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Research Article

Assessment of Hepatitis C Awareness Among the Dental Students and Interns in Dental Colleges in Nagpur, India

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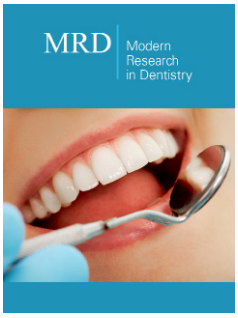

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Abstract

Aim: The study aim is to ascertain the level of knowledge of Hepatitis C transmission, treatment, complications and prevention among dental as well as interns in dental college in Nagpur.

Materials and methods: The updated survey was distributed via WhatsApp groups to RDDC interns and students. The study used a questionnaire format. A total of 140 students participated. Participants were advised that the responses would remain confidential. The sole data program choice available was MS Excel, which was used to analyze the data.

Result: A total of 140 students participated in almost half of the students had a fair knowledge regarding Hepatitis C virus. 40% and 41% of the students had enough awareness about the etiological and diagnostic factors. Generally, the knowledge of hepatitis c virus infection spread was as roughly as 34%.

Conclusion: Majority of the dental participants had adequate knowledge regarding awareness about HCV transmission, precautions, risk factors, etiological factor. However, there are still significant gaps in knowledge which need to be modified or filled and the gaps should be closed.

Keywords: Hepatitis C; Awareness; Interns; Dental students

Introduction

Hepatitis C Virus (HCV) is the primary cause of Hepatitis C, an infectious disease that mostly affects the liver [1]. Acute Hepatitis C virus infections are typically asymptomatic but can become life-threatening [1,2]. Hepatitis C is a hepatotropic RNA virus of the family Flaviviridae [3]. In 70% of cases, chronic HCV infection will occur [2]. Over a 20-year period, individuals with persistent HCV infection had a 15% to 30% chance of developing cirrhosis. The Hepatitis C virus is considered a global health concern. Prevalence of Hepatitis C infection in India varies from 0.9 to1.9%. Twelve million people in the European and Mediterranean regions are chronically afflicted with the disease. Infections affect about 10 million people in the Western Pacific and Southeast Asia regions [2]. The most prevalent ways that the HCV spread are as follows: Inadequate sterilization of dental and medical equipment, particularly used syringes and needles in dentistry and medical settings, or their reuse. The most common cause of liver transplants is hepatitis C, even though the infection typically returns after the

procedure [2]. Fever, exhaustion, appetite loss, nausea, vomiting, abdominal discomfort, dark urine and yellow ingof the skin or eyes (jaundice) are some of the symptoms that may be present [4]. Due to the increased danger of meeting patients who have hepatitis C, dental interns' and students' knowledge and attitudes regarding it are clinically significant in terms of its prevention. There is no hepatitis vaccination. About 85% of those infected had the virus still present in their liver. Hepatitis C cannot be prevented, although it can be managed with antiviral drugs. Peg-interferon and Ribavirin are conventional treatments, with Telaprevir or Boceprevir added in certain circumstances. In total, 50-80% of patients receive a cure [1]. People who get liver cancer or cirrhosis need a liver transplant [1]. Prompt identification and intervention can avert severe liver impairment and enhance enduring well-being. The study goal was to find out how much dental students and interns knew about hepatitis C infection Supplies and Procedures The purpose of this study was to assess participant knowledge of Hepatitis C including its mechanism of transmission, preventative measures, related consequences and the status of the HCV vaccine's availability [1].

Materials and Methods

The updated survey was distributed via WhatsApp groups to RDDC interns and students who had consented to participate. The questionnaire, formatted in English, consisted of 20 questions. Participants were informed that their responses would be kept private and confidential. A total of 140 dental students completed the survey (Table 1). Data was entered, coded and analyzed using MS Excel. Statistical analysis was performed using frequencies and percentages for both qualitative and quantitative variables.

Table 1:

Descriptive Statistics		
	Frequency	**Percent**
Gender		
Female	124	88.6
Male	16	11.4
Total	140	100
Year		
1st year	8	5.7
2nd year	12	8.6
3rd year	36	25.7
Final year	31	22.1
Interns	53	37.9
Total	140	100
1. Did You Know About Hepatitis C before Coming to Medical Field?		
Maybe	24	17.1
No	35	25
Yes	81	57.9
Total	140	100
2. Which is True About Hepatitis C Virus		
It is highly asymptomatic	28	20
There are often no symptoms	31	22.1
There is a vaccine to prevent it	61	43.6
There is no cure	20	14.3
Total	140	100
3. Which of the Following Statements is TRUE About Hepatitis C?		
HCV infections are decreasing among women with live births	7	5
Injection drug use is the primary risk factor for HCV infection	34	24.3
Sexual exposure is the most common means of Hepatitis C virus transmission	63	45
Surveillance data reveal a decrease in reported cases of acute HCV infection from 2009 through 2017	36	25.7

