

Hepatitis B Knowledge and Vaccination Status among Ethnic Kashmiri Population: A Community Based Cross-Sectional Study

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Abstract—Hepatitis B virus (HBV) infection is one of the major global public health problems with nearly 2 billion people infected worldwide. So this present study was planned to have information about socio-demographic characteristics of study subjects, level of knowledge about Hepatitis B and vaccination among adults. A cross-sectional, community-based study about hepatitis B knowledge and vaccination status among ethnic 1300 Kashmiri population aged 18 years and above was conducted. The study area was block Hazratbal of district Srinagar. There were 970 (74.6%) females and 330 (25.4%) males. Majority of our participants (54.7%) were in the age group of 21-40 years. Most of the participants were from urban areas(68%), currently married(66.8%), illiterate(64.8), members of joint family(59%) and belonging to socio-economic class II(67.2%). Regarding knowledge, only 10.2% subjects had heard of Hepatitis B before this study. Among them, 50 (37.6%) participants were aware of the modes of transmission of this disease. About the Hepatitis B vaccination, only 26 (2%) participants out of 1300 had ever received the vaccine. Keeping in view, the low level of knowledge about Hepatitis B in the general population, there is a need to organize health education campaigns targeting both health care workers as well as public, so that they adopt all possible measures to prevent the spread of this fatal infection.

Key words: Knowledge, Hepatitis B, Vaccination

I. INTRODUCTION

Hepatitis B virus (HBV) infection is one of the major global public health problems by with nearly 2 billion people infected worldwide, out of that 75 % are Asians.¹ Worldwide there are about 350 million chronic carriers.^{1,2,3} About 15-25 % of chronically HBV infected people used to die due to liver disease, including cirrhosis of the liver and hepatocellular carcinoma. HBV infection accounts for 5,00,000 to 1.2 million deaths each year. HIV virus causes 60-80 % of all primary liver cancers, which is one of the three top causes of cancer deaths in the East and SEAR, the Pacific Basin and Sub-Saharan Africa.⁴

India has intermediate endemicity of Hepatitis B with HBsAg carrier rate between 2-7%. In India, there are 40 million HBsAg carriers and every year about 1,00,000 Indians die due to illness related to HBV infection.⁵

Safe and effective vaccine is available against Hepatitis B since 1982. In the fourteenth meeting of Global Advisory Group (GAG) on Expanded Program on Immunisation (EPI) 1991, it was recommended that Hepatitis B vaccination should be an integral part of national immunisation programmes worldwide by 1997 and this decision was reaffirmed in the 45th World Health Assembly (1992). As of end of 2008, 177 countries have fully included and 2 countries have partially included this vaccine in their national immunisation programmes. In countries that have implemented universal

childhood Hepatitis B vaccination, chronic HBV infection and incidence rates of long term complications like liver cancer have declined markedly.

The Government of India introduced Hepatitis B vaccine in 2002-2003 as a pilot project in 33 districts and 14 cities across the country. The success of this pilot programme led to further expansion of vaccination to 10 selected states of India in 2007-2008 including Jammu & Kashmir. Hepatitis B vaccination was expanded to the entire country in 2011-2012.

As there is paucity of community based studies no community based study has been done in Kashmir about hepatitis B knowledge and vaccination status among ethnic Kashmiri adult population, therefore, this present study was planned to have information about status of knowledge about Hepatitis B and Vaccination among Kashmiri adult population.

II. METHODOLOGY

A cross-sectional, community-based study about hepatitis B knowledge and vaccination status among ethnic Kashmiri adult population aged 18 years and above was conducted. The study area was block Hazratbal of district Srinagar. The duration of study was 2 years from April 2011 to March 2013.

