

International Journal of Biomedical Research

ISSN: 0976-9633 (Online); 2455-0566 (Print)

Journal DOI: <https://dx.doi.org/10.7439/ijbr>

CODEN: IJBRFA

Original Research Article

Assessment of knowledge, attitude and practices regarding Biomedical Waste Management amongst Intern doctors in New Civil hospital, Surat**Manali Shah*** and Summaiya Mullan*Department of Microbiology, Government Medical College, Surat, Gujarat, India*

QR Code

***Correspondence Info:**Dr. Manali Shah,
Department of Microbiology,
Government Medical College, Surat, Gujarat, India***Article History:****Received:** 21/01/2017**Revised:** 15/03/2017**Accepted:** 15/03/2017**DOI:** <https://dx.doi.org/10.7439/ijbr.v8i3.3890>**Abstract****Objective:** To assess knowledge, attitude and practice regarding Biomedical Waste Management amongst Intern Doctors.**Method:** It was a cross-sectional study conducted in New Civil Hospital, Surat, India. The study was conducted amongst 70 Intern Doctors. A pretested questionnaire of 18 questions, 6 each for knowledge, attitude and practice was given.**Result:** The results show that <20% has knowledge about categories, color coding and different wastes that are not included in Biomedical Waste Management Rules, 2016. Attitude shows good results. >50% has faulty practice regarding disposal of expired medicines, contaminated caps and masks and used syringes.**Conclusion:** As the knowledge and practice regarding Biomedical Waste Management amongst Intern Doctors was poor, periodic training and their evaluation is mandatory for better outcome.**Keywords:** Bio medical waste, Intern Doctors, KAP.**1. Introduction**

Biomedical waste is any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or research activities, which carries higher potential for infection and injury than any other type of infection. Inappropriate handlings of health care waste have serious public health issues. [1-4] Health care sector produces both hazardous and non hazardous waste. Hazardous waste management is of more concern.

After amendment of Biomedical Waste Management Rules in 2000, every concerned health personnel is expected to have proper knowledge, practice and capacity to guide others for waste collection and management, and proper handling techniques. Although there is an increased global awareness among health professionals about the waste hazards and proper management techniques but the level of awareness in India is still found to be unsatisfactory.[5-8]

Intern doctors, who have just completed their study and are not exposed enough clinically, are of more concern. Though they visit indoor and outdoor departments in their clinical posting, they lack some practical knowledge about biomedical waste management. They need to be made aware and trained enough for the same. With this view of context, this study has been carried out to assess the knowledge and awareness amongst Intern doctors in New Civil Hospital, Surat, which can help to add on their knowledge and practice further.

2. Material and Methods

This study was a hospital based cross-sectional study. It was conducted in New Civil Hospital, Surat, India. Study was done after getting approval from institutional ethical and scientific review board.

The study was conducted amongst Intern Doctors. Total 70 Intern doctors were included in the study. Interns were approached in their respective areas of posting from various clinical departments like surgery, medicine, obstetrics and gynecology, pediatrics, ophthalmology, orthopedics, psychiatry and dermatology.

They were given a preformed semi structured questionnaire based on Biomedical Waste management Rules guidelines, 2016. Questionnaire included total of 18 multiple choice questions, 6 each for knowledge, attitude and practice. Each question was given one point. Identity of Intern doctors were decoded by giving them dummy numbers. The KAP score was given for each knowledge, attitude and practice as favorable (>3 answers) and unfavorable (≤ 3 answers) according to their response. Data entry and analysis was done using Microsoft Excel sheet.

3. Results

Results of the study shows good attitude but poor knowledge and practices [9,10]. The results show that <20% has correct knowledge about number of categories of Biomedical Waste Management Rules, 2011 and 2016. Only 10% of Intern doctors knew about color coding of the waste management and different wastes which are not

included in biomedical waste management rules according 2016 guidelines. Knowledge about training and retraining of workers associated with waste management was also <40%. Almost >95% of intern doctors were aware of Biohazard symbol and 50% of them were having knowledge about Ministry who published rules for the same.

