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Perception of Health Care Workers About Medical Waste Management Based on KAPAnalysis. A Case Study of Tertiary Care Hospital Lahore, Pakistan

Sadaf ljaz[a]*, Muhammad Nawaz Chaudhary[b]*, Sajid Rashid Ahmad[a] and Raja Muhammad Asim[c]

[a]College of Earth and Environmental Sciences, University of the Punjab, Lahore, Pakistan
[b]Department of Environmental Sciences and Policy, Lahore School of Economics, Lahore, Pakistan
[c]Pakistan Institute of Management, University of the Punjab, Pakistan

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Abstract. Medical waste management based on knowledge, attitude and practices (KAP) analysis, this paper evaluates healthcare of employees. A tertiary care hospital located in Lahore was selected for this purpose. The present studys consisted of doctors, nurses and paramedical and janitorial staff. Self administered assessments were used in this statistical cross-sectional investigation. Descriptive and inferential statistics were used to describe the results of sample of employee. A sample of 248 healthcare workers was drawn and analyzed by using descriptive statistics to check the respondents quantity and the proportion of responses about understanding, mindset and practice regarding managing biological waste. The Chi-square test and ANOVA test were applied to the data. For discovering, an independent sample t-test was used for the attitude of hospital employees and concluded that P (0.000) is far less than the degree of evidence (0.05) and a P-value compared with fewer than 0.05 and it is statistically significant. It indicates substantial evidence against the null hypothesis since there is a 5% chance that the null hypothesis is incorrect (and the outcomes are random). As a result, we reject the null hypothesis and accept the alternative hypothesis. It concludes that there is a difference between gender and attitude toward healthcare workers perception of medical waste management. Females have a better and more positive attitude toward medical waste management than male employees. The Chi-square method was conducted to test the association between respondents education and knowledge about medical waste management. The P (0.000) value is less than the significance level of significance a (0.05), which mean there is no association between education and understanding of medical waste management. One way ANOVA test was applied to find out the significant difference between respondents experience and healthcare sewage treatment in theory and practice as the $P > a$ value of (0.230) is greater than just the significant level (0.05), indicating a substantial discrepancy experience and practice of workers about the handling of medical waste. One-way ANOVA to discover, testing was conducted on the significant difference between respondents experience and an exercise about medical waste management. The P (0.230) value is more significant than just the significance level a (0.05), meaning employees with a profession like doctors and nurses have better attitudes toward medical waste management than other hospital staff.

Keywords: knowledge, attitude, practice, hospital waste management, health care workers, case study

lntroduction

Contagious sludge is primarily produced by hospitals around the world, posing significant environmental and public health risks (Queen *et al*., 2022). Biomedical waste organization (HWM) is an essential patient safety concern worldwide (Ayub *et al*., 2021). As little more than a result, proper disposal of healthcare waste using modern methods is strongly recommended (Khobragade, 2019). Domestic waste water is the worlds second most potent garbage (nuclear waste is the first) and it needs to be adequately handled by well-trained personnel (Dieng *et al*., 2022). Hospital trash is generated throughout patient care at clinics, district hospitals and academic institutions. Patients, communities and providers increasingly focus on improving healthcare waste worldwide (Wei *et al*., 2021). In developing countries, poor healthcare sewage treatment contributes to significant illness and mortality, particularly among children (Dhrifi, 2019). All trash provided by healthcare facilities, academic institutions, clinics, district hospitals and laboratories is classified as healthcare garbage.

*Author for correspondence;
E-mail: muhammadnawazchaudhry@yahoo.com; sadaf.sharif.ss@gmail.com

