

Hepatitis B seroprevalency among the students of the Public Health Faculty at the University of Vlora

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Introduction

Hepatitis B is a worldwide disease. (1) About 30% (nearly two billion) of the world population exhibit serological evidence of the Hepatitis B virus (1) and 40 million are carriers of HBV (1, 2).

The communication of the infection varies greatly around the world and is mainly influenced by the age at which the infection occurs (3). In Europe, the level of this communication is different. The countries of North and West Europe have a low prevalence level (3).

In such countries as the USA and Italy the incidence of Hepatitis B has noticeably decreased over the past decade, particularly amongst the younger age groups (4, 5).

Epidemiological data concerning Hepatitis B incidence in Albania, prior to the application of the compulsory vaccination of newborn babies (1995), were taken from the screening of the immigrants in other countries like Italy and Greece (6).

As Hepatitis B is an infectious disease which is transmitted through the paternal way (2, 7, 8), the nurse is often faced with risky situations. A research carried out at Mother Teresa Hospital in Tirana (9) has produced the following results: Hepatitis B HBsAg +: 13.27 % (49/369) and 15.21 % (56/368); soldiers (two contingents); students, trainees, doctors, nursing students: 8.35% (56/668); pregnant women: 6.4% (32/500); hospital personnel: 8.1% (39/480); healthy adult population: 9.4% (57/602).

Nursing students have to do professional practice at bedded or not bedded health centres as this practice is part of their compulsory curriculum.

Numerous studies have been carried out relating the professional practice and the possibility of catching an infection during these practices and the nursing procedures. Nursing students are often involved in various nursing procedures such as taking blood samples for tests or parenteral administration of medication. Because of their insufficient experience with these procedures, they can be harmed and get an infection by all kinds of accident, owing to neglect of the asepsis rules and of the standard measures of preventing infections transmitted in parenteral ways (10, 11).

One of the injuries most frequently reported by nursing students is getting pricked with the syringe needle after making an injection and this is thought to be one of the ways of communicating infections of either Hepatitis B, C or of the HIV (in a parenteral way) from patient to caretaker (12).

Thus great emphasis should be placed to carefully training the students during clinical practice for preventing accidental pricking with contaminated needles or other sharp instruments (13, 14, 15).

PRESENTATION OF STUDY

Aim of study:

To assess the seroprevalency of Hepatitis B among the students of the Public Health Faculty at the University of Vlora “Ismail Qemali” in order to shed light upon the possible etiological factors of this infection.

General objective:

To assess the seroprevalency of Hepatitis B among the students of the Public Health Faculty at UV.

Specific objectives:

1. Assessment of the number of immune students;
2. Assessment of HBsAg (+) prevalence at nursing students;
3. Assessment of prevalence propagation according to demographic factors;
4. Assessment of exposure factors of the students who resulted with an HBsAg(+).

Ethical considerations:

In order to carry out this study, we asked the permission of the Dean of the Public Health Faculty, the Head of Mother and Baby Care Department, and the Head of the Nursing Department. The Director of the Primary Health Care Board as well as the office for health promotion at that office were also contacted. Colleagues have been asked to cooperate and help in order to organise getting the students' tests for examination at the laboratory. We also talked to the Students' Government and asked for their collaboration. We explained to the participants the aim and importance of carrying out this laboratory examination, how to fill in the questionnaire, at the same time promising to preserve total anonymity relating to test results or the answers to the questions.

METODOLOGY OF STUDY: This is a depict study through which the following will be evidenced:

- Seroprevalency of Hepatitis B among the students of the Public Health Faculty at UV;
- Seroprevalency propagation according to demographic factors;
- Seroprevalency propagation according to possible infection factors at nursing students.

Population in study: The nursing students of the Public Health Faculty at the University of Vlora have been taken as a population in study. Two hundred and nineteen out of 495 students (44%) of that faculty replied to this depict study.

Preliminary testing

We did a pre-testing with the students who did not choose to participate in this screening study, requesting them to collaborate only by replying to the questionnaire used for the participant students in this screening project. A random sample of 50 students from all the three academic courses of study who had not taken part in the study was taken for this purpose.

Comparing the data produced by this pre-testing, we could find no significant difference between the two groups.

- Relating to the vaccination status, 34% of them have been vaccinated, 49% not vaccinated, and 17% do not know whether they have been vaccinated or not.
- Relating sex division, 71% were females and 29% males.

