

Original Article

Hepatitis B Virus Infection Among Workers in Selected Garments

R Yasmin¹, SA Ahmed², F Zaman³, M Ansari⁴, E Azim⁵

Abstract

This cross sectional study was carried out among 146 garment workers from selected two garments industries to find out the magnitude of Hepatitis B virus infection in Narayanganj. Data was collected through face to face interview of the workers by using a pre tested questionnaire. The study was conducted during April to June 2007. Majority 56.2% were in the age group of 18-25 years followed by 32.9% were of 26-35 years. By sex partner majority 28.8% had their partnership with their husband, 11% had partnership with their wife and 2.7% had sexual relation with their boyfriend and 5.5% had relation with their girlfriend, 8.9% had history of sex with commercial sex worker. In this study only 11 (7.5%) respondents had HBV

positive. Among them who had the history of inject able drug taking 8(2.05%) were found positive. Statistically it was found highly significant. History of jaundice, only 1(0.7%) respondents had HBV positive while those who had no history of jaundice 10 (6.8%) had HBV positive. In this study it was found that 6(46.2%) HBV positive respondents who had sex with commercial sex worker and none of the respondents those who had sex with their wife were HBV negative. This was found statistically significant, that means development of hepatitis B virus might has an association of sex with sex worker. The study recommended mass screening of hepatitis should be conducted among the garments workers as it was found highly prevalence among the study workers.

Key Words: Hepatitis B, Garments workers, Infection, Acon hepatitis B virus screening strip.

Introduction:

In Bangladesh, Ready Made Garment sector plays an important role in the overall economic development of our country, approximately 20 lacs workers are working in this sector and it is also mentionable that about 76% of our foreign exchange is also earned by this sector.¹

Hepatitis B is a major cause of chronic liver disease and a significant public health issue Between 350 million to 400 million people worldwide are

chronically infected with HBV.² The HBV prevalence in Bangladesh is 2.3 to 9.7 percent with an approximate carrier pool of 10 million³.

These include healthy adult population 4.4 to 9.7%, healthy children 3%, and schoolgirls 2.3%, a rural community 6.4% and slum communities 3.8%. Perinatal or vertical transmission of HBV in Bangladesh is infrequent due to a low HBeAg positivity rate (30.1%) among pregnant females with HBV infection³.

Among the high-risk population HBV carrier rate that varies widely such as professional blood donors 19.0 to 29.0%, family members of HBsAg carrier 20.6%, health care workers 8.7%, parenteral drug abusers 6.2 to 12.0%, truck drivers 5.9%, commercial sex workers 9.7%, multiple units of blood recipients 13.8%. HBV is an important cause of liver disease in Bangladesh and is responsible for 19.0 to 35.0% of acute viral hepatitis, 35.7% of acute liver failure, 33.3% to 40.5% of chronic hepatitis and 46.8% of hepatocellular carcinoma³.

Garments industries play a major role in our economies. This is the number one way to earn foreign currencies. Due to adverse working conditions, absence of staff amenities, workplace stress, poor wages, low socio-economic background and lack of knowledge about health, hygiene and small injury by their day to day activities at house and at work place, they are more prone to Hepatitis B Virus infection. The current

1. Dr. Rabeya Yasmin, MPH, Sr. Lecturer
Department of Community Medicine, Bangladesh Institute of Health Sciences (BIHS), Dhaka.

2. Prof (Dr) Sk. Akther Ahmed
Ex. Director, Professor & Head, Department of Occupational & Environmental health. NIPSOM, Mohakhali, Dhaka.

3. Dr. Farhana Zaman, MPH, Sr. Lecturer
Department of Community Medicine, Bangladesh Institute of Health Sciences (BIHS), Dhaka.

4. Dr. Mahmuda Ansari
Medical officer, Marie Stopes, Dhaka.

5. Dr. Ehsamul Azim, MPH, Lecturer
Department of Community Medicine, Bangladesh Medical College, Dhaka.

Corresponding Author

Dr. Rabeya Yasmin MPH, Sr. Lecturer
Department of Community Medicine, Bangladesh Institute of Health Sciences (BIHS)

study is an attempt to find out the magnitude of occurrence of HBV infection among the garments workers.