Medical waste can indeed be regarded as one of the most severe environmental concerns because it can hold potentially hazardous micro-organisms and presents a danger of transmission of infectious agents from healthcare facilities to healthcare workers, patients and the general public (Zamparas *et al*., 2019). Professional medical waste management (MWM) is required to prevent detrimental consequences to human health, the community and the ecosystem (Mugabi *et al*., 2018). MWM controls waste from creation to final disposal, including separation, collection, transport and treatment (Barua and Hossain, 2021). MWM also be appropriately carried out in many developing countries with no clearly defined laws or operational standards (Hassan *et al*., 2022). It has been reported that the disposal of medical waste combined with municipal solid waste is more likely to occur in clinics due to the small amount of medical wastewater created, the expensive cost of collection and disposal and a lack of oversight from local authorities (Zhao *et al*., 2021). Each phase of HWM necessitates the use of professional techniques and standards. As a result, mis-handling any of these steps would result in a catastrophic collapse of the entire sewage treatment cycle. Overall, separation is the most crucial step in the hospital in which the waste collectors begin separating medical and non-medical trash, which is frequently overlooked by hospital staff (Exposto *et al*., 2022). Waste management practices among healthcare workers in hospitals in Korea do not meet the required criteria (Windfeld and Brooks, 2015). Factors such as education level and experience in relevant disciplines have been linked to knowledge, attitude and practices (K) among hospital workers (Sarani *et al*., 2016). In order to inform hospitals and other health organizations from developing countries in search of better handling of healthcare waste. It is necessary to explore and select appropriate Correlates of improved HWM (Ali *et al*., 2017). However, little is known about the numerous factors and their correlates responsible for poor K about HWM among healthcare workers in developing countries, including Afghanistan (Yazzie *et al*., 2019). This research has uncovered certain factors that could be addressed, while implementing the HWM system in hospitals in developing countries. In this survey study, we present the findings of KÀP for HCWM from one major hospital in Lahore, Pàkistàn.

The body of research has demonstrated inadequacies and non-compliance with sewage treatment principles at hospitals and disposal sites in developing countries, including south Africa. The National Health Act no. 61 of 2003, the Prevention and Control of Pollution Act no. 107 of 1998, the National Environmental Management Waste Act no. 59 of 2008, the national core specifications, the south African Institute of Principles and Norms the National Environmental Management Waste Act no. 59 of 2008 start regulating the governance of hazardous waste in south Africa. Such national legislations demand that waste generation be avoided and that if it cannot be avoided, it be minimized, recycled, reused or disposed of following local, national and international legislation and practices. In an ecologically friendly way, however, studies in south Africa, such as the national core standards, office of the Standards Health Compliance and Generic auditor reports, have found considerable complexities of HRW at various levels of healthcare facilities in various provinces.

Separating garbage among distinct colour scheme receptacles and afterward transporting that to its ultimate stop might have been an excellent way of managing with both the minimum recontamination (Hoffman, 2009). Physicians possess a higher conceptual understanding of hospital waste management, whereas nurses possess better and more efficient expertise (McDermott and Venditti, 2015). On-the-job education on everyday operating practices on a routine basis to improve compliance can help prevent the spread of infectious diseases. Separation and reduction of waste at source has improved its management by reducing contact with health workers (Yukalang *et al*., 2018).

The preponderance of the problem can be avoided if healthcare waste is handled correctly. Planning, organizational, administrative, financial, legal, technical and human capital development are all covered and their administration necessitates inter-discipline relationships. As a result, the study was performed only to evaluate universal healthcare employees' understanding, attitudes and practices inside a tertiary care teaching hospital in Lahore, Pakistan.

Their research has also been waiting for information on the following hypotheses:

H01. There is no association between gender and attitude towards treatment and clinical staff describes disposal performance differently.

H02. There is no association between education and knowledge about medical waste management.

H03. There is also no discernible change between workers experience and practice about handling medical waste.

H04. There is also no discernible change between profession and attitude concerning medical waste.

Materials and Methods

Research design. To obtain accurate information, this study used the descriptive research design which entails documenting the behavior of the covariate, while altering it in any way.

A self-structured questionnaire was designed and organized. The questionnaire is divided into four parts. First, section was demographic information about the respondents, age, profession, experience, qualification (education level) and working h/d. Second section was about the knowledge of hospital employee about medical waste management. Third section was about attitude towards the perception of health care staff regarding medical waste management and fourth section was about practice of workers regarding handling of medical waste. Within that study, many types of purchases have been used. Di-chotomous scale and conventional scale, for example. The method of analysis employed for this study is the relationships between variables. Questionnaire was filled by doctors, nurses ànd paramedical staff.

The janitorial staff was less educated or illiterate so the questionnaire was filled by researcher by taking interviews of workers. Convenience sampling was used. Physicàl survey *via* printed questionnaire was used for collection of data. Its ronbach's alpha statistics (0.80) demonstrated that the devices reliability coefficient was good and reliable. Experts completed this survey with the use of exploratory factor analysis.