Attitude of intern doctors was comparatively good. Around 97% believed that safe management is a team work, whereas >90% agreed with the statement that safe management is not an extra burden on work. >60% did not agree with increase in financial burden of the hospital with safe management. Only around 50% of the intern doctors showed satisfactory attitude towards proper management of blood spillage.

Assessment of practice shows poor results. Hardly <30% had good practice regarding expired medicines and used syringes discarding. Around 51 % showed faulty practice regarding disposal of contaminated caps and masks, whereas 45 % showed poor response for chlorinated materials, whether they are to be incinerated or not. 80% showed appropriate practice regarding disposal of contaminated soiled waste. >85% were having good practice regarding recapping and discarding of used needles.

Table 1: Knowledge and awareness of Intern doctors regarding Biomedical Waste Management

No	Question	% of good response
1	How many categories are there in Biomedical waste management according to 2011 and 2016 guidelines respectively?	15.71%
2	What is the color coding of bags in Biomedical waste management according to 2016 rules?	10%
3	Which of the following is the symbol of Biohazard?	97.14%
4	Which wastes are not included in Biomedical waste management rules?	10%
5	Biomedical Waste Management Rules, 2016 has been published by:	50%
6	At what time interval Biomedical waste management (health care) workers should be trained?	38.57%

Table 2: Attitude of Intern doctors for proper handling of Biomedical Waste

No	Question	% of good response
1	Safe waste management is a team work:	97.14%
2	Safe management increases the financial burden of hospital:	68.57%
3	Biomedical waste management is an extra burden on work:	90%
4	Choose an appropriate sentence for Biomedical waste:	97.14%
5	In case of blood spillage sodium hypochloride can be used in how much concentration:	54.28%
6	Biomedical waste management is duty of:	60%

Table 3: Assessment of Practicing Biomedical Waste Management

No	Question	% of good response
1	Where do you dispose cotton, gauze piece contaminated with blood?	80%
2	We can recap needles and discard them later:	88.57%
3	Where do you discard expired or discarded medicines:	22.85%
4	Where do you dispose masks and caps?	48.57%
5	Final treatment for chlorinated materials is Incineration:	54.28%
6	Used syringes are to be discarded in:	27.14%

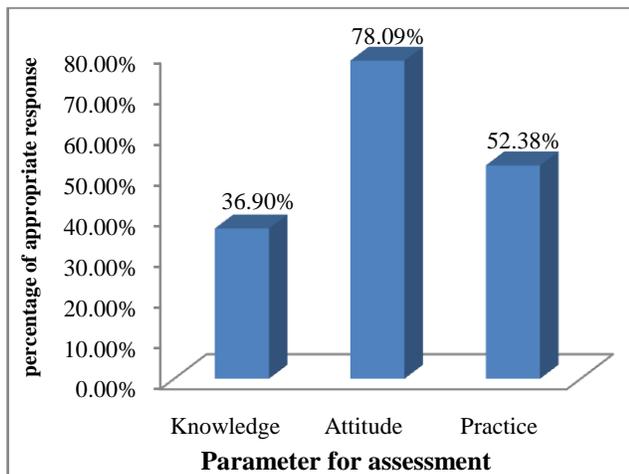


Figure 1: Percentage of appropriate response of Intern doctors for Knowledge, Attitude and Practice

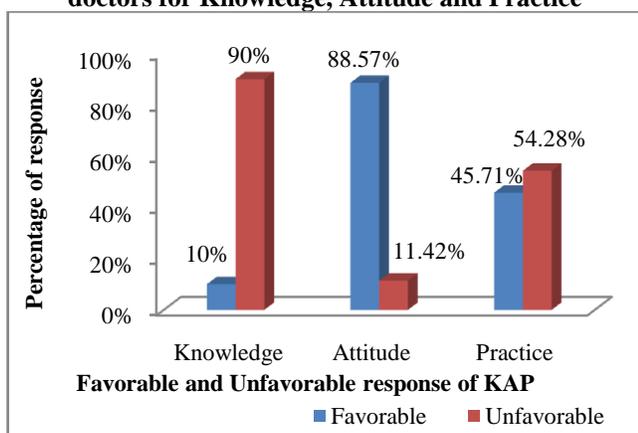


Figure 2: Percentage of Favorable and Unfavorable response of Intern doctors regarding Knowledge, Attitude and Practice

