



3. Akulume, M., & Kiwanuka, S. N. (2016). Health Care Waste Segregation Behavior among Health Workers in Uganda: An Application of the Theory of Planned Behavior. *Journal of Environmental and Public Health*, 2016, 8132306.

<https://doi.org/10.1155/2016/8132306>

4. Barrih, Y. A. M. (2022). The Impact of Applying Medical Waste Management Standards on Infection Prevention and Control in the Hospitals of Ibb City. (Unpublished Master's thesis). Yemeni Academy for Graduate Studies. Retrieved from

<https://21umas.edu.ye/wp-content/uploads/2022/12/The-Impact-of-Ap-plying-Medical-Waste-Management-Standards-on-Infection-Prevention-and-Control-in-the-Hospitals-of-Ibb-City-3.pdf>

5. Dawood, M. H. M. (2010). A Study on Medical Waste Management in the Hospitals of Shendi City. *Shendi Journal of Humanities*, 1(1), 1-15. Retrieved from

https://journals.ush.edu.sd/shendi/wp-content/uploads/sites/2/2018/01/ush_journal_Study-of-Medical-Waste.pdf



disposal, and high-quality Personal Protective Equipment (PPE). This directly addresses the “Perceived Behavioral Control” component of the TPB by removing physical barriers to safe practice.

Establish Clear Policies and Standard Operating Procedures (SOPs): A written, simplified guidance manual should be developed that outlines the hospital’s policy and procedures for handling medical waste at all stages (segregation, collection, transport, storage, and disposal). This manual must be accessible to all staff and its implementation must be monitored. This creates a clear environmental health and safety framework for all employees.

Promote a Culture of Safety and Effective Supervision: Department heads and supervisors must play an active role in monitoring staff compliance with safe practices, providing immediate feedback, and encouraging the reporting of any incidents or difficulties. Safety must become an integral part of the daily work culture, shifting the focus from a reactive to a proactive approach to environmental risk management.

Conduct Future Research: The study recommends conducting further research to include other hospitals in Benghazi and conducting longitudinal studies to assess the long-term impact of implementing training programs and new policies.

5.3. Conclusion

The awareness of healthcare workers is the cornerstone of any effective medical waste management system. This study has revealed a pressing need for organized interventions to raise the level of awareness, particularly in its practical and applied aspects, at the Children’s Hospital in Benghazi. Investing in staff training and providing a safe and supportive work environment is not only an ethical and legal obligation but also a necessity for protecting the health of children, patients, workers, and the community as a whole. From an environmental health perspective, failure to do so represents a significant and preventable public health threat. The findings underscore that a systemic, multi-faceted approach is essential to bridge the gap between knowing what to do and actually doing it, thereby safeguarding both human and environmental health.

REFERENCES

1. World Health Organization. (2018). Health-care waste. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/health-care-waste>
2. Al-Allaqi, A., & Ali, M. (2025). Assessment of Handling Methods for Hazardous Medical Waste at Zawiya Medical Educational Center. *Libyan Journal of Science and Technology*, 10(1), 1-12. Retrieved from <https://www.stcrs.com.ly/istj/article-details.php?id=1178>



to environmental contamination and public health risks. This echoes the findings of Dawood (2010) [5] regarding the lack of a clear understanding of waste hazards among some workers.

Second, concerning attitudes, it was noteworthy that there were high positive attitudes across all sample categories. This suggests that healthcare workers, in principle, recognize the importance of proper waste management and feel a sense of responsibility. However, these positive attitudes do not fully translate into actual practices, a phenomenon known in the literature as the “Attitude-Behavior Gap.” This gap can be explained through the lens of the Theory of Planned Behavior (TPB). Specifically, the “Perceived Behavioral Control” may be low. In other words, even with a positive attitude, workers may perceive barriers that prevent them from applying correct practices, such as a lack of containers, work pressure, or the absence of clear policies. These barriers are critical environmental health determinants that directly influence behavior.

