

# A Study to Assess the Knowledge and Safety Practices regarding Occupational Health Hazards among Health Personnel in GMCH, Kamrup (M), Assam

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**Abstract:** A quantitative descriptive survey research approach with descriptive correlational research design was considered to be appropriate for this study. Setting of the study was GMCH Kamrup (M), Assam. Total 136 health personnel were selected as a study sample chosen by purposive sampling technique. The data were collected through structured self-administered questionnaire and inventory checklist. Data were analyzed in terms of descriptive and inferential statistics. Out of 136 patients, majority i. e.77 (56.6%) of the respondents had moderately adequate knowledge, followed by 32 (23.5%) had adequate knowledge and 27 (19.9%) had inadequate knowledge towards occupational health problems among health personnel. Whereas majority i. e.96 (70.60%) of the respondents had moderately adequate practice, followed by 18 (13.2%) with adequate practice and 22 (16.2%) inadequate practice towards occupational health hazards among health personnel. The study also revealed a significant positive correlation between the knowledge and safety practices regarding occupational health hazards among health personnel where  $r=0.637$  at  $p=0.000$ . The study concluded that majority of the health personnel had moderately adequate knowledge and safety practices regarding occupational health hazards. It was further established that there was significant positive correlation between the knowledge and safety practices regarding occupational health hazards.

**Keywords:** Knowledge, Safety practices, Occupational Health Hazards, Health personnel, Guwahati Medical College and Hospital (GMCH)

## 1. Introduction

### Background of the study

Working condition has strong impact on wellbeing of employee's health. Non supportive working environment can cause harm if not controlled. This non supportive working environment is termed as occupational health hazards. Occupational health hazards refer to the potential risks to health and safety for those who work outside the home (Maier 2009). Worldwide, the healthcare workforce represents 12% of the working population. Healthcare workers operate in an environment that is considered to be one of the most hazardous occupational settings. In addition to the usual workplace related exposures, healthcare workers encounter diverse hazards due to their work related activities<sup>[4]</sup>. In spite of this knowledge, the healthcare work environment continues to be neglected by governments and organizations. Healthcare workers are exposed to bloodborne infections which usually expose them to diseases such as HIV, TB, and hepatitis B and hepatitis C. Substantial morbidity and mortality among these workers inevitably lead to loss of skilled personnel and adversely impact healthcare services which are already strained in many low and middle income countries. Occupational hazard refers to risk or danger as a consequence of the nature of the working conditions of a particular job. It can also refer to a work material, substance, situation or process that predisposes, or itself causes accident or disease. The history of occupational hazards awareness can be traced back to 18th century when Bernardino Ramazzini, who referred to as the father of occupational medicine, recognized the role of occupation in

dynamics of health and diseases. An occupational hazard is a hazard experienced in workplace. Occupational hazards can encompass many types of hazards. The Occupational Safety and Health Administration (OSHA) establish enforceable standards to prevent workplace injuries and illness. Occupational hazard as a term signifies both long-term and short-term risks associated with the workplace environment. Short term risks may include physical injury, while long term risks may be increased risk of developing cancer or heart disease. Exposure to occupational hazards can lead to work related injuries or diseases. The ILO revealed that every 15 seconds, 153 employees experience work related accidents, worldwide. Furthermore, every year 2.3 million deaths occur due to occupational diseases. Annually, a global estimate of 4% of the Gross Domestic Product (GDP) is lost as a result of occupational hazards and diseases. It is widely acknowledged that health care personnel are a crucial component of the health care system. Occupational health is an important issue because of high rates of associated morbidity and mortality of exposed workers. An estimated 100,000 people die from occupational illness, while about 400,000 new cases of occupational diseases are diagnosed every year. This affects workers in various occupations as a result of their exposure to different types and varying degrees of hazards in workplace. NIOSH report indicated that an estimated 6,000 to 8,000 percutaneous injuries occur annually to health care workers. Traditionally hospitals are directed towards curative services than preventive services. It is very important to maintain optimum health of the health care personnel in health care organization as they take care of the

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sick individuals. It is necessary to identify and reduce the hazardous exposures in their working environment as it not only influence their own health but also affect their patient's care. Exposures to work related hazards, which includes needle stick injuries, blood –borne infections (HIV, Hepatitis B virus, Hepatitis C virus), back and neck pain, physical injuries during handling and transfer of patient, burn out stress, exposure to radiation, spills from chemicals etc. These observed impacts pose serious health and safety problems. Hence, there is need for inculcating a safety practices in the workplace.