Population and sample. Their report's targeted audience was just the employees (doctors, nurses, paramedical staff and janitorial staff) of a tertiary care hospital Lahore, Pakistan, location map shown in Fig. 1. Among the targeted population, 248 respondents were selected for collection of data.

Data analysis. SPSS version 15.0 had been used to support the findings and to assess the samples demographic profile and even the internal consistency of the construct. The responses of the participants to the sloe articles being presented descriptively, primarily in percentage and frequencies. After that, a test of normality was used to ensure that the data sets were

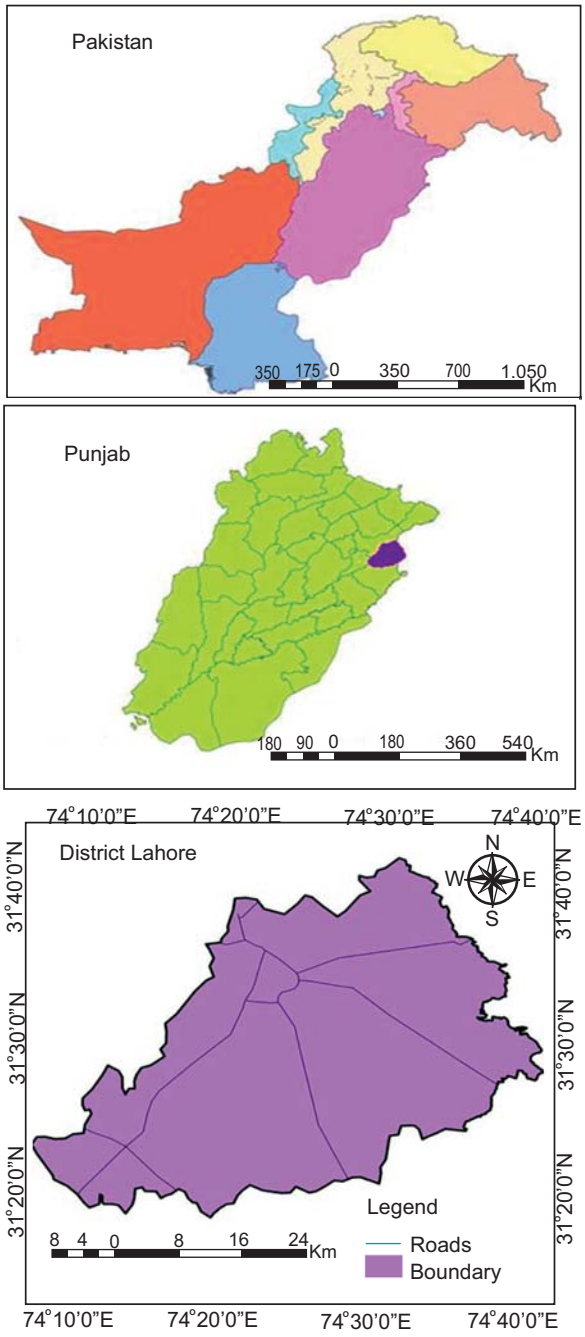

Fig. 1. Location map of Lahore.

related to the dependent variable when evaluating the classes, t-test, chi-square test and ANOVA test was performed.

Results and Discussion

Descriptive analysis. This pàrt deals with the concept and method concerned with summarization and

description of the important aspect of the numeral data. The area of study consists of the concentration of the data and the commputation of the few numerical quantities that provide information about the center of the data and indicate the spread of the observation.

Descriptive statistics of respondent's demographic information. Table 1 shows descriptive analysis of respondents' demographic information.

Table 1 shows the demographic information of respondents. A total of 248 questionnaires were filled out. Most respondents were female, 186 (75.0%) and 62 (25%) were male. Respondents between the age of 18-29 were 93 (37.5%), 79 (31.9%) between the age of 30-39, 46 (18.5%) between the age of 40-49 and 30 (12.1%) between the age of 50-100.