Sample size: Sample size was determined by using an assumption of the proportion of good knowledge was 50% among Kashmiri adults with a confidence level of 95% and absolute error of 3%. By using the formula, $n=4pq/d^2$, sample size was found to be 1111. Considering non-response rate of 10%, final sample size was 1222. So for this study 1300 subjects was taken

Selection of sample: Hazratbal block is predominantly an urban block with small proportion of rural and tribal mix. The block has been divided into 4 zones-Hazratbal, Harwan, Nishat and Tailbal, comprising of 16 health centers (sub-centers, primary health centers). The sample was selected from the study population by multi-stage random sampling. Firstly, from each zone, one health centre was chosen randomly using lottery method. The four selected health centers were s/c Abi-dal (zone Nishat), s/c Theed (zone Harwan), s/c Nandpora (zone Hazratbal) and s/c Kashipora (zone Tailbal). A list of all the households in selected sub-centre areas was obtained from the survey register (2010). After enlisting all the households, average number of adults (18 years of age and above) per household was determined. Number of households to be visited in each sub-centre area was calculated by probability proportionate to size sampling (PPS). From each of the selected sub-centre, requisite number of households were chosen randomly using random number table. The selection procedure is detailed in Table 1.

Table 1

Selection of Sample from Sub-centers of four Zones

	Abidal	Theed	Nandpora	Kashipora
Total Population	6000	4008	3370	840
Population of age 18 years & above	3500	2645	2470	500
Sample size according to PPS	509	389	362	80
Number of households	600	850	674	200
Number of adults per household	5.8	3.1	3.6	2.5
Number of households enrolled for study	88	126	101	32

Each selected household was visited and all members of age 18 years and above were enrolled for the study. The households in which the enrolled member was not present at the time of visit, were re-visited at least twice to ensure participation. First of all, informed consent was obtained from the participants. A total of 1300 subjects were included in the study. Relevant information about socio-demographic characteristics, knowledge about hepatitis B, modes of transmission, prevention and vaccination status of study subjects was collected on a pre-tested, semi-structured proforma. Modified BG Prasad's scale (2010) which is based on per capita monthly income was used for socio-economic status.⁶

Statistical analysis: Data obtained was entered into Microsoft Excel and analyzed using statistical software. Frequencies were obtained using descriptive statistics.

III. RESULTS

A total of 1300 participants were included in our study, out of which 970 (74.6%) were females and 330 (25.4%) males having Male:Female ratio 0.34. Majority of our participants (54.7%) were in the age group of 21-40 years with a median age of 35 years and age range of 18-80 years. Study participants were mostly from the urban area with only 32% belonging to rural area. About 66.8% of the participants were currently married followed by unmarried (26.3%) and others. More than half of the participants (59%) belonged to joint families and only 41 % were members of nuclear families. Majority of the participants were illiterate (64.8%) and only 6% were graduate and above. About half of the participants were housewives followed by skilled workers (21%), students (8.4%), salaried employees (5.4%), unskilled (5%). About 16 participants (1.2%) were health workers and therefore at risk of occupational exposure to Hepatitis B infection. According to modified BG Prasad's socioeconomic scale (modified for the year 2010), majority of the participants (67.2%) belonged to class II (i.e. having per capita monthly income of Rs. 1644 to Rs. 3287). Only 0.5% of participants belonged to socio-economic class IV (Table 2).

Table 2

Socio-demographic characteristics of participants

Characteristics	Number(n)	Percentage(%)
Sex		
Female	970	74.6
Male	330	25.4
Age(years)		
20 or less	119	9.2
21-30	393	30.2
31-40	319	24.5
41-50	117	9.0
51-60	173	13.3
61-70	133	10.2
71-80	46	3.5
Residence		
Urban	888	68.3
Rural	412	31.7

Islamic sect		
Sunni	898	68.1
Shia	402	30.9
Marital status		
Unmarried	342	26.3
Currently married	868	66.8
Widow	67	5.2
Widower	11	0.8
Divorced	12	0.9
Type of family		
Nuclear	531	40.9
Joint	769	59.1
Educational status		
Illiterate	843	64.8
Primary	52	4.0
Middle	130	10
High	126	9.7
Higher secondary	71	5.5
Graduate	54	4.2
Postgraduate and above	24	1.8
Occupation		
Housewife	659	50.7
Skilled	273	21.0
Unskilled	65	5.0
Student	109	8.4
Salaried	70	5.4
Retired employees	50	3.8
Business	32	2.5
Farmer	22	1.7
Health worker	16	1.2
Tourist guide	4	0.3
Socioeconomic class		
Class IV (Rs 493-985)	6	0.5
Class III (Rs 986-1643)	142	10.9
Class II (Rs 1644-3287)	873	67.2
Class I (Rs 3288 & above)	279	21.5
Total	1300	100

