shoulders during breaks to relieve muscle tension.



BARISTA (COFFEE MAKER)

Duties:

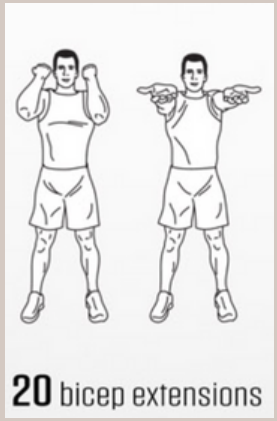
- Preparing and serving coffee and beverages to customers.
- Operating coffee machines and maintaining cleanliness.
- Standing for long hours while interacting with customers.

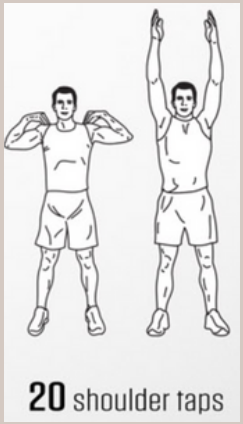
Ergonomic Problems:

- Prolonged standing during preparation causes leg and back fatigue.
- Repetitive hand and wrist movements while operating machines lead to wrist strain.
- Reaching overhead or bending for supplies strains shoulders and back.

Coping Strategies:

- Use anti-fatigue mats to reduce stress on feet and legs.
- Maintain neutral wrist positions while operating coffee machines.
- Organize supplies at accessible heights to minimize bending and reaching.
- Take short breaks for hand, wrist, and back stretches during downtime.





Organize supplies at accessible heights to reduce excessive bending and reaching, promoting better posture and minimizing the risk of musculoskeletal strain.

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