Do the medical, dental and nursing students of first year know about hepatits B? A study from a university of North India

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Abstract

Objective: To assess the knowledge about hepatitis B among the medical, dental and nursing students of first year in Subharti University, a private medical university of North India.

Methods: A cross sectional institutional study was conducted among the first year students of medical, dental and nursing colleges of Subharti University. The total subjects studied were 250. Data was collected when the student came up for hepatitis B vaccination in the Department of Community Medicine. Data was entered in MS Excel and analyzed using Epi Info for Windows. Bivariate analysis using Chi-square test was applied.

Results: Overall, 83.32% of the study subjects had heard of hepatitis B. Only 42% knew that virus is a cause of hepatitis B. Awareness of mother to child transmission of hepatitis B was present in only 12% of the study subjects. Unsafe blood transfusion as a risk factor of hepatitis B was known by 35.2%, whereas, prevalence of knowledge regarding reused needles and unsafe sex as risk factors was lesser. Forty-four percent of the study subjects were not aware of vaccination against hepatitis B. There was a significant difference in the proportion of students of the different faculties about the correct knowledge about hepatitis B.

Conclusion: The knowledge about hepatitis B was very low among the students entering in the medical, dental and nursing profession. This highlights the importance of informed and evidence based education programmes among the students of these healthcare professions.

Keywords: Hepatitis B, Unsafe blood transfusion, Subharti University (JPMA 62: 25; 2012).

Introduction

Medical, dental and nursing students are an integral part of the healthcare provider team, responsible for decision making and implementation of many healthcare related practices. In their course of learning and training during the undergraduate course they are taught the theory and practice of delivering healthcare. Serious and highly fatal blood borne infections like HIV and Hepatitis B are the frontrunners in their occupational diseases profile. Hepatitis B is a highly infectious disease but preventable by its vaccination. Infection with Hepatitis B virus (HBV) is a major cause of morbidity and mortality in the South-East Asia region (SEAR).

More than one-third of the world's population has been infected with HBV.[1] Transmission of HBV infection by bood transfusion and in other medical interventions in both modern and traditional health practices is also common in SEAR. In India, the carrier rate of HBsAg in hospital staff has been found to be higher (10.87 percent) than in voluntary blood donors (6 percent) and in the general population (5 percent).[2] Studies show that the highest number of sharps injuries was sustained by healthcare professionals while they were drawing blood, giving injections or suturing. In addition, those not wearing gloves while doing any of these procedures were at greater risk of contracting infection.[3] Medical, dental and nursing students are more vulnerable to infectious diseases as they are in direct contact with the patients, requiring blood transfusions, injections, surgical instrumentation etc.

Assessing the knowledge regarding hepatitis B among these first year students gives the required information for planning and implementing educational programmes relating to universal precautions and biomedical waste management in their future curriculum. Published studies regarding knowledge of hepatitis B among first year students are scarce in India. Thus, this study was conducted with the objective of assessing the knowledge regarding hepatitis B among the medical, dental and nursing students of first year, in Subharti University.

Methodology

A cross-sectional study was undertaken in 2008 among the first year medical, dental and nursing students of Subharti University, a reputed private university of North India and about 60 kilometers away from Delhi, the capital city of India. This institute has 100 seats per batch in medical and dental colleges whereas 80 in the nursing

college; making a total study population of 280. No sampling technique was employed as it was feasible to include the total study population. A pre-tested, pre-structured and self-administered schedule was used for data collection. Apart from their biosocial characteristics like age and sex, this schedule comprised of various questions related to hepatitis B like awareness regarding hepatitis B; knowledge of its causes, risk factors and prevention aspects. We have taken 'awareness' as having heard of Hepatitis B.

The department of community medicine of the medical college of this university administers hepatitis B vaccine to the first year students of medical, dental and nursing students. The data was collected when these students came to us for their vaccinations. Those who did not turn up for vaccinations in spite of two reminders were not included in the study. Data was entered in Microsoft Excel and analyzed using Epi-Info for Windows. Descriptive data are given in the form of percentages; and bi-variate analysis was done for analyzing discrete data using Chi-square test of statistical significance. P-value less than 0.05 was considered significant in the study.

Results

As 30 (10.70%) subjects were not available for the study in spite of two additional reminders, the total sample size studied was 250 (89.30%) out of the total population of 280. The mean age of the study subjects was 22.36±2.3 years. In all the three faculties, proportion of females was more than males, the highest being in the nursing (88.61%) followed by dental (61.18%) and then medical faculty (52.33%) (Table). As the nursing profession is more or less stereotyped for females, it was but obvious to have this gender imbalance.

With regards to awareness (i.e. have you ever heard of hepatitis B), all (100%) of the medical students were aware followed by 79 (92.94%) of the dental students and 43 (51.19%) of the nursing students and the overall awareness was high i.e. 83.32%. This difference in awareness between different faculties was statistically significant. It is surprising to know that about half of the nursing students had never heard about hepatitis B.

When knowledge about causes of hepatitis B was analyzed it was found that virus as a cause was mentioned by only 42% of the respondents, with a statistically significant difference between the different groups i.e. highest proportion (65.12%) of correct responses from the medical students followed by dental (42.35%) and nursing students (16.46%). Mother to child transmission of hepatitis B as a cause of hepatitis B was known by only 12% of the respondents. About 20.9% of the medical students followed by 11.79% of the dental students and only 2.53% of nursing students gave the correct responses; the difference also was statistically significant.

