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Research Article

**BARRIERS TO THE PREVENTION AND CONTROL OF THE  
HEPATITIS B IN THE COMMUNITY**<sup>1</sup> Dr Arifa Bibi, <sup>2</sup> Ammara mumtaz, <sup>3</sup> Dr Mahek Fatima<sup>1</sup> Nishtar Medical College, BHU 14/8\_r khanewal[Ehsan1698@yahoo.com](mailto:Ehsan1698@yahoo.com)<sup>2</sup> Nishtar Medical College, Wmo BHU Pounta Shujabad<sup>3</sup> Q.M.C, DHQ Shahbaz Shareef Hospital Multan.**Abstract:**

**Introduction:** Chronic hepatitis B can lead to life-threatening complications, including liver failure and hepatocellular cancer (HCC) and affects over 292 million people worldwide. **Aim:** This study aimed to rule out the barriers to the prevention and control of hepatitis B in communities from the prospects of hepatitis patients, residents, and healthcare providers. **Methods:** A qualitative study was conducted in which 26 participants were recruited through purposive sampling technique. In depth face to face interviews were taken to collect the data. **Results:** The critical factors of barriers to hepatitis prevention and control included poor cognition of residents regarding hepatitis B, severe stigma in society, inadequate health education, and the provision of unsatisfactory medical services. **Conclusion:** Strengthening health education and improving services for treating patients with hepatitis are suggested to make further progress and this may be achievable through well-organized and targeted community-based screening and educational interventions.

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**INTRODUCTION:**

Chronic hepatitis B virus (HBV) infection remains a major global health burden affecting 292 million persons worldwide. (1) HBV is a blood borne pathogen, transmitted by percutaneous or per mucosal (e.g., sexual) exposure to infectious blood or body fluids (e.g., semen or saliva). HBV circulates in high titers in the blood and lower titers in other body fluids (e.g., semen, vaginal fluid, or saliva), and is approximately 100 times more infectious than HIV and 10 times more infectious than HCV (2).

Approximately 30%--50% of adults at the time of initial infection develops acute hepatitis B and experienced by anorexia, nausea, vomiting, and often jaundice. With age, being highest among young children and infants (30%--90%) and lowest among adolescents and adults (2%--6%) the risk of progression to chronic infection varies. (3)

Most of persons with chronic HBV infection are asymptomatic, and one third have no confirmation of liver disease, in spite of high levels of viral replication in hepatocytes (4). The remnants have chronic hepatitis (mild, moderate, or severe) that can lead to cirrhosis and HCC. Persons with chronic HBV infection have a 15%--25% lifetime risk of death from chronic liver disease or HCC (5). Velocity of continuation to cirrhosis and HCC fluctuate according to age at acquisition of chronic infection; HBeAg status; coinfection with HDV, HIV, HCV; and alcohol abuse (6).

Approximately 3,000 deaths in the United States annually are caused by HBV-related liver disease and HCC. In 2015, an estimated 257 million people were chronically infected with hepatitis B virus (HBV) worldwide, and chronic HBV infection was responsible for 887 000 deaths. Most of these deaths are caused by untreated chronic hepatitis infections, resulting in cirrhosis and liver cancer. (7)

With 60 million people living with chronic HBV infection and an estimated prevalence of 6.1% in the adult population, Africa is the second most affected region in the world after Asia, a burden that has long been neglected.(8)

The prevalence of HBV infection has increased in recent years (9). To date, the low coverage of testing and treatment of hepatitis B and C is a substantial gap that must be addressed globally (10). At least 60% of liver cancer cases result from the late testing and treatment of HBV and HCV (11). In 2015, 9% and 20% of HBV-positive and HCV-positive patients worldwide were aware of their diagnosis, and out of these diagnosed patients, the treatment coverage reached 8% and 7.4%, respectively (12). Based on the National Disease Supervision Information Management System of China, the

mean reported occurrence of hepatitis B was 84.3 per 100,000 in China between 2005 and 2010 (13). Hepatitis B transmission is preventable through vaccination. To all infants, and people who belong to high risk populations (e.g., healthcare workers; men who have sex with men; commercial sex workers; people in close contact with people with chronic hepatitis B; people in custodial setting; people who inject drugs and people with HIV) should be given Hepatitis vaccination (14). Healthcare workers belong to a special group in that, aside from them being at risk of occupational exposure, they may also transmit infections to patients they handle. (15)

Infection with hepatitis B has a significant social impact not just from the disease, but from fear, stigma and discrimination. (16) A lack of understanding within the community about these infections means that many people think that people with the infections can casually transmit the disease. Many of the extensive public suppose that patients must have done unethical acts to have gotten the virus, unknowing that these infections can be inadvertently transmitted through innocent routes such as polluted shared personal items, contaminated blood products, foul medical devices, during childbirth, and close household contact. (17) Hepatitis is one of the cause of a solid economic burden. Apart from the high cost of antiviral treatment, not to mention the treatment for liver failure, cirrhosis, and liver cancer, many people with viral hepatitis suffer from loss of productivity, and are destitute of significant employment (18).

