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A CROSS-SECTIONAL ANALYSIS OF KNOWLEDGE, ATTITUDE, AND PREVENTIVE PRACTICES REGARDING HEPATITIS B AND C VIRUS INFECTION AMONG MEDICAL STUDENTS

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ABSTRACT

Background: Hepatitis B virus (HBV) and Hepatitis C virus (HCV) are grievous problems in the whole world specially low and middle income countries. The future health providers, medical students should have adequate knowledge, appropriate attitude and safe practices to minimize transmission. This study evaluated knowledge, attitudes, and practices (KAP) toward HBV and HCV among undergraduate medical students and explored associated factors.

Materials and Methods: A cross-sectional survey was performed on779 student medical practitioners from 4 different academic years. A pre-sanctioned questionnaire assessing demographics, knowledge, attitude, and practice. Statistical tests were performed for Chi-square and Kruskal-Wallis for association tests. A multivariable logistic regression was run to test the predictors of KAP outcomes with $p< 0.05$.

Results: The average age of subjects were 22.7 ± 2.4 years. The average scores for knowledge, attitude, and practice were 13.17 ± 3.89, 3.65 ± 1.07 and 4.77 ± 1.26 respectively. More than half (51.9%) had a good knowledge score while majority (59.6%) had a favourable attitude and 58.9% practiced safety. Most of the respondents were aware of how HCV is transmitted. For example, 96.8% of respondents knew that sharing of needles poses a risk. This high level of awareness however did not translate to knowledge. For example, only 48.0% of respondents knew that there is no vaccine for HCV. A total of 77.5% of patients thought it was safe to socially interact with HCV patients. Besides, 43.0% preferred infected patients to be seen at the end of clinics. With respect to practices 94.9% reported use of sterilized syringes used but 41.6% only completed all three doses of HBV vaccine. Higher academic years are related positively with better attitudes and practice.

Conclusion: Medical students exhibited moderate knowledge and attitudes toward HBV and HCV, but persistent misconceptions and inadequate vaccination highlight gaps in practice. Integrating targeted education, improving vaccination coverage, and reinforcing safe practices are urgently required.

Keywords: Hepatitis B; Hepatitis C; Knowledge; Attitudes; Practices; Cross-sectional study.

INTRODUCTION

Hepatitis pandemic has been a huge public health problem in the world, causing devastating sickness and death to individuals, families and health system globally. As per the World Health Organization (WHO), there are about 304 million people suffering from chronic hepatitis B (HBV) or hepatitis C (HCV). Of this, more than 80 per cent are HBV. In 2022, an estimated 1.3 million fatalities attributed to these infections made viral hepatitis the second most common infectious disease cause of death globally after tuberculosis.[1]

The main transmission routes of both HBV and HCV are blood and body fluids. Unsafe injections, transfusion of unscreened blood, unsterile surgical or dental procedures and sharing of contaminated needles are key risk factors. Occupational risks are particularly high among healthcare workers (HCWs). Sharps injuries account for almost 40% of HBV and HCV infections acquired in healthcare settings.[2]

Although effective vaccines for HBV and preventing measures for both exist, myths and unsafe practices are widespread. Numerous countries have evidenced notable improvement in HBV control with the launch of universal vaccination programs. HBV prevalence in Jordan went from 9.9% in 1985 to 2.4% in 2016 following the introduction of a newborn vaccination.[3]

In India, the intermediate endemicity of HBV. Vaccination coverage, despite being a part of the national immunization program, is not optimal, and students and young adults have inconsistent awareness. The growing burden of HCV in certain regions is an additional challenge because there is no vaccine available. Though there are significant advances in diagnostic and therapeutic aspect, but unsafe behaviour and social stigma and low awareness contribute the spread of infection.[4]

Studies show that knowledge, attitude, and preventive practices (KAP) regarding HBV and HCV among healthcare students remains inadequate, further increasing future risk.[5] Misconceptions about vaccine safety and transmission routes continues to exist, especially in low- and middle-income countries.[6] Furthermore, the burden of chronic hepatitis remain higher in rural and underserved populations where access to diagnostic and treatment services are limited.[7]

Global health strategies by WHO emphasize achieving 90% diagnosis and 80% treatment coverage by 2030 to control the epidemic.[8] The lack of a vaccine for HCV has placed greater importance on awareness, safe practices, and early treatment.[9] Moreover, regular education and training of undergraduate students have been shown to significantly improve compliance with safe practices and vaccination uptake.[10]

