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Original Article

Chronic HCV Infection–Comparison of Awareness Regarding Mode of Transmission in Educated and Uneducated Patients Presenting in Gastroenterology/ Medical Clinics in Various Hospitals of Sindh Province

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ABSTRACT

Objective: To compare the awareness regarding the mode of transmission in educated and uneducated patients presenting to OPDs of five hospitals in Sindh province.

Study Design: Cross-sectional survey.

Place and Duration of Study: Five Combined Military Hospitals, of Sindh province; Badin, Chhor, Hyderabad, Malir and Pano Aqil, Pakistan, from April to July 2022.

Methodology: Patients presenting to the five Combined Military Hospitals were included through non-probability consecutive sampling technique. The questionnaire was reviewed by two medical education experts for content validity and piloted among ten patients before being tested.

Results: A total of 121 participants were included in the study. Participants had better knowledge regarding sharing of shaving equipment (p=0.008), unsafe blood transfusions (p<0.001), using contaminated surgical instruments in surgeries (p<0.001) and dental extractions (p=0.005) and sharing of needles (p<0.001) as potential sources of HCV spread. The disparity was quite clear by comparing the ratio of correct responses given by educated participants with uneducated.

Conclusion: Our general public lacks basic information regarding modes of transmission of HCV, and the low level of education in the masses is one of the most important reasons.

Keywords: Hepatitis C, Risk factor, Hepatocellular carcinoma, Cirrhosis, Knowledge

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INTRODUCTION

Hepatitis is the inflammation of liver parenchymal cells that leads to loss of organ function.[1] Hepatitis C is a variant that causes the chronic type of hepatitis in 85% of the infected individuals, replacing normal liver parenchymal cells with fibrosis, resulting in the phenomenon called portal hypertension and related complications like porto-systemic encephalopathy, ascites, oesophagal varices, Porto-pulmonary hypertension, hepato-pulmonary syndrome, hepatorenal syndrome and cardiomyopathy to name a few.[2]

Hepatitis C virus (HCV) affects 170 million people worldwide, with 3 to 4 million cases reported annually.[3] Pakistan is the second most prevalent country for this chronic condition,[4] which kills 350,000 people every year.[5] The most dreadful complication of chronic hepatitis is hepatocellular carcinoma which is usually detected late and is often incurable. In Pakistan, the age-standardised incidence rate (ASIR) for HCC is 7.6 per 100,000 and 2.8 per 100,000 for the male and female population per year, respectively.[6] It has been reported that 60-70% of all HCC cases can be attributable to chronic HCV infection. This is in contrast to many other neighbouring Asian countries where chronic HBV is the main culprit.[7]

The modes of transmission of the Hepatitis C Virus are blood-borne, peri-natal and sexual routes, whereas breastmilk, feco-oral and casual contacts do not spread the virus. Since there is no known vaccine for HCV, prevention and dissemination of awareness and knowledge are the key factors for controlling this disease.[8] An extensive literature review revealed that the knowledge regarding the transmission, prevention and treatment is very low among our Pakistani population, especially for female and uneducated population.[9] Therefore, this study was designed to evaluate the knowledge of the educated versus uneducated people visiting OPDs of five main CMHs, namely Badin, Chhor, Hyderabad, Malir and Pano Aqil (being remote with low literacy rates), regarding the mode of transmission of HCV.

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METHODOLOGY

This cross-sectional survey was carried out at the five Combined Military Hospitals of Sindh province (Badin, Chhor, Hyderabad, Malir and Pano Aqil) Pakistan, from April to July 2022 after taking approval from the Ethical Committee (86/2020/Trg/FCPS, dated 15 Aug 2022). The sample size was calculated using the OpenEpi Sample size calculator with a margin of error set at 9%, a confidence level at 95% and an anticipated frequency (response distribution) of 50%.[10]

Inclusion Criteria: Patients of either gender, aged 15 years and above, presenting to the five Combined Military Hospitals were included in the study through consecutive sampling.

Exclusion Criteria: Patients with the communication barrier were excluded. Patients with debilitating illness and non-consenting individuals were also excluded from the study.

The questionnaire was developed after a thorough literature review.[11-13] In addition, two medical education experts reviewed the questionnaire for content validity and piloted it among ten patients before putting it to the test. The questionnaire consisted of two parts; basic demographics and questions regarding the risk factors for HCV spread. To Measure the internal consistency of the instrument, Cronbach alpha was calculated, which produced a value of 0.84.

Statistical Package for Social Sciences (SPSS) version 23.0 was used for the data analysis. Quantitative variables were summarized as mean±SD and qualitative variables were summarized as frequency and percentages. Chi-square test was applied to find out the association. The *p*-value of ≤0.05 was set as the cut-off value for significance.