The students involved in the pre-test also exhibited the same data concerning possible exposure factors.

Table 1 **Preliminary test outcomes**

	Participant students		Pre-test students	
	Yes	No	Yes	No
Have you ever had a tattoo made?	10	209	47	3
Have you ever practiced acupuncture?	0	219	0	50
Have you ever received blood or plasma?	1	218	0	50
Have you ever had a surgical / dental operation?	187	32	41	9
Have you ever had an endoscopy?	3	216	1	49
Have you had unprotected sexual intercourse (without a condom)?	14	205	5	45
Have you ever had a pricking / incision / skin or mucous contamination with sharp instruments / human liquids during your clinical practice?	23	196	4	46

This study has been carried out through two elements:

a) Blood examination – ELISA Test. HBsAg (+) persons were identified through this test.

HbsAg is a protein situated on the surface of the Hepatitis B virus and which is present in the circulating blood of the individuals with an acute or chronic Hepatitis B. Thus, it is indicative of a Hepatitis B infection. (16, 17).

Those individuals are called HBsAg (+) persons who have been found to have over 100 titres of HBsAg.

Those individuals whose level is below 100 titres are considered HBsAg (-) persons.

The scale of measuring this variable is categorical.

b) A self-administered questionnaire

Description of measuring instruments

Two instruments have been employed in carrying out this study:

1. *Examination of the students' blood through the ELISA test (18)*

The ELISA (enzyme – linked immunosorbent assay) test consists in a bio-chemical technique which is widely employed to detect the presence of an anticorp or an antigene in a simple blood sample. This testing method is also used to diagnosticate HIV,HCV, Syphilisis, etc. and it has already proved its specificity and sensitivity (18).

This examination was offered by the Public Health Board, the Epidemiology and Statistics Office, and the virologic laboratory of that Board. The students went to the lab, where each was taken a blood sample of 2ml.

Through this laboratory examination, the nursing students were also offered examination relating three other pathologies: HIV,HCV, Syphilisis.

2. Self-administered questionnaire (Annex 1)

The self-administered questionnaire was granted by the Public Health Institute. We adapted it for the nursing students.

The questionnaire we used is a simple one. First, it contains a group of data relating universal variables such as age, sex, place of residence and marital status. Next, there are eight clear and direct questions, asking the students for information concerning various exposure factors which can serve to the communication of infection.

One specific of that questionnaire was that it required filling in the identity by the student because the laboratory examination they undergo will give information as there is a presence of the Hepatitis B virus or not, which will be followed by other confirming examinations for those students who appear HbsAg(+). The students were assured about the confidentiality of the information ensuing from the laboratory tests and their answers to the questions. The questionnaire was given to the students immediately after their blood samples were taken and they wrere allowed ample time to complete it.

The scale of measuring the variables in the questionnaire is categorical.

DATA COLLECTION

The information for this study has been gathered through the voluntary participation of the nursing students at the University of Vlora. The data were collected during the period of February - March 2011.

The laboratory examination that the nursing students went through gavi information as to whether there was a presence of HbsAG or not.

The laboratory examination was granted for free by the Public Health Board.

RESEARCH OUTCOMES

Two hundred and nineteen students took part in the project, from all the three courses of study as follows:

First year: 50 students

Second year: 77 students

Third year: 92 students

173 participant students (79%) were females and 46 (21%) were males.

An important element of the research was to determine which students were immune and which were not immune.

Table 2. Distribution of students who took part in the project in respect to immunisation against Hepatitis B.

<i>Distribution of students respect to immunisation against Hepatitis B.</i>	
Vaccinated	83
Not vaccinated	113
Do not know	23

Table 3 Distribution of students who took part in the project according to the test result.

Number of examined students	<i>Distribution of examined students according to seroprevalency</i>	
	HbsAg (+)	HbsAg (-)
219	9 (4.1%)	210 (95.9%)

Table 4 Distribution of HbsAg(+) students according to sex.

<i>Distribution of HbsAg(+) students according to sex.</i>	
Female	5
Male	4

Table 5 Distribution of HbsAg(+) students according to marital status.

<i>Distribution of HbsAg(+) students according to marital status</i>	
Not engaged	7
Cohabit	2

Table 6 Distribution of HbsAg(+) students according to place of residence.

