

## Student's Knowledge and Attitude Regarding Infected Patients with Blood Borne Pathogenesis in College of Applied Medical Science at Kingdom Saudi Arabian

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**Abstract: Overview:** Today's student nurses are tomorrow's staff nurses. Health care workers (HCWs) are at high risk of encountering needle stick injuries, blood and body fluid exposure and therefore acquiring blood borne infections especially Hepatitis B & C, which may be followed by serious long term sequel in a significant number of cases. Estimated reported incidence of injuries in hospital health care workers is approximately 30/100 bed /yr. **Aim:** the present study is to investigate student's knowledge and attitude regarding infected patients with blood borne pathogenesis in Jeddah **Setting:** descriptive exploratory with nonrandomized sampling was used which calculated 69 from second year students and 31 from fourth year students and carried out in College of Applied Medical Science at Nursing Department- King Abdul-Aziz University in Jeddah in Kingdom of Saudi Arabian. **Methods:** One modified tool for data collection after translation from English to Arabic language was used divided into 5 main parts related to sociodemographic characteristics, knowledge towards Hepatitis, attitude towards Hepatitis, knowledge towards AIDS, attitude towards AIDS respectively. **Results:** results of the present study revealed significance difference in many items related to student's knowledge regarding hepatitis and AIDS. in addition to, negative attitude towards infected patients with blood borne diseases is a remarkable behavior of attitude scale noticed among second year students in comparing with fourth year students attitude. **Conclusion:** The present study concluded that second year students had low total scores of satisfactory knowledge level regarding blood borne diseases in comparing with fourth year students, also, there are +negative attitude present from attitude scale sheet among second year students in comparing with fourth year. [Sabah M. Mahran and Shereen A. A. Kalawa. **Student's Knowledge and Attitude Regarding Infected Patients with Blood Borne Pathogenesis in College of Applied Medical Science at Kingdom Saudi Arabian.** *Journal of American Science.* 2012;8(6):657-665]. (ISSN:1545-1003). <http://www.americanscience.org>. 81

**Key Words:** Knowledge, attitude, students, Blood borne pathogenesis, high risk group, prevention.

### 1. Introduction

HIV/AIDS is one of the largest obstacles to development in many countries and is destroying the lives and livelihoods of millions of people around the world. Nearly 95 percent of all infected individuals are found in developing countries and the situation is especially problematic in sub-Saharan Africa. In Zambia, around 17 percent of the population is infected with HIV and AIDS is the most common cause of death <sup>(1)</sup>. It is estimated that approximately 15,000 people are infected with HIV every day <sup>(2)</sup>. While in India, a large number of people are living with HIV/AIDS. About 5. 1 million HIV infected people and 1, 03000 case AIDS cases have been reported from the total 35 states of India. Six states, of Southern India (AndhraPradesh, Tamilnadu, Maharashtra, and Karnataka) and two in North Eastern Indian (Manipur and Nag land) have higher prevalence of HIV infection. <sup>(3)</sup>. However added by. UNAIDS (Joint United Nations Programme of HIV/AIDS) <sup>(4)</sup> estimated the worldwide number of persons living with HIV to be 33. 2 million in 2007. The majority of these infections took place in an area of the African continent situated south of the Sahara (22. 5 million). More than thirty million of the infected were adults. Half of them were women and

2. 5 million were children under the age of 15. In 2007 the number of newly HIV infected individuals was 2. 5 million, almost 14,000 people a day, half of whom were aged 15–24 years.

Causes of transmission of Human Immunodeficiency Virus (HIV) and AIDS (Acquired Immunodeficiency Syndrome) are not the same virus. HIV is a virus which belongs to a group of viruses called lent viruses (from Latin "lentus" which means "slow"). It is defined as damages of the immune system, hence its name. AIDS is the common term for the condition that arises when the HIV virus has damaged a person's immune system severely. Symptoms of the immune system barely exists and a cold, otherwise in noxious, can be life threatening <sup>(5)</sup>.

