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Knowledge and Practises Related to Hepatitis B among Dental Students

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ABSTRACT

Introduction:Hepatitis B infection is one of the most common causes of viral Hepatitis and is caused by Hepatitis B virus (HBV). HBV is highly contagious and is more infectious than HIV. HBV is a major global health problem that affects a large number of people every year. The aim of this study is to assess the knowledge and practises related to Hepatitis B among dental students.

Materials And Methods: A descriptive cross sectional survey was conducted in the month of March to April 2020 among 200 dental students through a self administered questionnaire. The responses were collected, tabulated in excel sheet and analysed using SPSS software. Chi square test was used to analyze the level of knowledge on Hepatitis B among dental students with statistical significance of $p< 0.05$.

Results: 97% students were aware about Hepatitis B. Around 89.5% students said that Hepatitis B infection is transmitted by virus and 90.5% students were that Hepatitis infection was transmitted during blood transfusions. 87% of students were aware that they should receive immunisation against Hepatitis virus.

Conclusion: The study shows that the majority of the students have adequate knowledge and practises related to Hepatitis B. From the present study, the first year and second year undergraduate dental students had good knowledge compared to other undergraduate dental students.

Keywords: Hepatitis B, HBV infection, dental students, knowledge

INTRODUCTION

Hepatitis B is an occupational health hazard among health care workers. Knowledge about Hepatitis B virus (HBV) and the mode of transmission, its prevention is an absolute necessity among students. HBV is a major global health problem that affects a large number of people every year. Preclinical students are at high risk of acquiring the HBV infection during clinical practise(Peeran*et al.,* 2017). It is believed that dentists and dental students are at high risk of exposure to HBV because dentistry involves use of small, sharp instruments that can get contaminated easily with infected blood during a procedure which is one of the main modes of transmission of HBV. The possibility of HBV transmission from exposure to saliva and gingival crevicular fluid is a well known fact(Shah *et al.,* 2016).

HBV is a highly contagious disease. It is transmitted through blood, semen, viginal mucous fluids, needlestick, injuries, sharing toothbrushes, razors,nail clippers. First year dental students are screened for the presence of HB surface antibodies. Although the students are aware about the risk of infection, if they are not vaccinated they can also be affected (Madiba *et al.,* 2018) India has the prevalence rate of Hepatitis between 2% and 10% and four percent of the population was estimated to be HBV carriers. The dental curriculum should incorporate sessions about all the possible diseases that can spread and can be risky for patients and themselves (Peeran*et al.,* 2017).

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Proper knowledge is necessary along with the precautions that are to be taken for patients as well health care professionals about HBV is mandatory. Institutions should take initiative in giving Hepatitis B immune status and free HBV vaccines for incomplete vaccinated or non-vaccinated students. Previously our team had conducted numerous original studies (Sarbeen and Gheena, 2016; Krishnan *et al.*, 2018; Padavala and Sukumaran, 2018; Abitha and Santhanam, 2019; Harrita and Santhanam, 2019; Hema Shree *et al.*, 2019; Palati*et al.*, 2019) and surveys (Ahad and Gheena, 2016; Gunasekaran and Abilasha, 2016; Prasanna and Gheena, 2016; Hannah, Ramani, Sherlin, *et al.*, 2018; Sheriff and Santhanam, 2018; Manohar and Abilasha, 2019; Palati*et al.*, 2020; Uma *et al.*, 2020) . The aim of this study is to assess the knowledge and practises related to Hepatitis B among dental students.

Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Arriga*et al.*, 2018; Basha, Ganapathy and Venugopalan, 2018; Hannah, Ramani, Herald. J. Sherlin, *et al.*, 2018; Hussainy*et al.*, 2018; Jeevanandan and Govindaraju, 2018; Kannan and Venugopalan, 2018; Kumar and Antony, 2018; Manohar and Sharma, 2018; Menon *et al.*, 2018; Nandakumar and Nasim, 2018; Nandhini, Babu and Mohanraj, 2018; Ravinthar and Jayalakshmi, 2018; Seppan*et al.*, 2018; Teja, Ramesh and Priya, 2018; Duraisamy*et al.*, 2019; Gheena and Ezhilarasan, 2019; Hema Shree *et al.*, 2019; Rajakeerthi and Ms, 2019; Rajendran *et al.*, 2019; Sekar*et al.*, 2019; Sharma *et al.*, 2019; Siddique *et al.*, 2019; Janani, Palanivelu and Sandhya, 2020; Johnson *et al.*, 2020; Jose, Ajitha and Subbaiyan, 2020).

MATERIALS AND METHODS

STUDY DESIGN: A Cross sectional study was conducted in the month of March to April 2020 among 200 dental students.

STUDY SUBJECTS: A simple random sampling method was used to select the study participants. Among 200 participants, 73 participants belong to first year, 46 participants belong to second year, 41 Participants belong to third year, 21 participants belong to fourth year and 19 participants belong to Interns.

INCLUSION CRITERIA : All undergraduate dental college students who were willing to participate were included.

ETHICAL CONSIDERATIONS: Returning the filled questionnaire was considered as implicit consent with no need for signing for a return consent. Ethical approval of study is obtained from the Institutional Review Board (IRB).

STUDY METHOD:

Self administered questionnaire of 24 close ended questions was prepared and was distributed among undergraduate dental college students of private dental college institutions through an online survey form “GOOGLE FORMS” . Demographic details were also included in the questionnaire.

STATISTICAL ANALYSIS

Data was analysed with SPSS version (22.0). Descriptive statistics as number and percent were calculated to summarize qualitative data. Chi square test was used to analyze and compare the

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education level of students and their knowledge and practises related to Hepatitis B among preclinical and clinical students in dental institutions. The confidence level was 95% and the statistical significance p <0.05 was considered statistically significant. Finally the results were represented by using bar charts and frequency tables.

RESULTS

Among 200 participants, 37.1% participants belonged to first year, 23.4% participants belonged to second year , 20.8% participants belonged to third year , 10.7% participants belonged to fourth year, and 8.1% participants belonged to interns. In the present study, 97% were aware about the disease Hepatitis B. About 89.5% participants were aware that Hepatitis infection was transmitted through virus. In the present study, 90.5% dental students were aware that Hepatitis is transmitted through contaminated blood/ blood transfusions. About 58.5% participants were aware that shaking hands with an infected person does not cause Hepatitis. In the present study 52.5% were aware that sharing toothbrushes with an infected person does not cause Hepatitis. Around 82.5% participants were aware that vertical transmission from infected mother to child during delivery causes Hepatitis. Around 81% agreed that dentists are at high risk of getting HBV infection more compared to other professions. In the present study 80.5% participants agree that blood soaked sponge transmits Hepatitis infection. Around 82.5% are aware that aerosols produced by hand piece transmits Hepatitis B infections. In the present study, 80.5% participants agreed that they Would carry out a sonic/ultrasonic scaling procedure in patients positive to Hepatitis B. About 81% participants checked for antibodies after vaccination. In the present study, 82% participants were vaccinated against Hepatitis B. Around 82% are aware about the risk of transmission of Hepatitis B among their profession. 77.5% are aware of the appropriate intervals of the Hepatitis B vaccination. Around 84% are aware of the first aid treatment in case of accidental exposure to Hepatitis B. 78% would feel comfortable treating a HBV infected patient. Around 87% agree that dental students and professionals should receive immunisation against Hepatitis virus. 89% knew the precautionary measures to be taken against Hepatitis B in your routine practice. Around 77.5% of dental students were aware about the risk of Hepatitis B even before entering the dental college. 57.5% participants agree that 3 booster doses of vaccines a dental health care provider should receive. Around 91.5% agree that special precautions are necessary to treat a Hepatitis B-positive patient. 84.5% agree that regular Hepatitis B testing of the patients should be made mandatory before any surgical procedure is carried out. Around 79% agree that in case of an emergency they are ready to perform mouth to mouth resuscitation in Hepatitis B-positive patients. 65.5% agree that it is important to uphold the confidentiality of a patient's Hepatitis B-positive status.[TABLE 1].

DISCUSSION

Our institution is passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh*et al.*, 2018; VijayashreePriyadharsini, SmilineGirija and Paramasivam, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramaduraiet *al.*, 2019; Sridharan *et al.*, 2019; VijayashreePriyadharsini, 2019; Chandrasekar *et al.*, 2020; Mathew *et al.*, 2020; R *et al.*, 2020; Samuel, 2021)

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Hepatitis B is a disease that is more infectious than HIV. Hepatitis B is a very common disease in occupations such as surgeons and physicians. HBV is one of the frequently occurring diseases in a developing country like India. (Pandharbale*et al.*, 2015). In the present study, 97 undergraduate dental students were aware about Hepatitis B. Among which the majority of the first year students i.e 68% were aware about Hepatitis B disease with p value = 0.189 which is statistically not significant. Similar findings were reported in a study done by Nazir Ibrahim, Amr Idris et al (92%)(figure 1). Hepatitis B is a major health problem in India. Prevention, transmission, progression of disease is important to know (Ibrahim and Idris, 2014).

Around 89.5% students knew that Hepatitis B infection was transmitted by virus. In the present study 61 first year undergraduate students had adequate knowledge regarding the same with p value = 0.102 which is statistically not significant. Results were not in consensus with the previous study done by Yuan-Yuan Li, Wei-Wei Chen et al (16.4%) (figure 2).Hepatitis B primarily affects the liver which is caused by HB virus (Bility*et al.*, 2014).

In the present study, dental students were aware that Hepatitis was transmitted by blood transfusions (90.5%). Around 63 first year dental students were aware that Hepatitis is transmitted through blood transfusions, followed by 39% second and third year dental students. The chi square test showed p value as 0.90 which was found to be statistically not significant. According to Majid Mohensenizaden and Hamid Reza molllalei et al- 86.3% samples confirmed positive to Hepatitis during blood transfusions.(figure 3) Post transfusion Hepatitis is the most common form of Hepatitis B transmission.(Moosavy*et al.*, 2017).

Around 58.5% of students knew that shaking hands with an infected person does not cause Hepatitis. In the present study 53 first year undergraduate students also believed the same With p value = 0.00. which was statistically significant. There were no existing articles related to this. (figure 4) .No virus can spread through day to day contact.