Regarding knowledge, only 133 (10.2%) subjects had heard of Hepatitis B before this study. 37.6%(50) participants were aware of the modes of transmission of this disease. Out of these 50, 30 participants(60%) had knowledge of blood transfusion as the only mode of transmission of Hepatitis B, followed by sexual route(2%) and mother to child transmission(2%).18 participants(36%) were aware that Hepatitis B could be transmitted by all the above mentioned routes. Out of those who had heard about Hepatitis B, only 24% were aware of methods of prevention of Hepatitis B infection. Among these, 47% had knowledge that Hepatitis B vaccine was the only preventive measure, followed by blood screening before transfusion (12.5%) and use of condoms(3%).About 37.5% participants were aware that hepatitis B could be prevented by all the above said measures. Regarding the source of information about Hepatitis B, 35.3% had learnt it either from school, books or during training course.30.1% participants had heard from neighbors, relatives or colleagues, followed by doctor or health worker(25.6%) and through TV or radio(9%) (Table 3).

Table 3

Knowledge about Hepatitis B among participants

Q. No.	Questions	No.	%	
1	Ever heard of hepatitis B	Yes	133	10.23
		No	1167	89.77
		Total	1300	100
2	Heard of modes of transmission	No	83	62.41
		Yes	50	37.59
		Blood Transfusion	30	22.56
		Mother to Child	1	0.75
		Sexual Transmission	1	0.75
		Blood Transfusion, Mother to child & Sexual Transmission	18	13.53
		Percutaneous	0	0
		Total	133	100
3	Heard of methods of prevention	Not known	83	62.4
		Yes	32	24.06
		Hepatitis B vaccine	15	11.28
		Screening of blood before transfusion	4	3.01
		Condom use	1	0.75
		Vaccine, screening of blood & condom use	12	9.02
		Total	133	100
4	Source of information	School/Books/Training course	47	35.34
		Neighbours/Relatives/Colleagues	40	30.08
		Doctor/ Health worker	34	25.56
		Radio/Television	12	9.02
		Total	133	100

About the Hepatitis B vaccination, only 26 participants out of 1300 (2%) had ever received the vaccine. Out of these 26, only 7 subjects (27%) had completed all the 3 doses. None of the participants had received the booster dose of vaccine (Table 4).

Table 4

Hepatitis B vaccination among participants

Variables related to Vaccination	Number(N)	Percentage(%)
History of Hepatitis B vaccination		
Present	26	2
Absent	1274	98
Total	1300	100
Number of doses received		
1	7	26.9
2	12	46.2
3	7	26.9
Total	26	100
Duration since last dose (years)		
2	2	7.7
3	7	26.9
8	17	65.4
Total	26	100
Booster dose received		
Yes	0	0
No	26	100

IV. DISCUSSION

Hepatitis B is the most common chronic viral infection in humans. In spite of a vaccine available since 1982, the hepatitis B virus (HBV) remains a serious global public health problem. Nearly 350 to 400 million people suffer from this infection globally, and 1 million people per year lose their lives due to complications of this infection.⁷ As no community based study has been done in Kashmir about hepatitis B knowledge and vaccination status among ethnic Kashmiri adult population, therefore, the present study was planned.

A total of 1300 participants were included in our study. Majority of our participants were females (75%) as males used to be on their job and as such were not present in their household during day time.

Despite paying repeated visits to households, where a subject of 18 years and above age could not be contacted, our sample comprised of only 25% males. More than half of our participants were in the age group of 18-40 years and about 68% were residents of urban area as our study area being predominantly urban. All participants were Muslims and belonged to either Sunni or Shia sect. About half of the participants were housewives as females constituted the majority of the sample. About 21% were skilled workers and only 1.2% were at risk of occupational exposure to HBV infection. More than half of the participants were married, illiterate, belonging to joint families having 4-8 members and mostly from socio-economic class II (as per modified BG Prasad's scale for the year 2010).

