



# Limited Awareness of HCV among Ophthalmic Patients in Nigeria

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

**Background:** The hepatitis C virus causes serious morbidity and mortality and is a global public health concern.

**Aim:** To ascertain adult patients' awareness of hepatitis C in a specialist eye clinic in Anambra State, Nigeria.

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**Methods:** A pretested, semi-structured questionnaire administered by interviewers and also self-administered by participants was used in this prospective, descriptive, cross-sectional study to ascertain the awareness of hepatitis C among adults visiting a specialist eye clinic in Anambra State, Nigeria. Descriptive variables and tests of significance were used in the analysis of data on socio demographics, awareness, and knowledge of hepatitis C. The COUTH Ethics committee granted ethical approval.

**Results:** Because they met the inclusion criteria, 264 people in total took part in this survey. With an age range of 20–87 years, there were 110 (41.7%) males and 154 (58.3%) females, with a ratio of 1:1.4. The average age was 60.6 +/- 14.8 years. The majority of the 149(56.4%) participants were unaware of HCV infection while 258 (97.8%) were unaware of the method by which HCV is spread.

**Conclusion:** In Nigeria, adult patients who visit eye clinics have low knowledge of hepatitis C.

*Keywords:* Awareness; eye clinic; HCV; Nigeria.

## 1. INTRODUCTION

Worldwide, infection with the hepatitis C virus (HCV) continues to be a major cause of morbidity and mortality [1]. An estimated 58 million people have chronic infection with the hepatitis C virus; 290,000 people die from the virus each year and approximately 1.5 million new infections are reported each year [2]. Although it is currently the goal of the global community to eradicate both HBV and HCV by 2030, new cases of HCV infections continue to occur, particularly in the world's poorest regions [3].

The exchange of contaminated blood and blood products, unprotected sexual behavior, risky injections and unsafe medical procedures, sharing of sharp items like needles, and needle stick injuries are all ways that HCV is spread. Cultural customs, particularly in West Africa, have been found to encourage the transmission of HCV infection. Traditional circumcision, homebirth, and traditional scarring are a few of these cultural customs [2, 4].

Many people can avoid or recover from HCV infection with the right care. A cure for HCV depends on a number of factors, including awareness and understanding of the illness, early detection, timely treatment, accessibility to testing supplies, and anti-HCV medications [2]. The primary goal of the global target for HCV elimination is to decrease mortality by 65% and the incidence of HCV infection by 90% by 2030 through three key initiatives: better access to care, greater screening, and infection and re-infection prevention. Knowledge and awareness of HCV are essential for improving access to care and preventing HCV infection [5].

Numerous studies have indicated low awareness of HCV in various countries [6–8]. There is evidence of a low level of HCV awareness in Nigeria [9], but infections with the hepatitis viruses have also been reported in patients visiting ophthalmic eye clinics or undergoing eye surgery [10–12]. For instance, low hepatitis B virus (HBV) awareness has been reported in ophthalmology clinic in Nigeria [13]. But one major obstacle to eradicating HCV infection is low HCV awareness [14]. In order to increase diagnosis and treatment accessibility, HCV awareness and testing should be promoted in all clinical settings, including eye clinics, to meet the challenging global aim of eliminating HCV by 2030. This article aims to ascertain the awareness of hepatitis C among patients who seek care in a specialist eye clinic in Anambra State, Nigeria.

## 2. MATERIALS AND METHODS

### 2.1 Study Design

A prospective, cross-sectional study.

### 2.2 Study Population

Adult outpatients in a specialist eye clinic providing primary, secondary, and tertiary eye care services to residents of Anambra state, Nigeria, were the subjects of the study.

### 2.3 Study Site

The City of Refuge Specialist Eye Clinic provides primary, secondary, and tertiary eye care services to individuals in Anambra state, Nigeria, as well as those outside the state.

## 2.4 Inclusion Criteria

All adult patients who gave their consent for the study.

## 2.5 Exclusion Criteria

Adult patients who did not give consent for the study.

## 2.6 Sample Technique

Convenient sampling technique.

## 2.7 Study Outcome Measures

The HCV awareness among adults attending specialist eye clinic in Onitsha, Anambra State Nigeria

## 2.8 Procedures Involved

Consenting participants were given a pretested questionnaire. Data were gathered and examined, including age, marital status, place of residence, educational attainment, awareness of HCV, and exposure to risk factors for HCV infection.