The Department Of Labor and Employment (DOLE) Department Advisory No. 05 (Series of 2010), also known as the Guidelines for the Implementation of a Workplace Policy and Program on Hepatitis B, emphasizes that hepatitis B is not spread through usual workplace activities (16) and provide for confidentiality and non-discriminatory policy and practices in the workplace. Nonetheless, many patients, even those not from the healthcare profession, prevail to be proclaimed unfit to work based simply on their chronic infection (seropositivity for the hepatitis B surface antigen) and many are contradicted overseas employment (17).

Nowadays, access to HBV testing and treatment serves as an important determinant for eliminating hepatitis by 2030. Community health service centres should offer basic services to meet the needs of residents. However, to our understanding, no study has prospected the problems and barriers to the prevention and control of hepatitis B in communities from the outlook of a health system.

This study crowds the academic gap to a definite extent and gives new intuition into delivering successful prevention and control of hepatitis B in communities. In-depth interviews were conducted to collect information on the actual demands, obstacles, and suggestions from the perspectives of healthcare providers, community residents, and patients with hepatitis B.

## **MATERIALS AND METHODS:**

### **Study Design**

A qualitative study was conducted in the form of in-depth interviews with hepatitis patients, community residents, and healthcare providers.

### **Settings and Recruitment**

To reach out to potential participants to be interviewed, we contacted one hospital, two communities, two community health service centres, three Centres for Disease Control (CDC) offices, and two community-based non-governmental organizations (NGO) that address hepatitis prevention and control-related issues in Lahore. Totally we summoned 26 people, and all settled to attend the interview. Of the ten healthcare providers, six CDC workers were in charge of hepatitis prevention and control programs and have different experience in managing associated programs. All enlisted participants met the participation criteria and informed consent was given to be interviewed. No remuneration was provided for their involvement in the study.

### **Data Collection**

Key questions were formulated according to the demographic information (name, age, occupation, disease, and treatment), and current situation, barriers, and suggestions for hepatitis prevention and control in the community. Before the main study, the questions were piloted, and modifications were made accordingly. One doctor from the community health service centre, one community resident, and one patient with hepatitis B were interviewed before the main interview. All the piloted interviewees were not included in the formal investigation.

Two trained and experienced interviewers conducted the interviews. One male researcher headed the interviews, and the other female researcher recorded the key points. Each interview was conducted in a private and quiet room with only the interviewee and interviewer to guarantee confidentiality. Detailed introductory communication was held to ensure that the interviewer and interviewee gained every detail (objective, content, research method, time, location, profit, and risk) of the interview. The privacy of the participants was maintained and the data obtained were used for research purposes only. All interviews were carried out in the local language and lasted for 20–40 min. Data collection and analysis should continue to a point when additional input from new participants no longer changes the researchers' understanding of the concept, which is the point of data saturation (18). In this study, we recruited interviewees strictly in line with the information saturation principle, and we stopped the interviews when there was no more information about the research theme.

### **Data Analysis**

Two investigators read the transcripts repeatedly and highlighted recurring themes. With regard to the themes highlighted in the scripts and topic pilot used in the interviews, a thematic substructure was confirmed after a discussion among the research team members. Later, all transcriptions were imported into MAXqda V12.0 (VERBI Software GmbH, Berlin, and Germany) and coded line-by-line according to the thematic framework. The illustrative quotes used for the results. All files were analysed using the grounded theory.

## **RESULTS:**

### **Demographic Characteristics of Interviewees**

Total 26 participants were interviewed, five hepatitis patients, six residents, ten healthcare providers, two community leaders, and three NGO workers. Most of the patients were infected with the CHB virus. The three NGO hired man worked in a community health promotion organization and AIDS prevention and control organization (Table 1).

**Table 1.** The socio-demographic characteristics of the interviewees.

Interviewee	Age	Sex
Patient-1, Hepatitis C, under treatment	59	Male
Patient-2, Chronic hepatitis B, under treatment	49	Male
Patient-3, Chronic hepatitis B, under treatment	45	Female
Patient-4, Chronic hepatitis B, under treatment	46	Male
Patient-5, Chronic hepatitis B, under treatment	62	Female
Resident-1	61	Female
Resident-2	57	Female
Resident-3	62	Male
Resident-4	80	Female
Resident-5	43	Female
Resident-6	56	Female
CHC-1, Community Health Service Center Manager	33	Male
CHC-2, Community Health Service Center Manager	48	Female
CHC-3, Community Health Service Center worker	42	Female
CHC-4, Doctor from community health service center	27	Male
Community leader-1, Community manager	38	Female
Community leader-2, Community manager	54	Male
CDC-1, Infectious Disease Prevention and Control Section	49	Female
CDC-2, STD/AIDS Prevention and Control Department	39	Female

### Participants' Suggestions to Improve the Prevention and Control of Hepatitis in the Community

#### Strengthen health education

Almost all of the interviewees expressed the urgent need to enhance health education in the prevention and control of hepatitis B in the communities. Initially, most of the interviewed patients identified their urgent need for health education related to the prevention and control of hepatitis (see Quote 12 in Table A1).

