

# VACCINATION STATUS OF DENTAL STUDENTS OF MULTAN DENTAL COLLEGE MULTAN AGAINST HEPATITIS B VIRUS

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## ABSTRACT

*Hepatitis B viral (HBV) infection is included in top ten diseases in the world which cause fetal mortality to life. HBV can be prevented through vaccination. Healthcare workers (HCW's), especially in a developing country are at a higher risk of HBV infection, making its nosocomial transmission of a great significance. The mainstay of prevention of HBV transmission is the practice of standard precautions and vaccination.*

*This poll based expressive cross-sectional overview was directed at the Multan Dental College Multan. Two hundred and ten participants were included in the study.*

*Proforma was filled by two hundred and ten students in which ninety two (43.8%) were male and one hundred and eighteen (56.2%) were females (Table 1). One hundred and twelve (43.8%) students got vaccination but one hundred and eight (46.7%) students never got vaccinated.*

*Vaccination status of dental students is alarming. There is need to educate the dental students about the risk of hepatitis B and encourage the students to get vaccinated. Medical and dental institutes should ensure that vaccination is mandatory for each student prior to admission.*

**Key Words:** *Hepatitis B, Dental students, Vaccination*

## INTRODUCTION

Hepatitis B viral (HBV) infection is included in top ten diseases in the world which cause fetal mortality to life. HBV can be prevented through vaccination. HBV infection is one of the major public health problems globally.<sup>1</sup> The HBV is a partially double-stranded DNA virus that belongs to the family, Hepadnaviridae<sup>2</sup>. About 30 % of world population is infected by hepatitis B virus.<sup>3</sup> Transmission of the virus may occur through percutaneous or mucosal exposure to infected blood and various body fluids, as well as through saliva, menstrual, vaginal, and seminal fluids; transmission may also be vertical (transplacental).<sup>3,4</sup> Sexual transmission of HB is a major route, especially when there are multiple sex partners or contact with sex workers, hence classified as a sexually transmitted disease (STD). In addition, infection may occur through the reuse of needles and syringes, either in health-care settings or among persons

who inject drugs.<sup>5</sup> In addition, infection occurs during medical, surgical, and dental procedures, tattooing, or through the use of razors and similar objects that are contaminated with infected blood.<sup>5</sup>

About 2 billion people are preyed with HBV worldwide<sup>6,7,8</sup>. In Pakistan about nine million people are infected with Hepatitis B virus<sup>10</sup> and its infection rate is on a steady rise<sup>11</sup>. The reason may be the lack of proper health facilities, poor economical status and less public awareness about the transmission of major communicable diseases including HBV, HCV and HIV<sup>12</sup>

Healthcare workers (HCW's), especially in a developing country are at a higher risk of HBV infection, making its nosocomial transmission of a great significance<sup>13</sup>. The mainstay of prevention of HBV transmission is the practice of standard precautions and vaccination<sup>14</sup>. There are certain precautions which can prevent spread of infection among healthcare workers. Hand hygiene, proper disposal of sharps and wearing of personal protective equipment (gloves, gowns, goggles, cap wearing) are standard precautions which can prevent infection<sup>15</sup>. Unimmunized HCWs are more prone to be infected than immunized ones<sup>16,17</sup>. Unfortunately, in developing countries, doctors and dentists are less interested in HBV vaccination<sup>18,19,20</sup>. Hepatitis B infection can be prevented by vaccination<sup>21</sup>. This study investigated the attitude toward the uptake of the HBV vaccine and the practice of standard

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**Received for Publication:** Nov 14, 2018

**First Revised:** Dec 24, 2018

**Approved:** Dec 26, 2018

precaution among clinical medical and dental students of Multan Medical and Dental College Multan.

**METHODOLOGY**

This poll based expressive cross-sectional overview was directed at the Multan Dental College Multan. Two hundred and ten participants were included in the study. After taking consent Performa containing questions was given to get their Hepatitis B virus inoculation status. Non-vaccinated students had to give reason for failure to get vaccination. Students who get at least three doses of vaccination were considered as vaccinated.

**RESULTS**

Two hundred and ten students filled the Performa. Ninety two (43.8%) were male and one hundred and eighteen (56.2%) were females (Table 1). One hundred and twelve (43.8%) students got vaccination but ninety eight (46.7%) students never got vaccination (Table 2). Vaccination status of the students is showed in Table 3.

**DISCUSSION**

This study describes the vaccination status of dental students in the Multan Medical and Dental College Multan. Dental students should have sufficient knowledge of blood-borne diseases such as HBV and should be cautious to reduce the risk of transmission of these diseases and should be vaccinated against them.

In India a study revealed that 64% dental students were vaccinated which is comparable to our study where vaccination rate is 53.3%. Another study from Haryana showed 23% vaccination rate in three dental colleges which is far lesser than this study.<sup>22</sup>

In the city of Montes Claros 75% of dentists got vaccinated against hepatitis B virus. These results are better than this study in which only 53.3% students were vaccinated.<sup>23</sup>

Developed countries have a better rate of vaccination than developing countries. England has 97% vaccinated dentists, Germany has 74% and Japan has 64.3%. Vaccination rate of our dentists is alarming as compared to developed countries. Vaccination rate of Italian dentists are comparable with our study which is 53.3%.<sup>23</sup>

According to Atiba, three doses of vaccination against hepatitis B virus were received by only 39.2% students which was lower than vaccination of this study.<sup>24</sup>

According to Oyebimpe eighty percent (83.2%) of the participants had at least a dose of the HBV vaccine while 79.65% completed the three doses. Majority

(94.7%) of the students that did not receive the vaccine cited their busy schedule as the reason for their failure to be vaccinated. While in this study 53.3% completed their vaccination and 10% got one dose, 16.8% got two doses, 14.1% got three doses and 38.6% got booster dose.

