

A CASE STUDY ON LEADING INDICATORS FOR OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT PRACTICES BY HEALTHCARE WORKERS OF PUBLIC AND PRIVATE HOSPITALS OF GUJARAT

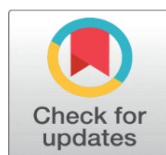
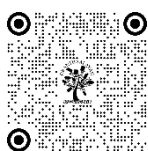
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ABSTRACT

BACKGROUND: An Occupational Health and Safety Management System is a fundamental part of an organization's risk management strategy. Implementing an OHSMS helps an organization protect its workers and others within its control, helps with legal requirements, and facilitates ongoing improvement.

METHOD: the study used an exploratory research design. It was carried out in randomly selected public and private hospitals of Gujarat. 503 healthcare workers were taken for the study using the simple random sampling method. Descriptive statistics and factor analysis were applied to fulfill the objectives of the study.

RESULT: Leading indicators are something that can help health personnel to minimize the risk of any unwanted incident before its occurrence. The majority of these indicators are proactive, predictive, and input-oriented. These are quite tough to measure, but they are much easier to influence. Leading indicators are classified based on organization, system, and behavior.

CONCLUSION: The leading indicators for occupational health are to be finding out for preventing the incidence at the workplace due to negligence of the employees and employers as well. There is a factor that implies the need for occupational health policy at the health care centers. Occupational health is not only for health care but applied to all other sectors but this study only focuses on the field of health care.

Keywords: Occupational Health, Leading Indicators

1. INTRODUCTION

According to the World Health Organization "Occupational health deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards."

Any healthcare facility is always exposed to a huge amount of health hazards, mainly biological, chemical, physical, psychosocial, and ergonomic hazards.

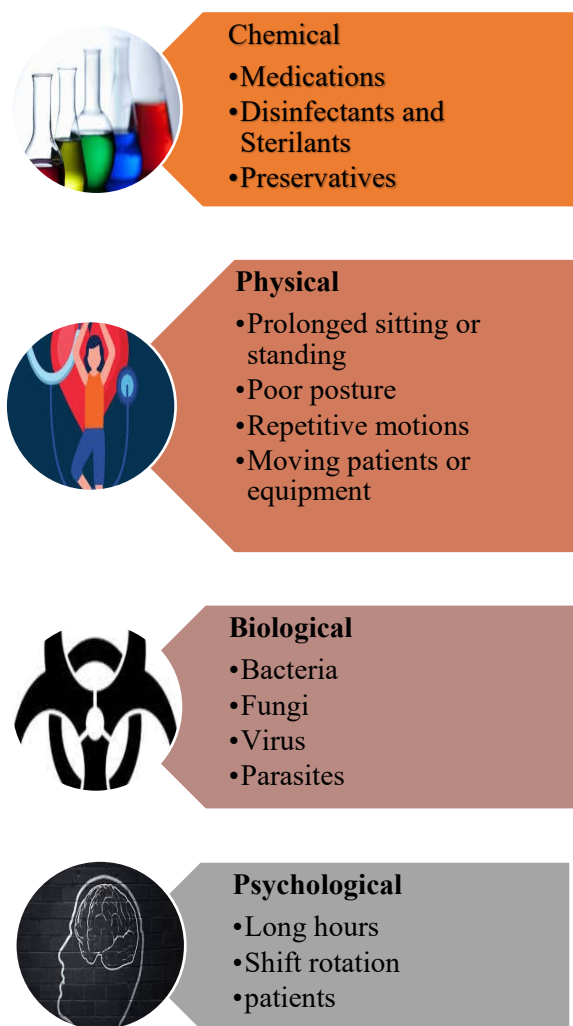


Figure 1. Types of Health Care Occupational Hazards (self-made with reference (Ndejjo et al., 2015))

Biological hazards are any of the microbial agents like bacteria, fungi, or viruses. In laboratory premises needle stick injury is quite common among healthcare workers which can lead to blood-borne diseases such as HIV, hepatitis B or C, etc. Many other diseases of which healthcare personnel are prone to be affected are influenza, common cold, tetanus, measles, mumps, varicella, staphylococcus, and many more others (Chhabra, 2016).