Risk factors of becoming infected with a blood borne pathogen or transmitting the disease to others is not the only healthcare provider. Although the risk to patients who are cared for by HIV infected HCWs is considered negligible, practice restrictions could be imposed by the courts on an individual basis as well as percutaneous exposures to blood borne pathogens. These injuries may result in 15, 000 HCV, 70,000 HBV and 1,000 HIV infections. More than 90% of these infections occur in developing countries <sup>(6,8)</sup>.

Poor awareness about HIV/AIDS among pre-clinical students; Misconceptions regarding modes of transmission of infection among Para medical personnel and poor knowledge about proper decontamination and precautionary measures may be causes of transmitted disease<sup>(5,9)</sup> HIV can be transmitted by unprotected sexual intercourse, unprotected oral sex, blood transfusions, when intravenous drug users share injection tools and mother-to-child transmission (primarily during delivery and through breast-feeding).

So medical students, represent a high risk population for Hepatitis B Virus (HBV) infection. Hepatitis B is the most important infectious occupational hazard. They do not practice universal precautions on a routine basis and there exists the widely prevalent problem of under reporting of percutaneous and mucocutaneous exposures and a lack of awareness about the disease transmission, its consequences and the importance of adhering to universal precautions at all times. This further compounds the issue of safety of student. Once a medical/ nursing student is infected by hepatitis, he is left to fend for himself. The hapless student could then face the following daunting prospects, such as difficulties securing health insurance, loss of income due to unemployment, long term disability and premature death<sup>(10)</sup>.

The reason for concentrating on the attitudes of first year university students depends on their expected knowledge of diseases and preventive measures gained during their previous studies<sup>(11)</sup>.

In the United Arab of Emirates. Different results were reported<sup>(12)</sup> that the university students of the United Arab Emirates named books, media and the health care professionals as the most important information sources. In comparative study done between Finland and Kenya students, the family members and relatives had a very small role in informing the students about HIV/AIDS both in Finland and in Kenya. More often for the male students than for the female students the newspapers were the information source concerning the dissemination, cause, risk group, cure or the prevention of HIV/AIDS. The respondents identified TV (52. 5%) and school classes (32. 1%) as the two main sources of information. Only a few referred to their parents (1. 3%) as a source of information<sup>(13)</sup>. while who stated the most significant and trusted source of information on HIV/AIDS was doctors/nurses. It was closely followed by parents whom most cases trust as important source of information<sup>(14)</sup>.

Efforts of HIV/AIDS prevention have sought to change the behaviors of individuals, paying too little attention to the socio-economic context in which

people live. Social and economic realities constrain individual actions and this is most likely the main reason for the gap between what people know and how they act.<sup>(2)</sup>

According to the ethical guidelines in the **American Nurses' Association's Code for Nurses** "the nurse's primary commitment is to the health, welfare, and safety of the client". Nurses are also responsible for questioning inappropriate practice and are accountable for individual actions. Presently, avoidance of occupational exposure is the only effective prevention strategy.<sup>(15)</sup> The number of HIV positives has decreased in Africa because of successful promotion program especially in Kenya and Zimbabwe. For instance in 2003 in Kenya the prevalence of HIV (the percentage of the adult population with HIV) was 6. 7%. It has decreased to the level of 5. 7% in 2004. Furthermore, descriptive comparison of knowledge, attitude and practice (KAP) toward HIV/AIDS between nursing graduates (B. Sc and GNM) conducted in Punjab. Findings shows that B. Sc graduates had significantly higher knowledge than GNM graduates ( $P < 0. 01$ ), both groups had positive attitude toward HIV/ AIDS and both group of nurses had poor universal precaution practices. There was no relationship found between knowledge, attitude and practice among both groups<sup>(16)</sup>.

