

## Awareness of hepatitis C infection among medical and engineering students

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**Objective:** To determine the current knowledge and awareness of medical and engineering students regarding the Hepatitis-C infection, its treatment and complications.

**Methodology:** This cross-sectional study was carried out amongst medical and engineering students from four different universities selected by convenient sampling method. Data were collected using a structured, self-administered questionnaire. The participants were asked to answer the questions as Yes, No and Don't know. Analysis of the data was carried out with SPSS version 20.

**Results:** A total of 561 students were registered in the study, out of which 269 were medical and 292 were engineering students. More than 95% of medical students were aware about routes of its transmission and treatment available. However, amongst engineering student, 87% knew that it is transmitted by blood transfusion while 72% knew that it is spread by intravenous drug abuse. Only 62% thought that it was spread by body piercing and tattooing. 49% of engineering students had the knowledge that it is spread by sexual contact. However, both medical and engineering students

were not aware whether Hepatitis C could be transmitted from mother to new born or through breast feeding. Most of the medical students (95%) were well informed about its complications; on the contrary engineering students (40%) had poor information about it. All students had poor knowledge regarding vaccine against hepatitis C. Source of information in 90% of medical students was academics and in 9% it was from peers, while in non-medical students main source of information was social media (70%) and peers (24%). The difference between knowledge and awareness of medical and engineering students was statistically significant ( $P < 0.05$ ).

**Conclusion:** Although the engineering students were more aware about modes of transmission of disease than general population, still their awareness was less than medical students. Both medical and engineering students need to improve awareness about treatment and complication of chronic hepatitis C. (Rawal Med J 201;43:373-376).

**Key words:** Awareness, medical and engineering students, hepatitis C, knowledge.

### INTRODUCTION

Hepatitis C is an infection caused by the hepatitis C virus (HCV), which attacks liver cells and leads to inflammation. The virus is mainly transmitted parenterally, through IV drug use or needle stick injuries in health care settings. With adequate treatment, up to 90% of patients can be cured.<sup>1</sup> It has significant morbidity and mortality.<sup>2</sup> Prevalence of HCV in Pakistan is approximately 4.8%-8.6% and it is amongst one of the world's highest.<sup>3</sup> Approximately, 10 million individuals have HCV infection in Pakistan.<sup>4,5</sup> According to WHO, 3.5 to 5 lac people die from HCV

complications every year.<sup>6</sup>

Healthcare givers, particularly doctors, nursing staff and medical students remain under continuous contact with patients and are exposed to these communicable diseases. It is essential for them to be well informed about hazards associated with the treatment procedures and its proper precautionary measures, which are essential to be undertaken while treating the patient. Majority of the studies were conducted in Pakistan regarding knowledge, attitude and practice about hepatitis C among medical students but it was not compared with general population of same age category. The

objective of this study was to assess awareness between students of both fields of professions about HCV transmission, treatment and complications.

## METHODOLOGY

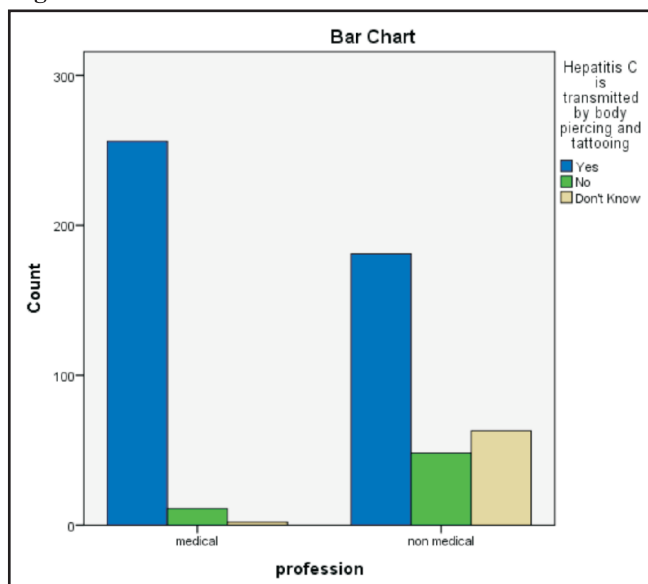
This cross-sectional study was carried out on medical students from 3<sup>rd</sup> year, 4<sup>th</sup> year and final year at Yusra Medical and Dental College, Islamabad and students of UET Taxila, NUST Islamabad and UET Faisalabad. A total of 561 students were approached. Structured, self-administered questionnaire was used to collect data. The questionnaire comprised two parts with questions on sociodemographic data as age and gender, profession as medical or engineering students and awareness of the students on modes of HCV transmission, complications, prevention, treatment of hepatitis C and their source of information.

