ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

بسم الله الرحمن الرحيم

Ibn Sena University
Faculty of Medicine
Department of community medicine

Knowledge, Attitude and Practice of Nurses and Midwives towards Hepatitis B Infection and Control Measures in Alban Gaded Hospital, Khartoum, Sudan

Thesis submitted for partial fulfillment of requirements for MBBS Degree

Submitted By:

Mohammed Abdelmoniem Kamal Eldin Elnoor; Ahmed Atif Mohamed Ali

Supervisor:
Dr. Hiba Ahmed Khalil

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

TABLE OF CONTENTS

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

LIST OF ABBREVIATIONS

- HBsAg Hepatitis B surface antigen
- HBV Hepatitis B virus
- HCWs Healthcare workers
- IG Immunoglobulin
- KAP Knowledge, attitude and practice
- MTCT Mother to child transmission
- NSI Needlestick injury
- PEP Post exposure prophylaxis

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

ACKNOWLEDGMENT

We would like to thank our esteemed supervisor – Dr. Hiba Ahmed Khalil for her supervision, support and tutelage during the course of our research. Our gratitude extends to The University of Ibn Sina and the Faculty of Medicine for the support that eased our data collection work at Alban Gaded Hospital. Respectively, special thanks to Alban Gaded hospital for cooperating in making sure we reached full coverage. Additionally, we would like to express gratitude to the participants' treasured support which was really influential in conducting the research easily and rightfully. Our appreciation also goes out to our families and friends for their encouragement and support all through our studies.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

ABSTRACT

➢ ***Purpose:***

Infection with the hepatitis B virus (HBV) causes severe morbidity and death, burdening world health. Nurses and midwives, among other healthcare professionals, are more likely to contract the illness. Few studies have looked at the knowledge, attitude, and practices (KAP) of healthcare professionals in Sudan with regard to HBV infection, despite the fact that diverse components of KAP have an impact on health-related behaviors. This study's objective was to assess the knowledge, attitude, and practice (KAP) level of nurses and midwives concerning HBV viral infection in, Khartoum, Sudan.

➢ ***Methods:***

In the Sudanese state of Khartoum, a public hospital (Alban Gaded Hospital) underwent a cross-sectional descriptive hospital-based study.

To assess KAP's understanding of nurses and midwives about HBV infection.

Self-administered questionnaires were used and approved by the supervisor for distribution to the population chosen for the study. The data was handed over to the Medical Director whom personally ensured the questionnaires were signed and filled by the Healthcare workers (HCWs) of the chosen criteria at the field. A member of group (23:B) took care of the supervision aside with the medical director, and made sure the data was collected as needed.

The data at hand were subjected to statistical analysis using SPSS version 24.0 (Statistical Package for Social Sciences).

➢ ***Results:***

95 samples out of 99 were collected. According to participants' knowledge: 67.95% have good knowledge about HBV, while 32.05% lack basic knowledge about it. The participants' attitude towards HBV is above average showing 60.3% safe attitude. Lastly, the study shows excellent practice of the participants' behavior towards HBV safety measures with a score of 92.3% safe practice.

From the hospital, a total of 95 out of 99 nurses and midwives took part in the study. Two thirds of the respondents practiced safety, and the majority of respondents had a positive attitude about HBV preventative measures. More than half of the respondents (58.2%) had an average level of understanding. A minor but serious score of (12.6%) was noticed of the individuals, dealing with patients without wearing gloves. More over half of the nurses and midwives were not vaccinated against HBV; more than 50% of participants had incorrect ideas regarding the symptoms and route of HBV infection and all 95 participants voted (NO) for ever being infected by HBV.

➢ ***Conclusion:***

In Alban Gaded hospital, the majority of the nurses and midwives were aware of HBV infection. But a sizeable majority of the participants lacked the necessary understanding of early immunization after birth. The study found a probability of high risk infection due to exposure under the poor level of HBV vaccine coverage rate. Moreover a clear point of limitation was noticed in Table 4 third question, where it asks whether you are or ever was infected by HBV. All the participants denied, showing a sense of partiality. Further occupational exposure prevention measures, training programs on HBV infection, including post-exposure prophylaxis, and increasing the vaccination rate of all HCWS are also strongly encouraged.