Out of 248 the 24 (9.7%) respondents were illiterate and 49(19.8%) respondents were under matric, 33 (13.3%) respondents had matric degree, 60 (24.2%) respondents had intermediate education, 57 (23.0%) respondents were bachelor, 16 (6.5%) employees having master's degree, only 1 (0.4%) respondent having Ph.D.

Table 1. Descriptive analysis of respondent's demographic information

Variables	Frequency (%)	Respondents n=248
Gender	Male	62 (25.0%)
	Female	186 (75.0%)
Age	18-29	93 (37.5%)
	30-39	79 (31.9%)
	40-49	46 (18.5%)
	>50	30 (12.1%)
Qualification	None	24 (9.7%)
	Under matric	49(19.8%)
	Matric	33 (13.3%)
	Intermediate	60 (24.2%)
	Bachelor	57 (23.0%)
	Masters	16 (6.5%)
	Ph.D	1 (0.4%)
	Diploma/Certificate	8 (3.2%)
Experience	>1 year	59 (23.8%)
	2-5 years	84 (33.9%)
	6-10 years	56 (22.6%)
	Above 10 years	49 (19.8%)
Profession	Doctors	48 (19.4%)
	Nurses	60 (24.2%)
	Paramedical staff	67 (27.0%)
	Janitorial staff	73 (29.4%)

degree and 8 (3.2%) employees had diploma/ certification of related job.

Out of 248 respondents the 59 (23.8%) employees had less than one year of experience, 84 (33.9%) respondents had 2-5 years of job experience, 56 (22.6%) employees had 6-10 years of job experience and 49 (19.8%) respondents had more than ten years experience. Out of 248 respondents, 48 were doctors, 60 were nurses, 67 were paramedical staff and 73 respondents belonged to janitorial staff.

Table 2 presents the descriptive statistics of those who responded to specific queries about knowledge regarding medical waste management. Out of 248 the 177 (71.4%) give answered yes, 63 (25.4%) answered no and 8 (3.2%) do not know the question. Do you know about the medical waste management plan and a team of your hospital? out of 248 the 136 (54.8%) respondents answered yes, and 109 (44.0%) no and 03(1.2%) answered do not know whether the legislation applies to hospital waste management in Pakistan. Out of 248 the 214 (86.3%) answered yes and 34 (13.7%) answered do not know about medical waste segregation. Out of 248 the 238 (96.0%) respondents answered yes and 04 (1.6%) answered no and 06 (2.4%) answered don't know that medical waste should not be mixed with general waste. Out of 248 the 232 (93.5%) answered yes and 16 (6.5%) answered no about the colour coding of medical waste bins. Out of 248 the 220 (88.7%) answered yes and 28 (11.3%) answered do not know that proper disposal of medical waste is essential. Out of 248 the 115 (46.4%) answered yes and 33 (53.6%) answered no about the bio-hazard sign. Out of 248 respondents, 83 (33.5%) answered yes and 165 (66.5%) answered no regarding awareness of bio-hazard signs. Out of 248 the 169 (68.1%) respondents answered yes and 18 (7.3%) answered no and 61 (24.6%) answered do not know about liquid waste disposal into toilet bowls. 248 (100%) respondents answered yes that medical waste should be put into a closed container. Out of 248 the 23 (9.3%) respondents answered yes, 209 (84.3%) answered no and 16 (6.5%) answered do not know that medical waste is recyclable. Out of 248 respondents, 191 (77.0%) respondents answered yes 28 (11.3%) answered no and 29 (11.7%) answered do not know about the treatment and disposal method of medical waste. Out of 248 respondents, 154 (62.1%) respondents answered yes and 54 (21.8%) answered no and 40 (16.1%) answered do not know that disposal of syringes and needles should be immediate and separate

Table 2. Descriptive statistics to check the respondents' frequency and percentage of responses about knowledge regarding medical waste management