The students were asked to answer the questions based on their knowledge about the issue as yes, no and don't know. As part of the introduction to the survey, the questionnaire was explained and all doubts raised were cleared before obtaining their consent. The filled questionnaires were reviewed for completeness. SPSS version 20 was used for data analysis. Chi-square test was applied to assess the significance of difference of knowledge about chronic Hepatitis C amongst students.

## RESULTS

Out of 561 students, 269 were medical and 292 were engineering students; 65% were male and 35% were female. Mean age was 22 years. More than 95% of medical student were aware that it is transmitted by blood transfusion, I/V drug abuse, body piercing and tattooing (Fig.). However, amongst engineering students, 87% knew that it is transmitted by blood transfusion while 72% knew that it is spread by intravenous drug abuse. Only 62% thought that it was spread by body piercing and tattooing. 49% of engineering students had the knowledge that it is spread by sexual contact. 52% of medical and 59% of engineering students were not aware that the transmission from mother to newborn is low.

**Fig. Mode of transmission.**



Both medical and engineering students knew that the treatment is available. 83% of engineering and 31% of medical students thought that vaccine is available for Hepatitis C. 95% of medical students knew that Hepatitis C can cause hepatocellular carcinoma while 40% of engineering students were aware about it. Source of information in 90% of medical students was academics and in 9% from peers, while in non-medical students main source of information is social media (70%) and peers (24%). There was statistical difference between knowledge and awareness in medical and engineering students ( $P < 0.05$ ).

## DISCUSSION

It is commonly believed that educated people of society have better awareness about the general health and disease however not much data is available in literature to support this believe. Our study has shown that the level of awareness of both medical and engineering students was good as compared to the general population of Mansehra reported by Jamil et al showing perception and understanding about HCV was insufficient.<sup>7</sup> In our study, 49% of engineering students had the knowledge that it can be spread by sexual contact; 72.2% population of Mansehra was not aware of vertical transmission of HCV from infected mother to the new born.<sup>7</sup> Similar results are reported by

students of the medical college of Bitola.<sup>8</sup>

A study conducted in different medical colleges of Karachi<sup>9</sup> revealed that only 57.1% of medical students exhibit excellent knowledge regarding the mode of transmission of hepatitis B and C, which is less than our students. They also found that knowledge of female medical students regarding diagnosis was considerably superior than the male students ( $P=0.001$ ) and for the knowledge of route of spread and diagnosis, students of age more than 21 years showed significantly better knowledge than younger ones ( $P<0.0001$ )

Feng et al<sup>10</sup> reported that 11% of non-specialist had a deficient knowledge regarding the route of spread of hepatitis C. In our study, non-medical students had relatively deficient knowledge as compared to medical students.

The medical students in this survey had results similar to reported in medical students from Karachi.<sup>9</sup> Our results were better than those of the medical students in Guilan University, Iran.<sup>11</sup> Similarly, Setia et al found an urgent need to increase the level and quality of training among healthcare workers to hamper the outbreak of hepatitis B and C virus infections.<sup>12</sup>

A study on HIV-positive and HIV-negative participants reported that 70-80% had ever heard of HCV on their initial visit.<sup>13</sup> A study from India on 500 students dental students reported that they were not well-informed about the infection despite the fact that the participants belong to a well-educated group.<sup>14</sup> Mtengezo et al reported that Malawian health care workers had less knowledge about HBV and HCV.<sup>15</sup> Saleh et al inferred that there is insufficient awareness of hepatitis C infection and its mode of transmission among rural population in Egypt.<sup>16</sup>

Al-Mansour et al found serious gaps in the knowledge of medical students of Saudi Arabia.<sup>17</sup> Mengal et al found that urban area (Quetta, Pakistan) had better awareness and knowledge than participants from semi-urban and rural settings.<sup>18</sup>

## CONCLUSION

The engineering students were more aware about modes of transmission of disease than general population but still their awareness was less than

medical students. Both medical and engineering students need to improve awareness about treatment and complication of chronic hepatitis C. There is need to increase awareness through short courses of health care and electronic media.

