Review on Knowledge and Practice of Nurses Regarding Biomedical Waste in Healthcare Settings

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Abstract

Biomedical waste may also refer to trash that is created during the development and testing of biological. Under the laws passed in 1998 regarding the management and handling of biological waste, biological waste refers to any waste produced during diagnosing, treating, or vaccinating human patients, animals, or during research activities. The primary goal and goal of the study is to review the knowledge and practice of nurses regarding the management of biological waste in hospital settings. For the systematic review, we relied on secondary sources such as books, previously published papers, and journals, with a significant effect. Out of 30 publications, we evaluated just 16 of them. It is necessary to emphasize the significance of training in managing biomedical waste; The widespread availability of inaccurate and incomplete information regarding biological waste management affects the proper disposal of medical waste.

Keywords: Biomedical waste, knowledge, Nurses, and practice.

Introduction

"Biological waste" is generated when either a human being or an animal is diagnosed, treated, or vaccinated, or when research is conducted about those subjects or biological and human fluids are produced and tested." Biomedical waste can be generated during biological production or testing as well. Most wastes produced by the health care industry are non-hazardous or general trash (between 75 and 90 percent), whereas the remaining wastes are classified as hazardous. A large expansion in the number of healthcare facilities has occurred along with rapid population growth and rising levels of service use. Hospitals, although being places of healing, may be hazardous to patients' well-being because of the volume of biological waste they produce. This waste includes discarded medical supplies and equipment. (Tiwari et al., 2021)

The previous century saw a significant mushrooming of healthcare facilities in both the public and commercial sectors, which was done to satisfy the requirements of a growing population. The introduction, widespread use, and ever-increasing demand for so-called "disposable products" have resulted in the current healthcare system's production of a significant quantity of trash. Some of the most contentious issues surrounding healthcare waste include improper waste management, insufficient knowledge about associated health threats, a shortage of human resources, insufficient financial resources, & poor control for waste disposal.

The spread of illnesses including typhoid, cholera, hepatitis A, B, C, & AIDS via contact with infectious trash, and through unintentional injury from used sharps, may be the aftermath of inadequate, unsuitable, and inefficient waste management. Around half a million people every year lose their lives all over the world as a direct consequence of medical operations that were not sterilized, resulting in the spread of infectious illnesses including hepatitis B and C. HIV, as well as hepatocellular cancer. (Hashish et al., 2020)

These dangers to health are compounded because untreated medical waste pollutes the environment by leaching chemicals into the water, air, and soil. This is a significant problem that has to be addressed. This contamination of the environment has the potential to harm our flora and fauna, as well as the ecosystem. According to a statement by the WHO, only 10-15% of hospital wastes are infectious, while the other 85% are not harmful.

In India, it is estimated that the amount of trash generated is between 0.5 and 2.0 kg per bed per day, and out of this total, it is determined that 10 to 15 percent is biological waste. The volume of BMW produced in India is around 0.33 million tons, making it the global leader in this category.

The term "biological waste" refers to any material that has been contaminated with human or animal DNA during diagnosing, treating, or vaccinating people or animals, or during the conduct of scientific study. Reiterated in the release is the idea that biological waste management is crucial to the continued success of hospital operations; hence, the mentality of those who work in health care must be included through procedures. (Dey & Das, 2020)

According to the Medical Trash Tracking Act of 1988, "any waste created as an outcome of diagnostic operations, treatment, or vaccination of humans or pets, in research relating to, or for the manufacture or testing of biologicals" is medical waste.

1998 was the year that saw the outset of the regulations governing the management and storage of biological waste, with additional revisions taking place in the years 2000, 2003, 2016, 2018, and 2019. To protect the natural world and prevent the release of harmful chemicals into the atmosphere, facilities that generate large amounts of biological waste, such as hospitals, may no use have chlorinated plastic bags and gloves in medical procedures.

