KNOWLEDGE, ATTITUDES, AND PRACTICES REGARDING HEPATITIS AMONG FOREIGN STUDENTS OF MEDICAL FACULTY IN JALAL-ABAD, KYRGYZSTAN: A CROSS-SECTIONAL STUDY

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Abstract

Introduction: Viral hepatitis remains a leading cause of liver-related morbidity and mortality, responsible for 1.3 million deaths globally in 2022. Despite being preventable and treatable, significant knowledge gaps persist, especially among future healthcare providers.

Objective: This study aimed to evaluate hepatitis-related knowledge, attitudes, and practices (KAP) among foreign medical students and identify educational gaps affecting prevention and vaccination awareness.

Methodology: A cross-sectional prospective and descriptive study was conducted among 204 foreign students of medical faculty in Jalal-Abad, Kyrgyzstan using a pre-structured online questionnaire. Data were analysed using SPSS (v26), applying descriptive statistics and cross-tabulations, forming pie-charts and bar-graphs.

Results: Among respondents knowledge of enteric hepatitis (A and E) was high, with 83.3% and 70.6% correctly identifying food/water-borne transmission. Blood-borne transmission of HBV and HCV was recognized by 77% and 66%, respectively. Awareness of HDV's co-dependence on HBV was limited (only 40%). Hepatitis B and A vaccine awareness stood at 77% and 78.4%, while only 25.5% and 43.1% reported availability for hepatitis D and E vaccines. Symptom recognition was high for jaundice (79.9%) and fatigue (75.5%). Preventive practice adherence, including universal precautions (M = 1.40) and PPE use (M = 2.59), was moderate. Knowledge accuracy improved progressively by academic year.

Conclusion: While overall hepatitis awareness was satisfactory, significant deficiencies remain in vaccine knowledge, clinical understanding of HDV/HEV, and preventive behaviours. Early, structured infection control education and vaccination literacy programs are essential to bridge these gaps.

Keywords: Hepatitis, Micriobiology, Medicine, Foreign Medical Student, Pathology

ЗНАНИЯ, ОТНОШЕНИЕ И ПРАКТИКА В ОТНОШЕНИИ ГЕПАТИТА СРЕДИ ИНОСТРАННЫХ СТУДЕНТОВ МЕДИЦИНСКОГО ФАКУЛЬТЕТА В ДЖАЛАЛ-АБАДЕ, КЫРГЫЗСТАН: ПОПЕРЕЧНОЕ ИССЛЕДОВАНИЕ

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Аннотация

Введение: Вирусный гепатит остается одной из ведущих причин заболеваемости и смертности, связанных с заболеваниями печени, и в 2022 году стал причиной 1,3 миллиона смертей во всем мире. Несмотря на то, что гепатит можно предотвратить и лечить, сохраняются значительные пробелы в знаниях, особенно среди будущих медицинских работников.

Цель: Данное исследование направлено на оценку знаний, отношения и практики (ЗАП) в отношении гепатита среди иностранных студентов-медиков и выявление пробелов в образовании, влияющих на осведомленность о профилактике и вакцинации.

Методология: Было проведено поперечное проспективное описательное исследование среди 204 иностранных студентов медицинского факультета в Джалал-Абаде, Кыргызстан, с использованием предварительно структурированной онлайн-анкеты. Данные были проанализированы с помощью SPSS (версия 26) с применением описательной статистики и перекрестных таблиц, формированием круговых диаграмм и столбчатых графиков.

Результаты: Среди респондентов уровень знаний о кишечном гепатите (A и E) был высоким: 83,3% и 70,6% правильно определили передачу через пищу/воду. Передача ВГВ и ВГС через кровь была распознана 77% и 66% соответственно. Осведомленность о взаимозависимости вируса гепатита D и ВГВ была ограниченной (всего 40%). Осведомленность о вакцинах против гепатита B и A составила 77% и 78,4%, в то время как только 25,5% и 43,1% сообщили о наличии вакцин против гепатита D и E. Распознавание симптомов было высоким для желтухи (79,9%) и усталости (75,5%). Соблюдение профилактических мер, включая универсальные меры предосторожности (M = 1,40) и использование СИЗ (M = 2,59), было умеренным. Точность знаний постепенно улучшалась с каждым учебным годом.

