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# Assessment of Nursing Students Knowledge Regarding Hepatitis B Virus at Iraqi Nursing Colleges

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**Abstract:** ***Background: Hepatitis B virus is a serious, is a dangerous, global public health problem that leading to liver cancer / hepatic cirrhosis with a high rate mortality around 600000 individuals in world. Nursing students are also vulnerable to acquire this infection.Objectives: This study sought to evaluate the knowledge of undergraduates nursing students concerning viral B hepatitis infection and routes of transmission andprevention control andtodetermine the relationship between demographic characteristic with students knowledge. Methodology: A cross-sectional study, conducted in the Facultiesof Iraqi nursing; Baghdad University, Babel University, Mesan University, Kirkuk University , Tikrit University, Iraq; from December - April 2016. Results: The vast majority of the participants (88%) of the study sample were at (20-24) years, There were 79 male (63.2%) and 46 females (36.8%), concerning academic year (52%) at fourth class (80%) were single, equal distribution (20%) for university.Residents of urban areas represented 91(72.8%) of the study group.Conclusions: The study concluded that the nursing students have poor knowledge concerning HBV.***

**Keywords:**Assessment, Knowledge, Hepatitis B virus, Nursing Students

## 1. Introduction

Hepatitis B is an infection of the livertissues caused by the hepatitis B virus (HBV). The two billions of individuals in worldwide it is appraises that have current or past hepatitis B infection, including more than 250 million chronic carriers and more than 600,000 deaths worldwide each year [1].Hepatitis B is widespread in the Asia Pacific region and 10 to 15 million of the people suffer from this disease [2].Globally, According toWHO stated that that over 2 billion people have been infected with HBV and 170 million HCV infected patients world-wide. [3].The infectious of viral B istransmission through many routes such as with plasma, blood, vaginal fluids, semen, saliva and mucous membranes. Also HBV can be transmitted from mother to child at birth (perinatal transmission), by sexual intercourse with an infected personify, by using contaminated needles, undependable blood transfusions and between children in the early childhood [4]. Individualsthat high risk to prone viral infection include health care teams in contact with blood and human body fluid, secretions, hemodialysisunit staff, oncology and chemotherapy nurses, all personnel at risk of needle stick/sharps injuries, which includes those working in theater rooms and laboratories, respiratory therapists, surgeons, nursing, dentists, as well as medical, dental and nursing students. Therefore nursing students are the future healthcare staffsso that risk for infection with HBV exposed during their clinical training [5]. The nursing students because of insufficient training and limited clinical experience are at a much higher risk of exposure to such pathogens. They are liable to spread infection to the patients. So knowledge regarding hepatitis transmission, treatment, and preventive measures is crucial for its prevention. Adequate knowledge and sequent preventive measures could effectively reduce the risk of this important hazard. Infact the quality of nursing care depends to a large degree on the knowledge, skills, attitudes and activities of the practicing nursing staff. With this background, the current study was conducted with the objective to detection of the knowledge among undergraduate students towards HBV.

## 2. Materials and Methods

A cross sectional design was carried out among third and final year undergraduate students of nursing faculty for duration from December - April 2016infifth Iraqi nursing colleges these were selected randomized that includes (Baghdad nursing college, Bable nursing college, Mesannursing college, Kirkuk nursing college, Tikrit nursing college).To evaluate knowledge about viral B hepatitis among nursing students and to identify the relationship between demographic characteristics with students knowledge.The stratified random sampling method was utilized in selecting the participants. The inclusion criteria for the participants were age of 18 years old and above of both genders, male and female, which include third and fourth stage from each faculty. The sample size calculated was 125, inclusive of the 10% non-response rate. Proportional allocation from third& fourth grade levels (1 to 4 or 1 to 5 in all colleges). The study was done with the help of (15) specially prepared questionnaires which were validated by doing pilot study. Data collection tool was a multi section questionnaire; the first sector was about demographic information such as age, gender, academic year, university, marital status, and home. The second part consists of twenty-oneclose-ended questionsto evaluate the knowledge of the participant about hepatitis B, the knowledge questions, as follows: 21 affirmations, for which an “X” should be marked for one of the possible alternatives, (yes), (no) (yes it was considered as a correct question, (no it was considered as an incorrect question answered.The knowledge score ranged from (0 –1) with higher score indicating higher knowledge. According to the score, the participants were poor knowledge (score: 0-o.49)

and good knowledge (score: 0.5-1).Statistical analysis of the data in this study was performed using SPSS V. 18.