Third, with respect to practices, the results revealed that the level of actual practice (68%) is the weakest link in the awareness chain. This is fully consistent with the study by Al-Allaqi and Ali (2025) [2], which observed poor implementation of approved procedures. The lack of significant differences attributable to years of experience,

contrasted with the substantial differences related to training, is conclusive evidence that safe practice is not a behavior acquired through spontaneous experience but a skill that requires structured and continuous education. The high percentage (70.3%) of those who had not received training is the most potent explanation for the suboptimal level of practice. This highlights a systemic failure to institutionalize environmental safety protocols.

5.2. Recommendations

Based on the findings, the study recommends the following:

Develop and Implement Mandatory and Continuous Training Programs: Comprehensive and targeted training programs must be designed for all categories of healthcare workers, with a special focus on auxiliary staff such as cleaners. These programs must cover both cognitive aspects (waste types, risks, environmental impact) and practical skills (segregation techniques, use of PPE). The programs should be periodic to ensure the continuous updating of information and skills, reinforcing a culture of environmental responsibility.

Provide Necessary Infrastructure and Resources: The hospital administration must ensure the provision of all necessary supplies for safe waste management. This includes a sufficient number of clearly labeled, color-coded containers at all points of waste generation, safety boxes for sharps



Figure (4) illustrates a gap between knowledge and attitudes on the one hand, and practices on the other, where the compliance rate in actual practices is lower compared to the high levels of knowledge and attitudes.

4.2. Hypothesis Testing Results

4.2.1. Differences by Profession

The results of the One-Way ANOVA showed statistically significant differences (at a significance level of $\alpha \leq 0.05$) in the level of knowledge and practices among the different professional categories. The differences were in favor of doctors and nurses compared to technicians and cleaning staff. However, there were no statistically significant differences in attitudes, indicating that all categories share an awareness of the importance of the topic.

4.2.2. Differences by Years of Experience

The results did not show any statistically significant differences in the levels of knowledge, attitudes, or practices attributable to the variable of years of experience. This may indicate that practical experience alone is not sufficient to increase awareness or improve practices in the absence of targeted training.

4.2.3. Differences by Previous Training

The results of the Independent Samples t-test showed statistically significant differences (at a significance level of $\alpha \leq 0.05$) between those who had received training and those who had not in all aspects of awareness (knowledge, attitudes, and prac-

tices). The group that had received training recorded significantly higher means in all sections. This result confirms the crucial role of structured training in raising awareness and improving practices.

5: DISCUSSION AND RECOMMENDATIONS

5.1. Discussion of Results

This study provides a comprehensive insight into the awareness of healthcare workers regarding medical waste management at the Children's Hospital in Benghazi. The findings are consistent with much of the previous literature, which has highlighted a significant gap between knowledge and practice in the field of medical waste management.

First, regarding knowledge, the study revealed a relatively good overall knowledge level (72%), but this is insufficient to ensure completely safe practices. This finding aligns with the study by Barrih (2022) [4], which emphasized knowledge as a fundamental pillar. The pronounced knowledge gap among different professional categories, particularly the low scores among cleaning staff, represents a critical vulnerability in the waste management system. This group often has the most direct contact with waste during its final stages of collection and transport. From an Environmental Health perspective, this is a major concern, as improper handling by any single group can compromise the entire system, leading



As the figure shows, doctors recorded the highest level of knowledge, followed by nurses, then technicians, while cleaning staff recorded the lowest level of knowledge, indicating a clear knowledge gap between the different categories.

4.1.3. Answering the Second Research Question: Attitudes

The results showed that the sample members generally have positive attitudes towards the importance of proper medical waste management. The overall mean of the attitude section scores was (4.1 out of 5), or 82%. The majority of participants strongly agreed with statements such as “Proper medical waste management is everyone’s responsibility” and “I feel a personal re-

sponsibility to protect patients and the environment.” This indicates the existence of an internal motivation and a desire to comply, but it may not always translate into actual practice.

4.1.4. Answering the Third Research Question: Actual Practices

The analysis of the practice section revealed a discrepancy between positive attitudes and actual practices. The overall mean of the practice section scores was (3.4 out of 5), or 68%. Although the majority of participants reported that they always adhere to wearing gloves, adherence to other practices such as the precise segregation of all types of waste at the point of generation was lower.