## 2. Literature Review

**Sial N, ZarishA (2020)** conducted a research study on a descriptive cross sectional study to assess the knowledge and practice of nurses regarding needle stick injury in allied hospital Faisalabad. Objective of this study was to assess the knowledge and practice of nurses regarding needle stick injury. For this study sample size was 50 and consecutive sampling technique was used to collect data. Self - structured questionnaire was used for data collection and SPSS was used for data analysis. Results revealed 54% of nurses have insufficient knowledge and 46% have sufficient knowledge. On the other hand 36% of nurses have good practice while 64% nurses showed poor practice. Study results illustrated that the nurses of Allied hospital Faisalabad have insufficient knowledge and poor practice regarding needle stick injury.

**Dhahir D M, MayahiNaji Yasser Al (2019)** conducted a research study on assessment of health workers knowledge towards Occupational Health and Safety Program in Alkut City's Primary Health Care Centers. Descriptive cross sectional study was carried out in order to assess the Health Workers towards "Occupational Health and safety program" and to find out the relationships between knowledge's of health workers toward occupational safety and health program and their socio - demographic variables. The study population included health workers who were working in Alkut City's primary health centers. The study findings indicated that there is a significance relation among health worker's knowledge about occupational health and safety program with their level of educational and their age. As well as findings showed that there is a highly significance relation between knowledge about occupation health and safety program with the training of course that health workers participated. The study concludes that health workers age, level education, training course, monthly income, and number of years of employment have a great effect on occupational health and safety program. The study recommended that to improve knowledge level encourage health care workers to attend continuing education activities in the form of workshops, conferences, training programs, refreshing courses and review update related to "occupational health and safety program" and ministry of Iraqi health could improve the "infections protective processes" as "head cap, closed shoes, gloves, and frequent medical examination for communicable diseases" as hepatitis.

**OgwnyiPA. England A, Aliyu Y (2018)**, conducted a prospective cross - sectional research study on Occupational

hazards among medical radiation workers. Objective of the study was to determine the prevalence of occupational hazards among medical radiation workers in Northern Nigeria and to assess the adequacy of existing occupational safety measures in the region. A total of 139 medical radiation workers used for data collection and study was carried out in six tertiary health - care institutions in northern Nigeria. Structured questionnaires were used to obtain vital information about the occurrence of occupational hazards, prevention and control measures. Data were analyzed by using descriptive and inferential statistics. This study revealed that out of 159 questionnaires distributed 139 were retrieved giving a response rate 87.4%. The mean age of respondents was  $34.5 \pm 9.2$  years, and there were 103 (74.1%) males and 36 (25.9%) females involved in the study. In terms of years of experience, we found that 100 (71.9%) had < 10 years experience, 57 (41%) were working regular overtime, nearly half of the respondents 68 (48.9%) slept for < 6 hours and 49 (35.3%) respondents indicated high work pressure. The majority of the respondents were radiographers 59 (42.5%), 36 (25.9%) were radiologists, 25 (18.0%) were student radiographers, 12 (8.6%) were X - ray technicians, whereas only 7 (5%) were medical physicists. In this study, 78 (56.1%) radiation workers were exposed to radiographic contrast media splashes or spills and this was the second most prevalent nonbiological hazard after stress. Considering all biological and non - biological hazards, we discovered that medical radiation workers were more predisposed to non - biological hazards than they were to biological hazard with 45.3% respondents indicating that they had either fractures, trips, falls, contrast spill/splash, stress, psychological, verbal and physical abuse, and direct contact with fixer and developer solutions among others. Medical radiation workers in Northern Nigeria face a wide range of occupational hazards, and therefore concerted efforts must be channeled toward mitigating these hazards.

