Knowledge, Attitude and Practices Regarding Prevention of Hepatitis B & C Among House Officers of Khyber College of Dentistry ,Peshawar, Pakistan

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ABSTRACT

Background: Medical professionals pare at greater risk of needle stick injuries and developing viral infection including hepatitis B and C.

Objectives: To assess Knowledge,Attitudes and Practices regarding the prevention of Hepatitis B virus infection, in House officers of Khyber College of Dentistry Peshawar.

Material and Methods: A cross-sectional study was conducted in Khyber College of Dentistry from October 2016 to February 2017.Data was collected through a semi-structured questionnaire. The sample was composed of 50 Dental house officers. Sample was selected as a cluster by selecting all the house officers. Among them 10 house officers refused to participate. The data was analysed using SPSS version 20.Knowledge attitude and practices was assessed as frequency and percentages.

Results: Out of 40 subjects 26(65%) were male and 14(35%) were female. Participants had fair level of knowledge regarding disease transmission, prevention and treatment, generally positive attitudes but poor practices about standard precautions and use of personal protective equipment (PPE). Most of the respondents were vaccinated and attained few training regarding Hepatitis B & C.

Conclusions: The study showed good knowledge which can be improved by formal training and follow up of the preventive measures in dental care providers. However poor preventive practices need consideration and can be improved by following strict preventive protocols.

Key words: *Knowledge, Attitudes, Practices, Hepatitis B, C*

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INTRODUCTION:

Medical professionals are at greater risk of needle stick injuries and developing viral infection including hepatitis B and C. It is estimated that there is about 6%-30% risk of Hepatitis B after a needle injury to non-immune person and 5-10% for Hepatitis C and 0.3 % For HIV[1].According to WHO estimates hepatitis B virus infects 300,000 every year; and 5-10% develop cirrhosis and Liver cancer and 350 million are chronic carriers of the virus. About 3% of the world population is effected by hepatitis C virus, and approximately 30,000 new acute infection and 8000-10000 death occur each year[2].

The dental surgery provides an ideal environment for cross-infection with pathogens other than Hepititis B ,C including CytoMegalo virus, hepatitis B and C viruses, herpes simplex virus types 1 and 2, Mycobacterium Tuberculosis (TB), staphylococci, streptococci, and other viruses and bacteria that colonize or infect the oral cavity and respiratory tract[3].

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Hepatitis B,C and D are the main types of viruses that are a matter of concern for a dentist.

Hepatitis B virus is transmitted mainly through exposure of mucous membrane to blood of a person having either acute or chronic Hepatitis B. Hepatitis D can also occur as a co- infection in patients having either Hepatitis B or C infection. Hepatitis B virus is heat stable and can survive in dried blood up to a week posing a risk to infection without any needle prick[4, 5, 6].

Various infection control procedures must be strictly followed to avoid potential viral infections. Unfortunately standard infection control measures are not routinely followed by dentists. Effective education regarding safety measures to dental students and new dentists can be very fruitful[7,8].

The present study is therefore designed to assess the knowledge attitude and practices of house officers because they are new in their field and effective preventive -strategies are very important so against such chronic infections. This will assist the college administration in collaboration with the clinical facilities managers to remove the risk practices and to uptake the standard precautionary measures.

MATERIALS AND METHODS:

A Cross Sectional Descriptive Study was conducted in the clinical area of Khyber College of Dentistry Peshawar between October 2016 to February 2017. All the House Officers of five main units, that are Operative Dentistry, Orthodontics, Prosthodontics, Oral & Maxillofacial Surgery, Pediatrics Dentistry of Khyber College of Dentistry, were included in the study. Degree students and Post-Graduateand Senior dental House Officers were excluded. Sampling was not feasible in such a small target population, as this would have limited the generalizability of the findings. Thus questionnaires were distributed for self-administration to all the House Officers of college. Cluster sampling technique was used, because of limited number of House officers. Semi-structured, pre-coded questionnaires were developed and the respondents interviewed to collect data. The aims and objectives of the study was explained to them, and they were informed that, if they do not want to take part in the study they do not have to, as no pressure are on them to participate. The questionnaires were collected on daily basis from the interviewers and checked by the principal investigator. Upon completion of data collection, data were coded, captured on M.S Excel software and then into the statistical Package for Social Sciences (SPSS) version 20 for analysis.

