

# AWARENESS ON DISPOSAL OF LIQUID WASTE IN DENTISTRY AMONG DENTAL STUDENTS

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## Abstract

*Despite the advancing technological methods to prevent diseases, outbreaks become more common due to the ineffective waste disposal methods followed in dental clinics. In safe and effective disposal of wastes, the key step is the separation or segregation of the wastes produced depending on its nature and composition. The present study aims at determining the awareness on safe disposal of liquid dental waste among undergraduate dental students. For the study, a pre tested questionnaire consisting of 10 questions assessing the awareness and knowledge about waste disposal of liquids in dental clinics was prepared and circulated to a total of 100 undergraduate dental students of varying age groups via an online survey planet link. The responses provided by the students were collected, diagrammatically represented and analysed to determine the comprehension levels and understanding on the type of waste disposal system implemented and followed in the respective dental clinics. In addition to this, the requirement to layout a proper apprehension on the same was monitored. 94% of the population are aware of the waste produced in the dental industry, 72.% of individuals believed that more than 2 liters of liquid waste are produced on an average daily basis. 53% of population were aware that mercury was one of the essential components of liquid waste. 85%, who felt that the wastes produced had to be separated before disposal. 89% of the population were aware that dental wastes affect the people living around the disposal area and 71% felt that dental wastes could be recycled. The knowledge and awareness levels among dental students was adequate on the different types of liquid wastes produced in dental clinics and the effective solution to minimize this waste and dispose them safely. Further, the results of the survey conducted were educated the need and necessity to inculcate the correct management techniques of dental wastes and to make dental students realise the importance of this subject.*

**Keywords:** Awareness, waste, disposal, dental

## Introduction

One of the serious issues that we face consistently is the absence of a perfect situation both personally and professionally. Any undesirable material or substance that remains after its utilization is named as waste. Each field creates a lot of waste, thus does the dental field. Notwithstanding the measure of waste created another

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serious issue is the protected and viable removal of the wastes produced. (Kumar et al., 2011) Waste produced in clinical businesses can extensively be characterized into general, irresistible, risky and radioactive. The liquid waste in dentistry can extensively be delegated harmful and non-poisonous waste which must be successfully awarded before their discharge into the earth. A portion of the waste created incorporates unused or lapsed medications, mercury, societies of irresistible operators, body liquids, for example, blood and other waste materials, for example, q-tips, syringes and utilized mortar molds. The liquid wastes produced in this calling incorporate blood, water left in the patient's mouth, salivation and different substances. ((Minallah et al., 2017))

In protected and viable removal of wastes, the key advance is the division or isolation of the wastes delivered relying upon its tendency and creation. (Jang et al., 2006) As the innovative advances happen, the quantity of strategies intended to isolate and kill the waste created in dentistry likewise progresses. So as to isolate these waste materials, distinctive shaded sacks are doled out for various segments of wastes. For instance, dark for cytotoxic wastes, red for contaminated dressings and blue for plastic wastes. It is likewise fitting for dental professionals to upgrade the tidiness of the dental office by buying instruments and items with least bundling so as to decrease the general plastic waste additionally delivered. Besides, vitality proficient lighting and warm administrative devises can be imparted for amplifying vitality utilization. (Osamong et al., 2010; Schüch et al., 2016) Dental staff can likewise actualize an assortment of different practices to make the dental office all the more earth well disposed. (Schüch et al., 2016) Purchase of items with insignificant bundling and utilization of reusable plastic holders (e.g., for cleaning and sanitizing arrangements) can diminish general waste creation. Items produced using reused or mostly reused materials can likewise be utilized. Vitality proficient lighting and temperature guideline can restrict office vitality use and lessen the waste produced.