In the present study, 52.5% dental students were aware that Hepatitis cannot be spread by shaking toothbrushes with an infected person. Around 51 first year dental students had knowledge regarding the same with p value = 0.00. which was statistically significant.(figure 5) Toothbrushes, towels carry traces of the blood sharing with an infected person.

Around 82.5% of the students knew that vertical transmission from an infected mother to child causes Hepatitis. In the present study 45 first year undergraduate students were aware that transmission from infected mother to child causes Hepatitis.(figure 6) The chi square test showed p values as 0.00. which was statistically significant. According to Ivan Gentile, Guglielmo Borgia et al had similar findings (90%)(Gentile and Borgia, 2014). Hepatitis B poses risk factors to fetuses from their infected mother.

In the present study, 81% of dental students were aware that dentists are at high risk of getting HBV more than any other profession. Around 50 first year dental students had knowledge regarding the same with p value = 0.01 which is statistically significant. Around 80.5% of the Students knew that blood soaked sponge can transmit Hepatitis B.(figure 7) In the present study,

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50% of first year undergraduate students were aware of this. The chi square test showed p value = 0.01 that is statistically significant.(figure 8)

In the present study, 82.5% Students knew that aerosols in handpiece transmits HBV infection Around 48 first year undergraduate students were aware of the same. The chi square test showed p value = 0.01 that is statistically significant. (figure 9). The aerosol from the hand piece contains primarily a large-particle spatter of water, saliva, blood, microorganisms, and other debris that can travel a short distance and affect the other patient.

Around 80% of the students said that they would carry out ultrasonic scaling procedures on a HBV positive patient. In the present study, 50 first year undergraduate students were aware of this. The chi square test showed p value = 0.01 that is statistically significant.(figure 10). No existing literature was found to support this. The instrument that is used to carry out ultrasonic scaling procedure will have blood stains and debris that can transmit Hepatitis infection.

In the present study 82% students checked for antibodies after vaccination of HBV. In the present study, 49 first year undergraduate students were aware of the same. The chi square test showed p value = 0.01 that is statistically significant (figure 11. A study by chul. S Hyun and Seulgi lee et al only 10.2% of study participants checked their antibody levels (Hyun, Lee and Ventura, 2019).

Around 82% of the students have been vaccinated against HBV. In the present study, 47% of first year undergraduate students are vaccinated against Hepatitis B. The chi square test showed p value = 0.00 that is statistically significant (figure 12). According to Eric Osei , John Niyilapah et al similar findings were reported (44.2)%. The Hepatitis vaccine prevents Hepatitis B infection that eventually can lead to cancer.

In the present study 82% students are aware about the risk of transmission of HBV in their profession. In the present study, 50 first year undergraduate students were aware of the same. The chi square test showed p value = 0.00 that is statistically significant(figure 13). Jose D. Debes et al had similar findings with 70%.(Debes, Kayandabila and Pogemiller, 2016). To prevent the transmission of disease, proper community awareness is required.

Around 77.5% of the students were aware about the booster doses for Hepatitis B vaccination. In the present study, 44 first year undergraduate students were aware of the same. The chi square test showed p value = 0.03 that is statistically significant(figure 14) Hepatitis vaccine is usually given in 3 doses.

In the present study 84% Students are aware about the first aid treatment for Hepatitis B. In the present study, 49 first year undergraduate students were aware of the same.The chi square test showed p value = 0.00 that is statistically significant (figure 15). Washing hands with soap for every exposure to blood reduces the chances of transmission of Hepatitis.

Around 78% of the students feel comfortable treating an HBV infected patient. In the present study, 45 first year undergraduate students were aware of the same. The chi square test showed p value = 0.01 that is statistically significant (figure 16). More precautions are necessary while treating Hepatitis B positive patients.

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In the present study 87% dental students were aware that they should receive immunization . In the present study, 52 first year undergraduate students were aware of the same. The chi square test showed p value = 0.00 that is statistically significant(figure 17). According to Aparajita.D et al the finding was found to be 49.52%. (Shitoot*et al.*, 2016). Hepatitis vaccine is given to prevent severe liver disease.

Around 89% of the students know the precautionary measures against HBV in routine practice. In the present study, 58 first year undergraduate students were aware of the same. The chi square test showed p value = 0.24 that is statistically not significant(figure 18). Measures for Hepatitis B positive patients includes intake of several antiviral medications that can help fight the Hepatitis virus and slows down its ability to damage the liver along with the routine hand washing technique and wearing of personal protective equipment.

In the present study 77.5% students were aware about the risk of exposure to HBV. In the present study, 46% first year undergraduate students were aware of the same. The chi square test showed p value = 0.58 that is statistically not significant (figure 19). According to the study by Claude AsabaBelanqu Ale et al 16.81% participants were about the same (Aroke*et al.*, 2018).

Around 57.5% of the students agreed that 3 doses of vaccine is needed. In the present study, 21 first year undergraduate students were aware of this. The chi square test showed p value = 0.58 that is statistically not significant (figure 20). No existing literature has been found to support this. Vaccines for Hepatitis B are primarily administered in 3 booster doses.

In the present study 91.5% students say that precautions are necessary to treat an HBV positive patient. In the present study, 62 first year undergraduate students were aware of the same. The chi square test showed p value = 0.35 that is statistically not significant (figure 21). Precautions needed while treating HBV positive patients include proper sanitary needs, blood tests should be performed.

Around 84.5% of the students think that testing for HB is mandatory before surgical procedure. In the present study, 45 first year undergraduate students were aware of this. The chi square test showed p value = 0.00 that is statistically significant (figure 22). No existing literature has been found for this.

In the present study 79% students were ready to perform mouth to mouth resuscitation of HBV positive patients. In the present study, 44 first year undergraduate students were aware of the same. The chi square test showed p value = 0.00 that is statistically significant (figure 23). There is no risk of transmission of Hepatitis B after mouth to mouth resuscitation.

Around 65.5% of the Students think that it is important to uphold confidentiality of HBV positive status of patients. In the present study, 37% second year undergraduate students were aware of this. The chi square test showed p value = 0.00 that is statistically significant (figure 24).No existing Literature has been found to support this. Disclosing the information of a patient is not a legal requirement.

The limitation of this study was biased sampling, equal number of participants can be included from different years of study to get more accuracy in the results. The future scope of this study is

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that it can be expanded widely to include an equal number of participants to assess the awareness and knowledge on Hepatitis B among dental students.

CONCLUSION

Within the limitations of the study, we conclude that the majority of the students have adequate knowledge and practises related to Hepatitis B. From the present study, the first year and second year undergraduate dental students had good knowledge compared to other undergraduate dental students.

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AUTHOR CONTRIBUTIONS

M.B. Sai Keerthana: Literature Search, survey, data collection, analysis, manuscript writing.
Dr.Archana Santhanam: Study design, data verification, manuscript drafting.

CONFLICTS OF INTEREST

The authors declare that there were no conflicts of interest in the present study.

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Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

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TABLE 1: Depicts the percentage response on knowledge and practise related to Hepatitis B among dental students

S.NO	QUESTIONS	CHOICES	RESPONSES
1.	Year of Study	● Ist Years ● IInd Years ● IIIrd Years ● IVth Years ● Intern	● 37.1% ● 23.4% ● 20.8% ● 10.7% ● 8.0%
2.	Are you aware about the disease Hepatitis B	● Yes ● No	● 97% ● 3%
3.	Is Hepatitis infection transmitted by virus	● Yes ● No	● 89.5% ● 10.5%
4.	Is Hepatitis transmitted through contaminated blood/ blood transfusions	● Yes ● No	● 90.5% ● 9.5%
5.	Shaking hands with infected person cause Hepatitis	● Yes ● No	● 41.5% ● 58.5%
6.	Sharing toothbrushes with infected person cause Hepatitis	● Yes ● No	● 52.5% ● 47.5%
7.	Vertical transmission from infected mother to child during delivery cause Hepatitis	● Yes ● No	● 82.5% ● 17.5%
8.	Are dentists at high risk of getting HBV	● Agree	● 81%

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

	infection more compared to other professions	• Disagree	• 19%
9.	Can blood soaked sponge transmit the Hepatitis infection	• Yes • No	• 80.5% • 19.5%
10.	Can aerosols produced by hand piece transmit Hepatitis B infections	• Yes • No	• 82.5% • 17.5%
11.	Would you carry out a sonic/ultrasonic scaling procedure in patients positive to Hepatitis B	• Yes • No	• 80% • 20%
12.	Did you check for antibodies after vaccination	• Yes • No	• 81% • 19%
13.	Are you vaccinated against Hepatitis B	• Yes • No	• 82% • 18%
14.	Are you aware about the risk of transmission of Hepatitis B among your profession	• Yes • No	• 82% • 18%
15.	Are you aware of the appropriate intervals of the Hepatitis B vaccination	• Yes • No • Maybe	• 77.5% • 13% • 9.5%
16.	Are you aware of the first aid treatment in case of accidental exposure to Hepatitis B	• Yes • No	• 84% • 16%
17.	Will you feel comfortable treating a HBV infected patient	• Yes • No	• 78% • 22%
18.	Should dental students and professionals receive immunisation against Hepatitis virus	• Yes • No	• 87% • 13% •
19.	Do you know the precautionary measures to be taken against Hepatitis B in your routine practice	• Yes • No	• 89% • 11%
20.	Before entering the dental college, were you aware of the risk of exposure to Hepatitis B	• Yes • No	• 77.5% • 22.5%
21.	How many booster doses of vaccines should	• 2	• 20.5%

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

	a dental health care provider receive	• 3 • No Idea	• 57.5% • 22%
22.	Do you think special precautions are necessary to treat a Hepatitis B-positive patient	• Yes • No	• 91.5% • 8.5%
23.	Should regular Hepatitis B testing of the patients be made mandatory before any surgical procedure is carried out	• Yes • No	• 84.5% • 15.5%
24.	In case of an emergency will you be ready to perform mouth to mouth resuscitation in Hepatitis B-positive patient	• Yes • No	• 79% • 21%
25.	Do you think that you have to uphold the confidentiality of a patient's Hepatitis B-positive status	• Yes • No • Maybe	• 65.5% • 10.5% • 24%

LEGENDS FOR FIGURES:

Figure 1: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and awareness about the Hepatitis B disease using chi square test.

