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## Research Article

### BIOMEDICAL WASTE MANAGEMENT AMONG DENTAL SURGEONS OF LUCKNOW

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#### ABSTRACT

**Objectives**-To assess the awareness about the disposal of Biomedical waste like surgical waste and mercury disposal among dental surgeons.

**Materials and method**-A cross-sectional questionnaire based study was conducted to assess the awareness and attitude towards the BMW among the dental surgeons in Lucknow. A total of 100 questionnaires were distributed among dental surgeon and results was collected and analysed statistically using SPSS software version 17.0.

**Results**-Survey was conducted on 100 dental surgeon with predetermined questionnaire asked about BMW management in Lucknow and the results showed that the 59.76 % of dental surgeons were aware about BMW management.

**Conclusion**-The results of present study showed that there was moderate knowledge and awareness about BMW among dental surgeons in Lucknow hence proper training programme about biomedical waste management should be conducted among dental surgeons routinely.

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#### INTRODUCTION

According to Biomedical Waste Management and Handling Rules, 1998 of India “any form of waste which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities or in the production or testing of biological entity (Mathur P et al. 2012). Interaction of all micro and macro environment of human beings determines the status of health of an individuals or community at-large. On daily basis generation and disposal of biomedical wastes has become a emerging problem not only in India but also worldwide (chakraborty S et al. 2014). The recent developments in healthcare units are precisely made for the prevention and protection of community health. Sophisticated instruments have come into existence in various operations for disease treatment. Waste generated in the process of health care are composed of variety of wastes including hypodermic needles, scalpels, blades, surgical cottons, gloves, bandages, clothes, discarded medicine body fluids, human tissues and organs, chemicals, radioactive wastes etc. These are the most environmentally sensitive healthcare byproducts and needs a greater attention which has to be monitored (Radha KV et al.2009). There are a number of hazardous dental wastes that when disposed improperly could cause harm to the human beings and environment e.g. chemical solutions, lead foil, mercury & dental amalgam and

radiological waste(Agrawal B et al.2011). WHO states that 85% of hospital wastes are actually non-hazardous whereas 10% are infectious and 5% are non-infectious but they are included in hazardous wastes. About 15% to 35% of hospital waste is regulated as infectious waste. This range is dependent on the total amount of waste generated (Mathur P et al 2012). The aim of present study is an attempt to know about the awareness and attitude towards biomedical waste management among dental surgeons in Lucknow. The objective of the study was to assess the awareness about the disposal of Biomedical waste (BMW) like surgical waste and mercury disposal among dental surgeons.

#### MATERIALS AND METHODS

The Survey was conducted to assess the awareness and attitude towards the biomedical waste management among dental surgeon. Across-sectional questionnaire based survey was employed to assess awareness and attitude towards BMW among dental surgeon of Lucknow population after obtaining permission from the institutional research committee (IRC). A verbal consent of all dental surgeon was also taken .A total 100 questionnaire were distributed among dental surgeons which were based on BMW management.

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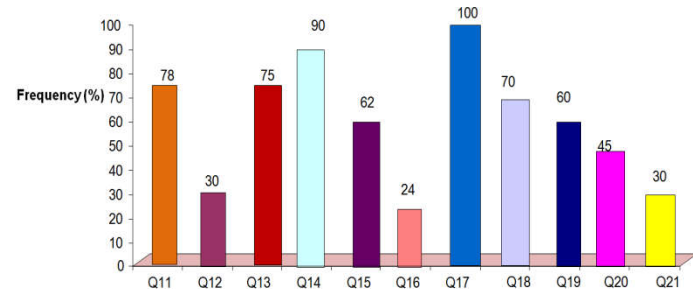
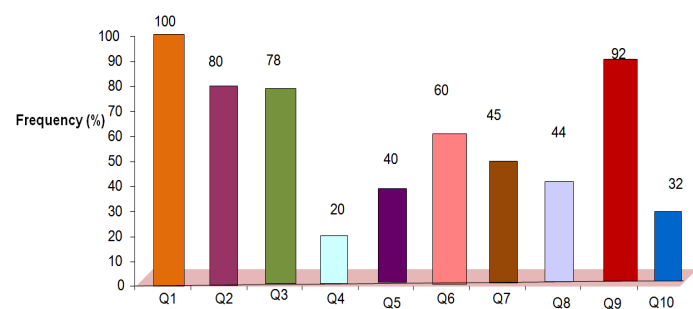
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**Questionnaire about BMW management which was asked to dental surgeons**

