

INCIDENCE OF HEPATITIS C IN DIFFERENT AGE GROUPS AND SOCIO-ECONOMIC STATUS IN RELATION TO DIETARY HABITS; A HOSPITAL-BASED STUDY

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Abstract: Hepatitis C is an infectious disease which is caused by hepatitis C virus (HCV) infection. It causes irritation or swelling of the liver. The primary methods of its transmission include intravenous drug use, blood transfusion, and unsafe medical procedures. Hepatitis C disturbs the intake of food and its processing in the body which causes the deficiency of micro and macronutrients. The purpose of this study was nutritional support to the patient, to determine the incidence of hepatitis C in different ages and sexes, to assess the burden of disease in the target population, and to determine the effect of dietary habits and lifestyle on hepatitis C. Allied hospital Faisalabad was visited for one and a half month. 128 respondents were collected during this period, and the data from them were collected with the help of an already prepared questionnaire and which was processed by the SPSS computer program. The chi-square test was applied to find the association. The salient findings of the study were: there were more males (53.9%) than females (46.1%) affected with hepatitis C. Most of the respondents (42.02%) were of the age between 31 to 40 years. The majority of them (80.5%) were married. The majority of the respondents (65.6%) belong to a low socio-economic status, (25.05) were illiterate, and (53.1%) belongs to a rural area. There was a significant association between egg and meat eating habits and the respondent's socioeconomic status. There was a non-significant association between the socioeconomic status of respondents and their wheat, rice, fruits, vegetables, yogurt, milk, and salad eating habits.

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INTRODUCTION

Hepatitis C is an infectious disease which is caused by hepatitis C virus (HCV) infection which causes irritation and swelling of the liver. This virus is from the family Flaviviridae and it is an RNA virus of plus strands (1). According to a survey 200 million people worldwide are suffering from HCV, which is almost 3.3% of the total population of the world (2). It was noted that 50% to 80% of people are suffering from a chronic hepatic disease that is caused by HVC. It was projected that 308,000 individuals suffering from liver cancer due to HCV and 785,000 individuals from cirrhosis are dying annually. 170 million

people in Pakistan, which is an underdeveloped country, have very poor nutritional status and a low literacy rate. In 174 countries Pakistan was ranked 134th by the human development index of the United Nations. It was estimated that 10 million people in Pakistan are suffering from HCV (3). 15% of total cases of hepatitis are suffering from acute symptoms (4). Progress to chronic infection is in 80% of cases. Due to Hepatitis C 27%, of people develops cirrhosis and 25% develop hepatocellular carcinoma (5). In developed underdeveloped countries; HCV is transferred through blood transmission and medical treatments. There is a 1.8%

chance of getting infected with hepatitis C in an individual who suffered from a needle stick injury from a person who was HCV positive. Hepatitis C can be transferred through sexual activities (4). Whereas, due to tattooing risk of hepatitis C virus is increased by about two to three folds. HCV can be transferred through self-care equipment such as shaving items, toothbrushes, manicuring, and Pedicuring items, which can be polluted with blood. Pakistan is an underdeveloped country in which shaving equipment and scissors are used repeatedly from one person to another without cleaning them. This is because mostly the barbers are not educated and they did not know that viral infections can be transmitted through these items (5,6). The risk of hepatitis C transmission from the diseased mother to the baby is less than 10%. As the malfunctioning liver grows up it shows possible complications in infected individuals and it also shows the significant role of diet in the consequences of disease which cannot be overruled (7). The liver considerably affects nutritional status through its role in the digestion, absorption, and storage of vitamins, minerals, proteins, carbohydrates, and fats. Hepatitis C disturbs the intake of food and its processing in the body which causes a deficiency of macronutrients. The role of poor nutrition in increasing liver failure due to the activity of viruses and the increase in HCV is not known. The liver is the primary organ that plays important role in the metabolism of nutrients and damage to the liver significantly affects the dietary intake and total health status of the body (8). The aim of the study is nutritional support to the patient, check the role of nutrition in hepatitis C control and encourage the optimum state of health, inhibit or cure malnutrition or insufficiencies in certain nutrients and hypothetically delay the development of the disease. Normally,

individuals suffering from hepatitis C do not require any specific nutritional modifications. If someone is diabetic or develops chronic hepatic disease or any other chronic disease such as celiac disease, it may require specific nutritional restrictions. Proteins, carbohydrates, fats, vitamins, and minerals modifications can be designated in these conditions. Malnutrition study in HCV patients is still a problem and assessment of the nutritional status has been rarely performed. Malnutrition occurs generally in these patients so nutritional support is compulsory. When most of the liver cells have been damaged hepatic failure is noticeable and the body becomes unable to sustain dietary balance, consume diet appropriately, synthesize blood proteins, and decontaminate harmful materials. At the beginning of HCV infection nutritional deficiencies may not be significantly apparent. To encourage good health and better nutritional status, quality of life should be promoted as easily as possible.