Вывод: Хотя общая осведомленность о гепатите была удовлетворительной, сохраняются значительные пробелы в знаниях о вакцинах, клиническом понимании вирусов гепатита D/HEV и профилактическом поведении. Раннее, структурированное обучение по инфекционному контролю и программы повышения осведомленности о вакцинации необходимы для устранения этих пробелов.

Ключевые слова: Гепатит, Микробиология, Медицина, Иностранный студент-медик, Патология

Introduction

Acute viral hepatitis encompasses a group of hepatotropic infections that significantly impact liver function and public health. Globally, nearly all cases are attributed to one of five primary viruses: hepatitis A (HAV), B (HBV), C (HCV), D (HDV), and E (HEV). These viruses are classified as either single-stranded RNA viruses—HAV (Picornaviridae), HCV (Flaviviridae), HDV (Deltavirus), HEV (Hepeviridae)—or a double-stranded DNA virus, HBV (Hepadnaviridae) [1,2].

Clinical manifestations of viral hepatitis range from asymptomatic presentations to acute symptoms such as jaundice, pale stools, gastrointestinal disturbances, fever, and fatigue.

HAV, primarily transmitted via the fecal-oral route, is closely linked with poor sanitation and contaminated water or food sources [3]. HEV shares similar transmission modes and is particularly dangerous in pregnant women, contributing to high maternal mortality in endemic regions [4]. HBV, transmitted perinatally, sexually, or through blood exposure, is endemic in many low- and middle-income countries [5]. Chronic HBV can progress to cirrhosis or hepatocellular carcinoma, especially in co-infections with HDV, which depends on HBV for replication [6]. HDV-HBV co-infection is associated with faster disease progression and poorer outcomes [7]. HCV, predominantly transmitted via blood (e.g., injection drug use), can also cause chronic liver disease, and remains a global concern despite antiviral advances [8].

Despite advancements in diagnostics and antiviral therapies, viral hepatitis continues to be underdiagnosed and undertreated. According to WHO, global deaths from viral hepatitis increased from 1.1 million in 2019 to 1.3 million in 2022, with HBV and HCV responsible for 83% and 17% of deaths, respectively [2]. Moreover, over 300 million people are estimated to be chronically infected, many of whom are unaware of their status [2].

Inadequate vaccine uptake and poor adherence to infection control protocols exacerbate this public health issue [9]. Public awareness campaigns are often fragmented, underfunded, or fail to reach high-risk populations [10].

Medical students represent a crucial demographic for hepatitis education due to their occupational exposure risk and future roles in patient education and public health. However, numerous studies highlight significant gaps in medical students' understanding of hepatitis transmission, prevention, and vaccine availability [11]. Early exposure to structured infection control training is key to addressing these gaps and cultivating evidence-based clinical practices.

This study was conducted to assess the knowledge, attitudes, and practices (KAP) regarding hepatitis among foreign medical students enrolled at Jalal-Abad State University in Kyrgyzstan. The primary objectives were to: (1) evaluate students' knowledge of hepatitis transmission and preventive measures; (2) analyse their attitudes toward disease severity and vaccination; and (3) identify patterns in awareness strategies suggested by participants. By identifying conceptual deficiencies and educational strengths, this study aims to inform targeted curricular interventions and improve future public health initiatives.

Methodolgy

Study design - This was a cross-sectional prospective and descriptive study designed to evaluate the knowledge, attitudes, and practices (KAP) concerning hepatitis among foreign medical students.

Study population - The research was conducted among foreign students of the medical faculty in Jalal-Abad, Kyrgyzstan. The participants included students from different academic years, nationalities, age groups and genders.

Sampling technique - A non-probability convenience sampling method was employed to select participants who were available and agreed to respond during the data collection period of 2-3 months.

Data collection tool - Data were collected with the help of pre-structured questionnaire created and distributed through Google Forms. The questionnaire consisted of five major sections:

(1) demographic information, (2) knowledge about hepatitis (3) attitude towards hepatitis (4) practices related to hepatitis prevention and (5) Suggestions and feedback.

