KNOWLEDGE OF HEPATITIS PREVENTION AMONG REPRODUCTIVE AGE GROUP WOMEN FROM PAKISTAN DEMOGRAPHIC HEALTH SURVEY DATA 2012-13

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Abstract

Background: Pakistan and Egypt bear more than 80% of the burden of disease as more than 12 million people are suffering from hepatitis B or C infection and there is addition of about 150000 new cases each year.

Methods: We have used secondary data PDHS - Pakistan Demographic and Health Survey, DHS has become the gold standard of survey data in developing countries, a project by ORC Macro with financial support from the USAID for the International Development carried out as multistage, cluster sampling for its data collection on multiple questions, most pertinent from our study point view the maternal and child health related to knowledge attitude and practices of hepatitis and its prevention.

Results: The final multivariate model six variables came out to be statistically significant with their adjusted odd's ration p-value and 95% confidence interval i.e., use of new disposable syringe every time for therapeutic injection purpose, the respondent being rich as wealth index, reading newspapers and magazines, watching television as source of information, area of residence being urban and with higher educational level came out to be most important variable which are making statistically significant difference for prevention of hepatitis among females of reproductive age group as our study population from Pakistan Demographic and Health Survey 2012-13.

Conclusion: It is quite evident from the results of our study that use of new disposal syringes, being rich, being educated, having access to information resources like watching television, listening radio, reading newspaper & magazine and being as an urban dwellers are significant factor among women of reproductive age groups for prevention of hepatitis.

Keywords: Knowledge, hepatitis prevention, reproductive age women, PDHS, Pakistan

Introduction

Viral Hepatitis is one of the leading causes of morbidity and mortality all over the world as 1.34 million deaths occurred in 2015 due to chronic Hepatitis B & C infection resulting as liver cirrhosis and hepatocellular carcinoma. It has been identified as 7th leading cause of mortality from all over the world as per WHO global burden of disease in 2013 (1). Although being one the major public health burden of disease globally, it has been ignored as health priority by the healthcare providers until recently (2). The world health assembly in its meeting held in 2016 on the agenda for "Sustainable Development Goals", the issue of hepatitis control and prevention was recognized as the major public health goal as SDG-3 as call for global healthcare strategy with the aims and objectives for elimination of viral hepatitis by the year 2030 (3).

Report from WHO EMRO region, about 21 million people are suffering from chronic hepatitis B virus infection while 15 million suffering from hepatitis C virus infection by the year 2016 and the global burden disease data 2010 indicates more than 90,000 deaths due to Hep B & C in this region which is more than HIV, tuberculosis or malaria (2). Out of total 19.9 million HCV infected about 15 million are chronically infected individuals, out of which 80% are from Egypt and Pakistan, while 0.5 million chronically infected individual are from Iran, Saudi Arabia, Afghanistan and Yemen (4). The major cause of liver diseases in the Eastern Mediterranean region is the Hepatitis C infection as in its national level HCV antibody prevalence among the general population of Egypt is 10% and about 5% in Pakistan (5).

This high prevalence of hepatitis C infection among the general population particularly in the reproductive age group indicates high risk of exposure through our healthcare delivery settings with poor infection control protocols (6). The literature search reveals that the people get infected with hepatitis infection from healthcare setting even being unaware of its source and majority of the people remain undiagnosed and untreated of this silent killer nature of the disease by the time, they develop some complication. The important risk factors for hepatitis B & C infection transmission are reuse of disposable syringes for therapeutic injection practices, minor and major surgical procedures, contaminated unsterilized surgical and dental instruments, unsafe blood transfusion, sharing of razors and even history of hospitalization. High prevalence of hepatitis C infection has been reported among children from our many rural local settings. The Pakistan Demographic Health Survey 2012 - 13 provides data for population monitoring and current health situation. It is well documented for its importance with respect to public health policy by taking into account the level of awareness, population concerned beliefs for their health seeking behavior determining the population as risk if they don't follow the prerequisite standard and protocols as per their knowledge of prevention of infectious diseases like hepatitis (7). Therefore the rationale of our study was to come up with base line data of reproductive age group females about prevention of hepatitis using PDHS 2012-13 as secondary data and to identify important risk factors for its better control for the general population, clinicians and put forward suggestions and recommendations for the stake holders, policy makers in our settings. The objective of the study was to determine knowledge about the prevention of hepatitis among women of reproductive age group 15-49 years through secondary data DHS 2012-13.