Healthcare personnel are exposed to various infectious diseases. It is mainly by direct contact, droplet, or airborne. Infectious agents containing droplets are spread through sneezing, coughing, talking, or some medical procedures, for instance, suction or endotracheal intubation. In healthcare settings, various infectious diseases are transmitted by an airborne route like influenza, measles, rhinovirus, varicella, and severe acute respiratory syndrome virus. The most common blood-borne risks are HBV, HCV, and HIV.

Chemical hazards affect one by inhalation or absorption by lungs, skin, or mucous membranes. It can occur by any gas used in giving anesthesia, agents used in preserving organs, or any cleaning and disinfecting solutions. Some of the chemicals named formaldehyde and glutaraldehyde can also cause asthma if inhaled in huge amounts (Xue et al., 2019). Healthcare workers are dealing with a number of chemical hazards including cleaning agents used for housekeeping, on floors, washrooms, carpets, windows, and other surfaces in the entire hospital and waiting lounges. Cleaning agents are inhaled in the form of aerosolized droplets and vapors and skin exposure with the risk of skin and eye irritation is the main route of exposure.

Physical hazards include fire, temperature, radiation noise, and others. These factors mainly affect the sterilization center, food service center, laundry, radiology department etcetera. That may result in skin burns, eye injuries, deafness, and reactions, which can endanger the capability of employees to work properly.

Psychosocial hazards mainly include the violence any hospital staff are being suffered by the subordinates or by the clients. This is one thing that is not visible to the naked eye. This kind of hazard can cause sleep disturbance primarily due to shift duty, frustration, gastric problems, and other psychological disorders (Pramod & Kinslin, 2024).

Factors related to these hazards are discrimination, changes in technologies, equipment malfunction, hectic work schedules, downsizing, workload, understaffing, large facility size, violence, demanding and depending patients, and death of patients.

2. OBJECTIVES OF THE STUDY

- To understand the leading indicators in occupational health in healthcare workers.
- To know about the level of understanding and application of the concept of occupational health and safety management system among the health personnel.
- To understand the psychology of the workplace hazards in health care providers.

3. REVIEW OF LITERATURE

A study on leading indicators of occupational health and safety in healthcare in Ontario, Canada in 2018 this study was conducted using six elements of the Ontario Safety Association for Community and Healthcare System (OSACHS), which was identified as Leading Indicators for evaluating effectiveness at the workplace safety (Almost et al., 2019). Occupational Health Safety and Management Service (OHSMS), uses leading indicators to identify any potential barriers that may lead to change in current OHSMSs and could add some new leading indicators to the current list. This phase identifies the gaps while phase II is a pilot test and evaluates the tailored intervention (Mohammadfam et al., 2017). The Public Services Health and Safety Association (PSHSA) implemented three assessment tools, from which only one tool was used in the study Attitude Assessment and Questionnaires. It was prepared based on a 5-point Likert Scale with 43 questions. Different nine dimensions (management commitment, communication, priority for safety, safety rules and procedures, supportive environment, involvement, personal priority and need for safety, personal appreciation for risk, and physical work environment) with separate demographic questionnaires were included as a tool for research. Means and standard deviation were calculated for each of the nine dimensions.

4. METHOD

The Exploratory research design was conducted in developing countries like India. A total of 503 healthcare workers were selected, in which especially doctors and staff nurses were included as samples in this study. A cross-sectional study was conducted among 503 healthcare workers in Gujarat in 2022–23. It is because they are the direct caregivers to the clients and are more prone to come in contact with the health hazards. Data were collected from healthcare workers from the state of Gujarat randomly. Simple random sampling was used to collect the data. Those health workers who were not willing to participate in the study were excluded from it. The questionnaire was used to assess in the terms of this research, that health care providers are to be inspected and observed for their knowledge and practices regarding occupational health and their consequences. The structural equation modeling method was used to identify the factors associated with the leading indicators affecting health workers. Statistical Packages for Social Science (SPSS) were used to analyze the data. The questionnaire was pretested among 100 healthcare workers. The data consistency was determined using the reliability test. Cronbach's alpha was 0.780, which ensured clarity, internal consistency, and accuracy.