<i>Distribution of HbsAg(+) students according to place of residence</i>	
Vlora	5
Fier	4

Table 7 Distribution of HbsAg(+) students according to age group.

<i>Distribution of HbsAg(+) students according to age group</i>	
18 years old	0
19 years old	1
20 years old	1
21 years old	3
22 years old	4

A very important element of the study is related to discovering the possible factors of infection as to what is stated by the students themselves.

Table 8 Distribution of HbsAg(+) students according to possible factors of exposure.

<i>Distribution of HbsAg(+) students according to possible factors of exposure</i>		
	Po	Jo
Have you ever had a tattoo made?	1	8
Have you ever practiced acupuncture?	0	9
Have you ever received blood or plasma?	0	9
Have you ever had a surgical / dental operation?	7	2
Have you ever had an endoscopy?	0	9
Have you had unprotected sexual intercourse (without a condom)?	2	7

Have you ever had a pricking / incision / skin or mucous contamination with sharp instruments / human liquids during your clinical practice?	6	3
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Table 9 Distribution of HbsAg(+) students according to factors of exposure and course of study.

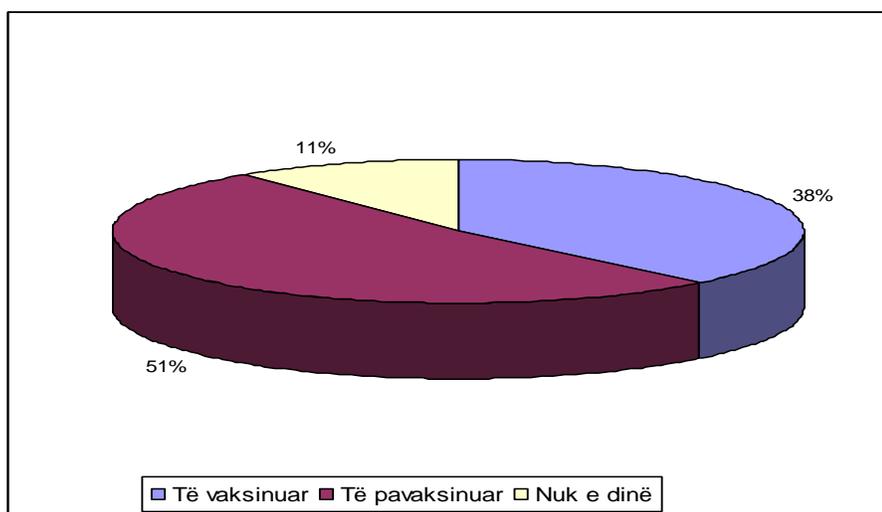
<i>Distribution of HbsAg(+) students according to factors of exposure and course of study</i>			
	First year	Second year	Third year
Have you ever had a tatoos made?	0	0	1
Have you ever practiced acupuncture?	0	0	0
Have you ever received blood or plasma?	0	0	0
Have you ever had a surgical / dental operation?	1	3	3
Have you ever had an endoscopy?	0	0	0
Have you had unprotected sexual intercourse (without a condom)?	0	2	0
Have you ever had a pricking / incision / skin or mucous contamination with sharp instruments / human liquids during your clinical practice?	0	2	4

Table 10 Distribution of HbsAg(+) students according to immunisation status.

<i>Distribution of HbsAg(+) students according to immunisation status</i>	
Vaccinated	3
Not vaccinated	4
Do not know	2

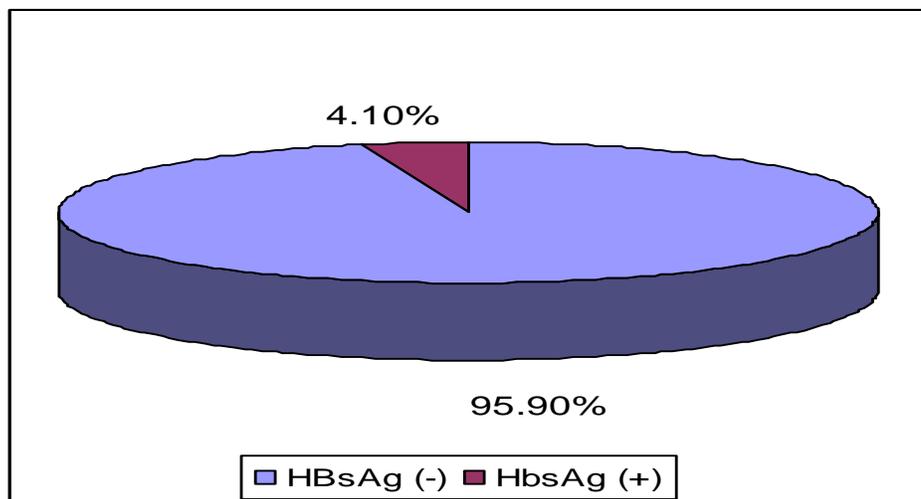
Discussion of outcomes

Diagram 1. Graphic representation of distribution of students according to vaccination status.



