

# Assessment of awareness regarding Chronic Kidney Disease and Chronic Hepatitis among people visiting a Tertiary Care Hospital

Mahvesh Mahmud<sup>1</sup>, Khurram Baqai<sup>2</sup>, Maryam Anwar<sup>3</sup>

## ABSTRACT

**Objective:** To assess the level of knowledge, regarding chronic kidney disease (CKD) and chronic hepatitis in high risk groups of people

**Study design:** Cross-sectional study

**Place and Duration:** The study was carried out at Ziauddin Hospital, Karachi over a period of 8 months from 19<sup>th</sup> November 2021 till 19<sup>th</sup> July 2022.

**Methodology:** A total of 300 patients were interviewed verbally on a questionnaire translated into Urdu.

**Results:** Regarding CKD, only 13% of the participants knew that it is a long term and irreversible condition, with only 6% of them being aware that it can also be asymptomatic in initial stages. Only 5% of them knew that disease management revolves around reducing its progression and complications. 33% of the patients knew about hepatitis B or C, out of which 26% had knowledge that it can progress to chronic hepatitis. Only 21% knew that the infection is lifelong and incurable. Almost 80% of the respondents were not aware regarding the different routes of transmission, the symptoms or the complications.

**Conclusion:** The research identified a dismally low level of awareness up to 80-90%, regarding awareness aspects of two very common health conditions. Thus, it is imperative to design religiously and culturally acceptable public health strategies to increase awareness for earlier detection of both CKD and CLD for better health outcomes and therefore to reduce the economic burden of our country.

**Key words:** Chronic Kidney Disease, Chronic Hepatitis, Knowledge, Perception, Strategies, Healthcare.

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## INTRODUCTION

Chronic diseases are the one of the main causes of morbidity and mortality around the world. As per the CDC, they are broadly defined as conditions that persist for at least one year and need persistent medical attention, or limit the daily living activities, or both. Fortunately, the majority of the chronic diseases can be prevented by lifestyle modifications, avoiding risk factors, getting a vaccine, or getting baseline tests done on a regular basis. Understanding the knowledge and attitude of people regarding chronic diseases is crucial for formulating optimal

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public health policies and responses in the geographical region<sup>1</sup>. Chronic kidney disease (CKD) is defined as an estimated glomerular filtration rate (eGFR) of less than 60 ml/min for at least 3 months<sup>2</sup> and worldwide it is the ninth-leading cause of mortality<sup>3</sup>. The prevalence and incidence of chronic kidney disease (CKD) are increasing rapidly globally<sup>4</sup>. The overall prevalence of CKD among adults in Pakistan was 21.2%. The highest prevalence of CKD in Pakistan was reported as 29.9% as per high quality studies<sup>5</sup> and the least noted prevalence percentage was 12.5<sup>6</sup>. Only Alam et al. reported age specific prevalence of CKD in Pakistani studies. This study noted the greatest prevalence of CKD among participants over the age of 50 years (43.6%) and the least prevalence was seen among participants less than 30 years old (10.5%)<sup>7</sup>. Uncontrolled diabetes and hypertension in Pakistan are one of the most common causes of end-stage renal disease (ESRD). The incidence of hypertension and diabetes in Pakistan is one of the highest globally, therefore it is not unexpected that there is a high prevalence of CKD in the population in Pakistan<sup>8</sup>. The modification of risk factors (that is, control of diabetes and high blood pressure, and avoidance of nephrotoxins) can decrease the morbidity and mortality associated with CKD, including the progression to end-stage kidney disease (ESKD)<sup>9</sup>. The factors that can affect the modification of risk factors, include patients' comprehension of the disease processes, their level of engagement in health care, and how empowered they are to take part in healthy lifestyles.