Regardless of the quantity of maladies that the waste from dental centers can cause, for example, hepatitis, HIV, meningitis, bacteremia, skin diseases and substantially more, there is likewise a staggering impact on the earth which makes common air and water bodies unfit for use in this manner expanding the passing rates over the globe. (Ma et al., 2016) The present study aims at analyzing the knowledge on safe and effective disposal of wastes produced in a dental office and to determine the type of waste management that is widely being followed based on the present knowledge.

## **Aim**

The purpose of this study is to analyse the knowledge and awareness levels among dental students on the different types of liquid wastes produced in dental clinics and the effective solution to minimise this waste and dispose them safely.

## Materials And Method

For the study, a pre tested questionnaire consisting of 10 questions assessing the awareness and knowledge about liquid waste disposal in dental clinics was prepared and circulated to a total of 100 undergraduate dental students of varying age groups via an online survey planet link. The responses provided by the students were collected, diagrammatically represented and analysed to determine the comprehension levels and understanding on the type of waste disposal system implemented and followed in the respective dental clinics. In addition to this, the requirement to layout a proper apprehension on the same was monitored.

## Result

Fig.1 shows that 94% of the population are aware of the waste produced in the dental industry and Fig. 2 shows that 72.% of individuals believed that more than 2 liters of liquid waste are produced on an average daily basis. Figure 3 represents 53% of population who were aware that mercury was one of the essential components of liquid waste. Fig.4 best describes the majority of individuals, 85%, who felt that the wastes produced had to be separated before disposal. 89% of the population were aware that dental wastes affect the people living around the disposal area which is seen in Fig.5 shows that 71% felt that dental wastes could be recycled.