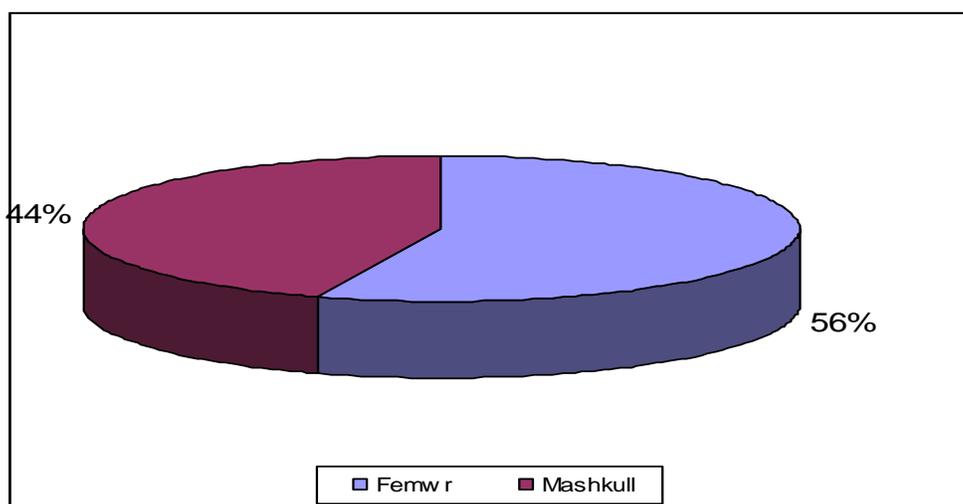
It can be seen from the diagram that 51% of the nursing students at UV are not vaccinated, against 38% who are. It is also significant that a fair portion of the students (11%) are not in a position to tell.

Diagram 2. Graphic representation of distribution of screened students according to seroprevalency.



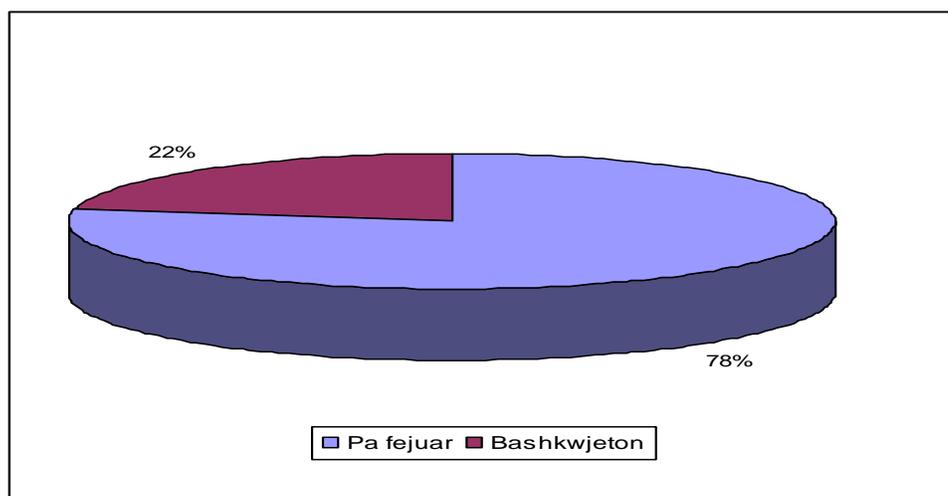
The screening carried out reveals that 9 students of the screened group, or 4.1%, resulted as HbsAg (+) against 95.9% who resulted HbsAg(-).

Diagram 3. Graphic representation of distribution of HbsAg (+) students according to sex.



