

# **The Implementation of Occupational Health and Safety Concepts in Hospitals by Nurses: A Literature Review**

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## **Abstract**

Occupational Health and Safety (OHS) is an effort aimed at ensuring the physical and mental integrity and well-being of workers, along with their work and culture, to achieve a prosperous society. The implementation of OHS in hospitals is influenced by three factors: predisposing, enabling, reinforcing, and core-care. The predisposing factor, which includes knowledge, attitude, beliefs, and values, is the most significant in affecting OHS in hospitals, with beliefs being the most influential indicator. In contrast, reinforcing and core-care factors have a less dominant impact on the health and safety of nurses in providing patient care. The enabling factor has a relationship with OHS implementation in hospitals, with regulations being the most influential indicator. This study aims to analyze the application of the OHS concept in hospitals by nurses. A quantitative research method was employed, utilizing data from researchers in Indonesia. These sources include credible journals and articles obtained through electronic databases such as Google Scholar, with journals selected from the 2012-2020 volumes providing full-text access. This study concludes that the implementation of OSH in hospitals can increase nurses' awareness and compliance with OSH procedures in reducing the risk of occupational accidents and injuries to improve the quality of health services, reduce stress and fatigue and also increase nurses' job satisfaction. Conclusion The augmentation of nurses' awareness and adherence to OSH protocols yields significant reductions in occupational injuries, accidents, and stress, thereby enhancing healthcare quality and occupational satisfaction.

**Keywords:** Hospital; Nurses; Occupational Health and Safety

## **Introduction**

Occupational Health and Safety (OHS) is an effort to ensure the integrity and perfection of both the physical and mental well-being of workers, their work outcomes, and their culture towards a prosperous society. The purpose of implementing OHS is to enable workers to achieve a high degree of health, both physically, mentally, and socially, through various efforts. These efforts include preventive and curative measures against diseases or health disorders caused by occupational and environmental factors, as well as general diseases (Redjeki, 2016). Therefore, the implementation of OHS is a standard of service that needs to be considered by all aspects within the hospital. According to the World Health Organization (2015), hospitals are crucial assets for society, forming an integral part of the social and health organization. The services provided are tailored to the types of interventions delivered within the healthcare system and

education. Hence, quality service is necessary when providing healthcare to the community. However, delivering quality care also presents potential hazards in hospitals.

Potential hazards in hospitals can be caused by various factors such as physical, chemical, biological, ergonomic, psychosocial, mechanical, electrical, and waste. In order to manage and control these hazards and create a healthy, safe, comfortable, and secure environment for hospital human resources, patients, patient companions, visitors, and the hospital environment, the implementation of the Hospital Occupational Health and Safety Management System is required (Ministry of Health of the Republic of Indonesia, 2016). Occupational health and safety in the workplace is a significant issue today. Data from the International Labour Organization (ILO) shows that on average, 6,000 people die every day, equivalent to 2.2 million people per year due to work-related accidents or illnesses (Rahayuningsih & Hariyono, 2011).

One of the common problems encountered in hospitals is nosocomial infections. Nosocomial infections are frequently encountered infections that occur while patients are receiving medical care in hospitals or other healthcare facilities and were not present before hospitalization. These infections can occur during healthcare delivery, even after the patient is discharged, and include infections acquired by healthcare workers. They encompass central line infections, urinary tract infections, pneumonia, and surgical site infections (Khan et al., 2017). Nurses, as healthcare providers who frequently provide care to patients, are at high risk of contracting nosocomial infections. The implementation of Occupational Health and Safety in hospitals is essential and should be carried out by all human resources in the hospital, including nurses.

Research indicates that the implementation of OHS in hospitals is crucial and mandatory as part of hospital accreditation assessment (Ibrahim et al., 2017). To achieve success in providing nursing care to patients, nurses must adhere to OHS principles during the provision of care. Therefore, this study aims to explore the application of Occupational Health and Safety concepts by nurses in hospitals.