Attention should be paid to find out if young medical and nursing students possess correct knowledge about the disease, its risk factors, modes of transmission and consequences and do not harbor any misconceptions about it. A strong hold of such basic knowledge would go a long way in helping them to protect them. All students should be counseled, at the time of admission to College or at least before they start their clinical rotations, about the appropriate way to deal with patients and practice infection control measures<sup>(17)</sup>.

So the reason for concentrating on the knowledge and attitude between second and fourth year to clarify the importance of nursing college to improve students attitude & awareness regarding blood borne disease. Students in the first year were clarify their attitudes of first year university students depends on their expected knowledge of HIV/AIDS gained. The age of the university students is 18 and up. In the future they may be parents advising their children or they may have contact with HIV infected and AIDS patients in their work. The universities of Helsinki and Oulu were chosen in order to see if there is any difference in the attitudes of students in southern and northern Finland<sup>(13)</sup>.

#### **Aim of the study:**

This study was carried out to investigate student's knowledge and attitude regarding infected patients with blood borne pathogenesis in Jeddah.

## 2. Subjects and Methods

### Research design

Descriptive exploratory with nonrandomized sampling was used.

### Setting:

This study was carried out in Jeddah city in kingdom Saudi Arabia, Nursing Department- College of Applied Medical Science- King Abdul -Aziz University.

### Target population

The target populations were second and fourth year as mentioned above.

### B-Subjects:

All available students were assigned to second and fourth in the above mentioned settings were included in this study. They were 106 students divided as 69 from second year and 31 from fourth year.

### C-Tools for Data Collection:

Data was collected by using five main modified tools<sup>(18,19,20)</sup> this tool aimed to explore the impact of impact of health college on improving student's knowledge and attitude regarding infected patients with blood borne pathogenesis in Jeddah

#### Tool I- Sociodemographic data:

Was Contains information related to demographic characteristics of the studied students as their age, educational class level, Sources of data obtained and opinion of Saudi people knowledge regarding HIV& AIDS?

#### Toll II: knowledge regarding HIV Questionnaire:

It includes 17 questions related to student's Knowledge regarding HIV Disease

#### Tool III: Attitude regarding HIV Questionnaire:

These tools was including 7 Questions related to student's attitude regarding HIV Disease

#### Part IV: Knowledge regarding AIDS Questionnaire:

It includes 13 Questions related to student's Knowledge regarding AIDS Disease

#### Part IV: Attitude regarding AIDS Questionnaire:

It includes 18 Questions related to student's attitude regarding AIDS Disease

### Methods of Data collection:

#### Ethical considerations:

#### Ethical Consideration:

1. Explain the aim of the study to the Academic coordinator of the college to take his permission to do this study with students.
2. Explain the aim of the study to each student's to be familiar with the importance of her participation.

3. A brief explanation of the purpose and importance of the study was given to the student's and assured that the obtained information will be confidential and used only the purpose of the study. Confidentiality of the information was assured by the researcher.

### (2)-Operational Design:

The operational design includes preparatory phase, content validity, reliability, pilot study and fieldwork.

#### A-Preparatory Phase:

It includes reviewing of literature, different studies and theoretical knowledge of various aspects of the problems using books, articles, internet, periodicals and magazines.

#### B- Content Validity:

Validated tools were used from Published sources as mentioned before in tools of data collection.

**C-Content Reliability:** Was done through:

#### Pilot Study:

Pilot study was carried out after the development of the tools on 10% of the students to test applicability of the tools then necessary modification were done according to the results of the results of pilot study and expertise opinions. The purpose of pilot study was:

- 1- To test the applicability of the study tools.
- 2- To estimate any need for addition in the tool.

Otherwise, the ten students were then excluded from the sample of research work to assure the stability of answers

#### Field work:

The interview sheet was filled out individualized with the students. Data was collected from the selecting settings by the researcher using the pre constructed tools.