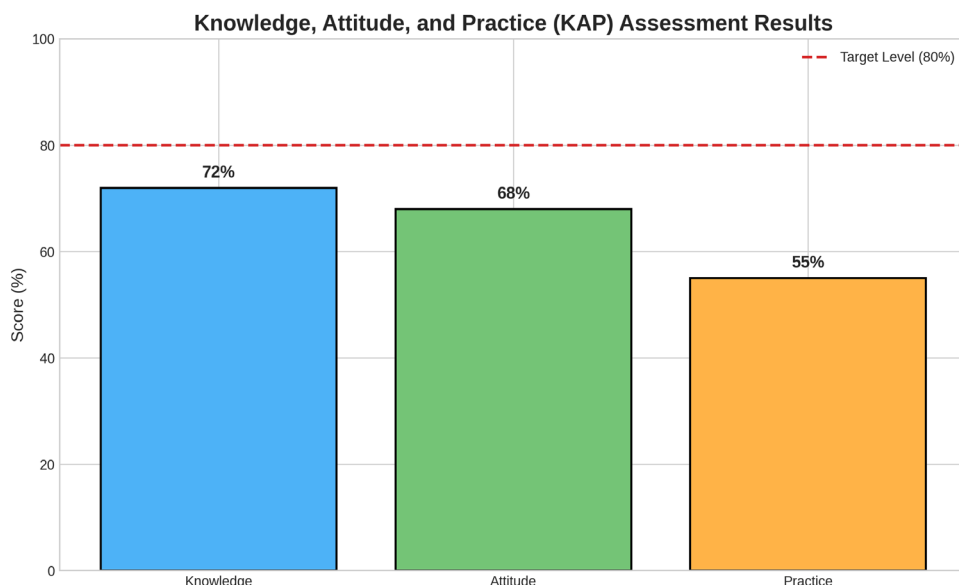


Figure (4): Summary of Knowledge, Attitude, and Practice (KAP) Assessment Results



Figure (3): Comparison of Knowledge Levels among Different Professional Categories (hypothetical data for illustration)



It is noted from the table that the nursing category constitutes the largest proportion of the sample (47.1%), which is consistent with the staffing structure in most hospitals. It is also noted that a large proportion of the sample (70.3%) has not received specialized training in medical waste management, which is a key observation.

4.1.2. Answering the First Research Question: Level of Knowledge

To assess the level of knowledge, the mean scores of the participants in the knowledge section were calculated. The results showed that the overall mean of knowledge among the sample members was (7.2 out of 10), or 72%. The following chart illustrates the knowledge levels among the different professional categories.



the questionnaires to the selected sample members. The objectives of the study were explained to the participants, and they were assured of the confidentiality of their data and that it would be used for scientific research purposes only. The questionnaires were collected after being completed by the participants for analysis.

3.6. Statistical Analysis Methods

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) software. The following statistical methods were used:

Descriptive Statistics: Frequencies, percentages, means, and standard deviations were used to describe the characteristics of the study sample and to answer the research questions related to the levels of knowledge, attitudes, and practices.

Inferential Statistics: The Independent Samples t-test and One-Way Analysis of Variance (ANOVA) were used to examine the differences in awareness means that are attributable to demographic and professional variables.

4: RESULTS AND ANALYSIS

Here it presents a detailed presentation of the results obtained after analyzing the data collected through the questionnaires distributed to the study sample, with the aim of answering the research questions and testing its hypotheses.

4.1. Descriptive Statistics Results

4.1.1. Characteristics of the Study Sample

150 questionnaires were distributed, and 138 were returned, for a response rate of 92%. The following table shows the distribution of the sample members according to demographic and professional variables.

Variable	Category	Number (n=138)	Percentage (%)
Profession	Doctors	30	21.7%
	Nurses	65	47.1%
	Technicians (Lab, Radiology)	23	16.7%
	Cleaning Staff	20	14.5%
Years of Experience	Less than 5 years	55	39.9%
	5 - 10 years	48	34.8%
	More than 10 years	35	25.4%
Previous Training	Yes	41	29.7%
	No	97	70.3%



consisted of all medical and paramedical staff working in various departments of the Children's Hospital in Benghazi during the study period. This includes doctors, nurses, laboratory technicians, radiology technicians, pharmacists, and cleaning staff.

