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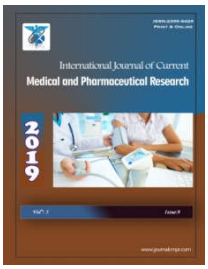

Research Article

AWARENESS OF VIRAL HEPATITIS INFECTION AMONG ADULT INDIVIDUALS ATTENDING PRIMARY HEALTH CARE CENTERS IN ALHASA CITY OF MINISTRY OF HEALTH, SAUDI ARABIA, 2018-2019

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ABSTRACT

Background: Viral hepatitis infection is a global health problem. It is considered one of the major health concerns because of the potential epidemic spread with high risk of mortality and morbidity. There are five types of viral hepatitis, which are hepatitis A, B, C, D and E. However, the most common with the greatest concern are hepatitis A, hepatitis B and hepatitis C.
Methodology: A cross sectional survey was done in Alhasa MOH PHCs to assess the awareness of hepatitis A,B,C viral infection among individuals.
Result: Overall the awareness about viral hepatitis infection was low. The mean knowledge score was significantly higher among married individuals about hepatitis B virus infection. The mean knowledge score was significantly higher in favor of college students.
Conclusion: The research show that there were low knowledge regarding the overall knowledge of the hepatitis infection in the area, which is resemblance to other studies done in the same topic. The study show the need for more awareness of prevention measures and awareness of the danger and complications that can be caused by the infection of the hepatitis A,B, and C. The lowest knowledge was the knowledge of the complications of the infection, which will not make people take actions when see any symptoms of the infection

INTRODUCTION

Viral hepatitis infection is a global health problem. It is considered as one of the major health concerns because of the potential epidemic spread with high risk of mortality and morbidity.[1,2] There are five types of viral hepatitis, which are hepatitis A, B, C, D and E. However, the most common with the greatest concern are hepatitis A, hepatitis B and hepatitis C. [2]Symptoms of viral hepatitis can appear after the individual exposure by two weeks to six months, which include: fever, nausea, vomiting, abdominal pain, fatigue, loss of appetite, jaundice, dark urine, grey colored stool and joint pain. (2)

Hepatitis A virus (HAV) infection can be transmitted by fecal-oral route, contaminated water and food consumption. This disease is considered a self-limited disease and it can be prevented by vaccination. [1-3] Hepatitis B and C viruses are considered one of the major health problems because of the high risk of developing a chronic illness and other serious complication like liver cirrhosis and liver cancer. [2-6]

About 257 million people are diagnosed with chronic hepatitis B infection worldwide. The prevalence of the disease in the Eastern Mediterranean region is estimated as 3.3%. [2,4] There are several ways of transmission for hepatitis B. For example, vertical transmission from infected mother to the baby, sexual contact, saliva, semen, blood transfusion, and sharing needles or syringes with an infected person.[2,4,5] Pre-exposure vaccination for hepatitis B can prevent the infection. This vaccination is recommended for all newborns and adult individuals who are at high risk of getting the infection.[5] Unlike hepatitis B virus (HBV), there is no available vaccine for hepatitis C, which makes it a serious health issue. Globally, about 71 million people have chronic hepatitis C infection. In Middle Eastern area, the prevalence of the disease is higher and it is estimated as more than 3.5%. Hepatitis C virus (HCV) is a blood-borne virus and it can be transmitted in different ways. [2,6,7] For instance, it can be transmitted through intravenous drug use, blood transfusion of an infected unscreened blood, and sharing needles with an infected person.[6,7]

