

DETERMINANTS OF HEPATITIS PREVENTION

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Objective: To assess the socio-demographic factors that has potential influence in the prevention of hepatitis of reproductive age men and women.

Methods: Descriptive and inferential analysis carried out.

Data: Pakistan Demographic and Health Survey (PDHS) 2012-13.

Results: Male has higher (65%) knowledge of hepatitis prevention compared to female (48%). Two multinomial logistic regression models are executed separately for men and women. The models revealed that urban resident has more knowledge about hepatitis prevention compared to rural. Age, education level, access to media and wealth index are positively associated with hepatitis prevention. Being illiterate the likelihood almost double and more than double that the ever married men and women would say that the hepatitis cannot be preventable respectively compared to their counterpart having higher level of education. Ever married men and women who did not access to newspaper [OR=1.95, OR=1.32] and TV [OR=1.46, OR=1.42] were more prone that the hepatitis cannot be preventable compared to those who access to newspaper and TV respectively.

Conclusion: Socio-demographic aspects such as age, education, place of residence and access to media TV, radio and newspaper and wealth index are found to be significant. These statistical outcomes can be a useful in anti-hepatitis seeking measures and mechanism.

Keywords: hepatitis; socio-demographic factors; multinomial logistic regression; PDHS

INTRODUCTION:

Viral hepatitis (A, B, C, D, E) is an infectious diseases that affects hundreds of millions of people globally, causing serious morbidity and mortality from acute hepatitis infection, liver cancer and liver cirrhosis.¹ Hepatitis B and C is responsible for significant illness and death in developed and under developing countries.²

HEPATITIS TYPES AND MODE OF TRANSMISSION:

Hepatitis A and hepatitis E: Poor sanitation and unsafe water is a major cause to occur hepatitis A and E. According to WHO, every year 119 million people infected with hepatitis A, causing 31 million cases of symptomatic morbidity.³ On the basis of Global burden of disease 103,000 deaths occurred in 2010 due to hepatitis A.⁴ It seldom causes more severe

disease, and people at older ages are at greater threat of developing severe disease and acute liver failure. Hepatitis E is believed to infect 20 million people are infected by hepatitis E each year, with 3.4 million cases causing in symptomatic illness.⁵ According to Global Burden of Disease estimates, 57,000 deaths in 2010 due to hepatitis E.⁴ Pregnant women and infants are at top risk of death from hepatitis E.

Hepatitis B and D: There are various means of diffusion for hepatitis B consist of at birth from mother to child, the use of infected blood

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products, semen and other body fluids, the use of polluted needles in health care settings, and the sharing of injection among inject drugs people.³ According to the WHO, 240 million people globally have chronic hepatitis B.³ Global Burden of Disease figures show that 786,000 deaths occur due to hepatitis B in 2010: seventeen per cent from acute infection, 40% from cirrhosis and forty three percent from liver cancer.⁴

Hepatitis C: it is spread by largely through infected blood. In developing world where the poor health care settings, like unsafe injection practices or lacking screening of blood products, whereas, the use of contaminated injecting equipment by people who inject drugs is a main transmission way in high-income countries.³ Other ways of spread consist of mother to child diffusion at birth, sexual contact involving blood, and tattooing. According to the WHO, people chronically infected with hepatitis C between 130 million and 150 million.⁶ 499,000 deaths due to hepatitis C in 2010: 58% from cirrhosis, 3% from acute infection and 39% from liver cancer.⁴

In Pakistan large proportion is infected with hepatitis B and C, the prevalence being 10% for hepatitis B and 4-7% for hepatitis C.⁷ Due to the lower literacy rate and lack of knowledge about these disease and there modes of transmission the rural has higher proportion of that disease.⁸ Numerous studies have been conducted to highlight the risk factors and knowledge attitude about hepatitis in various part of the Pakistan. For instance, Ghias and Pervaiz (2009)⁹ explored that patient's age, history of blood transfusion, history of hospitalization, history of tattooing, family history of hepatitis and patients with history of operation were significantly associated factors with the hepatitis C in Punjab one of the highly populated province of Pakistan. Akhtar et al (2014)¹⁰ found that HCV prevalence rate is high due to poor literacy rate, low socio economic status and history of surgical treatment are the important risk factor. Talpur et al (2007)¹¹ was conducted a study in order to understand the level of knowledge and attitudes of patients towards hepatitis B and C, found that a significant lack of knowledge and poor

attitudes of people towards both types of hepatitis.

