

**Occupational Health Hazards among Migrant Canteen Workers in Select Higher Education Institutions of Rohtas District in Bihar**

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**Abstract**

Occupational health and safety practices are concern when there are major accidents at the workplace and it leads to huge loss for both human and property. Workers migrate from their hometown in search of better work opportunities in the canteen such as cutting, grinding, and washing. These activities lead to stress and muscle fatigue. Migrant canteen workers in Bihar face numerous occupational health hazards that pose significant risks to their well-being. Objective: This study tries to investigate the prevalence of occupational health hazards among migrant canteen workers in Bihar and also determine the awareness regarding occupational health and safety practices. Methodology: This study was qualitative in nature and exploratory in approach which was conducted in the various canteens of Bihar state and data was collected through in- depth interview for qualitative data. The universe for this study was 70 and the sample size was 4. Findings: The study resulted in thematic findings that the low occupational health hazards awareness of the canteen is due to inadequate education and training on occupational safety and health. The prevalent occupational health hazards are musculoskeletal hazards affects which includes back pain, headache, numbness in fingers and hand, body ache etcetera and chemical hazards affects which includes red rashes, itching and various dermatological issues.

**Keywords:** Occupational hazard, awareness, musculoskeletal problems, migrant workers.

**Introduction**

The magnitude of global workers who are exposed to hazardous risks at their workplaces is 2.9 billion (Meswani, 2008) While at work, people face a variety of hazards nearly as numerous as the different types of work, including chemicals, biological agents and adverse ergonomic conditions etc. According to International labour Organisation data, on a regular basis, 6300 people die because of occupational accidents or work- related diseases which surpasses 2.3 million deaths per year. In various sectors there are numerous risks

factors that affect the productivity of the employees (ILO, 2018). Occupational health hazards refer to the potential risks or dangers that workers may face in the course of their work. These hazards can vary depending on the type of work environment, job tasks, and exposure to harmful substances. It is essential to understand and address these hazards to ensure the well-being and safety of workers in all industries. These hazards underscore the urgent need for improved workplace safety measures, social protections, and policy responses to safeguard the well-being of migrant workers in India. Furthermore, historical disparities in wages, discrimination, benefits, injuries, and illness linked to social class and economic position persists among food service workers, highlighting the need for improved worker protections and working conditions in the industry (Julia, et.al, 2020). During COVID-19 all the migrants from different states face much trouble like their firms do not pay their wages on time and do not protect from the virus and not facilitate them transport for returning to their home.

The canteen in an education institution is predominantly responsible for providing healthy and hygienic food to the staff and students. Canteens are very crucial in colleges and universities, and the workers in the canteen are either migrants or non-migrants, and it involves several labour-intensive processes. Canteen worker implies to a person employed for the greater part of his/her working time supervising, cooking, doing kitchen work, server duties, and being responsible for canteen sales.

Similar to other employment sectors, workers in canteens run a considerably high risk of being injured as a result of the type of work they do. There are a multiple safety hazards and health issues associated with high volume cooking in industrial kitchens. Safety threats such as loud noises, high temperatures, cuts, slips and falls, and physical injuries related to heavy lifting are quite common within canteens. Ergonomics deals with various work-related risk factors such as repetitive motion, extreme forces, difficult posture, extreme temperature conditions, excessive exposure time, noise, lack of ventilation and insufficient lightning. Monitoring the various risk factors enables ergonomists to reduce or eliminate injuries, illnesses, and disorders arising out of work situations before they lead to serious long-term musculoskeletal disorders (MSDs) (Chengalur et al, 2004).

Migrant workers in the food industry face various occupational health hazards. Common occupational health hazards faced by vulnerable migrant workers in the informal sectors include repetitive hand movements, exposure to hazardous substances, standing for long hours, and working at heights (Shalini, 2021). Likewise, this study is based on the migrants occupational health hazards of canteen workers they face various issues like unsafe working environment and their health and well-being. In present scenario, organisations treated their employees as an asset but in some cases the organisations make the fault and safety relate to their health are not taken in mind. Additionally, migrant workers are exposed to workplace hazards like repetitive movements, exposure to hazardous substances, standing for long hours, and working at heights, leading to musculoskeletal problems, breathing issues, and slips (International Commission on Occupational Health 2022). Overall, addressing these occupational health hazards requires enhancing food safety knowledge, implementing proper hygiene and sanitation practices, improving working conditions in canteens to ensure the well-being of food service workers (Ghosh, Rumi and Alim, 2022). In all over India, there is no any special treatment to the migrant workers.