OBJECTIVES: Objectives of the present study are

- To determine the incidence of hepatitis C in different ages and sexes.
- To assess the burden of disease in the target population status.
- To determine the effect of dietary habits and lifestyle on hepatitis c

MATERIALS AND METHODS

Place of Study: The study was conducted in the Faisalabad District. To accomplish the set objectives of the study Allied Hospital Faisalabad was between the 10th of May and to 24th of June 2015. Allied Hospital is a tertiary care hospital at the Faisalabad district level.

Sample Size: Allied hospital was visited for one and a half months and the data of patients suffering from hepatitis C was collected during this time to see the incidence of this disease. A total of 128

patients were included and inclusion was dependent upon their positive reports for HCV as kept by them.

Data Collection Tools:

Pre-testing: Pre-testing helps to detect mistakes in the questionnaire. It was done on 5 respondents and after pre-testing some questions were added, rephrased, and modified.

Questionnaires: Relevant data was collected with the help of an already prepared questionnaire that was served upon the patients included in this study.

Statistical Analysis: After completing the data collection, data were analyzed by the SPSS-17 computer program.

RESULTS

Data revealed that respondents of young age from 31-40 were majorly affected (Table 1). Data showed that most of the respondents were from low socio-economic status and this socio-income group was more affected due to a lack of awareness about the disease. (Table 2)

The chi-square value shows that there was a non-significant association between the socio-economic status of respondents and their wheat eating habits and they follow the instructions of their physician (Table 3). The chi-square value shows that there is a non-significant association between the socio-economic status of respondents and their rice eating habits. Patients from every socio-income group eat rice and follow the instruction of the physician (Table 4).

The chi-square value shows that there is a non-significant association between the socio-economic status of respondents and their milk-drinking habits. That means respondents follow the instruction of their physician. Patients from every socio-economic group drink milk almost on daily basis (Table 5).

The chi-square value shows that there is a significant association meaning that respondents show violence against the

instructions of their physicians because most of the patients belong to a low-income group and they were not able to buy eggs. The chi-square value shows that there is a highly significant association between the socio-economic status of respondents and their meat-eating habits which means respondents show violence against the instructions of their physicians (Table 6).

Meat is very expensive and low-income groups cannot afford it (Table 7).

Chi-square shows that there is a non-significant association between the socio-economic status of respondents and their fruits eating habits which means respondents follow the instructions of physicians and eat fruits (Table 8). The chi-square value shows that there is a non-significant association between the socio-economic status of respondents and their vegetable eating habits (Table 9).

DISCUSSION

The prevalence level of Hepatitis C in Pakistan is too much high. The causative factor, Hepatitis C Virus, is usually spread through blood transfusion. It has been considered that safe transfusion of blood can limit the spread of HCV. It is also understood that there are about 15% of the patients go into the spontaneous resolution of the disease and get recovery through their self-immune system. Different age groups respond differently to infectious agents while socioeconomic status is also responsible for indirect immune response to the disease causative agents. Usually, low socioeconomic status populations show that there are two types of problems that aggravate the disease spread in that population. Unbalanced and low dietary habits are responsible for the low immune response which is usually effective in 15% of patients. The 2nd aspect is the lack of information about the disease, its spread, and even its effect on the healthy liver. The fatal consequences of HCV infection are

still not known in those with low socioeconomic status which is the major cause of negligence and ultimately easy spread of disease-causing agent (9).

Pakistan health departments, as well as the research centers, have been working on disease cures and treatment in different ways including conventional and alternative treatment ways. Despite all the treatment efforts, the importance of prevention is still there (9,10).

Gender wise study on males was carried out in Rawalpindi hospital that was indicating the ratio of male-gender HCV infections to female-gender HCV infections (10). The study of different risk factors for HCV infection was done in Rawalpindi hospitals which were indicative of HCV risk factors (11). Another study was carried out in Karachi hospitals on serotyping of HCV in children (12). Factors affecting the sero-

prevalence of HCV in blood donors were also studied in northwest Pakistan (13).

The present study showed different relationships with the socioeconomic status of the population with HCV. The results of this study show that the parameters used in the study are easily accessible and should be considered in further studies. However, the socioeconomic status of the patients is currently being investigated. Therefore, it is suggested that further survey of the said relationship should be done.

CONCLUSION

There was a significant association between egg and meat eating habits and the respondent's socioeconomic status. There was a non-significant association between the socioeconomic status of respondents and their wheat, rice, fruits, vegetables, yogurt, milk, and salad eating habits.