New regulations call for the use of barcode systems for the proper administration of biomedical waste. In addition, it has expanded its coverage to include waste from healthcare generated at home. (Haider et al., 2015)

On a global scale, biomedical waste is a hot topic today. There is a high risk that insufficient information, attitude, and behaviours can cause damage and pollution to individuals and to others, as well as a substantial impact on the environment, resulting in damage and pollution.

Some circumstantial evidence suggests that inappropriate handling of biomedical waste may have a role in the spread of life-threatening infections such as hepatitis B, and hepatitis C, HIV/AIDS.

Healthcare workers in underdeveloped countries, such as India, have reported low levels of knowledge, attitude, and practice regarding managing biological waste, in contrast to reports from industrialized countries that have shown rising awareness. (Acharya et al., 2014)

Developed countries have also reported greater awareness. It is not only the legal obligation of every health care practitioner but also their social responsibility to guarantee the correct disposal of waste created by their role in the health care industry. Several studies show students do not have a sufficient understanding of how to manage biomedical waste.

Teaching institutions with hospitals connected to them have an essential responsibility toward society to educate nursing students in such a way that enables them to manage biological waste. Early in one's career, one develops patterns of behaviour that are persistent and difficult to alter. (Pandey et al., 2020)

A nursing student's ability to comply with regulations governing the disposal of biological waste depends on solid knowledge, a positive attitude, and effective practices regarding current modifications and improvements. To the author's knowledge, however, there have been no studies examining where nursing students may lack in knowledge, attitude, or conduct regarding biomedical waste management. Study participants often come from the healthcare industry. Therefore, this research was carried out to evaluate how much is known, how people feel, and where there are gaps in practice regarding managing biomedical waste. Students will be provided with instruction and skill-building opportunities in the future ((Odonkor & Mahami, 2020)

Aim and Objectives of the study

- To Review of Knowledge and practice of nurses regarding biomedical waste in healthcare settings.

Methodology

For systematic review we used secondary sources like books, previously published paper, highly impacted journals. We selected 16 papers for review out of 30 papers.

Review of articles

A comparative study on knowledge and practices of nurses regarding biomedical waste management in select government hospitals

The Bio-Medical Waste (Management & Handling) Rules of India describe biomedical waste as any substance produced during the diagnosis, treatment, or vaccination of humans or animals, in addition to related research activities, the production, or the testing for biological goods. To evaluate nurses' familiarity with and ability to implement different biomedical waste management strategies, a comparison research were conducted in three government hospitals with more than 500 beds. Descriptive study was used to assess how well hospitals managed their biological waste across the whole cycle, from production to segregation to color coding to treatment to final disposal. Therefore, this research was carried out to evaluate how much is known, how people feel, and where there are gaps in practice when it comes to managing biomedical waste. Waste production, segregation, and treatment processes were observed using a non-participant observation approach and rated using a Likert scale. The chi-square test was used to analyze the data that was gathered in SPSS 16. Nurses in Hospital II were found to know more about waste transportation, whereas nurses in Hospital III were found to know more about biological waste regulations and segregation. The nurses at Hospital 3 were found to be solely responsible for the hospital's biological waste management, and as a result, they had the highest average scores on questions on waste segregation. These nurses knew all there was to know about waste segregation, from where to put indenting of biological waste management applications to how to build a proper bin system to the standard operating procedures of segregation in the ward.**(sarvjeet kaur, 2011)**

Knowledge, Attitude, and Practices about Biomedical Waste Management among Healthcare Personnel: A Cross-sectional Study