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Community Health Education program is an important program to prevent the spread of hepatitis infection and to lower the risk of mortality and morbidity. It should be planned based on the level of the community awareness of the disease. Assessing the Public knowledge and awareness on viral hepatitis is crucial to formulate an effective programme in controlling this disease. Various studies on knowledge and awareness of the general population on viral hepatitis been done throughout the world in the recent years. In turkey study (2015) , in which knowledge on viral hepatitis A was assessed in the general population, the researchers has found that 31.7% of the participants had no knowledge about the symptoms of hepatitis A, while 59.4% were aware that jaundice is a symptom of hepatitis A. About 68.9 of the participants had no knowledge of the transmission routes of HAV, while 31.1% had at least one correct response. Of all the participants, 68.1% also had no knowledge about the prevention of hepatitis A, while 31.9% knew at least one correct preventing route. This study however indicated that the general awareness of hepatitis A, transmission, and prevention among the selected participants are very low.[8] In other study in Kuala Lumpur and Selangor (2013), the results showed that healthcare workers and undergraduates group had the highest level of knowledge of hepatitis A with (85.0)% in comparison to the public from both towns and rural areas with 63.6% and 52.7% respectively.[9] Similar studies done in two countries, Germany and the Netherlands (2011) has found a high public awareness about Viral hepatitis A, B and However practical knowledge regarding differences in the mode of transmission, consequences, and prevention were considered to be very low in both countries. It was noticed that the level of awareness was lower among people with lower level of education.[10]An article published in 2013 in India was about the awareness of hepatitis B and C and their routes of transmission. The study results showed that most of the participants were aware of the existence of hepatitis B and C infection, but the level of awareness regarding the modes of transmission and vaccination was found to be dissatisfactory. A positive correlation was found between the awareness score and the behavior score, which revealed that participants with better awareness level had better attitudes toward the infection and prevention of its transmission.[11]In Nigerian study (2012) the results showed that 94% of the participants were aware of the risk of HBV and HCV.[12] A cross sectional study (2015) aimed to assess hepatitis B virus and hepatic cancer beliefs among Korean immigrants in USA showed that the participants were generally aware of hepatitis B and hepatitis B vaccine. However, they were not aware of the routes of transmission and the preventive measures for hepatitis B precisely. [13] A cross sectional study was conducted in Turkish-Dutch (2010), the researchers have found that the level of awareness and knowledge about hepatitis B was low, especially the level of knowledge about the complication of hepatitis B.[14]Similar study in France (2007) disclosed a low level of awareness.[15] In an Australian study (2010) the lack of knowledgewas found to be the primary cause that inhabited the patient from taking the treatment.(16) A cross sectional study in Iraq(2017) has showed that 75% knew about the fact that HBV is transmitted more easily than HIV. In addition, only 33.9% of the participants knew that sharing toothbrush could transmit HBV. In conclusion, there was an average level of knowledge about hepatitis B.[17]

In another study in Egypt (2014) showed that majority the participants were not aware of what could cause the infection and the moods of transmission. One third of the participants had no knowledge about the symptoms of the disease in this study. [18] Similar study done in Taif city of Saudi Arabia (2017) has found a gap in the knowledge about hepatitis B, but positive attitude toward the disease and negative practice about screening and prevention of the disease.[19] However in another study in Saudi Arabia (2017) , the participants showed good knowledge and attitude toward the disease, but poor practice regarding screening and immunization through vaccine.[20]In a recent study in Al-Dammam city of Saudi Arabia (2017) has found that about 75% of participants had a low knowledge about the virus transmission while the awareness about the viral hepatitis was also not satisfactory.[21]

This study was an attempt to evaluate the knowledge and the awareness of the Alhasa population toward hepatitis A, B, and C and who were visiting Primary Health Care centers of MOH for their treatment. To the best of our knowledge this is the first of its kind of study in this regard in this region of Saudi Arabia.

MATERIALS AND METHODS

This was a cross sectional survey conducted in Al Hasa region of Saudi Arabia. There are three Ministry of Health sectors in Al Hass region of Saudi Arabia named Almubarraz, Alhofuf and Alomransectors which included 56 PHCs. All the adult individual aged from 18 to 65 years visiting Primary Health Care centers in Almubarraz, Alhofuf and Alomran sectors were the study population. The sample size was determined after doing the pilot study on 30 random sample patients from PHC in AlOmran and Alhufof sector of Al hasaregion. To calculate representative sample, we used Epi Info (version 6; November, 1993). With the assumption that the knowledge about viral hepatitis among the population could be (based on the pilot study) between 30% and 35% and to achieve the confidence level of 95% with a total population of the patients to be 20000 in the required age group was found to be 375 persons. The health centers for studies were selected randomly. Every second patient attending the general physician clinic was selected for the study. The independent variables which were recorded were the demographic information (such as age gender, nationality, level of education, occupation and past history of viral hepatitis infection).The dependent variable recorded were the participants' awareness of viral hepatitis infection included awareness of: mode of transmission, prevention of the disease and treatment availability. The data were collected through a designed self-administerd questionnaire, which was designed by the investigators to achieve the objectives of the study after being validated and approved by three consultants (GI consultant, family medicine consultant and infectious disease consultant).All collected data were verified and corrected when necessary. The English version of questionnaire will be translated to Arabic version, and the Arabic version was used. Data entry and analysis will be done by using the Statistical Package of the Social Sciences (SPSS) statistical program version 22.Necessary statistical tests such as Chi-square, T-test and other appropriate tests will be used. Written permission from concerned authority in Ministry of Health (MOH) PHC was obtained. Individual consent was taken from every participant before starting the study. To the best of our knowledge this study was the first study that assessed the level of awareness of viral hepatitis