Fig 1: Awareness of the waste produced in the dental industry

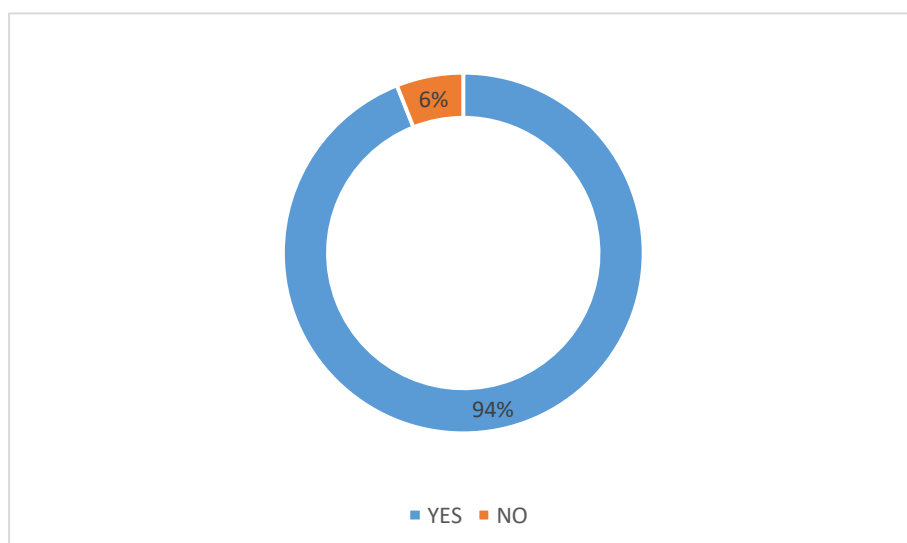


Fig 2: Awareness of the liquid waste produced in practice

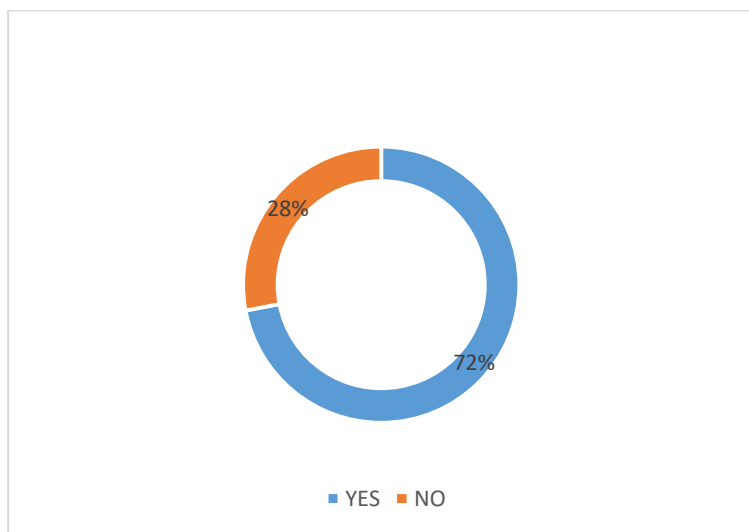


Fig 3: Awareness of mercury present in liquid waste

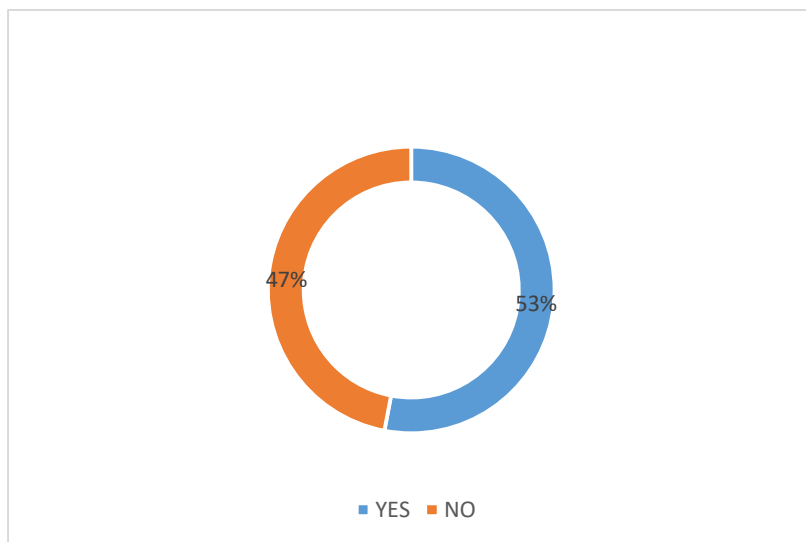


Fig 4: Awareness of separation of liquid waste

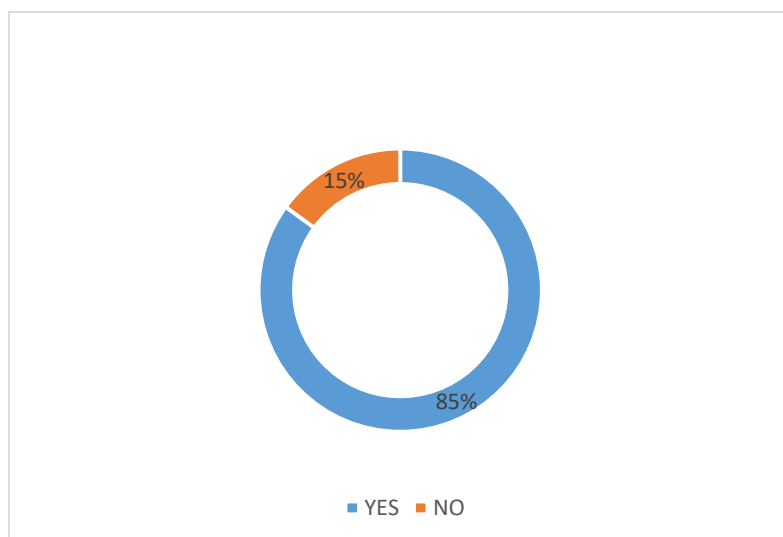
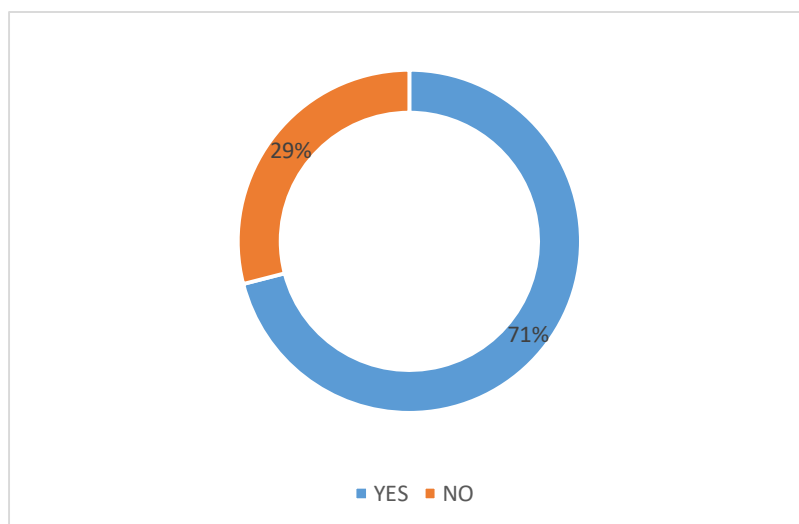