It is a matter of concern that when asked regarding the risk factors of hepatitis B only 35.96% considered unsafe blood transfusion as a risk factor; and only about one fifth and one tenth of the respondents considered reused needles and unsafe sex as risk factors of hepatitis B respectively. For unsafe blood transfusion as risk factor for hepatitis B, medical students were more aware followed by dental and nursing students, the difference being statistically significant.

Surprisingly nursing students were more aware (36.71%) about reused needles as a risk factor followed by medical students (19.77%) and then dental students (12.94%).

Only 13.6% considered unsafe sex as a risk factor for hepatitis B. Comparatively, medical students (23.26%) were more aware than nursing students (10.13%) followed by dental students (7.06%), with a statistically significant difference between these.

With regards to prevention by hepatitis B vaccine, 56% of the respondents knew about it. A statistically significant difference existed in this knowledge between the medical students (90.7%) followed by dental (44.71%) and then nursing students (30.38%).

Table-1: Sex-wise distribution of study subjects of the three different faculties.

	Medical (n=86)	Dental (n=85)	Nursing (n=79)	Total (n=250)
Males	41 (47.67%)	33 (38.82%)	09 (11.39%)	83 (33.20%)
Females	45 (52.33%)	52 (61.18%)	70 (88.61%)	167 (66.80%)

Discussion

In a study by Daud et al[4] conducted among the first year medical students, 96% responded that virus is a cause of hepatitis B as compared to 65.12% of the medical students correctly responding in our study. Al Jabri AA et al,[5] in a study in Oman have reported that 75% of the students (preclinical medical and non-medical combined) correctly responding that virus is a cause of hepatitis.

Daud et al,[4] Anjum Q et al[6] and Al Jabri AA et al[5] have reported the proportion of subjects responding unsafe blood transfusion as a risk factor of hepatitis B as 28%, 95% and 75% respectively, while in our study this was found to be 35.96%.

This result is comparable to the study done by Seema Daud et al,[4] whereas Shaheen Shah et al[7] in a study on Epi

vaccinators have shown a higher (50%) result in responding correctly that reused syringes are a risk factor for hepatitis B. This may be because the Epi vaccinators' primary responsibility is to give vaccines and they may have been provided training regarding safe injection practices.

Shah et al[7] have reported 22% of their study subjects as being aware of unsafe sex being a risk factor of hepatitis B as compared to only 8% being reported in a study by Seema Daud et al[4] whereas in our study it was 13.6% which is comparable to these studies.

Vaccination as a prevention strategy for hepatitis B was reported by 15% and 65% of the respondents in the studies done by Seema Daud et al[4] and Al Jabri AA et al[5] respectively as compared to 50% in our study.

We found that different studies around the globe have reported different results for the various parameters. It is because of the differences in the general awareness of the people in those regions about hepatitis B and also the differences in the study subjects involved in these reported studies. Overall, we can say that the nursing students were much less aware about hepatitis B and its related aspects of causes, risk factors and prevention which is a cause of worry because they are directly involved in patient care. The medical students are more aware than the dental students regarding hepatitis B which is on expected lines. The knowledge about risk factors is also very dismal among the study subjects.

Although, these three groups have to work in the same settings and will be exposed more or less to same occupational hazards in their careers, they have a vast difference in knowledge regarding one of the serious health problems that they will be at risk while delivering healthcare; i.e. hepatitis B. The nursing staff in the hospital is more in contact with the patients and therefore at greater risk of acquiring hepatitis B and their knowledge is very deficient.

First year students cannot be blamed for not having entire knowledge about the transmission of hepatitis B. Onus of imparting such knowledge falls on the medical /nursing school and the university. As no comparisons were made between the students of first year and final year, it cannot be assessed as to how effectively the university is imparting knowledge regarding hepatitis B to the students.

As we have seen varying results in different studies reported globally on this topic, it is recommended that these type of studies have to be conducted in different areas and bigger samples to asses the actual knowledge on this disease so that relevant tailor made strategies can be made.

Hepatitis B is a highly infectious disease, and it shares many of its routes of transmission akin to those of HIV/AIDS. Making the healthcare team aware of its correct knowledge will go a long way in prevention of both these infections.

Conclusion

The knowledge regarding hepatitis B was found to be low among students entering the medical, dental and nursing profession.

References

1. Kane M. Global strategies for the control of hepatitis B. In: Zuckerman AJ, editor. Prevention of hepatitis B. London: Royal College of Physicians, 1996; pp 87-96.
2. WHO. Health situation in the south-east Asia Region 1994-97, South-East Asia Region, New Delhi, 1999.
3. Shiao J, Guo L, Mclaws ML. Estimation of the risk of bloodborne pathogens to health care workers after a needlestick injury in Taiwan. Am J Infect Control 2002; 30: 15-20.
4. Daud S, Hashmi NR, Manzoor I. Prevention of hepatitis B: Knowledge and practice among first year MBBS students. Professional Med J 2007; 14: 634-8.
5. Al-Jabri AA, Al-Adawi S, Al-Abri JH, Al Dhahry SH. Awareness of hepatitis B virus among undergraduate medical and non medical students. Saudi Med J 2004; 25: 484-7.
6. Anjum Q, Saddiqui H, Ahmad Y Rizvi SR, Usman Y. Knowledge of students regarding hepatitis and HIV/AIDS of a private medical university in Karachi. J Pak Med Assoc 2005; 55: 285-8.
7. Shaheen E, Nisar N, Majid HQ. Knowledge regarding Hepatitis B among EPI vaccinators working in district South, Karachi. Pak J Med Sci 2007; 23: 538-41.