Validity and realibility - The questionnaire was pretested on a few students to ensure proper clarity and accurate comprehension. Modifications were made based on their feedback to improve question design and flow. Content validity was ensured by faculty reviewers.

Data collection procedure - The Google Form link was shared with students through email, WhatsApp groups, and other digital student platforms. A brief introduction was provided on the form's first page, under main title of form, informing about the purpose of study, assured of confidentiality, and seeking informed consent digitally before proceeding.

Inclusion and exclusion criteria - Inclusion criteria included all foreign students currently enrolled in the medical faculty of Jalal-Abad, Kyrgyzstan who gave consent. Respondents who did not consent or submitted incomplete forms were excluded from the study.

Ethical consideration -This study was authorized by the IRB of Jalal-Abad State University. Participation was voluntary, and no identifying personal details were collected to ensure confidentiality.

Data analysis – Responses were automatically recorded and saved by Google forms, thereafter Data were exported from Google Forms to Microsoft Excel and in the next step analysed using IBM SPSS Software Version 26. We used Descriptive statistics (frequencies, percentages) and Cross-tabulations analyses to examine the nexus between demographic characteristics and KAP responses.

Results

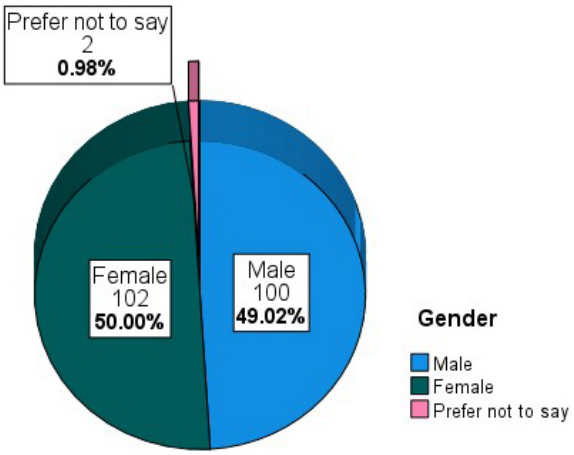
Demographic Characteristics

A total of 204 foreign medical students responded to the study. Their demographic attributes are presented below:

• **Gender Distribution:**

• Out of the total participants, 50.0% (n = 102) were female, 49.0% (n = 100) were male, and 1.0% (n = 2) preferred not to reveal their gender (see Figure 1).

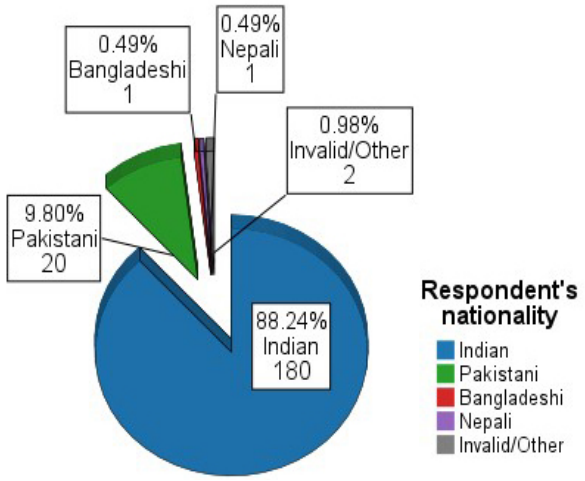
• *Figure 1. Distribution of respondents by gender*



• **Nationality of Respondents:**

• The majority of respondents were Indian (n = 180, 88.24%), followed by Pakistani (n = 20, 9.80%), with Bangladeshi (n = 1, 0.49%), Nepali (n = 1, 0.49%), and other nationalities (n = 2, 0.98%) constituting the rest (see Figure 2).