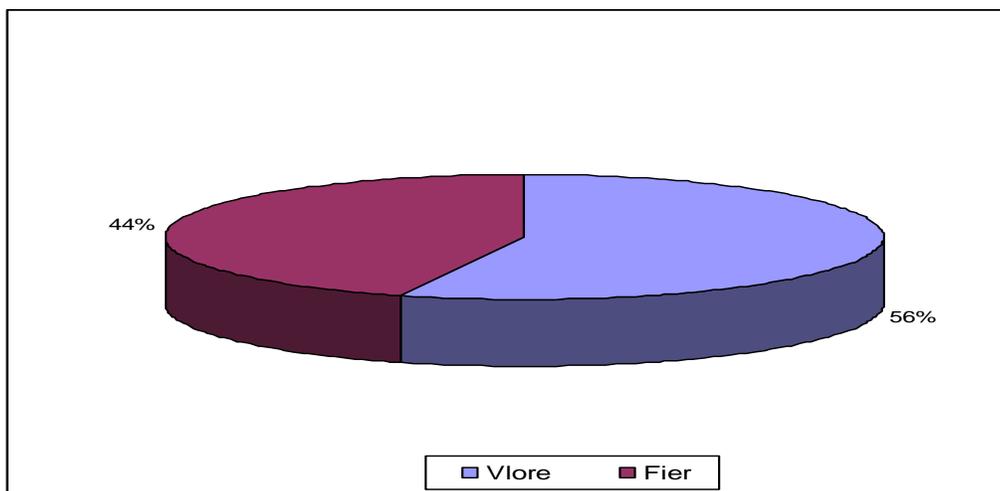
The female students of our faculty appear to be more afflicted than the male students, 56% to 44% respectively.

Diagram 4. Graphic representation of HbsAg (+) students according to marital status.



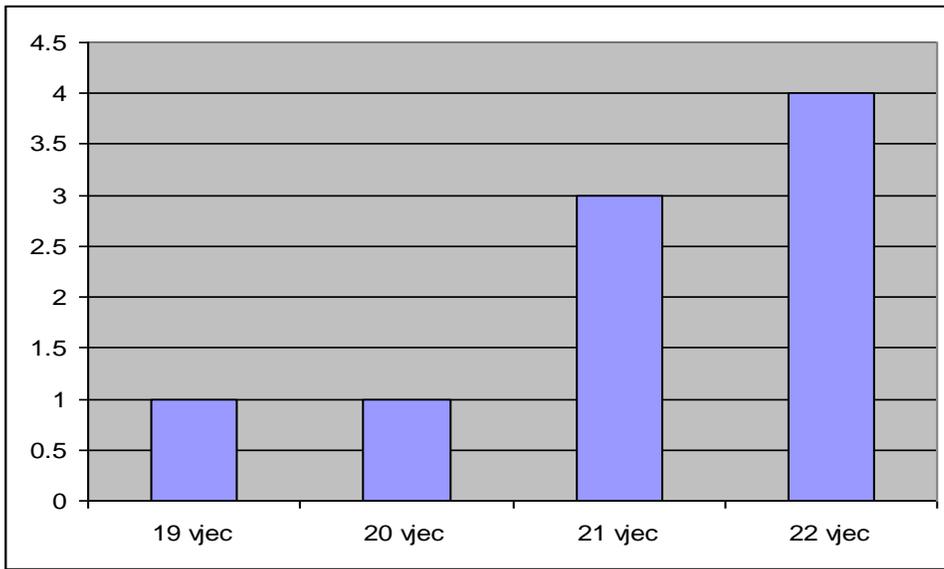
As it can be observed, 78% of the HBsAG (+) students are not engaged, as compared to 22% who cohabit.

Diagram 5. Graphic representation of HbsAg (+) students according to place of residence.



Although the students of our faculty come from a lot of districts in the south of the country, our research reveals that the whole nine of the HbsAg(+) students come only from Vlore (56%) and from Fieri (44%).