RESULTS

A total of 121 participants were included from five different hospital after obtaining informed consent. Of these 121 participants, 72(59.5%) were males, and 49(40.5%) were females. The mean age was 49.6±10.0 years, with median family members of 8.0. Rural residents make up most of the population, with over 50% hailing from far-flung areas. The educated population accounted for 66% of the total sample, including those who could only read and write.

The sample distribution from the five centres was shown in Table-I. Majority of the females (36.4%) interviewed were unemployed (homemakers), whereas farmers (15.7%), sepoys (11%), shopkeepers and businessmen (6.6% each) were the commonest occupation groups among the males (Figure-1).

Table-I: Basic demographics of the Study Participants (n=121)

Parameters		Frequency(%)
Hospital location	Badin	23(19.0)
	Chhor	29(24.0)
	Hyderabad	16(13.2)
	Malir	33(27.3)
	Pano Aqil	20(16.5)
Gender	Male	72(59.5)
	Female	49(40.5)
Education level	Uneducated	41(34.0)
	Till class 5	18(15.0)
	Till class 10	14(11.6)
	Till class 12	19(15.7)
	Bachelors	15(12.4)
	Masters or equivalent	11(9.1)
	MBBS	2(1.7)
	FCPS	1(0.8)
Residence	Urban	45(37.2)
	Semi-urban	15(12.4)
	Rural	61(50.4)
Mean age		49.6±10.0
Family members	Median	8.00
	<5	8(6.6)
	5-10	73(60.3)
	>10	40(33.0)

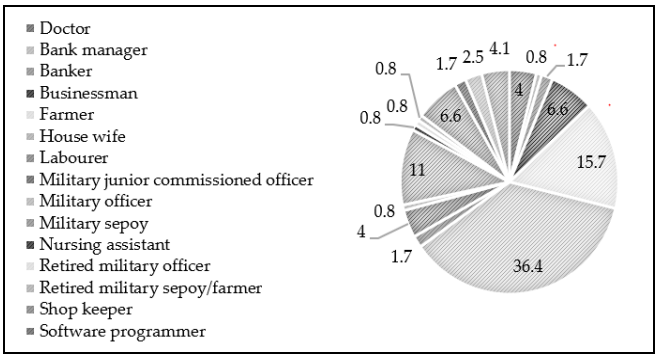

Figure-1: Distribution of the Participants according to Their Professions (n=121)

A comparison of correct versus incorrect responses regarding the knowledge of risk factors of HCV spread was shown in Table-II. Participants had better knowledge regarding sharing of shaving equipment (p=0.008), unsafe blood transfusions (p<0.001), using contaminated surgical instruments in surgeries (p< 0.001) and dental extractions (p=0.005) and sharing of needles (p<0.001) as potential sources of HCV spread. On the other hand, the knowledge regarding sharing of toothbrushes, dialysis, peri-natal transmission, sexual contact, tattooing and faecal-oral route as transmission sources of HCV was not good (Table-II).

Table-II: Comparing Responses Regarding the Risk Factors of HCV spread (n=121)

Risk Factors	Responses n(%)			*p*-value
	Yes	No	Don't Know	
Sharing toothbrush	47(39.0)	26(21.5)	48(40.0)	<0.001
Sharing shaving equipment	78(64.5)	5(4.1)	38(31.4)	0.008
Blood transfusion	91(75.2)	3(2.5)	27(22.0)	<0.001
Surgical instruments	80(66)	4(3.3)	37(30.6)	<0.001
Tooth extractions	76(63.0)	6(5.0)	39(32.0)	0.005
Body piercing	63(52.0)	9(7.4)	49(40.5)	0.649
Dialysis	35(29.0)	17(14.0)	69(57.0)	<0.001
Sexual contact	60(49.6)	11(9.0)	50(41.3)	0.782
Sharing syringes	84(69.4)	4(3.3)	33(27.3)	<0.001
Drinking contaminated water	70(58.0)	28(23.0)	23(19.0)	<0.001
During childbirth	31(25.6)	20(16.5)	70(58.0)	<0.001
Sharing plate and glass	27(22.3)	57(47.0)	37(30.6)	0.525
Tattooing	60(49.6)	13(10.7)	48(39.7)	0.928

Similarly, only 5.8% of the participants could pinpoint alcohol and obesity as combined risk factors for accelerated liver injury (Figure-2).

