



DETERMINING THE KNOWLEDGE LEVEL OF MIDWIVES AND NURSES WORKING IN THE HOSPITALS ABOUT HEPATITIS A AND B, AND THE PRECAUTIONS THEY TAKE

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ABSTRACT

Healthcare professionals working with hepatitis-B virus (HBV) and hepatitis-A virus (HAV), which are both still important infectious diseases throughout the world and in Turkey, are at risk in terms of many infectious diseases, in which they become infected from patients and their physical work environment. HBV and HAV infections and their outcomes are among the important public health issues. This study was conducted to determine the knowledge level of nurses and midwives working in the institutions with beds in the city center of Şanlıurfa, about HBV and HAV infections, and the precautions they take. This descriptive study included nurses and midwives working at the Harran University Research and Application Hospital (285 nurses/midwives) in the city center of Şanlıurfa and in 4 hospitals (823 Nurses/midwives) affiliated with Şanlıurfa's Public Hospitals Institution. The population of the study consisted of 1,108 midwives/nurses/health officers working on duty in these hospitals, while the sample consisted of 550 people who could be reached and volunteered to fill out the questionnaire. A questionnaire was prepared by reviewing relevant literature and receiving expert opinions. The questionnaire form was assembled in its final form after the preliminary study was performed. In this form, there are 36 questions, including the socio-demographic characteristics of the nurses and the precautions taken by the institutions as well as the nurses in order to be protected from HBV and HAV. Before starting the study, the required permissions from the institutions and consents from the participants were obtained. The questionnaire was given by the researchers to the participants via face-to-face interviews between January 2 and May 31, 2016. The statistical evaluation of the data obtained in the study was performed by using SPSS (22) as well as number, percentage, mean, and standard deviation values.

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1. INTRODUCTION

Blood-borne infectious diseases is an important health problem all over the world. The risk of being exposed to hepatitis B (HBV) and hepatitis C (HCV) by healthcare professionals is an important and preventable problem worldwide (Yoldaş, Bulut, et. al, 2014).

HBV and HCV infections have a high rate of morbidity and mortality worldwide (Smyth, Manning, Byrne et. al., 2002; Sagmeister, Renner, Mullhaupt et. al., 2002).

One of the most widespread blood-based viral diseases is Hepatitis B. Hepatitis is defined as life-threatening liver inflammation, caused by viral infection, which in turn adversely affects one's health, and causes chronic diseases (Lai, Ratziu, Yuen and Poynard, 2003; Sharma, Saini and Chwla, 2005; Lavanchy, 2004; Şahin, Bilgiç, Esen, Çetinkaya and Tozoğlu, 2009).

Midwives and nurses are at risk of being exposed to many infectious diseases via their patients, the materials they use on the patients, and their physical daily work environment.

Those that especially infect people through blood and blood-based products have a particular importance due to their frequency and the negative effects they cause (Uçan, Ovayolu and Torun, 2006).

The contaminated tools are the sources of infection both for the patients and the healthcare professionals alike. When healthcare professionals are exposed to these infected materials, this is known as an occupational disease (Göçgeldi, İstanbulluoğlu, Türker, Güleç, Ceylan, Koçak and Komutanlığı, 2011).

Personnel working in the emergency department, operating room, intensive care unit, and labs come into contact with the blood and bodily fluids, which in turn increases the infection risk. The most frequently encountered forms of exposure include contaminated needles, contaminated sharp medical equipment, and contract with blood and bodily fluids to the mucosa. As many of sharp objects are now disposable, the risk for the patients has reduced, however infection contamination nevertheless continues due to occupational exposure (Sarı, Fincancı, Soysal, Demirkıran, Koyuncu and Özgün, 2014).

This study gives information about literature information about the matter as well as population, sample, limitations, data collection tool, and reliability of the study. In the results section of the study, the data obtained from the study were presented in tables. In the discussion section of the study, comparisons were made with similar studies in the literature and similarities and differences between the present study and these studies were determined. In the conclusion section of the study, the conclusion was presented along with the related recommendations. The aim of this study was to determine the knowledge level of the nurses and midwives, working in the institutions with beds across Şanlıurfa, on HBV and HAV, alongside precautions they take.

2. MATERIAL AND METHOD

2.1. The aim of the study: The aim of this study is to determine to determine the knowledge levels of nurses and midwives, working at public hospitals in the city center of Şanlıurfa, about protection from HBV and HAV.