**Faris H S, Mansoor H I, Alzeyadi S (2018)** conducted a research study on knowledge, attitude and practice of Occupational Hazard among Nursing Staff at teaching Hospitals in Kerbala City, South - Central Iraq. Aim of this study was to evaluate nurses' knowledge, attitude and practices regarding occupational health hazards at kerbala teaching hospitals. Descriptive research study was carried out during the period from the month of January to April on a sample of 300 nurses were selected randomly from three teaching hospital in Kerbala city, Iraq. The instrument of this research was modified from a study by reviewing the related literature. The study instrument was consisted of four parts; demographic variables, nurses' knowledge which included of 18 items; nurses' practices 10 items; and nurses' attitudes which involved of 17 items. Statistical Package for the Social Sciences (SPSS - PC, version 20) were using to analyze data. A total of 300 nurses participated in the study including of 90 (30 %) males and 210 (70%) females, 188 (62%) were in the age category of 20 - 39 years, 171 (57%) had secondary school of nursing, 171 (57%) had 7 - 22 years of job experience, and 231 (77%) were participant in training course related occupation hazards. About 252 (84%) and 207 (69%) of subjects had adequate knowledge and practices respectively. 276 (92%) of nurses had a positive attitude. This study revealed that most of the nursing staff in Kerbala teaching hospitals had adequate knowledge and

practices, and slightly more than one quarter had inadequate knowledge and practices regarding occupational hazards. Moreover, majority of participants had a positive attitude towards occupational hazards. There was significant association between nurses' knowledge, attitude and practices with their years of experience. There was non-significant association between nurses' knowledge, attitude and practices and training related course, although the most of the nurses were participant in training course related occupation hazards.

**KN Lakshmi (2018)**, conducted a study to assess the knowledge of nursing staff regarding needle stick injury in selected hospital Mysore. In this study 60 samples were selected by using non-probability convenience sampling technique. Data was collected by administering personal performa and structured knowledge questionnaire regarding needle stick injury. Staff took 30 min to fill the questions. Among 60 samples 1 (1.6%) nursing had poor knowledge, 24 (40%) had average knowledge and 35 (58.3%) had good knowledge regarding needle stick injury.

**Sreekumaran J, Dr. Balachandran R (2018)**, conducted a study on knowledge and practice regarding occupational health hazards among nursing personnel working in selected government hospital of New Delhi. A non-experimental approach was adopted and descriptive survey design was used for the purpose of study. Data was collected by using convenient sampling technique. Framework of this study was based on the prevention of occupational hazards among nurses. Rosenstock's Health belief model was found to be suitable for this study. A total of 70 nursing officers from critical and non-critical care areas used to collect data. Based on the objectives, a structured knowledge questionnaire and practice questionnaire was developed to assess knowledge and practice of the nursing personnel on occupational health hazards and occupational safety measures. Structured Performa for prevalence of hazards in workplace was developed to collect information regarding the risk they regularly exposed to in their work place. Analysis was done by using descriptive and inferential statistics. The findings revealed that knowledge and practice scores of nursing personnel in critical care area is more than that of non critical care area but statistically not significant. Hence, it has been established that those in the nursing profession are susceptible to a number of occupational hazards, many of which are avoidable and preventable while others are inevitable. Knowledge and preventive practice is a necessity in prevention and control of occupational hazards. . But co-efficient of correlation between knowledge and practice scores was significant, indicates that the practices of nursing personnel on occupational safety measures were influenced by their knowledge level.

### 3. Research Methodology

**Research Approach:** Descriptive survey approach

**Research Design:** Descriptive correlational research design was adopted.

**Setting:** Medicine ward, surgery ward, radiology and pathology department in Gauhati Medial College and Hospital, Kamrup (M) Assam.