Keywords:- *Knowledge, Attitude and Practice; Nurses and Midwives; Hepatitis B; Control Measures; Khartoum, Sudan.*

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

CHAPTER ONE
INTRODUCTION

A. Background:

Acute and chronic consequences of the hepatitis B virus (HBV) infection, such as chronic hepatitis, cirrhosis, and hepatocellular cancer, result in considerable morbidity and death worldwide [1–5]. Globally, there were 240 million hepatitis B surface antigen (HBsAg) positive individuals in 2005, up from 223 million in 1990 [6]. A significant public health issue, hepatitis B affects about 10% of the world's population. The 2009 WHO study estimates that there are around 2 billion HBV-positive persons globally, more than 350 million of whom have a chronic, lifelong infection, and more than one million people die each year from cirrhosis and liver cancer [2, 4]. Additionally, 170 million people are thought to have chronic HCV infection [5]. In the developing world, notably in Asia and sub-Saharan Africa, the prevalence of HBV infection is greatest. According to WHO estimates, more than 10% of people in Africa have HBV infection. But according to a research carried out in Addis Ababa, Ethiopia, the mean prevalence of HBsAg was 6.1% [4].

Estimates of the frequency of HBV infection in various Sudanese groups have been published by multiple researchers [3, 7, 8, and 9]. In Sudan, a recent systematic review and meta-analysis of 14 studies including 5848 people found that the seroprevalence of HBV varied from 5.1 to 26.8%, with a pooled prevalence of 12.1%. Khartoum State has the highest incidence of HBV infection in Sudan, with a proportion of 12.7%, according to study results [1]. This rate is greater than that of Nigeria (5%), Ethiopia (6.1%), and other African nations like Burundi (15.6%), Central African Republic (14%) [2].

According to the Centers for Disease Control (CDC), 3.9 million people (1.8%) have HCV infections, and 2.7 million of these infections will progress to chronic disease [1]. Between 5 and 10% of voluntary blood donors have anti-HB viral antibodies. However, those with poorer socioeconomic levels, older age groups, and those exposed to blood products have a greater prevalence [2]. According to estimates, hospital staff members had HBV and HCV infections at rates of 14.4% and 1.4%, respectively [1]. People working in healthcare environments, especially support employees, are at a significant risk of contracting severe, even fatal illnesses like HIV and HBV. The most typical or frequent danger that healthcare professionals face when providing patient care is direct contact with blood and other bodily fluids [3]. According to studies conducted in the US, there is a 27–37% chance of contracting HBV after receiving a needle stick from a patient who has the virus. Additionally, there was a 3 to 10% chance of contracting HCV through a needle stick from an infected person. Hepatitis B transmits with a high rate of efficiency. For instance, a vulnerable host can get HBV from an unintentional splash of as little as 108 ml of contaminated blood in the eye [6]. Since it was developed 20 years ago, the HBV vaccine is safe and efficient in avoiding infection as well as the major side effects of hepatitis, such as liver cancer and cirrhosis [2]. It may be administered either before or after exposure. There is currently no HCV vaccine [5].

All people at risk of coming into touch with blood, blood products, or body fluids should have the hepatitis B vaccination before and/or after exposure. Hepatitis B vaccination should ideally be finished before beginning training as a health professional since it is assumed that the risk of infection is higher at this period. As it provides long-term, probably lifetime protection from hepatitis B infection, immunizing healthcare workers (HCWs) against the virus inhibits nosocomial transmission of the virus from HCWs to patients and from patients to HCWs [2, 7].

The clinician's attitudes and knowledge are crucial in preventing the spread of illness. Therefore, the goals of this study were to evaluate nurses' and midwives' knowledge, attitudes, and practice about hepatitis B. Correlating awareness of hepatitis B and C infection with clinical practice and attitudes toward these diseases is another essential goal of this study, and it will help determine how information and education may affect attitudes and practices.

