

# Assessment of awareness regarding Bio-Medical Waste among Operation Theater staff of Children Hospital Lahore

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**Abstract:** This study is conducted to assess the knowledge about bio-medical waste among operation theatre staff of Children Hospital. The present study is Descriptive in nature regarding working in Operation Theaters. Convenient Sampling Technique was applied to gather data. This was a hospital based study in which staff members of both genders were included. The study population divided into four strata and these strata consisted of doctors (surgeons and anesthetists) and paramedical staff including nurses, operation theatre technicians and anesthesia technicians, sweepers. A total of 223 staff mem-bers were involved out of which there were 77 doctors, 62 nurses, 65 technicians and 19 sweepers. Their re-sponses checked by a Performa about problems in the management of operation theatre. Total of 223 staff members were enrolled awareness about bio-medical waste. The result showed that 65.84% staff members have satisfactory knowledge about bio- medical waste. And remaining staff have very basic knowledge. The awareness about BMW manage-ment among Children's Hospital Operation theater staff is satisfactory. But still they need to improve to ensure more patient safety by organizing seminars, workshops.

## 1 INTRODUCTION

Bio Medical waste refers to any type of waste research purposes pertaining to or in the fabrication or testing of biologicals. (Rawat et al., 2016). There are different categories of Bio Medical wastes on the basis of their density and proper weight. The World Health Organization has waste on several basis: waste caused by infections, Sharps, Pathological, Pharmaceutical, radioactive waste. (Arshad N. et al., 2011). **Hazards** The undiscerning disposal of bio-medical and disclosure to this kind of waste stimulates serious danger to human health and environment. Because the severity of this danger may further trigger high prevalence of diseases such as Human immunosuppressive virus (HIV). Hospital acquired infections (Nosocomial infections) also spread because of this reason. (Sharma *et al.*, 2013). **Current Possible Solution:** Bio-medical waste management has emerged as main problem and its major responsibility depends on its originator. The proper management of hospital generated waste has become talk of the town worldwide. The improper management of waste contributes in multiple issues like unpleasant scent, worms and typhoid etc. To duck these hazards, a strict waste management system should be implemented in health care facilities. Strict legislation on hospital waste management should be done. (Begum et al., 2015). It depends on four steps. **Collection:** begins in which the waste of different types like sharps, needles are separated from general waste in color-coded containers. It is important to check that Staff is wearing personal protective equipments and collecting the waste in respective color coded containers. **Transportation:** The next step is transportation of collected waste products. Advanced healthcare facilities uses case cart system for transportation of collected waste into waste department where they segregate the waste. **Segregation:** The segregation of waste is another challenge for any hospital. It must be segregated in properly covered areas and away from normal passages. **Treatment/Disposal:** The last and salient step in waste management cycle is its treatment. There are different ways to treat waste depending upon their nature. Like human anatomical waste should be disposed in incinerators. Body fluids should be autoclaved, liquid waste should be filtered and then land-fill. Each hospital has its own patterns of disposal depending upon their resources. (Aljibre et al., 2002).

## 2 LITERATURE REVIEW

Siti Nurshahida Nazli et al., (2014). In this study the questionnaire was used the participants who experienced self- needle injury and received adequate information regarding hospital waste management were more aware and conscious rather than those who received less information and were not properly aware of disposing clinical waste.

MC Yadavannavar et al., (2009) presented Bio-medical waste regarding awareness, behaviour, and routine negligence of medical staff in a tertiary health care system. In this cross-sectional study 334 employees were surveyed. Out of which 154 were teaching staff and 180 non-teaching staff. The study was statistically analyzed by using Chi-square test. The results showed that the teaching staff gave correct answers (97.4%) to questions among waste management than non-teaching staff (80%).

Njiru MW et al., (2013) conducted a study on practices on bio-medical waste. The duration of the study was more than six months. The total awareness among staff was 60%. The population was further divided into two groups, one for doctors and one for nurses. The awareness was 51% among doctors and it was quite low than nursing staff that was 65%.

Fawaz Pullishery et al., (2016) conducted a study on awareness on bio-medical waste management. In this study 157 participants from different professionals like doctors, nurses, laboratory technicians, surgeons, auxiliary staff, housekeepers and students were selected. This study concluded that the general knowledge about waste management among nurses, doctors, lab technicians was higher than sanitary staff. It further added that specific knowledge on waste management like color coding, collection, segregation, disposal among nurses and lab technicians was more than doctors.