5. FINDINGS

This research study involves healthcare workers as participants who come under numerous cadres and positions. In the findings, the total number of nurses who have participated is 341 (67.5%). Some other categories of nurses have taken part in the research study, they are head nurse 18 (3.6%), in charge nurse 29 (5.8%), nursing assistant 1 (0.2%), and nursing supervisor 2 (0.4%). In the technician category, there are laboratory technicians 10 (2.0%), radiology technicians 12 (2.4%), and another technician 2 (0.4%) involved as the participants. Apart from these, other respondents

are there are anesthesia assistants, AYUSH consultants, AYUSH medical officers, consultants, dentist, dieticians, doctors, laboratory assistants, medical officers, OT assistants, pharmacists, physicians, physiotherapists, radiation safety officers, radiologists, surgeon with numbers respectively 1 (0.2%), 1 (0.2%), 2 (0.4%), 6 (1.2%), 1 (0.2%), 1 (0.2%), 3 (0.6%), 1 (0.2%), 24 (4.8%), 13 (2.6%), 2 (0.4%), 3 (0.6%), 7 (1.4%), 1 (0.2%), 5 (1.0%) and 1 (0.2%).

The total number of samples is 503 including the sample from public as well as private hospitals where data collected from the total number of samples 258 (51.3%) responses are received from public hospitals whereas 245 (48.7%) responses are received from private hospitals. The variable includes five questions and all the questions have their separate statistical readings. They are a Likert scale questionnaire in which the values are: 1.00- Strongly Agree, 2.00- Agree, 3.00- Neutral, 4.00- Disagree, and 5.00- Strongly disagree. In the question, difficulty regarding the functioning of specialized equipment, the mean is 3.0359, and the standard deviation is 1.31728. The skewness and kurtosis are respectively 0.018 and -1.233 with the standard error of 0.109 and 0.218 for both. The second sub-variable is the stress that employees are having after a full sleepless night. The mean value for that is 3.6680 whereas the standard deviation is 1.20718. By the above value, it is also clear that the skewness and kurtosis are -0.637 and -0.640 with the standard error of 0.109 and 0.217 respectively. The third point involved is about feeling stressed when an employee has to work on several hospital sites. The sub-variable followed by the previous one is the time factor is the main cause of mental stress.

Factor analysis is done to identify the factors contributing to the occupational health and safety of healthcare workers. By factor analysis, the approach can be made to identify the leading indicators for the occupational health of healthcare workers.

On the basis of all the analysis and implementation of statistical tools, an interpretation has been prepared for the purpose of this research study. The indicators which are affected by certain demographic factors are described in the form of a chart.

