

Knowledge and Awareness of Hepatitis among Dental Fraternity in Udaipur- An Institutional Study

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ABSTRACT

Background- Hepatitis is one of the major infectious viral diseases of the world affecting mankind. It is the most common cause for liver cirrhosis and hepato-cellular carcinoma in the World. Possible forms of transmission of Hepatitis include unprotected sexual practises, reuse of contaminated needles and vertical transmission during pregnancy. Dental professionals are at a higher risk of Hepatitis infection due to their frequent exposure to contaminated blood, blood-soaked cottons, mucous membrane, saliva, gingival crevicular fluid and needle prick injuries. Hence' placed in the high-risk group. There is no adequate data on the awareness of hepatitis among dental fraternity.

Aim- To determine knowledge and awareness among the dental fraternity of Udaipur about hepatitis infection, its transmission, precautions and vaccine related.

Methodology- Study was conducted in May 2024 at Darshan Dental College and Hospital, Udaipur on 307 participants of dental fraternity. Inclusion and Exclusion criterias were taken in consideration. Questionnaire link through Google forms were shared among participants. Questions had three options (yes/no/maybe). The noted data was compiled and analysed using Microsoft Excel 2010 and SPSS version 26.

Results- More than 248 (81%) participants agreed on the fact that dental fraternity is at more risk of Hepatitis infection than any other healthcare sector and Hepatitis is the most common occupational hazards among dentists worldwide.

Conclusion- Dental professionals' knowledge of Hepatitis infection, the probable routes of its transmission during dental treatment, and the most effective preventive strategies against it may be a great help in preventing the spread of this infection.

1. INTRODUCTION

Hepatitis is one of the major infectious diseases of the world affecting mankind and is one among the leading causes of the deaths. It is the most common cause for liver cirrhosis and hepato-cellular carcinoma in the World¹.

Hepatitis is a highly contagious viral infection with its 5 variants- Hepatitis A, B, C, D and E. All the variants have different causative agents, incubation periods and mode of transmissions. The possible forms of transmission of Hepatitis virus include unprotected sexual contact, blood transfusion, reuse of contaminated needles, and vertical transmission from mother to child during pregnancy.²

Dental professionals are at a higher risk of viral Hepatitis infection as compared to any other profession due to their frequent exposure to contaminated blood, blood-soaked cottons, mucous membrane, saliva, gingival crevicular fluid and needle prick injuries. They are placed in the high-risk group as they are the definite sufferers and carriers.³

Hepatitis virus remains viable for more than twenty-four hours under natural circumstances and for more than one week in plaster casts, hence there exists a significant possibility of Hepatitis transmission in dental settings as there are special circumstances and opportunities which can lead to the transmission of such organisms to dental healthcare professionals and to dental clinical students. Dental professionals' knowledge of Hepatitis infection, the probable routes of its transmission during dental treatment, and the most effective preventive strategies against it may be a great help in preventing the spread of this infection.⁴

Various immunisation programmes have been initiated by the Government of India under National Viral Hepatitis Control Program aiming to combat hepatitis and achieve country wide elimination of Hepatitis C by 2030, achieving significant reduction in the infected population, morbidity and mortality associated with Hepatitis B and C viz. Cirrhosis and Hepatocellular carcinoma (liver cancer), reduce the risk, morbidity and mortality due to Hepatitis A and E.⁵

According to WHO South-East Asian region records viral hepatitis is responsible for an annual estimated 350,000 deaths with 81% of total mortality being attributed to liver cancer and cirrhosis due to Hepatitis B and C.⁵ Studies have shown that the risk of exposure for general dentists is about three to four times greater and for nonimmunized surgical specialists about six times greater than that of the general population.⁶ The incidence of viral hepatitis infection can be reduced by giving proper education regarding its transmission and immunizations to the public, all healthcare workers (HCV), and students⁵. There are no adequate data on the awareness of hepatitis among dental colleges of India. Hence this forms the base of the present study which aimed to analyse the awareness of Hepatitis infection among the dental fraternity in Udaipur.

2. METHODOLOGY

Approval. This is an institutional based study conducted to determine the knowledge and awareness on hepatitis infection among dental fraternity in Udaipur. The study protocol was reviewed by the institutional ethical board.

Year of Study. The study was conducted during the academic year in May 2024.

Sample selection. We considered all the five dental colleges of Udaipur city. Darshan Dental College and Hospital was selected on the basis of convenience sampling. The reason behind is the availability of students and staff during the study period and the maximum attendance. Thus, we selected the sample.