2.2. Population and Sample of the Study: The population of the study was composed of nurses and midwives working at the Harran University Research and Application Hospital (285 nurses/midwives) in the city of Şanlıurfa and in 4 hospitals (823 nurses/midwives) affiliated with

Şanlıurfa's Public Hospitals Institution. The population of the study involved a total of 1.108 midwives/nurses/ health officers actively working in these hospitals; on the other hand, the sample consisted of 550 people who were reached and were eager to fill in the questionnaire. Once necessary permissions were obtained from the institutions and the participants before conducting the study, the questionnaire was completed by the researchers by using the face-to-face interview technique between 2 January and 31 May 2016.

2.3. The limitations of the study: The study was not conducted throughout Turkey; therefore, the study reflects the opinions of nurses and midwives, working at public hospitals only in the city center of Şanlıurfa, where the study was conducted, about protection from HBV and HAV. Moreover, public states and private hospitals operating in Şanlıurfa were not included in the study. Additionally, it is assumed that the results obtained from this study would provide information to future studies in general. It was accepted that nurses and midwives participating in the study understood the statements in the study correctly and gave correct answers.

2.4. Data Collection Tool: The study is a descriptive field study based on survey. A questionnaire was prepared based on expert opinion and upon literature review and was finalized after preliminary test. This questionnaire includes 36 questions about socio-demographic characteristics of the participants as well as nurses and the institutions' precautions concerning protection from HBV and HAV. Each item in the questionnaire was prepared based on 5-point Likert scale including "Strongly disagree(1)", "Disagree (2)", "Neutral (3)", "Agree (4)" and "Strongly Agree (5)".

Before conducting the study, necessary permissions from the hospitals and the participants were taken and the questionnaire was administered by the researchers by using the face-to-face interview technique between 2 January and 31 May 2016.

2.5. Validity and reliability of the study: Cronbach's Alpha (α) coefficient of the questionnaire used in the study was 0.82, which shows that this questionnaire is reliable.

2.6. Material and Method

In this descriptive and cross-sectional study, 550 midwives and nurses working in five hospitals including one university hospital and four public hospitals in the city of Şanlıurfa were reached. No sample selection was performed; only those who were on duty during the study were included in the study.

The study was conducted upon obtaining the written permission from institutions, where the study was conducted, as well as verbal consent from the participants. The questionnaire, prepared by the researchers upon literature review, was applied through the face-to-face interview technique. The statistical evaluation of the data obtained in the study was performed using SPSS (22) as well as number, percentage, mean, and standard deviation values.

3. RESULTS

This section includes the various study results. Table 1 shows the socio-demographic characteristics of the midwives and nurses participating in the study.

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Table 1. The socio-demographic characteristics of the midwives and nurses

Age groups	N	%
24 years and younger	181	32.9
25-27 years	128	23.3
28-31 years	112	20.4
32 years and over	129	23.5
Gender		
Female	409	74.4
Male	141	25.6
Educational status		
Health High School	97	17.6
Associate's Degree	70	12.7
Bachelor's Degree	364	66.2
Master's Degree	19	3.5
Working duration		
2 years and less	193	35.1
3-4 years	102	18.5
5-8 years	140	25.5
9 years and more	115	20.9
The hospital where they work		
Harran University Research Hospital	109	19.8
Balıklığöl Public Hospital	59	10.7
M. Akif İnan Training and Research Hospital	178	32.4
Şanlıurfa Gynecology and Maternity Hospital	80	14.5
Children's Hospital	124	22.5
Clinical Unit		
Emergency Department	57	10.4
Operating room	39	7.1
Service	259	47.1
Outpatient clinic	10	1.8
Other	185	33.6
Position In The Unit		
Ward Nurse	332	60.4
Chief Nurse	50	9.1
Intensive Care Nurse	129	23.5
Other	39	7.1
Manner of Work		
Always day-shift	173	31.5
Shift	377	68.5
Total	550	100.0

When Table 1 was examined, it was determined that 56.5% of the participants were aged 27 years and younger, 74.4% were female, 66.2% held a Bachelor's degree, 53.6% worked for 0-4 years, 80.2% worked in a public hospital, 47.1% worked in the services, 60.4% were ward nurses, and 68.5% worked in shifts.