Total	140	100
4. Is Hepatitis C Vaccine Available?		
Don't Know	15	10.7
Maybe	39	27.9
No	40	28.6
Yes	46	32.9
Total	140	100
5. How is Hepatitis C Transmitted from one to Another?		
Exposure to infected blood	115	82.1
Hugging or shaking hands	4	2.9
Sharing straws	4	2.9
Through sneezing or coughing	17	12.1
Total	140	100
6. Incubation Period of HCV is:		
10 to 30 days after infection	27	19.3
4 weeks to 6 weeks after infection	71	50.7
7 weeks after infection	14	10
One week to three weeks after infection	28	20
Total	140	100
7. What are the Causative Agents of Hepatitis C?		
Alcohol and drugs	7	5
All the above	29	20.7
Viruses	83	59.3
Viruses and bacteria	21	15
Total	140	100
8. Hepatitis C Virus Belongs to Which of the Following Virus Group?		
Flavi viruses	29	20.7
Hepadna viruses	31	22.1
Herpes viruses	66	47.1
Picorna viruses	14	10
Total	140	100
9. How Many Genotypes of HCV have been Identified?		
2	15	10.7
4	54	38.6
6	50	35.7
11	21	15
Total	140	100
10. What is the Most Common Symptom Associated with Chronic HCV Infection?		
Abdominal pain with or without ascites	29	20.7
Asymptomatic	33	23.6
Fever with or without jaundice	50	35.7
Jaundice	28	20
Total	140	100
11. What is the Initial Test that is Most Commonly for HCV Screening?		
Anti-HCV (ELISA)	61	43.6
HCV RNA by PCR	47	33.6
Liver biopsy	15	10.7

Liver function tests	17	12.1
Total	140	100
12. What are the Extrahepatic Manifestations of Chronic HCV Infection?		
All the above	81	57.9
Diabetes mellitus	19	13.6
Glomerulonephritis	25	17.9
Non-Hodgkins lymphoma	15	10.7
Total	140	100
P13. Do You Know Universal Precautions Taken for Precaution of Hepatitis C?		
Being educated	37	26.4
Do not know	36	25.7
Following executable protocol	17	12.1
Heard something	50	35.7
Total	140	100
14. Do You Check the Indicator Showing Whether or Not Instruments have been Sterilized Before Using them in Procedure?		
Always	73	52.1
Frequently	34	24.3
Never	6	4.3
Sometimes	27	19.3
Total	140	100
15. Do You Bend Needles After Injections and Discard them into Medical Waste Container?		
Always	78	55.7
Frequently	36	25.7
Rarely	9	6.4
Sometimes	17	12.1
Total	140	100
16. Does the Institute Provide Protection Aids (Gloves, Mask etc.) During Any Surgical Procedure?		
Don't Know	10	7.1
Maybe	28	20
No	28	20
Yes	74	52.9
Total	140	100
17. Which Group Below has and Elevated Risk of Viral Hepatitis Infection?		
A clinical laboratory analysis worker	10	7.1
A drug user / person with tattoos and piercing	15	10.7
A hospital worker	22	15.7
All the above	93	66.4
Total	140	100
18. Do You Think Hepatitis C is More Prone to Spread in Dental Practitioners?		
Don't Know	13	9.3
Maybe	35	25
No	13	9.3
Yes	79	56.4
Total	140	100
19. HCV Transmission from Dental Practitioner Can be Prevented by Wearing Gloves		
Don't know	14	10
No	14	10
Not sure	36	25.7

Yes	76	54.3
Total	140	100
20. Do You Think Hepatitis C Can Spread Through Aerosol During Dental Procedures?		
Don't know	16	11.4
Maybe	55	39.3
No	14	10
Yes	55	39.3
Total	140	100