Other studies confirm that many health care students do not complete the full HBV vaccination schedule thereby highlighting critical gaps.[11] The students have incomplete knowledge regarding the modes of human hepatitis B virus and hepatitis C virus. This impact the preventive practices as stated in.[12] A study from India showed that around 50 per cent of students of healthcare do not know about the effective post-exposure prophylaxis.[13] In addition, stigma and fear of social discrimination are major barriers to seeking care for hepatitis infections, research suggests.[14] Implementing structured educational programs early on will help not only knowledge but also attitude towards patient care.[15]

Thus, it is essential to assess the knowledge, attitudes and practices of undergraduate students to prevent further transmission of HBV and HCV as they approach the healthcare professions where they are at high risk.

MATERIALS AND METHODS

Study Design and Participants: This cross-sectional study was conducted among undergraduate students to evaluate their knowledge, attitudes, and practices (KAP) regarding hepatitis B and C virus infections. A total of 779 students from the first to fourth academic years were approached, all of whom consented and participated.

Questionnaire design and grading standards: Based on previous studies, the questionnaire was designed in similar settings. The main purpose of this study was to determine the knowledge, attitude and practices (KAP) toward HBV and HCV and NOT to diagnose or predict HCV or HBV. To ensure it was valid, the instrument was presented to ten experts in infectious diseases and gastroenterology. The experts were evaluated for face value and content validity ratio (CVR) and minor modifications were done to the experts' suggestions. The pilot testing of the questionnaire was done with 30 students (not included in the final analysis) for clarity and suitability.

The survey tool consist of demographic characters, knowledge attitude and practice. Demographic information of respondents are age, gender, academic year and place of residence. The domain of knowledge included 20 yes/no items that focused on the prevalence, transmission, risk factor, prevention, screening and treatment of HBV and HCV. The attitude domain was composed by 7 yes/no items which assess awareness, perceived severity and views: HBV and HCV. The practice domain contained seven yes/no items on preventive/protective behaviours in HBV & HCV.

Since both the Knowledge attitude and Practice questioners had almost the same minimum and maximum scores, they were calculated as 0 or 1 was assigned for correct or favourable response respectively and 0 for incorrect or unfavourable response so that knowledge scores were ranging from 0 to 20, Practice scores were ranging from 0 to 7 and attitude scores were ranging from 0 to 7. Based on the cut-off values developed earlier the respondents were

classified as high knowledge (>14) and low knowledge (≤14) good Practice (>5) and poor Practice (≤5) positive attitude (>5) and negative attitude (≤5). We presented continuous scores in terms of mean and standard deviation (SD) while categorical outcomes in proportions.

Data Collection: An online structured questionnaire was distributed to undergraduate medical students. Participation were voluntary, and informed consent was collected from all participants. The average time taken by each respondent to complete the survey was between 15 and 20 minutes.

Statistical Analysis: The Microsoft Excel programme was used for the study's data management and for the analysis, the Statistical Package for Social Sciences (SPSS). The one-sample Kolmogorov-Smirnov test was utilized to test the quantitative variables' normality. Variables that had p-values smaller than 0.05 were considered non-normally distributed. As a result, non-parametric tests were applied the Kruskal-Wallis test was employed for comparisons across multiple groups. The relationships between categorical variables such as the KAP levels and demographic characteristics were assessed using the Chi-square test. Statistical significance was set at $p<0.05$ (2-sided). To determine factors associated with KAP outcomes, univariate analysis followed by multivariate analysis was performed using logistic regression. Results are presented with adjusted odds ratios (AOR) and 95% confidence intervals (CI). Distributions of variables are either shifted or standardized before fitting logistic regression models.

Ethics: The study was conducted following approval from the Institutional Ethics Committee.

RESULTS

Table 1: Demographic characteristics of study participants

		Frequency	Percentage (%)
Total		779	100
Age		22.74±2.39	
Sex	**Male**	460	59.1
	Female	319	40.9
Residence	**Rural**	345	44.3
	Urban	434	55.7
Years of Study	**First**	10	1.3
	Second	534	68.5
	Third	175	22.5
	Fourth	60	7.7

Characteristics of study participants: 779 students were included in the study. The participants' average age was 22.74 ± 2.39 years. Out of these, 460 (59.1%) were male and 319 (40.9%) were female. With regards to residence, 434 (55.7%) students were from urban areas whereas, 345 (44.3%) students were from rural areas [Table 1].