Methodology:

This cross sectional study was conducted during April to June 2007. In two garments industries 300 workers were working. Out of three hundreds, 146 workers were willing to participate in the study and available during data collection period. Data was collected through face to face interview by using a pre tested questionnaire. Acon, Hepatitis B Virus screening strip used to find out magnitude of Hepatitis B virus infection. Hepatitis B surface antigen (HBsAg) Rapid Diagnostic Test Strip is a rapid, direct binding test for the visual detection of hepatitis B surface antigen (HBsAg) in serum or plasma. It is used as an aid in the diagnosis of hepatitis B infection. This one step test is very sensitive and only takes 20-30 minutes. Test results can be read visually without any instrument. Data was analyzed through SPSS 11.5

Result:

146 respondents majority 82(56.2%) were in the age group of 16-25 years & 48 (32.9% were of 26-35 years.

Table 1:- Distribution of Respondents by age group

Age in group	Frequency	Percent
Age less than 18 years	6	4.1
18-25 years	82	56.2
26-35 years	48	32.9
36-45 years ¹⁰		6.8
Total	146	100.0

Mean age 24.49, Std. Deviation ± 6.61

Majority 92.5% were Muslim. By education 50% of the respondents had education of primary level. 50 (34.2%) earns in between 3000-5000 taka per month. (57.5%) lived in semi pucca house, 82.9% use sanitary latrine. 36.3% respondents were the worker of sewing section, 37(25.3%) was of quality control section. 54 (73%) get their save in the

saloon. 58(39.8%) had their partnership with their legal partner,

Table 2:- Distribution of Respondents by Sex partner

Sex partner	Frequency	Percent
Husband	42	28.8
Wife	16	11.0
*Boyfriend	4	2.7
*Girlfriend	8	5.5
* Sex worker	13	8.9
Total	83	56.8

In this study 11 (7.5%) was detected having positive.

Table- 3:-Distribution of Respondents by HBV* screen test.

HBV screen test	Frequency	Percent
Positive	11	7.5
Negative	135	92.5
Total	146	100.0

8 (2.05%) were found HBV positive who had H/O inject able drug use

Table- 4:-Distribution of Respondents in relation to drug addiction and HBV screening test.

History inject drug taking	HBV screen test		Total
	Positive	Negative	
Yes	8	16	24
No	3	119	122
Total	11	135	146

$\chi^2 = 27.253, p = .000$

History of jaundice, 1(0.7%) had HBV positive while those who had no history of jaundice 10 (6.8%) had HBV positive.

Table 5: Respondents in relation to History of jaundice and HBV screen test.

History of jaundice	HBV screen test		Total
	Positive	Negative	
Yes	1	36	37
No	10	99	109
Total	11	135	146
$\chi^2 = 1.649, p = .179$			

2 (8.2%5) with their opposite sex friend and 13 (8.9%) had history of sex with commercial sex worker.

Table-6:- Distribution of Respondents in relation to sex partner and HBV screening

HBV screen test	Sex partner					
	Husband	wife	Boy friend	Girl friend	Sex worker	Total
Positive	0 (0.0%)	2 (12.5%)	1 (25%)	2 (25%)	6 (46.2%)	11(13.3%)
Negative	42 (100%)	14 (87.5%)	3 (75%)	6 (75%)	7 (53.8%)	72(86.7%)
Total	42 (100%)	16 (100%)	4 (100%)	8 (100%)	13 (100%)	83(100%)

Discussions:

A descriptive cross sectional study has been conducted to find out the magnitude of Hepatitis B virus infection among 146 garment workers.

Among the respondents majority 82(56.2%) were in the age group of 16-25 years followed by 48 (32.9%) were of 26-35 years. By gender the male and female were very nearer. Among them respondents had education at the level of primary and by monthly income majority between 3000-5000 taka per month. By residence majority of the respondents lived in semi pucca house, and had the

practice of sanitary latrine. Among the respondents majority were the worker of sewing section followed by quality control section, finishing and cutting section . Among the total male respondents majority get their save in the saloon. By sex partner majority had their partnership with their legal partner, and some respondents reported they had sex with their opposite sex friend and also history of sex with commercial sex worker. Among the respondents apportion of them had the history of inject able drug addiction. In the current study an attempt was undertaken to know the prevalence of Hepatitis B Virus by test strip. Among the respondents 11 respondents were detected having positive. Among the respondents who had the history of drug addiction, some of them were found HBV positive. Statistically it was highly significant. One study conducted in Taiwan by Chung concluded that parental drug abuse may be considered a possible reason for the significantly higher rates of HBV and HDV among parental drug abusers.⁵ One study conducted by Islam MN and associates on prevalence of Hepatitis B virus in Dhaka City and found patients with post-transfusion hepatitis and doctors with acute hepatitis showed the highest incidence, being 60% and 65.5% respectively.HBsAg was detected only in 15.4% of children and 27.2% of adult with acute hepatitis.⁶

Study conducted by Khan M and Nazrul in Bangladesh among the voluntary blood donors and found prevalence of hepatitis B as 3.5%⁷.