4. Discussion

Finding of the study shows lack of favourable knowledge and poor practice amongst Intern Doctors about Biomedical Waste Management. The results show that <20% has knowledge about categories, color coding and different wastes that are not included in Biomedical Waste Management Rules, 2016. Attitude shows good results. >50% has faulty practice regarding disposal of expired medicines, contaminated caps and masks and used syringes. It shows that there is need to train and do continuous periodic training of Intern Doctors. There should be more adherence to norms in practicing Biomedical Waste Management Rules, published by Government of India.

Limitation

As Intern doctors were posted in different departments, we had difficulty in gathering them for their training for Biomedical Waste Management.

Acknowledgement

Authors would like to acknowledge New Civil Hospital, Surat and Government Medical College, Surat for IJBR (2017) 08 (03)

giving us permission to conduct the study. We would also like to thank Intern Doctors who participated in the study.

References

- [1] Dudi M, Sharma R, Sharma S, Jain M. Assessment of the knowledge, attitude and practices regarding Biomedical Waste Management amongst Paramedical Staff in a Tertiary Level Health Care Facility. *Int J Med Sci* 2016; 5(4):615-19.
- [2] Malini A, Bala Eshwar. Knowledge, Attitude and Practice of Biomedical waste management among health care personnel in a tertiary care hospital in Puducherry. *Int J Bio Res* 2015; 6(3):172-76.
- [3] Ismail IM, Annarao G, Kulkarni et al. Knowledge, attitude and practice about bio-medical waste management among personnel of a tertiary health care institute in Dakshina Kannada, Karnataka. *Al Ameen J Mical Sciences* 2013; 6(4):376–80.
- [4] Chudasama RK, Rangoonwala M, Sheth A, Misra SKC, Kadri AM, Patel UV. Biomedical Waste Management: A study of knowledge, attitude and practice among health care personnel at tertiary care hospital in Rajkot. *J Res Med Den Sci* 2013; 1:17-22.
- [5] Sengodan VC, Amruth KH. Knowledge attitude and practice study on biomedical waste management among health care professionals and paramedical students in a Tertiary Care Government Hospital in South India. *Int J Env Health Eng* 2014; 3:11.
- [6] Mathur V, Dwivedi S, Hassan MA, Misra RP. Knowledge, attitude, and practices about biomedical waste management among healthcare personnel: a cross-sectional study. *Indian J Community Med* 2011; 36:143–5.
- [7] Sachan R, Patel ML, Nischal A. Assessment of the knowledge, attitude and practices regarding Biomedical Waste Management amongst the Medical and Paramedical Staff in Tertiary Health Care Centre. *Int J Sci Res Public* 2012; 2(7):1–6.
- [8] Yadavannavar MC, Berad AS, Jagirdar PB. Biomedical Waste Management. A Study of Knowledge, Attitude, and Practices in a Tertiary Health Care Institution in Bijapur. *Indian J Community Medicine* 2010; 1 35(1):170-1.
- [9] Sharma A, Sharma V, Sharma S, Singh P. Awareness of Biomedical Waste Management Among Health Care Personnel in Jaipur, India. *OHDM* 2013; 12(1):32-40.
- [10] Sanjeev R, Kuruvilla S, Subramaniam R, Prashant PS, Gopalakrishnan M. Knowledge, attitude, and practices about biomedical waste management among dental healthcare personnel in dental colleges in Kothamangalam: A cross-sectional study. *Health Sciences* 2014; 1(3): JS001I.