## 2.9 Data Processing and Statistical Analysis

An Excel spreadsheet was used to enter all of the obtained data. The cleaned data were sent to

IBM Corporation's SPSS version 26.0 statistical program for analysis. On the variables, both univariate and bivariate analysis were done. While categorical variables were characterized by frequency and percentage and were displayed using tables and figures, continuous variables were presented using the mean, median, and standard deviation. The Chi-square test was used for the bivariate analysis, and a p-value of less than 0.05 was deemed statistically significant.

## 3. RESULTS

A total of 264 patients enrolled and responded. There were more females than males with majority of the study participants being of Igbo ethnic group and Christians. Most of the study participants were traders, married and had only primary education.

## 4. DISCUSSION

Results of this study have shown a very poor awareness of HCV infection among the study population. Over 50% of the respondents have never heard of HCV infection prior to the study and this was not associated with any demographic feature. (Fig 1 and Table 2). This is similar to results of a national pilot study in 2021 by the Triplex Pregnancy Infection Collaboration

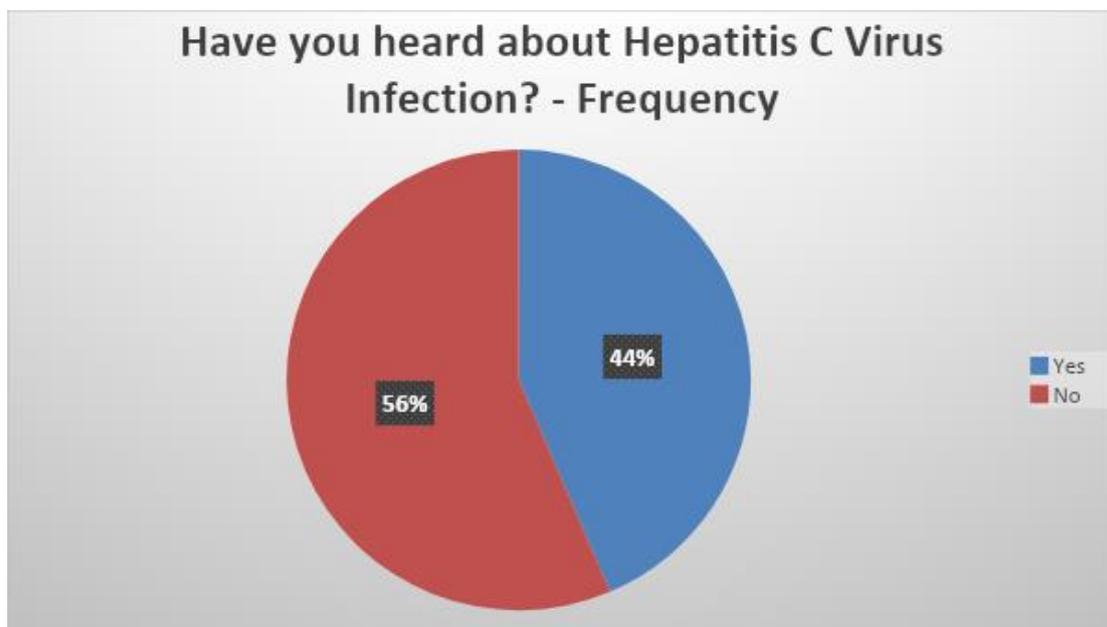


Fig. 1. The awareness of HCV among patients attending specialist eye clinic. The majority of the participants have not heard of HCV