Methodology

This study has been conducted using a cross sectional study design as we have used secondary data from PDHS 2012-13. The study population consists of the selected sample women of reproductive age group 15-49 years. The study was completed in 27 weeks. This survey is conducted after every 3-5 years. Our study sample size consists of nationally representative sample of over 95,000 households collected by using a stratified two stage cluster sampling. In First stage total Urban Frame was 43000, among them total 248 sample points were taken, there were total 105000 rural frames, from them 252 sample points were taken. In Second stage, household were calculated. 1 sample point contains 28 house hold. Total 498 sample points were taken for this study, total of n=13557 households were included. This whole process of data collection was carried out by the NIPS staff and their field workers team from October 2012 till March 2013 supervised by the trained personals, data field editors, at least one male and about three females interviewers with data quality control checked and ensured as coordinated by the NIPS senior staff members

simultaneously. The questionnaire received from the field after their editing were entered by the field computer assisting staff immediately and uploaded for the senior staff concerned for its editing and further processing on same day. Household information was collected through the Household Questionnaire in all selected households from ever-married women age 15-49. In each household only ever married women age 15-49 were included in our study. A total of 13944 household have been included in this study, the process of secondary data editing and its analysis was carried out at NIPS head office with its double entry and check till the tabulation of results (8). Our study data analysis was carried out on secondary data on the variables of interest chosen from the DHS data as mentioned above and its whole analysis was performed at SPSS 20.0 version. The data analysis plan was carried out as the descriptive analysis as frequency and its percentages in tabulated form and for few continuous variables mean and standard deviations were calculated. Univariate analysis was performed to know association of various variables of interest with the outcome variable through chi-square and its p-value alpha 0.05 taken as statistically significant and corresponding 95% confidence interval was calculated before conducting binary and multiple logistic regression analysis (with adjusted odd's ratio, p-value and 95% confidence intervals) to come up with the final multivariate model for those independent variables of interest which were statistically highly significant and showed their association in the Univariate analysis by calculating Chi-square, p-value and 95% CI and binary logistic regression as determined through odd's ratio, -value and its corresponding 95 confidence intervals.

Table 1: Descriptive statistic for socio-demographic variables in frequency and percentages (n=13557)

Variable Name	Frequency	Percentages
Age		
15 – 30	6149	(45.4%)
31 – 40	4591	(33.9%)
41 – 49	2817	(20.8%)
Residence		
Urban	6351	(46.8%)
Rural	7206	(53.2%)
Education		
No Education	7624	(56.2%)
Primary level	1831	(13.5%)
Secondary level	2415	(17.8%)
Higher level	1687	(12.4%)
Wealth Index		
Poor	5072	(37.4%)
Middle	2589	(19.1%)
Rich	5896	(43.5%)

Results

The socio-demographic variables descriptive variables statics are presented in table No 1 showing their relative observed number as per reproductive which reveal more female (45.4%) in the age group 15 - 30 years while in the age group 31 - 40 years (33.9%) and less study subjects in the age group 41 - 49 years. There is not much difference as per urban (46.8%) and rural (53.2%) in the reproductive age group females. So far as the education level of these females is concerned majority (56.2%) of them have no education at all, while hardly 13.5% at the primary education level and (17.8%) up to secondary education, while only (12.4%) are above the secondary education level from 2012-13 DHS data set. Similarly majority of the females are poor (37.4%) and small number of the female belongs to middle class family (19.1%) and there are (43.5%) responded to be in rich category, most of study respondent are blew middle class as per their wealth index.

Table 2: Descriptive Statistic of Hepatitis in Frequency and its Percentages(n=13557)

Variable Name	Frequency	Percentages
Ever heard about STI		
Yes	6556	(48.4%)
No	6953	(51.3%)
Can Avoid Hepatitis by safe sex		
No	6296	(46.4%)
Yes	1083	(08.0%)
Don't Know	6178	(45.6%)
Can Avoid Hepatitis by safe blood		
No	6256	(46.1%)
Yes	1123	(08.3%)
Don't Know	6178	(45.6%)
Can Avoid Hepatitis by use of new syringe		
No	5851	(43.2%)
Yes	1528	(11.3%)
Don't Know	6178	(45.6%)
Can Avoid hepatitis by contaminated water		
No	4856	(35.8%)
Yes	2523	(18.6%)
Don't Know	6178	(45.6%)
Can Avoid by avoiding personal contact		
No	6279	(46.3%)
Yes	1100	(08.1%)
Don't Know	6178	(45.6%)
Can be avoided by Dentist Instruments		
No	7074	(52.2%)
Yes	305	(02.2%)

Table 2 shows knowledge of respondents about the hepatitis, around 48.4% respondents knows about STI and remaining did not hear about the STI. Only 8% respondents know that by practicing safe sex prevention of hepatitis can be done. Similarly only 8.3% know about the prevention of hepatitis through safe blood. Only 11.3 % know that by use of new syringe prevention of hepatitis is possible. Only 18.1% have knowledge that hepatitis occur through contaminated water. Around 8% know that hepatitis can be avoided by personal contact and only 02.2 % have knowledge that it can be avoided by dentist instruments.