Only 10.2% of our study group had heard of Hepatitis B (before the disease was described to them). This is in contrast to the study, reported by Victoria M Taylor and others, about hepatitis B knowledge among Cambodian Americans, in which 78% had heard about the disease earlier.⁸ Another study by Brouard et al among French population reported that among the people interviewed, 96.1% had already heard of hepatitis B.⁹

Regarding modes of transmission, only 36% of participants in our study had knowledge of transmission of HBV infection via blood transfusion, sexual route and vertical transmission. None of our participants had ever heard of percutaneous route as a mode of transmission of Hepatitis B. This is in contrast to the study among general population in France, whereby amongst those who had heard of Hepatitis B, 89.9% knew that HBV can be transmitted by needle-sharing while taking drugs, 79.1% that transmission can occur during pregnancy and 69.7% that transmission can occur during unprotected sexual intercourse. About 70% of the French respondents reported that Hepatitis B could be transmitted sexually.⁹ Similar findings were observed in other European studies: 63% and 78%, respectively, in Germany and the Netherlands.¹⁰ This low level of knowledge in our study may be due to the fact that almost 65% of our subjects were illiterate.

Only 2% of our subjects had received the vaccine against Hepatitis B. However in a French study almost half of the respondents (47%) declared that they had been vaccinated against hepatitis B (irrespective of the number of vaccination doses administered) while 9.0% declared that they did not know if they had been vaccinated or not.⁹ A study in adult Chinese population reported that 14% had good knowledge of HBV infection, and 26% had received HBV vaccination.¹¹

V. CONCLUSION

Keeping in view, the increasing burden of this disease and low level of knowledge about Hepatitis B in the general population, there is a need to organize health education campaigns targeting both health care workers as well as public, so that they adopt all possible measures to prevent the spread of this fatal infection. Our communication strategy should be effective enough to bring about change in the behavior of young and productive population so that they would refrain themselves from adopting such behaviors that make them vulnerable to hepatitis B infection. There is a need to strengthen routine immunization of infants and ensure regular supply of vaccines.

CONFLICT OF INTEREST

None declared till now.

REFERENCES

1. Lee W. Hepatitis B virus infection. *N Engl J Med.* 1997;337(24):1733–45
2. Cok A, Healthcote E, Hoofnagle J. Management of Hepatitis B: Summary of a Workshop. *Gastroenterology.* 2001;120:1828–53
3. Lavanchy D. Public Health measures in the control of viral hepatitis: A World Health Organisation perspective for the next millennium. *Journal of Gastroenterology and Hepatology.* 2002;17:452–9
4. WHO. *Life in the 21st Century, A vision for all*, WHO, Geneva. 1998
5. *Weekly Epidemiological Report.* Geneva; 2000 p. 5
6. Upadhayay S, Agarwal K, Rani A, Al SC et al. Developmental lag in preschool children of goitrous mothers. *Indian Pediatr.* 1983;20:259–63
7. JL D. Hepatitis B virus infection. *N Engl J Med.* 2008;359(14):1486–500
8. Taylor VM, Talbot J, Do HH, Liu Q, Yasui Y, Jackson JC, Bastani R. Hepatitis B Knowledge and Practices among Cambodian Americans. *Asian Pac J Cancer Prev.* 2011;12(4):957-961
9. Brouard C, Gautier A, Saboni L, Jestin C, Semaille C, Beltzer N. *BMC Public Health.* 2013;13:576
10. Crutzen R, Goritz AS: Public awareness and practical knowledge regarding Hepatitis A, B, and C: a two-country survey. *J Infect Public Health* 2012,5:195–198
11. Chung PW, Suen SH, Chan OK, Lao TH, Leung TY. Awareness and knowledge of hepatitis B infection and prevention and use of vaccination in Hong Kong adult Chinese population. *Chin Med J (Engl).* 2012 Feb; 125(3):422-7