Dawal and Taha (2006) reviewed that job satisfaction is key to developing a healthy environment in an organization. If there is no job satisfaction, there is no motivation. Sudhar and Kausik (2013) reviewed that musculoskeletal problems start with minor aches and pain but, when left unaddressed, can result in serious injuries that can be permanently disabling. Also, the painful injuries take long recovery periods, and chances are that severely injured women may never be able to return to their work. Musculoskeletal disorders have an impact on the population, health care utilization, and the cost for society. Furthermore, occupational hazards are workplace aspects that can lead to harm in terms of injury or ill-health. Migrant workers in India face various hazards, including workplace dangers like repetitive movements, exposure to hazardous substances, and working at heights.

It is apparent from the reviews of previous research that OHS lacks understanding, and lax laws failed to establish/achieve certain things:

- The fundamental right to a healthy and safe workplace and working conditions.
- Eliminate occupational injuries and diseases, to enhance workers and community well being
- Continuously reduce the number of work-related injuries and illnesses through setting OHS targets.

Exposure to occupational hazards can contribute to occupational diseases and work related accidents. According to Oxenburgh et al. (2004), the health and safety of all employees is closely linked to the company's productivity in all workplaces. In majority of the cases, occupational safety and health (OHS) is basically measured by negative outcomes such as workplace injury and illness, but these measures have a shortfall; for instance, a low incidence of injury does not necessarily mean adequate safety systems and controls in the workplace.

World health organisation (WHO) and the International Labour organisation (ILO) (2006), states that there are around 1.1 million deaths annually that can be attributed to unsafe workplaces. About 300,000 fatalities out of an estimated 250 million accidents in the workplace result in partial or complete disability, hence leading to loss of ability to work and to generate income. Estimated 160 million health hazard cases occur because of unsafe work conditions yearly in the world, and these diseases range from musculoskeletal disorders, dermatological issues, muscle fatigue, respiratory diseases etcetera. In this turbulent environment, there are many workers who migrate either inter-state or outside the boundary of country for their livelihood. In India, 2 million deaths every year are attributable to occupational diseases and injuries while 4% of Gross Domestic Product (GDP) is lost due to occupational diseases and injuries.

The UN General Assembly recognises that the right to health includes a wide variety of social and economic aspects that support good living circumstances for health and safety, as well as good working conditions and a safe workplace. This covers fundamental safety and health factors, as well as safe and hygienic working environment (Tshoose, 2014).

After reviewing the literature, it has found that there are many studies on the occupational health hazards in different sectors like oil and refinery, nursing, coal mining, etc., which has been done globally and nationally, but no study has been done on the domain of occupational health hazards of interstate migrant canteen workers in the state of Bihar in

India which causes lack of valuable insights regarding their health hazards at the workplace. The gaps in the existing literature creates a scope for further studies on the in-depth explanation of the factors affecting occupational health hazards, prevalent health hazards, and the ways to prevent and control these hazards in migrant canteen workers.

### **Objectives of the Study**

The major objectives of the study are:

2.1 To determine the level of awareness among the workers on the occupational health hazards; to identify the existing occupational health hazards among canteen workers;

2.2 To determine the factors influencing work-related health problems found among migrant workers;

2.3 To suggest measure for mitigating the occupational health hazards of migrant canteen workers

### **Methodology**

The study follows a qualitative research design and exploratory grounded theory by nature. The qualitative data was collected through in-depth interview. The site for data collection was the private universities of Rohtas District in Bihar. The purposive sampling technique was administered for including 4 respondents under the study. The inclusion criteria are the respondents need to be migrant workers, respondents must be canteen workers, and must have worked for at least 1 year in the organization. In this study, thematic data analysis was done in which the responses of interviewed respondents are analyzed by an interview transcript that involves data sets and identifying the patterns in meaning across the data to derive themes. The study was conducted with the maintaining the ethical consideration.