Figure 2:Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and transmission of Hepatitis infection by virus using chi square test.

Figure 3:Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and transmission of Hepatitis through blood/blood transfusions using chi square test.

Figure 4:Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and transmission of Hepatitis by shaking hands with an infected person using chi square test.

Figure 5: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and transmission of Hepatitis by sharing a toothbrush of an infected person using chi square test.

Figure 6: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students on vertical transmission of Hepatitis from infected mother to child

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

using chi square test.

Figure 7: Bar graph depicting comparison of responses between educational levels of undergraduate dental students and dentists being at high risk of getting HBV infection compared to other professions using chi square test.

Figure 8:Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and transmission of Hepatitis infection through blood soaked sponge using chi square test.

Figure 9: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and transmission of Hepatitis B infection through aerosols produced by hand piece using chi square test.

Figure 10: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students on performing sonic/ultrasonic scaling procedure on Hepatitis B patients using chi square test.

Figure 11: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and checking of antibodies after vaccination using chi square test.

Figure 12:Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and vaccination against Hepatitis B using chi square test.

Figure 13: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students on the risk of transmission of Hepatitis B using chi square test.

Figure 14:Bar graph depicting comparison of responses on educational levels of undergraduate dental students on appropriate intervals of Hepatitis B vaccination chi square test.

Figure 15: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students on the first aid treatment in case of accidental exposure to Hepatitis B using chi square test.

Figure 16: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students on being comfortable at treating HBV infected patients using chi square test.

Figure 17: Bar graph depicting comparison of educational levels of undergraduate dental students on receiving immunization against Hepatitis virus using chi square test.

Figure 18: Bar graph depicting comparison of educational levels of undergraduate dental students on the precautionary measures that are needed to be taken against Hepatitis B in their routine practise using chi square test.

Figure 19: Bar graph depicting comparison of responses between educational levels of undergraduate dental students and risk of exposure to Hepatitis B before entering dental college

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

using chi square test.

Figure 20: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and the number of booster doses of vaccination that a healthcare provider should receive using chi square test.

Figure 21:Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and special precautions that are needed to be taken while treating Hepatitis B positive patients using chi square test.

Figure 22:Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and testing for Hepatitis B before any surgical procedures using chi square test.

Figure 23:Bar graph depicting comparison of responses on different educational levels of undergraduate dental students on performing mouth to mouth resuscitation in Hepatitis B positive patients in case of emergency using chi square test.

Figure 24:Bar graph depicting comparison of responses on different educational levels of undergraduate dental students on upholding confidentiality about Hepatitis B positive status using chi square test.

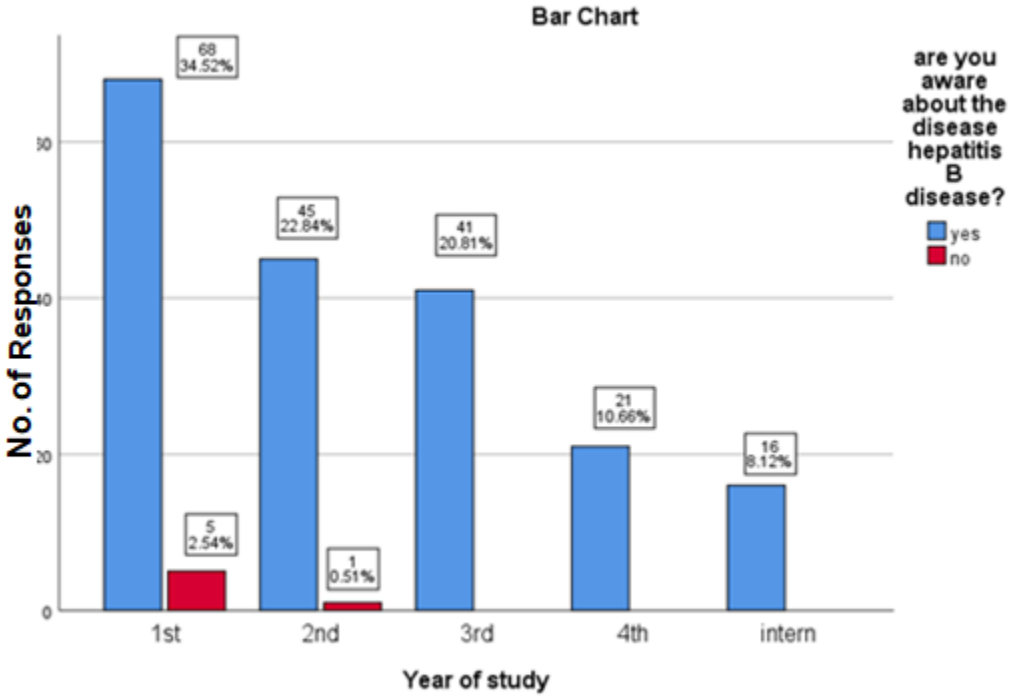

Figure 1: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and awareness about the Hepatitis B disease, where blue denotes

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

yes, red denotes no. X axis represents the education levels and Y axis represents the number of responses. Maximum awareness response(68) was given by first year undergraduate dental students. However the difference was statistically not significant. Chi square test p value = 0.189> (0.05)- statistically not significant.

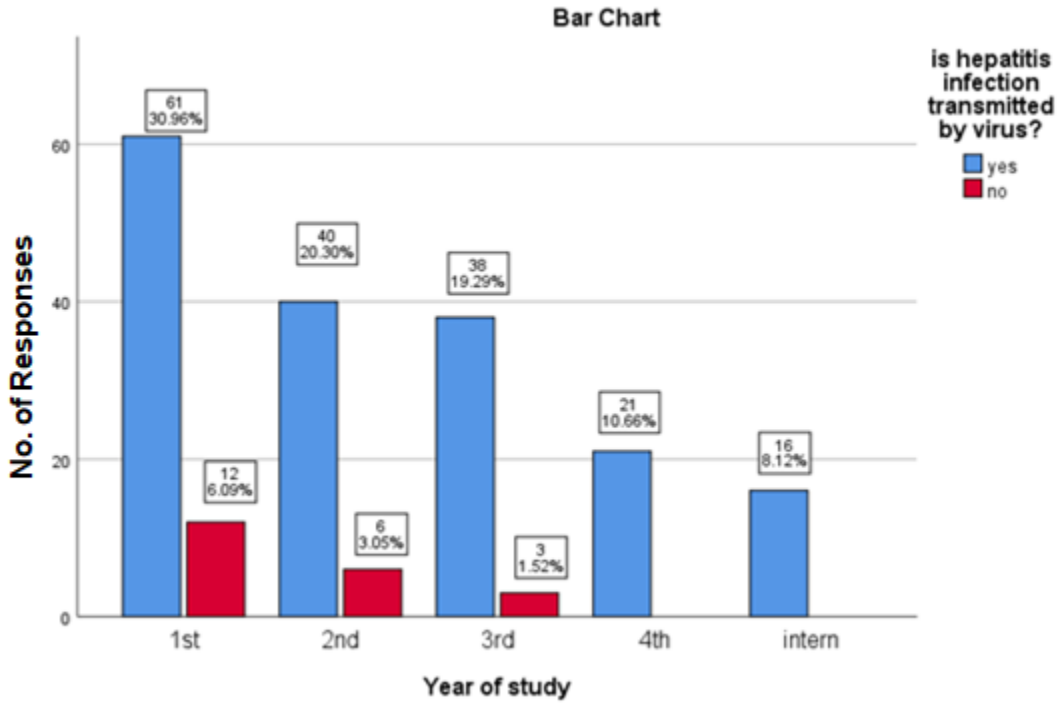

Figure 2: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and transmission of Hepatitis infection by virus, where blue denotes yes, red denotes no. X axis represents the education levels and Y axis represents the number of responses. Majority awareness response(61) was given by first year undergraduate dental students. However the difference was statistically not significant. Chi square test P value = 0.102> (0.05)- statistically not significant.

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

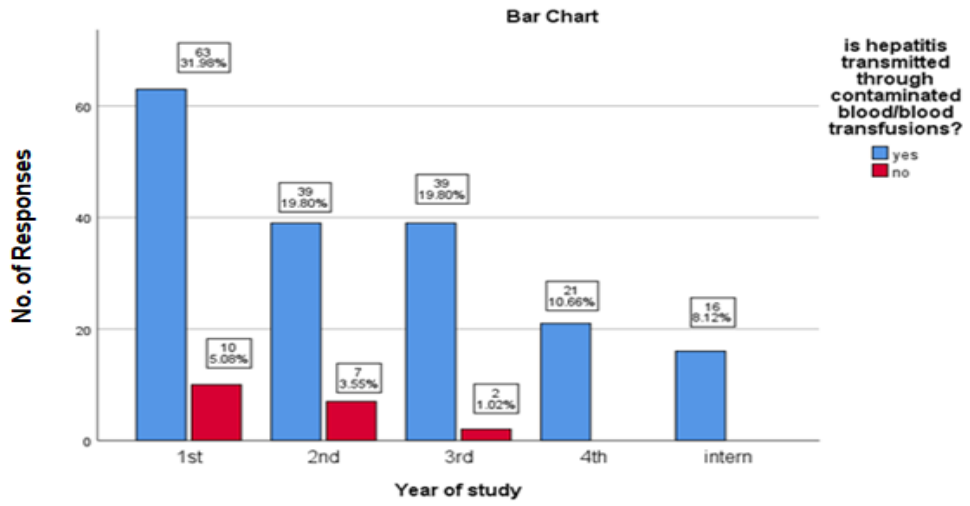

Figure 3: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and transmission of Hepatitis through blood/blood transfusions , where blue denotes yes, red denotes no. X axis represents the education levels and Y axis represents the number of responses. Maximum awareness response(63) was given by first year undergraduate dental students. However the difference was statistically not significant. Chi square test p value = 0.90> (0.05)- statistically not significant.