Study Population and Setting. This study is conducted among the under graduates, post graduates and faculty members of Darshan Dental College and Hospital Loyara, Udaipur.

Inclusion and Exclusion Criteria. The students and faculty members who were present at the day of the particular study and were willing to participate were included in the study and those who were not willing to participate and were absent were excluded from the study.

The final sample size was calculated to be 307.

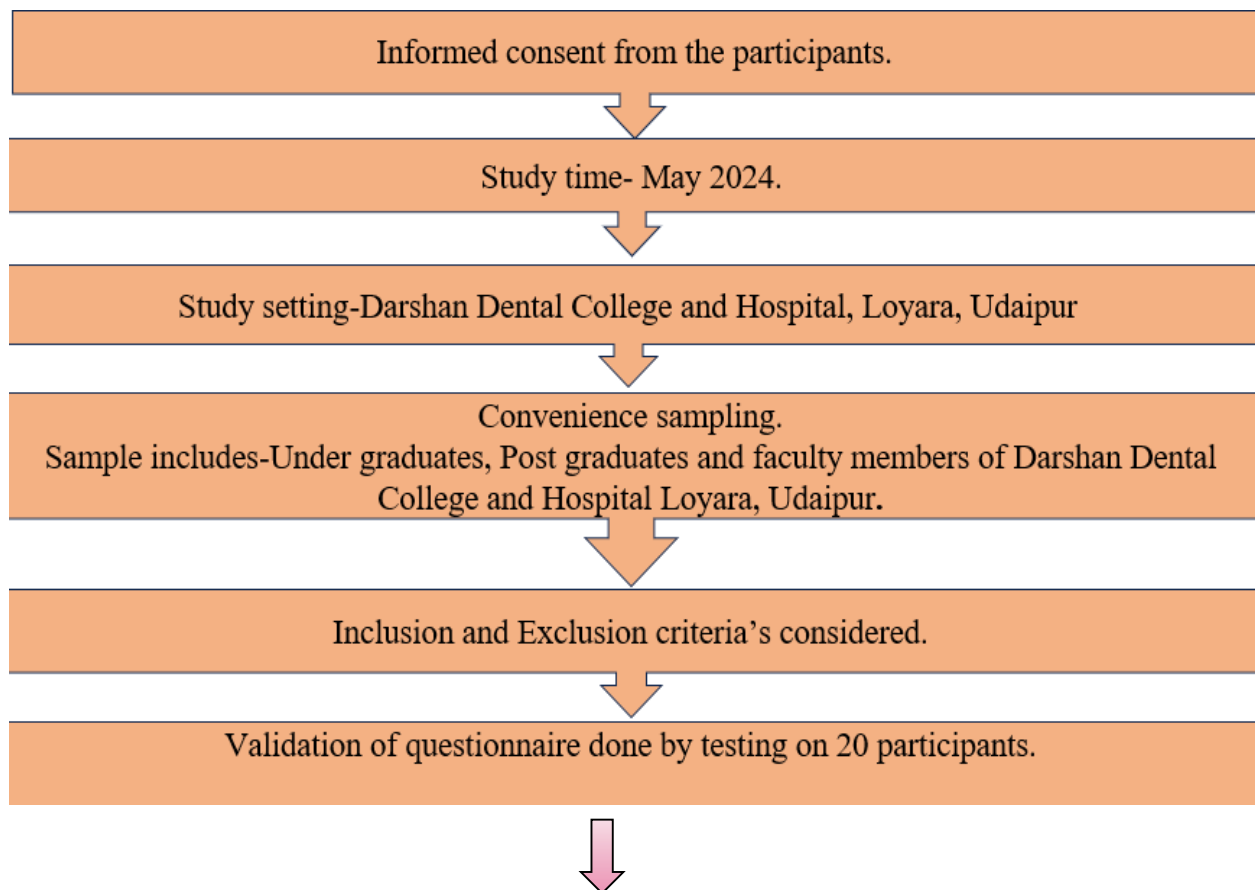
Informed consent. A written informed consent was obtained from all the subjects who were willing to participate after they understood the purpose and details of the study.