### **Research Results**

Canteen workers are at risk because of a wide range of occupational hazards, including falls, slips, burns, and high temperatures. Prolonged standing, heavy workloads, walking long distances, lifting heavy burdens in awkward postures, and inadequate rest are the factors influencing the rise in musculoskeletal disorders prevalent among the canteen workers.

The present study has tried to ascertain the workers' knowledge and practice regarding occupational health hazards and safety measures in canteens. In this study, there are four respondents who gave their valuable insights. Their name, age, year of experience, and their educational level are as follow

**Table 1** Profile of the Respondents

Respondents	Age	Sex	Year of experience	Educational Level	Working in Bihar	Domicile resident	Nature of work
1.	27 years	Male	More than 15 years	Higher Secondary	4-5 years	West Bengal	Master Chef
2.	38 years	Male	More than 15 years	Matriculation	8 years	West Bengal	Cook

Respondents	Age	Sex	Year of experience	Educational Level	Working in Bihar	Domicile resident	Nature of work
3.	45 years	Female	Less than 5 years	No educational background	4 years	Jharkhand	Dishwasher
4.	17 years	Male	Less than 10 years	No educational background	8 years	West Bengal	Waiter

Source: Primary data collected during the study

### Health Hazards

An “occupational hazard” can be defined as any workplace condition that could pose a risk to an employee’s health. The various health hazards which the respondents have mentioned are discussed below.

**Physical Hazards** Physical hazards are those threats in the workplace environment that can harm body without touching it, like prolonged exposure to sunlight, extreme temperatures vagaries, and loud noises. In canteens there are numerous physical hazards that can pose significant risks to both staff and patrons. Identifying and mitigating these hazards is crucial for maintaining a safe environment. Some common physical hazards are slips, trips, and falls, including wet floors, uneven surfaces, and obstructions (Park, 2021). In this study presence of similar risk patterns are strongly visible. All the respondents have stated common experience of risk patterns.

*“In the Canteen, there are many physical hazards like at the work site slippery floors with oil strains, water or other liquid cause us to slip, to avoid these we use all-purpose cleaning and there are various ways including proper mats and shoes for avoiding these slips and trips but these are not available.” Respondent 1*

The respondents have shared that while using knives, cutters, and sliders, there are minor cuts that do not affect their health widely, but the repetitive use of these knives, cutters, and sliders would cause numbness on their hands and lead to extreme pain. There is no proper ventilation in the work place. There is too much harm due to working in front of a flame because there is fixed timing and it does harm health overall. The respondents have shared that they face a lot of physical hazards in the work place and most of the hazards can be dealt with through safety measures.

**Musculoskeletal Hazards** Musculoskeletal hazards are conditions or activities in the workplace that can lead to musculoskeletal disorders (MSDs). These hazards often arise from repetitive motions effects on health strain muscles and tendons, awkward postures effect on health discomfort and injury, overexertion effect on health on overburden muscles and joints, or prolonged static postures effect on body is muscle fatigue and discomfort, vibration effect on health in hand-arm vibration syndrome (HAVS) (Park, 2021). Respondents of this study reported joint pains specifically during long working hours and suffer from numbness in different parts of the body.

*"I continuously stand for three hours because of that I face joint pain and back pain sometime. To deal with these pains I use painkiller and sprays." Respondent 3*

Respondents reveal that standing for prolonged periods often leads to various problems like joint and back pain, and for avoiding that pain; the respondent uses either painkillers or sprays. For such pain the workers are not provided with any special treatment like physiotherapy rather they apply sprays for pain relief which they buy on their own.

*"I face many problems like holding cleaning stand or washing dishes causes back pain, numbness in fingers, legs and knee pain because of continuously sitting while washing dishes and utensils." Respondent 2*

One of the respondents who wash dishes stated, because of holding the swapper for prolonged periods, she has numbness in her hand, and in medical terms, it is hand-arm vibration syndrome (HAVS). She said after some time this numbness disappeared and she could work smoothly. She also reveals women's bodies are weak, and because of that, physical problems are more frequent.