Additionally, the interviewed inhabitants suggested that the forms of health education should be improved such as online activities (see Quote 13 in Table A1).

Moreover, the community workers showed that the young people should be targeted for health education as most of them acquire higher education and feature exceptional receptivity (see Quote 14 in Table A1).

Many of the community staff interviewed revealed their approval and aid for the work of community

health activists who presented a general sense of compassion and decency. The community staff members decided to carry strengthened communication and collaborate with community health activists to take edge of their positive role in enlarging health education and dilating community mobilization (see Quote 15 in Table A1).

#### Improve services for treating patients with hepatitis B

Two community leaders recommended the advancement of services for treating patients with hepatitis B in community health service centres. First, recruiting some public health professionals and continuing the professional development of in-service medical workers are important to improve the professional level of the medical personnel.

Finally, the routine work of preventing and controlling hepatitis in community health service centres can motivate community health activists, clinical family doctors, and public health doctors and nurses to achieve work efficiency.

**Table A1.** Related quotes in the results section.

Key points	Quotes
	<p><b>Quote 1:</b> "I feel confused as to why my parents, who are both over 80, do not suffer from hepatitis B, but my brother and I experience such a condition." (Patient-4)</p>
Poor awareness and knowledge of HBV and HCV care among participants and strong stigma in the society	<p><b>Quote 2:</b> "Honestly, most of the HBV- and HCV-positive populations know little about the diseases; they are unaware of what they should do in a case that they become infected." (Community leader-1)</p> <p><b>Quote 3:</b> "Actually, we do not concern about hepatitis, instead, we mostly focus on chronic diseases, like hypertension and diabetes, since there are more people ill with chronic diseases compared with hepatitis." (Resident-4)</p> <p><b>Quote 4:</b> "Both the common citizens and medical workers possess inadequate common knowledge about hepatitis C. A number of people still confuse hepatitis C with hepatitis B, indicating their need to increase their knowledge about these diseases. Given the limited knowledge of patients with hepatitis B and C, early treatment has always been delayed, resulting in deteriorating conditions." (CDC-2)</p> <p><b>Quote 5:</b> "I was a security guard in a company, but the boss fired me after I was diagnosed with hepatitis B. Afterward, I never found a stable job. Thus, my income is low. Discrimination also arises in the family sometimes. For example, when I eat, some family members become very angry if I use their tableware inadvertently." (Patient-5)</p> <p><b>Quote 6:</b> "I experienced a situation like this: one resident who was over 50 years old was found to be a hepatitis B carrier in an operation. Since then, he had to eat alone, and his son and daughter-in-law forbade him to hug his grandson, which caused a significant psychological burden to him." (CHC-1)</p>
Inadequate health education about hepatitis B and C in the community	<p><b>Quote 7:</b> "In general, little attention is given to viral hepatitis in the community. I receive no relevant health promotional materials, such as leaflets or posters, nor see related display board in the community." (Resident-3)</p> <p><b>Quote 8:</b> "Occasionally, the doctors from community health service centers would mention some information about viral hepatitis when conducting health education activities on chronic diseases." (Community leader-2)</p>

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Low-level services currently provided to treat patients with hepatitis B and C	<p><b>Quote 9:</b> "How to achieve effective bidirectional referral needs more push from the government!" (CHC-1)</p> <hr/> <p><b>Quote 10:</b> "Usually, we advise hepatitis patients or original residents to disinfect the tableware and pay attention to personal hygiene, but we know nothing about treating patients professionally." (Doctor from community health service center-1)</p> <hr/> <p><b>Quote 11:</b> "The antiviral and hepatoprotective drugs are not in the list of basic medicine. As a consequence, hepatitis patients are unable to obtain treatment in community health centers. However, treatment and follow-up of patients in the community health centers are more convenient." (Community leader-2)</p>
Strengthen health education	<p><b>Quote 12:</b> "We hope to receive one lesson for us every month. The lessons should tell us what kind of treatment we should get and how or what kind of foods are good for treating the disease. Moreover, the community can occasionally offer medical examinations when conducting health education activities." (Patient-1)</p> <hr/> <p><b>Quote 13:</b> "Participatory activities, such as climbing, and gifts should be organized and prepared as rewards can motivate more residents to join the activities. Otherwise, they will not partake in the activities." (Resident-2)</p> <hr/> <p><b>Quote 14:</b> "I think we should seize the opportunity for schools and enterprises to carry out collective activities, for example, we can process a 20-minute publicity when schools open the parents' meeting or when enterprises initiate staff meetings." (Community leader-1)</p> <hr/> <p><b>Quote 15:</b> "The community health activists can inform us about health education activities. We will join these activities if available. Community health activists also care about us and relieve our mental burden to a certain extent." (Patient-2)</p>
Improve services for treating patients with hepatitis B and C	<p><b>Quote 16:</b> "The three-stage prevention of viral hepatitis must be emphasized, for example, hepatitis B examination should be included in health examination items to increase the discovery rate." (CDC-3)</p>

