

# The Impact of Hepatitis C on Humans

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## Abstracts

The aim of the study is to know the effect of the hepatitis C virus on humans, how it is transmitted, how to prevent it, and what treatment is used to alleviate the severity of the disease. The questionnaire was designed via the Google Drive application and distributed via the social networking application (WhatsApp), with complete transparency to the population targeted by the research, city of Riyadh, age (25-55 years) men and women, where 600 questionnaires were distributed and answers were obtained (580 people responded via email). It concluded that there is no treatment to cure it. Interferon treatment is used only to mitigate its danger and serious effects.

**Keywords:** The impact, hepatitis C, humans.

## 1. Introduction

Hepatitis C (1) is a contamination illness that mainly affects the liver. Hepatitis C virus (HCV) is the cause of this disease. Hepatitis C is often asymptomatic, but chronic infection may lead to scarring of the liver and, after several years, cirrhosis. In some cases, patients with cirrhosis also suffer from liver failure, liver cancer, or severely swollen veins in the esophagus and stomach, which may lead to severe bleeding that leads to death (2). Hepatitis C infection occurs primarily through blood contact due to intravenous drug injection, non-sterile medical equipment, and blood transfusion. The number of people infected with Hepatitis C in the world is estimated at approximately 130-170 million. Scientists began studying the hepatitis C virus during the 1970s and confirmed its existence in 1989 (3). It is not known whether it causes disease in any other animals. Interferon and ribavirin are the main drugs for treating HCV. About 50-80% of patients treated with these two drugs are cured. As for those who develop cirrhosis or liver cancer, they may need a liver transplant, but the virus usually reappears after the transplant is completed (4). It should be noted, however, that there is no protective vaccine for hepatitis C virus. Hepatitis C virus is a small, enveloped, single-stranded, positive-sense RNA virus (4), and it belongs to the

“hepacivirus” genus in the “Flaviridae” family (5). There are seven main genotypes of hepatitis C virus (6). In the United States of America, genotype 1 is responsible for 70% of cases, while genotype 2 is responsible for 20% of them; Each of the other genotypes is responsible for 1% of cases (7). Genotype 1 is also the most common in South America and Europe (4). The primary mode of transmission of the virus in the developed world is through intravenous drug injection. In developing countries, the main means are blood transfusion and unsafe medical procedures (8), and the causes of transmission remain unknown in 20% of cases (9); But many of these cases are most likely caused by intravenous drug injections (10). The primary mode of transmission of the virus in the developed world is through intravenous drug injection. In developing countries, the main means are blood transfusion and unsafe medical procedures (8), and the causes of transmission remain unknown in 20% of cases (9); But many of these cases are most likely caused by the injection of drugs into a vein (10). Most infected people do not show symptoms of the disease in the first weeks after they become infected. It may take between two weeks and six months for symptoms to appear. When symptoms appear, they may include: fever, Feeling very tired, Anorexia, Nausea and vomiting, Abdominal pain, dark urine, Pale stool, Arthritis, Jaundice (yellowing of the skin or eyes). Few people are diagnosed when their infection is recent because recent infection with hepatitis C virus is usually asymptomatic. People who become chronically infected with hepatitis C virus often go undiagnosed because they remain asymptomatic for up to decades after infection before secondary symptoms resulting from serious liver damage develop. Hepatitis C infection is diagnosed in two stages: screening for hepatitis C virus antibodies using a serology test identifies people who have been infected with the virus. If test results show antibodies to hepatitis C virus, a nucleic acid test to detect the presence of hepatitis C virus RNA is needed to confirm chronic infection and the need for treatment. This test is important because about 30% of people infected with the virus spontaneously clear the infection thanks to a strong immune response without the need for treatment. Although these people have cleared the infection, they still test positive for hepatitis C antibodies. Nucleic acid testing to detect the presence of hepatitis C virus RNA can be performed in the laboratory or using a simple point-of-care machine within the clinic. Innovative new tests are being developed as diagnostic methods such as the hepatitis C core antigen test and these tests will allow the diagnosis of active hepatitis C infection at a single stage in the future. After a person is diagnosed with chronic hepatitis C virus infection, the degree of liver damage (fibrosis and cirrhosis) should be assessed. Liver damage can be assessed by taking a liver biopsy or through a variety of non-invasive tests. Evaluation of the degree of liver damage is used to guide decisions about treatment and management of the disease. Early diagnosis can prevent the emergence of health problems that may result from infection and prevent transmission of the virus. The organization recommends testing people who may be at greater risk of infection. In settings with high hepatitis C antibody seroprevalence in the general population (defined as hepatitis C antibody seroprevalence of 2% and above or 5% and above), WHO recommends screening blood donors and conducting focused or targeted testing for specific groups High risk of contracting the disease include migrants from endemic regions, health-care workers, people who inject drugs, people in prisons and other confined settings, men who have sex with other men, sex workers and people infected with HIV. WHO recommends that hepatitis C testing be made available to all adults and that they be linked to prevention, care and treatment services.