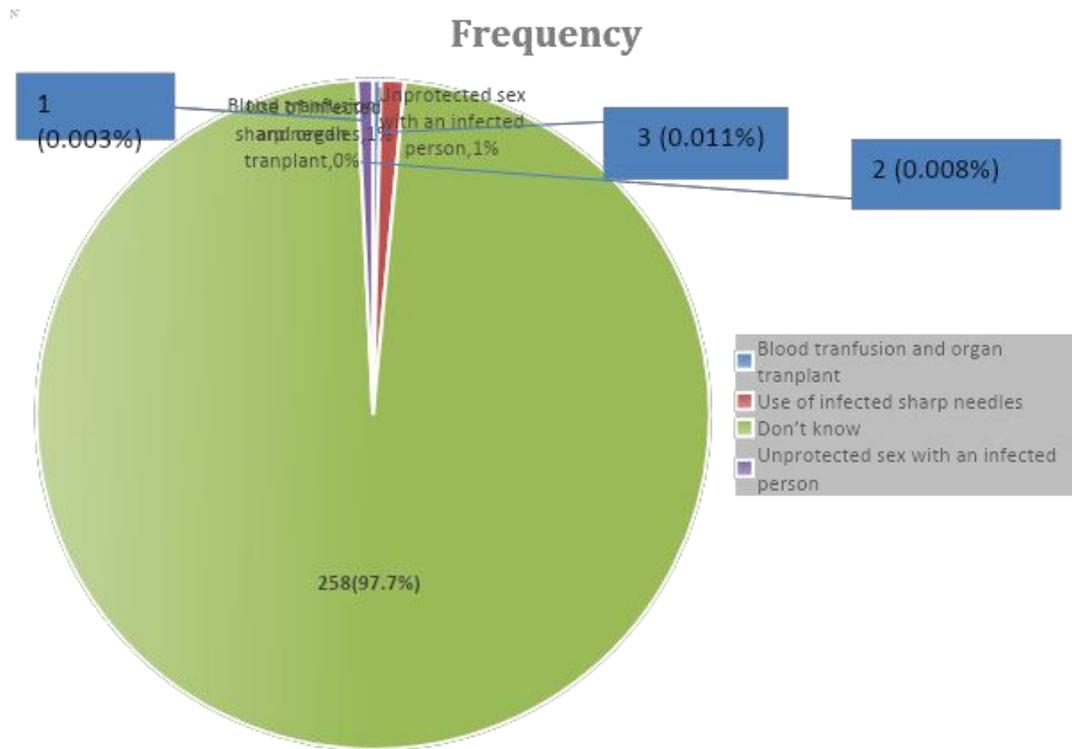
**Table 1. Socio demographics of study participants**

<b>Variable</b>	<b>Frequency(n=264)</b>	<b>Percentage%</b>
<b>Gender</b>		
Female	154	58.33
Male	110	41.67
<b>Age range (years)</b>		
20-34	19	7.20
35-49	47	17.80
50-64	99	37.50
≥65	99	37.50
Mean Age	60.60 ± 14.75	
Range	20 – 87 years	
<b>Ethnicity</b>		
Delta	1	0.38
Igbo	263	99.62
<b>Religion</b>		
Christian	262	99.24
Pagan	2	0.76
<b>Occupation</b>		
Civil Servant	35	13.26
Artisan	46	17.42
Student	6	2.27
Trader	106	40.15
Unemployed	71	26.89
<b>Residence</b>		
Rural	17	6.44
Urban	247	93.56
<b>Level of Education</b>		
None	21	7.95
Post Graduate	9	3.41
Primary Education	127	48.11
Secondary Education	61	23.11
Tertiary Education	46	17.42
<b>Marital Status</b>		
Divorced	2	0.76
Married	165	62.50
Single	14	5.30
Widow	83	31.44
<b>Total</b>	<b>264</b>	<b>100</b>

group where only 48.4% of their population was aware of HCV infection [9]. However, it differed from another study conducted in the USA where 97% percent of their population were aware of HCV [15]. There is a difference between the population in this study and that of the triplex group. Respondents of this study were ophthalmic patients of different demographic characteristics while the triplex study had pregnant women as the study population. Albeit, there is similarity in the results, despite the demographic differences suggesting a low awareness of HCV in Nigeria. On the other hand, the variation in awareness

between the index study and the US study is most likely environmental and variation in demographic characteristics of the populations.

Furthermore, an overwhelming majority (97.7%) of the respondents were unaware of the mode of transmission of HCV and bivariate analysis suggests a strong association between this variable and age, marital status and occupation of respondents ( $p= 0.000, 0.004$  and  $0.000$  respectively). This is partly similar to the results of the triplex study where knowledge of HCV infection was positively associated with young



**Fig. 2. Respondents knowledge of transmission of hcv among patients attending specialist eye clinic. Overwhelming majority of the respondents do not know how HCV is transmitted**