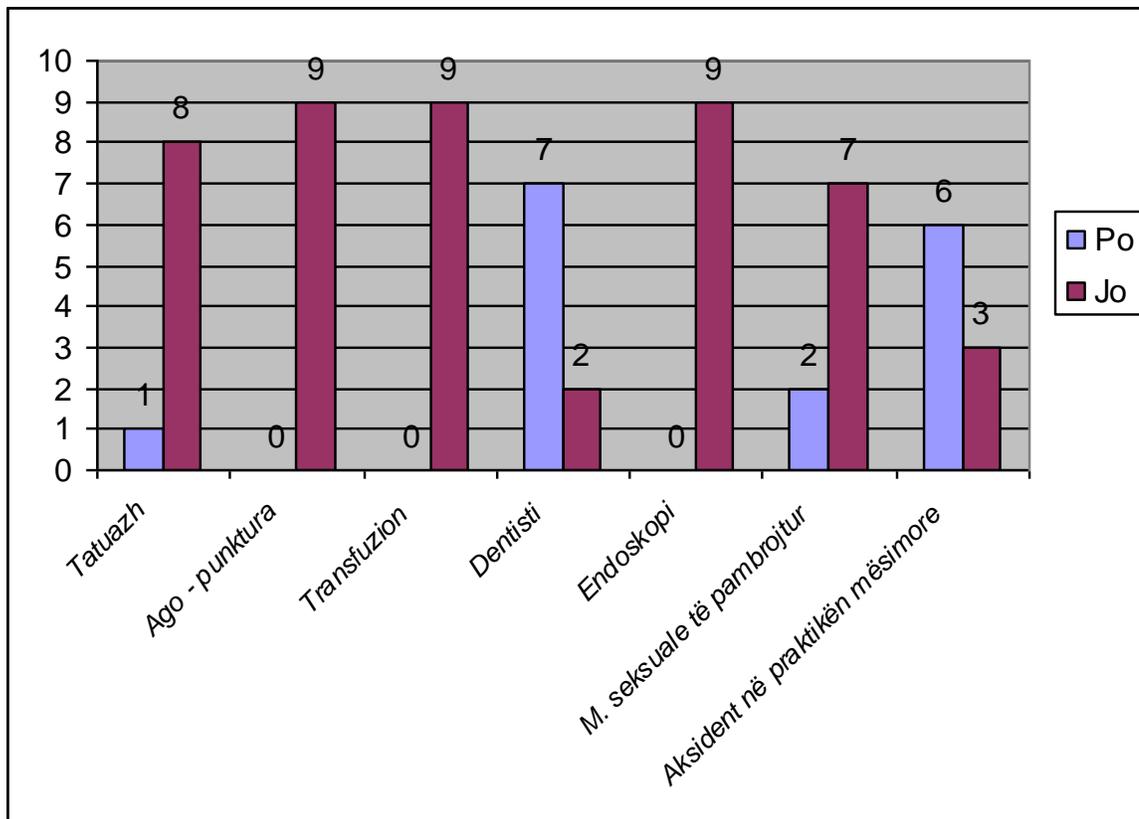
Diagram 5. Graphic representation of HbsAg (+) students according to age group.



One student is nineteen years old, one is twenty, three students are 21 and four more 22 years old.

It is a very important aspect of the study to discover the possible factors of infection based on what the students themselves relate.

Diagram 7. Graphic representation of HbsAg (+) students according to possible factors of exposure.



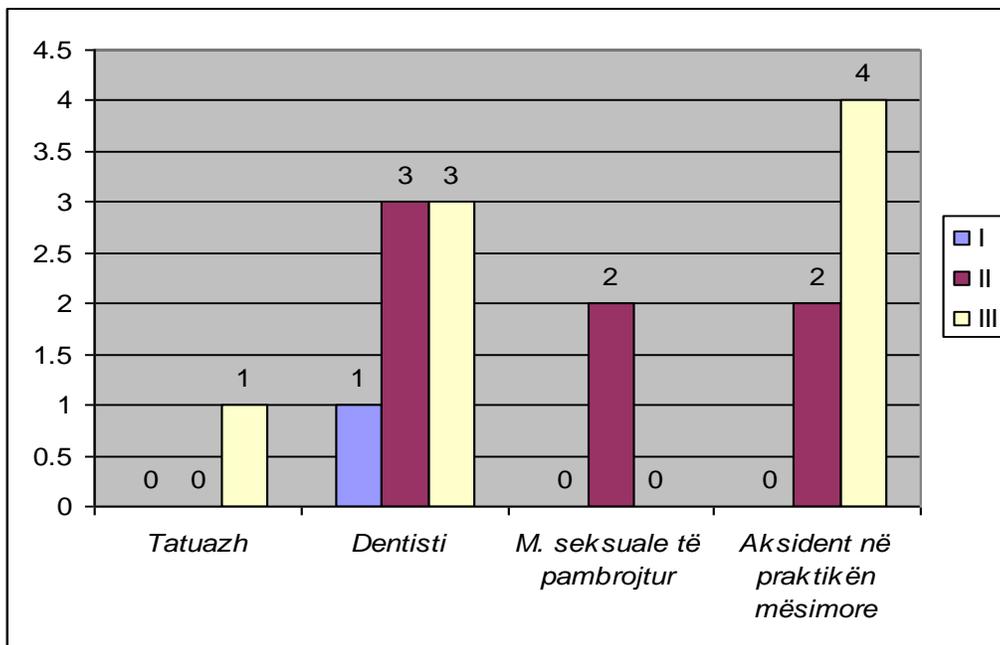
What can be observed, always according to what is stated by the students, is that the main factors of exposure consist in accidents like pricking or cuts during the clinical practice (six of the students state that kind of exposure).