Table 2. Contact with patients with hepatitis B and A, and the data on the procedures taken after contact

		N	%
Have you been in contact with blood and bodily fluids?	Yes	490	89.1
	No	60	10.9
	Total	550	100.0
Did you take precautions when contacting with blood and bodily fluids?	Yes	408	83.3
	No	40	8.2
	I do not remember	42	8.6
	Total	490	100.0
What kind of precautions did you take?	I wear gloves	350	71.4
	I wear a double pair of gloves	121	24.7
	I wear a gown	100	20.4
	I wear a mask	101	20.6
	I wear goggles	39	8.0
	All	34	6.9
	I do not remember	33	6.7
	Total	490	100.0
The procedure taken in case of the contact with blood and bodily fluids	I had my hepatitis marker results examined.	262	53.5
	I checked whether or not the patient had an infectious disease.	359	73.3
	I made the injured/contact region bleed.	62	12.7
	I washed the injured/contact region with cold water	260	53.1
	I washed the injured/contact region with alcohol	78	15.9
	I washed the injured/contact region with batticon	255	52.0
	I did nothing	18	3.7
Total	490	100.0	
Did the patients exhibit infectious symptoms of Hepatitis B?	Yes	228	41.5
	No	191	34.7
	I do not remember	131	23.8
	Total	550	100.0
Did the patients exhibit infectious symptoms of Hepatitis A?	Yes	161	29.3
	No	235	42.7
	I do not remember	154	28.0
	Total	550	100.0
Preventive measures taken during procedures applied to the patients	Do you wash your hands before and after the intervention performed on the patients?	507	92.2
	Do you wash your hands every time you provide care?	383	69.6
	Do you know the warning signs for patients with hepatitis infection?	458	83.3
	Do you know whether or not the contaminated materials are properly disposed of?	390	70.9
	Do you know whether or not the contaminated materials are properly disinfected?	356	64.7
	Total	550	100.0
Types of injuries	Needle-based injury in hands	363	66.0
	Injury when closing the injector tip	286	52.0
	Splashes of blood and bodily fluids into the eyes and mucosa	205	37.3
	During medical waste disposal	98	17.8
	Sharp object injury with scalpel, suture needle etc.	160	29.1
	Total	550	100.0

When Table 2 was examined, it was determined that 89.1% of the midwives and nurses participating in the study stated that "they were in contact with blood and bodily fluids"; on the

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other hand, 83.3% of them stated that they took precautions. For the question "What kind of precautions did you take?", 71.4% of them stated that they wore gloves, 24.7% stated that they wore a double pair of gloves, and approximately 20% stated that they wore a gown or mask. For the question "what kind of procedures did you take when coming into contact with blood and body fluids?", 73.3% of midwives and nurses stated that "they investigated whether or not the patient had an infectious disease", 53.5% stated that "they had his/her hepatitis marker results examined", 53.1% stated that "they washed the injured/contact region with cold water" and 52% stated that "they washed the injured/contact region with batticon". For the question "Did the patients exhibit infectious symptoms of Hepatitis B?" 41.5% of midwives and nurses answered "yes" and for the question "did they exhibit infectious symptoms of Hepatitis A?", 42.7% answered "no". When the injury types of midwives and nurses were examined, 66% stated that they had needle-based injury in their hands, 52% stated that they were injured while closing the injector tip, and 37.3% stated that they were injured by the splashes of blood and bodily fluids to eyes and mucosa.

Table 3. Immunization of the participants

		N	%
Do you work by taking precautions as if every patient has hepatitis infection?	Yes	403	73.3
	No	147	26.7
	Total	550	100.0
Did you have an examination to determine whether or not you had Hepatitis B?	Yes	498	90.5
	No	52	9.5
	Total	550	100.0
Finding after the examination	HbsAg(+),anti-Hbs(-)	37	7.4
	HbsAg(-),anti-Hbs(+)	271	54.4
	HbsAg(-),anti-Hbs(-)	68	13.7
	I'm ill	3	.6
	I do not know	119	23.9
	Total	498	100.0
Have you got a hepatitis B vaccine?	Yes	477	86.7
	No	73	13.3
	Total	550	100.0
The number of Hepatitis B vaccination	1	44	9.2
	2	63	13.2
	3	270	56.6
	Booster	100	21.0
	Total	477	100.0
Did you have the antibody examined after vaccination?	Yes	367	76.9
	No	110	23.1
	Total	477	100.0
The reasons of not getting the hepatitis B vaccine	I couldn't find any opportunity	11	15.1
	I am not at risk	18	24.7
	I don't trust the protectiveness of the vaccine	1	1.4
	I am afraid of the side effects of the vaccine	3	4.1
	I had had Hepatitis B	11	15.1
	I think that I protect myself properly.	8	11.0
	I paid no attention	21	28.8
	Total	73	100.0

When Table 3 was examined, it was determined that 73.3% of the midwives and nurses answered "yes" to the question " Do you work by taking precautions as if every patient has hepatitis infection?" Also, 90.5% of the midwives and nurses answered "yes" to the question

"Did you have an examination to determine whether or not you had hepatitis B virus?". The rate of the nurses who got the Hepatitis B vaccine was 86.7%. When the number of Hepatitis B vaccinations was examined, 56.6% of the nurses stated that they got this vaccine 3 times, 13.2% state that they got it twice, and 9.2% stated once.