**Table 2. Association of socio demographic data of respondents and awareness of HCV Infection**

Socio demographic data	HCV Infection		Mode of HCV infection	
	$\chi^2$	P-value	$\chi^2$	P-value
Age	1.638 <sup>F</sup>	0.124	321.832	0.000*
Sex	61.006	0.512	0.772	0.680
Marital Status	9.247	0.055	22.274	0.004*
Occupation	36.553	0.327	119.142	0.000*
Level of Education	6.483	0.166	14.381	0.072
Place of residence	0.505 <sup>F</sup>	0.327	0.209	0.901

F- Fishers Exact Test, \* - Significant

age ( $p = 0.018$ ) and higher education ( $p = 0.001$ ) [9]. There was no association between education status and awareness of HCV infection. In a related study, Onwuegbuna et al [13] in the same population reported a fair awareness (69.7%) and knowledge of the mode of transmission (89.4%) of hepatitis B virus infection. In that report, age ( $p = 0.016$ ), occupation ( $p > 0.001$ ), level of education ( $p = 0.021$ ) and marital status ( $p = 0.004$ ) were associated with the knowledge of viral transmission [13]. The likely reason for the similarity is the identical demographic characteristics of the study population in the two reports.

However, in this report, there was no association between level of education and knowledge of mode of HCV transmission. The disparity in the knowledge level of HBV and HCV has been reported in literature by Dehghani et al in Iran [16]. The reason for this is likely due to availability of more HBV related education activities compared to HCV. Another possible reason for this is the higher prevalence of HBV (2.4%) compared to HCV (1.5%) as reported in another study by Onwuegbuna et al in 2022 among a cohort of glaucoma patients in South east Nigeria. [17]. The gap in awareness between

HBV and HCV ought not to be so as both infections are blood borne and have identical modes of transmission, have similar universal prevention precautions and can both cause inflammation of liver parenchymal cells and if not well managed can lead to hepatocellular carcinoma and unfortunately, there is no vaccine against HCV at the moment [18].

The abysmally low level of awareness of HCV in this study is a wakeup call for stakeholders to step up health education interventions to improve the awareness of this deadly hepato-trophic virus. Since it has similar risk factors for transmission as that of HBV and HIV, we recommend that it should receive the same attention as HIV and HBV infection do among policy makers and health planners. It may just need to be built in to the existing programs for prevention of and control of HIV and HBV as against designing new programs. This will ensure sustainability of such intervention in the face of scarce resources for health care in resource constrained economies like that of Nigeria and other developing countries. Also, the routine screening done for HIV and HBV can be extended for HCV in our health facilities to help protect the health workers and other patients (by ensuring strict adherence to universal precautions on infection control in our health facilities) and it will also help in estimating the exact burden of HCV in our society.

Again, it is important to note that knowledge of a particular condition is an important determinant of the attitude, risk perception and practices towards such conditions [19]. With a very poor awareness of HCV and its modes of transmission, there is a high likelihood that people can engage in risky behaviors that will expose them to contracting the infection. However, with strict adherence to infection control protocols and universal precautionary measures, intervention for HIV and HBV will also be helpful against HCV. Therefore, the role of health education in this case cannot be overemphasized. If people learn that with risky sexual behaviors or indiscriminate use of sharp objects, there is one more equally deadly virus, they may be exposed to, they are likely to be more cautious the way they lead their lives and with better education in the communities, members can serve as education ambassadors and peer

educators for HCV as was done for HIV during its early years.

## 5. CONCLUSION

This study has demonstrated low awareness of HCV in the study population. This is a wakeup call for policy makers and stakeholders to increase awareness of HCV in the population by perhaps building HCV control programs into existing HIV programs. There is also need to increase testing among high risk groups like commercial sex workers and intravenous drug users. This will invariably improve attitude and practices that will positively contribute to the global target of eliminating HCV infection by the year 2030.

## CONSENT AND ETHICAL APPROVAL

The Chukwuemeka Odumegwu Ojukwu University Teaching Hospital Ethics Committee examined and approved the study protocol (Reference No. COOUTHWU/CMAC/ETH.C/VOL.1/FN:04/296. Permission letter was granted by the authority of City of Refuge Specialist Eye clinic, Onitsha, Nigeria. Every study participant was asked for written informed consent; however, oral informed consent was also acquired from those who were illiterate. The study participants' anonymity was preserved during analysis, and the confidentiality of the data was guaranteed during data collecting. They were also informed of their liberty to discontinue with the study at any time the felt uncomfortable with the process. Permission for the study was also granted by the authority of City of Refuge Specialist Eye Clinic, Onitsha.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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