Angus Nnamdi et al., (2015) conducted a study on healthcare waste of government and private health care workers about bio-medical waste management. 660 Validated Questionnaires formulated to measure results among participants. 187 were medical doctors, 44 were pharmacists, 317 were nurses and 77 were medical lab scientists. Out of 660 only 424 participants heard about waste management and its disposal. Results showed that the awareness about bio-medical waste among government professionals was 81.5% and in private professionals it was 57.3%.

Shashwati Nema et al., (2015) conducted a study on awareness and practices regarding waste management among hospital staff of a medical college hospital. The goal of this study was to check awareness among staff of hospital. Questionnaire included 32 questions and was distributed among 125 participants, 25 from each profession, like doctors, interns, Nurses, technicians. It concluded that information about general waste management was 72% among hospital staff and knowledge about specific waste management was quite poor.

Siddharudha Shivalli et al., (2014) conducted a study on health care waste management about qualitative and quantitative appraisal of nurses in a tertiary care hospital. This study categorized their knowledge into different scores. For excellent remarks (>70%), for good remarks (50-70%), for poor (<50%). 100 Nurses worked as participants in this research work. It was seen that 47% nurses scored excellent remarks. 19% nurses had poor remarks. 34% nurses had good remarks.

### 3 RESEARCH METHODOLOGY

The objective of was study to assess the awareness about bio-medical waste among staff of Operation Theater in Children Hospital Lahore.

It was a Descriptive study. **Inclusion criteria:** Medical staff from operation theaters were included in current study.

- Doctors 70-80
- Nurses 60-70
- Technicians 60-65
- Class IV Employee 15-20

**Exclusion criteria:** Those staff members who were newly inducted (less than one month) or Non-medical staff of Operation theatre were excluded. The study was conducted in operation theaters of CH&ICH. The duration of study was three months. A total of 223 staff members of Operation Theaters of Children Hospital and Institute of Child Health were involved. Data was collected by a Questionnaire from medical and paramedical personnel of Children Hospital, Institute of Child Health. This research was not funded by any organization. Proper approval of the study was taken from Ethical Committee. This research was analyzed by using software SPSS 24. Data was described in terms of frequencies and percentages.

### 4 RESULTS AND DISCUSSION

The present study is related with the Operation theaters. This research was done to assess the knowledge about biomedical waste management among staff Operation theater staff of respective hospital. In this study the volunteer doctors were 77 (34.5%), Nurses were 62 (27.8%), Technicians were 65 (29.1%) and class IV employees were 19 (8.5%).

Table 4.2 shows the awareness about Bio-medical waste among staff. 60.1% people answered in Yes. While 5.4% in No. and 34.5% volunteers said they do not know.

Table 4.3 shows basic knowledge of volunteers about BMW regulation agency. And 67.7% people answered correct.

Table 4.4 represents how much volunteers consider that BMW legislation is essential to know 59.6% answered yes.

Table 4.5 shows 39.3% people know when the amendments done in management rules.

Table 4.6 shows only 27.4% volunteers know when BMW rules were proposed. Other answers different.

Table 4.7 shows 62.3% people knows what is basic about BMW.

Table 4.8 shows out of 100% only 41.7% volunteers know for how long the waste material should be kept in hospital setting without its treatment.

Table 4.9 to 4.20 shows the key concept of biomedical waste its purpose, hazards, and proper management.

The basic knowledge about biomedical waste among staff is satisfactory. But still the hospital administration needs more effort to meet with the international standards. Hospital waste is a very basic challenge for any health care facility. The hospital must organize seminars, workshops and awareness campaigns among its staff for better results. Most of the staff do not pay attention towards biomedical waste because of lack of awareness.

The duration of the study was more than six months. The total awareness among staff was 60%. The population was further divided into two groups, one for doctors and one for nurses. The awareness was 51% among doctors and it was quite low than nursing staff that was 65%. This study was used as a concept among OT staff about biomedical waste. In my study used questionnaire and applied convenient sample technique. I find awareness as a whole among staff.

Dr. Ayesha Begum et al., (2015) shared a study on Knowledge about biomedical waste management among health care professionals. 175 health care professionals including doctors, nurses, allied health care professionals, technicians participated in this study. The results obtained were out of 175 only one fourth of them were aware about general waste information. And half of them were attentive to color coding system. The main issue that researchers felt during studies were lack of team work. I also compared this study in my work to assess the awareness about biomedical waste among my staff. I also used questionnaire. My volunteers were 223. And out of which 55.84% people are aware about biomedical waste. Some of them are more attentive towards color coding system.

## 5 FIGURES AND GRAPHS

Table 1. Do you think it is important to know about BM waste generation, Hazards and legislation?