### Author contributions:

Conception and design: Kausar Malik, Faiza Batool  
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Analysis and interpretation of the data: Kausar Malik  
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## REFERENCES

1. <https://www.amboss.com/US/knowledge/Hepatitis-C>
2. Shepard CW, Finelli L, Alter MJ. Global epidemiology of hepatitis C virus infection. *Lancet Infect Dis* 2005;5:558-67.
3. World Health Organization, Hepatitis C factsheet. Available at: <http://www.who.int/mediacentre/factsheets/fs164/en/index.html>
4. Raja NS, Janjua KA. Epidemiology of hepatitis C virus infection in Pakistan. *J Microbiol Immunol Infect* 2008;41:48.
5. Waheed Y. Effect of interferon plus ribavirin therapy on hepatitis C virus genotype 3 patients from Pakistan: Treatment response, side effects and future prospective. *Asian Pac J Trop Med*. 2015;8:85-9.
6. <https://www.healthline.com/health/hepatitis-C/facts-statistics-infographic>
7. Jamil MS, Ali H, Shaheen R, Basit A. Prevalence, knowledge and awareness of hepatitis C among residents of three Union Councils in Mansehra. *J Ayub Med Coll Abbottabad* 2010;22:192-6.
8. Prodanovska-Stojcevska V, Isjanovska R, Popova-Ramova E. Knowledge of HCV infection among nursing students of the Medical College of Bitola. *Arh Hig Rada Toksikol* 2010;61:197-201
9. Khan N, Ahmed SM, Khalid MM, Siddiqui SH, Merchant AA. Effect of gender and age on the knowledge, attitude and practice regarding hepatitis B and C and vaccination status of hepatitis B among medical students of Karachi, Pakistan. *J Pak Med Assoc* 2010;60:450-5.
10. Bo Feng, Jin Zhang, Lai Wei. Inadequate awareness of hepatitis C among nonspecialist physicians in China. *Adv Med Educ Pract* 2011;2:209-14.
11. Mansour-Ghaneaie R, Joukar F, Souti F, Atrkar-Roushan

- Z. Knowledge and attitude of medical science students toward hepatitis B and C infections. *Int J Clin Exp Med* 2013;6:197205.
12. Setia S, Gambhir RS, Kapoor V, Jindal G, Garg S, Setia S. Attitudes and Awareness Regarding Hepatitis B and Hepatitis C Amongst Health-care Workers of a Tertiary Hospital in India. *Ann Med Health Sci Res* 2013;3:5518.
  13. Lambers FA, Prins M, Davidovich U, Stolte IG. High awareness of hepatitis C virus (HCV) but limited knowledge of HCV complications among HIV-positive and HIV-negative men who have sex with men. *AIDS Care* 2014;26:416-24.
  14. Sharma R, Pallavi, Nagrath S, Kalsi A, Tewari N, Beri V. Awareness of hepatitis C among dental students in north India: a survey. *International J Res Develop Pharmacy Life Sci* 2015;4:1770-4.
  15. Mtengezo J, Lee H, Ngoma J, Kim S, Aronowitz T, DeMarco R, Shi L. Knowledge and Attitudes toward HIV, Hepatitis B Virus, and Hepatitis C Virus Infection among Health-care Workers in Malawi. *Asia Pac J Oncol Nurs* 2016;3:344-51.
  16. Saleh DA, Amr S, Jillson IA, Wang JH, Khairy WA, Loffredo CA Knowledge and perception of hepatitis c infection and pesticides use in two rural villages in Egypt. *BMC Public Health* 2014,14:501.
  17. Almansour AH, Darwish MA, Abdel Wahab MM. Hepatitis C infection awareness among fourth year medical students at University of Dammam. *J Fam Community Med* 2017;24:49-54.
  18. Mengal MH, Tanver F, Azam M, Mengal MA, Mengal MA, Taj MK. Cross sectional assessment of knowledge, attitude and practice towards hepatitis C among adolescents in Quetta, Pakistan. *Dentistry*. 2014;4:263. doi: 10.4172/2161-1122.1000263.