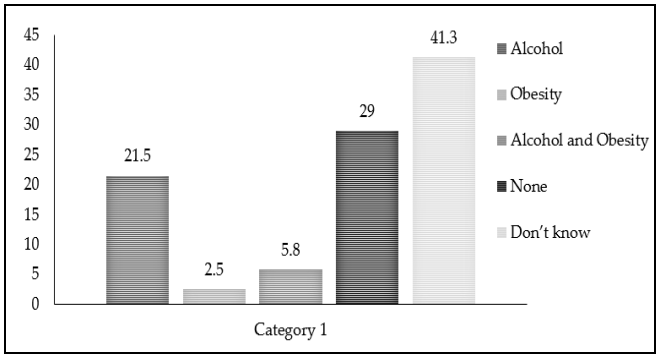

Figure-2: Responses Regarding the Cause of Accelerated Liver Injury In-Lieu of HCV Infection (n=121)

The disparity was quite clear by comparing the ratio of correct responses given by educated participants versus uneducated. Although 66% of the sample was educated (including those who could only read and write), the correct responses were still low for questions regarding sharing of needles, faecal-oral route and peri-natal spread in this sub-group (Table-III).

DISCUSSION

This study shows that the knowledge regarding the transmission mode of HCV is limited even in people with formal education and access to information. The results regarding suboptimal knowledge in the uneducated sample are similar to many studies conducted in regions with similar socio-politico-economic strata.[14-16] A study by Knick *et al.* pointed out the correlation of poor knowledge with a higher incidence of HCV and vice versa in West Virginia.[17] The same study found better health-seeking behaviour regarding HCV treatment and management discussion with their healthcare providers in people with optimal knowledge and low incidence regions. To summarize this effect, knowledge regarding HCV helped de-stigmatize this chronic illness and made people more receptive towards treatment and seeking help.

Table-III: Analysing the Relation of Correct Responses to Education (n=121)

Risk Factors	Correct Responses n (%)		*p*-value
	Educated	Uneducated	
Sharing toothbrush	22(18.0)	4(3.3)	0.019
Sharing shaving equipment	69(57.0)	6(5.0)	<0.001
Blood transfusion	57(47.0)	16(13.0)	<0.001
Surgical instruments	72(59.5)	8(6.6)	<0.001
Tooth extractions	68(56.0)	8(6.6)	<0.001
Body piercing	59(48.7)	4(3.3)	<0.001
Dialysis	13(10.7)	4(3.3)	0.415
Sexual contact	57(47.0)	3(2.5)	<0.001
Sharing syringes	74(61.0)	10(8.3)	<0.001
Drinking contaminated water	28(23.0)	0	<0.001
During childbirth	29(24.0)	2(1.7)	<0.001
Sharing plate and glass	54(44.6)	3(2.5)	<0.001
Tattooing	56(46.0)	4(3.3)	<0.001

A study by Chen *et al.* showed the same phenomenon where imparting knowledge and re-auditing the same sample showed improved knowledge and attitude even in those patients who had pointed out indifference or shame towards the diagnosis of HCV and its treatment.[2]

Our study revealed that although education positively impacted the level of information regarding modes of HCV spread, faecal-oral route; casual contact; using the same glass and plate, dialysis and spread during childbirth were the areas that showed a lack of knowledge with misconceptions and social taboos. A similar study from Hong Kong exploring the general public's scope of knowledge reported identical results to our study, with many people considering touching, hugging, kissing, eating together, sharing cutlery, air and genetics as sources of viral transmission.[18] The same study also found a positive correlation between education level and good knowledge and attitude towards safe practices and testing.

In a pioneer study regarding the economic implications of HCV on an average Pakistani household income, Ahmed D and colleagues concluded that the annual economic burden posed by HCV infection is 1379 USD versus an annual GDP of 1443.6 USD8. This shows that for an average Pakistani, it is almost impossible to shoulder the economic burden secondary to the illness caused by HCV and other household needs.

Knowledge regarding this viral disease is not only important for prevention and improving health-seeking behaviour but also paramount for dissipating social taboos that revolve around a blood-borne disease that spreads through casual sexual contact.[19] This will result in minimizing shame and self-loathing, self-isolation and social discrimination, and denying jobs and professional development.

LIMITATIONS OF STUDY

The study has limitations, including consecutive sampling, no follow-up and re-audit to test the knowledge gained after the interview and small sample size.

CONCLUSION

In conclusion, our general public lacks basic information regarding the modes of transmission of HCV, and the low level of education in the masses is one of the most important reasons. Therefore, it is paramount to impart targeted education through multiple sources, with particular attention paid to dissipating the misconceptions and fear surrounding this preventable and curable disease.

Conflict of Intrest: None.

Author's Contribution

Following authors have made substantial contributions to the manuscript as under:

RZAK & RSAK: Conception, data acquisition, drafting the manuscript, approval of the final version to be published.

UAK & LA: Study design, data analysis, critical review, drafting the manuscript, critical review, approval of the final version to be published.

SRAN & SZAN: Data analysis, data interpretation, critical review, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investgated and resolved.

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