- 1) Each student was individually filling questionnaire ; the questionnaire was collected from all the students while they are in free time of classes, purpose of the study was explained prior to get the questionnaire sheet, and it distributed to be answered within (30 -45 minutes) then collected.
- 2) The questionnaire was filling from about 5-10 students per day started from February to March 2012, over a period of one month starting according to students schedule and availability of time for both students and the researcher.

#### Statistical Design:

Collected data was arranged, tabulated and analyzed according to the type of each data.

#### Scoring system:

Scoring system was ranged from 0 to 3 scores for enough, not enough at all, need educational support, I 'don't know. also the assessment of

student's knowledge regarding hepatitis it contains 18 questions ranged in answer from 0 to 2 which ranking as 0 for I' don't know, 1 for yes and 2 for No answer. while the assessment of student's attitude towards hepatitis contains 8 questions ranged from 0 to 1 which 0 for disagree and 1 for agree except for last question is ranged from 1 to 3 as 3 for agree to contact, 2 disagree to contact and 0 for Run away and refused contact. Regarding assessment of student's knowledge regarding AIDS it contains 12 questions ranged from 1 to 2 which 1 for true and 2 for false items as students perceived. Finally part is contains 18 questions for assessment of student's attitude toward AIDS ranged from 1 to 5 for strongly disagree, disagree, strongly agree, agree, neutral respectively.

#### Statistical analysis:

##### Data analysis:

Data was collected and entered into a database file. Statistical analysis was performed by using the SPSS 16 computer software statistical package. Data was described by summary tables and figures. For comparing the (Knowledge and attitude) with socio-demographic characteristics, Chi-2 or Fisher Exact test was used. Statistical significance was considered at  $P$ -value  $<0.05$  and highly significance at  $P$ -value  $<0.00$ .

#### Descriptive statistics:

##### -Numbers and percentages:

Used for describing and summarizing qualitative data.

#### The following statistical measures were used:

##### 1-Chi square(X<sup>2</sup>):

Used to test the association between two qualitative variables or compared between two or more proportion.

##### 2-Fisher exact test probability (FETp):

They are used when X<sup>2</sup> is not valid ( $>20\%$  of the expected cell have count less than 5).

#### Limitation of study

The researcher was made a great over to match and organized the time with students for collect data more than the researcher prediction.

#### 3. Results:

The students included in this study were 100, 69 from the second year and 31 from the fourth year. The age of the students ranged from 18 to 20 years, and there are a statistically significance difference between second and fourth student's year in age group 18-20 years. ( $p < 0.000$ ).

Table (1): Shows that common sources of acquired information between fourth student's is school and internet with age group above 20 years while the most common sources of acquired information in the second year students is family members

Table (2): revealed that the most students' opinion regarding community level of blood borne disease is enough in both students' level which in second year it was found in age group 18-20 years in comparing with fourth students it was founded in age group above 20 years old.

Table (3): shows that there are a highly statistically significance difference between second and fourth year student's attitude regarding hepatitis in items related to If your husband want you to travel with him to infected area with hepatitis, Are you agree to living in the same place with infected person with hepatitis

Table (4): Shows that there are a highly statistically difference in total scores of knowledge between second and fourth year students regarding hepatitis mainly in items related to causes of disease, vaccination of hepatitis.

Table (5): illustrates that there were a highly significance difference between level 2 and 4 in total scores of knowledge regarding AIDS in items related to Mode of transmission, warning signs and methods of prevention of acquiring AIDS.