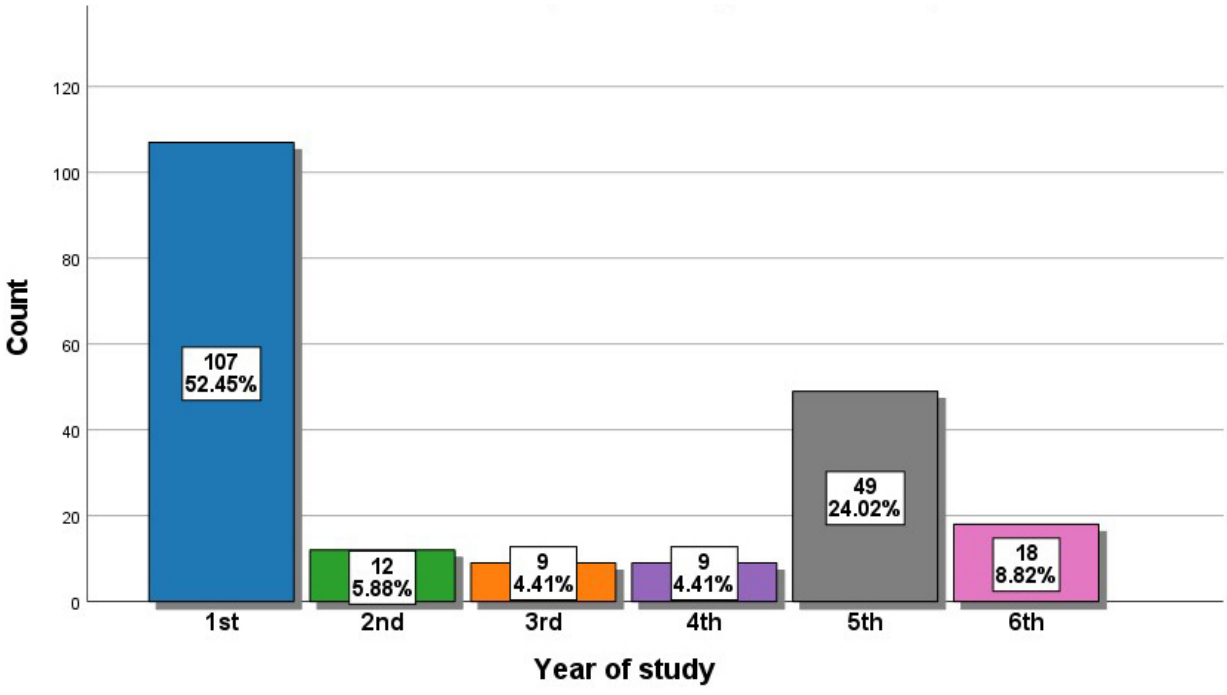
• *Figure 2. Distribution of respondents by nationality.*



• **Year of Study:**

• More than 50% of the participants were first-year students (n = 107, 52.45%), followed by fifth-year students (n = 49, 24.02%), sixth-year (n = 18, 8.82%), second-year (n = 12, 5.88%), third-year (n = 9, 4.41%), and fourth-year students (n = 9, 4.41%) (see Figure 3).

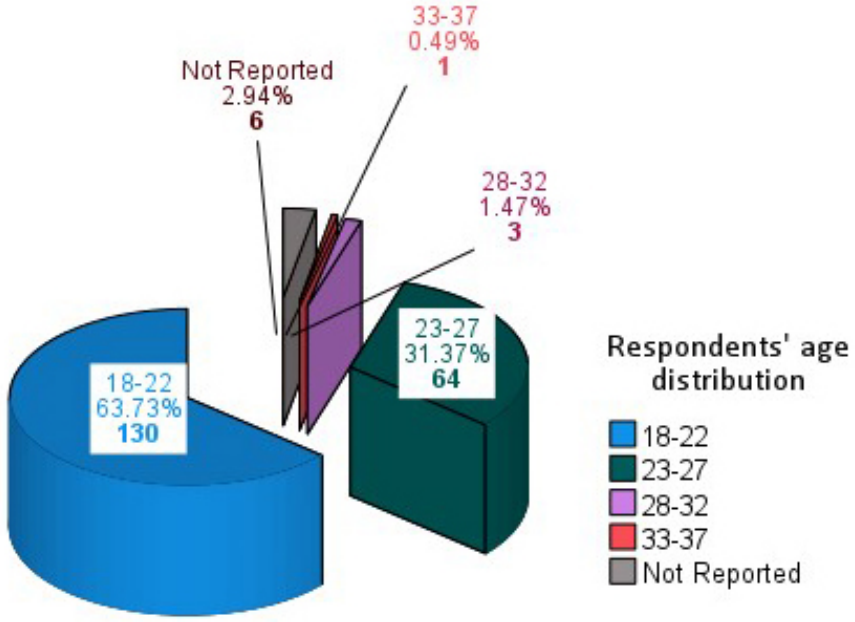
• *Figure 3. Distribution of respondents by year of study*