*"My work is repetitive in nature I repeatedly move here and there for serving food and because of holding plate's wrist and shoulder stiffness." Respondent 4*

One of the workers who is minor by age, serves food faces wrist and shoulder stiffness, which is a symptom of Carpel tunnel syndrome that causes pain and weakness in the hand and wrist. This syndrome causes weakness when gripping objects with one or both hands, pain, or numbness in one or both hands. The boy is unaware of this problem and also that he requires some attention towards his health. These responses depict that there are too many musculoskeletal hazards faced by canteen workers. In the musculoskeletal hazards, it would be face problems like back pain, joint pain, body aches, and wrist and shoulder stiffness.

*Chemical Hazards* All industries utilize a range of chemicals in their production process. Even in the canteens where the study has been conducted there are numerous chemicals that are used, like industrial-grade detergents, sanitizers, and cheap hand washes, which lead to itching and red rashes in the hands and dermatological problems which arise due to excessive use of chemicals. Chemicals like chlorine and ammonia, which are components of various cleaning materials, can lead to problems with the respiratory system, especially irritation in nose and throat.

*"I am facing some dermatological problem like red rash, mild to severe itching, dry cracking or scaly skin because of continuously using detergents, sanitizers, cleaning liquids that are used for cleaning floors and dishes." Respondent 3*

The dermatological problems that the respondents shared are normally found in the women who are engaged in washing utensils continuously in a bulk basis, and they prefer applying coconut oil and itching creams to avoid these problems. To avoid this, the women apply some household remedies but they never consult a dermatologist.



*Ergonomic Hazards* Ergonomics has been defined as the study of people in their working environment it consists of designs or modifies the work to fit the worker, not the other way around. The goal is to eradicate distress and risk of injury at work.

*“Since I have been working for 12-15 years, it has made me habitual to manage work at a particular point of time because of that I am not feeling burden of work. Yes, all the machineries are working properly and if problem arises then it is maintained by the technician. If I am talking about lightning there is a problem, adequate lightning is missing in the canteen and there is also shortages of ventilators in canteen cooking area there are only 4 ventilators that are available for removal of gases.” Respondent 1*

According to the respondents ergonomic is totally inadequate in the canteen as there must be at least eight ventilators in the area but there are only four. About materials it is properly sterile and functioning, it is not obsolete if it is obsolete it is removed by the employer.

*“No, I am not facing any type of problems that you brief in the ergonomic hazards.” Respondent 2*

According to government instructions there is a briefing about the ergonomic hazards the employees are getting favourable condition at their workplace they are not facing any type of health related problems while working. If they are facing any type of health issues related to their occupation owner of that firm will be responsible for their illness and disease and they must have to bear all the expenses incurred during his/her treatment. In the study are major issues in this context are visible. Though the respondents say that they don't face any problem still the researchers has observed that there are major flaws in the canteen. This shows the level of awareness is low among workers regarding their own probable hazards and health rights.

*Psychological Hazards* The psychosocial hazards arise from the workers' failure to adapt to an unfamiliar psychosocial environment. Frustrations, lack of job satisfaction, diffidence, poor human relationships, and emotional tension are some of the psychosocial factors.

*“Yes, I am facing psychological problem as most of us face burn out, overburdened, depressed, and lack of sharing and venting space regarding the job satisfaction and workplace misconduct.” Respondent 2*

All the respondents have stated similar response regarding psychological hazards this gives a clear indication that all the employees are unsatisfied with their job and job roles. They are feel overburdened and stressed about their work.

### **Work Environment in the Study Area**

A work environment in a canteen typically several keep elements to ensure efficiency, hygiene, and a positive atmosphere. It includes cleanliness and hygiene regular cleaning schedules for surfaces, utensils, and cooking areas.

*“Here working environment is favourable all the workers are supportive and they are working with full coordination and cooperation of each employee. They called me “Guru”. Because of all workers cooperation and coordination all works are done smoothly and there is no any physical and mental burden on an individual worker.” Respondent 2*

According to the statement of the respondent, Work culture and working environment both are favourable. He reveals that all the workers are cooperative and eager to work. Support from the owner to their employees in a canteen setting is crucial for fostering a positive and productive work environment. Support includes economic, emotional and career advancement opportunities.