Study Sample: A stratified random sample was selected to ensure the representation of all categories of healthcare staff in the sample. The sample size was set at 150 individuals, distributed among the different categories in proportion to the size of each category in the hospital.

3.3. Study Instrument

A questionnaire was used as the main tool for data collection. It was designed after a comprehensive review of the relevant literature and previous studies, especially those that used the KAP model. The questionnaire was divided into four main sections:

Section One: Demographic and Professional Data: This includes variables such as age, gender, profession, years of experience, and previous training.

Section Two: Knowledge Assessment: This consisted of 10 closed-ended questions (true/false or multiple choice) to measure the participants' knowledge of the basic aspects of medical waste management, focusing on classification, risks, and environmental impact.

Section Three: Attitude Assessment: This consisted of 8 statements using a five-point Likert scale (from strongly agree to strong-

ly disagree) to measure the participants' attitudes towards the importance and responsibility of proper waste management from a public and environmental health perspective.

Section Four: Practice Assessment: This consisted of 8 questions about the frequency of certain practices (always, often, sometimes, rarely, never) to assess the participants' actual behavior in waste segregation, handling, and disposal.

3.4. Validity and Reliability of the Instrument

Face Validity: The questionnaire, in its initial form, was presented to a group of experts and reviewers in the fields of public health, environmental health, and hospital management to ensure the clarity, comprehensiveness, and relevance of the items to the study's objectives. Necessary modifications were made based on their feedback.

Reliability: The reliability of the study instrument was measured by applying it to a small pilot sample (20 individuals) from outside the main study sample, and then calculating Cronbach's Alpha coefficient. The reliability coefficient was 0.88, which is a high value indicating that the study instrument has a high degree of reliability and consistency.

3.5. Study Procedures

After obtaining official approvals from the administration of the Children's Hospital in Benghazi, the researcher distributed



management and infection control, which enhances the importance of awareness and correct practice.

In Sudan, a study conducted by Dawood (2010) [5] in the hospitals of Shendi city revealed an alarming reality. The results showed “a lack of a clear concept of the meaning of medical waste and its danger among most workers,” in addition to the lack of proper waste segregation and the absence of an infrastructure for treatment. These findings, although relatively old, reflect challenges that may be similar to those faced by the health sector in Libya.

2.2.3. Local (Libyan) Studies

A recent study conducted by Al-Allaqi and Ali (2025) [2] at the Zawiya Medical Educational Center showed a “clear deficiency in health and environmental awareness among the workers responsible for medical waste management,” in addition to “poor knowledge of the procedures approved by the World Health Organization.” The study also pointed to the breakdown of the medical incinerator, which exacerbates the problem of final waste disposal. This study is the closest to our current research topic and confirms the existence of a gap in awareness and practice in the Libyan context.

2.3. Commentary on Previous Studies and the Research Gap

Most previous studies agree on the existence of a lack of awareness and practices related to medical waste management

among healthcare workers in various countries, especially in developing nations. The importance of organizational factors such as providing training and resources emerges as a decisive factor in enabling correct behavior. Although there are Libyan studies that have addressed the topic in other cities, there is no specialized study—to the researcher’s knowledge—that has focused on the awareness of healthcare workers at the Children’s Hospital in Benghazi. This study is distinguished by its focus on a sensitive health facility (a children’s hospital) and by its attempt to integrate the (KAP) and (TPB) models to provide a deeper understanding of the problem, thus filling an important research gap in this field.

3: RESEARCH METHODOLOGY AND PROCEDURES

3.1. Research Design

To achieve the study’s objectives, a descriptive-analytical method was adopted. This approach is suitable for the nature of the current study, as it aims to accurately describe the phenomenon of “Healthcare Workers’ Awareness of Medical Waste Management” and to analyze the collected data to draw scientific conclusions about the relationship between different variables. The study was designed as a cross-sectional study to collect data from the study sample at a specific point in time.