infection among adult individuals attending PHC of MOH in Alhasa city, Saudi Arabia.

RESULTS

The study sample consisted of 366 participants (175 women and191 men) with mean age 34.18 years ± 9.79 standard deviation .The majorities (79.8%) were married while 17.2%, 1.9% and 1.1% were single, divorced and widow respectively. More than fifty nine percent (59.6%) were graduate while 2.7%, 4.6%, 21.3%. 9% and 2.7% were non- formal school educated ,primary school educated, intermediate school educated and post graduate respectively. More than forty eight percent of the participants were government employee while 6.3%, 23.3%, 8.7% and 12.3% were Self-employed, unemployed, non-governmental employee and students respectively. While 1.4% were retired. More than eighty six percent of the participants stated that they heard about viral hepatitis infection. More than twenty nine percent of the participant stated social media as the source of information about the viral hepatitis while 23.2% and 22.7% stated health promotion progamme of ministry of health, friends and respectively. While rest 24.9% of the participants stated TV, health care workers and reading as sources of information on viral hepatitis .In addition, 7(1.9%) of participants stated that they had hepatitis infection in the past. 6(1.6%) of them had HBV and 1(0.3%) of them had HCV. The details of the demographic information of the participants are shown in table1.

Table 1 Showing the demographic information of the participants

Demographic variables	categories	N	%
Sex	Male	191	52.2
	Female	175	47.8
	Total	366	100.0
Marital Status	Single	63	17.2
	Married	292	79.8
	Divorced	7	1.9
	Widowed	4	1.1
	Total	366	100.0
Level of Education	no formal school	10	2.7
	primary school	17	4.6
	secondary school	78	21.3
	intermediate school	33	9.0
	College	218	59.6
	post graduate	10	2.7
	Total	366	100.0
Occupation	governmental employee	176	48.1
	self-employee	23	6.3
	Unemployed	85	23.2
	non -governmental employee	32	8.7
	Student	45	12.3
	Retired	5	1.4
	Total	366	100.0
Have you heard about viral hepatitis infection?	Yes	315	86.1
	No	51	13.9
	Total	366	100.0
If the answer is yes, from where you have heard?	TV	64	17.5
	social media	107	29.2
	health promotion programs	85	23.2
	health care workers	70	19.2
	Friends	83	22.7
	relative has HBV	1	0.3
	relative has HCV	1	0.3
	Others	12	3.3
Have you had hepatitis infection in the past?	Yes	7	1.9
	No	359	98.1
	Total	366	100.0
If the answer is yes, which type of viral hepatitis you had?	B	6	1.6
	C	1	0.3

Level of Knowledge

Assessment of the knowledge regarding viral hepatitis infection was done through sixty questions, each having three options: Agree Neutral and Disagree. Over all knowledge for the participants regarding hepatitis infection was 35.32 %, which distributed among the three types of hepatitis as follows: For HAV, knowledge about Routes of Transmission of Hepatitis Virus was 24.1%, regarding Treatment and Prevention Methods for Hepatitis Virus Infection was 40.4%, and regarding possible clinical outcome of Hepatitis Virus infection it was 39.1%. Overall knowledge about HAV was 26.8%.For HBV, knowledge about Routes of Transmission of Hepatitis Virus was 39.8%, regarding Treatment and Prevention Methods for Hepatitis Virus 28.3%. Overall knowledge about HAV was 41.5%.