*“Yes, our owner is very supportive and he helps us in our problems, if any worker requires financial assistance for their family he assists 65k-1lac and if any employee is ill he gives leave for proper recovery.” Respondent 1*

As the respondent depicts in the above statement that his respondent assist his financial needs this emotional support done by the owner. Though, career advancement opportunities and work-life which includes reasonable work hours and fair scheduling practices, encouragement of regular breaks to prevent burnout are significantly absent in the study area.

### **Status of the Migrant Workers in Bihar**

*Reason for Migrating “During Covid-19, many workers lost their job and I also who lost my job because of that I had to leave Bangalore and come back to my hometown. The reason for moving to Bihar not any other state is that this state is near to my hometown in West Bengal and there is a favourable working condition.” Respondent 1*

The respondents state the major reason behind migrating to Bihar was for job. They said that in the pandemic they have lost their job and then they migrated to Bihar and the reason behind moving to Bihar and not to any other state was that Biharis near to their home town and there is favourable working condition for migrant worker.

#### *Adoption of New Culture*

*“This is hard to describe, because while there is a favourable condition at my workplace but the place where I live with my family is not favourable. In Kanchanpur (a village near Jamuhar) where I live with my family there are many unsocial people who consume alcohol, smoke and indulge in other unacceptable activities. This kind of an environment makes it difficult for my family to live there.” Respondent 2*

In case the workers are staying alone in the canteen they can still manage but when it comes to migrating and staying with their family members in Bihar, it becomes difficult for the family members, specially the female members of the household feel insecure and alienated with culture.



### Awareness Regarding Labour law and Occupational Health and Safety (OHS)

Knowledge regarding labour law and occupational health and safety is mandate by the government because if there is any type of exploitation and discrimination in the work place the workers can stand for their rights which are mentioned in the labour law. In this study the findings are very contradictory as workers' statements indicate that they are all ignorant of labor rules as well as occupational health and safety (OHS).

*"No, I'm not aware about the occupational health and safety." Respondent 2*

This can be bridged through training program that covers complete onboarding training, including fundamental health and safety practices, food hygiene, and the use of personal protective equipment (PPE), can be undertaken in order to provide education and appropriate understanding about occupational health and safety (Canteen administration instructions, 2008). But because of lack of such initiatives in any canteen work place the awareness level among the workers is low. Again the awareness regarding minimum wage regulations are in a higher side as the workers are more concerned about the money and the off days which they are provided with. This is again very much visible among the workers of the present study.

*"Yes, I'm aware about this and I filed the case in Bengaluru against my owner for the non-payment at least 3 month." Respondent 1*

In terms of the medical examination of the workers, it is mandate by labour law to check the medical history and current position of worker's health. The regular check-up of workers is also mandate by the labour law. These provisions are made because if the employees are facing some prior disease before joining the firm for that the organisation would be not responsible. If during the working hours or days if any employee face any type of health issue the organisation would be responsible (this is not applicable in some exceptional case like employee consuming alcohol, cigarettes etc. while working hour). The tests before joining is mandatory but when it comes to check up after every six or twelve months is not very significant in the study area.

*"Yes, before joining there is six types of medical examination was done. It includes Fatigue test, urine test, Blood and Blood pressure check-up, liver functioning test (LFT), and Kidney Function Test (KFT) but in last one year I have not gone through any scheduled check up" Respondent 1*

### Discussion

The study sample comprises canteen workers from West Bengal and Jharkhand, who migrated to Bihar for reasonable salary, culture and working environment. The primary aim of this study was to assess workers' knowledge and practices regarding occupational health hazards and safety measures in canteens. A total of four respondents were included in the study.

Majority of the canteen workers in the study area were male, which can be attributed to the physically demanding nature of the work involving large cooking utensils. The findings of the study aligned with the works of Afube et al. (2019) in Nigeria. However, this result contradicts Ercan and Kiziltan (2014), who reported a more balanced gender distribution in their study. Furthermore, the ages of the studied workers varied, with participants aged 27, 38, 45, and some minors under 18. This variability contrasts with Elsayed (2018), who found that restaurant workers in Benha City were typically aged between 40 and 50 years.