Univariate Analysis:**Table No. 3: Univariate Analysis for Association of Hepatitis Prevention(n=13557)**

Variables & categories	Hepatitis can be Prevented		Chi-square	P-value	95% CI
	No = 0	Yes = 1			
	Obs No and its %ages				
Age Groups in years					
15 – 30	3708 (47.0%)	2441 (43.1%)	20.34	0.000	0.000 – 0.000
31 – 40	2578 (32.6%)	2013 (35.6%)			
41 – 49	1610 (20.4%)	1207 (21.3%)			
Use of new syringe					
No	3426 (43.4%)	2664 (47.1%)	17.94	0.000	0.000 – 0.000
Yes	4470 (56.6%)	2997 (52.9%)			
Opening of new syringe					
No	4470 (56.6%)	2997 (52.9%)	17.94	0.000	0.000 – 0.000
Yes	3426 (43.4%)	2664 (47.1%)			
Wealth Index					
Poor	3486 (44.1%)	1586 (28.0%)	433.61	0.000	0.000 – 0.000
Middle	1517 (19.2%)	1072 (18.9%)			
Rich	2893 (36.6%)	3003 (53.0%)			
Watching Television					
Not at all	2877 (36.4%)	1438 (25.4%)	224.14	0.000	0.000 – 0.000
Occasionally	1537 (19.5%)	1086 (19.2%)			
Once a week	178 (02.3%)	108 (01.9%)			
Almost daily	3304 (41.8%)	3029 (53.5%)			

Table 03 shows that significant variables such as age, use of new syringe, opening of new syringe, Wealth Index and watching television when cross tabulated with variable hepatitis can be prevented in Chi-square analysis. P value of each variable is given in table 02.

Binary Logistic Regression Analysis:**Table No. 4: Binary Regression Analysis showing association with Prevention of Hepatitis (n=13557)**

Variable names & its categories	Odd's Ratio	P – Value	95% CI
Age Groups in years			
15 – 30	1		
31 – 40	1.186	0.000	1.098 – 1.282
41 – 49	1.139	0.005	1.040 – 1.247
Use of new syringe			
No	1		
Yes	0.862	0.000	0.805 – 0.923
History of genital discharge			
No	1		
Yes	1.074	0.125	0.980 – 1.177
History of STI			
No	1		
Yes	1.663	0.000	1.331 – 2.079
Opening of new syringe			
No	1		
Yes	1.160	0.000	1.083 – 1.242
Wealth Index			
Poor	1		
Middle	1.553	0.000	1.408 – 1.713
Rich	2.282	0.000	2.110 – 2.467
Watching Television			
Not at all	1		
Occasionally	1.414	0.000	1.279 – 1.563

The binary logistic regression analysis showed association of those statistically significant variables from the univariate analysis with prevention of hepatitis from DHS data from the women of reproductive age group, as with the advancing age there is an increase (odd's ratio) of 1.86 times hepatitis prevention in the age group 31- 40 year while this increase is 1.139 times for the age group 41 - 49 years taking lower age group of 15 - 30 years as the reference category as its P-value 0.000 and 0.005 with their 95% confidence interval 1.098 - 1.282 and 1.040 - 1.247 respectively. The variable of genital discharge as replied by the respondents came out to be statistically insignificant as its p-value 0.125 and its 95% confidence interval 0.980 - 1.177 which contains zero in between, rest of all the independent variables are statistically highly significant with the outcome variable with their odd's ratio as measure of association and corresponding 95% confidence interval as quite obvious from the above give table No.4.

Table No 5: Multivariate Model for Association of Variables with Prevention of Hepatitis (n=13557)

Variable names & its categories	Ad Odd's Ratio	P – Value	95% CI
Use of new syringe			
No	1		
Yes		0.005	1.016 – 1.170
Wealth Index			
Poor	1		
Middle	1.359	0.000	1.225 – 1.508
Rich	1.600	0.000	1.438 – 1.780
Reading Newspaper magazine			
Not at all	1		
Occasionally	1.019	0.742	0.912 – 1.138
Usually / Daily	1.468	0.0.00	1.230 – 1.752
Watching Television			
Not at all	1		
Occasionally	1.139	0.016	1.025 – 1.265
Once a week	0.909	0.462	0.706 – 1.172
Almost daily	1.184	0.001	0.076 - 1.302
Area of Residence			
Urban	1		
Rural	0.789	0.000	0.727 – 0.858
Level of Education			
No Edu	1		
Primary	1.050	0.398	0.937 – 1.177
Secondary	1.040	0.518	0.923 - 1.173

Multivariate Logistic Regression Analysis: The final multivariate model out of more than 18 variables above mentioned six variables came out to be statistically significant with their adjusted odd's ratio p-value and 95% confidence interval as shown in table No 5. Use of new disposable syringe every time for therapeutic injection purpose, the respondent being rich as wealth index, reading newspapers and magazines, watching television as source of information, area of residence being urban and with higher educational level came out to be most important variable which are making statistically significant difference for prevention of hepatitis among females of reproductive age group as our study population from Pakistan Demographic and Health Survey 2012-13 (8).