**Table (1):** Comparison of acquired sources of information and student's age, level

| X <sup>2</sup> | Age            |     |             |     | Sources                         | Grouping             |
|----------------|----------------|-----|-------------|-----|---------------------------------|----------------------|
|                | Above 20 years |     | 18-20 years |     |                                 |                      |
|                | %              | No. | %           | No. |                                 |                      |
| 0.086          | 3.0            | 2   | 79.0        | 54  | Family members                  | 2 <sup>nd</sup> year |
|                | 1.5            | 1   | 3.0         | 2   | School / College                |                      |
|                | 0.0            | 0   | 10.5        | 7   | School, Friend, journal, poster |                      |
|                | 0.0            | 0   | 3.0         | 2   | School, internet, poster        |                      |
| 0.086          | 38.7           | 12  | 0.0         | 0   | School, internet, poster        | 4 <sup>th</sup> year |
|                | 61.3           | 19  | 0.0         | 0   | School, internet                |                      |

**Table (2):** Students opinion regarding community level of blood borne disease awareness according to their levels and age

| X <sup>2</sup> | Age            |     |             |     | Opinion                | Grouping             |
|----------------|----------------|-----|-------------|-----|------------------------|----------------------|
|                | Above 20 years |     | 18-20 years |     |                        |                      |
|                | %              | No. | %           | No. |                        |                      |
| 0. 531         | 2. 9           | 2   | 68. 1       | 47  | Enough                 | 2 <sup>nd</sup> year |
|                | 1. 4           | 1   | 14. 5       | 10  | Not enough             |                      |
|                | 0. 0           | 0   | 13. 1       | 9   | Need education support |                      |
|                | 0. 0           | 0   | 0. 0        | 0   | I don't know           |                      |
|                | 54. 8          | 17  | 0. 0        | 0   | Enough                 | 4 <sup>th</sup> year |
|                | 32. 3          | 10  | 0. 0        | 0   | Not enough             |                      |
|                | 12. 9          | 4   | 0. 0        | 0   | Need education support |                      |
|                | 0. 0           | 0   | 0. 0        | 0   | I don't know           |                      |

**Table (3):** Comparison of attitude between 2<sup>nd</sup> and 4<sup>th</sup> year students regarding Hepatitis

| ±SD                    | 4 <sup>th</sup> year   |               | 2 <sup>nd</sup> year    |                | Items of Comparison                       |  |
|------------------------|------------------------|---------------|-------------------------|----------------|---|--|
|                        | %                      | No.           | %                       | No.            |   |  |
| 0. 49936<br>0. 37388   | 16. 1<br>83. 9         | 5<br>26       | 56. 5<br>43. 5          | 39<br>30       | Agree<br>Disagree                         | If you know that your husband had Hepatitis are you continue your life with him?   |
| 0. 49162<br>0. 000***  | 100. 0<br>0. 0         | 31<br>0       | 39. 1<br>60. 9          | 27<br>42       | Agree<br>Disagree                         | If your husband want you to travel with him to infect area with hepatitis  |
| 0. 000***<br>0. 000*** | 100. 0<br>0. 0         | 31<br>0       | 100. 0<br>0. 0          | 69<br>0        | Agree<br>Disagree                         | Are you agree to living in the same place with infected person with hepatitis  |
| 0. 36875<br>0. 50588   | 45. 2<br>54. 8         | 14<br>17      | 15. 9<br>84. 1          | 11<br>58       | Agree<br>Disagree                         | Are you agree to work in the same unit With hepatitis person   |
| 0. 46944<br>0. 000***  | 0. 0<br>100. 0         | 0<br>31       | 31. 9<br>68. 1          | 22<br>47       | Agree<br>Disagree                         | If you discovered in doing premarital examination that your fiancées had hepatitis are you married him                       |
| 0. 45702<br>0. 000***  | 0. 0<br>100. 0         | 0<br>31       | 29. 0<br>71. 0          | 20<br>49       | Agree<br>Disagree                         | Are you feeling of compassion toward hepatitis person  |
| 0. 50106<br>0. 000***  | 0. 0<br>100. 0         | 0<br>31       | 44. 9<br>55. 1          | 31<br>38       | Agree<br>Disagree                         | I'm feeling of contempt regarding hepatitis patient  |
| 0. 81414<br>0. 84637   | 64. 5<br>35. 5<br>0. 0 | 20<br>11<br>0 | 27. 6<br>33. 3<br>39. 1 | 19<br>23<br>27 | Agree<br>Disagree<br>Go away & left place | If you are seeing accident and you know infected person with hepatitis needed helping. Are you agree to help him and contact |