RESULTS:

Among 50 house officers 10 refused to participate. The mean age of the remaining 40 participants were 24.5 ± 2.5 SD. 26(65%) were male and 14(35%) were female. Regarding the knowledge of the disease as shown in Figure 1, 100% (n=40) of the house officers knew that a healthy looking person can be a carrier of Hepatitis. Knowledge regarding transmission modes was good for many of the routes, while some modes were wrongly answered by some of the house officers. Most were also aware that hepatitis was transmitted by sharp instruments/syringes and blood transfusion (90 and 100% respectively). Still, there were no knowledge regarding non-transmittable routes.

Knowledge of the prevention was fair for some methods, while misconceptions existed regarding staying away from patients as a method of HBV & HCV prevention. About 10 % wrongly answered yes to staying away as a method of prevention. They selected this answer on the assumption that it is an infection which is spread by treating such patients and there is chance of prick. Using screening blood before transfusion were correctly answered as yes by all respondents as 100% respectively. The correct response to using clean Instruments / syringes was chosen by 90 % of the study sample.

Knowledge about the prevention methods, the response on the question about vaccine as a preventive methods was 100% and all respondents were having belief that it can prevent the occurrence of Hepatitis B. and about 50% answered that the treatment of hepatitis is possible and successful, while 40% answer in negative and 10% knowledge did not know the treatment.

Almost about 87% know about hospital policy of screening for HBV and HCV in hospital of patients, while 10% where not aware of the policy of the hospital. While it was in the policy of hospital that each and every patient coming for surgical process should be screened for the Hepatitis B and C virus.

Attitudes

Generally attitudes of the house officers towards people living with HBV and HCV were found to be accepting and positive. As shown in Figure 2, 70% of the house officers showed their willingness to provide treatment for HBV and HCV patients. Regarding the question whether they consider treatment of HBV and HCV patients a waste of resources, 85% disagreed while 15 % said that it is a waste of resources because they are not going to get cured anyway.

Regarding vaccination of Hepatitis B, 100 % house officers believed in vaccination protection against Hepatitis B and similarly 100 % believed in prevention of Hepatitis through vaccination.

All respondents reported that they wash their hands whatever is available i.e. soap, antiseptic or just water before and after nursing procedures. Plain water was reported 20% of the times, soap/water 40% and the use of antiseptic solution 10 %. This shows good hand washing practices of the House Officers.

Practices:

As shown in table 1,the practice of always wearing gloves when taking patients was however reported by 90%, whereas 10 % reported

occasional use. The main reason for never or occasional use of gloves was reported to be interrupted or short supplies (45%). To the question on the use of personal protective equipment, masks were reported 50% of the times, protective goggles 50%, apron in Operation theaters or wards 85% and rubber boots in operation theaters 50% of the times.

The most frequently reported reason for not using personal protective equipment (PPE) was interrupted or short supplies by 25 % of the study sample, followed by 20 % who didn't have any reasons for no use.

Twenty six House Officers (65%) reported needle pricks during the last one year whereas 35% said they didn't remember about the pricks. This constitutes approximately 20% of the sample. Of those 8 House Officer responded with more than 3 pricks in a year ,while almost 15% show the results of a single or double needle prick in the last year.24% (n=17) said that they have exposed to hepatitis B or C positive patients. Almost half had taken care or treated patient during their professional career, while 45% (n=18) were exposed to 15 or more patients with HBV and HCV positive.

When asked about the use of barrier methods used while attending the HBV and HCV positive patient, the responses was the use of double glove, mask, apron and protective goggles.

Regarding training received against prevention of Hepatitis B and C; 70% (n=28) house officers got some form of training. Of those 12 (30%) respondents had received no training. Some house officers have only attended some lectures or a one day seminar.