• Age Group Distribution:

• Most respondents were between 18–22 years old (n = 130, 63.73%), followed by 23–27 years (n = 64, 31.37%). Fewer respondents were aged 28–32 years (n = 3, 1.47%), 33–37 years (n = 1, 0.49%), while age data was not provided by 6 participants (2.94%) (see Figure 4).

• *Figure 4. Age distribution of respondents.*



Knowledge about hepatitis characteristics

Table 1 provides an extensive cross-tabulation of respondents' perceptions about the transmission of hepatitis A through E via contaminated food or water, classified by gender and year of study. Hepatitis A and E were most frequently recognized as food/water-borne illnesses, with 88 males and 66 females reporting 'Yes' for hepatitis A, and 61 males and 56 females for hepatitis E. These findings demonstrate a strong awareness of enterically transmitted hepatitis viruses.

In contrast, few respondents misconstrued hepatitis B (13.2%), hepatitis C (5.9%), and hepatitis D (2.9%) as food/water-borne, suggesting an overall reliable understanding of their transmission routes. These incorrect responses were more prevalent among 1st- and 2nd-year students.

Markedly, 18 participants (8.8%) selected "Don't know" for at least one hepatitis type, revealing ongoing deficiencies in foundational knowledge. Female respondents demonstrated moderately enhanced recognition of hepatitis A and E transmission routes than males in most academic years. Overall, accuracy appeared to increase with academic progression, highlighting the potential positive impact of medical education on knowledge procurement.

• *Table 1. Respondents' Knowledge of Hepatitis Transmission Routes by Gender and Year of Study*

		Year of study				
		1st			2nd	
		Gender			Gender	
		Male	Female	Prefer not to say	Male	Female
		Count	Count	Count	Count	Count
Belief: Hepatitis A spreads via contaminated food/water (Yes/No)	No	11	8	0	0	8
	Yes	51	37	0	1	3
Belief: Hepatitis B spreads via contaminated food/water (Yes/No)	No	57	38	0	1	4
	Yes	5	7	0	0	7
Belief: Hepatitis C spreads via contaminated food/water (Yes/No)	No	62	45	0	1	8
	Yes	0	0	0	0	3
Belief: Hepatitis D spreads via contaminated food/water (Yes/No)	No	62	45	0	1	11
	Yes	0	0	0	0	0
Belief: Hepatitis E spreads via contaminated food/water (Yes/No)	No	23	15	0	1	8
	Yes	39	30	0	0	3
Belief: "Don’t know" if hepatitis spreads via contaminated food/water (Yes/No)	No	56	43	0	1	8
	Yes	6	2	0	0	3

• *Table 1. Respondents' Knowledge of Hepatitis Transmission Routes by Gender and Year of Study*

		Year of study				
		2nd	3rd			4th
		Gender	Gender			Gender
		Prefer not to say	Male	Female	Prefer not to say	Male
		Count	Count	Count	Count	Count
Belief: Hepatitis A spreads via contaminated food/water (Yes/No)	No	0	0	2	0	1
	Yes	0	1	6	0	2
Belief: Hepatitis B spreads via contaminated food/water (Yes/No)	No	0	1	8	0	2
	Yes	0	0	0	0	1
Belief: Hepatitis C spreads via contaminated food/water (Yes/No)	No	0	1	7	0	3
	Yes	0	0	1	0	0
Belief: Hepatitis D spreads via contaminated food/water (Yes/No)	No	0	1	7	0	3
	Yes	0	0	1	0	0

Belief: Hepatitis E spreads via contaminated food/water (Yes/No)	No	0	0	4	0	2
	Yes	0	1	4	0	1
Belief: "Don’t know" if hepatitis spreads via contaminated food/water (Yes/No)	No	0	1	8	0	3
	Yes	0	0	0	0	0

• *Table 1. Respondents' Knowledge of Hepatitis Transmission Routes by Gender and Year of Study*