Serological evidence indicates past or current hepatitis C virus infection in approximately 2.3 million (6.2%) of the estimated 37.7 million people infected with HIV in the world. Chronic liver disease represents a major cause of morbidity and mortality among people living with HIV worldwide. Antiviral medications, including sofosbuvir and daclatasvir, are used to treat hepatitis C. Some people's immune systems may fight the infection on their own and new infections do not always require treatment. Treatment is always necessary in the case of chronic hepatitis C. Sofosbuvir and daclatasvir are the most widely used and least expensive direct-acting antiviral treatments that target all genotypes. Curative treatment is available for less than US\$50 in many low- and middle-income countries. There is no effective vaccine against hepatitis C. The best way to prevent the disease is to avoid exposure to the virus. Among the ways to prevent hepatitis C are the following: Safe and appropriate injection practices in health care, Safe handling and disposal of needles and medical waste, providing harm reduction services to people who inject drugs, such as needle exchange programs, substance abuse counseling, and the use of opioid agonist therapy. Testing donated blood for hepatitis C and other viruses, Training health workers, Safe sexual practices using barrier methods such as condoms (11).

## **2. Material and Methods:**

The study started in (the city of Riyadh in Saudi Arabia), began writing the research and then recording the questionnaire in January 2024, and the study ended with data collection in June 2024. The researcher used the descriptive analytical approach that uses a quantitative or qualitative description of the social phenomenon (the impact of hepatitis C on humans). The independent variable (the prevalence of hepatitis C in the world), the dependent variable (the prevalence of hepatitis C in the city of Riyadh). This kind of study is characterized by analysis, reason, objectivity, and reality, as it is concerned with individuals and societies, as it studies the variables and their effects on the health of the individual, society, and consumer, the spread of diseases and their relationship to demographic variables such as age, gender, nationality, and marital status. Status, occupation (12), And use the excel 2010 Office suite pie chart to arrange the results using: frequency tables percentages (13). A questionnaire is a remarkable and helpful tool for collecting a huge amount of data, however, researchers were not able to personally interview participants on the online survey, the questionnaire electronically, and consisted of twelve questions, all of which were closed.

## **3. Results and discussion:**

The percentage of approval to participate in the questionnaire (the impact of hepatitis C type on humans) was 99.5%, and the percentage of refusal to participate was 0.5%. The percentage of participants' ages in the questionnaire was as follows: the percentage of participants' ages was 21.2%, from 25-34 years of age, 52.3% from 35-44 years of age, and 26.5% from 45-55 years of age, and 55.3% of their gender was male. Their percentage of females is 44.7%. As for their nationalities, the majority were Saudi men and women, at a rate of 96.2%, and of non-Saudi men and male Saudis, 3.8%. As for their professions, they were 40.2% administrators and managers

