Original Article

Assessment of Awareness Regarding Hepatitis B and C among the Urban Community of Rawalpindi

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Abstract

Introduction: Hepatitis B and C pose a significant public health threat globally and in Pakistan, with high prevalence rates and transmission risks through various means, including blood contact and sharing personal items. Healthcare professionals are particularly vulnerable to these infections. Existing research indicates a concerning lack of awareness about hepatitis B and c among different populations, with studies showing poor knowledge and inadequate understanding of the diseases.

Objectives: The objective of this study was to evaluate the knowledge, attitudes, and practices of the urban community in Rawalpindi towards Hepatitis B and C.

Materials and Methods: A descriptive cross-sectional study was conducted in July 2023 among 277 participants. Data was collected through a questionnaire assessing knowledge, attitudes, and practices related to Hepatitis B and C. The responses of participants were compared based on both gender and educational level through the Chi-square test. Responses were also compared based on age via the Kruskal-Wallis H test. P-value<0.05 was considered statistically significant.

Results: Among the participants, 135 (48.7%) were male, and 142 (51.3%) were female, with a mean age of 38.13 years ±12.76 years. Most had not received Hepatitis B vaccination (61%), and only 27.1% had undergone screening. Participants from the secondary education level demonstrated higher knowledge levels in various aspects of Hepatitis B and C. There was no significant difference between genders, except for female participants being more informed about the potential lifelong persistence of the diseases.

Conclusion: The results indicate a need for enhanced vaccination coverage and screening accessibility. Tailored educational initiatives can significantly contribute to improved public health outcomes in this context.

Keywords: Hepatitis B, Hepatitis C, Health Knowledge, Attitudes, Practices, Urban population.

Introduction

Hepatitis B and C virus (HBV and HCV) infection poses a significant public health threat, being a primary cause of liver cirrhosis and hepatocellular carcinoma (HCC). According to the World Health Organization (WHO), in 2019, an estimated 296 million people (3.8% of the global population) were living with chronic hepatitis B virus (HBV) infection, and 58 million people (0.75%) were living with hepatitis C virus (HCV) infection worldwide. Hepatitis B alone causes approximately 887,000 deaths each year.[1, 2]

In Pakistan, HBV prevalence stands at 10%, while seroprevalence rates for HCV are reported at 6.7% in women and 1.3% in children. In Punjab, the documented overall prevalence of HBV and HCV is 8.4% and 42.7%, respectively.[3]

Healthcare professionals face significant exposure to blood-borne pathogens such as hepatitis B virus (HBV) and hepatitis C virus (HCV). These infections are not only common sources of occupational diseases but also bear the potential for transmission between patients and healthcare workers (HCWs), further extending to the families of HCWs. HBV, distinguished by its high contagiousness, can be transmitted through various means, including direct blood contact, vertical transmission from mother to child, unprotected sexual intercourse, and even seemingly innocuous acts such as sharing personal items like eating utensils. Furthermore, environments like barber shops, beauty salons, and practices like tattooing, ear piercing, acupuncture, and dialysis all present potential transmission risks. Similarly, HCV transmission primarily occurs through blood contact, with sexual transmission being relatively rare and mainly observed in HIV-positive men who engage in sex with other men.[4, 5]

A study conducted at Dow University showed only 57.1% of students with excellent knowledge regarding the route of the spread of hepatitis B and C.[4] Another study conducted on patients visiting the hepatitis clinic in a tertiary care hospital in Rawalpindi showed poor knowledge with a mean score of 7.33 ± 2.03, adequate attitude with a mean of 4.33 ± 1.19, and poor practice with a mean of 2.97 ± 1.0.[6]

This research manuscript aims to assess the level of knowledge regarding hepatitis B and C among the urban community of Rawalpindi, to identify potential gaps in awareness and understanding.

The rationale for this study is to evaluate the level of knowledge about hepatitis B and C among Rawalpindi's urban community, identifying gaps in awareness that can inform targeted educational interventions and public health initiatives, ultimately enhancing prevention strategies in urban settings.