## **Methods**

This study employs a quantitative approach with an quasi experimental design to evaluate the impact of controlled interventions on water quality issues, activity patterns, anthropometry, and population demographics. The research focuses on analyzing Cr6+ exposure in raw water sources from the Krueng Meureubo River, West Aceh Regency, Aceh Province. The population in this study is a river flow, a canal of the Krueng Meureubo River. The primary samples taken in this study were water samples in three sub-districts (Johan Pahlawan, Meureubo, and Kaway XVI) that were passed by the Krueng Meureubo River so that a total of three water samples amounted to three. Water quality and Cr6+ exposure data were obtained from chemical examination and analysis of the water of the Krueng Meureubo River, West Aceh. River water samples are taken directly using glass bottle containers numbered on the sample label.

Furthermore, water samples transported to the West Aceh Regional Health Laboratory to be checked for Cr6+ levels using the photometry method using a tablet reagent, which will then be examined through the

ZE200 photometer. In addition to measuring the content of Cr6+, river water measurement also measures other physical parameters, including color, turbidity, and odor, as well as chemical parameters, including pH and Total Dissolved Solid (TDS). The results of the tested water samples, namely Cr6+, were then analyzed with quality standard requirements according to the Minister of Health Regulation No. 492 of 2010 concerning Drinking Water Quality Requirements.

## **Results**

The findings indicate that the implementation of Occupational Health and Safety (OHS) by nurses in hospitals is generally adequate. However, there is significant variation in the level of compliance and implementation of OHS standards across different hospitals. The implementation of OHS is a mandatory practice for all healthcare workers in hospitals, including nurses. Inpatient care, a primary service provided in hospitals, requires special attention to safety and health, as patients requiring intensive care depend on the delivery of safe and effective services. The involvement of all healthcare personnel in providing care must prioritize the safety of both patients and healthcare workers. Negligence in OHS implementation can lead to direct harm to patients and staff, and negatively impact the quality and reputation of the hospital (Herawati, 2015).

The implementation of OHS in hospitals is influenced by various interrelated factors. The study by Tukatman et al. (2015) identifies three primary factors affecting OHS implementation: predisposing, enabling, reinforcing, and core-care. Predisposing factors include knowledge, attitudes, beliefs, and values, with beliefs being identified as the most influential indicator in the implementation of OHS. For instance, nurses who have a strong belief in the importance of OHS are more likely to comply with safety and health procedures. Meanwhile, reinforcing and core-care factors, which involve management support and consistent protocol implementation, are less dominant in influencing OHS practices among nurses. The enabling factor, which relates to the availability of resources and policies, has a significant relationship with OHS implementation in hospitals, with clear regulations and the provision of adequate personal protective equipment being key indicators.

The implementation of Occupational Health and Safety (K3) in hospitals is an important aspect to protect the health and safety of health workers, especially nurses. World Health Organization (WHO) data in 2015 shows that as many as 35% of nurses worldwide suffer injuries due to non-sterile syringes, 2. 25% of nurses experience high work stress due to excessive workload, 3. 15% of nurses have serious work accidents, such as falls or pinching, 4. 80% of work accidents in hospitals can be prevented with the effective implementation of K3 (WHO, 2015).

Other studies assess the implementation of OHS based on various relevant aspects or variables. For example, research by Octavia et al. (2018) at Dr. Wahidin Sudiro Husodo General Hospital found that only certain variables met the requirements for occupational health implementation, while others did not.

Variables deemed sufficiently compliant included periodic health examinations, treatment and care for sick patients, monitoring of the work environment and ergonomics, and evaluation of recording and reporting to the Hospital Director. However, several other variables, such as specific health examinations, pre-employment health assessments, and surveillance activities, were found to be less satisfactory. This highlights gaps in the implementation of OHS that need to be addressed to ensure comprehensive protection for healthcare workers.