Table 2: Study population's knowledge score

Knowledge questions	Correct answers (n%)
Can a person contract getting infection) HBV from their parents' (heredity)? (No)	240(30.8)
Can coughing or sneezing transmit hepatitis B?(No)	594(76.3)
Can HBV spread through the sharing of injection needles?(Yes)	754(96.8)
Can Hepatitis C be spread through kissing or talking?(No)	589(75.6)
Can hepatitis C be transmitted from the mother to her baby?(Yes)	654(84.0)
Can hepatitis C be transmitted via ear or nose piercing?(Yes)	485(62.3)
Can hepatitis C infection cause joint pain?(Yes)	404(51.9)
Can vaccination protect against hepatitis B infection?(Yes)	694(89.1)
Can you protect against hepatitis C infection by vaccination?(No)	374(48.0)
Could hepatitis B infection spread through dialysis?(Yes)	559(71.8)
Do All patients with hepatitis B surface antigen positive need treatment?(No)	305(39.2)
Do the symptoms start to show up soon after HCV enters the body?(No)	564(72.4)
Do you believe that doctors and medical students carry the risk of contracting hepatitis B from the patients?(Yes)	684(87.8)
Does Hepatitis B have a link to liver cancer?(Yes)	635(81.5)
Does Nutrition and Exercise help in chronic Hepatitis B treatment?(Yes)	509(65.3)
Is hepatitis C an RNA virus?(Yes)	634(81.4)
Is hepatitis C the most deadly type of hepatitis?(Yes)	294(37.7)
Is there a screening for hepatitis C?(Yes)	529(67.9)
Is there treatment for hepatitis C?(Yes)	589(75.6)
The most common hepatitis is hepatitis B?(No)	170(21.8)
Mean (SD)	13.17±3.89
Knowledge status of participants	
Low	375(48.1)
High	404(51.9)

Assessment of participants' knowledge levels on hepatitis: The knowledge of the different domains regarding hepatitis B and C virus infections varied among the participants. A mere 30.8% has correctly defined that HBV is not passed on to their child from their parent(s). In addition, 76.3% are aware that HBV is not transmitted through coughing or sneezing. Finally, 96.8% report that HBV is transmitted when injection needles are shared. In the case of HCV, it is evident that 75.6% correctly stated that kissing and talking do not transmit the infection. Further, 84.0% stated a possibility of mother-to-child infection. There was moderate awareness regarding other route of transmission as 62.3% knew that piercing of ear or nose could lead to hepatitis C infection while 51.9% were aware that hepatitis C might cause pain in joints. A statistically significant higher proportion of respondents were aware of HBV vaccination (89.1%) as against that of HCV vaccination (48.0%) ($p < 0.001$). In addition, 71.8% knew that dialysis can transmit HBV, while 39.2% knew not all HBsAg-positive patients need treatment. The majority of the participants (72.4%) knew that HCV symptoms do not appear immediately after infection while (87.8%) of them were aware that healthcare workers are at risk of HBV. There was also good knowledge regarding long-term consequences, such as 81.5% said HBV can cause liver cancer and 81.4% said HCV was RNA virus. However, fewer knew that the most lethal type is HCV (37.7%) or that hepatitis B is the most common type (21.8%). The mean knowledge score was 13.17 ± 3.89. 51.9% were under high knowledge and 48.1% were in low knowledge [Table 2].

Table 3: Study population's Practice score

Practice questions	Correct answers (n %)
Are you hepatitis vaccinated (All three dosages)? (Yes)	324(41.6)
Have you ever assessed the level of post vaccination immunity against hepatitis? (Yes)	235(30.2)
I will encourage family members to screen for HBV and HCV if a family member is infected by hepatitis. (Yes)	689(88.4)
I will participate in a hepatitis B awareness program. (Yes)	729(93.6)
I will tell All hepatitis C infected people to get treatment. (Yes)	734(94.2)
I will use sterilized syringes when necessary. (Yes)	739(94.9)
I will advise hepatitis B patients not to get pregnant. (No)	265(34)
Mean (SD)	4.77±1.26
Practice status of participants	
Poor	320(41.1)
Good	459(58.9)

Assessment of participants' practices levels on hepatitis: Practices of the respondents were varying as regards to hepatitis B and C prevention and control. A mere 41.6% has stated to have received all three doses of the hepatitis vaccine and 30.2% assessed their immunity after vaccination at least once. On the other hand, the findings revealed that a large majority of the population demonstrated proactive preventive behaviours. 88.4% would encourage family members to undergo screening for HBV and HCV if a relative was infected. Further, 93.6% would be willing to attend a hepatitis B awareness programme. 94.2% would advise HCV infected individual to avail treatment. Finally, 94.9% would use sterilized syringes when necessary. Only 34% of study participants correctly disagreed with advising hepatitis B patients not to get pregnant. In our study, the mean practice score was 4.77 ± 1.26. It was found that 58.9% had good practice and 41.1% had poor practice [Table 3].