As opposed to other types of trash, medical waste is more likely to spread disease or cause harm to those

who come into contact with it. Negative effects on human health and the natural environment may result from improper or absent information on how to deal with medical waste. Researchers set out to gauge healthcare providers' familiarity with, and approach to, proper disposal of biological waste. This surveyed participants at random. Allahabad city hospitals with above 100 beds were included in the research. One hundred and seventy-five physicians, sixty-zero nurses, seventy-eight laboratory technicians, and a dozen or so janitors made up the medical staff (70). In terms of biological waste management, medical professionals such as doctors, nurses, and laboratory technicians are more versed than sanitation workers. The nurses and laboratory technicians were found to have more familiarity with color coding and source-segregation trash disposal than the physicians. The sanitation workers knew nothing about how to properly handle biological waste. Reporting of injuries, however, was low across the board for the medical community. Lack of correct and full understanding about biological waste management affects practices of acceptable waste disposal; hence training in this area is crucial.**(Mathur et al., 2011)**

Awareness, Knowledge and Practices on Bio-Medical Waste Management among Health Care Professionals in Mangalore -A Cross Sectional Study

Since biomedical waste may pose serious risks to human and environmental health, it is an issue of critical relevance. A greater risk of infection and harm is associated with medical waste than with any other sort of waste generated in the course of health care operations. It has been calculated that India generates around 0.33 million tons of medical trash per year. The study's goals are to (1) examine how medical waste is handled in various healthcare settings, (2) examine how health care workers perceive the risks involved, and (3) evaluate how people feel about the regulations that govern medical waste disposal. Using a piloted questionnaire, researchers at Mangalore city's various healthcare institutions took a cross-sectional look at their staff's level of medical waste management literacy. When it comes to dealing with biological waste, medical professionals like doctors, nurses, and lab techs are more versed than sanitation workers. Nurses and lab techs were found to have more knowledge than physicians on color coding and waste segregation. Medical waste must be properly collected, contained, and disposed of such that it poses no threat to the health of anybody who comes into contact with a hospital or medical facility in any manner. Nearly every healthcare facility has an inadequate waste sorting system. Health officials in India continue to express grave concern about the improper and irresponsible management of Bio-medical waste.**(Pullishery et al., 2016)**

Evaluation of biomedical waste management practices in public and private sector of health care facilities in India

Biomedical waste (BMW) must be properly managed to prevent potential harm to human and environmental health. This analysis of Fatehgarh Sahib District in Punjab, India's public and commercial healthcare facilities focused on best-practices in bedside wound management (BWM). The research was done at 120 sites throughout both urban and rural regions, using a customized version of a World Health Organization (WHO) instrument. There was 67.2% compliance with BMW management requirements in public facilities and 40.4% compliance in private institutions providing primary care, whereas there was 100% compliance in both public and private facilities providing secondary care. The median score was used to classify healthcare institutions into three broad categories: red (no credible BMW management system in place), yellow (system existent but requires considerable improvement), and green (system

existing but not functioning optimally) (good system in place for BMW). It was found that 82% of public facilities and 64% of private facilities in the primary care sector are in the red category, while just 8% of secondary care facilities are in the red category. Using logistic regression, we were able to identify the most important aspects influencing the hospital's performance and see that consistent training on BMW and upgraded facilities may boost BMW management standards. In addition, effective BMW management calls for cross-sector collaboration, a challenge that may be met by policies and regular stakeholder education and development.(**Devi et al., 2019**)

Assessment of knowledge, attitude, and practice about biomedical waste management among healthcare workers during COVID-19 pandemic in a health district of West Bengal