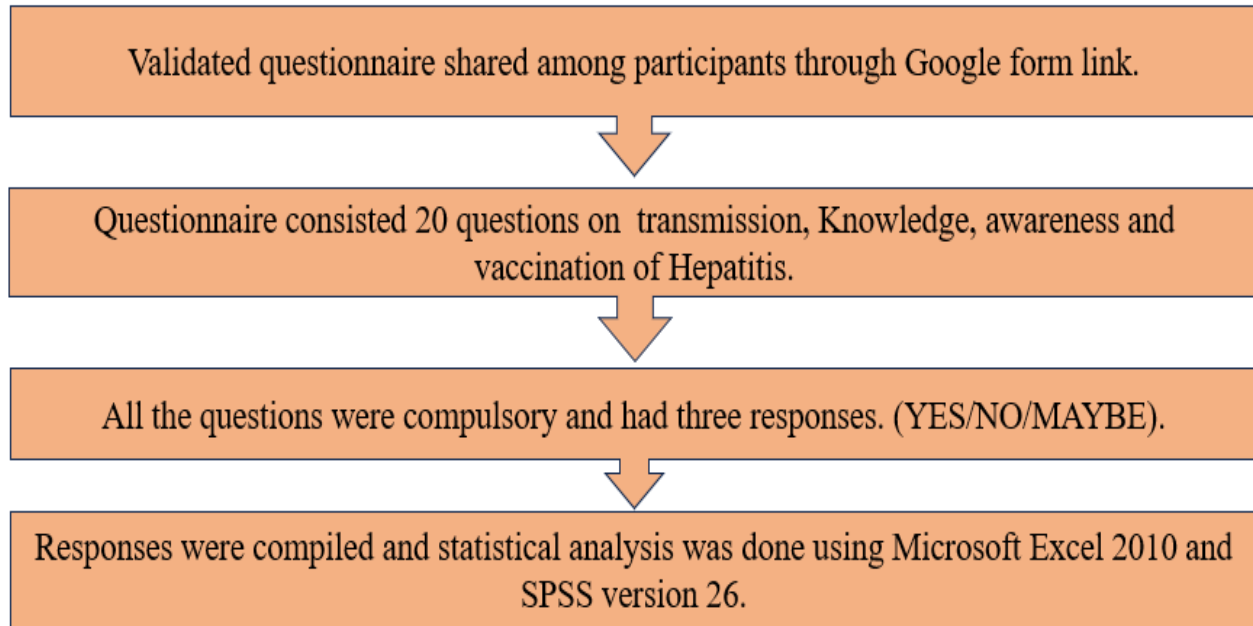
Questionnaire. Validation of questionnaire was done by testing it on 20 participants. Training and calibration of the investigator was also done. Later the questionnaire through Google forms consisting of 20 questions was shared among all the participants of the study. All the questions were given three options (yes/no/maybe). This included questions about the risk factors, transmission and awareness on Hepatitis infection, Hepatitis vaccination and the preventive measures taken by the dentist to protect both patients and dentists from Hepatitis infection.

Statistical Analysis. The noted data was compiled and analysed using Microsoft Excel 2010 and SPSS version 26 respectively. The description included computation of percentages, means and standard deviations. The appropriate statistical test applied was chi-square test. Confidence interval and p-value were set at 95% and ≤ 0.05 respectively.



Data Collection





Methodology Flowchart

QUESTIONS	YES n (%)	NO n (%)	MAY BE n (%)
1. Can Hepatitis be spread through contaminated needles	303(98.7)	3(1)	1(0.3)
2. Can Hepatitis be spread through contaminated body fluid	259 (84.3)	23 (7.5)	25(8.1)
3. Can Hepatitis be spread via unsafe sexual practises	277(90.2)	18 (5.9)	12(3.9)
4. Is Hepatitis an air borne infection	49 (15.9)	241(78.5)	17 (5.5)
5. Can tattoos and body piercings lead to Hepatitis	219 (71.3)	33(10.7)	55 (17.9)
6. Is Dental Fraternity at more risk as compared to other health care sectors	257 (83.7)	11(3.6)	39 (12.7)
7. Is Hepatitis the most common occupational hazard in dentists	248 (80.7)	24 (7.8)	34 (11.1)
8. Is Hepatitis a hereditary disease	101 (32.9)	167 (54.4)	39 (12.7)
9. Can Hepatitis be transferred from patient to patient	229 (74.5)	37 (12.1)	41 (13.4)
10. Can Hepatitis be transferred vertically	259 (84)	17 (5.6)	31 (10.1)