Factors	Yes	No	Don't know
Do you know about medical waste management plan and team of your hospital?	177 (71.4%)	63 (25.4%)	8 (3.2%)
Do you know the legislation applicable to hospital waste management in Pakistan?	136 (54.8%)	109 (44.0%)	03 (1.2%)
Medical waste should be segregated at source.	214 (86.3%)		34 (13.7%)
Medical waste should not be mixed with general waste.	238 (96.0%)	04 (1.6%)	06 (2.4%)
Do you know about colour coding of medical waste bins?	232 (93.5%)	16 (6.5%)	
Proper disposal of medical waste is important.	220 (88.7%)		28 (11.3%)
Do you know about bio-hazard sign?	115 (46.4%)	133 (53.6%)	
Do you know about these signs?	83 (33.5%)	165 (66.5%)	
Liquid waste should not be disposed into toilet bowl.	169 (68.1%)	18 (7.3%)	61 (24.6%)
Medical waste should be put into a closed container.	248 (100%)		
Medical waste is recyclable.	23 (9.3%)	209 (84.3%)	16 (6.5%)
Do you know about the treatment and disposal method of medical waste?	191 (77.0%)	28 (11.3%)	29 (11.7%)
Disposal for syringes and needles should be immediate and separate from other medical waste.	154 (62.1%)	54 (21.8%)	40 (16.1%)
Medical waste can be kept in the hospital premises maximum for (48 h.)	132 (53.2%)	85 (34.3%)	131 (12.5%)
Medical waste includes infectious, hazardous, radioactive and general waste.	221 (93.1%)	08 (3.2%)	09 (3.6%)
Are you seeing a certain official medical waste management coaching?	63 (25.4%)	185 (74.6%)	
Do you know about the protocols after spillage of blood/bio hazardous materials?	147 (59.3%)	101 (40.7%)	

from other medical waste. Out of 248 respondents, 132(53.2%) respondents answered yes and 85 (34.3%) answered no and 131 (12.5%) answered do not know that medical waste can be kept in the hospital premises maximum of (48 h). Out of 248 respondents, 221 (93.1%) answered yes and 8 (3.2%) answered no and 9 (3.6%) answered do not know that medical waste includes infectious, hazardous, radioactive and general waste. Out of 248 respondents, 63 (25.4%) answered yes and 185 (74.6%) answered no. Have you had such an official collection and treatment. Out of 248 the 147 (59.3%) answered yes and 101 (40.7%) answered no about the protocols after the spillage of blood/bio-hazardous materials.

The percentage and frequency whenever various questions have been asked to the responses shared, in Table 3, about attitude towards medical waste management. Out of 248 respondents, 223(89.9%) answered yes, 6 (2.4%) answered no and 19(7.7%) answered do not know that safe/proper management of waste in the healthcare industry is indeed a problem. Out of 248 respondents, 230 (92.7%) answered yes and 18 (7.3%) answered no when asked about handling and disposal as the state's duty. About 248 (100%) respondents answered yes that medical waste management is a team work / no single class of people is responsible for it. Out of 248 respondents, 90 (36.3%) answered yes, 14 (5.6%) answered no and 144 (58.1%) answered do not know that the cost of adequately managing hazardous materials raises the capital gearing on healthcare staff, while 248 (100%) respondents answered yes that the collection of medical waste should be daily from the hospital storage area. Out of 248 respondents, 87 (35.1%) answered yes, 147(59.3%) answered no, 14 (5.6%) answered do not know about did we believe we are all in charge of Handling and disposal?, while 248 (100%) respondents answered yes that the collection of medical waste should be daily from the hospital storage area and 248 (100%) respondents answered yes that healthcare facilities should organize training programs on medical waste management. Appropriately labeled and marked with the bio-hazard sign. 248 (100%) respondents answered yes about safety precautions (PPE) can assist in decreasing the overall chance of disease. Out of 248 respondents, 233 (94.0%) answered no and 15 (6.0%) answered do not know that medical waste does not transmit infectious diseases.

Table 3. Descriptive statistics to check the respondents' frequency and percentage of responses about Attitude regarding medical waste management