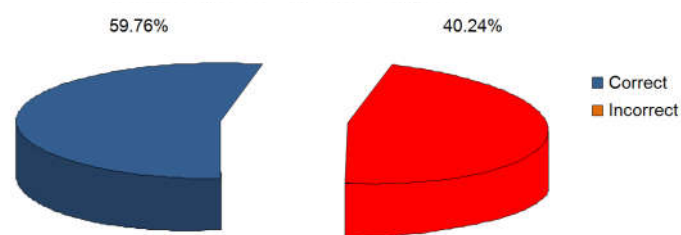
1. What do you mean by biomedical waste.
  - a) waste from household
  - b) waste generated during diagnosis ,treatment ,immunization or research activity during dental medical or labotary process.
  - c) don't know
2. How biomedical waste should be disposed of?
  - a) dump directely into garbage bins
  - b) hanging it over to biomedical waste management agency
  - c) don't know
3. Are there any guideline for Biomedical waste disposal by government in india?
  - A) yes
  - b) no
  - c) don't know
- 4) According to government guideline , untreated BMW should not be stored beyond
  - A) 24hrs
  - B) 48hrs
  - c) don't know
- 5) Glassware and metallic body implants are disposed in
  - a) blue
  - b) white
  - c) don't know
- 6) Infectious sharp and needles are disposed in
  - A) white
  - b) blue
  - C) don't know
- 7) Infectious biodegradables e.g teeth tissue membranes ,cotton dressing,suture materials like braided silk,vicryl etc are disposed in
  - a) yellow
  - b) red
  - c) don't know
8. Biomedical waste handlers should
  - a) be made aware of risk involved in handling biomedical waste
  - b)use personel protection equipments like ,mask,protective glasses,gum boots
  - c) both of above
- 9) Do you fallow color coding while disposing waste during your treatment
  - a) yes
  - b) no
  - c) sometimes yes and sometime no
- 10) Do you know about biomedical waste disposal cause health hazards
  - a) yes
  - b) no
  - c) don't know
11. Red coding for
  - a) waste sharp
  - b) needle hub
  - c) none
12. Black coding for
  - a) discarded medicineb) cytotoxic drug
  - c) both a and b
13. Yellow coding is for
  - a) microbiological wasteb) soiled waste
  - c) chemical waste
14. Which color coding is not part of biomedical waste disposal system
  - a) yellow and redb) red and black
  - c) orange and pink
15. IV bottles should disposed in
  - a) yellow bagb) red bagc) blue bags
16. have you undergone any training programe in biomedical waste management
  - a) yesb) noc)don't know
- 17.Do you know about swachh bharat abhiyan.
  - a) yes b) Noc)don't know
- 18) Swachh bharat was launched on
  - a) 2<sup>nd</sup> oct 2014b) 6<sup>th</sup> oct 2014
  - c) 14<sup>th</sup> Nov 2016
- 19) clinical waste put in
  - a) yellow
  - b) red
  - c) don't know
- 20) general waste kept in
  - a) green
  - b) yellow
  - c) don't know
- 21) which color is not included in color code
  - a) brown
  - b) yellow
  - c) red

**RESULTS**

**Response to the questionnaire from dental surgeon**



X axis-Correct response in percentage and y-axis –question about BMW



The Study was conducted on 100 dental surgeon in Lucknow with questionnaire about BMW management. Approximately 59.76 % of dental surgeon were aware about BMW. With question about color coding for biomedical waste disposal only 51.63% were aware about different color coding for disposal. Only 32% of dental surgeon knew about the harazdous effects of biomedical waste. About 80% dental surgeon don't know that untreated biomedical waste cannot be stored for more than 48 hours. About 78% of dental surgeons knew about the guidelines for biomedical waste management and only 24% of the dental surgeons had undergone training programme for BMW.