3.2. Study Population and Sample

Study Population: The study population

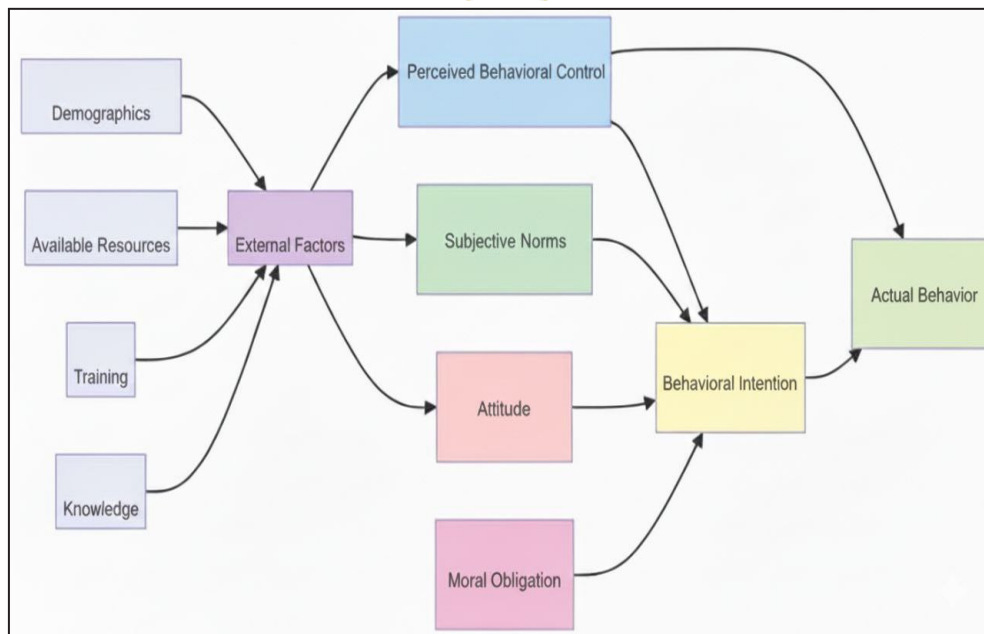


Figure (2): Theory of Planned Behavior Model and its application to medical waste management

2.2. Previous Studies

A number of previous studies at the international, regional, and local levels have been reviewed to understand the different dimensions of the problem of healthcare workers' awareness of medical waste management.

2.2.1. International Studies

A study conducted in Uganda by Akulume and Kiwanuka (2016) [3] to apply the Theory of Planned Behavior to the behavior of medical waste segregation found that the theory succeeded in explaining 52.5% of the variance in behavior. "Behavioral intention" was the strongest influencing factor, followed by "perceived behavioral

control." The study indicated that factors such as the level of the health facility and its ownership significantly affect practices, confirming the importance of organizational factors alongside individual factors.

2.2.2. Regional (Arab) Studies

In Yemen, Barrih (2022) [4] studied the impact of applying medical waste management standards on infection control in the hospitals of Ibb city. The study aimed to determine the level of knowledge and awareness among medical practitioners. Although the study did not publish its quantitative results in detail in the available abstract, it confirms a direct relationship between proper waste



tion of more environmentally responsible attitudes, ultimately reflected in improved

daily practices to protect the environment and public health.