Factors	Yes	No	Don't know
Safe / proper health-care garbage management is a challenge.	223 (89.9%)	06 (2.4%)	19 (7.7%)
Collection and disposal is the obligation of the state.	230 (92.7%)	18 (7.3%)	
Hospital waste management is a collaborative effort; really no person or group was solely accountable for that though.	248 (100%)		
The cost of properly managing biological waste raises the financial load on healthcare staff.	90 (36.3%)	14 (5.6%)	144 (58.1%)
All through the processing of hazardous material, care services employees should be appropriately safeguarded.	248 (100%)		
Would individuals suggest that hazardous material be collected in colour scheme bins?	188 (75.8%)	44 (17.7%)	16 (6.5%)
Would you consider yourself to be in charge of management of waste?	87 (35.1%)	147 (59.3%)	14 (5.6%)
Collection of medical waste should be on daily basis from hospital storage area.	248 (100%)		
Health care facilities should organize training programs on medical waste management.	248 (100%)		
Are you willing to attend medical waste management training programs?	248(100%)		
Medical waste containers should be properly labelled and marked with bio-hazard sign.	248(100%)		
Personal protective equipment (PPE) can help decrease a chance of disease.	248(100%)		
Medical waste does not transmit infectious diseases.		233 (94.0%)	15 (6.0%)

The various questionnaires were distributed again from the investigator's perspective, this graph shows the number of answers about practice towards medical waste management (Table 4). Out of 248 respondents, 233 (94.0%) answered yes and 15 (6.0%) did not know whether medical waste was disposed of according to the colour coding. Out of 248 respondents, 43 (17.3%) answered yes, 100 (40.3%) answered no and 105 (42.3%) answered need to learn about is proper disinfection of medical waste is carried out before final disposal. Out of 248 respondents, 155 (62.5%) answered yes and 93 (37.5%) answered no about personal protective equipment used when dealing with medical waste. Out of 248 respondents, 197(79.4%) answered yes and 51 (20.6%) answered do not know that sharps are disposed of in puncture-proof rigid containers. Out of 248 respondents, 62 (25.0%) answered yes, 141 (56.9%) answered no and 45 (18.1%) answered need to learn about the current practices of medical waste disposal in the healthcare facility correctly and safely. Out of 248 respondents, 188 (75.8%) answered yes, 44 (17.7%) answered no and 16 (6.5%) answered do not know about Vaccination (Hepatitis, Tetanus, COVID-19) for healthcare workers is provided by hospital management. Out of 248 respondents, 114 (46.0%) answered yes, 54 (21.8%) answered no and 80 (32.3%) answered do not know that Footpad is attached to all waste containers to avoid direct contact. Out of 248 respondents, 217 (87.5%) respondents answered yes, 16 (6.5%) answered no and 15 (6.0%) answered do not know that medical waste containers are labeled with bio-hazard symbols. Out of 248 respondents, 209 (84.3%) answered yes and 39 (15.7%) answered do not know that waste bins/containers are covered. Out of 248 respondents, 240 (96.8%) answered yes and 8 (3.2%) answered no that posters to guide users are available near medical waste containers. Out of 248 respondents, 243 (98.0%) answered yes and 5 (2.0%) answered no that medical waste bags are closed and sealed when they are 1/3 to 2/3 full. Out of 248 (100%) respondents answered yes about the transportation of medical waste to the hospital storage area/yellow room during non-busy. Out of 248 respondents, 212 (85.5%) answered yes and 36 (14.5%) answered no that Infectious and general waste was transported separately. Out of 248 150 (60.5%) respondents answered yes and 98 (39.5%) answered no. Did you dispose of fluid hazardous material within the bathroom? and 248 (100%) respondents answered yes to did you rapidly mop up incidents containing fluid biological waste according to protocol? Out of 248

Table 4. Descriptive statistics to check the respondents' frequency and percentage of responses about practice of medical waste management