Result

Data collected using a questionnaire consisting of participants' demographic details, evaluation of knowledge, etiological, risk factors and precautions. Collected data was entered into the EXCEL SHEET and it was validated, tabulated and analyzed with the help of MS EXCEL and results were obtained. Descriptive statistics were done. Categorical variables were expressed in count and percentage. Chi square test was used to test associations between categorical variables. Survey results showed that awareness of Hepatitis C before entering medical studies was consistent across years (p=0.828). Knowledge improved with study progression regarding the asymptomatic nature of HCV (p=0.008) and the number of genotypes (p=0.034). Significant gains were also noted in awareness of protective aids (p=0.042), risk groups (p=0.000) and risks in dental practice (p=0.000). Most students consistently recognized injection drug use and blood exposure as key risk factors, understood transmission routes and followed safe practices such as sterilization and needle disposal, with no significant year-wise differences (Table 2). However, gaps persisted in vaccine awareness, incubation period knowledge, virus classification and aerosol transmission risks, indicating areas needing stronger curricular emphasis. Overall, awareness of Hepatitis C was high among both genders, with no significant difference in prior knowledge (p=0.778). Most students correctly identified key aspects such as asymptomatic nature, common symptoms, screening tests and safe practices like sterilization and needle disposal, with no major gender disparities. However, significant differences were observed in specific areas: females showed better understanding of transmission through infected blood (p=0.014), the number of HCV genotypes (p=0.018), extrahepatic manifestations (p=0.002) and high-risk groups (p=0.022), while males demonstrated stronger knowledge of virus classification (p=0.018). These findings suggest generally consistent awareness across genders but highlight the need for targeted educational efforts, particularly to address knowledge gaps among male students in certain domains.

Table 2:

Association between Year of Study and Responses									
Responses	**Year**					**Total**	**Chi-Square Value**	**df**	**P-value**
	1st Year	**2nd Year**	**3rd Year**	**Final Year**	**Interns**				
1. Did you Know About Hepatitis C before Coming to Medical Field?									
Maybe	2(1.43)	2(1.43)	6(4.29)	7(5)	7(5)	24(17.14)	4.315	8	0.828
No	2(1.43)	1(0.71)	8(5.71)	8(5.71)	16(11.43)	35(25)			
Yes	4(2.86)	9(6.43)	22(15.71)	16(11.43)	30(21.43)	81(57.86)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
2. Which is True about Hepatitis C Virus									
It is highly asymptomatic	2(1.43)	2(1.43)	6(4.29)	7(5)	11(7.86)	28(20)	26.896	12	8
There are often no symptoms	1(0.71)	0(0)	9(6.43)	5(3.57)	16(11.43)	31(22.14)			
There is a vaccine to prevent it	5(3.57)	3(2.14)	18(12.86)	15(10.71)	20(14.29)	61(43.57)			
There is no cure	0(0)	7(5)	3(2.14)	4(2.86)	6(4.29)	20(14.29)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
3. Which of the Following Statements is TRUE about Hepatitis C?									
HCV infections are decreasing among women with live births	0(0)	0(0)	3(2.14)	1(0.71)	3(2.14)	7(5)	13.052	12	0.365
Injection drug use is the primary risk factor for HCV infection	3(2.14)	2(1.43)	11(7.86)	8(5.71)	10(7.14)	34(24.29)			