METHODS AND MATERIAL:

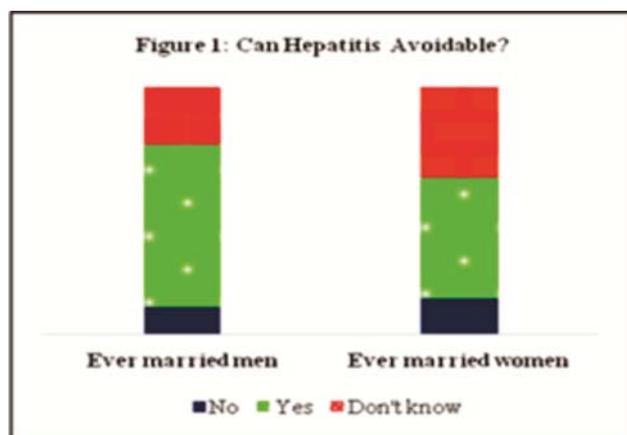
The most recent data set of PDHS 2012-13 used with sample size 13558 (ever married women) and 3134 (ever married men). A quantitative frame work (descriptive statistics) is applied to evaluate percentages and frequencies of various features of respondents. Multinomial Logistic Regression analysis is performed to examine the factors associated with hepatitis prevention of ever married men and women. A set of independent variables were used namely, age (15-49), place of residence (urban rural), place of residence by province (Punjab, Sindh, KPK, Baluchistan and Gilgit Baltistan), educational level (Illiterate, primary, secondary and higher), media exposure (read newspaper, listen radio and watch TV) and wealth index (poor, middle and rich).

RESULTS:

EVER MARRIED MEN: The maximum (20.3%) and the minimum (1%) respondents are falling in age group of 30-34 and 15-19 respectively, while almost same proportion (18%) of respondent lie in 35-39 and upper age groups. The percentages of rural (51.5%) respondents are higher compared to urban (48.5). Punjab has a higher proportion of respondents and about quarter (24.2%) of the respondents is from Sindh. Respondents with secondary level of education are in a greater proportion 32% while about more than a quarter (27.1%) of the respondents are illiterate. The 45.3% of respondents are wealthy. Whereas the greater number of respondents has access to television and radio compared to newspaper, the detail description is illustrated in Table 1.

EVER MARRIED WOMEN: The maximum (20.1%) and the minimum (4.2%) respondent are lying in the age of group 25-29 and 15-19 respectively. The percentage of rural respondents are higher (53.2%) compared to urban (46.8%). Punjab and Sindh has higher percentage of ever married women followed by KPK, Baluchistan and GB. More than half (56.2%) of the ever married women are

illiterate. 43.5% ever married women are wealthier followed by poor (37.4%) and middle (19.1%) families. TV is accessed by higher proportion of women compared to other media sources. The graphical presentation of the responses by the ever married men and women about the knowledge of hepatitis prevention is shown in Figure 1. Male has higher (65%) knowledge of hepatitis prevention compared to female (48%).



LOGISTIC REGRESSION ANALYSIS:

Factors along with odds ratio are illustrated in table 2. With the exception of age all other factors found to be significant for ever married men, while variable age found to be significant for ever married women and have a positive relationship with hepatitis prevention. Urban resident has more knowledge of hepatitis prevention as compared to rural areas the odds were 0.68,

0.79 for men and women respectively. Media access positively associated with hepatitis prevention for both men and women respondents. Ever married men with no access to radio [OR=1.35] were more likely to say that the hepatitis cannot be avoided as compared to those who have access to radio. Respondents who did not access to newspaper [OR=1.95, OR=1.32] were more likely to say that the hepatitis cannot be avoided compared to those who access to newspaper for men and women respectively. People who did not access to television [OR=1.46, OR=1.42] were more likely to say that the hepatitis cannot be avoided compared to those who access to television for men and women respondents respectively. Education attachment and knowledge of hepatitis awareness have the same direction for both respondents being no educated almost double the likelihood that the respondent would say that the hepatitis cannot be avoidable and more than double for men and women respectively, whereas as education level goes up secondary level the likelihood decline about 1.033 and 2.14 that the respondent would say that the hepatitis cannot be avoidable by men and women respectively. As resident of Punjab and KPK were less likely say that the hepatitis cannot avoidable for male respondents, whereas the ever married women resident of Sindh more likely to say that the hepatitis cannot avoidable. Wealth index is positively associated to hepatitis prevention for ever married women.