Factors	Yes	No	Don't know
Is disposal of medical waste done according to color-coding?	233(94.0%)		15(6.0%)
Is proper disinfection of medical waste carried out before final disposal?	43(17.3%)	100(40.3%)	105(42.3%)
Is personal protective equipment used when dealing with medical waste?	155(62.5%)	93(37.5%)	
Sharps are disposed of in puncture-proof hard containers.	197(79.4%)		51(20.6%)
Is the current practice of medical waste disposal in the health care facility correct and safe?	62(25.0%)	141(56.9%)	45(18.1%)
Vaccination (hepatitis, tetanus, COVID-19) for health care workers is provided by hospital management	188(75.8%)	44(17.7%)	16(6.5%)
Foot pad is attached with all waste containers to avoid direct contact.	114(46.0%)	54(21.8%)	80(32.3%)
Medical waste containers are labelled with bio-hazard symbol.	217(87.5%)	16(6.5%)	15(6.0%)
Waste bins / containers are covered.	209(84.3%)	39(15.7%)	10
Posters to guide users are available near medical waste containers.	240(96.8%)	8(3.2%)	
Are medical waste bags closed and sealed when they are 1/3 to 2/3 full?	243(98.0%)	5(2.0%)	
Transportation of medical waste to Hospital storage area / yellow room is done during non-busy hours.	248(100%)		
Is Infectious and general waste transported separately?	212(85.5%)	36(14.5%)	
Would you dispose of fluid biological waste inside the bathroom?	150(60.5%)	98(39.5%)	
Did you rapidly mop up accidents containing fluid biological waste according to protocol?	248(100%)		
Is there any storage facility for medical waste present inside the hospital?	175(70.6%)	46(18.5%)	27(10.9%)
Are used needles recapped for reuse?	24(9.7%)	192(77.4%)	32(12.9%)
Medical waste management training programs are offered by the hospital management.	51(20.6%)	145(58.5%)	52(21.0%)
Separate registers and logs are maintained for proper record of medical waste and its disposal.	153(61.7%)	95(38.3%)	20
Medical history of health care workers is taken by hospital at the time of hiring.	207(83.5%)	14(5.6%)	27(10.9%)
Has your facility have written policy on medical waste management?	239(96.4%)		9(3.6%)

respondents, 175 (70.6%) respondents answered yes, 46 (18.5%) answered no and 46 (18.5%) answered do not know that there was any storage facility for medical waste present inside the hospital. Out of 248 respondents, 24 (9.7%) give answered yes, while192 (77.4%) give answered no and 32 (12.9%) answered do not know. Out of 248 respon-dents, 51 (20.6%) and answered yes, while145 (58.5%) answered give no and 52 (21.0%) answered do not know that hospital management offers medical waste management training programs. Out of 248 respondents, 153 (61.7%) answered yes and 95 (38.3%) answered do not know of separate registers and logs maintained for proper records of medical waste and its disposal. Out of 248 respondents, 207 (83.5%) respon-dents answered yes, while 14 (5.6%) give answered no and 27 give (10.9%) answered do not know about the medical history of healthcare workers taken by the hospital at the time of hiring. Out of 248 respondents, 239 (96.4%) give answered yes and 09 (3.6%) give answered whether your facility has a written policy on medical waste management.

T-test. H01. There is no difference between gender and attitude towards clinical waste management can be viewed differently by healthcare practitioners (Table 5).

Overall mindset among medical officers was investigated using an independent samples t. Because the P value (0.000) is less than the level of certainty (0.05), we reject the null hypothesis difference between gender and attitude towards clinical waste mangers: how do providers in the region see it? is rejected and our alternative hypothesis. There is difference between gender and attitude towards treatment and disposal management is characterized differently by hospital

Table 5. Independent sample t-test regarding attitude of respondents about medical waste management

Factors	Gender	N	M	S.D	t-test	Sig.(2 tailed)
Attitude	Male	62	25.5000	2.91829	5.813	0.000
Female	186	28.5645	3.79169			

workers. Female have better and positive attitude towards medical waste management as compared to male employees.

Chi-square. H02. There is no association between education and knowledge about medical waste management.

The Chi-square method was conducted to test the relationship between participants' schooling and their expertise in medical waste management of hospital employees. Because the value of P (0.000) is smaller than the significance level (0.05), the null hypothesis that, 'there is no such thing as the association between education and knowledge about medical waste management is rejected. An alternative hypothesis is accepted that there is an association between education and knowledge about medical waste management, which means employees with better and higher education backgrounds have better and more knowledge about medical waste management (Table 6).

One way ANOVA. H03. There is no significant difference between experience and practice of workers about handling of medical waste (Table 7).

For uncovering, a one-way ANOVA was used and analysis was conducted on the critical variable difference among respondents experience and exercise about medical waste management, the value of P (0.230) is greater than that of the probability value (0.05), so Because there is no such thing as a null hypothesis significant difference between experience and practice of workers about the handling of medical waste is accepted and there is indeed a big difference is indeed an alternate hypothesis. Between experience and practice of workers about handling medical waste rejected. This means all employees have the same practice regarding medical waste management.