Sexual exposure is the most common means of Hepatitis C virus transmission	3(2.14)	7(5)	18(12.86)	9(6.43)	26(18.57)	63(45)			
Surveillance data reveal a decrease in reported cases of acute HCV infection from 2009 through 2017	2(1.43)	3(2.14)	4(2.86)	13(9.29)	14(10)	36(25.71)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
4. Is Hepatitis C Vaccine Available?									
Don't Know	1(0.71)	2(1.43)	4(2.86)	4(2.86)	4(2.86)	15(10.71)	10.354	12	0.585
Maybe	3(2.14)	3(2.14)	13(9.29)	4(2.86)	16(11.43)	39(27.86)			
No	2(1.43)	2(1.43)	9(6.43)	8(5.71)	19(13.57)	40(28.57)			
Yes	2(1.43)	5(3.57)	10(7.14)	15(10.71)	14(10)	46(32.86)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
5. How is Hepatitis C Transmitted from One to Another?									
Exposure to infected blood	5(3.57)	8(5.71)	34(24.29)	26(18.57)	42(30)	115(82.14)	14.54	12	0.268
Hugging or shaking hands	1(0.71)	0(0)	1(0.71)	1(0.71)	1(0.71)	4(2.86)			
Sharing straws	0(0)	1(0.71)	1(0.71)	1(0.71)	1(0.71)	4(2.86)			
Through sneezing or coughing	2(1.43)	3(2.14)	0(0)	3(2.14)	9(6.43)	17(12.14)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
6. Incubation Period of HCV is:									
10 to 30 days after infection	1(0.71)	3(2.14)	6(4.29)	4(2.86)	13(9.29)	27(19.29)	10.413	12	0.58
4 weeks to 6 weeks after infection	4(2.86)	5(3.57)	18(12.86)	19(13.57)	25(17.86)	71(50.71)			
7 weeks after infection	0(0)	3(2.14)	3(2.14)	4(2.86)	4(2.86)	14(10)			
One week to three weeks after infection	3(2.14)	1(0.71)	9(6.43)	4(2.86)	11(7.86)	28(20)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
7. What are the Causative Agents of Hepatitis C?									
Alcohol and drugs	1(0.71)	2(1.43)	1(0.71)	1(0.71)	2(1.43)	7(5)	15.998	12	0.191
All of the above	1(0.71)	1(0.71)	5(3.57)	5(3.57)	17(12.14)	29(20.71)			
Viruses	4(2.86)	8(5.71)	27(19.29)	19(13.57)	25(17.86)	83(59.29)			
Viruses and bacteria	2(1.43)	1(0.71)	3(2.14)	6(4.29)	9(6.43)	21(15)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
8. Hepatitis C Virus Belongs to Which of the Following Virus Group?									
Flavi viruses	2(1.43)	2(1.43)	8(5.71)	3(2.14)	14(10)	29(20.71)	11.922	12	0.452
Hepadna viruses	2(1.43)	5(3.57)	9(6.43)	8(5.71)	7(5)	31(22.14)			
Herpes viruses	4(2.86)	3(2.14)	14(10)	17(12.14)	28(20)	66(47.14)			
Picorna viruses	0(0)	2(1.43)	5(3.57)	3(2.14)	4(2.86)	14(10)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
9. How Many Genotypes of HCV have been Identified?									
2	1(0.71)	1(0.71)	3(2.14)	7(5)	3(2.14)	15(10.71)	22.31	12	0.034*
4	2(1.43)	3(2.14)	18(12.86)	13(9.29)	18(12.86)	54(38.57)			
6	4(2.86)	7(5)	14(10)	8(5.71)	17(12.14)	50(35.71)			
11	1(0.71)	1(0.71)	1(0.71)	3(2.14)	15(10.71)	21(15)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
10. What is the Most Common Symptom Associated with Chronic HCV Infection?									
Abdominal pain with or without ascites	2(1.43)	3(2.14)	6(4.29)	5(3.57)	13(9.29)	29(20.71)	10.147	12	0.603

Asymptomatic	1(0.71)	3(2.14)	12(8.57)	5(3.57)	12(8.57)	33(23.57)			
Fever with or without jaundice	2(1.43)	2(1.43)	11(7.86)	14(10)	21(15)	50(35.71)			
Jaundice	3(2.14)	4(2.86)	7(5)	7(5)	7(5)	28(20)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
11. What is the Initial Test that is most Common for HCV Screening?									
Anti - HCV (ELISA)	4(2.86)	7(5)	16(11.43)	10(7.14)	24(17.14)	61(43.57)	8.175	12	0.771
HCV RNA by PCR	1(0.71)	4(2.86)	14(10)	12(8.57)	16(11.43)	47(33.57)			
Liver biopsy	2(1.43)	0(0)	2(1.43)	4(2.86)	7(5)	15(10.71)			
Liver function tests	1(0.71)	1(0.71)	4(2.86)	5(3.57)	6(4.29)	17(12.14)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
12. What are the Extrahepatic Manifestations of Chronic HCV Infection?									
All the above	1(0.71)	7(5)	20(14.29)	21(15)	32(22.86)	81(57.86)	13.467	12	0.336
Diabetes mellitus	2(1.43)	3(2.14)	3(2.14)	3(2.14)	8(5.71)	19(13.57)			
Glomerulonephritis	3(2.14)	1(0.71)	7(5)	4(2.86)	10(7.14)	25(17.86)			
Non-Hodgkins lymphoma	2(1.43)	1(0.71)	6(4.29)	3(2.14)	3(2.14)	15(10.71)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
13. Do You Know the Universal Precautions Taken for Precautions of Hepatitis C?									
Being educated	3(2.14)	2(1.43)	9(6.43)	13(9.29)	10(7.14)	37(26.43)	18.786	12	0.094
Do not know	4(2.86)	5(3.57)	10(7.14)	7(5)	10(7.14)	36(25.71)			
Following executable protocol	0(0)	2(1.43)	6(4.29)	4(2.86)	5(3.57)	17(12.14)			
Heard something	1(0.71)	3(2.14)	11(7.86)	7(5)	28(20)	50(35.71)			
	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
14. Do You Check the Indicator Showing Whether Instruments have been Sterilized before Using them in Procedure?									
Always	5(3.57)	6(4.29)	22(15.71)	12(8.57)	28(20)	73(52.14)	17.037	12	0.148
Frequently	1(0.71)	3(2.14)	5(3.57)	6(4.29)	19(13.57)	34(24.29)			
Never	0(0)	1(0.71)	2(1.43)	3(2.14)	0(0)	6(4.29)			
Sometimes	2(1.43)	2(1.43)	7(5)	10(7.14)	6(4.29)	27(19.29)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
15. Do You Bend Needles After Injections and Discard them into Medical Waste Container?									
Always	4(2.86)	6(4.29)	25(17.86)	15(10.71)	28(20)	78(55.71)	10.165	12	0.602
Frequently	1(0.71)	3(2.14)	7(5)	8(5.71)	17(12.14)	36(25.71)			
Rarely	1(0.71)	2(1.43)	1(0.71)	2(1.43)	3(2.14)	9(6.43)			
Sometimes	2(1.43)	1(0.71)	3(2.14)	6(4.29)	5(3.57)	17(12.14)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
16. Does the Institute Provide Protection Aids (gloves, mask etc.) During Any Surgical Procedure?									
Don't Know	3(2.14)	2(1.43)	0(0)	2(1.43)	3(2.14)	10(7.14)	21.643	12	0.042*
Maybe	3(2.14)	2(1.43)	6(4.29)	7(5)	10(7.14)	28(20)			
No	0(0)	2(1.43)	6(4.29)	8(5.71)	12(8.57)	28(20)			
Yes	2(1.43)	6(4.29)	24(17.14)	14(10)	28(20)	74(52.86)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
17. Which Group Below has and Elevated Risk of Viral Hepatitis Infection?									
A clinical laboratory analysis worker	1(0.71)	4(2.86)	0(0)	0(0)	5(3.57)	10(7.14)	38.708	12	0.000**
A drug user / person with tattoos and piercing	3(2.14)	1(0.71)	1(0.71)	7(5)	3(2.14)	15(10.71)			
A hospital worker	0(0)	1(0.71)	3(2.14)	6(4.29)	12(8.57)	22(15.71)			
All the above	4(2.86)	6(4.29)	32(22.86)	18(12.86)	33(23.57)	93(66.43)			

Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
18. Do You Think Hepatitis C is More Prone to Spreading in Dental Practitioners?									
Don't Know	4(2.86)	1(0.71)	1(0.71)	3(2.14)	4(2.86)	13(9.29)	33.101	12	0.000**
Maybe	3(2.14)	3(2.14)	7(5)	6(4.29)	16(11.43)	35(25)			
No	1(0.71)	0(0)	2(1.43)	7(5)	3(2.14)	13(9.29)			
Yes	0(0)	8(5.71)	26(18.57)	15(10.71)	30(21.43)	79(56.43)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
19. HCV Transmission from Dental Practitioners Can be Prevented by Wearing Gloves									
Don't know	3(2.14)	1(0.71)	2(1.43)	3(2.14)	5(3.57)	14(10)	19.216	12	0.083
No	0(0)	2(1.43)	2(1.43)	5(3.57)	5(3.57)	14(10)			
Not sure	4(2.86)	1(0.71)	12(8.57)	9(6.43)	10(7.14)	36(25.71)			
Yes	1(0.71)	8(5.71)	20(14.29)	14(10)	33(23.57)	76(54.29)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			
20. Do You Think Hepatitis C Can Spread Through Aerosols During Dental Procedures?									
Don't know	3(2.14)	2(1.43)	3(2.14)	4(2.86)	4(2.86)	16(11.43)	14.514	12	0.269
Maybe	4(2.86)	3(2.14)	12(8.57)	14(10)	22(15.71)	55(39.29)			
No	1(0.71)	0(0)	5(3.57)	2(1.43)	6(4.29)	14(10)			
Yes	0(0)	7(5)	16(11.43)	11(7.86)	21(15)	55(39.29)			
Total	8(5.71)	12(8.57)	36(25.71)	31(22.14)	53(37.86)	140(100)			

Discussion

This study was carried out in the group of first to final year dental students and interns in dental colleges in Nagpur about its transmission, etiological factor, knowledge and precautions who were supposed to have an adequate understanding and knowledge towards Hepatitis C, similarly AH Almansour studied Hepatitis C awareness among final year students at University of Dammam [5]. On the other hand, K. Shah observed among dental practitioners and interns practicing in Maharashtra, India [2]. Persons infected with HCV virus are generally without any symptoms and are unaware that they are infected with virus [6] most of the students at University of Dammam knew that people with hepatitis c virus infection are asymptomatic 62(75.6%) of males and 105(88.2%) females are aware that infection with HCV is asymptomatic [5]. Simultaneously there was a lot of confusion and doubt among students regarding symptoms with HCV infection 57.12% of students believe that the infection is asymptomatic, 39.81% of students say that it is temporary infection 1.35% believe that it cannot be prevented and 31.15% believed that it is treatable [1]. In the present study it was reported that 25 (17.86%) females had a better knowledge than males 3 (2.14%) about HCV infection that it is generally asymptomatic while 55(39.29%) females and 6(4.29%) believe that there is a vaccine to prevent 3(2.14%) and 17(12.14%) feel that there is no cure to H Hepatitis C infection (Table 3). As per the present study conducted the participants knowledge on unavailability of vaccine was low which was about 49% and knowledge on availability was 51 in which compared to the previous study conducted by K Shah et al. [2] which was seen to be very low of about 43% availability of vaccine and 57% unavailability of vaccine.