Regarding the common etiologic factors of chronic liver disease

(CLD), Hepatitis B virus (HBV) belongs to a family of Hepadnaviridae; it is a deoxyribonucleic acid (DNA) virus, belonging to a family of Hepadnaviridae and leads to infection that may be acute or chronic<sup>10</sup>. Hepatitis B virus (HBV) infection is a significant health problem globally<sup>11-13</sup>. The carrier rate in Pakistan is 3-5%, and there are approximately 7-9 million carriers of hepatitis B virus (HBV) in the country<sup>14</sup>. It is documented that there is a 2 - 7% prevalence of HBV infection in Pakistan<sup>15</sup>. Hence, Pakistan is highly endemic with HBV the rate of infection is rising steadily<sup>16</sup>. Likewise, the rate of hepatitis C infection virus (HCV) is 4.8%, and among developing countries, this is the second highest rate of prevalence<sup>17</sup>. One of the reasons may be poor financial status, the paucity of proper health facilities, and a low level of public awareness about the means of transmission, like a streak with infected sharp objects, contaminated blood transfusion, and unprotected intercourse<sup>18</sup>. Moreover, the risk factors for HCV infection that have been identified in Pakistan are dissimilar to those of the developed world. The major risk factor identified in developed nations is intravenous drug abuse, whereas the reuse of syringes was found to be the most common reason for transmission<sup>19</sup>. Among individuals with chronic hepatitis, the clinical course and the sequelae vary greatly. HBV infection leads to a wide spectrum of clinical presentations, which range from a carrier state which is asymptomatic, to acute infection which is self-limiting, or to progression to chronic hepatitis. In Pakistan, the majority of those who are infected do not know their hepatitis status. Therefore, delays in diagnoses can lead to chronic hepatitis and cirrhosis, as well as hepatocellular carcinoma, leading to further financial burden for an already economically disadvantaged country<sup>19</sup>.

Although enough data is available regarding the awareness of these diseases, this study was done to assess the degree of knowledge of people with regard to chronic hepatitis and chronic kidney disease in a developing country like Pakistan. Results obtained from the study will aid local health planners to form strategies for prevention and control of these diseases according to the medical facilities and cultural norms of our country.

### METHODOLOGY

This questionnaire based cross sectional study was done at the Ziauddin Hospital in Karachi, Pakistan. This hospital caters to a large number of populations within the city, as well as receives patients from other cities and towns of the southern province. The study was carried out from 19<sup>th</sup> November 2021 till 19<sup>th</sup> July 2022. All patients from age 17 onwards up to 60 years were included. Targeted clinics included General Medicine, General Surgery, Gynaecology, Ophthalmology and Otolaryngology. Patients from the Nephrology and Gastroenterology clinics were excluded so as to avoid any bias.

Total 300 patients were administered questionnaires from all age groups, both male and female. The sample size was calculated using an Iranian study which showed a mean knowledge score of 74%<sup>20</sup>. The required sample size was estimated to be 295, based on a 99% confidence interval.

After taking approval from the ethical review board and

informed consent from the patients, all patients were interviewed verbally on a questionnaire translated into Urdu. Data was incorporated in SPSS (20 version). Continuous variables such as age were expressed as mean and standard deviation whereas the categorical variables were presented as frequency along with their percentages.

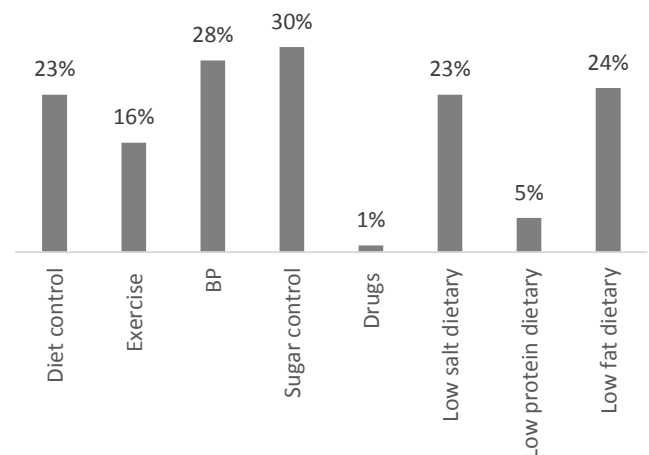
### RESULTS

Three hundred participants were enrolled to check their level of awareness of chronic kidney disease and chronic hepatitis. The male participants were 37% (n= 111) and 63% (n= 189) were females with the mean age 33±13 years.

The participants were then asked if they had ever been tested for creatinine. Out of the 300 participants, 14% (n=42) were tested for creatinine previously.

Knowledge regarding CKD was then assessed. Participants were asked if they considered CKD as an irreversible long-term disease. Only 13% (n=39) of them agreed while the rest had no knowledge about it. On the other hand, only 15% (n=45) of the participants were aware that chronic kidney disease leads to a decreased filtration capacity whereas 85% (n=255) of them did not have any idea regarding this. Next, they were asked if they knew that CKD causes proteinuria. Only 8% (n=24) of the participants knew that it does, whereas the rest 92% (n=276) had no awareness regarding this.

Furthermore, only 6% (n=18) of the participants were aware that chronic kidney disease can be asymptomatic in initial stages. 94% (n=282) of the participants had no idea that CKD can have an insidious onset.