Table 6. Chi-square test regarding knowledge of respondents about their perception of medical waste management

Factor	N	df	X2	P-value
Participant education *Knowledge	248	98	147.60	0.00

H04. So there's no discernible variation in attitude toward medical waste based upon occupation.

For uncovering, a one-way ANOVA was used and analysis was conducted on the important variable difference between respondents profession and attitude about medical waste management of hospital employees, because the value of P (0.000) is smaller than the level of significance (0.05), the null hypothesis that there really is no such thing as significant difference between profession and attitude regarding medical waste was denied, while the alternative hypothesis that "substantial differences exist" is accepted among profession and attitude regarding medical waste is accepted. Which means employees with profession like doctors and nurses have better attitude towards medical waste management as compared to the other staff like janitorial and paramedical (Table 8).

The knowledge of Surgeons, nurses and so many other employees is viewed differently; this difference can be attributed to various factors, including their level of formal education, job experience, training and practical

Table 7. One way ANOVA test regarding experience of respondents and practice about perception of medical waste management

Factor		Sum of squares	df	Mean square	F	Sig
Duration in service / Job Experience	Between Groups	12.997	9	1.444	1.314	.230
		261.612	238	1.099		
	Within groups	274.609	247			
	Total					

Table 8. One way ANOVA test about profession and attitude of employees regarding medical waste management

Factor		Sum of squares	df	Mean square	F	Sig
respondents	Between groups	139.550	23	10.735	15.931	.000
profession	Within groups	157.672	234	.674		
	Total	297.222	247			

involvement in hospital waste management. Doctors were judged to be more knowledgeable than other healthcare providers. When we compared paramedics to nurses, paramedics had a lower level of expertise. Owing to its medical labor obligations, all healthcare personnel, including physicians, nursing and several other paramedics, were better knowledgeable regarding institutional handling waste.

It is also observed that physicians' and nurses' attitudes toward handling clinical garbage are much better than janitorial and other paramedical staff. This is because of their excellent educational background and some training sessions they attended. It is also observed that the perceptions of healthcare workers that handling and managing medical waste are not the responsibility of a specific team. Everyone is responsible for managing waste.

During observation, it is noted that the staff's approach to health care workwer (HCW) is very Pity the lack of medical staff understanding of bio-hazard safety due to their poor towards the training sessions. Total of these problems would only be solved by assigning Employees with a different fund and proper instruction focused on dealing with medical waste in hospitals. The need for high educational attainment and great practice for healthcare employees cannot be overstated. Betterment in any organization, the best practices for dealing with medical waste should be followed. This is only achievable if the group's director imposes excellent commitment and dedication.

Conclusion

This qualitative study about KAP analysis among tertiary medical hospital health professionals revealed that female employees have a better and more positive attitude towards medical waste management than male employees. An analysis carried out between the education of employees with their knowledge regarding medical waste management found that employees with better and higher educational backgrounds had better and more knowledge about medical waste management. One-way ANOVA the exam has been used to discover the significant difference among respondents experience and practice about medical waste management as the value of P (0.230) is greater than the significance level (0.05), the null hypothesis there is no difference in rejected. A significant difference between the experience and practice of workers in handling medical waste is accepted and there is still a massive distinction is an alternate hypothesis between the experience and practice of workers about the handling of medical waste rejected. This means all employees have the same practice of medical waste management. One way ANOVA test was applied to find out the significant difference between respondents profession and attitude about medical waste management of hospital employees as a value of P (0.000) is less than the level of significance α (0.05), which means employees with better and higher educational background had a better attitude towards medical waste management.

In a nutshell, integrating environmental management into the running of a hospital is essential for improving standards in healthcare units along with increasing efficiency, satisfying requirements and minimizing cost. Arising from the above, the following recommendations are made:

- Provide and effectively monitor workers use of personal protective equipment. It is necessary to reduce their exposure to health risks and hospital waste.
- The government needs to enact a law to set up checks. A system for use as a hospital waste management system revealed waste contractors are not fit for hospital waste management.
- Existing waste management needs to be upgraded. Policies in hospitals are designed to meet today's realities.
- Training of hospital staff should be organized at regular intervals so that BMW management's understanding, attitude, and practices of HCWs are maintained and the quality of patient care is improved.

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