## 3. Results

**Table 1:**Characteristics of study participants

| No | Items | Variables | Frequency | Percent |
|---|---|---|---|---|
| 1- | Age | 20-24 | 110 | 88 |
| | | 25-29 | 10 | 8 |
| | | 30-34 | 3 | 2 |
| | | 35-38 | 2 | 1 |
| | | Total | 125 | 100% |
| 2- | Gender | Male | 79 | 63.2 |
| | | Female | 46 | 36.8 |
| | | Total | 125 | 100% |
| 3- | Academic year | Third class | 60 | 48 |
| | | Fourth class | 65 | 52 |
| | | Total | 125 | 100% |
| 4- | Marital status | Single | 100 | 80 |
| | | Married | 25 | 20 |
| | | Total | 125 | 100% |
| 5- | University | Baghdad | 25 | 20 |
| | | Bable | 25 | 20 |
| | | Mesan | 25 | 20 |
| | | Kirkuk | 25 | 20 |
| | | Tikrit | 25 | 20 |
| | | Total | 125 | 100% |
| 5- | Living place | Urban | 91 | 72.8 |
| | | Rural | 34 | 27.2 |
| | | Total | 125 | 100% |

**Frequency, Percent**

Table(1) demonstrate that the highest percentage (88%) of the study sample were at (20-24) years, the majority of them (63%) were male, concerning academic year (52%) at fourth class, (80%) were single, equal distribution (20%) for university, and highest (91%) urban living place.

**Table 2:**The knowledge of study sample concerning HBV

| No. | Items | Yes | | No | | M.S | Sig |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | | |
| 1- | Liver is a vital organ that processes nutrients, filters of blood, and fights infections. | 57 | 45.6 | 68 | 54.4 | 0.45 | N.S |
| 2- | Hepatitis is most often caused by a virus | 62 | 49.6 | 63 | 40.4 | 0.49 | N.S |
| 3- | The common types of viral hepatitis are hepatitis A, B, and C | 74 | 59.2 | 51 | 39.8 | 0.59 | S |
| 4- | The incubation period of hepatitis B virus from 45 to 160 days | 36 | 28.2 | 89 | 71.8 | 0.28 | N.S |
| 5- | Prevent or treat the commonlytypes ofhepatitis A & B can be prevented by vaccination. | 41 | 32.8 | 84 | 67.2 | 0.32 | N.S |
| 6- | The incubation period of hepatitis B virus from 45 to 160 days | 29 | 23.2 | 96 | 76.8 | 0.23 | N.S |
| 7- | Chronic hepatitis B and C are serious health problems can lead to cirrhosis , liver cancer | 52 | 41.6 | 73 | 58.4 | 0.41 | N.S |
| 8- | Histologic evolution to chronic hepatitis can be demonstrated in approximately 90-95% of cases of acute hepatitis B in neonates | 38 | 30.4 | 87 | 69.6 | 0.30 | N.S |
| 9- | Patients with chronic hepatitisB have antibodies against hepatitisB | 46 | 36.8 | 79 | 63.2 | 0.36 | N.S |

**F=Frequency P=Percentage M.S=Mean of score Cutoff point = 0.5**

This table shows that the mean of score is significant at the items (1, 3) while it is no significant in other items.