**Figure 1: Awareness of lifestyle modification. (N=300)**

Next, awareness regarding the risk factors of CKD was assessed. Majority of people were aware of diabetes mellitus and hypertension being the main risk factors for CKD (30% and 28%, n=90 and n=84, respectively). This was followed by hyperlipidemia, almost 23% (n=69) participants knew it is a major risk factor. 17% (n=51) of the participants knew that family history also factors in CKD development. 14% (n=42) of the participants were aware that old age could be a predisposing factor and only 9% (n=27) of them had an idea of smoking being a risk factor. However, the percentage of people with no clue regarding the risk factors was higher. The perception of lifestyle

modification needed to prevent chronic kidney disease is displayed in figure 1.

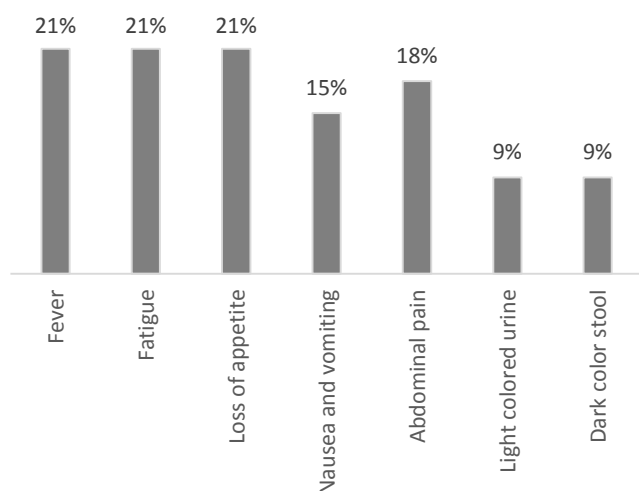
Awareness regarding complications of CKD was further assessed. 27% (n=81) of participants were aware that CKD can cause edema and/ or ascites, followed by 25% (n=75) of participants who were aware that it can affect the cardiovascular system. Only 8% (n=24) of people were aware that CKD can cause anemia whereas none of the participants knew that CKD can cause electrolyte imbalance including hyperkalemia, or bone disease.

The vast majority of participants had no idea regarding the routine blood tests done in CKD. 8% (n=24) of them knew that creatinine is a measure of declining renal function whereas 92% (n=276) of them had no idea. Only 3% (n=9) of the patients knew about urea. However, 11% (n=33) of them knew that urinalysis was frequently done in CKD.

Participants were asked if they were aware of the fact that disease management revolves around reducing disease progression and treating complications, and that there is no definite treatment. Only 5% (n=15) of them had this knowledge but as evident the majority of them had no insight regarding this. Participants were asked if they got diagnosed with CKD, would they prefer getting treated by a physician, or a homeopath. 95% (n=285) of them preferred allopathic treatment over homeopathic.

Lastly, awareness regarding treatment options was discussed. Only 9% (n=27) of the participants were aware that dialysis is a treatment option for CKD whereas only 5% (n=15) of them knew about kidney transplant. Again, the majority of them had no awareness. The second part of the questionnaire assessed the awareness regarding chronic hepatitis.

First and foremost, the participants were asked if they had ever heard of or been tested for hepatitis B or C. Only 33% (n=99) of them knew what hepatitis actually is. 67% (n=201) of them had no insight about hepatitis.



**Figure 2: Symptoms of Hepatitis Infection. (N=300)**

Next, awareness regarding the routes of transmission for hepatitis infection was assessed. Only 18% (n=54) of them were aware that needles and IV drug use can transmit hepatitis infection. 3% (n=9) of the participants knew that it could be

transmitted due to sexual contact or blood transfusion. Only 1% (n=3) of them were aware of vertical transmission.

The participants were then asked if they knew that hepatitis B or C can cause chronic hepatitis. 26% (n=78) of them had an idea but the majority had no knowledge.

Figure 2 shows the percentage of people who were aware of the symptoms of hepatitis infection. When asked, the majority of people (77% or n=231) were not aware that hepatitis B or C can also be asymptomatic. The participants were asked regarding their knowledge of preventive vaccines for hepatitis B and C. Although there is no vaccine for hepatitis C, it was still asked to assess the participant's knowledge. However, the majority of participants were not aware of the presence of a vaccine. 18% (n=54) of them knew that a preventive vaccine for hepatitis B is available.