P-value at 0. 05 \*Statistically significance \*\*\*Highly statistically significance

**Table (4):** Mean and SD of total student's knowledge scores regarding hepatitis

| Areas of Knowledge                               | Level                | Mean    | SD       | F       | X <sup>2</sup> |
|--|----------------------|---------|----------|---------|----------------|
| Knowledge of disease before admission To college | 2 <sup>nd</sup> year | 1. 0870 | 0. 33162 | 9. 598  | 0. 003*        |
|  | 4 <sup>th</sup> year |         |          |         |                |
| Clinical manifestations of hepatitis             | 2 <sup>nd</sup> year | 1. 4928 | 0. 86811 | 4. 498  | 0. 036*        |
|  | 4 <sup>th</sup> year |         |          |         |                |
| Causes of hepatitis                              | 2 <sup>nd</sup> year | 1. 9855 | 0. 32051 | 16. 005 | 0. 000***      |
|  | 4 <sup>th</sup> year |         |          |         |                |
| Mode of transmission                             | 2 <sup>nd</sup> year | 1. 6087 | 0. 80836 | 8. 491  | 0. 004*        |
|  | 4 <sup>th</sup> year |         |          |         |                |
| Vaccination of hepatitis                         | 2 <sup>nd</sup> year | 1. 1159 | 0. 47080 | 17. 435 | 0. 000***      |
|  | 4 <sup>th</sup> year |         |          |         |                |

P-value at 0. 05 \*Statistically significance \*\*\*Highly statistically significance

**Table (5): Mean and SD of total student's knowledge scores regarding AIDS**

| Areas of Knowledge          | Level  | Mean    | SD       | F       | X <sup>2</sup> |
|-----------------------------|--|---------|----------|---------|----------------|
| Mode of transmission of dis | 2 <sup>nd</sup> year<br>4 <sup>th</sup> year | 1. 8406 | 0. 32250 | 22. 405 | 0. 000***      |
| Vaccination of disease      | 2 <sup>nd</sup> year<br>4 <sup>th</sup> year | 1. 0435 | 0. 20543 | 6. 062  | 0. 016*        |
| Warning signs of AIDS       | 2 <sup>nd</sup> year<br>4 <sup>th</sup> year | 1. 7246 | 0. 44997 | 12. 129 | 0. 000***      |
| Prevention of disease       | 2 <sup>nd</sup> year<br>4 <sup>th</sup> year | 2. 0000 | 0. 000   | 14. 138 | 0. 000***      |

*P*-value at 0. 05 \*Statistically significance \*\*\*Highly statistically significance

#### 4. Discussion

Medical students (especially medicine, dentistry and nursing students) are in close contact with hepatitis patients, so they may be in danger of acquiring viral hepatitis especially type B and C. In addition these groups are responsible for prevention and control of these infectious in societies. In another words, they are harbingers in fighting to diseases. It must be mentioned that in addition to hepatitis B and C, the prevalence of hepatitis A and E is high in developing countries such as Iran. The prevalence of VHI in Sisitan and Baluchistan province in Iran is high, too<sup>(21)</sup>

Therefore, The aim of the present study is to assess student's knowledge and attitude regarding infected patients with blood borne pathogenesis in Jeddah. Therefore, it is very important to enhance the knowledge of medical students of this province. (Low compliance among medical and nursing students, especially in using masks and protective eyewear, may be partly explained by the perception that they are exposed to blood splashes or aerosols less frequently. However, the incidence of blood or body fluid splashes is often underestimated and student who does not routinely wear protective barriers for all patients, when the potential for blood or body fluid contact exists, are at risk of exposure.<sup>(10)</sup>