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Table 1: Distribution of hepatitis-C in human subjects of different age groups

Age	Frequency	Percent
10-20	6	4.7%
21-30	37	28.9%
31-40	54	42.2%
41-50	27	21.1%
51 to above	4	3.1%
Total	128	

Table 2: Percentage Distribution of respondents according to their socio-economic status

Socio- economic status	Frequency	Percentage
Low	84	65.6
Middle	38	29.7
High	6	4.7
Total	128	100.0

Table 3: Association between socio-economic status of respondents and their wheat eating habits

Wheat eating habits	Socio- economic status			
	Low	Middle	High	Total
Wheat daily count% within wheat	83 66.4%	36 28.8%	6 4.8%	125 100.0%
Alternate count% within wheat	0 0%	2 100.0%	0 0%	2 100.0%
Monthly count% within wheat	1 100.0%	0 0%	0 0%	1 100.0%
Total count% within wheat	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 5.309 df = 4, Signification = 0.2

Table 4: Association between socio-economic status of respondents and their rice eating habits

Rice eating habits	Socio- economic status			
	Low	Middle	High	Total
Rice daily count% within rice	2 40.0%	3 60.0%	0 0%	5 100.0%
Alternate count% within rice	7 38.9%	9 50.0%	2 11.1%	18 100.0%
Weekly count% within rice	42 68.9%	16 26.2%	4 25.0%	61 100.0%
Monthly count% within rice	11 68.8%	4 25.0%	1 6.3%	16 100.0%
Never count% within rice	22	6	0	28

	78.6%	21.4%	0%	100.0%
Total count% within rice	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 11.575

df=8

Signification= 0.17

Table 5: Association between socio-economic status of respondents and their milk drinking habits

Milk drinking habits	Socio- economic status			
	Low	Middle	High	Total
Milk daily count% within milk	62 62.0%	32 32.0%	6 6.0%	100 100.0%
Alternate count% within milk	7 77.8%	2 22.2%	0 0%	9 100.0%
Weekly count% within milk	1 50.0%	1 50.0%	0 0%	2 100.0%
Never count% within milk	14 82.4%	3 17.6%	0 0%	17 100.0%
Total count% within milk	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 4.339

df = 6

Signification = 0.6631

Table 6: Association between socio-economic status of respondents and their eggeating habits

Egg eating habits	Socio- economic status			
	Low	Middle	High	Total
Egg daily count% within egg	4 36.4%	6 54.5%	1 9.1%	11 100.0%
Alternate count% within egg	0 0%	6 85.7%	1 14.3%	7 100.0%
Weekly count% within egg	8 53.3%	6 40.0%	1 6.7%	15 100.0%
Daily count% within egg	9 81.8%	2 18.2%	0 0%	11 100.0%
Never count% within egg	63 75.0%	18 21.4%	3 3.6%	84 100.0%
Total count% within egg	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 23.283

df=8, Signification=0. 003

Table 7: Association between socio-economic status of respondents and their meat

eating habits

Meat eating habits	Socio-economic status			
	Low	Middle	High	Total
Meat daily count%within meat	1 12.5%	3 37.5%	4 50.0%	8 100.0%
Alternate count% within Meat	9 37.5%	13 54.2%	2 8.3%	24 100.0%
Weekly count% within meat	28 71.8 5	11 28.2%	0 0%	39 100.0%
Monthly count% within meat	12 66.7%	6 33.3%	0 0%	18 100.0%
Never count% withinmeat	34 87.2%	5 12.8%	0 0%	39 100.0%
Total count% within meat	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 58.401, df=8, Signification=0. 00

Table 8: Association between socio-economic status of respondents and their fruiteating habits

Fruit eating habits	Socio- economic status			
	Low	Middle	High	Total
Meat daily count%within meat	38 55.1%	25 36.2%	6 8.7%	69 100.0%
Alternate count% within meat	20 90.9%	2 901%	0 0%	22 100.0%
Weekly count% withinmeat	15 71.8 5	6 28.6%	0 0%	21 100.0%
Monthly count% withinmeat	4 66.7%	2 33.3%	0 0%	06 100.0%
Never count% withinmeat	7 70.0%	3 30.0%	0 0%	10 100.0%
Total count% within meat	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 12.757, df = 8, Signification=0. 120

Table 9: Association between socio-economic status of respondents and their vegetable eating habits

Vegetable eating habits	Socio- economic status			
	Low	Middle	High	Total
Meat Daily count%within Meat	46 55.1%	19 36.2%	4 8.7%	69 100.0%
Alternate count% within meat	30 62.5%	16 33.3%	2 4.2%	48 100.0%
Weekly count% within meat	2 66.7%	1 33.3%	0 0%	3 100.0%
Monthly count% within meat	1 100.0 %	0 0%	0 0%	1 100.0%
Never count% within meat	5 71.4%	2 28.6%	0 0%	7 100.0%
Total count% within meat	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 1.660 df = 84, Signification = 0. .990