Cross-sectional study conducted by Shiirin T and associates on prevalence and risk factors of hepatitis B virus , hepatitis C virus ,HIV infection among 266 drug abusers attending a drug addiction treatment center in Dhaka, Bangladesh. The seroprevalence of hepatitis B virus surface antigen, anti-HBV core antigen, anti-HBV surface antigen,was 6.2%.⁸ The seroprevalence of hepatitis B virus infection in both IDUs and non-IDUs was significantly higher among those who had a history of extramerital and paramerital sex⁹.

By suffering from Jaundice it was reported by a group of respondents had the history of jaundice. Among them only few were found HBV positive Prevalence of jaundice was found among the garments workers in the study conducted by Ahmad SA¹⁰ and MajumderPP¹¹.

Respondents those who had sex with sex worker were HBV positive and none of the respondents those who had sex with their wife were HBV positive. This was found statistically significant. That means development of hepatitis B virus might has an association of sex with sex worker.

Conclusions:

In Bangladesh, there is a dearth of research on prevalence and risk factors for hepatitis B virus infection. The current study would like to conclude that prevalence of hepatitis B virus among the garments workers is 75/1000 especially in the age group 26-35 years.

References:

1. Rahman S. Global Shift: Bangladesh Garment Industry In Perspective. Asian Affairs, Vol. 26, No. 1 :75-91, January-March, 2004.
2. Majumder PP. Social, Economic and Health Insecurity Affecting Women's Participation in the Labour Market and their Labour Productivity. Empowerment, 2005, Vol. 12, p-1-16.
3. Majumder PP. Health Status of the garments workers in Bangladesh. Project Report 01, BIDS 2003, Dhaka.
4. Majumder PP. Begum A. The Gender Imbalances in the Export Oriented Garment Industry in Bangladesh Policy Research Report On Gender And Development Working Paper Series No. 12. The World Bank.
5. Chung D-C, Ko Y-C, Chen CJ, Chen E-R, Wu C_C4, Wu P-S. Seroepidemiology of hepatitis b virus, hepatitis d virus, and human immunodeficiency virus infections among parenteral drug abusers in southern Taiwan. Journal of Medical Virology-, Volume 28, Issue 4 , Pages 215 - 218.
6. Islam MN, Islam KM, Islam NHepatitis-B virus infection in Dhaka, Bangladesh. Bangladesh Med Res Counc Bull. 1984 Jun-, 10(1)-.1-6.
7. Khan M, Nazrul I. A study on prevalence of syphilis, hepatitis B and HIV among the voluntary blood donors in Bangladesh./nt Conf AIDS. 2000 Jul 9-14: 13: abstract no. WeOrA527
8. Shirin T, Ahmed T, Iqbal A, Islam M, Islam MN. Prevalence and risk factors of hepatitis B virus, hepatitis C virus, and human immunodeficiency virus infections among drug addicts in Bangladesh. Journal of Health, Population and Nutrition, 2000 Dec; 18(3)-.145-50,
9. Gadi Lalazar, Deborah Rund, Daniel Shouval. Screening, prevention and treatment of viral hepatitis B reactivation in patients with haematological malignancies. British Journal of Haematology; Volume 136 Issue 5 Page 699-712, March 2007.
10. Ahmad SA, Elias M, Khan AW, Hadi SA. Musculoskeletal disorders among the garments workers. Project Final Report NIPSOM, AusAid & WHO.
11. Majumder, P.P. (2001) "Occupational hazards and health consequences of the growth of garment industry in Bangladesh" In P. Paul- & B. Sen (eds). Growth of Garment Industry in Bangladesh: Economic and Social Dimension. Proceedings of a National seminar on ready-made garment industry, pp. 172-207. (Dhaka: BIDS).