Biomedical waste (BMW) production has skyrocketed due to the massive scale of the response to the COVID-19 epidemic. Care providers' knowledge, skill, and attitudes towards BMW management, as well as the variables that influence this knowledge, were analyzed in a cross-sectional research for their impact on patients with COVID-19. Three hundred eighty healthcare workers (HCWs) from the North 24 Parganas Health District in West Bengal participated in this cross-sectional research. A self-administered, questionnaire method as well as a checklist for recording in-person observations were used to collect data once participants' eligibility and consent were confirmed. The questionnaire included four parts: basic demographic data, questions testing BMW-specific knowledge, an observational questionnaire gauging HCWs' actual BMW-management practices, and an attitude-rating scale. The average score for all 166 HCWs was 13.5 3.6, indicating that 43.2% possessed outstanding knowledge. Medical physicians had the highest mean score (14.4 3.2) while nurses had the second highest (13.6 3.8). When it came to actual procedure, around 52.8% of HCWs used the BMW color-coding system and about 49.5% adhered to the regulations regarding danger waste segregation. Positive attitudes were more common among doctors (91%) and nurses (81%). There was a statistically significant correlation between education and expertise ($P = 0.0001$), gender and expertise ($P = 0.001$), and years of experience and specialty ($P = 0.05$). In order to stop the spread of the disease during this pandemic, it is crucial that all HCWs be made aware of and given training on appropriate BMW management.(**Dalui et al., 2021**)

Assessing knowledge, attitude, and practice of healthcare personnel regarding biomedical waste management: a systematic review of available tools

Hospitals have a significant financial and moral investment in biomedical waste (BMW) management because to the potential for infectious danger it poses. One way to learn more about BMW management is to keep tabs on the KAP (knowledge, attitude, and practice) of healthcare practitioners. The purpose of this research is to discover accurate and valid techniques for evaluating the KAP of healthcare providers in managing BMW. On May 10th, 2018, PubMed and Scopus were searched for original research papers, case studies, and review articles on BWM management tools that used a cross-sectional design. Data on validity and trustworthiness were collected. The Newcastle-Ottawa scale was used to evaluate the study's methodology. There were 53 total articles, with 19 of them including a questionnaire on BMW for healthcare professionals. The Cronbach's alpha for the four reported questionnaires varied from 0.62 to 0.86, and nine of the proposals included a validated questionnaire. The findings further highlight the frequency of Asian research dealing with the challenge of measuring KAP concerning BMW management using particular instruments. Fourteen questionnaires were developed in Asia, two in Africa, one in the Americas, one in Australia, and one in Europe (Spain) was the only country to

expound on its own questionnaire. This meta-analysis emphasized the need of developing credible and rigorous survey instruments. In order to better generalize and facilitate worldwide comparability of study results, more cross-sectional studies examining these issues are required.**(Mannocci et al., 2020)**

Assessment of future physicians on biomedical waste management in a tertiary care hospital of West Bengal

A significant health danger is posed by about 25% among all biomedical waste to both healthcare personnel and the general population. In light of this, it was important to assess the familiarity of young doctors inside a tertiary care environment with BMW treatment. The researchers hope that by gauging the amount of knowledge and comprehension of BMW management amongst young doctors (future physicians), they might help policymakers devise a strategy for moving in a more favorable direction. Those involved in the materials and methods: This study was a descriptive observational study in which 200 resident doctors at a tertiary care hospital from Kolkata were given a semi-structured, anonymously, self-administered questionnaire. Sixty-two percent were between the ages of 22 and 24, the majority were men (66.5%), 70.2% lived in dorms, 80.1% were members of nuclear families, and 61.4% of all participants had a monthly family income of between 5,000 and 20,000 rupees. 99.1 percent of respondents were aware of BMW, 94.4 percent understood that BMW rule 1998, & 68.1 percent recognized the relevance of Bio Hazard symbol. As a tenth-placed brand, BMW had a recognition rate of 55.9%. Only 28% of medical students recognized there were other methods to get rid of BMW, whereas 78% knew that segregation just at source was the golden rule. Although 98.8 percent of respondents were aware that inappropriate management of BMW presents serious health issues, only 76.4 percent were aware that there are numerous color-coded bag types in use for collection. All the medical students learned the fundamentals of BMW, including the aforementioned topics, as part of their undergraduate education. All employees, but especially young physicians, need a rigorous training program and consistent supervision.**(Basu et al., 2012)**

Awareness, attitude and practises of biomedical waste management amongst public health-care staff in Karnataka, India