(non-health staff), and 59.8% were male and female technicians (health staff). As for the educational status, it was equal in primary and middle school at a rate of 1.5%, while holders of a secondary school certificate represented 6%, diploma holders 28%, university graduates 57.6%, master's holders 5%, and doctoral degree holders 0.4%.As for the questionnaire questions and responses, they were as follows: the first question: Hepatitis C is a viral infection that affects the liver. this inflammation can cause acute (short-term) and chronic (long-term) disease. Could it be life threatening? Yes 95.5% and no 4.5%. The second question: Is hepatitis C transmitted through contact with contaminated blood, which can occur as a result of sharing needles or syringes or due to unsafe medical procedures such as blood transfusions using untested blood products? Yes 97% and no 3%. Question 3: Can symptoms include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, and yellowing of the skin or eyes (jaundice)? Yes 92.4% and no 7.6%.The fourth question: Acute hepatitis C virus infection is usually asymptomatic and in most cases does not cause life-threatening illness. About 30% (15-45%) of infected people spontaneously get rid of the virus within 6 months after infection without receiving any treatment? Yes 58.3% and no 41.7%. Question 5: Of the remaining 70% (55-85%) of people infected, they will develop chronic hepatitis C virus infection. Among these patients with chronic disease, the risk of developing cirrhosis ranges between 15% and 30% over 20 years? Yes 82.8% and no 17.2%. The sixth question: Can serious liver damage be prevented and the health of people with the disease improved in the long term thanks to early detection and treatment of the disease? Yes 88.5% and no 11.5%.The seventh question: There is no vaccine against hepatitis C, but this disease can be treated with antiviral medications? Yes 65.2% and no 34.4%. The eighth question: Are there effective treatments against hepatitis C? the goal of treatment is to cure the disease and prevent liver damage in the long term. Yes 87.1% and no 12.9%. Question 9: The virus is most often transmitted in the following ways: reuse of medical equipment, especially syringes and needles, in health care settings or insufficient sterilization; transfusion of blood and blood products without testing; injection drug use through the exchange of injection equipment, from an infected mother to her child and from During sexual practices that lead to exposure to blood? Yes 93.9% and no 6.1%.The tenth question: Hepatitis C is not transmitted through breast milk, food, or water, or through casual contact such as hugging, kissing, or sharing food or drinks with the infected person? Yes, 75.2% and no, 24.8%. The eleventh question: most people with the infection develop symptoms between two weeks and six months? The following symptoms appear: fever, feeling very tired, loss of appetite, nausea and vomiting, abdominal pain, dark urine, pale stool, joint pain, jaundice (yellowing of the skin or eyes)? Yes 90.9% and no 9.1%. The last question: if the test results confirm the presence of antibodies to the hepatitis C virus, is it necessary to perform a nucleic acid test to detect the presence of hepatitis C virus RNA in order to confirm chronic infection and the need for treatment? Yes 90.9% and no 9.1%. (table.no.1)(figure No.1)

Table .no.1: the percentages Participation rate of men and women in Riyadh city

Men	females
55.3%	44.7%

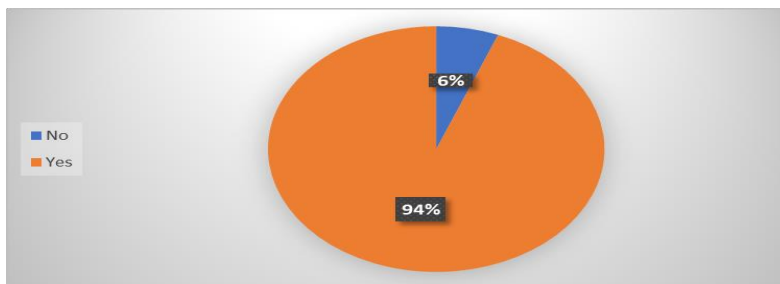


Figure No.1: Participants' opinions and attitudes regarding the danger of contamination with hepatitis C virus

#### 4. Conclusion:

According to the participants' opinions, they are aware of the danger of the hepatitis C virus, and how it is transmitted from one person to another through reusing medical equipment, especially syringes and needles. 94% of blood and its derivatives are transfused without examination, and its symptoms appear in infected people within two weeks to six months, and there is no treatment to cure it. Interferon therapy is used only to mitigate its danger and serious effects.

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