Table 1: Demographic characteristics of respondents

Variable	Ever married Men%	Ever married Women%
Age		
15-19	0.9	4.2
20-24	7.1	15.1
25-29	15.9	20.1
30-34	20.3	18
35-39	18.8	17
40-44	18.3	13.3
45-49	18.7	12.3
Place of residence		
Urban	48.5	46.8
Rural	51.5	53.2
Place of residence by province		
Punjab	34.5	35.1

Sindh	24.2	21.7
KPK	15.9	19.9
Baluchistan	17.6	14.4
GB	7.8	9
Educational status		
No education	27.1	56.2
Primary	17.1	13.5
Secondary	31.9	17.8
Higher	23.9	12.4
Wealth index		
Poor	37.2	37.4
Middle	17.5	19.1
Rich	45.3	43.5
Mass Media		
No Access to Radio	45.2	82.4
Access to Radio	54.8	17.6
No Read newspaper	64.2	74.3
Read newspaper	35.8	25.7
No access to TV	18.4	31.8
Access to TV	81.6	68.2

Table 2: Multinomial Logistic Regression analysis about knowledge of hepatitis prevention

Variables	Category	Responses against hepatitis prevention			
		Ever married Men No	Don not know	Ever married Women No	Don not know
Respondent age (ref: 45-49)	15-19	1.384	1.33	1.6504**	1.9512***
	20-24	1.124	0.951	1.3730**	1.3682***
	25-29	1.391	1.166	1.2350*	1.3201***
	30-34	1.022	1.101	1.1582	1.1968*
	35-39	1.196	0.909	1.0335	1.0395
	40-44	1.161	0.973	1.0256	0.9648
Residence (ref: rural)	Urban	0.68**	0.83**	0.7932**	0.9384
	Illiterate	1.939***	2.909***	2.6421***	2.8511***
Education (ref: higher)	Primary	1.392	2.453***	2.5871***	2.2513***
	Secondary	1.033***	1.973***	2.1423***	2.0244***
Has radio(ref: yes)	No	1.350**	1.613***	0.9474	1.1995**
Read newspaper(ref: yes)	No	1.955***	1.596***	1.3299**	1.3681***
Has Television(ref: yes)	No	1.466**	1.34**	1.4230***	1.1582**
Wealth index(ref: rich)	Poor	0.986	1.25	1.3964***	1.3669***
	Middle	1.132	1.44**	1.2419*	1.1219*
	Punjab	0.481**	0.66*	1.0125	1.6095***
Residence(ref: GB)	Sindh	0.941	1.077	2.0250***	2.0713***
	KPK	0.425***	0.17***	0.8267	1.5378***
	Baluchistan	1.471	1.037	1.1754	1.0130

Key: values represent odds ratio; ref implies reference category; ***p<0.001, **p<0.01, *p<0.05 and GB= Gilgit Baltistan

DISCUSSIONS:

Pakistan is a developing and ranked 6th in the world as a most populated country with lower literacy rate, higher proportion lived in rural areas and lack of health related quality of life. Various studies revealed that patients having chronic diseases possess poor health related quality of life.¹³ Place of residence are an important indirect measure for several health indices. Hepatitis knowledge and attitude vary by area and location, and urban has more knowledge about hepatitis prevention than rural in our study.¹⁴ Prevalence of HCV is more in rural area compared to urban.¹⁵ Similarly the Punjab and KPK province has found to be significant about the knowledge of hepatitis prevention compared to other provinces. Educational level and media awareness positively associated with the hepatitis prevention in our findings, people even primary level of education can better understand the health hazards than those who did not have it.¹⁶ As education level increase the awareness and knowledge about HCV and HBV increased.^{14,17} The number of women knowing about hepatitis C was much higher among women who had completed secondary or higher education.¹⁸ Zuberi et al (2008)¹⁹ exposed that increases the awareness level regarding hepatitis according to educational status, while the internet user in Pakistan had adequate core knowledge regarding hepatitis. Access to media yet another important indicator, the respondents having radio television and read newspaper have more knowledge about hepatitis prevention. In our study the TV is found to be mutual and major mode of awareness. Khan et al (2012)²⁰ found that in descriptive analysis, educated respondents and those read newspaper and listened to radio were more aware about hepatitis B vaccine, and professional were more awarded than civilian .