Biomedical wastes (BMW) are created daily on a global scale in very high volumes. BMW management is dependent on following established procedures. The goal of this research is to examine the level of understanding, attitude, and practice among healthcare professionals with regards to several elements of BMW, which is essential for effective management at the generation point. During the time period of January 7th, 2016, researchers from two different types of studies (an observational, with proper checklists, and a cross-sectional, with questionnaires) gathered data. Two hundred and seventy-three healthcare professionals at chosen Karnataka public hospitals were polled on their understanding, beliefs, and routines in regards to the BMW health care model. The majority (54%) of the 273 people who took part in the research had never undergone any kind of BMW-related training. Poor levels of knowledge and awareness of BMW management were found among healthcare professionals. Less than half (43%) of the sample was able to accurately identify BMW and place it in the appropriate recycling or trash container. Younger people, men, lab techs/pharmacists, and support personnel all have a very low level of awareness. Theoretical understanding, such laws, legislation, and the public-health implications of BMW management, were areas in which doctors excelled more than were the more hands-on, practical components, like classification and color-coding. Also, doctors and nurses tend to

have a positive outlook on BMW. Only 43 percent of those who work with garbage have the hepatitis B vaccine. Educating and monitoring healthcare workers on a regular basis, with an emphasis on the proper use of PPE, is necessary because of the widespread ignorance and poor implementation of BMW management. Also, those who deal with garbage and with sanitation services should be offered preventative vaccinations.**(Golandaj & Kallihal, 2021)**

KAP study of bio-medical waste management among health care workers in Delhi
Hospitals aren't the only ones concerned about how to dispose of biomedical waste; the public, government, and media all have a stake in the matter. This study aimed to explore the health care workers' knowledge, attitudes, & behaviors toward bio-medical waste management in a hospital setting in rural Delhi. 155 healthcare workers were surveyed in a cross-sectional research conducted at a rural hospital in Delhi. Fifteen-hundred-fifty hospital HCWs were given a structured questionnaire that had been developed and evaluated in advance. We used SPSS-17 to gather and analyze the data. There were a total of 155 HCWs chosen. Health care workers tended to be between the ages of 30 and 56. About 54.2% of the participants were female. Nurses made up the bulk of the crowd. An average of 4.833.7 (mean ageSD) years had been spent in service at this point. Most of the HCWs in this research have at least a high school diploma and are certified in their respective fields. A sizable percentage of HCWs have been immunized against HBV and educated on the proper disposal of biomedical waste. Almost all health care workers (97.4%) are knowledgeable with the regulations governing the disposal of biomedical waste and take this topic extremely seriously. Health care workers' procedures for handling biomedical waste were below par. The nursing staff is the most knowledgeable and has the most positive outlook of all HCWs. Paramedics and group-D employees have been mandated to complete additional training.**(Soyam et al., 2017)**

Knowledge on Biomedical Waste Management among Nurses Working in Hospital at Madurai
A secure setting is essential to good health. By using methods that limit or prevent the spread of infection, both patients and medical staff may be safeguarded against illness. It was decided to conduct a descriptive research to assess the extent to which nurses at Christian Mission Hospitals in Madurai understand the issues surrounding Biomedical Waste Management. The research methodology relied on a descriptive, non-experimental approach. Thirty representatives were chosen using a convenience sampling approach. An expert-based, standardized questionnaire on healthcare waste management was used for this study. Both inferential and descriptive statistics were used to this data. Thirty nurses were surveyed, and the results revealed that 23 (77%) had adequate knowledge, 7 (23%) have intermediate understanding, and 0 (0%).**(Panneerselvam, 2016)**