Nursing students are important auxiliaries to clinical nurses. They are on the frontline of HIV prevention, care, and advocacy. Therefore, it is necessary that they have enough knowledge to reduce the risk of occupationally acquired HIV infection and that they change their attitude to care for HIV=AIDS patients when they enter clinical practice. Many studies have demonstrated that a large minority of nursing students had tremendous fears about the possibility of contracting hepatitis and AIDS.<sup>(22)</sup>

Today's student nurses are tomorrow's staff nurses. They need to be educated more and more on the mode of transmission and prevention of hepatitis B, thus protecting themselves as well as others who come in contact with them from this deadly disease.

Thus the investigator felt the need to take up the study. Therefore, the aim of the present study was to investigate and clarify the nursing student's knowledge and attitude toward caring with blood borne infected patient disease.

The study covers three main areas. The first item is the student's demographic characteristics and sources types of acquired information's, opinion regarding awareness level of knowledge in their community. Secondly student's knowledge towards blood borne diseases. Thirdly, student's attitude towards blood borne diseases.

#### Part I:

Socio-demographic characteristics of study sample revealed that the present study included 100 students divided into 69 from second year and 31 from fourth year, the majority of second year students in age group between 18 -20 years while the majority of fourth year in age group above 20 years with highly statistically significance difference between them. This finding goes in the same way with Kels<sup>(23)</sup>, and Muninonen et al<sup>(24)</sup>.

Regarding sources of acquired information the present study revealed that the most of second year students preferred family member in acquiring information while fourth year students preferred school, college and internet for acquired knowledge. These finding goes in the same line with Hartjes *et al*<sup>(25)</sup>.

Harties et al,<sup>(25)</sup> who stated that School play a critical role in protecting students from the spread of blood borne infectious diseases. However, there are few guidelines available to help school students negotiate potentially conflicting health and privacy interests. The Occupational Safety and Health Administration (OSHA), the Centers for Disease Control and Prevention (CDC), the U. S. Department of Justice, the U. S. Department of Education, federal privacy laws, and medical and school nursing organizations all offer guidelines describing what school nurses should and should not do when students have blood borne infections.

As regards, community level awareness of blood borne disease as student's perceived, the present study revealed that above half of opinion in both second and fourth year student's was signed that there are enough information and awareness in their community regarding blood borne diseases in age group 18-20 for second year, above 20 for fourth year students. This finding goes in the same line with <sup>(25)</sup> in contrast, <sup>(26)</sup> While surveys level of AIDS awareness in countries with severe epidemics, risky behavior persists. The ABC strategy of abstinence, being faithful and correct and consistence a key component of program to modify behavior.

#### Part II:

Concerning Knowledge towards hepatitis. the present finding revealed that there are a statistically significance difference between second and fourth year students in the correct answers of hepatitis knowledge items related to Are you hearing about hepatitis C, A before, Hepatitis can caused liver cancer, Hepatitis can transmitted by kissing, Hepatitis can transmitted through blood transfusion, There are a vaccination for hepatitis C. These differences in the researchers opinion could be reflect the impact of study in Health College in improving student's information and awareness in many health aspects. This finding disagree with Stojcevaska et al <sup>(27)</sup> reported that Both our groups of students showed a high level of knowledge about hepatitis transmission. This is because the full-time students have sufficient knowledge about HVC infection and the part-time students pay more attention to the mode of transmission to protect themselves, also, Both of our groups showed sufficient knowledge about the risk factors (85 % and 76 %).