- *Summary of Similar Study*

A hospital-based study was conducted in Saudi and Saad Abu-Ella hospitals in Khartoum, Sudan between August 18 and September 2, 2016.

The total number of nurses and midwives working in the two participating hospitals was 150. The inclusion criteria for this study were the nurses and midwives working in these two hospitals.

- *Data Collection and Analysis*

The study implemented a structured 31-item questionnaire to examine the level of KAP of nurses and midwives towards hepatitis B virus infection. Data were collected from the HCWs, 15 questions for knowledge, 4 questions for attitude, and 6 questions for practice. The main purpose of knowledge questions was to measure basic knowledge about etiology, natural history, modes of transmission, complications, and PEP to HBV. The questions regarding the practice section aimed to measure whether the participants received the HBV vaccine, sterilized instruments, and wore gloves.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

➢ *Results*

A total of 110 nurses and midwives from the both hospitals participated in this study. More than half of the respondents (58.2%) had an average level of knowledge, two-third of the respondents had a safe practice, and the majority of the respondents had a favorable attitude towards HBV preventive measures. Approximately half of the participants (51.8%) had a history of needle stick injuries

➢ *Conclusion*

Most of the nurses and midwives in Saudi and Saad Abu-Ella hospitals were aware of HBV infection. However, a significant proportion of the participants lacked the requisite knowledge about post exposure management. The study revealed a low level of HBV vaccination coverage rate and a high rate of needle stick injuries.

B. Problem Statement:

Hepatitis B virus causes liver disease and up to 2 billion people have been in contact with the virus worldwide. It can cause both acute and chronic disease. The routes for transmission are through blood, mother to infant at time of delivery and sexually. Chronic hepatitis B infection is a risk factor for development of liver cirrhosis and hepatocellular carcinoma. Prevention of hepatitis B virus infection is highly desirable. Since the early1980s hepatitis B vaccine has been available. It can effectively prevent the disease and has been found to be safe. The World Health Organization, WHO, has recommended all countries to implement the vaccine in their children's vaccination programs and many countries have followed this recommendation.

This research is to help assess the percentage of health workers in Al Ban Gadeed who are knowledgeable towards infection control measures of hepatitis B.

C. Justification:

Hepatitis is more likely to affect nurses and midwives because it is one of the most prevalent causes of morbidity in the world and spreads easily through contact. It is less likely to contract the disease if people are aware of it. The implementation of blood safety measures, infection control measures in healthcare and community settings, safe injection and sex practices, and harm reduction techniques for injecting drugs are just a few of the strategies listed in WHO records as part of a comprehensive approach to the prevention of viral hepatitis that can help reduce transmission, inhibiting the spread of HAV, HBV, and HCV. All healthcare professionals need to get health education on hepatitis B/C infection through the administration of awareness programs in order to raise awareness of this disease.

D. Objectives:

➢ *General Objective:*

To assess knowledge, attitude and practice of nurses and midwives towards infection control measures of hepatitis B infection in Alban Gaded hospital, Khartoum north, Sudan.

➢ *Specific Objectives:*

- To know the knowledge of nurses and midwives about the infection control measures of hepatitis B in Alban Gaded hospital.
- To identify the attitude of nurses and midwives towards the infection control measures of hepatitis B in Alban Gaded hospital.
- To assess the practice of nurses and midwives towards hepatitis B infections in Alban Gaded hospital.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