		Year of study				
		4th			5th	
		Gender				
		Female	Prefer not to say	Male	Female	Prefer not to say
		Count	Count	Count	Count	Count
Belief: Hepatitis A spreads via contaminated food/water (Yes/No)	No	2	0	5	2	0
	Yes	3	1	21	20	1
Belief: Hepatitis B spreads via contaminated food/water (Yes/No)	No	4	1	24	21	1
	Yes	1	0	2	1	0
Belief: Hepatitis C spreads via contaminated food/water (Yes/No)	No	4	1	26	20	1
	Yes	1	0	0	2	0
Belief: Hepatitis D spreads via contaminated food/water (Yes/No)	No	4	1	25	21	1
	Yes	1	0	1	1	0
Belief: Hepatitis E spreads via contaminated food/water (Yes/No)	No	2	0	11	9	1
	Yes	3	1	15	13	0
Belief: "Don’t know" if hepatitis spreads via contaminated food/water (Yes/No)	No	4	1	25	21	1
	Yes	1	0	1	1	0

• *Table 1. Respondents' Knowledge of Hepatitis Transmission Routes by Gender and Year of Study*

		Year of study		
		6th		
		Gender		
		Male	Female	Prefer not to say
		Count	Count	Count
Belief: Hepatitis A spreads via contaminated food/water (Yes/No)	No	2	5	0
	Yes	5	6	0
Belief: Hepatitis B spreads via contaminated food/water (Yes/No)	No	7	8	0
	Yes	0	3	0

Belief: Hepatitis C spreads via contaminated food/water (Yes/No)	No	6	7	0
	Yes	1	4	0
Belief: Hepatitis D spreads via contaminated food/water (Yes/No)	No	7	9	0
	Yes	0	2	0
Belief: Hepatitis E spreads via contaminated food/water (Yes/No)	No	2	8	0
	Yes	5	3	0
Belief: "Don't know" if hepatitis spreads via contaminated food/water (Yes/No)	No	6	8	0
	Yes	1	3	0

Descriptive Statistics of Blood/Sexual/Maternal Transmission Beliefs and Liver Disease Awareness

Descriptive statistics for participants' knowledge of blood-, sexual-, and maternal-route hepatitis transmission are outlined in Table 2. A majority of respondents accurately identified Hepatitis B (M = 0.77, SD = 0.42) and Hepatitis C (M = 0.66, SD = 0.47) as being spread through blood, sexual contact, or vertically from mother to child. Conversely, awareness was significantly lower for Hepatitis D (M = 0.40, SD = 0.49), and incorrect identification was marginal for Hepatitis A (M = 0.11, SD = 0.31) and Hepatitis E (M = 0.04, SD = 0.20), both of which are infrequently blood-borne. Furthermore, a small proportion of participants (M = 0.07, SD = 0.25) responded with "Don't know," indicating minor ambiguity. Concerning the hepatitis complications, awareness that chronic hepatitis B or C can produce liver disease or cancer was fairly high (M = 1.21 on a 3-point scale, SD = 0.60).

• *Table 2. Descriptive statistics for participants' knowledge of blood, sexual, and maternal-route hepatitis transmission.*

Variable	N	Minimum	Maximum	Mean	SD
Belief: Hepatitis A transmits via blood/sex/mother route (Yes/No)	204	0	1	0.11	0.31
Belief: Hepatitis B transmits via blood/sex/mother route (Yes/No)	204	0	1	0.77	0.42
Belief: Hepatitis C transmits via blood/sex/mother route (Yes/No)	204	0	1	0.66	0.47
Belief: Hepatitis D transmits via blood/sex/mother route (Yes/No)	204	0	1	0.40	0.49
Belief: Hepatitis E transmits via blood/sex/mother route (Yes/No)	204	0	1	0.04	0.20
Belief: 'Don't know' if hepatitis transmits via blood/sex/mother route (Yes/No)	204	0	1	0.07	0.25
Chronic liver disease/cancer awareness (1 = Yes, 2 = No, 3 = Not sure)	204	1	3	1.21	0.60

Table 3 illustrates Awareness about Availability of Hepatitis Vaccine and Symptom Comprehension by Nationality and Age Group. A total of 204 respondents contributed to the

study, with the majority representing Indian nationals (88.2%), followed by Pakistanis (9.8%), and lower percentages of Bangladeshi, Nepali, and other nationalities. Regarding hepatitis vaccine awareness:

- Hepatitis B vaccine was marked as available by 157 respondents (77.0%), with Indian nationals making up 87.3% (n = 137) majority of these responses. Whereas, 28 respondents (13.7%) stated it unavailable, and 19 (9.3%) did not know.