**Population:** In this present study total number of target population was 1046 staff nurses and 45 lab technician who were working in medicine, surgery, radiology and pathology department of GMCH, Kamrup (M) Assam.

**Sample size:** In the present study, the sample comprised of 136 subjects.

**Sampling Technique:** Purposive sampling technique.

**Sampling Criteria:**

**Inclusion Criteria:** Staff nurses and lab technician who were working in medicine, surgery, radiology and pathology department of GMCH, Kamrup (M), Assam, Staff nurses and lab technician who were willing to give consent and participate in the research study, Staff nurses and lab technician who were present at the time of data collection.

**Exclusion Criteria:** Staff nurses and lab technician who have undergone training on occupational health hazards.

**Variables:**

**Socio - demographic variables:** The socio - demographic variables in the study were age, gender, religion, marital status, educational qualification, occupation, sources of knowledge, total work experience, areas of workplace.

**Research variables:** In the present study, research variables were knowledge and safety practices regarding occupational health hazard among health personnel.

**Data collection Tools & Technique:** Socio - demographic performa was used to collect the baseline information of the respondents, Structured self-administered questionnaire was used to assess knowledge of health personnel, Inventory checklist was used to assess safety practices of health personnel.

### 4. Results

The present study revealed that:

- Majority of the health personnel 44 (32.3%) were fall under the age group of 22 - 27 years followed by 36 (26.5%) in 34 - 39 years of age, 31 (22.8%) in 28 - 33 years of age whereas only few 25 (18.4%) were found in the age group of above 40 years.
- Majority of the health personnel were female 106 (77.9%) and less numbers were male 30 (22.1%).
- Majority of health personnel belongs to Hindu religion 72 (52.9%) followed by Islam 46 (33.8%), Christianity 13 (9.6%) and whereas only few belongs to others 5 (3.7%).
- As regards to marital status, majority of health personnel were married 78 (57.3%), followed by unmarried 44 (32.4%), widow 11 (8.1%) and whereas only few were fall under divorced 3 (2.2%).

- Majority of health personnel were found to be having diploma 115 (84.6%), followed by degree 17 (12.5%) and master degree 4 (2.9%).
- As regards to occupation, majority of health personnel were nurse 111 (81.6%) and very few were lab technician 25 (18.4%).
- Majority of health personnel 36 (26.5%) had 1 - 3 years of clinical experience followed by 34 (25%) had above 10 years of experience, 28 (20.6%) had 6 - 10 years of experience, 21 (15.4%) had 3 - 6 years of experience and only few 17 (12.5%) had upto 1 year experience.
- Majority of health personnel i. e.48 (35.3%) gathered their knowledge from workshop followed by 31 (22.8%) gathered their knowledge from seminar, 30 (22.1%) from books and only few gathered their knowledge from electronic media 27 (19.8%).
- Regarding areas of workplace, majority of health personnel were worked in medicine 58 (42.6%), followed by surgery 50 (36.8%), pathology 15 (11%) and only few in radiology 13 (9.6%).

## 5. Discussion

Discussion as per the objective of the study:

### Objective 1: To assess the knowledge regarding occupational hazards among health personnel.

The analysis of data in this study revealed that majority i. e.77 (56.6%) of the respondents had moderately adequate knowledge, followed by 32 (23.5%) had adequate knowledge and 27 (19.9%) had inadequate knowledge towards occupational health problems among health personnel. The overall mean was 10.43 and standard deviation was  $\pm 4.88$ .

These findings are consistent and similar to the descriptive study conducted by Shrestha M (2017) on knowledge regarding occupational health hazards among nurses. The finding of the study showed that 52.5% had moderately adequate knowledge regarding occupational health hazards.

On the contrary to present findings, Faris HS, Mansoor H I, conducted a descriptive research study on knowledge, attitude and practice of Occupational Hazard among Nursing Staff at teaching Hospitals in Kerbala City, South - Central Iraq. Aim of this study was to evaluate nurses' knowledge, attitude and practices regarding occupational health hazards at kerbala teaching hospitals. In this study About 252 (84%) subjects had adequate knowledge.