CHAPTER TWO
LITERATURE REVIEW

A. Study no.1:

In 2017, Adel Saeed Al Qahtani and Metrek Ali Almetrek conducted a retrospective study in Saudi Arabia with the goal of identifying the knowledge, attitudes, and practices of nurses working in dialysis units about common guidelines for infection management. Between December 2016 and January 2017, a cross-sectional survey with all nurses in three dialysis facilities connected to the Ministry of Health in Abha city was carried out. A self-administered questionnaire was used to get data on nurses' KAP, and an observation checklist was used to gather information on ambient factors. A total of 109 nurses participated, with a response rate of 94.78%. The majority of them (62.39%) were Saudi citizens and had a diploma (78.90%). The knowledge score was 60.18+17.51, attitudes were 85.59+8.09, and practice was 92.11+7.98. Despite the lack of education, the number of nurses practicing was high. The use of eye protection when blood splash is expected (31.19%), simultaneous care for positive and negative patients (24.77%), moving needles from hand to hand (29.36%), and recapping needles after use (25.69%) are only a few of the gaps in practice that were found. According to multivariate linear regression analysis, practice scores were independently predicted by attitudes about infection control, attempts to acquire infection control guidelines, on-the-job training, and not being Saudi. Although nurses lack sufficient information, their attitudes have a huge impact on their performance, certain infection control procedures are more frequently followed by nurses than others. Training in infection control should focus on developing a positive attitude while addressing performance gaps [11].

B. Study no.2:

In 2018, Masomeh Rostamzadeh, Abdorrahim Afkhamzadeh, Sirus Afrooz, Kaveh Mohamadi, and Mohammad Aziz Rasouliin conducted a retrospective study in Sanandaj, Iran, with the goal of assessing the Knowledge, Attitude, and Practices (KAP) of healthcare professionals, including doctors, dentists, nurses, and lab workers, with regard to infection control and fundamental principles. In Sanandaj, Iran, 106 dentists were recruited for this cross-sectional study. Regarding hepatitis B virus (HBV), hepatitis C virus (HCV), and HIV/AIDS, the dentists' KAP was assessed. To evaluate differences between the groups, one-way ANOVA, the student's t-test, and the chi-square test were applied. Stata 12 was used to analyze the data. The findings indicated that women (53.8%) made up the bulk of the study population's participants. Age and work experience had mean standard deviations (SD) of 39.6 9.80 and 10.6 8.7 years, respectively. Participants' knowledge, attitudes, and behaviors had corresponding mean SD values of 37.3 3.01, 22.9 4.80, and 24.07 5.06, respectively. The findings also showed that job experience (more than ten years; significant influence) had a significant impact on dentists' greater degree of knowledge of HBV, HCV, and HIV/AIDS. P 0.001) and the year of graduation (after 2006: P 0.001). Age group (30 years: P = 0.021), work experience (10 years: P 0.001), and workplace (dental office: P = 0.016) all had a significant impact on respondents' positive attitudes toward HBV, HCV, and HIV/AIDS. The study's findings showed that dentists have a satisfactory level of knowledge and attitudes about HBV, HCV, and HIV/AIDS infections, but some gaps were also found, suggesting that dentists' higher levels of knowledge are crucial in influencing their practices and attitudes toward patients who have these infections [12].

C. Study no.3:

Sanaa Mohammed-elbager Mahmoud Mursy and Sagad Omer Obeid Mohamed did a retrospective study in Khartoum, Sudan, in 2019 with the goal of determining the KAP level of nurses and midwives toward HBV virus infection there. In the Sudanese state of Khartoum, two public maternity hospitals (Saudi and Saad Abul-Eleella hospitals) underwent a cross-sectional descriptive hospital-based study. To assess KAP's attitude about HBV infection, a pre-tested structured questionnaire was developed and put into use. The data at hand were subjected to statistical analysis using SPSS version 21 (Statistical Package for Social Sciences). To assess the association between categorical variables, the chi-square test was performed. From the two hospitals, a total of 110 nurses and midwives took part in the study. Two thirds of the respondents practiced safety, and the majority of respondents had a positive attitude about HBV preventative measures. More than half of the respondents (58.2%) had an average level of understanding. A history of needle stick injuries was present in 51.8% of the individuals. More than half of the nurses and midwives did not follow the HBV vaccine schedule, and 50% of participants had incorrect ideas regarding post-exposure prophylaxis for HBV infection. In Saudi Arabian and Saad Abul-Eleella hospitals, the majority of nurses and midwives were aware of HBV infection. But a sizable majority of the participants lacked the necessary understanding of after exposure treatment. The study found a high risk of needle stick injuries and a poor level of HBV vaccination coverage rate. It is strongly advised to implement further workplace exposure prevention measures, implement training programs on HBV infection, including post-exposure prophylaxis, and raise the vaccination rate of all HCWS [13].