Materials and Methods

This is a descriptive cross-sectional study conducted on the urban community of Rawalpindi, Pakistan in July 2023. Convenience sampling was used. A sample size of 261 was calculated with 95% CI, 5% margin of error using WHO Sample Size Calculator. The ethical approval was obtained from the Institutional Review Board

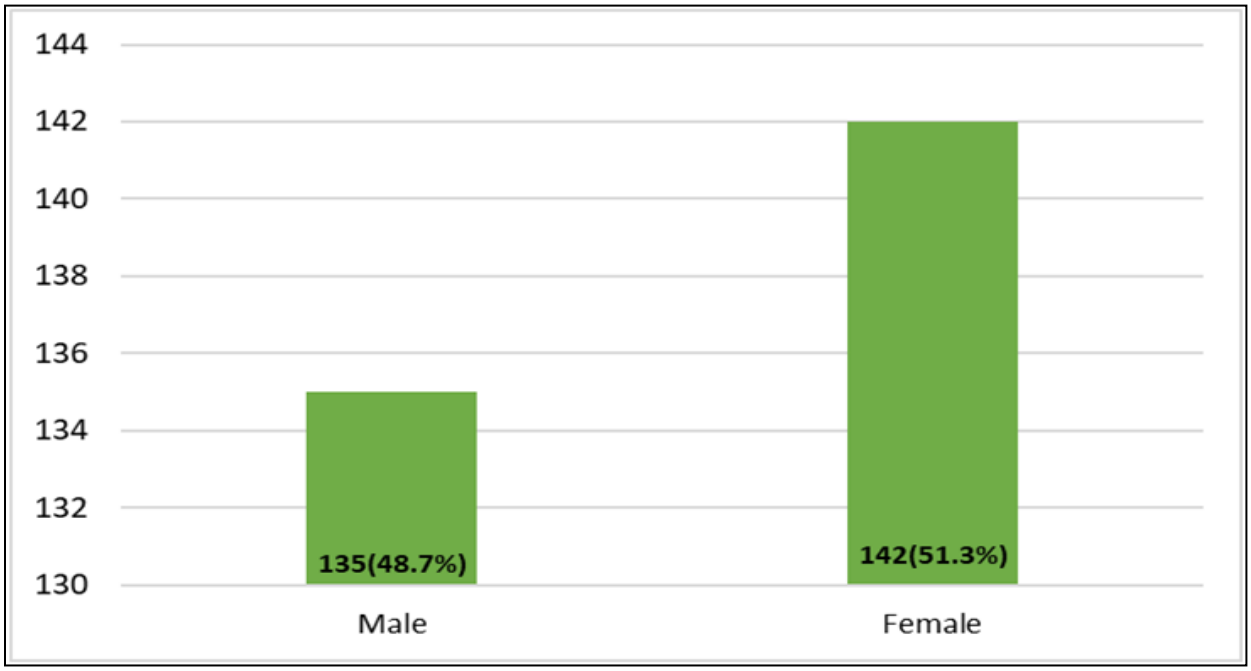
of Rawalpindi Medical University. Data was collected via a questionnaire that was distributed both online and in person. A total of 277 people gave consent to participate in this study. Participants aged 18 years and above, residing within the urban boundaries of Rawalpindi, who voluntarily agreed to participate and can communicate effectively in Urdu or English were included only. This study aimed to include a diverse sample, representing various age groups, genders, socioeconomic backgrounds, and educational levels. Minors below 18 years, individuals with severe cognitive impairments or mental health conditions, those lacking sufficient language proficiency, and individuals unwilling or unable to provide informed consent were excluded from the study. Individuals were classified into 5 educational levels: Primary (passed grade 5), Elementary (passed grade 8), Secondary (passed grade Matric), Higher Secondary (passed FSC), and Graduate (at least bachelor's degree).

The questionnaire used in this study was adapted from the work of Khuwaja et al in their study titled "Knowledge about hepatitis B and C among patients attending family medicine clinics in Karachi".[11] The questionnaire comprised two sections: Assessing knowledge of Hepatitis B and C, and Attitudes and Practices. The first section determined prior awareness amongst individuals regarding various aspects of Hepatitis B and C such as their transmission, persistence, preventability, screening, and dormancy. The second section assessed the participants' willingness to receive screening and vaccination for Hepatitis B. Data was entered and analyzed in SPSS software Version 25. Frequencies were given in percentages. Responses of participants were compared based on both gender and educational level through the Chi-square test. Responses were also compared based on age via the Kruskal- Wallis H test. P-value<0.05 was considered statistically significant. Shapiro-Wilk Test was also used to determine the distribution of numerical data.

Results

A total of 175 females participated in our study. We asked about the highest level of our participants, and most of them reported having education up to intermediate level (58 or 33.1%) followed by primary education (39 or 22.3%)**.** Most of the participants belonged to a relatively poor background with income below Rs. 50,000/- per month (132 or 75.4%). Additionally, 121 (69.1%) reported belonging to joint families, followed by nuclear families (49 or 28%). We inquired about the number of family members in the household, and the mean was 8.05 (± 4.604 SD). Additionally, we asked if they had There was a total of 277 participants out of which 135 (48.7%) were male and the remaining 142 were female (51.3%) presented in Figure 1.