**Table 3:**The knowledge of study sample concerning methods of transmission

| No | Items | Yes | | No | | M.S | Sig |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | | |
| 1- | At least 30% of reported hepatitis B among adults cannot be associated with an identifiable risk factor | 51 | 40.8 | 74 | 59.2 | 0.40 | N.S |
| 2- | The HBV cannot be spread by holding hands, sharing eating utensils, hugging, coughing, sneezing | 53 | 42.4 | 72 | 57.6 | 0.42 | N.S |
| 3- | Identified methods of transmission HBV include (blood transfusion, unsanitary sexually) | 78 | 62.4 | 47 | 37.6 | 0.62 | S |
| 4- | Through intercourse or contact with blood or bodily fluids. | 53 | 42.4 | 73 | 57.6 | 0.42 | N.S |
| 5- | From mother to child by breast feeding | 61 | 48.8 | 64 | 51.2 | 0.48 | N.S |
| 6- | Blood contact can occur by sharing syringes in intravenous drug use, shaving accessories such as razor blades, | 44 | 35.2 | 81 | 64.8 | 0.35 | N.S |
| 7- | Touching wounds on infected persons. | 64 | 51.2 | 61 | 48.8 | 0.51 | S |

F=Frequency P=Percentage M.S=Mean of score Cut off point = 0.5

This table demonstrate that the mean of score is significant at the items (5) while it is no significant in other items

**Table 4:** The knowledge of study sample concerning Preventive measures of HBV

| No | Items | Yes | | No | | M.S | Sig |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | | |
| 1- | Hepatitis infections can be prevented by avoiding exposure to viruses, and through injectable immune globulins or by vaccines | 49 | 39.2 | 76 | 60.8 | 0.39 | N.S |
| 2- | Vaccination is recommended in the first day of life if possible | 58 | 46.4 | 67 | 53.6 | 0.46 | N.S |
| 3- | A vaccine is | 62 | 49.6 | 63 | 50.4 | 0.49 | N.S |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | available that will prevent infection from hepatitis B for life. | | | | | | |
| 4- | VaccinationB antigen is administer to stimulate the body's immune system to produce protective antibodies | 56 | 44.8 | 69 | 55.2 | 0.44 | N.S |
| 5- | Before giving blood must act test of hepatitis virus infection before infusion to prevent infection | 64 | 51.2 | 61 | 49.2 | 0.51 | S |

**F=Frequency, P=Percentage, M.S=Mean of score Cut off point = 0.5**

This table demonstrate that the mean of score is significant at the items (21) while it is no significant in other items

**Table 5:**The knowledge of study sample concerning symptoms and diagnostic test

| No | Items | Yes | | No | | M.S | Sig |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | | |
| 1- | An illness that begins with general ill-health, loss of appetite, nausea, vomiting, body aches, mild fever | **67** | **53.5** | **58** | **46.5** | **0.53** | **S** |
| 2- | The clinical manifestation are mild and nonspecific and diagnosis usually is delayed | **69** | **55.2** | **56** | **44.8** | **0.55** | **S** |
| 3- | Symptoms of hepatitis includefatigue, tired. dark urine, light-colored stools,fever,and jaundice | **71** | **56.8** | **54** | **43.2** | **0.56** | **S** |
| 4- | There are three types of blood tests for evaluating patients with hepatitis: liver enzymes, antibodies to the hepatitis viruses, and viral proteins or genetic material (viral DNA or RNA). | **57** | **45.6** | **68** | **54.4** | **0.45** | **N.S** |
| 5- | Liver enzymes (AST, SGOT, ALT and SGPT)widely used blood tests for evaluating patients with hepatitis | **79** | **63.2** | **46** | **36.8** | **0.63** | **S** |

This table demonstrate that the mean of score is significant in all items except item (4).