About half of the respondents of the study had no educational background, while some had secondary education. This lack of education impacts their knowledge of occupational hazards, use of personal protective equipment (PPE) and personal hygiene practices. Similar conclusion was drawn in the study by Ajambo (2013), who found that a majority of restaurant workers in Kampala had secondary education. Accordingly, the nature of work varied according to the workers' capabilities, with half performing cooking tasks, others as waiters, dishwashers, and vegetable cutters.

In this study half of the workers had more than ten years of experience, while the rest had 5 to 10 years and the more significant finding was that with more years of experience at canteen work the knowledge and practice concerning occupational health has increased among them. Most of the workers have not received training on occupational health and safety practices, mostly gaining information through past work practices. This aligns with Jahangiri et al. (2019), who found that many workers lacked training.

All respondents reported musculoskeletal and physical hazards, such as numbness, back pain, and headaches due to extreme heat. This finding contrasts with Gupta and Bisht (2019), who found that all female workers in Punjab's food processing units were aware of occupational hazards like burns and cuts. Additionally, more than half the workers reported exposure to extreme high temperatures, with chemical hazards like red rashes from detergents and other dermatological problems being common. Most workers were unaware of biological hazards. This indicates a lack of proper health education programs in the canteen, emphasizing the need for increased knowledge about occupational health hazards. The canteens had only four ventilators, inadequate for removing unwanted gases and fumes, and insufficient lighting. These findings align with Elsayed et al. (2018), who found poor infrastructure in university kitchens, and Bertin et al. (2009), who reported unhealthy conditions in hospital kitchens.

Workers did not wash their hands before handling cooking equipment and food, though most wore masks, head nets, and gloves while serving food. However, no workers wore aprons while preparing food. This contrasts with Asmawi et al. (2018), who found a high rate of hand washing among food handlers. Hemanti and Fadaei (2020) found a significant portion of workers wore masks, consistent with the present study. A negative correlation was found between the knowledge scores about occupational health hazards and practice scores regarding safety measures, contradicting Mohmoud, S. R. (2021), who found a positive correlation between knowledge, attitude, and practice among restaurant workers.

The awareness of canteen workers regarding occupational hazards is low. Most interviewed respondents consider their job safe, but on site observations during the study shows that the working environment in the canteen is not safe: wet and slippery floors, excessive piling of materials, inadequate and uneven lightning, and extremely high temperature in the working environment. All these constitute a serious hazard to the safety and health of canteen workers.

From the findings of the study an inference can be drawn that there are significant gaps in the knowledge and practices of canteen workers regarding occupational health and safety, underlining the need for comprehensive training and health education programs to mitigate occupational hazards and improve workplace safety.

### **Conclusion and Suggestion**

Occupational health hazards must be recognized as a major challenge, not just for the well-being of employees but for the productivity and sustainability of the workplace itself. Through this study, it has not only been kept abreast of information about the canteen workers and their awareness and attitude towards occupational safety and health, but also had a better understanding of the canteen's working environment. This study further proves that the low occupational health hazards awareness is a result of inadequate education and training on occupational safety and health of the workers.

The study highlighted the occurrence of work-related health problems among canteen workers working in these work centres and the unsafe conditions under which some of the cooks are exposed to work. Multiple work-related injuries have been found to affect workers due to prolonged standing hours, awkward working posture, repetitive tasks, lifting heavy containers, exposure to intense direct heat, cuts and burns, slips, and falls. Pain in the neck, lower back, wrist and shoulder stiffness, headache, and body ache due to long standing hours were common issues among the canteen workers. Workers engaged with this profession have to increase their knowledge and practices about occupational health hazards and safety precautions. They need to do some health promotions for their safety in the long run. The canteen workers have to understand the risks of working with hazardous chemicals by providing on-going training exercises. Training programs should be organized to educate employees about different ergonomic threats, working postures, and their effects and prevention.

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