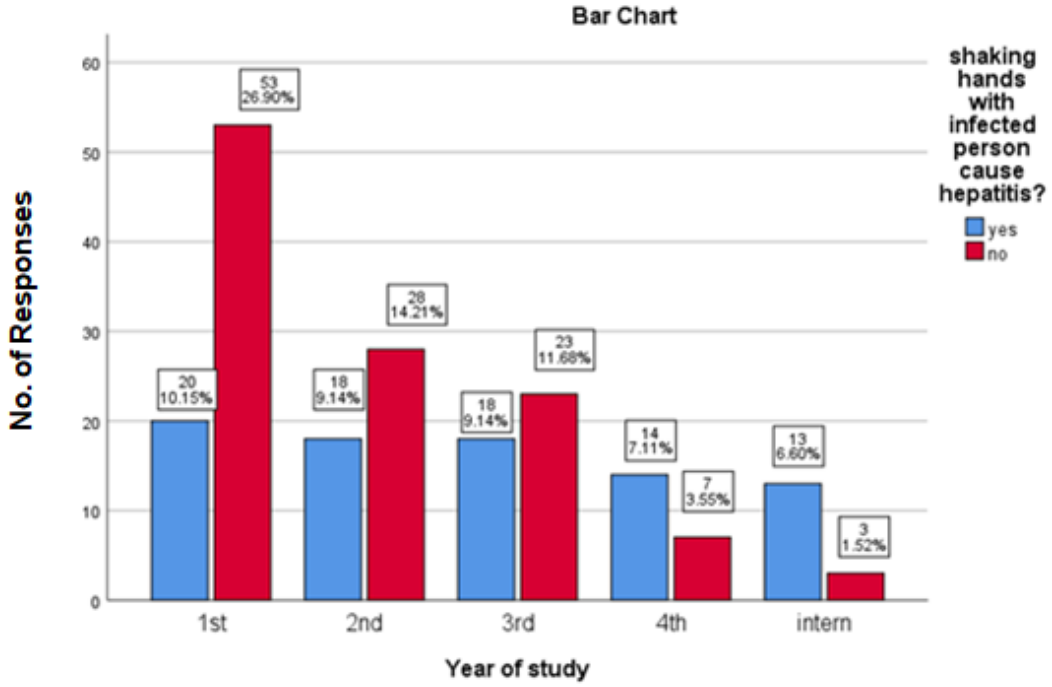

Figure 4: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and transmission of Hepatitis by shaking hands with an infected

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

person , where blue denotes yes, red denotes no. X axis represents the education levels and Y axis represents the number of responses. Majority of the first year undergraduate dental students(53) had maximum awareness and the difference was also statistically significant. Chi square test p value = 0.00<(0.05)- statistically significant.

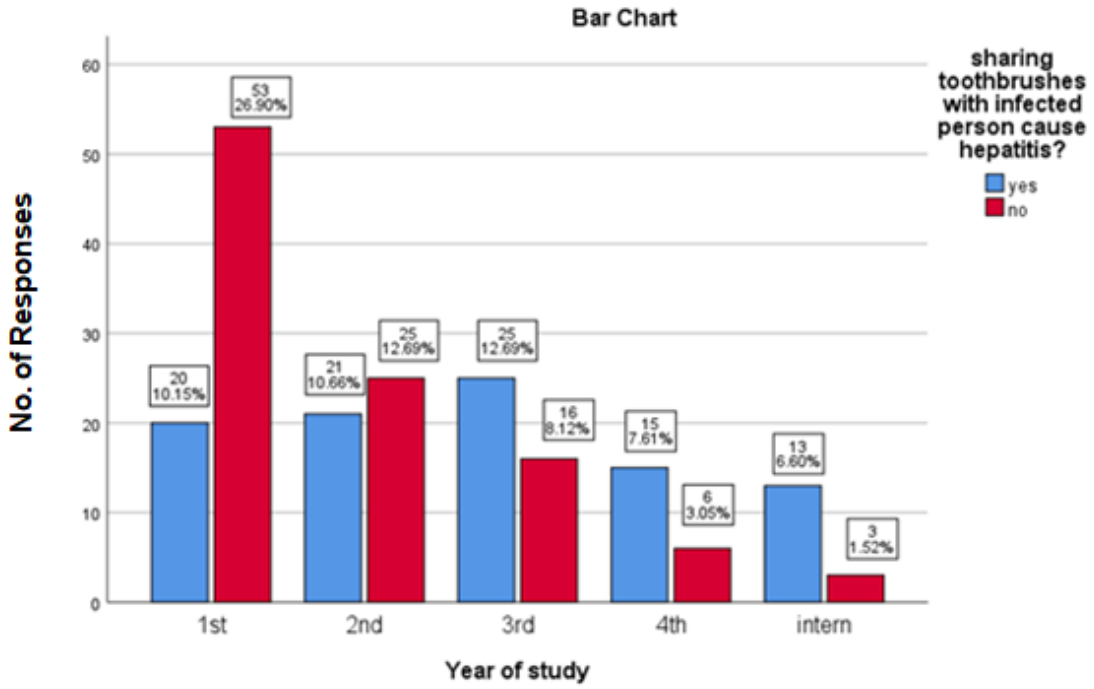

Figure 5: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and transmission of Hepatitis by sharing a toothbrush of an infected person, where blue denotes yes, red denotes no. X axis represents the education levels and Y axis represents the number of responses. Majority of the third year undergraduate (25) dental students were aware that sharing a toothbrush with an infected person causes Hepatitis. Similarly, the difference was also statistically significant.Chi square test p value = 0.00<(0.05)- statistically significant.

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
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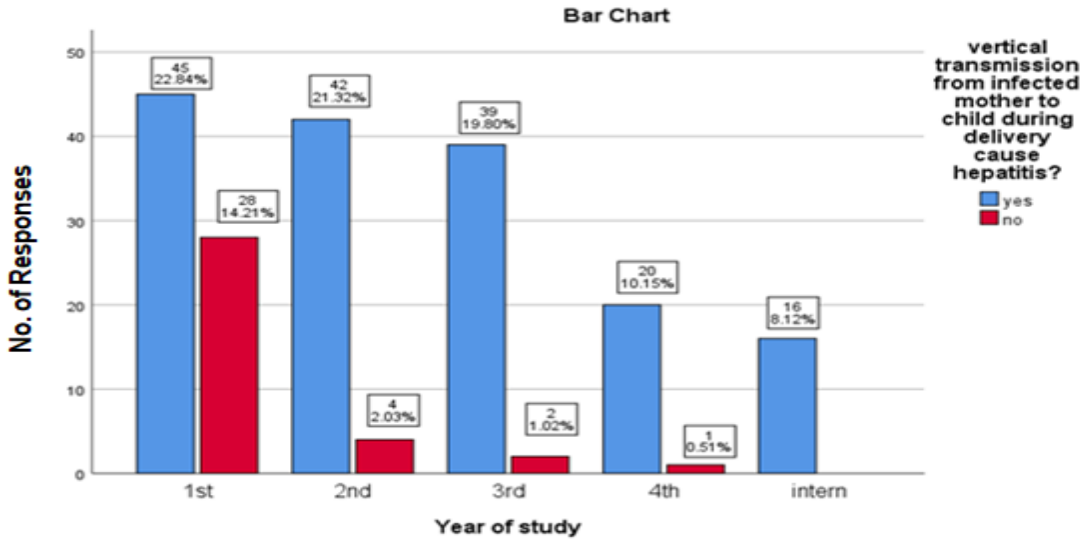

Figure 6: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students on vertical transmission of Hepatitis from infected mother to child, where blue denotes yes, red denotes no. X axis represents the education levels and Y axis represents the number of responses. First year undergraduate dental students (45) had more awareness on transmission of vertical transmission from mother to child during delivery. Similarly,the difference was also statistically significant. Chi square test p value = 0.00<(0.05)-statistically significant.

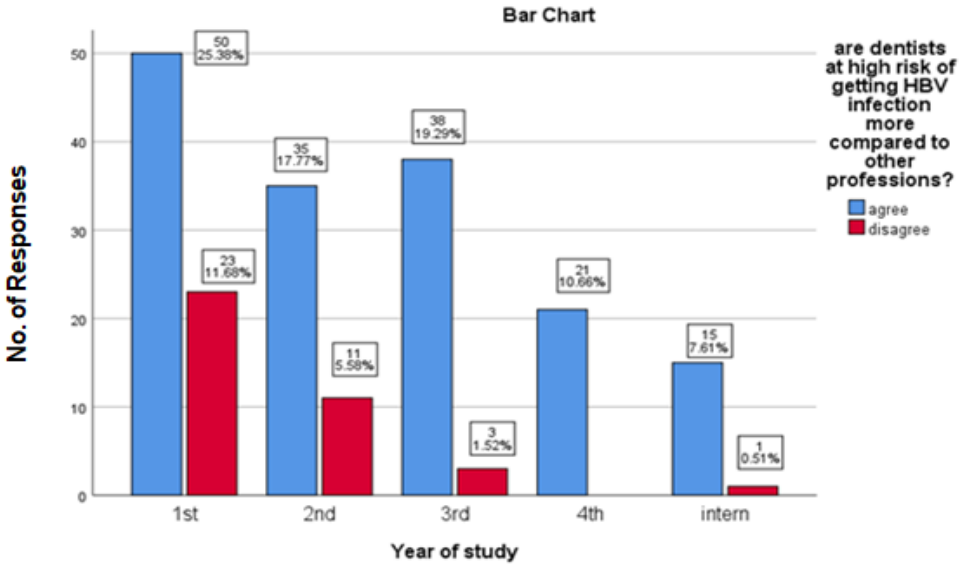

Figure 7: Bar graph depicting comparison of responses between educational levels of undergraduate dental students and dentists being at high risk of getting HBV infection compared to other professions, where blue denotes agree, red denotes disagree.X axis represents the

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

education levels and Y axis represents the number of responses. Majority of first year undergraduate dental students (50) were aware that dentists were at high risk of getting HBV infection compared to other professions. Similar results also found statistically that the difference was significant. Chi square test p value = 0.01<(0.05)- statistically significant.