### Objective 2: To assess the safety practices regarding occupational health hazards among health personnel in GMCH, kamrup (M), Assam.

In the present study, the level of safety practices were assessed by using inventory checklist. The analysis of data in this study revealed that majority i. e. majority i. e.96 (70.60%) of the respondents had moderately adequate practice, followed by 18 (13.2%) with adequate practice and 22 (16.2%) with inadequate practice towards occupational health hazards among health personnel. The overall mean was 7.06 and standard deviation was  $\pm 3.26$ .

On the contrary to present findings, a study conducted by AroojAwan (2017) on assessment of knowledge, attitude and practices regarding occupational hazards among nurses.

The result showed that overall practice level was 57.72% which is insufficient.

### Objective 3: To find out the association between knowledge regarding occupational health hazards among health personnel and selected socio - demographic variables.

The present study revealed there is a significant association between knowledge and gender ( $p=.008$ ), total work experience ( $p=.00017$ ) and sources of knowledge ( $p=.00012$ )

The study findings were supported by similar descriptive study conducted by Selman HussainFaris (2018) on knowledge, attitude and practices of occupational hazard among nursing staff. Findings suggested that there was significant association between nurses' knowledge with their years of experience where p value is .000.

### Objective 4: To find out the association between safety practices regarding occupational health hazards among health personnel and selected socio - demographic variables.

The present study revealed there is a significant association between safety practices and age ( $p=.044$ ), gender ( $p=.014$ ), religion ( $p=.013$ ), total work experience ( $P=.000$ ) and sources of knowledge ( $p=.003$ ).

The study findings were supported by similar descriptive study conducted by SabitaK (2016) on knowledge and preventive practice of occupational health hazards among nurses. Findings of the study revealed that practice was significantly associated with age ( $p=0.006$ ), work experience ( $p=0.01$ ), previous in - service education/training ( $p=0.03$ ).

### Objective 5: To determine correlation between knowledge and safety practices regarding occupational health hazards among health personnel.

The present study revealed there is a significant correlation between knowledge and safety practices regarding occupational health hazards among health personnel where r value is 0.637 and p value is .000.

The study findings were supported by similar study conducted by Mrs. JishaSreekumaran (2018) on knowledge and practice regarding occupational health hazards among nursing personnel. In this study co - efficient of correlation between knowledge and practice scores was significant, which indicates that the practices of nursing personnel on occupational safety measures were influenced by their knowledge level.

## 6. Conclusion

This study assessed the knowledge and safety practices regarding occupational health hazards among health personnel in GMCH Kamrup (M), Assam. The findings of the study revealed that that majority i. e.56.6 % of the respondents had moderately adequate knowledge, followed by 23.5 % had adequate knowledge and 19.9% had inadequate knowledge towards occupational health problems among health personnel. In case of safety practices majority i. e. majority i. e.70.60% of the respondents had moderately adequate practice, followed by 28% with adequate practice and 4% with inadequate practice towards occupational health hazards among health personnel. There is a

significant correlation between knowledge and safety practices. It is found that there is great need of knowledge for the health personnel to practice more safety practices towards occupational health hazards in order to improve the working environment and quality of life for their long term career.

## 7. Recommendations

On the basis of these findings, following recommendations were made:

### In clinical perspective:

- There should be regular training and educational meetings to enhance the occupational safety, develop policies or strategies on all aspects related to occupational hazards.
- There should be regularly routine check - ups of nurses to ensure occupational health.
- There should be proper records of accidents and injuries regarding occupational health hazards.
- Pre - employment history should also be considered since existing medical conditions can be aggravated depending on the role they have been assigned to.

### In research perspective:

- Similar study is recommended to include large sample to increase generalization of findings.
- The present study could be extended by including more hospitals like government, private, non - teaching hospitals etc.

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