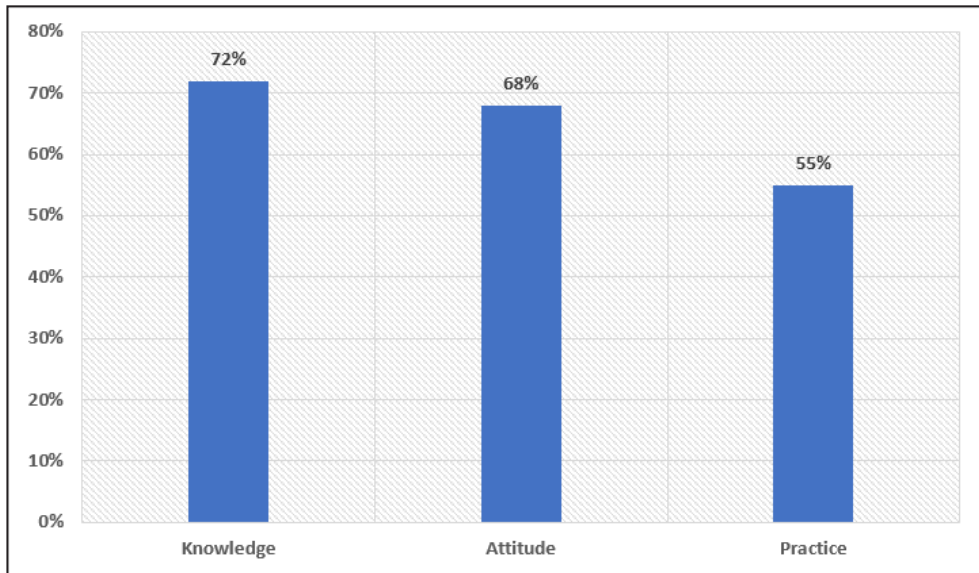


Figure (1): Knowledge, Attitude, and Practice (KAP) Assessment Model

2.1.2. Theory of Planned Behavior (TPB)

This theory provides a more detailed framework for understanding the determinants of behavior. The theory suggests that “behavioral intention” is the immediate determinant of behavior, and this intention is influenced by three main factors:

Attitude Toward Behavior: The individual’s positive or negative evaluation of performing the behavior (e.g., “segregating medical waste is beneficial and important”).

Subjective Norms: The individual’s perception of social pressure from significant others (colleagues, supervisors) to perform or not perform the behavior.

Perceived Behavioral Control: The per-

ceived ease or difficulty of performing the behavior, which is related to the availability of resources and opportunities (such as the availability of color-coded containers and training).

Some researchers have added a fourth factor, Moral Obligation, which reflects a sense of personal responsibility. This theory is particularly useful in this study because it not only measures knowledge and practices but also delves into the psychological and social motivations that drive the behavior of healthcare workers.



mental awareness and health-related practices.

Practical Significance:

It provides accurate data for policymakers to formulate effective environmental and health policies.

It assists in developing specialized training programs in Environmental Health.

It contributes to enhancing professional and environmental safety within healthcare facilities.

Environmental Significance:

It aids in protecting the local environment from pollution caused by medical waste.

It promotes the concept of environmental sustainability within the healthcare sector.

It safeguards natural resources and ecosystems from degradation.

1.6. Definition of Terms

Medical Waste: All waste generated by healthcare facilities, whether hazardous or non-hazardous, which requires special treatment to protect the environment and public health.

Environmental Health: A branch of public health concerned with the study, assessment, and control of environmental factors that may adversely affect human health and ecosystems.

Environmental Awareness of Healthcare Workers: The extent of awareness, knowledge, attitudes, and practices of healthcare professionals regarding the environmental impacts of their professional activities and

their responsibilities in environmental protection.

Sustainable Medical Waste Management:

A comprehensive system for handling medical waste that considers environmental protection, public health, and economic sustainability.

2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Theoretical Framework

The management of medical waste is a complex organizational and health behavior influenced by a range of individual, organizational, and environmental factors. To systematically understand these factors, this study is based on two main theoretical models: the Knowledge, Attitude, and Practices (KAP) Model, and the Theory of Planned Behavior (TPB).

2.1.1. Knowledge, Attitude, and Practices (KAP) Model

This model is applied within the context of Environmental Health and posits that knowledge of environmental and health risks forms the basis for developing positive attitudes toward environmental protection, which in turn leads to the adoption of environmentally friendly practices.

In the context of this study, the model implies that increased knowledge among medical personnel regarding the environmental impacts of medical waste on ecosystems and public health will lead to the forma-



risk of nosocomial (hospital-acquired) infections, expose healthcare workers to occupational hazards, and contaminate the environment surrounding the hospital. Local studies in other Libyan cities, such as the study by Al-Allaqi and Ali (2025) at the Zawiya Medical Center [2], have indicated a clear lack of health and environmental awareness among workers. Therefore, this study aims to systematically and scientifically investigate the reality of healthcare workers' awareness at the Children's Hospital in Benghazi, and to determine the extent and dimensions of the problem from an environmental health standpoint.

1.3. Research Questions

This study seeks to answer the following questions:

What is the level of knowledge among healthcare workers (doctors, nurses, technicians, cleaning staff) at the Children's Hospital in Benghazi regarding the correct concepts and practices of medical waste management?

What are the attitudes of healthcare workers towards the importance of proper medical waste management and its associated risks?

What are the actual practices followed by healthcare workers in their daily handling of medical waste within the hospital?