## DISCUSSION:

This study identified substantial barriers to the prevention and control of hepatitis B in the community in Lahore. First, the residents showed poor awareness and knowledge about hepatitis B; moreover, social stigma and discrimination against patients with hepatitis B were also observed and the limited health education could not reach the population effectively. Second, the community health service centres faced difficulties in providing professional diagnosis and treatment to hepatitis patients due to the lack of capable professionals and equipment. Furthermore, the bidirectional referrals between the community health service centre and the high level hospitals needs to be significantly consolidated.

Our findings revealed that the residents, patients with hepatitis, and medical staff from community health service centres had limited knowledge and awareness of hepatitis B. Moreover, another cross-sectional study that investigated the knowledge and practices relating hepatitis B among healthcare and public health professionals in China also showed the inadequate knowledge of health professionals about HBV (18). However, France, as one of the countries with more effective hepatitis care delivery in Europe (19), showed adequate knowledge about hepatitis B in the general population (20), Nigeria also presented considerable awareness on HBV infection and its transmission among the studied community residents (21). There are many factors contributing

to the differences between China and France. Since the early 1990s, and by 2012, the prevention and control of viral hepatitis has been reviewed as a public health priority in France, France had executed a national hepatitis plan of action for several years. (22). Subsidized treatment is also an important measure to improve the access of hepatitis patients to health care services. Thus, we recommend that the government should take actions to improve the level of health literacy of the general population, and increase the financial subsidies of treatment for hepatitis patients. Thus, enhancing health education about viral hepatitis in the community is imperative. Almost all participants owned a smartphone with social applications (apps), so given the rapid development of information technology and the popularity of smartphones. We can utilize apps such as WeChat to convey the knowledge of prevention and control of hepatitis B.

A severe social stigma and discrimination against hepatitis B is showed by this study. Varaldo et al. investigated the role of stigma and discrimination in Brazil from the point of view of the patients. They observed that after diagnosis, these diseases affected the patients' life; 24.6%, 23.8%, and 10.1% of patients with hepatitis experienced physical avoidance by their family, being uninvited by friends for events, and being dismissed in their daily lives, respectively (23). One study in Australia also revealed that few pieces of research currently address the stigma and/or discrimination in relation

to hepatitis B (24). Therefore, our future efforts should focus on addressing the stigma and discrimination against hepatitis.

In this study, we observed that poor health service was a serious barrier to the prevention and control of hepatitis B in the community. Broad-scale HBV screening are required for a large proportion of patients with HBV, who are likely to develop severe complications and transmit infection. However, classical virological tests require blood sampling by venepuncture, capacity for cold storage, specific infrastructure, equipment, and personnel training, and are often unaffordable in low- to middle-income countries (25). Therefore, it is necessary to examine alternatives to classical HBV virological tests POC tests are small devices that provide qualitative and quantitative determination of viral antibodies and antigens, which has proven to be cost-effective for HBV screening in other countries (26). Overall, new testing approaches that facilitate easy and inexpensive access and linkages to care need to be explored and recommended.

Our study has several limitations that must be acknowledged. First, owing to the limited time, manpower, and other resources, a small number of subjects were included. Second, the study was conducted among a limited set of communities, which were purposefully selected to reflect a range of performance levels and geographical regions. Thus, the findings may not be generalizable to other areas of city, but may offer some insights into the current challenges in the prevention and control of hepatitis B in the community.

### CONCLUSIONS:

A considerable gap is shown by the study between the urgent demand for effective hepatitis prevention and control measures and the current service given to the residents and patients. Unqualified staff members, poor awareness of the general population, and social discrimination are such barriers and problems which limit the prevention and control of hepatitis in communities. Consequently, comprehensive health services including screening, diagnosis, standardized treatment, and follow-up, should also be given. Expanding health education, reducing stigma in society, and providing supportive policies and funding from the government are also recommended.

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