Figure 1 *Bar Chart of the Gender of the Participant*



Note. Data presented as frequency (percentage)

The mean age of participants was 38.13 years ±12.76 years. Participants were divided into 5 categories (Table 1) based on education level and were assessed about their knowledge and understanding of Hepatitis B and C.

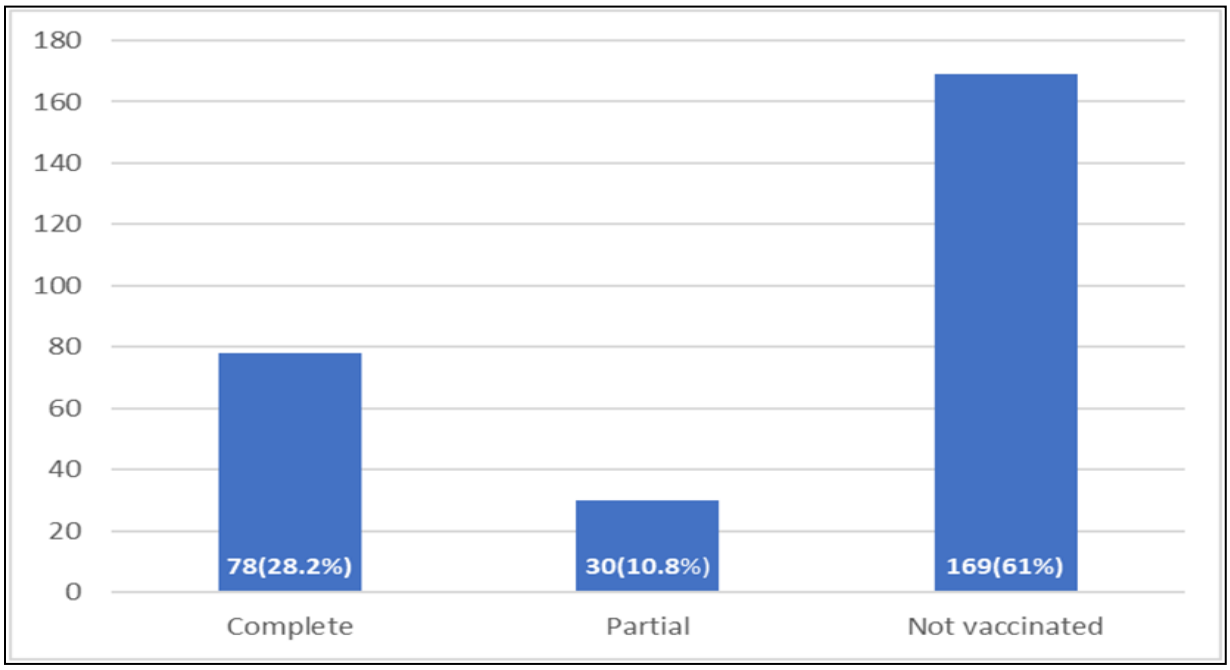
Table 1 *Education level of participants.*

Educational Level	Frequency	Percentage
Primary	62	22.4%
Elementary	43	15.5%
Secondary	73	26.4%
Higher Secondary	47	17.0%
Graduate	52	18.8%

Note. Data presented as frequency and percentage (%).

Their responses were compared using the Chi-square Test and $p<0.05$ was considered significant. 62 (22.4%) were in Primary (passed grade 5),43 (15.5%) was in Elementary (passed grade 8),73 (26.4%) was in Secondary (passed matric), 47 (17.0%) belonged to Higher Secondary (passed FSC), and 52 (18.8%) belonged to Graduate (at least bachelor's degree) as shown in Table 1. The age of participants was shown to be non-normally distributed as per the Shapiro-Wilk test ($p<0.05$). 39 out of total participants (14.1%) had been infected with Hepatitis B or C in the past. 169 participants (61%) had not received vaccination for Hepatitis B and 78 (28.2%) received complete vaccination, whereas 30 (10.8%) were partially vaccinated. Only 75 participants (27.1%) were screened for Hepatitis B and the remaining 202 (72.9%) were not as shown in Figure 2.

Figure 2 *Frequency distribution of the Status of Vaccination.*



Note. Data presented as frequency (percentage).