A Study of Health Care Professionals' Knowledge, Attitudes, and Practices about Biomedical Waste Management in a Tertiary Care Hospital in Puducherry
Human service personnel (HSPs) have regular contact with biological waste due to their job in healthcare settings (BMW). The effectiveness of Institution's BMW management platform is measured by the level of knowledge, attitude, & practice (KAP) for BMW management among HCWs. This study set out to determine whether or not healthcare professionals at the study location were conversant with, and opens to implementing, best practices for managing biomedical waste. A cross-sectional study was conducted with 160 medical professionals working at a tertiary care facility within Puducherry. In terms

of understanding regarding BMW management, postgraduates and interns topped the charts. The quality of care provided by nurses and housekeeping staffs lagged below that of laboratory technologists. Employees in the sanitation department had no idea how BMW operated at the upper levels. Their behavior, however, was disproportionate to their knowledge and outlook. Newly hired and current HCWs alike would benefit from an annual BMW management CME session designed to educate and inform.**(Pradha, V., U. Bharathi, 2020)**

Status of Biomedical Waste Management in Nursing Homes of Delhi, India

Biomedical waste poses a danger to the environment and human health when it is not properly handled (BMW). The onus is on doctors to properly quarantine contagious patients and train staff on how to apply the necessary isolation measures. This study aims to evaluate the current situation of biological waste management at private nursing homes throughout Delhi, India, in addition to the knowledge, attitudes, & practices of the personnel working in these institutions. Among Delhi's private nursing facilities, a cross-sectional analysis was performed. A total of 116 long-term care facilities were randomly chosen from the south and east regions. The data was gathered by use of a WHO-approved questionnaire. The SPSS program was used to analyze the data (version 16). Data was analyzed using a chi-squared as well as fisher test, as well as the findings revealed that 41.7% of south zone workers and 25% of east zone employees were uninformed of BMW generations (2=24.26, p=0.001). Workers in the south zone were 95% in agreement that BMW management generally helpful in reducing the spread of disease in the workplace, whereas those in the east zone were 98% in agreement (2=1.22, p=0.5).Thirteen nursing facilities in the south zone (21.7%) and fifteen in the east zone (26.6%) were discovered to be without black bags throughout the monitoring period. It was found that nursing facilities in both parts of Delhi had inadequate procedures in place for dealing with biological waste. The research showed that private sector health care personnel' knowledge of biological waste management was inadequate. The BMW management rules need to be strictly enforced.**(Jugal Kishore, Ravindra Agarwal, 2014)**

Assessment of knowledge, attitude, and practices regarding biomedical waste management among operation room personnel in a tertiary care center

All healthcare workers should be concerned about biomedical waste management since improper management may lead to significant infections and noninfectious injuries. The hospital's operating room generates a substantial quantity of garbage on a regular basis. The purpose of this research is to assess operating room staff members' level of understanding, commitment, and action with respect to the safe and responsible disposal of biological waste. This is a cross-sectional research that used a questionnaire to assess the level of understanding, commitment, and behavior around the proper disposal of biological waste among different categories of operating room staff. This research highlighted inconsistencies in biological waste management knowledge and procedure across all levels of operating room staff. This research emphasizes the need of educating all operating room staff on the importance of proper waste management.**(Aanandaswamy et al., 2019)**

Assessment of Awareness about Biomedical Waste among Doctors and Nurses of Children Hospital

Biomedical waste includes everything that has been employed in diagnosis, treatment, or immunization

of people or animals, as well as anything that has been employed in the study of, or the manufacture or testing of, biologicals. It was our intention to conduct a survey of the medical personnel at Children's Hospital that ascertain their familiarity with biological waste management. Children's Hospital and the National Institute for Child Health conducted the descriptive research. The information was collected using a Convenience Sample. The participants in this research were hospital employees of both sexes. Doctors and nurses made up the study's two distinct groups of participants. There were a total of 139 participants, including 77 medical professionals and 62 nurses. Issues in biomedical waste management were the subject of their comments, which were verified by a Performa. The majority of workers (62%) were found to have some understanding about biomedical waste. The remaining workers only had rudimentary understanding of biomedical waste. The personnel in the operating rooms at Children's Hospital have a sufficient level of knowledge of BMW management. However, they still need to attend lectures and workshops to increase patient safety.**(Hassan et al., 2021)**