Are there statistically significant differences in the level of awareness (knowledge, attitudes, practices) attributable to demo-

graphic and professional variables (such as profession, years of experience, and prior training)?

1.4. Objectives of the Study

The objectives of this study are:

To assess the level of knowledge among healthcare workers at the Children's Hospital in Benghazi regarding medical waste classification, risks, and safe handling methods.

To explore the attitudes of healthcare workers towards their responsibilities and role in the safe management of medical waste.

To identify the current practices followed by healthcare workers in the segregation, handling, and storage of medical waste.

To provide practical, evidence-based recommendations to improve awareness and enhance medical waste management practices in the hospital, with a focus on environmental health and safety.

1.5. Significance of the Study

The significance of this study is reflected in the following points from the perspective of

Environmental Health:

Scientific Significance:

It contributes to bridging a knowledge gap in local literature related to Environmental Health and medical waste management.

It applies established theoretical models within the context of local Environmental Health.

It offers a scientific framework for understanding the relationship between environ-



1: INTRODUCTION

1.1. Background to the Study

The management of medical waste constitutes one of the most significant challenges in the field of Environmental Health at the global level. Waste generated from healthcare activities poses a direct threat to public health and ecosystems if not managed scientifically and safely. According to the World Health Organization, approximately 85% of waste produced by healthcare facilities is general non-hazardous waste, while the remaining 15% is classified as hazardous waste, which may be infectious, toxic, or radioactive [1].

From an Environmental Health perspective, the fundamental issue lies in the potential for widespread environmental contamination and occupational hazards faced by healthcare workers. Improper disposal of medical waste can lead to soil and water resource contamination through leachate from waste dumps, as well as air pollution resulting from uncontrolled incineration of medical waste. This directly impacts the health of communities beyond hospital boundaries and threatens ecological balance.

The improper handling of medical waste does not only affect the immediate hospital environment but extends to broader ecosystems. For example, residual chemicals and pharmaceuticals can leach into groundwater, compromising water quality and threatening aquatic life. Furthermore,

inappropriate incineration of medical waste may release toxic substances such as dioxins and furans, which are persistent organic pollutants that bioaccumulate in the food chain and adversely affect human and animal health over the long term.

Within the Libyan context, the healthcare system faces multiple challenges, among which medical waste management is a prominent issue that has not received adequate attention from an Environmental Health standpoint. In Benghazi, a city hosting numerous vital healthcare facilities, this topic assumes particular importance due to the intensity of medical activities and the volume of waste generated. The Children's Hospital in Benghazi is considered an environmentally and medically sensitive facility owing to the nature of the population it serves; children are more vulnerable to environmental and health hazards, thereby amplifying the importance of implementing safe and environmentally sound practices in medical waste management.

1.2. Problem Statement

Preliminary observations suggest a potential deficiency in the awareness level of healthcare workers at the Children's Hospital in Benghazi regarding the importance and hazards of medical waste management. There appears to be a weakness in the application of safe practices for segregation, collection, storage, and disposal. This deficiency, if confirmed, could lead to an increased

وعي العاملين في مجال الرعاية الصحية بإدارة النفايات الطبية في مستشفى الأطفال في بنغازي

د. ريم علي الزردومي *

الملخص:

تقيم هذه الدراسة مستوى وعي العاملين في مجال الرعاية الصحية بإدارة النفايات الطبية في مستشفى الأطفال بمدينة بنغازي، ليبيا. اعتمدت الدراسة على المنهج الوصفي التحليلي، باستخدام استبيان تم توزيعه على عينة عشوائية طبقية مكونة من 150 من العاملين في مجال الرعاية الصحية، بما في ذلك الأطباء والممرضون والفنيون وعمال النظافة، وبمعدل استجابة بلغ 92%. تم بناء الإطار النظري للدراسة على نموذج المعرفة والمواقف والممارسات (KAP) ونظرية السلوك المخطط (TPB). يهدف البحث إلى تقييم المعرفة والمواقف والممارسات الفعلية للعاملين في مجال الرعاية الصحية فيما يتعلق بفرز النفايات الطبية ومناولتها والتخلص منها.