In this regard the present study revealed a highly statistically significant difference among two student's levels toward student's knowledge regarding hepatitis vaccination on the other hand there are no statistically significance difference in knowledge toward AIDS vaccination. Dental interns (34. 7%) had better awareness than medical interns (32. 8%). About 52. 2% believed that Hepatitis B virus can be transmitted by semen and vaginal secretions. Only 39. 9% of the interns believed that doctors, dentists infected with HBV should not have direct contact with patients. Also, One- third of the interns had very good knowledge about Hepatitis B. The majority had good knowledge regarding the mode of transmission and attitude towards HBV patients. However, there is a misconception about prophylaxis, vaccination and treatment of HBV. Hence there is an imperative need for health education to improve the knowledge and attitude of the interns towards Hepatitis B <sup>(27)</sup>

As regards, prevention of AIDS, it is surprised that the present study founded both students level

were had a good knowledge regarding AIDS prevention. This finding goes in the same line with Muninonen *et al* <sup>(24)</sup> whose who mentioned that there were different in their study groups and their knowledge about HIV/AIDS, for instance, with regard to young people in general, students and medical and nursing staff. Young people generally have a very good HIV related knowledge, prevention and knowledge as well as attitudes and information sources concerning HIV and AIDS.

Concerning student's knowledge towards AIDS the present study revealed that there are a highly statistically difference between second and fourth year students in correct answer of knowledge regarding AIDS in items related to Coughing and sneezing DO NOT spread AIDS, A person can get HIV by sharing a glass of water with someone who has AIDS, AIDS can be transmitted by sexual intercourse and People who have been infected with HIV quickly show serious signs of being infected and no differences were reported among both students level in the rest of knowledge items. This finding goes in the same way with Chouhan, & Lohrmann *et al.*, <sup>(17&28)</sup> who stated that there are needs for increased the level of information of German nursing students regarding blood borne disease. There are three main factors that had significant direct and indirect effects on negative attitude: knowledge of transmission and non transmission routes, and speciality knowledge.

Present study indicated that there is a significant relationship between average and awareness level of students. As above regarded, the students that have better educational status, have better awareness about hepatitis. A reason for mentioned point can be that students with high educational status have high motivation for learning about hepatitis infections and another field. <sup>(29)</sup>

#### Part III:

The present study revealed that there are a highly statistically difference among two student's levels regarding blood borne disease mainly in hepatitis and AIDS. in attitude regarding hepatitis in questions items related to If your husband want you to travel with him to infected area with hepatitis, Are you agree to living in the same place with infected person with hepatitis, If you discovered in doing premarital examination that your fiancées had hepatitis are you married him, Are you feeling of compassion toward hepatitis person, I'm feeling of contempt regarding hepatitis patient, while in question attitude items; I think patients with AIDS have the right to the same quality of care as any other patient, Homosexuality is illegal, these attitude answers in researchers opinion could be related to

Arab natural of feeling toward ill person in many countries. In this concern Hansson *et al.*,<sup>(30)</sup> necessitated that preventive knowledge and positive attitude among student nurses had little effect on occupational attitude. It is also possible that the relationships between preventive knowledge, positive attitude, and occupational attitude are bidirectional. This result shows that it is important for nursing students to change their occupational attitude by acquiring specialty knowledge and knowledge of transmission and non transmission routes and by reducing their negative attitudes toward HIV=AIDS.

### Conclusion

From the present study, it can be concluded that second year students had low total scores of satisfactory knowledge level regarding blood borne diseases in comparing with fourth year students, also, there are negative attitude present from attitude scale sheet among second year students in comparing with fourth year. it can be reflected the effect of learning in health college on students knowledge and attitude.

### Recommendations

In order to improving student's knowledge and attitude towards blood borne disease. there are some suggestions to students, the future studies and staff nurses are suggested:

Educational program should be simply presented by nurses through visual aids such as poster, illustrated pamphlets, simple and clear language booklets and some related models about knowledge of blood borne diseases .

Motivated students and community oriented people regarding the effect of Health College on student's knowledge and attitude.

Educational programs should be planned and offered on instructed basic knowledge to students before training in hospital and contact with infected patients

Further research studies should be undertaken on the students from enter to college until finish their graduation to study the impact of health college on student awareness.

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