Table 3:

Association between Gender and Responses						
	Gender		Total	Chi-Square Value	df	P-Value
	Female	Male				
1.Did You Know about Hepatitis C before Coming to Medical Field?						
Maybe	21(15)	3(2.14)	24(17.14)	0.502	2	0.778
No	30(21.43)	5(3.57)	35(25)			
Yes	73(52.14)	8(5.71)	81(57.86)			
Total	124(88.57)	16(11.43)	140(100)			
2. Which is True about Hepatitis C Virus						
It is highly asymptomatic	25(17.86)	3(2.14)	28(20)	0.486	3	0.922
There are often no symptoms	27(19.29)	4(2.86)	31(22.14)			
There is a vaccine to prevent it	55(39.29)	6(4.29)	61(43.57)			
There is no cure	17(12.14)	3(2.14)	20(14.29)			

Total	124(88.57)	16(11.43)	140(100)			
3. Which of the Following Statements is TRUE about Hepatitis C?						
HCV infections are decreasing among women with live births	6(4.29)	1(0.71)	7(5)	1.405	3	0.704
Injection drug use is the primary risk factor for HCV infection	32(22.86)	2(1.43)	34(24.29)			
Sexual exposure is the most common means of Hepatitis C virus transmission	55(39.29)	8(5.71)	63(45)			
Surveillance data reveal a decrease in reported cases of acute HCV infection from 2009 through 2017	31(22.14)	5(3.57)	36(25.71)			
Total	124(88.57)	16(11.43)	140(100)			
4. Is Hepatitis C Vaccine Available?						
Don't Know	12(8.57)	3(2.14)	15(10.71)	3.427	3	0.33
Maybe	35(25)	4(2.86)	39(27.86)			
No	38(27.14)	2(1.43)	40(28.57)			
Yes	39(27.86)	7(5)	46(32.86)			
Total	124(88.57)	16(11.43)	140(100)			
5. How is Hepatitis C Transmitted from One to Another?						
Exposure to infected blood	106(75.71)	9(6.43)	115(82.14)	10.54	3	0.014
Hugging or shaking hands	2(1.43)	2(1.43)	4(2.86)			
Sharing straws	3(2.14)	1(0.71)	4(2.86)			
Through sneezing or coughing	13(9.29)	4(2.86)	17(12.14)			
Total	124(88.57)	16(11.43)	140(100)			
6. Incubation Period of HCV is:						
10 to 30 days after infection	25(17.86)	2(1.43)	27(19.29)	3.932	3	0.269
4 weeks to 6 weeks after infection	65(46.43)	6(4.29)	71(50.71)			
7 weeks after infection	12(8.57)	2(1.43)	14(10)			
One week to three weeks after infection	22(15.71)	6(4.29)	28(20)			
Total	124(88.57)	16(11.43)	140(100)			
7. What are the Causative Agents of Hepatitis C?						
Alcohol and drugs	6(4.29)	1(0.71)	7(5)	0.846	3	0.839
All the above	27(19.29)	2(1.43)	29(20.71)			
Viruses	73(52.14)	10(7.14)	83(59.29)			
Viruses and bacteria	18(12.86)	3(2.14)	21(15)			
Total	124(88.57)	16(11.43)	140(100)			
8. Hepatitis C Virus Belongs to Which of the Following Virus Group?						
Flavi viruses	25(17.86)	4(2.86)	29(20.71)	10.044	3	0.018
Hepadna viruses	29(20.71)	2(1.43)	31(22.14)			
Herpes viruses	61(43.57)	5(3.57)	66(47.14)			
Picorna viruses	9(6.43)	5(3.57)	14(10)			
Total	124(88.57)	16(11.43)	140(100)			
9. How Many Genotypes of HCV have been Identified?						
2	10(7.14)	5(3.57)	15(10.71)	10.011	3	0.018
4	48(34.29)	6(4.29)	54(38.57)			
6	48(34.29)	2(1.43)	50(35.71)			
11	18(12.86)	3(2.14)	21(15)			
Total	124(88.57)	16(11.43)	140(100)			
10. What is the Most Common Symptom Associated with Chronic HCV Infection?						
Abdominal pain with or without ascites	27(19.29)	2(1.43)	29(20.71)	0.846	3	0.838