- Availability of Hepatitis A vaccine was confirmed by 160 respondents (78.4%), with 13 (6.4%) reporting non-availability and 30 (14.7%) uncertain.

- Hepatitis D vaccine awareness showed lower occurrence of reported availability (n = 52; 25.5%), while 112 respondents (54.9%) believed it was unavailable, and 40 (19.6%) were unsure.

- 88 respondents (43.1%) considered Hepatitis E vaccine available, 71 (34.8%) assumed unavailable, and unknown to 46 (22.5%).

In terms of symptom awareness:

- Jaundice was predominantly identified as a hepatitis symptom (n = 163; 79.9%), followed by fever (n = 128; 62.7%), fatigue (n = 154; 75.5%), abdominal pain (n = 154; 75.5%), and pale stools/diarrhoea (n = 127; 62.3%).

- Significantly, 35 respondents (17.2%) either disconfirmed or were unsure about jaundice as a symptom, and 30 (14.7%) believed there are no symptoms of hepatitis.

- Diagnosis via blood test was correctly identified by 180 respondents (88.2%), and awareness of risk for healthcare workers/students was high (n = 166; 81.4%).

These findings recommend broad familiarity regarding common hepatitis symptoms and vaccine availability for A and B types, while conceptual gaps persist for hepatitis D and E and correlated clinical features.

• *Table 3. Awareness of Hepatitis Vaccine Availability and Symptom Recognition by Nationality and Age Group.*

		Respondent's nationality				
		Indian	Pakistani	Bangladeshi	Nepali	Invalid/ Other
		Count	Count	Count	Count	Count
Age in Ranges	18-22	121	8	0	0	1
	23-27	51	11	1	1	0
	28-32	2	1	0	0	0
	33-37	0	0	0	0	1
	Not Reported	6	0	0	0	0

Vaccine availability for Hepatitis B	Yes	137	18	1	0	1
	No	24	2	0	1	1
	Don't know	19	0	0	0	0
	Not Reported	0	0	0	0	0
Vaccine availability for Hepatitis A	Yes	137	19	1	1	2
	No	13	1	0	0	0
	Don't know	30	0	0	0	0
	Not Reported	0	0	0	0	0
Vaccine availability for Hepatitis D	Yes	47	5	0	0	0
	No	95	15	1	1	0
	Don't know	38	0	0	0	2
	Not Reported	0	0	0	0	0
Vaccine availability for Hepatitis E	Yes	78	8	1	1	0
	No	60	10	0	0	1
	Don't know	42	2	0	0	1
	Not Reported	0	0	0	0	0
Belief: Jaundice is a common symptom of Hepatitis	No	33	7	0	0	1
	Yes	147	13	1	1	1
Belief: Fatigue is a common symptom of Hepatitis	No	44	3	1	1	1
	Yes	136	17	0	0	1
Belief: Abdominal pain is a common symptom of Hepatitis	No	40	6	1	1	2
	Yes	140	14	0	0	0
Belief: Pale stools and/or diarrhoea is a symptom of hepatitis	No	66	9	1	1	1
	Yes	114	11	0	0	1
Belief: Fever is a symptom of hepatitis	No	66	7	1	0	2
	Yes	114	13	0	1	0
Belief: There are no symptoms of hepatitis	No	150	16	1	1	2
	Yes	30	4	0	0	0
Belief: "Don't know" whether hepatitis has any symptoms	No	165	19	1	1	2
	Yes	15	1	0	0	0
Diagnosis via blood test	Yes	158	20	1	1	0
	No	5	0	0	0	1
	Not sure	17	0	0	0	1
	Not Reported	0	0	0	0	0

Risk perception for HCWs/ students	Yes	147	16	1	1	1
	No	7	1	0	0	0
	Not sure	26	3	0	0	1
	Not Reported	0	0	0	0	0

Descriptive statistics (Table 4) revealed key patterns among medical students (N = 204):
1. *Demographics:* Predominantly initial-year students (M = 2.68, SD = 1.97), with predominantly females (M = 1.52, SD = 0.52; 1 = Male, 2 = Female).