A total of 154 respondents (55.6%) agreed to receive screening and vaccination for Hepatitis B after being given its details, while the remaining 123 (44.4%) did not (Table 2)

Table 2 *Willingness for Vaccination and Screening of Hepatitis B Based on Educational Level.*

Educational Level	Agreed for Vaccination	Agreed for Screening
Primary	15.6%	14.3%
Elementary	13.0%	11.7%
Secondary	33.8%	36.4%
Higher Secondary	18.2%	18.2%
Graduate	19.5%	19.5%
p-value	0.023	0.031

Note. Data presented as percentage

There was no statistically significant difference between the responses of the different educational levels regarding transmission of Hepatitis B and C due to unprotected intercourse and ear and nose piercings (p>0.05). No significant difference was also observed in the responses about the effect of Hepatitis B and C on age groups and their persistence throughout one's life (p>0.05). Respondents belonging to secondary education level showed significantly greater knowledge than the rest about transmission of Hepatitis B and C by unsterilized needles and surgical instruments (p=0.037) and by contaminated blood and blood products (p=0.016). Awareness about screening (0.026) and major health problems caused by hepatitis (0.043) was also significantly more at the secondary education level. However, respondents with graduate education levels were more knowledgeable about the asymptomatic nature of Hepatitis B and C(p=0.01) and how vaccines can be used to prevent Hepatitis B(p=0.03).

Overall, male and female participants showed no significant difference in their responses to the questions asked (p>0.05) with the exception that females were more informed about the possible continuation of Hepatitis B and C throughout one's life (p=0.047).

Results showed that there was no statistical difference between the responses of the individuals concerning their ages except the response regarding transmission of Hepatitis B and C via unprotected intercourse. (p=0.04)

With respect to age and gender, there was statistically no difference between attitudes and practices amongst respondents(p>0.05). However, individuals with Secondary educational levels showed the most readiness in receiving vaccination(p=0.023) and screening(p=0.031) for Hepatitis B.

Discussion

This study provides a critical examination of the knowledge and awareness of Hepatitis B and C among the urban community of Rawalpindi, highlighting significant gaps in understanding and prevention strategies. In contrast to the study by Khuwaja et al., our findings indicate that females were more informed about the lifelong persistence of Hepatitis B and C, suggesting a potential shift in awareness dynamics[7].

The prevalence of prior infections (14.1%) and lack of vaccination (61%) in our study underscore the need for targeted interventions, echoing the concerns raised by Zahoor et al. regarding the projected increase in HBV and HCV cases in Pakistan.[8] Our findings are consistent with Easterbrook et al.'s emphasis on the importance of early detection and screening in combating viral hepatitis. Notably, our study's finding that participants with secondary education displayed the highest readiness for vaccinations and screenings highlights the impact of education on proactive healthcare behavior, a relationship also observed in other studies. However, the overall low vaccination rate and lack of awareness about hepatitis B and C in our study population suggest that more targeted efforts are needed to address these gaps. Comparison with existing literature highlights the need for context-specific interventions that take into account the unique characteristics and needs of different populations.

A strength of this study is its focus on a specific urban community, providing valuable insights for targeted interventions. However, the study's limitations include its cross-sectional design and reliance on self-reported data.

To effectively combat Hepatitis B and C, targeted educational campaigns tailored to address specific risk behaviors associated with different educational groups are necessary. Merely 10% of individuals harboring chronic hepatitis B are aware of their condition, and only 21% of those with chronic hepatitis C know their current infection status.[9] Screening and vaccination programs should be promoted, particularly for high-risk groups.[10] Public health initiatives should focus on specific groups, such as local barbers, tattoo artists, and individuals who use syringes, to prevent transmission.[11,12] Screening pregnant women and integrating hepatitis B vaccination into the extended immunization program for infants can also significantly contribute to reducing the transmission of these viruses.[13,14]. By addressing these gaps in awareness and education, we can enhance prevention and control efforts, ultimately reducing the burden of Hepatitis B and C in the community.[15]

Longitudinal studies and broader sampling frames could provide further insights into the dynamics of Hepatitis B and C awareness and prevention. Integrating hepatitis B vaccination into existing public health programs and promoting awareness about the importance of screening and vaccination can significantly contribute to reducing the transmission of these viruses.

Conclusion

This research delves into the knowledge, attitudes, and practices surrounding Hepatitis B and C within the urban community of Rawalpindi, Pakistan. The study reveals a significant proportion of participants had not received vaccinations against Hepatitis B. Low screening rates underscore the need for intensified public health initiatives. Education emerged as a key determinant of knowledge, with those at the secondary education level exhibiting a superior understanding of transmission routes and preventive practices. Alarming statistics indicate a substantial number of participants who had experienced prior infections with Hepatitis B or C, emphasizing the prevalence of these infections in the population. In light of these findings, targeted educational campaigns and workshops tailored to specific risk behaviors and educational groups are essential in combating the transmission and prevalence of Hepatitis B and C in Pakistan.

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