For HCV, knowledge about Routes of Transmission of Hepatitis Virus was 39.1%, regarding Treatment and Prevention Methods for Hepatitis Virus Infection was 28.3%, and regarding possible clinical outcome of Hepatitis Virus infection it was 49.6%. Overall knowledge about HAV was 37.5%.The details of the knowledge score is shown in table 2.

Table 2 Frequencies and percentages of the responses to the questions related to the level of knowledge

	Questions	Correct answer					
		HAV		HBV		HCV	
		N	%	N	%	N	%
Routes of Transmission of Hepatitis Virus	Contaminated food	174	47.5	55	15.0	51	13.9
	Contaminated water	187	51.0	55	15.0	52	14.2
	Through droplets (cough and sneezing)	67	18.3	62	16.9	58	15.8
	Through skin contact	125	34.1	84	22.9	61	16.6
	Needle stick	46	12.5	214	58.4	206	56.2
	Through blood transfusion	28	7.6	237	64.7	225	61.4
	Through dental procedure	59	16.1	178	48.6	169	46.1
	Through birth from infected mother to her child	58	15.8	165	45.0	166	45.3
	Through unprotected sexual intercourse	50	13.6	198	54.0	189	51.6
	Through tattoos	73	19.9	182	49.7	179	48.9
	Through barber's visit	71	19.3	199	54.3	192	52.4
	Knowledge Score mean	2.66	24.1%	4.45	40.4%	4.31	39.1%
Treatment and Prevention Methods for Hepatitis Virus Infection:	It is a self-limited infection	113	30.8	206	56.2	193	52.7
	There is a specific treatment for HAV infection	45	12.2	151	41.2	118	32.2
	There is an available vaccine for HAV	227	62.0	210	57.3	48	13.1
	Hand hygiene is protective against HAV infection	225	61.4	24	6.5	31	8.4
	Clean food and water are protective against HAV infection	241	65.8	33	9.0	31	8.4
	Un-sharing personal objects is a protective measure against HAV	24	6.5	219	59.8	202	55.1
	Knowledge Score mean	2.39	39.8%	2.39	39.8%	1.7	28.3%
possible clinical outcome of Hepatitis Virus infection	It may become chronic HAV infection	34	9.2	195	53.2	189	51.6
	It may cause liver cirrhosis	33	9.0	185	50.5	191	52.1
	It may cause liver cancer	49	13.3	155	42.3	168	45.9
	Knowledge Score mean	0.32	10.6%	1.46	48.6%	1.4	49.6%
	Total Knowledge Score mean for each type	5.37	26.8%	8.3	41.5%	7.5	37.5%
	Total Knowledge Score mean for whole questionnaire	**21.19 (35.32%)**					

There were no significant difference in mean knowledge score between males and females. The mean knowledge score was significant with regards to marital status in favor of married, in

Routes of Transmission of Hepatitis Virus HBV, possible clinical outcome of Hepatitis Virus infection HBV, and total B (p value = 0.03, 0.03 , and 0.019 respectively). There was no significant difference among other variables. The mean knowledge score was significant with regards to educational level in favor of college in Treatment and Prevention Methods for Hepatitis Virus (HAV), total A, Routes of Transmission of Hepatitis Virus(HBV), total B, Routes of Transmission of Hepatitis VirusHCV, possible clinical outcome of Hepatitis Virus infectionHCV, total C, and overall total. There was no significant difference among other variables. The mean knowledge score was significant with regards to occupation in favor of Governmental-employee in Treatment and Prevention Methods for Hepatitis VirusHAV, Routes of Transmission of Hepatitis VirusHBV, total B, Routes of Transmission of Hepatitis VirusHCV, total C, and overall total. There was no significant difference among other variables. The details of knowledge score significance with the different variables is shown in table 3.

Table 3 showing the statistically significant relationships between the socio-demographic variables and knowledge items.