Seven more students state that they have had either a surgical or dental operation.

Two of them admit having had unprotected sexual intercourse.

One student says that they have had a tattoo made.

Diagram 8. Graphic representation of distribution of HbsAg (+) students according to possible factors of exposure and course of study they are attending.



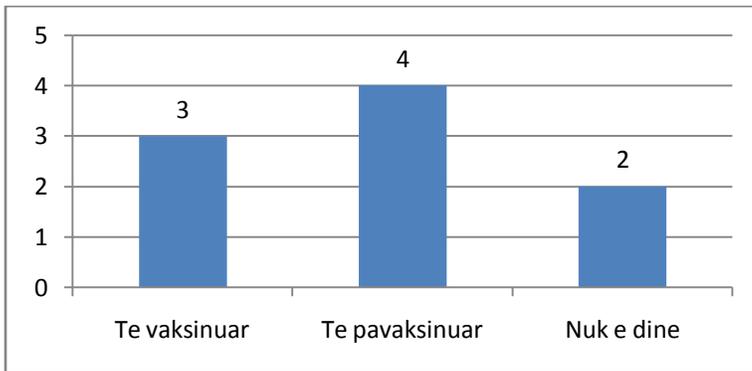
It can be seen from the diagram that the third year and second year students appear have had cases of conduct which may have been factors of exposure to HBV.

Four students of the third year and two of the second year state that they have had different accidents such as pricking with a needle, cuts, etc. while they were doing clinical practice.

Three third year students and one student of the first year state that they have had a surgical / dental operation.

Two second year students admit that they have had unprotected sex and one first year students has had a tattoo made.

Diagram 9. Graphic representation of distribution of HbsAg (+) students according to immunisation status.



We can notice that there is a considerable number of unvaccinated HBsAG(+) students; four of them appear as such.

It should be stressed that all of the 219 students were also subjected to examination about HVC, HIV and syphilis. None of them appeared positive.

CONCLUSIONS The main aim of this research has been the screening of the Public Health Faculty students concerning HBsAg.

In final analysis of the outcomes of this research we can say that:

- 4.1 % of the students resulted HBsAg(+) as compared to 95.9 % HBsAG(-).
- 44.44% (4 students) were unvaccinated against Hepatitis B and 22% appeared to have no knowledge as to whether they were ever vaccinated or not.
- The females appear to be more inflicted with 56%, compared to 44% of the males.
- Two of the students who ensued to be HBsAg(+) are cohabitating with someone else.
- There is no significant difference according to place of residence between the persons who ensued as positive.
- The main factors of exposure, as stated by the students, appear to be the surgical / dental interventions as well as various kinds of accidents during clinical practice. Six of the students state that, and it can be observed that the higher year students, who have already been to field practice, ensue in the research as the more inflicted.
- One of the important aspects of this research was to determine the students' immunisation state and it appears that more than half of them had not been vaccinated.

One important conclusion following the research is that the future professionals of health care should necessarily undergo vaccination programs against Hepatitis b.

Recommendations: Since a nurse's profession is on of the riskiest to various infections communicated in parenteral ways, it is recommended that:

- Such teaching curricula should be developed that help the students to enhance their health protection awareness.
- The clinical practice of the students be better organised, promoting teaching that pays particular attention to strictly abiding by the asepsis rules.

- Screening programs be regularly implemented concerning infection both with the students who first enter the medicine faculty as well as with those of the higher courses.

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