Response	Frequency	Percentage
No	65	29.1
Yes	133	59.6
Not sure	25	11.2

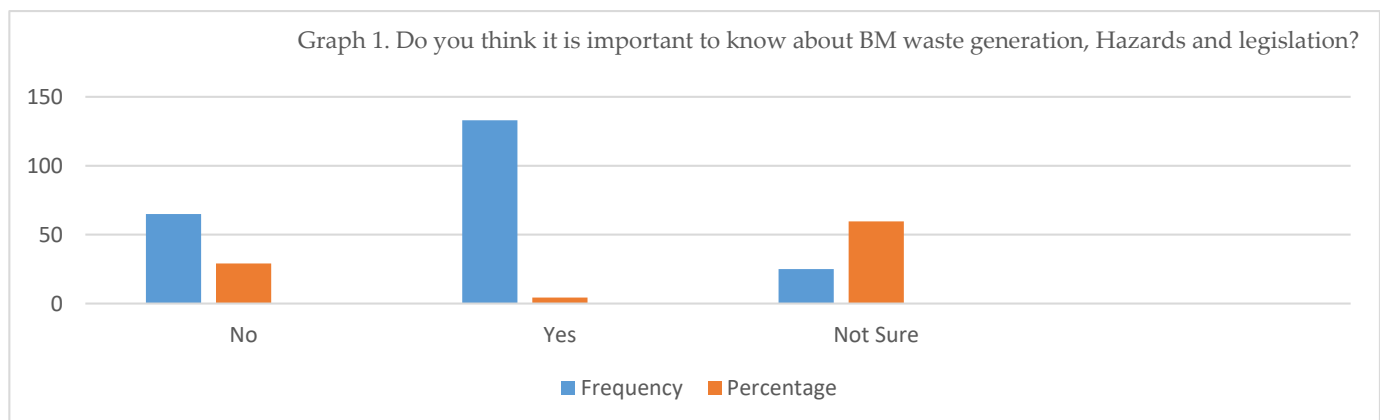


Table 2. According to the biomedical waste (Management and Handling) rules, waste should not be store beyond?

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
No	84	37.7
Yes	113	50.7
Some- times	26	11.7
12 hours	81	36.3
48 hours	93	41.7
72 hours	29	13.0
96 hours	20	9.0

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Table 3. Do you follow color coding for Bio-Medical waste?