	Sex		N	Mean	Std. Deviation	t	p-value
HAV	Routes of Transmission of Hepatitis Virus	Male	191	2.6387	2.46029	-0.165	0.869
		Female	175	2.6914	3.60183		
	Treatment and Prevention Methods for Hepatitis Virus	Male	191	2.4712	1.41717	1.068	0.286
		Female	175	2.3029	1.59912		
	possible clinical outcome of Hepatitis Virus infection	Male	191	0.3089	0.75664	-0.202	0.840
		Female	175	0.3257	0.83884		
	Total A	Male	191	5.4188	3.59568	0.222	0.824
		Female	175	5.3200	4.87669		
HBV	Routes of Transmission of Hepatitis Virus	Male	191	4.6911	3.01119	1.521	0.129
		Female	175	4.1886	3.31036		
	Treatment and Prevention Methods for Hepatitis Virus	Male	191	2.3560	1.08529	-0.383	0.702
		Female	175	2.4343	2.58532		
	possible clinical outcome of Hepatitis Virus infection	Male	191	1.5288	1.26406	1.070	0.285
		Female	175	1.3886	1.24008		
	Total B	Male	191	8.5759	4.40254	1.108	0.268
		Female	175	8.0114	5.32937		
HCV	Routes of Transmission of Hepatitis Virus	Male	191	4.4031	3.16224	0.492	0.623
		Female	175	4.2171	4.04269		
	Treatment and Prevention Methods for Hepatitis Virus	Male	191	1.6859	0.94910	-0.346	0.730
		Female	175	1.7200	0.93857		
	possible clinical outcome of Hepatitis Virus infection	Male	191	1.5288	1.31308	0.482	0.630
		Female	175	1.4629	1.29878		
	Total C	Male	191	7.6178	4.44800	0.423	0.673
		Female	175	7.4000	5.39156		
	Total score	Male	191	21.6126	10.82476	0.697	0.486
		Female	175	20.7314	13.31674		

DISCUSSION

Viral hepatitis is one of the major public health problems throughout the world including Saudi Arabia. Lack of awareness at individual, community and governmental level have been blamed as one of the reasons for the spread of this disease .The researchers have found that less than five percent of people living with viral hepatitis globally are aware of their conditions(31). Measurement of awareness of viral hepatitis among the general population is very important to shape up the effective awareness programme to prevent the spread of viral hepatitis. The present study was conducted to know the knowledge and awareness level of various types of viral hepatitis in Al Hasa region of Saudi Arabia. The overall knowledge for the participants regarding hepatitis infection was found to be poor (35.32 %) which is far lower than the study conducted in Turkey (68%)[8], Kualalampur (63.6)[9] and Netherlands[10]. However similar studies done on Indian population[11], on Korean population in USA[13] and Turkish-Dutch population[14] have shown a comparatively lower level of awareness about viral hepatitis , the result of which is similar to our study The gender difference of knowledge about the different types of viral hepatitis was not statistically significant in our study. The knowledge of female participants has been found to be significantly better in Ghana[22]as well in Jazan of Saudi Arabia studies [23]. However in Hong Kong [24] and Malaysian study [9] no gender difference was found in the awareness and knowledge of viral hepatitis.

One of the important predictors for poor knowledge and awareness about viral hepatitis in our knowledge is low education. The university educated participants were found to be significantly more aware about viral hepatitis. The impact of knowledge on the good awareness of viral hepatitis have been reported from Malaysian, Ghana , Hong Kong ,Turkey ,Nigeria, Korea and other Saudi Study.This result is well expected since the educated people are in a better position to access more sources of information and learn more about different types of viral hepatitis. With a high literacy rate in Saudi Arabia[25], emphasis lies on these educated people to create awareness among the uneducated people through community work.

Married participants in our study were significantly better aware about the routes of Transmission of Hepatitis Virus HBV and possible clinical outcome of Hepatitis Virus infection HBV(p value = 0.03and 0.03 respectively) in our study. Many of the types of viral hepatitis are sexually transmitted and chances of transmission of infection to the fetus are very high. A better awareness about viral hepatitis and its transmission mode among married people is a good sign.

The government employees in our study had significantly better awareness and knowledge about the viral hepatitis including their transmission. Government staffs are having more access to different awareness and education programme by ministry of health. However it is required that the benefits of such programme should reach to every section of society and every section of working in different occupations equally.

CONCLUSION

This study provided useful data on the knowledge and awareness of different types of viral hepatitis among the general population of Al Hasa region of Saudi Arabia. The results of this study have found a paucity of knowledge and awareness about different types of viral hepatitis and their transmission among the general population. Therefore there is a need of providing the mass population the impact information measures to increase awareness and knowledge about the various types of viral hepatitis. The existing policies and guidelines on viral hepatitis needs to be implemented fully and more effectively

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