النتائج الرئيسية:

المعرفة: وُجد أن المستوى العام للمعرفة كان متوسطاً (72%). ومع ذلك، توجد فجوة معرفية كبيرة بين الفئات المهنية المختلفة، حيث أظهر الأطباء أعلى مستوى من المعرفة، بينما سجل عمال النظافة أدنى مستوى.

المواقف: أظهر العاملون في مجال الرعاية الصحية بشكل عام مواقف إيجابية (82%) تجاه أهمية الإدارة السليمة للنفايات الطبية، مع شعور عالٍ بالمسؤولية الشخصية.

الممارسات: كشفت الدراسة عن فجوة ملحوظة بين المواقف الإيجابية والممارسات الفعلية، حيث كان متوسط درجة الممارسة هو الأدنى (68%).

العوامل المؤثرة: وجد البحث أن التدريب المسبق كان له تأثير إيجابي ذو دلالة إحصائية على المعرفة والمواقف والممارسات.

التوصيات:

برامج تدريب إلزامية ومستمرة: تنفيذ برامج تدريبية شاملة لجميع العاملين في مجال الرعاية الصحية.

البنية التحتية والموارد: توفير الموارد اللازمة مثل الحاويات الملونة ومعدات الوقاية الشخصية.

سياسات واضحة: وضع ونشر إجراءات تشغيل قياسية واضحة ومكتوبة لإدارة النفايات الطبية.

ثقافة السلامة: تعزيز الإشراف الفعال والنهج الاستباقي لإدارة المخاطر.

الكلمات المفتاحية: إدارة النفايات الطبية، وعي العاملين في الرعاية الصحية، نموذج المعرفة والمواقف والممارسات، الفجوة بين الموقف والسلوك، الصحة البيئية.

*. أستاذ مشارك بقسم الصحة البيئية، كلية الصحة العامة، جامعة بنغازي، بنغازي، ليبيا.

**Healthcare Workers' Awareness of Medical Waste Management in the Children's Hospital, Benghazi.*****. Dr. Reem Ali Alzardomi.****Date of Receipt:** 06/01/2026**Date of Acceptance:** 04/02/2026**Date of Publication:** June 2026**ABSTRACT:**

This study assesses the awareness of healthcare workers (HCWs) regarding medical waste management at the Children's Hospital in Benghazi, Libya. It employs a descriptive-analytical method, using a questionnaire distributed to a stratified random sample of 150 HCWs, including doctors, nurses, technicians, and cleaning staff, achieving a 92% response rate.

The theoretical framework for the study is built upon the Knowledge, Attitude, and Practices (KAP) model and the Theory of Planned Behavior (TPB). The research aims to evaluate the knowledge, attitudes, and actual practices of HCWs concerning medical waste segregation, handling, and disposal.

Key Findings:

Knowledge: The overall knowledge level was found to be moderate (72%). However, a significant knowledge gap exists between different professional categories, with doctors showing the highest level of knowledge and cleaning staff the lowest.

Attitudes: HCWs generally demonstrated positive attitudes (82%) towards the importance of proper medical waste management, with a high sense of personal responsibility.

Practices: The study revealed a notable gap between positive attitudes and actual practices, with the overall practice score being the lowest (68%).

Influencing Factors: Previous training had a statistically significant positive impact on knowledge, attitudes, and practices.

Recommendations:

Mandatory and Continuous Training: Implementing comprehensive training programs for all HCWs.

Infrastructure and Resources: Providing necessary resources such as color-coded containers and Personal Protective Equipment (PPE).

Clear Policies: Establishing and disseminating clear, written Standard Operating Procedures (SOPs) for medical waste management.

A Culture of Safety: Promoting effective supervision and a proactive approach to risk management.

KEYWORDS: Medical Waste Management, Healthcare Workers' Awareness ,Knowledge, Attitude, and Practices (KAP) Model ,Attitude-Behavior Gap ,Environmental Health.

* Associate Professor, Department of Environmental Health, Faculty of Public Health, University of Benghazi, Benghazi, Libya.

* **corresponding author:** Dr. Reem Alzardomi.

DOI:<https://doi.org/10.37376/ajhas.vi5.7880>



Copyright©C2024University of Benghazi.

This.open.Access.article.is Distributed under a CC BY-NC-ND 4.0 licens.