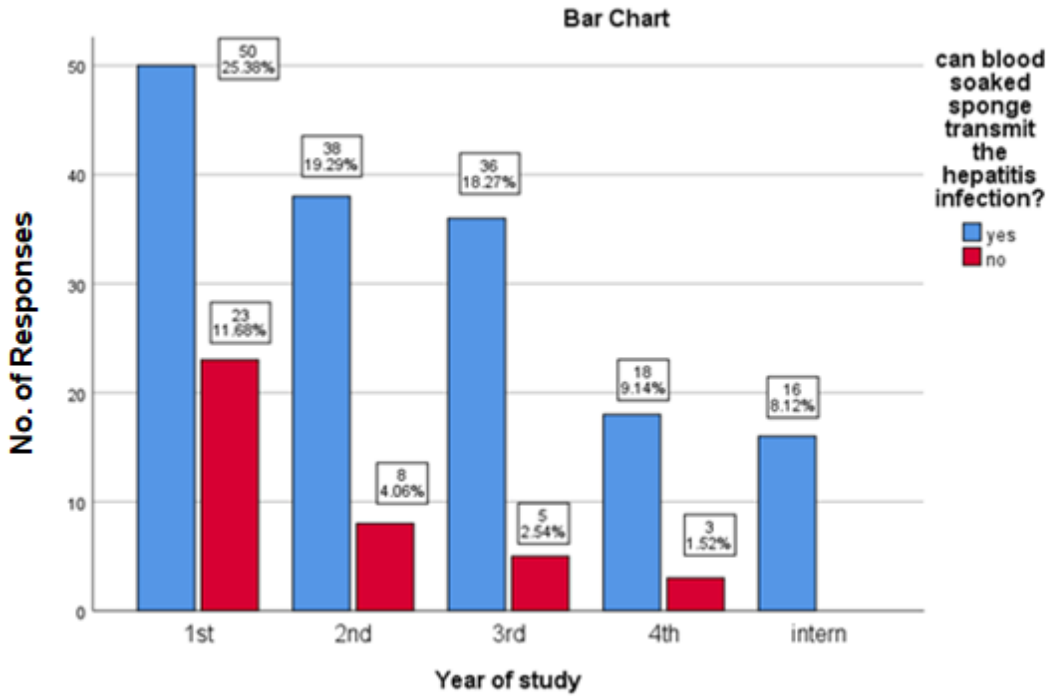

Figure 8: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and transmission of Hepatitis infection through blood soaked sponge, where blue denotes yes, red denotes no.X axis represents the education levels and Y axis represents the number of responses. First year undergraduate dental students(50) have more awareness of transmission of Hepatitis from blood soaked sponge compared to others and analysis also agreed that the difference was statistically significant. Chi square test p value = 0.01<(0.05)- statistically significant.

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

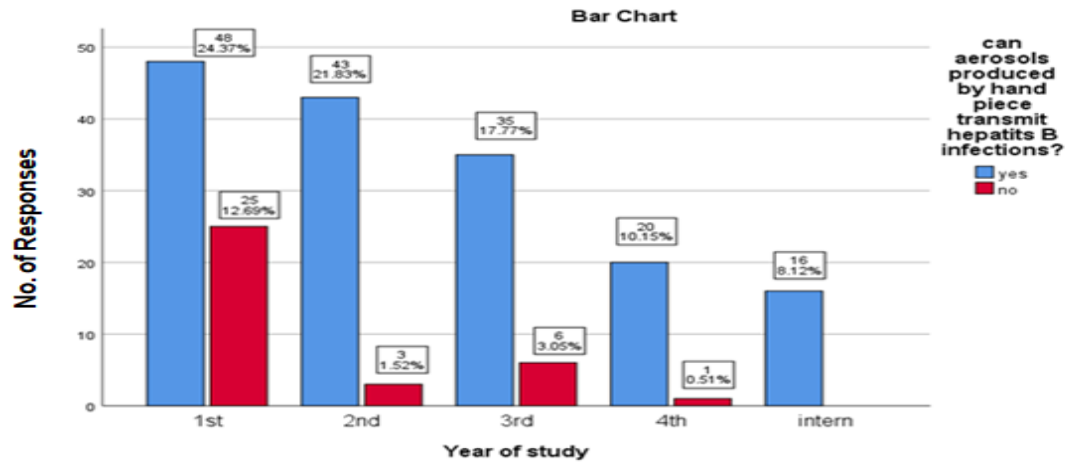

Figure 9: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and transmission of Hepatitis B infection through aerosols produced by hand piece, where blue denotes yes, red denotes no. X axis represents the education levels and Y axis represents the number of responses. Maximum awareness response(48) was given by first year undergraduate dental students and the difference was statistically significant. Chi square test p value= 0.05=(0.05)- statistically significant.

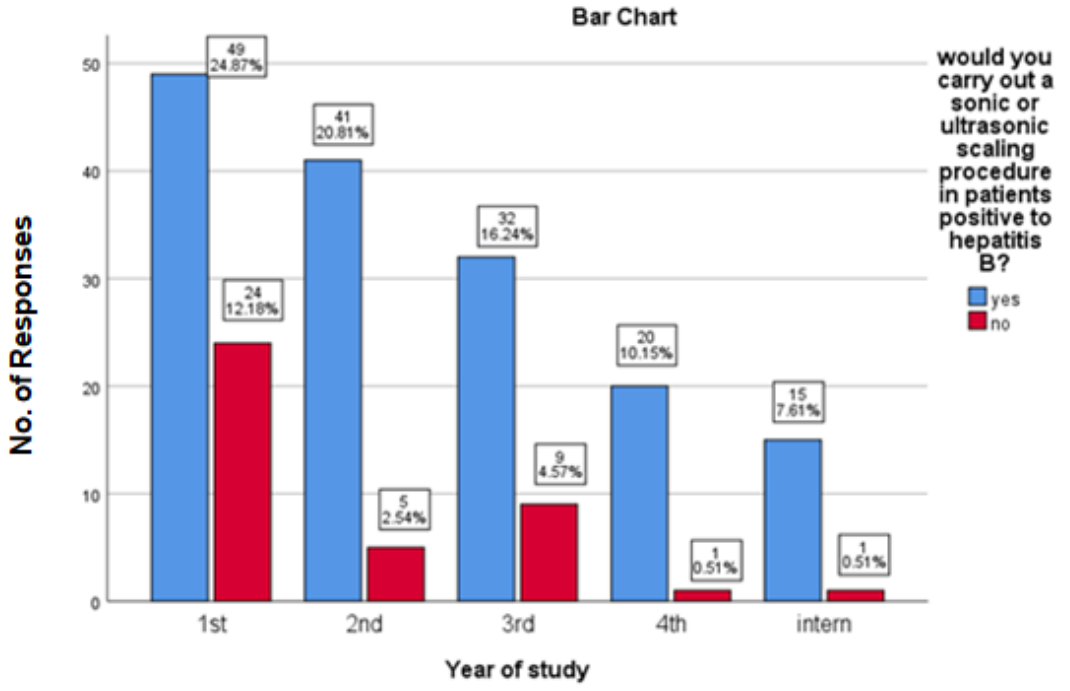

Figure 10: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students on performing sonic/ultrasonic scaling procedure on Hepatitis B patients , where blue denotes yes, red denotes no. X axis represents the education levels and Y

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

axis represents the number of responses. First year undergraduate dental students(49-blue) had more knowledge regarding performing ultrasonic scaling procedure in Hepatitis B positive patients and the difference was statistically significant.Chi square test p value = 0.01<(0.05)- statistically significant.

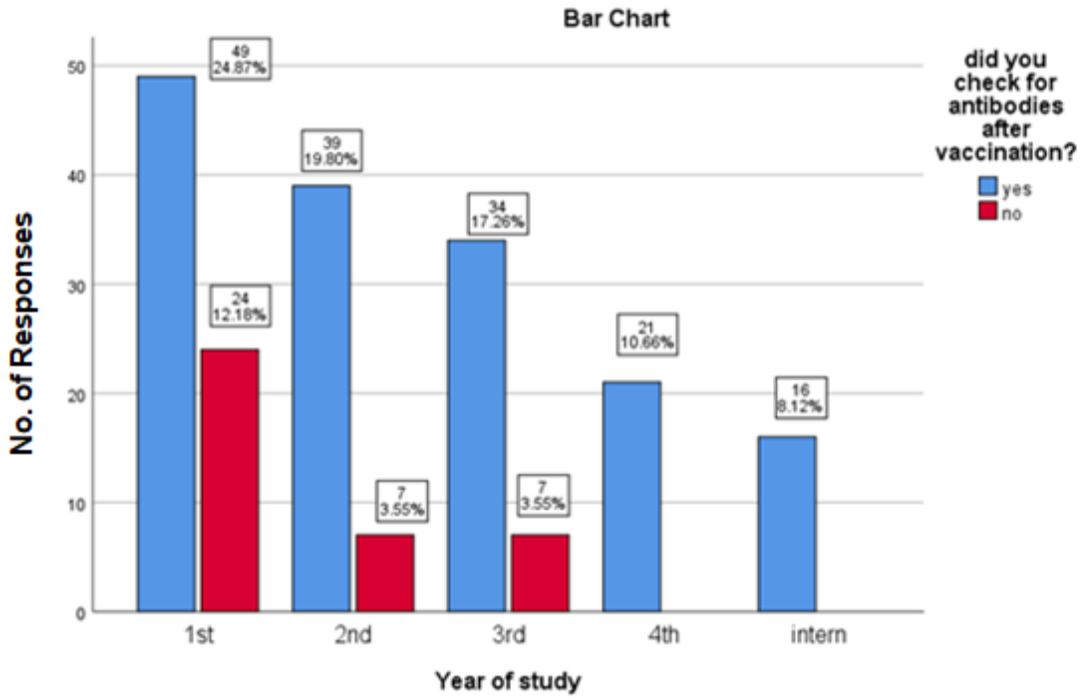

Figure 11: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and checking of antibodies after vaccination, where blue denotes yes, red denotes no. X axis represents the education levels and Y axis represents the number of responses. First year undergraduate dental students (49) have more knowledge regarding checking for antibodies against Hepatitis B virus and the difference was statistically significant. Chi square test p value = 0.00<(0.05)- statistically significant.