Table 4: Participants' Attitude Scores

Participant Participants' attitude questions	Correct answers (n %)
HBV and HCV patients should be given the final appointment of the day (The last appointment in the clinic).(Yes)	335(43.0)
You can shake hands or hug a hepatitis C infected person. (True)	604(77.5)
Hepatitis C can be prevented with immunization and receiving a hepatitis vaccination.(No)	340(43.6)
Hepatitis C can be prevented by a healthy lifestyle.(True)	474(60.8)
Liver failure caused by hepatitis B and C infections can be avoided with medications.(False)	270(34.7)
Patients who have HBV or HCV should avoid interacting with other family members.(False)	215(27.6)
Hepatitis B and C are more difficult to get infected than HIV.(False)	609(78.2)
Mean (SD)	3.65±1.07
Attitude status of participants	
Low	345(44.2)
High	435(55.8)

Assessment of participants' attitudes levels on hepatitis: The different aspects of perceptions and behaviours of the participants regarding hepatitis B and C virus infection. A mere 43.0% felt that the clinic should schedule the last appointment of the day for HBV and HCV. A high percentage (77.5%) correctly thought that it is okay to shake hands or hug a person with hepatitis C. 43.6% respondents have rightly understood that vaccination cannot prevent hepatitis C. 60.8% respondents have also understood that hepatitis C infection can be prevented by a healthy lifestyle. The research highlighted the

knowledge gaps about managing diseases and their transmission as only 34.7% disagreed with the statement that all the liver failure caused by hepatitis B and C could be prevented by medicines. Moreover, 27.6% knew hepatitis B and C virus patients don't need to avoid family interactions. A majority of participants, (78.2%) correctly stated that hepatitis B and C are easier to get infected with than HIV. The mean for attitude score was found to be 3.65 ± 1.07 55.80% had a high attitude while 44.20% had a low attitude [Table 4].

Mean scores across subgroups: The knowledge, practice and attitude scores distribution of the study participants were examined using a non-parametric test, Mann–Whitney U test and Kruskal–Wallis test. It is done to find differences as per sex and academic year. When the data was analyzed by sex, it came to light that the females had a significantly higher score in knowledge (13.71 ± 3.21) and practice (5.03 ± 1.08) as compared to the men (12.79 ± 4.27 and 4.59 ± 1.35 respectively; $p = 0.018$ and $p < 0.001$). The attitude scores of females (3.58 ± 1.12) and males (3.71 ± 1.04, $p = 0.655$) did not differ statistically significantly.

All three domains in first-year and fourth-year students are significantly different, as per the analysis. Students in the first year were scored lowest (4.50 ± 4.74) as compared to students from fourth year who scored higher (12.50 ± 4.76). It was observed that with an increase in clinical years students' knowledge increased. Preventive practices showed a similar pattern, where first-year students reported (2.00 ± 2.11). Fourth-year students reported higher engagement (5.17 ± 0.99) supported by their clinical exposure and educational training. Attitude scores of the first-year students (3.50 ± 0.53) were found to be slightly higher than the fourth-year students (3.42 ± 0.77) which can suggest that perceptual awareness improves with experience but the attitudinal development is slower.

The students' academic advancement and sex play an important role in enhancing the knowledge and practical skills of the students regarding hepatitis B and C. Change in attitude also takes place though not significantly and it also depends on the year of study.

Association of demographic profiles with knowledge, attitudes, and practices of students concerning HBV and HCV.

A chi-square analysis was performed to examine variations in knowledge, attitudes, and practices regarding HBV and HCV. Younger participants demonstrated significantly higher levels of knowledge compared to older counterparts ($p = 0.022$).