Asymptomatic	29(20.71)	4(2.86)	33(23.57)			
Fever with or without jaundice	44(31.43)	6(4.29)	50(35.71)			
Jaundice	24(17.14)	4(2.86)	28(20)			
Total	124(88.57)	16(11.43)	140(100)			
11. What is the Initial Test that is Most Common for HCV Screening?						
Anti - HCV (ELISA)	56(40)	5(3.57)	61(43.57)	1.803	3	0.614
HCV RNA by PCR	41(29.29)	6(4.29)	47(33.57)			
Liver biopsy	12(8.57)	3(2.14)	15(10.71)			
Liver function tests	15(10.71)	2(1.43)	17(12.14)			
Total	124(88.57)	16(11.43)	140(100)			
12. What are the Extrahepatic Manifestations of Chronic HCV Infection?						
All the above	76(54.29)	5(3.57)	81(57.86)	14.677	3	0.002
Diabetes mellitus	12(8.57)	7(5)	19(13.57)			
Glomerulonephritis	22(15.71)	3(2.14)	25(17.86)			
Non-Hodgkinâ€™s lymphoma	14(10)	1(0.71)	15(10.71)			
Total	124(88.57)	16(11.43)	140(100)			
PRECAUTIONS_13. Do You Know Universal Precautions Taken for Precaution of Hepatitis C?						
Being educated	30(21.43)	7(5)	37(26.43)	4.238	3	0.237
Do not know	31(22.14)	5(3.57)	36(25.71)			
Following executable protocol	16(11.43)	1(0.71)	17(12.14)			
Heard something	47(33.57)	3(2.14)	50(35.71)			
Total	124(88.57)	16(11.43)	140(100)			
14. Do You Check the Indicator Showing Whether or not Instruments have been Sterilized before Using Them in Procedure?						
Always	64(45.71)	9(6.43)	73(52.14)	3.562	3	0.313
Frequently	31(22.14)	3(2.14)	34(24.29)			
Never	4(2.86)	2(1.43)	6(4.29)			
Sometimes	25(17.86)	2(1.43)	27(19.29)			
Total	124(88.57)	16(11.43)	140(100)			
15. Do You Bend Needles After Injections and Discard Them into Medical Waste Container?						
Always	69(49.29)	9(6.43)	78(55.71)	5.496	3	0.139
Frequently	34(24.29)	2(1.43)	36(25.71)			
Rarely	6(4.29)	3(2.14)	9(6.43)			
Sometimes	15(10.71)	2(1.43)	17(12.14)			
Total	124(88.57)	16(11.43)	140(100)			
16. Does the Institute Provide Protection Aids (Gloves, Mask etc.) During Any Surgical Procedure?						
Don’t Know	7(5)	3(2.14)	10(7.14)	3.957	3	0.266
Maybe	25(17.86)	3(2.14)	28(20)			
No	26(18.57)	2(1.43)	28(20)			
Yes	66(47.14)	8(5.71)	74(52.86)			
Total	124(88.57)	16(11.43)	140(100)			
RISK FACTOR _17. Which Group below have and Elevated Risk of Viral Hepatitis Infection?						
A clinical laboratory analysis worker	6(4.29)	4(2.86)	10(7.14)	9.623	3	0.022
A drug user / person with tattoos and piercing	13(9.29)	2(1.43)	15(10.71)			
A hospital worker	19(13.57)	3(2.14)	22(15.71)			
All the above	86(61.43)	7(5)	93(66.43)			
Total	124(88.57)	16(11.43)	140(100)			
18. Do You Think Hepatitis C is More Prone to Spreading in Dental Practitioners?						
Don’t Know	11(7.86)	2(1.43)	13(9.29)	4.025	3	0.259