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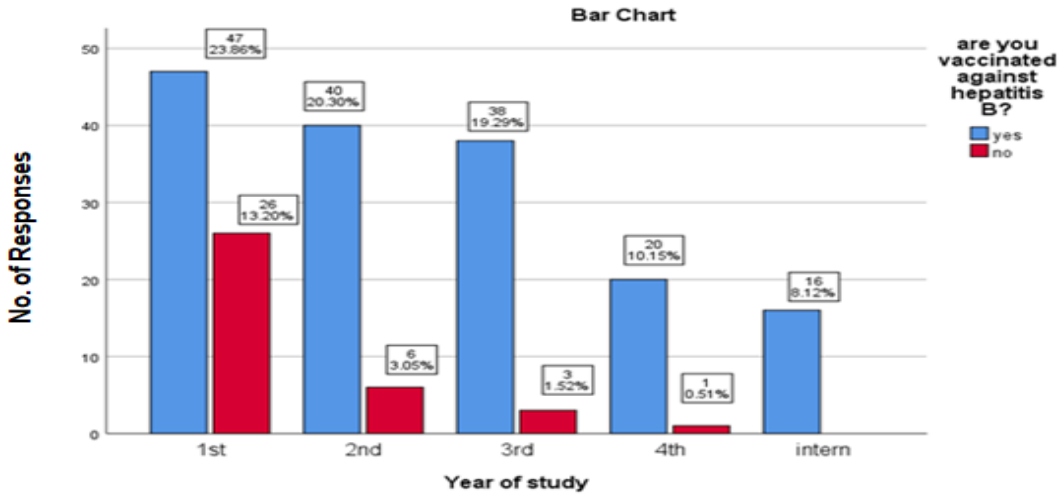

Figure 12: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and vaccination against Hepatitis B, where blue denotes yes, red denotes no. X axis represents the education levels and Y axis represents the number of responses. Majority awareness response(47) was given by first year undergraduate dental students and also the difference was statistically significant. Chi square test p value = 0.00<(0.05)- statistically significant.

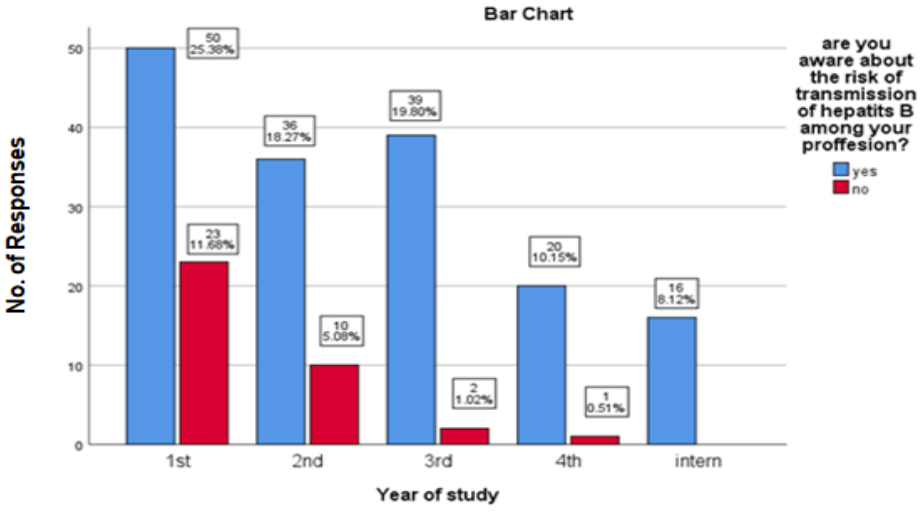

Figure 13: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students on the risk of transmission of Hepatitis B, where blue denotes yes, red denotes no. X axis represents theeducation levels and Y axis represents the number of responses. Maximum awareness response(50) was given by first year undergraduate dental students and also the difference was statistically significant.Chi square test p value =

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

0.03<(0.05)- statistically significant.

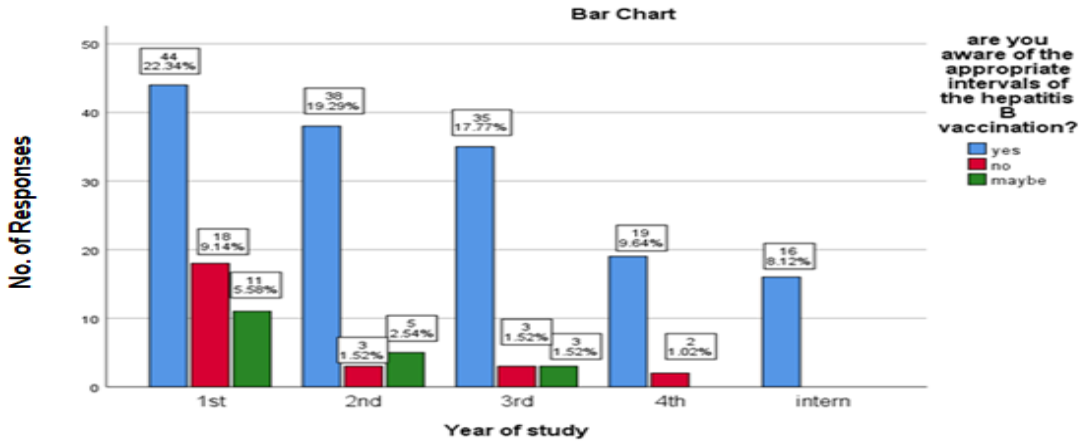

Figure 14: Bar graph depicting comparison of responses on educational levels of undergraduate dental students on appropriate intervals of Hepatitis B vaccination, where blue denotes yes, red denotes no, green denotes maybe. X axis represents the education levels and Y axis represents the number of responses. First year undergraduate dental students (44) have more knowledge on the intervals for Hepatitis B vaccination and the difference was statistically significant.Chi square test p value = 0.03<(0.05)- statistically significant.

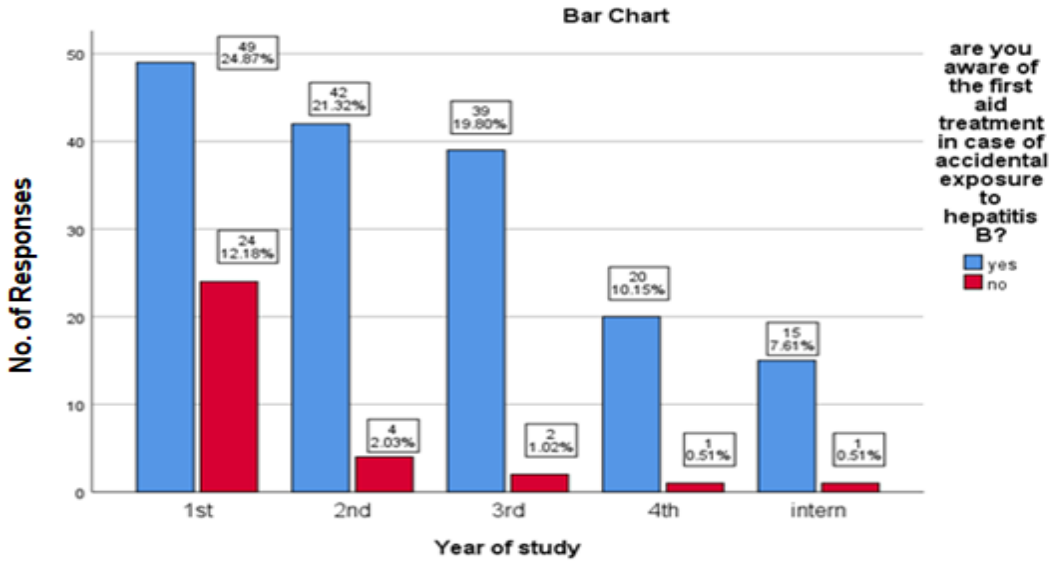

Figure 15: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students on the first aid treatment in case of accidental exposure to Hepatitis B where blue denotes yes, red denotes no. X axis represents the education levels and the Y axis represents the number of dental students. First year dental students(49) had more knowledge on first aid treatment following accidental exposure to Hepatitis B and the difference

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

was statistically significant.Chi square test p value = 0.01<(0.05)- statistically significant.

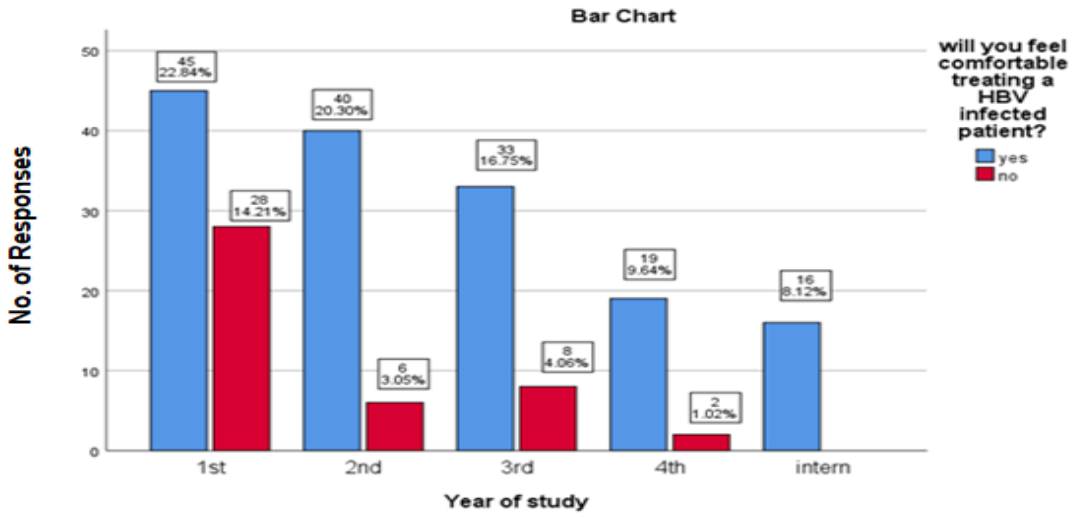

Figure 16: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students on being comfortable at treating HBV infected patients , where blue denotes yes, red denotes no. X axis represents the education levels and the Y axis represents the number of responses. Majority awareness response (45) was given by first year undergraduate dental students and the difference was statistically significant.Chi square test p value = 0.01<(0.05)- statistically significant.