It was determined that 76.9% of the midwives and nurses answered "yes" to the question "Did you have the antibody examined after vaccination?" As for the reasons for not getting a Hepatitis B vaccination, 28.8% of the midwives and nurses were not vaccinated as they paid no attention, 24.7% stated they were not at risk, 15.1% indicated they did not find any opportunity or they had had hepatitis B and, 11% indicated that they thought they protected themselves properly.

Table 4. Knowledge of the participants about the hepatitis

		N	%
Had you been examined to determine whether or not you were infected with hepatitis A virus?	Yes	332	60.4
	No	218	39.6
	Total	550	100.0
Was hepatitis A detected?	Yes	13	3.9
	No	319	96.1
	Total	332	100.0
When was the last time you have a serology examination?	1-3 months	99	18.0
	3-6 months	94	17.1
	6-12 months	130	23.6
	More than 1 year	173	31.5
	I did not	54	9.8
	Total	550	100.0
Is there a hospital infection control committee in your institution?	Yes	535	97.3
	No	15	2.7
	Total	550	100.0
Did you receive the training on hepatitis B and A?	Yes	426	77.5
	No	124	22.5
	Total	550	100.0
Type of training on hepatitis B and A	In-service training	325	76.3
	Continuing training	26	6.1
	Certificate program	6	1.4
	From books, magazines and brochures	52	12.2
	Other	17	4.0
	Total	426	100.0
The information activities on Hepatitis B and A	Did you attend courses, seminars or congresses about hepatitis b and a?	110	20.0
	Do you follow publications about hepatitis b and a?	132	24.0
	Do you think the methods of the hospital for protection against hepatitis b and c are adequate?	162	29.5
	Total	550	100.0
Do you want to receive the training on hepatitis B and A?	Yes	434	78.9
	No	116	21.1
	Total	550	100.0

When Table 4 was examined, it was determined that 60.4% of the midwives and nurses answered "yes" to the question "Had you been examined to determine whether or not you were infected with hepatitis A virus?" and 96.1% answered "no" to the question "Was hepatitis A detected?" 31.5% of the midwives and nurses, answered the question "When was the last time

you have a serology examination?" answered as "I have not had the serology examination for more than 1 year" and 9.8% answered as "I have never had a serology examination". 97.3% of them answered "yes" to the question "Is there a hospital infection control committee in your institution?". 77.5% of the midwives and nurses responded as "yes" to the question "Did you receive the training on hepatitis B and A?" and 76.3% said "In-service training" to the question "Type of training". 78.9% of midwives and nurses answered "yes" to the question "Do you want to have training on Hepatitis B and A" and 21.1% answered "no" to this question.

4. DISCUSSION

Given that hepatitis is an infectious disease, it continues to be a preventable public health issue in Turkey (Tosun, 2013). It is said that about two billion people are infected with HBV worldwide. Every year, approximately 600,000 people lose their lives due to the acute or chronic events associated with HBV. Midwives and nurses, who are directly responsible for patient care, are at risk when providing care to these kinds of patients. In the present study, 89.1% of the midwives and nurses stated that "they were in contact with blood and bodily fluids"; whereas, 83.3% stated that they took precautions. In the study, 90.5% stated that they had been examined for Hepatitis B, and 60.4% stated that they were examined for Hepatitis A. In a study conducted by sending letters to the physicians, gynecologists, nurses, and midwives providing primary care health service abroad, it was stated that HBV test was requested at the rate of 98%, and this test was requested at the rate of 93% in another study (Keane, Neale, Phillips, Heard, Jones, Guttridge and Bendall, 2002; Weisbord, Koumans, Toomey and Grayson, 2001).