Development of a waste management protocol based on assessment of knowledge and practice of healthcare personnel in surgical departments

Competent hospital waste management requires a devoted team, good administration, thoughtful planning, solid organization, underlying laws, appropriate funding, and trained employees. Therefore, waste management techniques must be practical. The goals of this study are (1) to assess the level of waste management skills and knowledge among surgical department doctors, nurses, and housekeepers at Al-Mansoura University Hospital, and (2) to develop and test a hospital-wide waste management strategy. This study was a cross-sectional study performed from Al-Mansoura University Hospital. There were a total of 56 cleaners, 106 nurses, and 38 doctors. The procedure was verified by two groups: one composed of academics (30 people), and the other of service providers (30 members). Nurses and physicians self-administered a knowledge assessment, while housekeepers were interviewed. Performance was evaluated via checklists. According to the evaluation phase data analysis, the researchers designed the waste management procedure. After jury validation, the methodology was applied. 27.4% of nurses, 32.1% of housekeepers, and 36.8% of physicians were knowledgeable. 18.9% of nurses, 7.1% of housekeepers, and no physicians had appropriate practice. Attendance at training courses was correlated with nurses' knowledge (r = 0.23, p 0.05). Validation of the established protocol showed 60%-96% agreement for the service group and 60%-90% agreement for the academic group. Most physicians, nurses, and housekeepers have poor waste management understanding and practice. Training improves nurses' knowledge. A healthcare waste management approach was created and verified based on the results. The planned hospital should execute the specified waste management policy for surgical departments and conduct waste management audits.**(Mostafa et al., 2009)**

Biomedical waste management practices in health centers in Chandigarh, India

Waste from the diagnosis, treatment, as well as immunization of people or animals, as well as associated research activities, the development, and the testing of biological commodities, all fall under the umbrella term "biomedical waste" (BMW). Only 15% of hospital treatment is potentially dangerous, based on the World Health Organization. The remaining 10% is made up of various types of hazardous waste, both infectious and noninfectious. As a result, between 15 and 35 percent of all trash generated by hospitals must comply with rules pertaining to infectious waste. The goal of this study is to assess medical professionals' familiarity with BMW management and their perspectives on the topic. Hospitals

and medical centers in Chandigarh, India, were used as study locations for this analysis. The study included both medical officers & paramedical health workers who worked in public health system. While 84.3% of doctors and nurses knew what to do if a patient had a needle poke, just 73.3% of paramedical workers were so versed. While 65.6% of MDs & 66.7% of PAs were hepatitis B-vaccinated, only 32.8% of MDs & 37.2% of PAs had received BMW management training. Many medical professionals, including physicians (68.8%) and paramedical personnel (68.1%), as well as patients (33.3%), take precautions by wearing protective gear. Each and every facility in Chandigarh has access to a handwashing station. Only 28.1% of MDs and 5.0% of NPs could correctly identify the proper location for storing radioactive waste. There is a disconnect between what is known about BMW segregation and what is really done. BMW management training is essential and should be addressed. Paramedical staff should get updated training on a consistent basis.**(Kalia et al., 2020)**

Conclusion

Review of nurses' knowledge and experience with biological waste in hospital settings is the topic of this paper. To help bridge the gap that exists between knowledge and practices, we should place a focus on sporadic testing, consistent instruction, and hands-on training programs, all of which should place a strong emphasis on recently implemented changes to the regulations. In Our Reviews of papers the Knowledge and practice of nurses regarding biomedical waste according to authors, in some papers have low and some papers have average. So we conclude that the Knowledge and practice of nurses regarding biomedical waste is below average. So, nurses and nursing staff should be sensitized for segregation of waste at the point of origin and minimization of waste. The knowledge and practice of nurses can be enhanced through various interventions like STP, SIM, demonstration methods.

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