Fig 5: Awareness of recycling of liquid waste



## Discussion

Protected and compelling removal of various kinds of waste produced every day is incredibly fundamental and is one of the rising issues over the globe. The requirement for this viable removal additionally helps in forestalling different flare-ups or pestilences and lessening the danger of procuring an ailment to the individuals living in and around the removal region. (Chander, 2017) The study was directed to evaluate the degree of information among dental understudies on the equivalent and what sort of practices were being followed in the dental facilities. In addition, the requirement for spreading mindfulness on the theme was viewed as a need to control the measure of waste created. It was discovered that inappropriate taking care of and removal of waste can prompt the spread of infections not just for youngsters living in and around that region pod additionally the janitorial staff and city workers.

Needle sticks can bring about hepatitis and HIV. (Lin, 1997) In request to decrease these consequences for people, epitome and substance purification of the waste is an absolute necessity. Moreover, partition of the wastes utilizing diverse hue containers, for example, dark for cytotoxic wastes, red for contaminated dressing and blue for plastic wastes ought to be executed in every single dental facility. Past examinations have corresponded with the above outcomes regarding the mindfulness levels in the populace and keeps on finding a strategy to spread mindfulness and information on the equivalent.

It ends up being obligatory for medical clinics to rehearse the necessary removal procedures to limit the loss of lives by gaining an infection. With appropriate training, assets and backing from different hierarchical networks including the administration can help in reestablishing the earth to its underlying state, liberated from the grasp of contamination, hurtful reactions of wastes and the loss of lives because of this too (Michael et al., 2015)(al. et al., 2019). Moreover, strict rules and guidelines must be initiated and followed by all dental clinics and clinicians to obtain maximum benefit of the waste disposal system (Allen, 2015). However, expanding this study to a larger population can enhance the study and lead to the development of newer and better techniques for the disposal of dental wastes. The present study could also be laid out on a larger basis to implement waste management programs and expand the funding for such programs in the near future (Rao & Hanumantha Rao, 2009; Singh et al., 2018). Proper education and awareness about waste disposal procedures is paramount to maintain better physical and mental health of the population in addition to better environmental conditions, proper rules and guidelines put forth by governments and other organisations along with the help of advancing technologies

## **Conclusion**

The knowledge and awareness levels among dental students was adequate on the different types of liquid wastes produced in dental clinics and the effective solution to minimise this waste and dispose them safely. Further, the results of the survey conducted were educated the need and necessity to inculcate the correct management techniques of dental wastes and to make dental students realise the importance of this subject.

## **Funding Support**

The authors declare that they have no funding support for this study.

## **Conflict of Interest**

The authors declare that they have no conflict of interest.

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