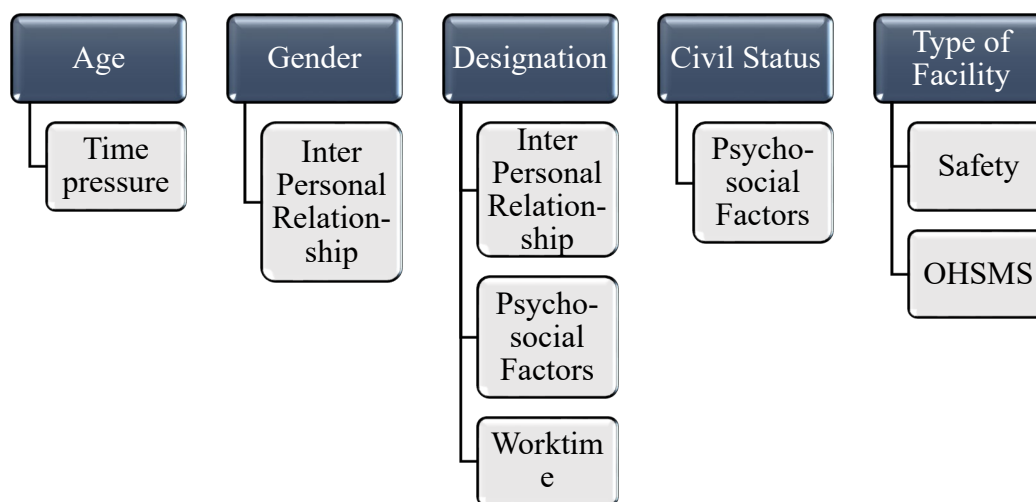


Figure 2 Indicators affected by Demographic factors

Different factors have their effect on the workplace factors of the health care workers. Some of the indicators are affected by more than one demographic factor, such as psychosocial factors of the employees being affected by health care workers' designation as well as their civil status. On the other side, one detail of employee that type of facility has its effect on safety and Occupational Health and Safety Management System as well. By this, it is indicated that the health care facility is responsible for the safety and occupational health of the health care professionals.

In the health care system, employers are not very aware of occupational health, which is shown above. Public healthcare organizations have less positive responses than private hospitals regarding the Occupational Health and Safety Management System.

6. CONCLUSION

The research study has been conducted with the concern of occupational health and safety of the health care workers. The leading indicators for occupational health are to be finding out for preventing the incidence at the workplace due to negligence of the employees and employers as well. There is a factor that implies the need for occupational health policy at the health care centers. Occupational health is not only for health care but applied to all other sectors but this study only focuses on the field of health care.

Leading indicators for occupational health are preventive measures for any accidents or illness at the workplace for employees. Periodical inspection and training can enhance the productivity of healthcare workers at the workplace. Providing personal protective equipment is a vital part of the prevention of many of the hazards exposure to hospital professionals. Burnout of staff is also a reason for the workload of the employees, so management should make an effort to have an appropriate number of staff members at the workplace.

This research study measured the perception of the employees regarding occupational health and also determined the concept and availability of OHSMS at the workplace. The availability of training and knowledge about the importance of occupational health has been found to be less as compared to the ideal measures. Workshop and educational meetings among the employees and employers are not identified in the data collection of the study.

People generally are not much aware regarding the concern topic due to less discussion and participation. The main reason for this result is the inappropriate patient-doctor and patient-nurse ratio. The health care seekers are increasing day by day but the providers are not being in necessary proportion. This is also a reason for deploying quality of care as well as the negligence of healthcare workers for their own health.

7. RESEARCH IMPLICATION

This research study has included the healthcare workers working in the public and private hospitals of the state. The workers working in the health care settings are surrounded by one or more occupational hazards within their working pace. Hospital facilitation plays an important role in the prevention of any accidental illness or injury to the employee. Appropriate follow of the standard operating procedures is also necessary to avoid any incidents. This study applies to all the healthcare institutions that are working as a hospital or a healthcare center, such as primary healthcare centers, community health centers, and even veterinary hospitals, as they also serve living animals. The study is helpful for those who are not aware of occupational health or occupational health and safety management systems. The researcher has studied all 360° aspects regarding the occupational health of healthcare professionals. The study was conducted to gain data regarding occupational health and safety in healthcare settings and find out the leading indicators from that. The indicators are necessary to measure periodically as it is important to gain the details regarding the occurrence of any accidents or illnesses, in which leading indicators help to prevent those incidents and illnesses before their occurrence. It is always indicated that 'prevention is better than cure', so it is important to focus on the leading indicators rather than the lagging indicators.

ETHICAL CONSIDERATION: Ethical approval may not be required for this study because verbal informed consent was taken from healthcare workers. Every participant was informed about confidentiality and privacy.

DECLARATION OF FUNDING: There is no funding was received.

DISCLOSURE OF INTEREST: There are no interests to declare.

CONFLICT OF INTEREST

None.

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