**DISCUSSION**

Biomedical waste management is receiving greater attention due to recent regulations of the Biomedical Wastes (Management & Handling Rules, 1998). Inadequate management of biomedical waste can be associated with risks to healthcare workers, patients, communities and their environment. The present study was conducted to assess the quantities and proportions of different constituents of wastes,

their handling, treatment and disposal methods in different health-care settings. The present study comprised of questions about BMW management and the dental surgeon constituting the study were from Lucknow. Aim of the present study was to enhance the awareness and the knowledge about BMW. Various questions were asked to gain information regarding BMW. Moderate level of knowledge and awareness was found among dental surgeon in present study which is similar to study conducted by Kishore J et al (2011) and Sharma et al (2013) where they also found that low level of awareness in different health care professional. Only 51.63% of dental surgeon were aware about different color coding in present study which is quite similar to study done by Singh R D et al (2014) where they found 37% of dental surgeon were aware of different categories of Biomedical waste disposal and Sudhakar V et al (2008) were found that 63.3% dentist do not segregate waste before disposal. The survey showed that only 32 % of dental surgeon knew about hazardous effects of BMW management which badly affects the biological system and causing different disease like parasitic infection, skin infection, hepatitis A and B and fungal infection etc. whereas study in Northern Sweden found that only 36 % of dental surgeon were segregating excess mercury showed the negligence of health care practitioners regarding the hazardous effects of elemental mercury (Abhishek KN et al (2015). Although Modern dentistry has been described as least hazardous of all occupational but still many hazards in dental practice such as exposure to infectious disease, radiation and mercury. X-ray processing, etchants, monomer, base metal debris and mercury from amalgam cause poisoning of the biological system (Singh A et al (2016). Dental practice involves many hazardous exposures and this calls for proper segregation and disposal of biomedical waste. The dental surgeons of Lucknow were moderate aware that improper waste management can cause various health hazards so there is a need to train and educate them through extensive education training programs which will be helpful in the clinics and hospital authorities to develop a strategy for improving BMW management. BMW management programmes cannot be successfully implemented without the effective knowledge, willingness, motivation, and co-operation from all sections of employees of any health care setting.

## CONCLUSION

Thus it can be concluded that from the present study that there was moderate level of knowledge and awareness about BMW among the dental surgeons in Lucknow. The lack of professional training and educational programme has been a major cause for same.

The safe and effective management of waste is not only a legal necessity but also a social responsibility continuing education and training programs and short courses on cross-infection and biomedical waste management are suitable means of improving the knowledge of dental surgeons and for the betterment of environment and human beings.

## References

1. Abhishek K.N.Suryavanshi H.N.Singh S.S. (2015). Management of biomedical waste: An exploratory study. *Journal of international oral health*. 2015:7(9).70-74
2. Agarwal B., Kumar M., Agarwal S. (2011). Biomedical waste and dentistry. *Journal of oral health & dentistry* 2011: 5(3)
3. Chakraborty S., Veeragowda B., Gowda L.(2014). Biomedical waste management. *Advances in Animal and Veterinary Sciences*.2014: 2 (2). 67-72
4. Kishore J.Goel P., Sagar R. (2011). Awareness about biomedical waste management and infection control among dentist of teaching hospital in New Delhi, India. 2011:4.157-161
5. Mathur P., Patan S., Shobhawat A. (2012). Need of biomedical waste management system in hospital –an emerging issue – A review. *An international research journal environmental science*. 2012:7(1).11-124
6. Radha K.V., Kalaivani K., Lavanya R. (2009) .A case study of biomedical waste management in hospitals. *Global Journal of health Science*. 2009:1(1)82-88
7. Singh R.D., Jural S.K., Tripathi S.(2104). Mercury and other biomedical waste management practice among dental practitioner in India. *Biomedical research international* 2014.
8. Sharma A., Sharma V., Sharma S., Singh P. (2013). Awareness of biomedical waste management among health care personnel on Jaipur, India. *OHDM*.2013:12(1).32-40
9. Sudhakar V., Chandrashekhar (2008). Journal dental health Care Waste disposal among private dental Practice in Bangalore City, India. *Int. Dent Journal*. 2008:58.51-54
10. Singh A, Gupta R., Tomar A.K., Current concept of biomedical waste management and dental practice. *International research journal of clinical medicine*. 2016:3(1);8-12

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