2. *Hepatitis Beliefs:*

• Affirmed hepatitis as a serious public health issue (M = 2.31, SD = 1.52; 1 = Strongly agree).

• Strongly supported further education (M = 1.97, SD = 1.52).

• High willingness for vaccine (M = 1.53, SD = 0.82; 1 = Willing).

3. *Practices:*

• Suboptimal vaccination status (M = 2.68, SD = 1.13; 1 = Complete).

• Strong adherence to universal precautions (M = 1.40, SD = 0.88; 1 = Always).

• Moderate PPE kit usage (M = 2.59, SD = 1.90; 1 = Always).

• *Table 4. Descriptive Statistics for Beliefs, Preventive Practices, and Demographic Variables Related to Hepatitis*

Variable	N	Min	Max	M (SD)
Gender	204	1	3	1.52 (.52)
Year of study	204	1	6	2.68 (1.97)
Respondent's nationality	204	1	5	1.16 (.54)
Belief: Hepatitis as a serious public health issue	204	1	5	2.31 (1.52)
Avoid socializing due to Hepatitis	204	1	3	1.91 (.66)
Willingness to get Hepatitis B vaccine	204	1	3	1.53 (.82)
Belief: Students should receive more education	204	1	5	1.97 (1.52)
Hepatitis B vaccination status	204	1	4	2.68 (1.13)
Use of PPE in clinical settings	204	1	6	2.59 (1.90)
History of hepatitis screening	204	1	3	2.04 (.68)
Sharing hygiene products	204	1	3	1.97 (.55)
Ensures sterilized equipment use	204	1	4	1.71 (1.06)
Adheres to universal precautions	204	1	4	1.40 (.88)

Discussion

This cross-sectional study assessed hepatitis-related knowledge, attitudes, and practices among foreign students of medical faculty in Jalal-Abad, Kyrgyzstan. Awareness of hepatitis A and E transmission via contaminated food and water was high, reflecting thorough grasp of enteric transmission dynamics [12]. Knowledge distortions were more frequent among early-year students, suggesting progressive curriculum impact.

Students showed strong recognition of HBV and HCV as blood-borne viruses, while HDV and HEV knowledge was limited. Notably, awareness of hepatitis D's obligate dependence on HBV was low [14]. This is consistent with prior findings among LMIC student populations [13].

Immunization-related awareness was maximum for hepatitis A and B, but awareness declined substantially for hepatitis D and E [8]. Preventive practices such as PPE usage and adherence to universal precautions were moderate, suggesting a gap across knowledge and application [5].

Amid the escalating global death toll from hepatitis —1.3 million annually [13]—enhanced training on lesser-known hepatitis types and holistic infection control approach modules are urgently needed.

Recommendation

The distribution of hepatitis awareness suggestions across demographic profiles highlights core domains for strategic educational reform. A sizeable fraction of responses was classified as unclear or vague, particularly among younger students and those in the early academic years. This emphasizes the necessity for formal curriculum incorporation of health communication and public awareness approaches. Educational institutions should adopt need-specific training modules that prioritize evidence-informed interventions such as vaccination advocacy, hygiene promotion, and organized health campaigns. The average prevalence of themes like digital engagement strategies suggests potential for employing online platforms to increase engagement and visibility, particularly among digitally literate groups. For maximum impact, Forthcoming educational interventions should be analysed across academic tiers and demographic factors, ensuring relevance and resonance with heterogeneous student cohorts. These views are not our own but of those respondents who participated in this study.

Conclusion

Participants exhibited foundational hepatitis knowledge, yet substantial gaps are still evident in vaccine awareness, prevention practices, and transmission knowledge for HDV and HEV. Curriculum enhancements targeting overlooked hepatitis types and applied preventive education are recommended to enhance student readiness for clinical safety and patient education and counselling.

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