Figure 01: General Knowledge about Hepatitis

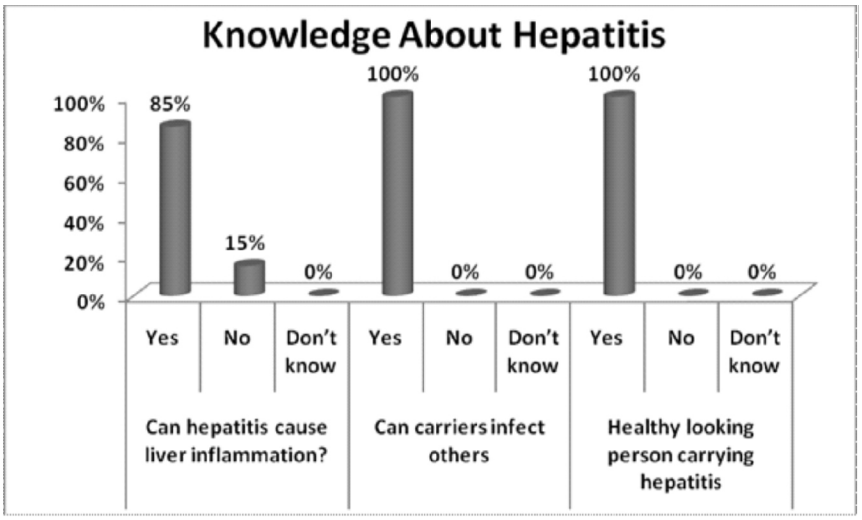


Figure 02: Attitude Regarding HBV & HCV

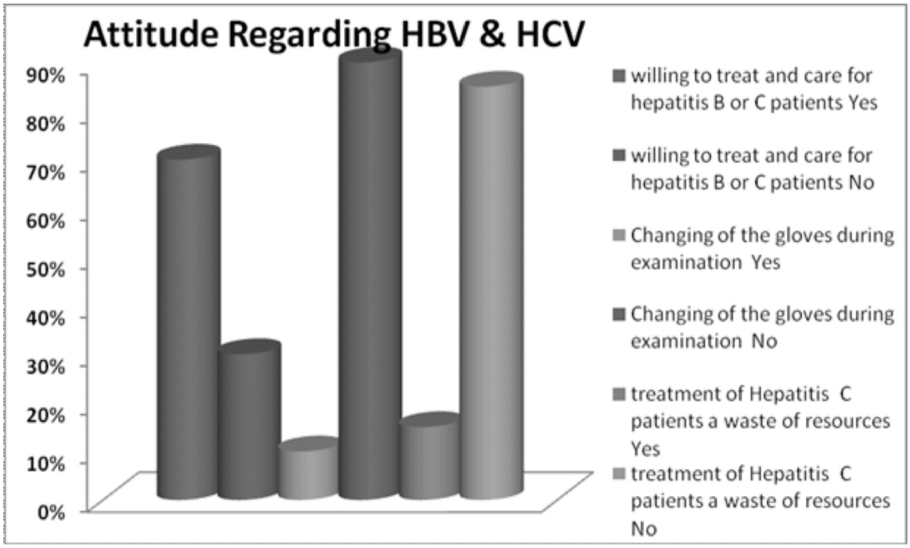


Table 1: Responses on Practices questions asked from house officers of Khyber College of Dentistry , Peshawar, Pakistan (n = 40)

S.No	Questions Asked	No	%	Total n(%)
1	Wash hands before/after dental procedures Yes No	 40 0	 100	40 (100)
2	If yes, what do you use to wash your hands? Water Soap/water Antiseptic solution	 8 16 4	 20 40 10	28 (70)
3	Reasons for never or occasional use of gloves Interrupted or short supplies Don't consider important No response	 5 18 0	 10 40 0	23 (58)
4	Needle pricks in past 1 year 1. Yes 2. No	 26 14	 65 35	40 (100)
5	If yes, how many pricks 1 time 2 times 3times More than 3 times	 6 6 8 2	 15 15 20 5	22 (55)
6	Ever been exposed to Hepatitis pt in career Yes No	 34 6	 85 15	40 (100)
7	If yes, how many pts 1-15 patient 15-30patients 30 or more patients	 8 8 18	 20 20 45	34 (85)
8	use of personal protective equipment (PPE) Masks in the OT and MOS Goggles in the OT Apron in the OT and Wards Rubber boots in OT	 20 20 34 20	 50 85 50 50	
9	Do you think that each and every patient should be screened for hepatitis? Yes No	 32 8	 80 20	40 (100)

DISCUSSIONS:

Our study results showed that majority of the house officers were having good knowledge about Hepatitis B and C and its prevention and positive attitudes yet preventive practices were not as good as it needs to be. Short supplies of gloves was the main reason of not using personal protective equipments.