Maybe	34(24.29)	1(0.71)	35(25)			
No	12(8.57)	1(0.71)	13(9.29)			
Yes	67(47.86)	12(8.57)	79(56.43)			
Total	124(88.57)	16(11.43)	140(100)			
19. HCV Transmission from Dental Practitioners can be Prevented by Wearing Gloves						
Don't know	11(7.86)	3(2.14)	14(10)	3.755	3	0.289
No	14(10)	0(0)	14(10)			
Not sure	33(23.57)	3(2.14)	36(25.71)			
Yes	66(47.14)	10(7.14)	76(54.29)			
Total	124(88.57)	16(11.43)	140(100)			
20. Do You Think Hepatitis C Can Spread Through Aerosol During Dental Procedures?						
Don't know	14(10)	2(1.43)	16(11.43)	1.097	3	0.778
Maybe	50(35.71)	5(3.57)	55(39.29)			
No	13(9.29)	1(0.71)	14(10)			
Yes	47(33.57)	8(5.71)	55(39.29)			
Total	124(88.57)	16(11.43)	140(100)			

The study conducted by AH Almansour et al. [7] Aside from the fact that drug users can effectively spread drugs by injection through blood transfusions and organ donation, knowledge on most of the questions regarding transmission was lacking [5]. Also, the study conducted by MS Jamil et al. [8] it was seen that knowledge regarding the awareness of participants in the study areas regarding HCV it's mode of transmission was inadequate [8]. Compared to our study 82% of students correctly identify exposure to infected blood as a primary transmission method. There are no significant differences among years showing consistent knowledge regarding transmission. And 12 % participants thought that it transmitted through sneezing or coughing. According to the study conducted by R Sharma et al. [1] it was seen that the awareness among the participants about the extra hepatic complications of Hepatitis C infection 371(71.35%) and 348 (66.92%) said that Hepatitis C may lead to liver failure and cirrhosis respectively. 196 (37.69%) students said that membranous glomerulonephritis is complications of Hepatitis C and 305(58.65%) said that hepatitis c infection might cause carcinoma of liver [1]. As per this study, the participants 19 (13.6%) said that Hepatitis C may lead to diabetes mellitus., 25 (17.9%) glomerulonephritis is caused and 15 (10.7%) said that Hepatitis C may lead to non-hodgkins lymphoma. And remaining 81 (57.9%) said that Hepatitis C infection leads to all the extrahepatic manifestations including diabetes mellitus, non-hodgkins lymphoma and glomerulonephritis. According to the study conducted by Al bawl et al. [9] it was seen that the anti HCV antibody test ELISA (21%) detects more HCV infection than HCV RNA method (17.2%) [3] Compared to our study there is a significant common understanding among all the students about initial testing methods with consistent level of awareness with Anti HCV ELISA 61 (43.6%) and HCV RNA by PCR 47(33.6%) [10].

Conclusion

Responses indicate that as dental students advance through their studies, their understanding of Hepatitis C improves in several areas, particularly regarding transmission, risk factors, etiological factors, diagnosis precautions and clinical practices. Although overall knowledge of HCV was adequate among participants there are significant gaps which need to be closed and modified. However, there are still significant gaps in knowledge regarding vaccines, transmission methods, and preventive measures, suggesting opportunities for curriculum enhancement.

Ethical Approval

The present study was approved by institutional ethical committee (Ethical clearance no. IEC/ RDDC&RC/Dean/48/2024 Date: 18/07/2024).

References

1. Sharma R, Pallavi SN, Kalsi A, Tewari N, Beri V (2015) Awareness of hepatitis C among dental students in north India: A survey. Int J Res Pharm L Sci 4(5): 1770-1774.
2. Shah K, Fruitwala A, Landge J, Syed H, Lahoti A (2023) Hepatitis C infection awareness among dental practitioners and interns practicing in Maharashtra, India. J Oral Med, Oral Surg, Oral Pathol, Oral Radiol 9(2): 82-85.
3. Centers for Disease Control and Prevention (2016) Hepatitis C FAQs for health professionals.
4. Gambhir RS, Kumar M, Singh G, Singh A, Kaur A (2018) Hepatitis C: Knowledge and awareness of private dental practitioners of a tri city in India. J Educ Health Promot 7: 7.
5. World Health Organization (2015) Hepatitis C.
6. Robbin's Basic Pathology, (5th edn), pp. 846-848.
7. Almansour AH, Darwish MA, Wahab MM (2017) Hepatitis C infection awareness among fourth year medical students at University of Dammam. J Fam Community Med 24(1): 49-54.
8. Jamil MS, Ali H, Shaheen R, Basit A (2010) Knowledge and awareness of hepatitis C among residents of three Union Councils in Mansehra. J Ayub Med Coll Abbottabad 22(3): 192-196.
9. Al Balwi MA (2011) Prevalence of mixed Hepatitis C Virus genotypes among recently diagnosed dialysis patients with HCV infection. Saudi J Kidney Dis Transpl 22(4): 712-716.
10. Harsh Mohan, Textbook of pathology, (7th edn), Jaypee Brothers Medical Publishers, Delhi, India, pp. 593-594.