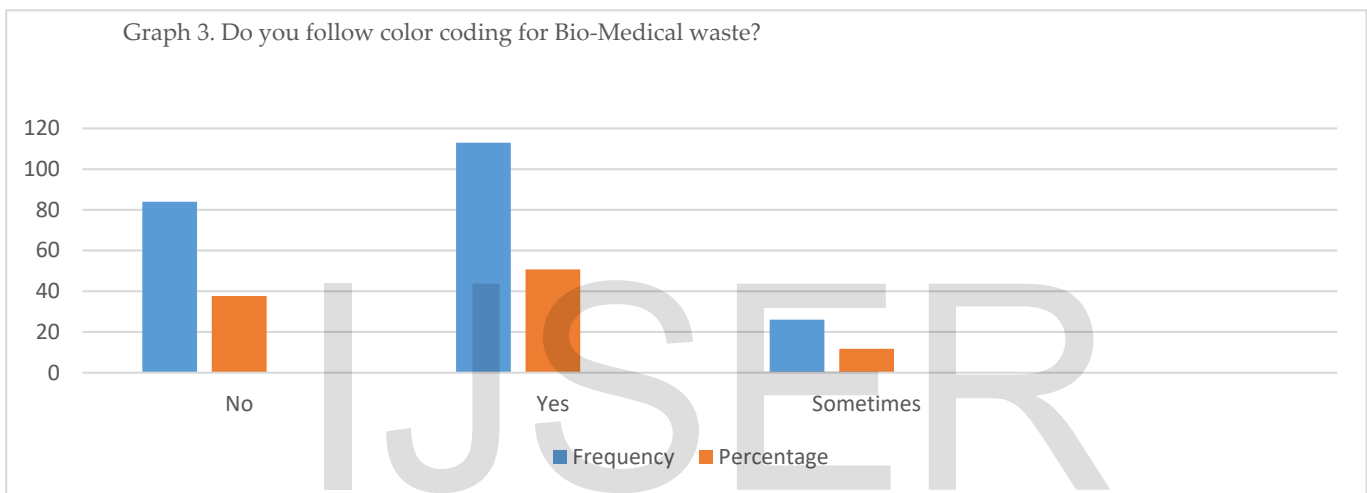
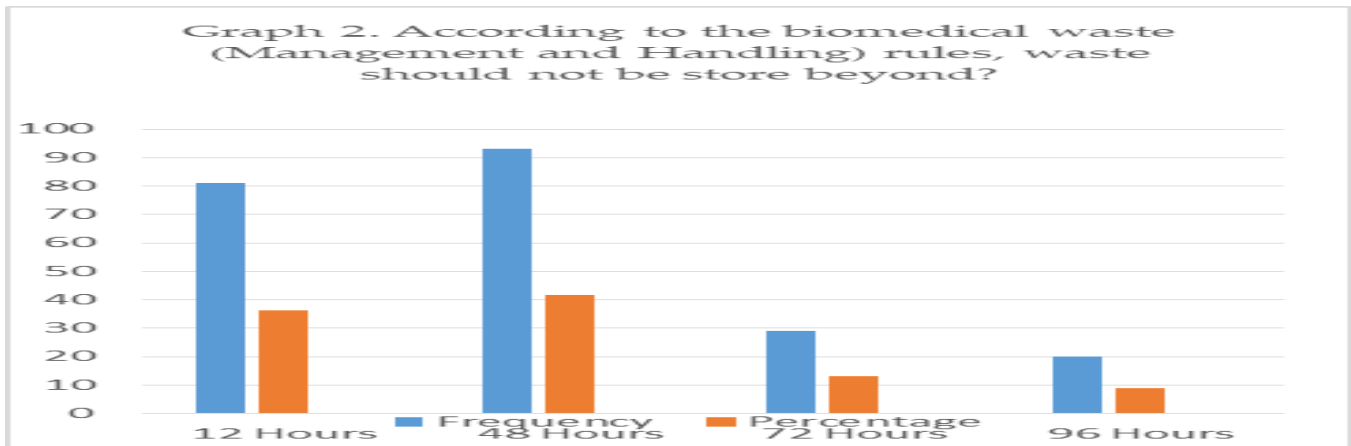
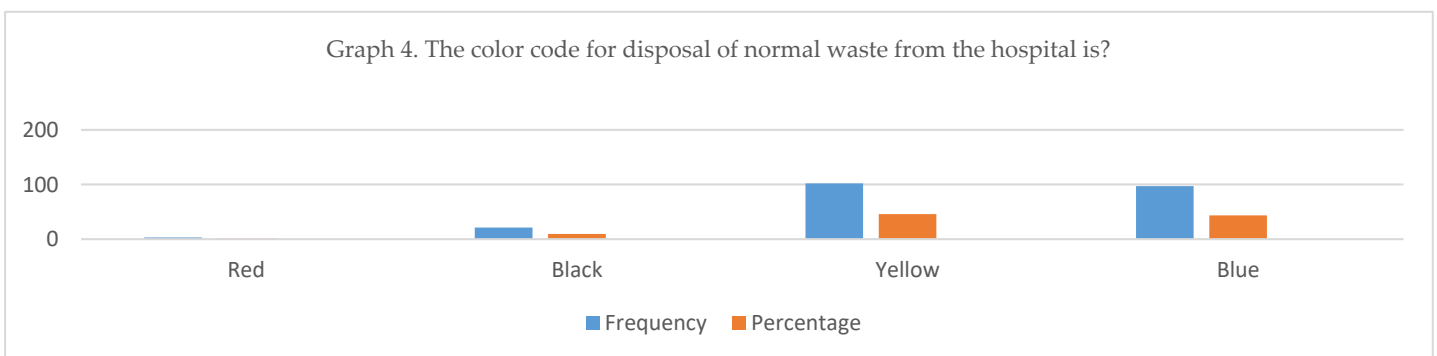


Table 4. The color code for disposal of normal waste from the hospital is?

Re- sponse	Frequency	Percentage
Red	3	1.3
Black	21	9.4
Yellow	102	45.7
Blue	97	43.5



## 6 Conclusion

The conclusion of this study is that the staff still needs to improve their knowledge and skills about handling biomedical waste to ensure their and patients safety. It is also essential to meet international Health Management SOP's.

## 7 LIMITATION AND SUGGESTION

Time duration was short. This study used a convenience sample technique and it will not be possible to determine if it is representative of all problems related to biomedical waste or not. Some participants refused to participate in study.

Following suggestion can be made after conducting this study

There should be a strict legislation about biomedical waste. There should be proper implementation system. There should be enough proper SOP's to follow. There should be education. The hospital should organize awareness programs, seminars, workshops about biomedical waste.

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