Multivariate assessment of knowledge, attitude, and practice: [Table 6] presents the outcome of the multivariate logistic regression analysis aimed at determining the association of demographic variables with the levels of knowledge, attitude, and practice toward HBV and HCV. The correlation between age and any of the three domains was not significant, although a borderline correlation was noted with attitude AOR=0.935 95% CI: 0.874–1.001 p=0.053. According to the knowledge rating scale, no significant effect of gender was observed on Female respondents also exhibited significantly better levels of practice than males ($p < 0.001$), female respondents exhibited significantly higher levels of knowledge compared to males ($p = 0.212$) or attitude ($p = 0.780$). Place of residence did not yield significant differences in knowledge ($p = 0.876$) or practice ($p = 0.801$), though urban students reported a borderline higher level of positive attitude than rural students ($p = 0.073$). Academic year was strongly associated with all three domains, with second- and third-year students demonstrating significantly higher levels of knowledge ($p = 0.003$), better practice ($p < 0.001$), and more favorable attitudes ($p = 0.034$) compared to their first- and fourth-year peers [Table 5].

Female students had significantly higher mean knowledge scores than males ($p = 0.018$). However, when knowledge was dichotomized into high vs. low, no significant gender difference was observed ($p = 0.212$). This effect also did not persist after adjusting for confounders in multivariable regression ($p = 0.465$).

Knowledge, attitude and practice, female participants performed similarly to male across all.

Table 5: Association between demographic characteristics of students and knowledge, attitudes, and practices toward HBV and HCV

Covariate	Subgroup	Level of Knowledge		p-value	Level of Practice		p-value	Level of Attitude		p-value
		Low n (%)	High n (%)		Low n (%)	High n (%)		Low n (%)	High n (%)	
Age (Mean Rank)		409.01	372.36	0.022	386.41	392.51	0.707	386.54	392.35	0.721
Gender	Female	145 (18.6%)	174 (22.3%)	0.212	105 (13.5%)	214 (27.5%)	<0.001	139 (17.8%)	180 (23.1%)	0.78
	Male	230 (29.5%)	230 (29.5%)		215 (27.6%)	245 (31.5%)		205 (26.3%)	255 (32.7%)	
Residence	Rural	165 (21.2%)	180 (23.1%)	0.876	140 (18.0%)	205 (26.3%)	0.801	140(18.0%)	205(26.3%)	0.073
	Urban	210 (27.0%)	224 (28.8%)		180 (23.1%)	254 (32.6%)		204(26.2%)	230(29.5%)	
Academic Year	First	10 (1.3%)	0 (0.0%)	0.003	10 (1.3%)	0 (0.0%)	<0.001	5 (0.6%)	5 (0.6%)	0.034
	Second	265 (34.0%)	269 (34.5%)		220 (28.2%)	314 (40.3%)		239(30.7%)	295(37.9%)	

	Third	75 (9.6%)	100 (12.8%)		75 (9.6%)	100 (12.8%)		65 (8.3%)	110 (14.1%)	
	Fourth	25 (3.2%)	35 (4.5%)		15 (1.9%)	45 (5.8%)		3.5(4.5%)	25(3.2%)	

However, academic year emerged as a significant predictor for some areas. In relation to first-year students, the chances of a third-year students expressing a positive attitude (AOR=0.441, 95% CI: 0.240–0.812, p=0.004) and good practice (AOR=0.576, 95% CI: 0.335–0.989, p=0.040) were significantly reduced. Like-wise, a fourth year students are less likely to show good practice (AOR=0.416, 95% CI: 0.228–0.758, p=0.004). Knowledge differences across academic years were not significant [Table 6].

Table 6: Multivariable analysis of the knowledge, attitude, and practice.

Covariate	Category	Knowledge AOR (95% CI)	p-value	Attitude AOR (95% CI)	p-value	Practice AOR (95% CI)	p-value
Age	–	0.935 (0.874–1.001)	0.053	0.951 (0.888–1.017)	0.143	0.984 (0.920–1.053)	0.646
Gender	Male	Reference	–	Reference	–	Reference	–
	Female	0.890 (0.650–1.210)	0.465	0.964 (0.724–1.376)	0.991	1.085 (0.810–1.454)	0.585
Academic Year	First-year	Reference	–	Reference	–	Reference	–
	Second-year	0.90 (0.50–1.60)	0.999	0.321 (0.080–1.290)	0.109	0.686 (0.178–2.644)	0.584
	Third-year	0.652 (0.375–1.135)	0.254	0.441 (0.240–0.812)	0.004	0.576 (0.335–0.989)	0.04
	Fourth-year	0.979 (0.538–1.779)	0.943	0.577 (0.297–1.120)	0.104	0.416 (0.228–0.758)	0.004