Discussion

The exposure of general population particularly females of reproductive age group to risk factors for HBV & HCV infection still remain an important hazard in countries like Pakistan with scarce resources and high prevalence rate of such infectious problems. The knowledge attitude and practices surveys are important source of base line data for designing preventive program at community level targeted towards most vulnerable population of the society keeping in view the intervention for prevention from public health aspect. This study has been conducted using secondary data from Pakistan demographic and health survey 2012-13 (8) for the reproductive age group females from all over the Pakistan. Despite the fact that DHS data has been collected from different part of our socio-demographic background divergent population from all over the country, the result of our study reveal good knowledge that hepatitis can be avoided as from the descriptive statistics 41.8% of the respondent have knowledge about its prevention while 58.2% replied in no response which is in consistent to the finding reported by Noubiap JJ and Nansseu JR et al in Cameroon (9).

The Pakistan Demographic and Health Survey (PDHS) data analysis revealed that most of the respondent were aware of the hepatitis infection response was 86.3% but this data lack hepatitis B vaccination, when asked for can hepatitis be avoided 41.8% of the study participants replied in yes and 58.2% were not again aware of it. Our study this finding in line with the finding from the knowledge attitude and practice study conducted by Al-Hazmi AH et al from Saudi Arabia among dentists (10). Although our study participants have also has been inquired about sterilization of the dentist instruments, which is believed to most hazardous in our settings but due to lack of pre-requisite information from the reproductive age group women this important study variable is not statistically significant from DHS data set neither in the Univariate nor in the binary logistic regression. Our this finding from our study results put more emphasis to address the awareness gap through primary prevention aspect of health education as important tool of safety for community prevention among the maternity and child health level. Similarly, another most important risk factor safe blood transfusion variable from the results of our study when compared with studies results from Nigeria (11) and Palestine by Al-Dabbas M (12) only 8.3% of the were aware of regarding safe blood transfusion practices while 91.7% were totally ignorant of this important factor hence this variable lost its significance from our study data set.

In the final multivariate logistic regression model only six variables use of new syringe (AOR 1.090, P-Value 0.005 and 95% CI (1.016 - 1.170) , wealth index as being rich (AOR 1.600, p-value 0.000 with 95% CI (1.438 - 1.780) taking poor as reference category, reading newspaper and magazines (AOR 1.468, p-value 0.000 with 95% CI (1.230 - 1.752) watching television AOR 1.184, p-value 0.001 and its 95% CI (0.076 - 1.302) as source of information and being urban dwellers was more positively associated with prevention of hepatitis as AOR 0.789 with p-value 0.000 and its 95% CI (0.727 - 0.858) which is quite narrow as well making it highly significant and similarly being higher level literate (intermediate and above) maintained their statistically significant adjusted odd's ratio 1.342 with p-value 0.000 and 95% CI (1.159 - 1.553) for the all the other variables as per their adjusted odd's ratio, p-value and 95% confidence interval. HiamChemaitelly et al., in 2013 (13) concluded that there was no statistically significant difference in HCV prevalence between those who have heard of HCV infection and those who have not (14.4% vs. 15.9%, p>.05). Similar results were found for the other HCV knowledge measures including

those specific to HCV modes of transmission and to the sources of information for HCV awareness. Logistic regression analyses did not demonstrate an association between HCV knowledge and HCV prevalence.

Conclusion

It is quite evident from the results of our study that use of new disposal syringes, being rich , being educated, having access to information resources like watching television, listening radio, reading newspaper & magazine and being as an urban dwellers are significant factor among women of reproductive age groups for prevention of hepatitis. The results of our study from PDHS Data 2012-13 regarding hepatitis prevention among reproductive age group women from Pakistan conclude that the awareness, positive attitude towards hepatitis prevention and its practices is still lacking among our general population.

Our study results put more emphasis to bridge these identified gaps to be strengthened particularly from our countries provinces with far-flung areas and main cities semi-urban and particularly the rural population as there exit lack of understanding about hepatitis infection control and prevention. Here comes the role of the stakeholder from public health authorities concerned not only through mass media but also from the gross root level through our country integrated maternity and child health program for women of reproductive age groups extensive health education campaign for the city slums and rural areas to reduce the burden of disease through primary prevention

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