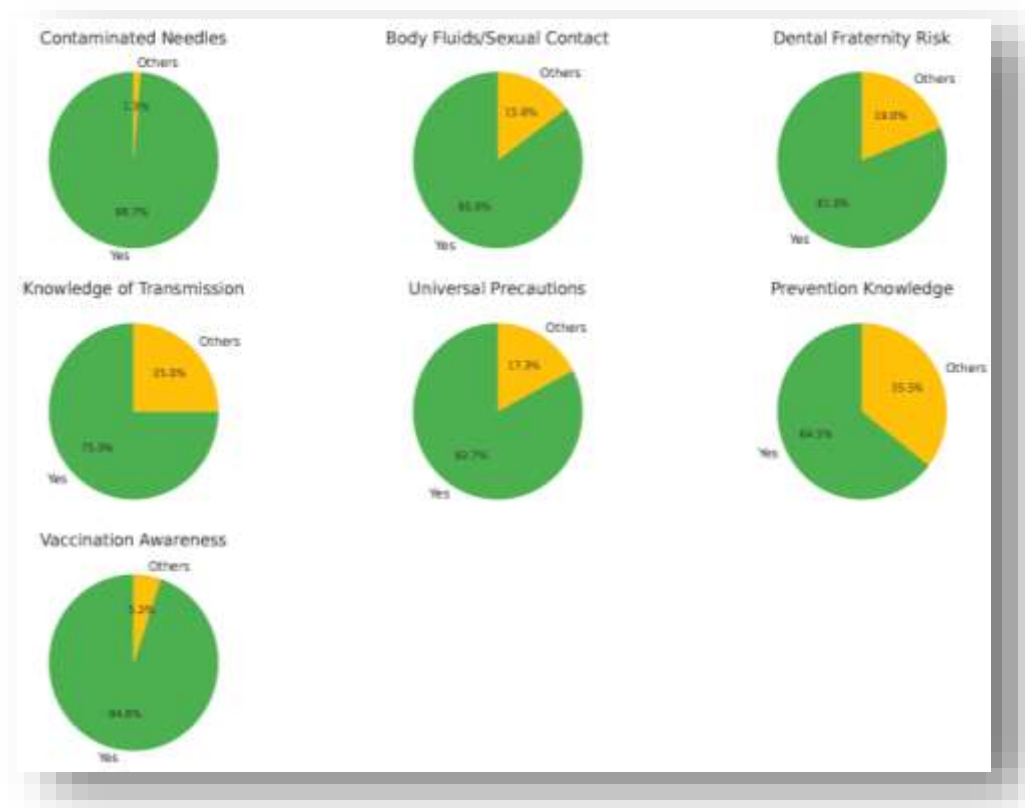
11. Is Liver the most affected organ by Hepatitis	265 (86.3)	13 (4.2)	29 (9.4)
12. Can gloves prevent the transmission of Hepatitis	198 (64.4)	43 (14)	66 (21.5)
13. Can vaccine prevent Hepatitis	291 (94.7)	5 (1.6)	11 (3.6)
14. Is it important to wash instruments before autoclaving	288 (93.8)	7 (2.3)	13 (4.2)
15. Any idea regarding standard universal precautions	255 (83.06)	53 (17.3)	30 (9.8)
16. Is Hepatitis fatal	238 (77.5)	21 (6.8)	48 (15.6)
17. Hepatitis positive person can carry out dental procedures	160 (52.1)	89 (29)	58 (18.9)
18. Do you take all the precautions while treating patients	254 (82.7)	18 (5.9)	35 (11.4)
19. Is there any lack of knowledge and awareness regarding Hepatitis among dentists	190 (61.8)	50 (16.3)	67 (21.8)
20. Is booster dose of vaccine necessary among dentists	286 (93.1)	3 (1)	18 (5.9)

Questionnaire

3. RESULTS

Out of 307 participants 206(67%) participants belonged to the age group of 21-24 years while 48(16.5%) belonged to the age group of 18-20 years. Majority of the participants 218(71%) were females while 89(29%) males participated in the study.

Almost all the participants 303(98.7%) were aware about the spread of Hepatitis through contaminated needles while more than 260(85%) of the participants were sure about the spread of Hepatitis through body fluid and sexual intercourse. More than 248 (81%) participants agreed on the fact that dental fraternity is at more risk of Hepatitis infection than any other healthcare sector and Hepatitis is the most common occupational hazards among dentists worldwide. More than 228 (75%) of the participants were knowing about the transmission of the Hepatitis infection. 254 (82.7%) participants had an idea about the universal precautions taken in the dental setting. 198 (64.5%) participants had knowledge about prevention of Hepatitis infection while a good number of 291(94.8%) participants were knowing about the vaccination of Hepatitis.