CONCLUSION:

These statistical outcomes can be an emerging in hepatitis control and management. It needs to be launch some massive and comprehensive awareness programme by utilizing all media modes particularly television. Potential efforts are needed where the lower literacy rate and

limited health care settings particularly in rural areas, so that the morbidity and mortality due to these infectious diseases can be declined.

REFERENCES:

1. WHO 2013, Global policy report on the prevention and control of viral hepatitis in WHO Member States, Geneva, Switzerland.
2. Chaudhary et al. Seroprevalence of hepatitis-B and C among the patients reporting in surgical OPD at Fauji Foundation Hospital, Rawalpindi: Review of 5 year literature. *Pak J Med Sci* 2007; 23(4):514-517.
3. World Health Organization. Prevention and control of viral hepatitis infection: framework for global action. Geneva, Switzerland, 2012. Available at: http://www.who.int/csr/disease/hepatitis/GHP_Frame_work_En.pdf?ua=1.
4. Lozano et al. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*, 2012; 380(9859):2095–2128.
5. Rein DB et al. The global burden of hepatitis E virus genotypes 1 and 2 in 2005. *Hepatology*, 2012; 55:988–997.
6. World Health Organization. Hepatitis C. Fact Sheet N. 164. Geneva, Switzerland, 2014. Malik AI, Tariq WUZ. Hepatitis-C infection in prospective. Where do we stand (Editorial). *J Coll Physic Surg Pak* 1999; 9(4):234-7.
7. Malik AI, Tariq WUZ. Hepatitis-C infection in prospective. Where do we stand (Editorial). *J Coll Physic Surg Pak* 1999; 9(4):234-7.
8. Talpur et al: prevalence of hepatitis b and c in surgical patients *pak j surg* 2006; 22(3):150-153
9. Muhammad Ghias MKP. Identification of epidemiological risk factors for hepatitis c in Punjab, Pakistan *J Ayub Med Coll Abbottabad* 2009; 21(2):156-161.

10. Akhtar et al: Hepatitis C Virus Infection in Pregnant Women in Lahore, Pakistan: An Analytical Cross Sectional Study. *International journal of agriculture & biology* 2014; 16(1):160-164.
11. Talpur et al: knowledge attitude of patients towards hepatitis B and C 2007; 23(3): 162-165
12. Chen, Y. H., *Biostatistics* 305. Multinomial logistic regression *Singapore Med j* 2005; 46(6): 259-268.
13. Saleem F, Hassali MA, Shafie AA, Atif M, ul Haq N, Aljadhey H. Disease related knowledge and quality of life: a descriptive study focusing on hypertensive population in Pakistan. *South Med Rev.* 2012; 5(1): 47-52.
14. Jabbar, Shameem F., "Epidemiological insights on the association between female genital mutilation and Hepatitis C Infection in Egypt: An Examination using Demographic and Health Survey data of Egypt, 2008." Thesis, Georgia State University, 2013. http://scholarworks.gsu.edu/iph_theses/281
15. Sina Aziz RK, Wajeaha Noorulain, Jamila Rajper. Frequency of Hepatitis B and C in rural and periurb an Sindh. *J Pak Med Assoc* 2010; 60(10):853-857.
16. Fleming, David A. et al: Caregiving at the end of life: Perceptions of health care quality and quality of life among patients and caregivers. *J Pain Symptom Manage* 2006; 31(5):407 – 420
17. Ashri NY. Hepatitis B and C knowledge among Saudi dental patients. *Saudi Medical Journal* 2008; 29(12):1785-1790.
18. El-Zanaty, F. a. A. W. (2009). *Egypt Demographic and Health Survey* 2008.
19. Zuberi et al: Appraisal of the knowledge of internet users of Pakistan regarding hepatitis using on-line survey *J Ayub Med Coll Abbottabad* 2008; 20(1):91-93.
20. Khan et al: Awareness about hepatitis B in patients and attendants *Journal of Rawalpindi Medical College (JRMC)* 2012; 16(2):198-199.

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2	Dr Jamal Abdul Nasir	Research Concept
3	Dr SyAed Arif Ahmed Zaidi	Literature Review and Medically Terminologies
4	Dr. NajeebUIRehman	Methodology Detail

WHEN YOU HAVE TO DEPART FROM THIS WORLD AND HAVE TO MEET DEATH (EVENTUALLY), THEN WHY WISH DELAY (WHY FEEL NERVOUS ABOUT DEATH).

Hazrat Ali (Karmulha Wajhay)