According to Oyebimpe, there are different reasons for failure to receive vaccination. 5.3% students fail to receive vaccination due to unavailability while in this study 11.2% participant did not get vaccination due to this reason. According to Oyebimpe, 57.9% students failed to receive vaccination due to busy schedule while in this study this figure is 46.9%. 21.1% students were complaining of distant vaccination centre but in this study rate is 15.3%. Percentage of the students who did not know about vaccination process is 5.3% while in this study this figure raised to 26.5%<sup>25</sup>.

Another study in Nigeria showed that 16% health-care workers failed to receive complete vaccination due to lack of knowledge while in this study 26.5% students have lack of knowledge about vaccination process. In this study 53.3% got complete vaccination but another study showed that 60.02% medical students got vaccination.<sup>5</sup>

In 2011 Asif stated that 57% medical students were vaccinated in Mirpur Khas and 43% students failed to receive vaccination while in this study vaccinated students are 53.3% and non vaccinated students are 46.7%.<sup>26</sup> In the study of Asif 5.5% students were unaware of knowledge about vaccination but in this study unawareness rate raised up to 26.5%.

In 2000 a study on medical students revealed that vaccination rate is 42% in medical students which is far less than this study<sup>26</sup>.

Administration of the medical and dental colleges should implement the rule vaccination for health care workers and also arrange lectures and seminars for

TABLE 1: GENDER DISTRIBUTION

Male	Female	Total
92(43.8%)	118(56.2%)	210

TABLE 2: VACCINATION STATUS OF THE STUDENTS

Vaccinated	Not vaccinated	Total
112(53.3%)	98(46.7%)	210

TABLE 3: NUMBER OF DOSES

One dose	Two doses	Three doses	Booster dose
22(10.4%)	35(16.7%)	31(14.8%)	81(38.6%)

TABLE 4: REASONS FOR NO VACCINATION

Did not know about vaccination	Vaccine unavail-able	Busy schedule	Distant vaccina-tion centre	Total not vacci-nated
26(26.5%)	11(11.2%)	46(46.9%)	15(15.3%)	98

awareness. Limitation of study is that data collected from one dental college and immunization status of the students were not checked due to lack of consent.

**CONCLUSION**

Vaccination status of dental students is alarming. There is need to educate the dental students about the risk of hepatitis B and encourage the students to vaccinate themselves. Medical and dental institutes ensure that vaccination should be mandatory for each student before admission.

**REFERENCES**

- 1 National HIV/AIDS and STIs Control Program. National Policy for the Control of Viral Hepatitis in Nigeria. 1st ed. Abuja, Nigeria: FMOH; 2015. 12-4.
- 2 Franco E, Bagnato B, Marino MG, Meleleo C, Serino L, Zaratti L. Hepatitis B: epidemiology and prevention in developing countries. World journal of hepatology. 2012; 4(3): 74-80.
- 3 Ibrahim N, Idris A. Hepatitis B Awareness among Medical Students and Their Vaccination Status at Syrian Private University. Hepar Res Treat 2014;12:1-7
- 4 Aroke D et al. Awareness and Vaccine Coverage of Hepatitis B among Cameroonian Medical Students. BioMed Resrch Inter 2018; 18: 1-6.

- 5 Chingle M P, Osagie I A, Adams H, Gwomson D, Emeribe N, Zoakah A I. Risk perception of hepatitis B infection and uptake of hepatitis B vaccine among students of tertiary institution in Jos. Ann Afr Med 2017;16:59-64.
- 6 Zhu R, Zhang H, Yu H, Li H, Ling YQ, Hu XQ, Zhu HG: Hepatitis B virus mutations associated with in situ expression of hepatitis B core antigen, viral load and prognosis in chronic hepatitis B patients. Pathol Res Pract 2008, 204:731-742.
- 7 Li G, Li W, Guo F, Xuc S, Zhaod N, Chena S, Liu L: A novel real-time PCR assay for determination of viral loads in person infected with hepatitis B virus. J Virol Meth 2010, 165:9-14.
- 8 Meireles LC, Marinho RT, Damme PV. Three decades of hepatitis B control with vaccination. World J Hepatol. 2015 ; 7(18): 2127-32.
- 9 Noorali S, Hakim ST, McLean D, Kazmi SU, Bagasra O: Prevalence of Hepatitis B virus genotype D in females in Karachi, Pakistan. J Infect Developing Countries 2008, 2:373-378.
- 10 Hakim ST, Kazmi SU, Bagasra O: Seroprevalence of Hepatitis B and C Genotypes Among Young Apparently Healthy Females of Karachi-Pakistan. Libyan J Med 2008, 3:66-70.
- 11 Hepatitis prevention & control program Sindh (chief minister’s initiative) 2009. directorate general health services, Hyderabad, Sindh, Pakistan.

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| <b>1 Mustafa Sajid:</b>  | Wrote introduction and made the Results.                            |
| <b>2 Muhammad Jamil:</b> | Supervised all the procedure and made an impact on discussion part. |
| <b>3 Mohsin Javed:</b>   | Wrote materials and methods and helped in surveying.                |