16% (n=48) of the patients also said that a vaccine for hepatitis C is present. This emphasized the severe lack of knowledge present. Only 21% (n=63) of the participants knew that infection with hepatitis B or C can be lifelong and incurable. 18% (n=54) of the participants were aware of liver cirrhosis being a complication of chronic hepatitis whereas 14% (n=42) knew about liver failure and 13% (n=39) about liver cancer. However, again, the majority of patients were unaware of the complications.

Participants were asked that if diagnosed with hepatitis infection, would they disclose it to their family. 93% (n=279) of them said that they will. Lastly, they were asked if they would prefer getting treated by a physician or a homeopath. 98% (n=294) of them said they will likely get treated by a physician.

## DISCUSSION

There is a widespread paucity of knowledge related to these diseases in developing countries, therefore there is a low detection rate of the early stages of CKD. This leads to a lack of preventive measures, as well as delays the start of early treatment, which inevitably facilitates the progression of mild and potentially treatable CKD to advanced CKD<sup>21</sup>. This research had sought to identify the awareness and level of knowledge towards prevention, causes, symptoms, diagnosis, treatment and management of CKD and chronic hepatitis. As evident from the results above, the majority of participants did not know of the functions of kidney, the risk factors leading to CKD and chronic hepatitis, the preventive measures and complications of both the diseases.

This inadequate knowledge, as seen above, will eventually lead to poor health outcomes. Lack of knowledge regarding the disease process and its symptoms would lead to delayed diagnosis. Similarly insufficient awareness regarding the risk factors for CKD or the routes of transmission for hepatitis, for instance, means that there will be zero prevention. All this would lead to the development and progression of these diseases and will significantly impact the already burdened health care system of a third world country.

On the other hand, it was reported by Shalaby et al. (2007) in Egypt that study participants had adequate knowledge towards the prevention, transmission, and treatment of HBV infection<sup>22</sup>. Another study conducted in Rawalpindi, Pakistan showed poor

knowledge, adequate attitude and poor practice towards hepatitis<sup>22</sup>. A study regarding knowledge, attitude and practice regarding viral hepatitis conducted in Saudi Arabia showed that most participants had not heard about hepatitis viruses and showed low level of knowledge on viral hepatitis (42%)<sup>23</sup>. Several other studies conducted in Iran, Brazil, Malaysia and India also showed inadequate levels of knowledge regarding viral hepatitis<sup>23</sup>. Globally, a study was conducted on HBV in Melbourne, Australia. This was the largest Australian study assessing knowledge and understanding of the effect, transmission, and treatment of HBV infection among chronically infected individuals. The findings highlighted the knowledge gaps and misconceptions held by the participants and the need to expand education and support initiatives<sup>23,24</sup>. The plausible reasons for differences in response could be the study tools used for the collection of data, study location, and the demographic variation of the study population.

It cannot be stressed enough that there is a dire requirement for international programs aimed at the prevention and control of CKD in developing countries like Pakistan<sup>21</sup>. It is imperative to hold seminars and informative sessions for the general population so they become well apprised of the disease process, the risk factors, the symptoms, and the preventive measures. In order to tackle HCV infection, the Government of Pakistan now also provides free of cost diagnostic tests, and therapeutic and management options for patients with HCV infection, thereby decreasing the considerable health costs involved<sup>25</sup>.

Moreover, HCV patients now have free access to new oral medication<sup>19</sup>. This will help in controlling the development and progression of chronic diseases, and therefore will aid in reducing the burden on healthcare system. Although the knowledge and awareness regarding the diseases is low, it is seen that the majority of participants if diagnosed with either of the diseases will likely opt for treatment by a physician. Similarly, if diagnosed with hepatitis infection, 93% of the participants agreed to disclose it to their family/spouse. This highlights a positive attitude and shows that the participants are not worried about the social stigma of chronic diseases.

The study however was limited by selection bias and was not truly representative of the entire population, because only people coming to the hospital were interviewed. This could have been overcome if the questionnaire was distributed in different areas of the city, for example in mosques, malls or parks.

### CONCLUSION

The research identified a dismally low level of awareness up to 80-90%, regarding awareness aspects of two very common health conditions. Thus, it is imperative to design religiously and culturally acceptable public health strategies to increase awareness for earlier detection of both CKD and CLD for better health outcomes and therefore to reduce the economic burden of our country.

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### AUTHOR'S CONTRIBUTION

**Mahmud M:** Conceived idea, Manuscript Writing

**Baqai K:** Designed research methodology

**Anwar M:** Data collection, Manuscript Writing

**Disclaimer:** None.

**Conflict of Interest:** None.

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