The world widesero-prevalence among dental students, oral surgeons and assistance staff was quite high in the past[9,10,11]. This can be attributed to important improvements in health sector due to worldwide interest regarding this particular problem, Global awareness regarding the disease itself, Improved vaccination techniques and equipment, improvement in safety standards and techniques for health care workers and new, improved and efficient methods of sterilization.

Our study reports that most of the house officers were in the young age group i.e. 65 % were under the age of 24 years, while only 20 % were more than 25 years, the respondents were mainly male as 60% (n=24) and 40% (n=16) were female. The duration of house job was mainly 7 months with 50% of house officers. The respondents had good level of knowledge about the modes of transmission, prevention and treatment. Concerning knowledge about the disease, 100 % knew that a healthy looking person may be carrying HBV or HCV. About 75% considered themselves at risk of acquiring HBV and HCV through occupational exposure. This is higher than a study done in Taiwan and South Africa feared this risk[12,13].A local study done on medical students of private medical college in Karachi showed good level of knowledge and practices in clinical students agreeing with our study results but in this study there was low level of knowledge in pre clinical students as compared to clinical one. Awareness lectures therefore need to be suggested when students enters in a medical college[14].

Regarding the availability of a successful treatment of HBV or HCV 50 % were aware that such treatment is possible and patients cure where about 40% responded that no such treatment exist for disease, while 10% has not expressed their views. This is much better than a study done among dental surgeons in hospital in Japan, whose response was 33%. [15]

Regarding Knowledge of preventive methods; Sterilization of instruments were chosen by 90 % of working house officers. Staying away from patients as a preventive measure was wrongly reported by 10 %, and staying clean was reported by 30% respectively. While the knowledge about the transmission of Hepatitis infection were very high and they were well aware of the routes of transmission, almost 100% knew the blood transfusion as main cause and about 90% responded the instruments and syringes are cause oftransmission.

Although most of the house officers had treated and cared an HBV and HCV patient, their attitudes were generally positive except for the question on the 'use of resources on treatment Hepatitis C, about (15 %) considered the treatment a waste of resources while majority was against of it. All the house officers were vaccinated against Hepatitis B and they believe that through vaccination the prevention is possible and response was 100%.

In the practices section, all house officers said they would wash hands with whatever available before/after dental procedures. Plain water was reported 20% of the times, soap/water 40% and the use of antiseptic solution 10%. This is in contrast with a study done by Bischoff et al on health care workers (HCWs) ,which showed neglect in hand washing. Gloves were occasionally used by 10 % while treating patients. Short supplies were reported by 23%[16].

In our study more than half (65 %) of the respondents reported the prick from needles, which is a risky act and can result in accidental exposure to infected blood. Of those responded, more than 22% got needle pricks many times. Eight house officers (20%) said they were exposed three times to needle pricks during the past one year. Of them 2 (5%) had more than 3 pricks. A study done on health care workers of Agha Khan university Hospital Karachi Reported needle pricks in 45% of doctors and nurses .Majority of pricks were reported by doctors[17].Another study done on medical students in Pakistan showed 26% needle pricks among medical students[18].This is a very risky exposure especially when the patients are not screened for blood borne viral infections (BBV) including HIV.

Therefore, refresher courses and on job training should be offered periodically from the institutions/employers to enhance compliance to universal precautions.

CONCLUSION:

The study showed high knowledge, but like most developing countries, resources are scarce and stock-outs are frequent in Pakistan. Hence despite acquisition of knowledge, some of the personnel practices and attitudes remain unchanged and they do not conform to available universal precautions. It is the responsibility of any institution to guarantee the safety of its personnel and should therefore provide single-use consumable items. Such as needles, syringes, gloves and in adequate quantities.

Limitations:

Only house officers were included in this study. Other health care staff including technicians and paramedics who are also at risk of getting

Hepatitis B and C should also be included in our study but due to time and cost constrains it was not possible.

Recommendations:

Health department and government should provide funds to assess the level of knowledge attitude and preventive measures of all Health care workers particularly housekeepers, operation theaters technicians, paramedics and nurses of all government hospitals of Peshawar and then carry out awareness campaigns for the mentioned group of health workers who are at more risk as compared to doctors.

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