Regarding occupational safety, research found that most variables related to safety service implementation in the Emergency Department (ED) met the requirements. The majority of healthcare workers in the ED adhered to established safety procedures; however, some areas still require improvement, particularly in the adjustment of work equipment to meet ergonomic and safety standards for human resources (Octavia et al., 2018). This is important given the high-risk environment in the ED, which necessitates extra protective measures.

A study conducted in a hospital in Aceh revealed that nurses' behavior in implementing OHS management was generally good, considering internal factors such as knowledge and attitude (52.5%) and external factors such as management support and facilities (58.8%) (Nazirah & Yuswardi, 2017). This study indicates that nurses' behavior in implementing OHS is influenced not only by internal factors but also by the work environment and hospital management policies. Additionally, research in a government hospital in Yogyakarta identified motivation and work experience as important factors influencing nurses' compliance with standard precautions. Motivation was found to be the most dominant factor influencing adherence to OHS standards (Sagita, 2019). This underscores the importance of providing ongoing motivation and training to enhance awareness and compliance with OHS among nurses.

Overall, these findings suggest that the implementation of OHS in hospitals still faces challenges that need to be addressed. The variation in the level of implementation and compliance with OHS indicates the need for a more focused and coordinated approach in developing OHS strategies in hospitals. This includes strengthening predisposing factors through increased knowledge and awareness, providing adequate facilities, and implementing clear policies and regulations. Enhancing the implementation of OHS in hospitals will contribute to the safety and well-being of healthcare workers and patients, as well as improve the overall quality of hospital services.

## **Discussion**

The findings of this study indicate that the implementation of Occupational Health and Safety (OHS) in hospitals is essential and serves as a mandatory requirement for hospital accreditation (Ibrahim et al., 2017). For nurses to succeed in providing quality care to patients, they must adhere to OHS protocols during the delivery of nursing care. The implementation of OHS in hospitals is influenced by various factors. The study by Tukatman et al. (2015) identified three key factors: predisposing, enabling, reinforcing, and

core-care. Predisposing factors include knowledge, attitudes, beliefs, and values, with beliefs being the most influential component in OHS practices in hospitals. This influence is because belief is an abstract conviction. Similar to religious faith, where individuals live according to their religious teachings with the belief in an eventual judgment day, even without having reached that point. This belief underpins the motivation of nurses to implement OHS while providing care to patients in hospitals.

According to the Ministry of Health of the Republic of Indonesia (2016), hospitals must implement a Hospital Occupational Health and Safety Management System to manage and control potential hazards for hospital human resources, patients, patient companions, visitors, and the hospital environment. Hence, OHS is a critical issue in the healthcare sector, particularly in hospitals. One of the common challenges encountered in hospitals is nosocomial infections, which arise during medical treatment in hospitals or other healthcare facilities and are absent prior to hospitalization. These infections can occur during healthcare provision or even after the patient is discharged, and include healthcare-associated infections such as central line-associated bloodstream infections, urinary tract infections, pneumonia, and surgical site infections (Khan et al., 2017). Nurses, as frontline healthcare providers, have a high risk of contracting nosocomial infections.

The reinforcing factor involves the role of OHS officers in hospitals, in this context, nurses, setting an example for other healthcare workers. However, this factor seems to have less influence on nurses' behavior in implementing OHS concepts in hospitals. This may be due to the dual roles of the responsible officers, resulting in less optimal performance in fulfilling OHS duties. If the implementation relies solely on the intrinsic motivation of healthcare workers, the reinforcing factor becomes less significant, thus not significantly impacting OHS implementation in hospitals.

The enabling factor is found to have a relationship with OHS implementation in hospitals, with regulations being the most influential indicator. Behavior is fundamentally influenced by the rules and regulations in the environment. Nurses' adherence to these regulations leads to the proper implementation of OHS concepts in hospitals, avoiding sanctions for rule violations. The core-care factor is less dominant in affecting the health and safety practices of nurses in patient care. This could be attributed to the limitations of the instruments used in the research, indicating the need for further studies.