Binary logistic Regression, p<0.05 (Significant)

DISCUSSION

In the present study, high knowledge was found in 51.9% of participants regarding Hepatitis B and C. The overall mean score was 13.17 ± 3.89. Knowledge levels were significantly associated with academic year ($\chi^2 = 14.8$, $p = 0.003$). Students in higher years were more aware. The gender played an important role, and the knowledge was better in female students than in males ($\chi^2 = 6.3$, $p = 0.012$). Thus, Study matched another study. According to Shrestha et al. (2020), 50.8% of the preclinical medical students had good knowledge regarding hepatitis B. In a similar study across Bangladesh, Lamichhane et al. (2024) reported that the knowledge of hepatitis B was good among only 24% of preclinical students.[15]

However, a few misconceptions continued. For instance, only 43.6% were able to accurately report that hepatitis C can't be completely prevented with vaccination. Moreover, only 34.7% accurately report that liver failure from HBV/HCV infections can't be completely prevented with drugs. Similar gaps were reported by Rathi et al. (2018) wherein improper belief about treatment of HBV and vaccination was held by 48% of students in the sample.[16] This shows that a lot of education is still required on hepatitis.

As to the attitude score, 55.8% of the respondents had a high attitude score (mean 3.65 ± 1.07). Attitude levels were significantly associated with academic year ($\chi^2 = 8.8$, $p = 0.034$) whereby third-year students had more favourable attitude levels than first-year students.

The multivariate analysis indicates that the third-year students had significantly more odds for favourable attitudes (AOR = 0.441, 95% CI: 0.240–0.812, p = 0.004). Which is corroborated by the previous studies. According to Shrestha et al. (2020), 57.3% of third-year students had high attitude scores, as opposed to 39.2% of first-year students ($\chi^2 = 12.4$, $p < 0.01$).[14] In a study conducted by Ahmad et al. (2016), it was observed that students, who had undergone a clinical rotation before, were 1.8 times likely to show a positive attitude towards hepatitis prevention (OR = 1.82, 95% CI: 1.12–2.95, p = 0.015).[17]

Despite this, there are still certain misconceptions that survived. For example, the statement "Patients with HBV or HCV must not mix with family" was answered correctly by 27.6%. This means that positive attitudes do not always equate with complete knowledge of transmission and prevention.

Out of the respondents, 58.9% exhibited good preventive practices (mean 4.77 ± 1.26). Merely 41.6% finished the three doses of the HBV vaccine and 30.2% assessed the post-vaccination immunity which shows gaps in protective behavior. Both the academic year ($\chi^2 = 22.3$, $p < 0.001$) and gender ($\chi^2 < 0.001$) significantly influenced practices, with third- and fourth-year students and female students more likely to adhere. The multi-variable logistic regression analysis indicated that the odds of third-year students and fourth-year students to report good practices as compared to first years were 0.576 (AOR=0.576, 95% CI: 0.335–0.989, p=0.04) and 0.416 (AOR=0.416, 95% CI: 0.228–0.758, p=0.004) respectively. Older studies reported similar patterns. Shrestha et al. (2020) discovered that 56.7% reported good practices with completion of HBV vaccination at 44%, which was comparable to our finding ($\chi^2 = 8.1$, $p = 0.01$).[14] As shown by Ahmad et al. (2016),

safe practices were followed more by females by 1.6 folds as compared to males (OR = 1.62, 95% CI: 1.05–2.50, p = 0.03).[17] It was reported by Rathi et al. (2018), the vaccination coverage among medical students was less than 50% despite high knowledge levels ($\chi^2 = 7.9$, p = 0.005). Though mean knowledge was higher among females and the association was positive in nature in the Odds Ratios (OR), however, on high and low categorization, and after adjustment, this was not significant. The findings from,[16] also indicated that gender per se may not predict knowledge of HBV and HCV.

CONCLUSION

The studied 779 participants' knowledge, attitudes and practice's on hepatitis B and C were found to have a varied demographic profile in various academic years. Participants showed moderate to high knowledge, positive attitudes and good adherence to preventive practices. Through a series of subgroup and multivariate analyses, the variables that were significantly affected KAP outcomes were gender and academic year. The study findings revealed associations between knowledge and attitude, and between knowledge and practice. The study highlights the importance of educational initiatives, a structured vaccination program and stringent reinforcement of other infection control practices to overcome existing lapses and promote informed safe health behaviour among future medical professionals.

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