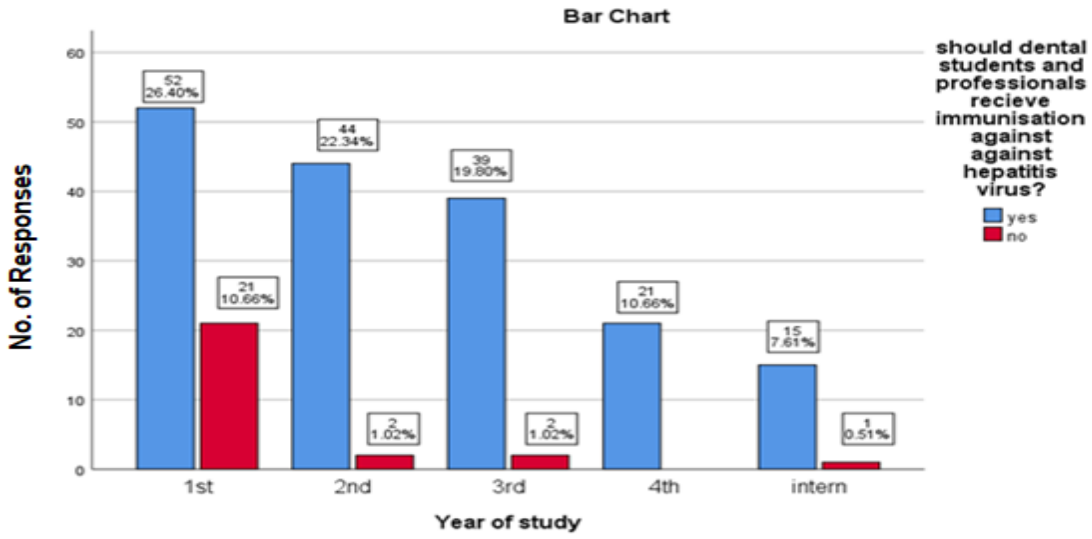

Figure 17: Bar graph depicting comparison of educational levels of undergraduate dental students on receiving immunization against Hepatitis virus , where blue denotes yes, red denotes no. X axis represents the education levels and the Y axis represents the number of responses. First year undergraduate dental students (52) have more knowledge on dental students receiving

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

immunization against Hepatitis virus. Similar results are obtained with the statistical analysis and found that there is a significant difference. Chi square test p value = 0.00<(0.05)- statistically significant.

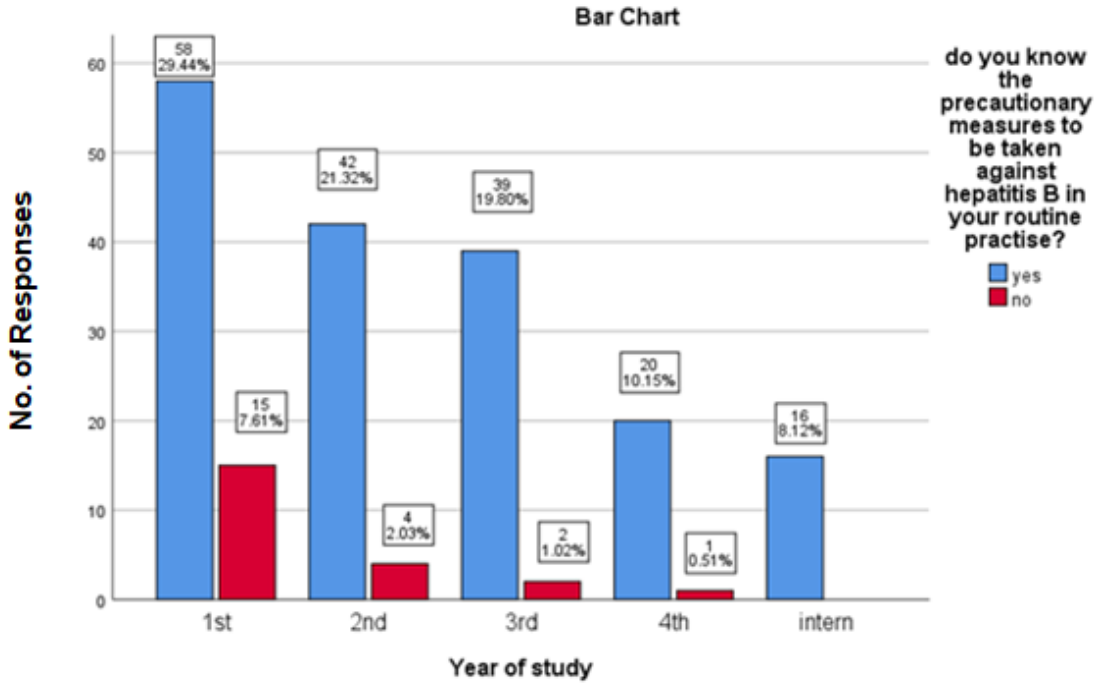

Figure 18: Bar graph depicting comparison of educational levels of undergraduate dental students on the precautionary measures that are needed to be taken against Hepatitis B in their routine practise, where blue denotes yes, red denotes no. X axis represents the education levels and the Y axis represents the number of responses. First year undergraduate dental students (58) have more knowledge on precautionary measures that need to be taken against Hepatitis B in their routine practise . However, it is not significant statistically. Chi square test p value = 0.24>(0.05)- statistically not significant.

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
Received 16 February 2021; Accepted 08 March 2021.

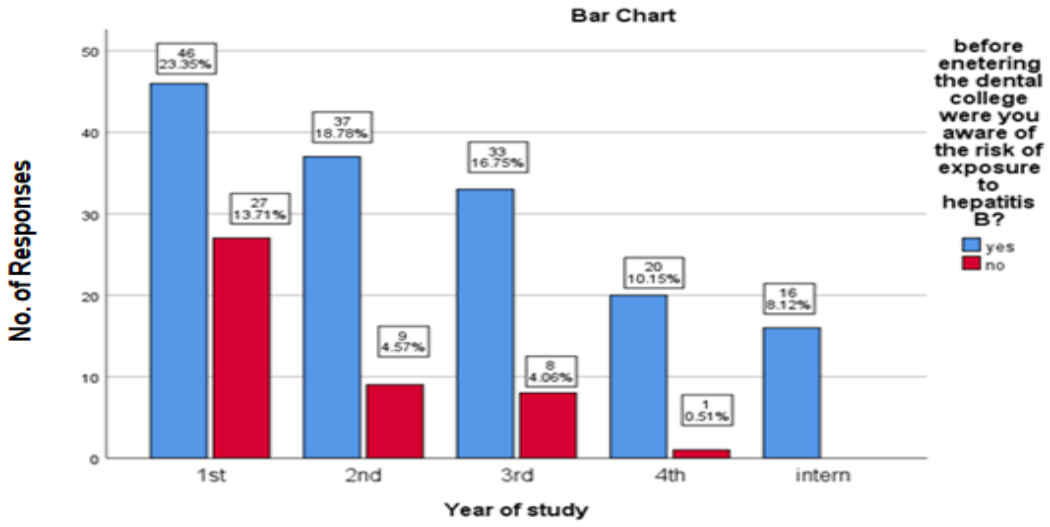

Figure 19: Bar graph depicting comparison of responses between educational levels of undergraduate dental students and risk of exposure to Hepatitis B before entering dental college , where blue denotes yes, red denotes no. X axis represents the education levels and the Y axis represents the number of responses. Maximum awareness response(46) was given by first year undergraduate dental students. However the difference was statistically not significant. Chi square test p value = 0.58>(0.05)- statistically not significant.

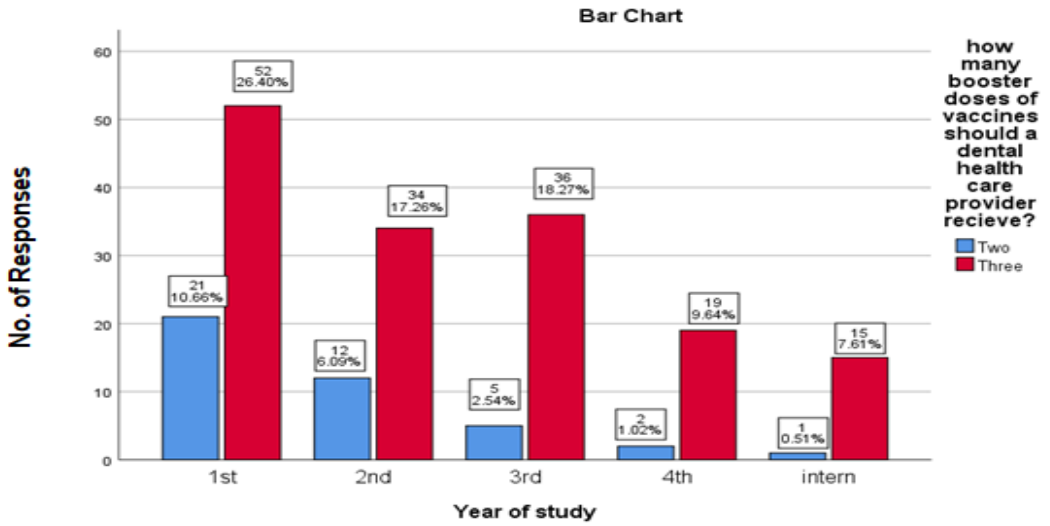

Figure 20: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and the number of booster doses of vaccination that a healthcare provider should receive , where blue denotes two, red denotes three. X axis represents the education levels and the Y axis represents the number of responses. First year undergraduate dental students had more knowledge on the number of booster doses (52- red). However the difference was statistically not significant. Chi square test p value = 0.58>(0.05)- statistically not

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 1071 - 1102
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significant.