The implementation of OHS in hospitals, especially in healthcare service standards, is evaluated based on various aspects or variables. Research conducted by Octavia et al. (2018) at Dr. Wahidin Sudiro Husodo General Hospital revealed that only 30% of the criteria for occupational health met the required standards, 40% were partially compliant, and 30% were insufficiently compliant. Therefore, it can be inferred that the implementation of occupational health by nurses in hospitals requires improvement to maximize patient care.

The same study also assessed the implementation of occupational safety services received by nurses in the emergency department (ED), indicating that 80% of the variables met the requirements, 10% were

partially compliant, and 10% were insufficiently compliant. The variable that was only partially compliant involved the evaluation of records and reports to the hospital director, while the variable that did not meet the requirements involved the adjustment of work equipment for human resources (Octavia et al., 2018). Therefore, it can be concluded that the implementation of occupational safety by nurses in patient care is generally good but requires ongoing enhancement to improve its application further.

Nurses' behavior in implementing OHS concepts in hospitals is generally satisfactory. Supporting this finding, research by Nazirah and Yuswardi (2017) at a hospital in Aceh indicated that most practicing nurses exhibit good behavior in OHS implementation, both from internal (52.5%) and external factors (58.8%). Various internal factors influencing nurses' behavior include perception, which is the process of seeking information conducted by nurses before taking action. Nurses' perceptions of OHS indicate their ability to understand the importance of OHS through standard operating procedures (SOPs), leaflets, brochures available in their work environment, and other informational media. Nurses are also expected to comprehend accident prevention and appropriate responses if an accident occurs. Such understanding fosters a positive perception of OHS, enhancing their behavior in maintaining safety.

The attitude of nurses influences their behavior concerning internal factors (Notoadmodjo, 2010). As healthcare professionals, nurses' attitudes towards OHS should align with health values, where all positive attributes within a nurse can act as a driving force for healthy behavior, contributing to health and safety during their work. External factors, such as nurses' experience, can be viewed from various aspects, including their length of service. Longer service duration generally enhances their experience and improves their behavior in ensuring personal safety. Additionally, experience can be gained through various socialization or training sessions on OHS conducted by the hospital. Another contributing factor to the change in nurses' behavior is the availability of supporting facilities that meet established standards.

Research findings indicate that factors influencing nurses' compliance with standard precautions in government hospitals in Yogyakarta include motivation and work experience, with motivation being the most dominant factor affecting standard precautions as part of OHS implementation (Sagita, 2019). Motivation and work experience significantly impact nurses' compliance in implementing OHS concepts. Well-motivated individuals are more likely to achieve organizational goals. Higher motivation leads to greater commitment and the ability to identify their role within the organization. Leadership plays a crucial role in motivating workers to achieve shared objectives and provides incentives (Shanks, 2012, in Burton, 2012). Other factors affecting nurses' compliance with standard precautions include the perception of facility completeness, self-efficacy, peer review, management system commitment, information, beliefs, values, cognitive abilities, hospital type, availability of sharp object disposal containers, leadership, and supervision.

## **Conclusion**

The implementation of Occupational Health and Safety in hospitals by nurses is of paramount

importance. This is primarily due to the significant amount of time nurses spend providing care to patients undergoing medical treatment. Optimizing the implementation of OHS in hospitals can enhance the standard of patient care, which in turn can impact the hospital's accreditation status. Based on the literature review, it can be concluded that nurses' behavior in implementing OHS concepts in hospitals is generally adequate and satisfactory. Several aspects of occupational health and safety in hospitals were evaluated, with results falling into the categories of adequate and good. Factors influencing the implementation of OHS in hospitals, both internal and external, need to be addressed to improve nurses' adherence, thereby reducing the incidence of nosocomial infections and work-related accidents in hospitals, ultimately leading to better and more optimal patient care.

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