Performing these tests routinely is important in order to diagnose the disease in its early stages and thus to start the treatment process. In the study, it was determined that 53.5% of the midwives and nurses had the "Hepatitis marker results" examined. Similarly, in a study conducted with the nurses and technicians working at Pamukkale University Hospital in 2014, 67.6% stated that they were examined for hepatitis markers. It may be thought that this finding was high as the nurses and technicians evaluated the examination of the markers in the Hepatitis B vaccination program within the scope of the health screening (Erkan, 2014).

When the injury types of the midwives and nurses were examined in the study, 66% of them stated that they had needle-based injury in their hands, 52% stated that they were injured while closing the injector tip, and 37.3% stated that they were injured by the splashes of blood and bodily fluids to eyes and mucosa. In a study including healthcare professionals working in a university hospital, two state hospitals, and 54 health centers in Mersin, it was determined that 79.1% of the healthcare professionals were injured with a sharp object at least once during their working life, 60.9% of the injuries happened due to a tool contaminated with blood—mostly through needles (89.2%) (Altıok, Kuyurtar, Karaçorlu, Ersöz and Erdoğan, 2009).

Likewise, Kuruüzüm et al., stated in a study conducted at Dokuz Eylül University Medical Faculty Hospital that 97% of injuries were percutaneous injuries caused by the sharp objects (Kuruüzüm, Elmalı, Günay, Gündüz and Yapan, 2008). Upon the literature review, similar studies regarding nurses were found. In the present study, 77.5% of the midwives and nurses stated that they received the in-service training on the diseases with an infectious risk (hepatitis B and C), and 79% stated that they wanted to receive the training again. In their study Uçan et al., (2006) obtained similar results. It was determined that 52.8% of the nurses received the in-service training on the protection from HBV and HCV; however, 85.2% of them wanted to receive their in-service training again.

It was determined that 41.5% of midwives and nurses, participating in the study, answered the question "Did the patients have infectious symptoms for Hepatitis B and A?" as "They had Hepatitis B" and 29.3% as "They had Hepatitis A". Similar results were obtained in a study (Uçan et al., 2006).

A great majority of the midwives and nurses answered "yes" to the question "Did you take precautions when contacting with blood and bodily fluids?" and they answered that they wore gloves, a double pair of gloves, a gown, and mask for the question "What kind of precautions did you take". Similar results were obtained in some studies (Çalışkan and Akdur, 2001; Uçan et al., 2006).

It was found that 90.5% of the midwives and nurses answered "yes" to the question "Did you have an examination to determine whether or not you had hepatitis?" Also, a great majority of the participants stated that they got the hepatitis vaccine in 3 doses as well as a got a booster vaccine. Also, similar results were obtained in the study by Uçan et al., (2006) and 83.1% of the nurses stated that they had a routine blood examination, and that most of them stated that they were vaccinated with 3 doses and alongside with a booster vaccine.

4.1. Conclusion and Recommendations

As a result of the study, a great majority of the participants stated that they took the required precautions upon coming into contact with blood and bodily fluids. Among those precautions, they stated that they wore gloves, a double pair of gloves, gowns or masks, respectively. The majority of the midwives and nurses stated that they took precautions such as controlling whether or not the patient had an infectious disease, controlling the hepatitis marker results, washing the injured/contact region with cold water, and washing the injured/contact region with batticon when there was a contact with blood and bodily fluids.

Most of the participants stated that they took precautions as if every patient had the hepatitis infection when they worked. 90.5% of the midwives and nurses had an examination to determine whether or not they had the hepatitis B. The rate of nurses who were vaccinated with hepatitis B vaccine was 86.7%. When the number of hepatitis B vaccination was examined, 56.6% of the midwives and nurses stated that they were vaccinated 3 times, 13.2% stated that they were vaccinated twice, and 9.2% stated that they were vaccinated once.

Most of the midwives and nurses had the antibody examined after vaccination. Concerning the reasons for not getting Hepatitis B vaccine, it was found that 28.8% of the midwives and nurses stated that they did not get the vaccine as they did not care, 24.7% as they were not at risk, 15.1% as they did not find any opportunity or they got hepatitis B vaccine, and 11% stated that they thought that they protected themselves properly.

Most of the participants stated that they were examined for hepatitis A, whereupon it was found as a result of the test that 96.1% did not have hepatitis A. For the question "When did you have a serology examination?", 31.5% of the midwives and nurses answered that "I have not had a serology examination for more than 1 year" and 98% answered as "I have never had a serology examination".

Although most of the midwives and nurses stated that they received the in-service training on Hepatitis B and A in their hospitals, they stated that they wanted to receive the training again.

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