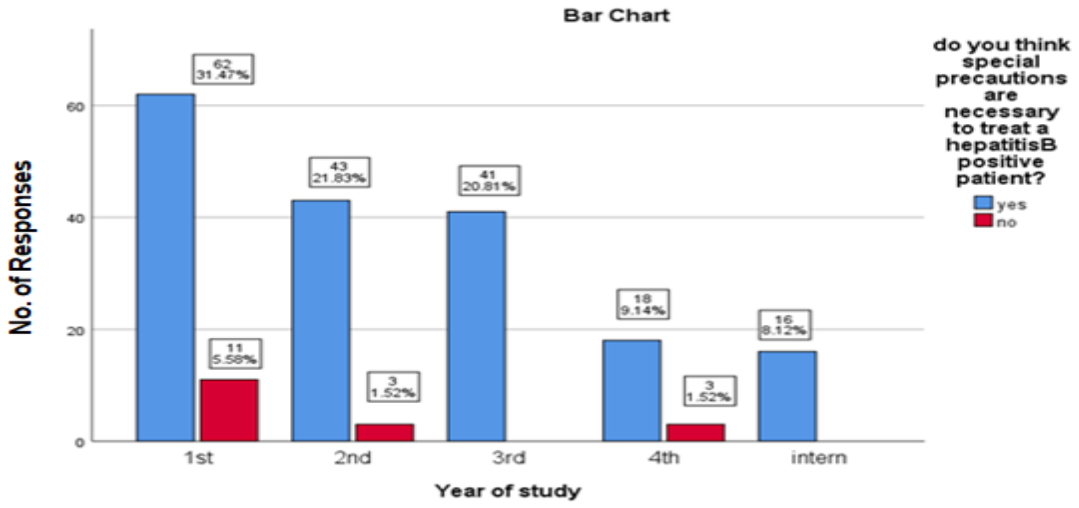

Figure 21: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and special precautions that are needed to be taken while treating Hepatitis B positive patients , where blue denotes yes, red denotes no. X axis represents the education levels and the Y axis represents the number of responses. First year undergraduate dental students (62- blue) had more knowledge regarding the special precautions to be taken to treat a Hepatitis B positive patient. However the difference was statistically not significant.Chi square test p value = 0.35>(0.05)- statistically not significant..

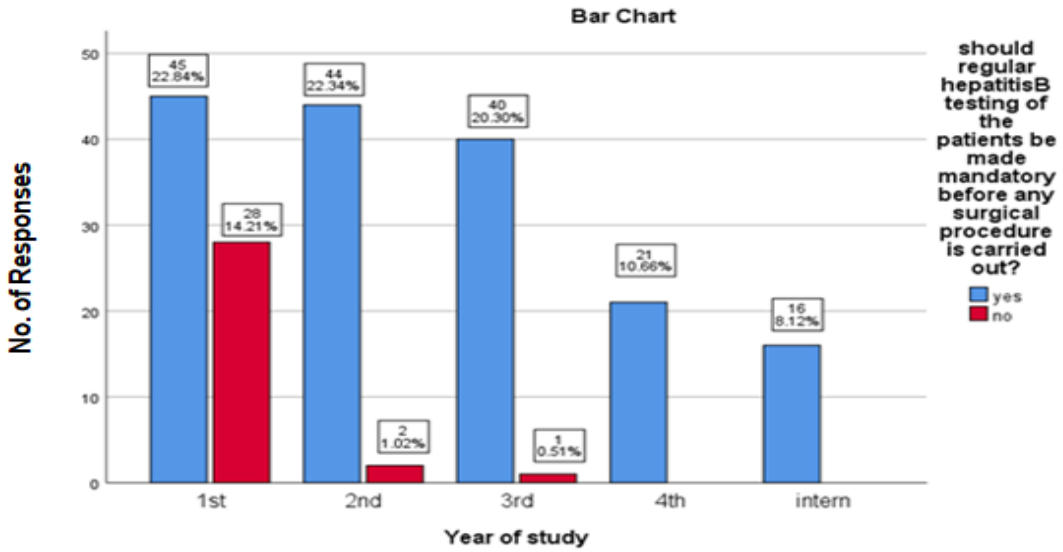

Figure 22: Bar graph depicting comparison of responses between different educational levels of undergraduate dental students and testing for Hepatitis B before any surgical procedures, where blue denotes yes, red denotes no. X axis represents the education levels and the Y axis represents the number of responses. Majority awareness response(45) was given by first year

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undergraduate dental students and the difference was statistically significant.Chi square test p value = 0.00<(0.05)- statistically significant.

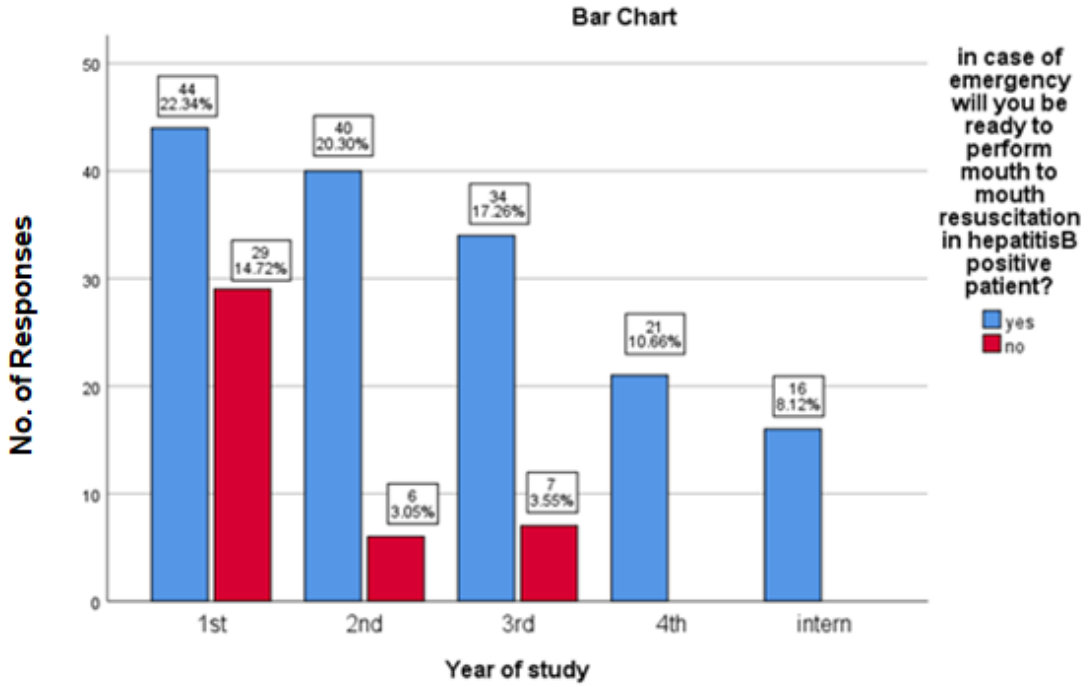

Figure 23: Bar graph depicting comparison of responses on different educational levels of undergraduate dental students on performing mouth to mouth resuscitation in Hepatitis B positive patients in case of emergency , where blue denotes yes, red denotes no.X axis represents the education levels and the Y axis represents the number of responses. Maximum awareness response(44) was given by first year undergraduate dental students and the difference was statistically significant. Similarly, the difference was also found to be significant statistically. Chi square test p = value 0.00<(0.05)- statistically significant.

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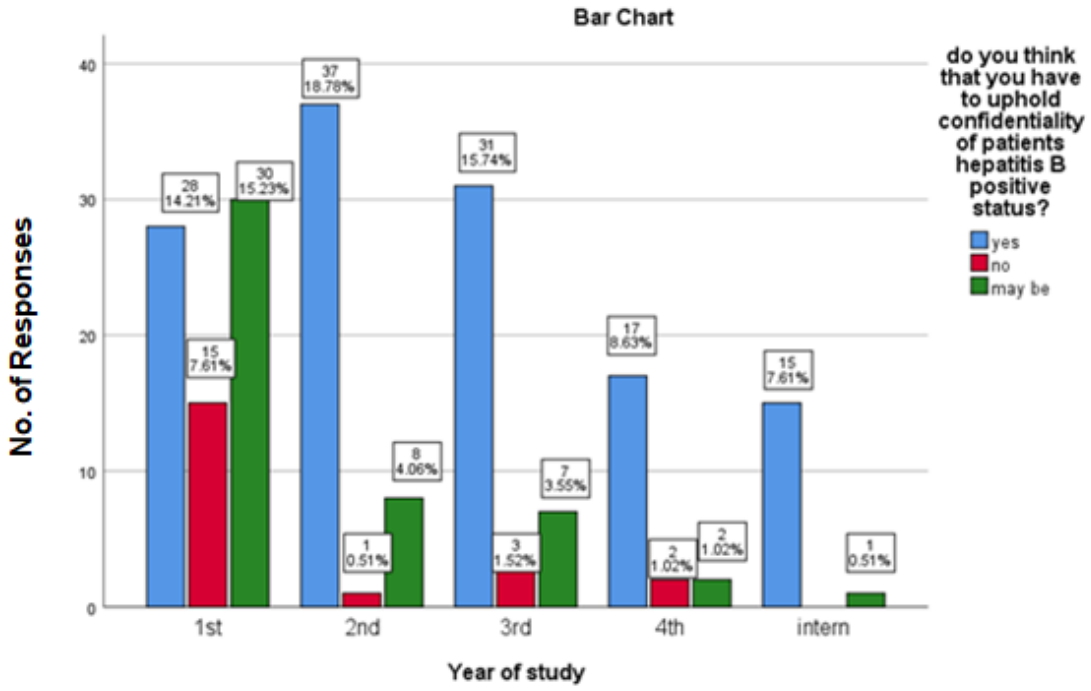

Figure 24: Bar graph depicting comparison of responses on different educational levels of undergraduate dental students on upholding confidentiality about Hepatitis B positive status , where blue denotes yes, red denotes no, green denotes may be. X axis represents the education levels and the Y axis represents the number of responses. Majority awareness response(37) was given by second year undergraduate dental students and the difference was statistically significant. The statistical analysis also shows a significant difference.. Chi square test p value = 0.00<(0.05)- statistically significant.