**Table 6:** The differences between Demographic Characteristics and Student's knowledge

| Variables | Source of variance | Sum of secure | dr | Mean score | F | Sig. |
|---|---|---|---|---|---|---|
| Age | Between group | 3.968 | 3 | 1.323 | .164 | .920 |
| | Within group | 306.436 | 38 | 8.064 | | |
| | Total | 310.405 | 41 | | | |
| Gender | Between group | 21.460 | 1 | 21.460 | 2.971 | .092 |
| | Within group | 288.944 | 40 | 7.224 | | |
| | Total | 310.405 | 41 | | | |
| Level of education | Between group | 7.690 | 2 | 21.460 | 2.971 | .015 |
| | Within group | 9.350 | 40 | 7.224 | | |
| | Total | 17.040 | 42 | | | |
| Marital status | Between group | 19.921 | 2 | 9.960 | 1.337 | .274 |
| | Within group | 290.484 | 39 | 7.448 | | |
| | Total | 310.405 | 41 | | | |

df =Degree of freedom , F= F-statistics , Sig.=level of Significance

This table shows no significant differences between demographic characteristics and knowledge of students**.**

## 4. Discussion

In this study we observed that that majority(88%) of the study sample within age group (20-24). This findings supported by a study conducted to assess the knowledge and practice of students regarding HBV, who stated that (82.6%) of the subjects were of 20 and 21 years of age [6]. Another study done in Egyptthe researcher reported that they mentioned that mean age of the all participated was 8 89 ± 0.98 years (range 17- 23) [7]. In relation of gender the most (63%)of respondents were female, this result is compatible with results of study conducted by other researcher who stated that the participation group consisted of 179 women students (77%) and 54 men students (23%)[8].Concerning to academic year most of study sample (52%) at fourth year this similar to finding who reported that (39%) of the sample were fourth academic year[9]. About marital status the current study showed that the majority(80%) were single, this result disagree with other study who stated that it was noticed that (60.6% and 65.1% respectively) from his sample were married [10]. Our study demonstrate that (72.8)urban living place it is agree with findings obtains from other research who observed that the vast majority of their studied samples were from urban area[11].While this results disagree with another study who mentioned that most of his study sample (52.8%) were rural [7]. Regarding to the students knowledge concerning HBV (table 2) the study shows the participants had poor knowledge about VBH this results agree with other study who stated that the present study showed that the knowledge of students about hepatitis B and C and the use of preventive measures was inadequate before education and improved after participation in the health educational program[7]. Another studyconducted by researchersaid that the survey indicatedthe level of knowledge between students toward hepatitis B and C, was fair knowledge, but gaps in knowledge were identified which need to be strengthened in students[12]. In relation to Methods of transmission (table 3) we found that the students had no sufficient prior knowledge, (WHO, 2012) mentioned that it is considered to be a serious gap of knowledge since transmission of HBV through sexual relationships is one of the most common ways of transmission[13]. Bari (2001) explains that initially it was believed that transfusion was the most common route of transmission of hepatitis. Other modes of transmission include unsafe injections (unsafe

syringe), unsafe blades for face or armpit shaving at community barber shops, ear/nose piercing and tattooing[14].Table(3) shows the student's knowledge had low score in relation to preventive measure, prevention for transmission is extremely important, both for the individual person and seen from a societal perspective. It is therefore important to give the right education to health care personnel (Abiola et al., 2013 & Carter et al., 2013)[15, 16].According to the study done by other researcher who reported that people are more likely to get vaccinated against HBV if they believe that the vaccine is protective[17]. Regarding to knowledge for HBV the study reveals that the participants had fair knowledge, this result same to Shikure & Fete who said in his study that about the appearance of hepatitis B viral infection symptoms; (27.0%) of the study participants respond correctly that the symptoms doesn't appear within few days always after the entry of hepatitis B virus to the body, while (50.4%) and (22.6%) answer incorrectly and doesn't know about the topic respectively[9]. Current study indicates that there are no significant differences between demographic characteristics (table 6) this findings disagree with results obtain from other researcher who explain that the academic years of study were significantly associated with knowledge of hepatitis B virus infection (p=0.000)[18].

## 5. Conclusions

The study concluded that the nursing student have poor knowledge concerning HBV.

## 6. Recommendations

Our study recommended that the need of strengthen the students knowledge about HBV by health education program and booklets and distribute to the students.

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