4. DISCUSSION

The present study revealed a generally high level of awareness regarding Hepatitis infection among the dental fraternity of Darshan Dental College and Hospital, Udaipur. The awareness about the spread of Hepatitis through contaminated needles (98.7%) and knowledge of Hepatitis vaccination (94.8%) were particularly noteworthy. These results align with similar findings in recent studies conducted among dental professionals in different regions.

A study by Sabeena et al. (2021) among dental interns in Karnataka found that 96% of the participants were aware of needle-stick transmission and 91% were vaccinated against Hepatitis B, showing a comparable level of awareness and preventive behavior.⁷ Similarly, a study conducted in 2022 by Al-Hazmi et al. in Saudi Arabia reported 93.2% awareness among dental students regarding Hepatitis transmission through blood and body fluids, and 88.5% were vaccinated, echoing the findings of the present study.⁸ Another study by Joseph et al. (2023) among dental students in Kerala revealed 87% of students had good knowledge about Hepatitis transmission and preventive measures, including universal precautions.⁹

Contrasting results, however, were observed in some studies which highlight gaps in awareness and preventive practices. For example, a study conducted by Sharma et al. (2020) among dental students in Northern India reported that only 65% were aware of all possible transmission routes, and just 70% were vaccinated against Hepatitis B, indicating lower awareness compared to our study.¹⁰ Likewise, research by Chaudhary et al. (2021) from Nepal indicated poor knowledge among dental undergraduates, with only 62% being aware of universal precautions and 68% vaccinated.¹¹ In contrast to our findings, a study conducted in 2023 by Yilmaz et al. in Turkey found only 59.7% awareness regarding Hepatitis transmission in dental settings, demonstrating a significant need for improved training and education.¹²

The higher levels of awareness observed in our study could be attributed to increased health campaigns under the National Viral Hepatitis Control Program and improved inclusion of infection control topics in dental curricula in recent years. Additionally, since our study was conducted in a single institution with good attendance and potentially better educational resources, this may have influenced the higher awareness levels.

Despite the encouraging results, gaps still exist. For instance, only 64.5% had knowledge about prevention of Hepatitis, suggesting the need for more focused educational interventions on practical preventive strategies beyond vaccination. Also, 75% awareness about transmission suggests that a quarter of participants might lack comprehensive understanding, posing potential risks in clinical practice.

In conclusion, while the findings of this study align with recent literature showing good awareness among dental students and staff in certain settings, discrepancies with other studies emphasize the importance of consistent and universal education efforts across institutions. Training programs, reinforcement of universal precautions, and mandatory vaccination policies should be emphasized to further enhance safety in dental healthcare environments.

This study has certain limitations that should be considered while interpreting the findings. Being a single-centre study conducted at Darshan Dental College and Hospital, Udaipur, the results may not be generalizable to other regions or institutions. The use of convenience sampling may have introduced selection bias, limiting the representativeness of the sample. Additionally, reliance on self-reported data through questionnaires is prone to response bias, as participants may have provided socially desirable rather than accurate answers. The cross-sectional design captures awareness at only one point in time and does not assess changes over a longer period. Furthermore, the study focused primarily on general awareness, without evaluating in-depth clinical knowledge or actual preventive practices. Future research involving multicentre, longitudinal designs with more comprehensive assessment tools would provide a broader and more accurate understanding of Hepatitis awareness among dental professionals.

5. CONCLUSION

The present study highlights a commendable level of awareness among the dental fraternity at Darshan Dental College and Hospital regarding the transmission, risks, and prevention of Hepatitis infection. The high percentage of participants aware of key transmission routes and the importance of vaccination underscores the effectiveness of current educational efforts and institutional infection control practices. However, gaps remain in certain areas such as comprehensive knowledge about prevention strategies beyond vaccination. These findings emphasize the continued need for structured educational programs and reinforcement of infection control protocols within dental institutions to ensure the safety of both dental professionals and patients.

The findings of this study underscore the need for sustained and enhanced educational efforts to improve comprehensive knowledge about Hepatitis among dental professionals. Future implications include integrating detailed infection control and Hepatitis prevention modules into dental curricula, mandating regular training sessions and vaccination programs, and utilizing digital platforms to disseminate up-to-date information. Additionally, conducting similar studies across multiple institutions and regions can help identify broader trends and gaps, guiding national policies and institutional strategies to ensure the safety of dental practitioners and their patient.

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