D. Study no.4:

In 2020, Hind Abdallah Modawi, Manal Bilal Mohamed, Iman Khalifa Abdel Gadir, Norah Hassan Ahmed, and Khadijah Mohammed Ismail Zaeri conducted a retrospective study in Saudi Arabia with the goal of assessing nursing students' knowledge, attitudes, and practices (KAP) regarding hepatitis B virus infection at the Sabya Campus of Jazan University. A validated questionnaire was used in a cross-sectional study to gauge nursing students' knowledge of hepatitis B and C infection. In 2020, the investigation was carried out between May and June. Using IBM SPSS Statistics version 20, data from 60 students in levels 4 through 8 were evaluated. Frequency and proportion analyses using descriptive statistics were carried out. Age, educational

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

attainment, and married status were employed as independent variables, and the connection between these factors and the desired outcome was examined using the Chi-squared test (knowledge, attitude, and practice, related to hepatitis B and C). Statistical significance was defined as a p-value 0.05. In the study, 60 students took part, and 51.7% of them demonstrated strong knowledge. Only 16.7% of them had positive attitudes, while 48.3% of them had negative attitudes toward those who carried the hepatitis B virus. 76.7% of businesses used ethical business practices. Marriage status and attitudes concerning HBV infection were shown to be significantly different (p=0.024). The study places a strong emphasis on the value of ongoing HBV education for enhancing understanding and attitudes around HBV infection [14].

In order to evaluate the knowledge, attitudes, and practices (KAP) of HBI prevention among nursing students in the Upper West Region of Ghana in 2021, Augustine Ngmenemandel Balegha, Adadow Yidana, and Gilbert Abotisem Abiiro conducted a retrospective study. In November 2020, they gave a stratified random sample of 402 nursing students from two nursing training colleges in the Upper West Region an online cross-sectional survey. They generated composite KAP of HBI prevention scores using STATA version 13, with a maximum score of 18 for knowledge and 8 each for attitude and practice. To evaluate the variables connected to the practice of HBI prevention, a generalized ordered logistic regression model was used. The students' knowledge and attitude had moderate median scores (12.00; IQR = 10-13) and 6.00; IQR = 5.00-7.00, respectively, however their performance in the practice of HBI prevention had a poor median score (5.00; IQR = 4.00-6.00). Being a male, second-year student, having parents with tertiary education, having high knowledge (aOR = 2.05; p = 0.06), and having a positive attitude were all substantially linked with higher likelihoods (aOR >1; p 0.05) of exhibiting good practice of HBI prevention. Students who had never been married were substantially less likely to conduct adequate HBI prevention (aOR = 0.34; p = 0.010). The kids' KAP scores for preventing HBI were below average. They advocate for institution-based HBI prevention policies and regular education, free or low-cost HBI preventive services, and the implementation of appropriate professional ethics on HBI prevention in nurse training institutions. These initiatives ought to primarily target female, single, and first-year nursing students [15].

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

CHAPTER THREE
METHODOLOGY

A. Study Design

A descriptive hospital-based cross-sectional study.

B. Study Area

Alban Gaded Hospital in Khartoum state, Sudan. This area was chosen because it's a teaching hospital for students and it's also a public health, tertiary healthcare facility providing specialized clinical inpatient and outpatient services for a great number of the Khartoum state population. This hospital is a popular health facility specialized in obstetrics and gynecology services aside from other departments. Khartoum state is the most populous state in Sudan with a population of more than 5 million in the 2008 census. The state has experienced rapid urbanization during the last decades, and the large part of the state's population has reported that their region of origin is outside Khartoum. The state is divided into seven localities. The distribution of public and private hospitals in these localities is made according to the population density.

C. Study Population:

The total number of nurses and midwives working at the participating hospital are 99 (80 nurses and 9 midwives in the emergency room and the patients' admission sector of obstetrics, and 10 nurses in the department of urology).

➢ *Inclusion Criteria:*

The inclusion criteria for this study were all the nurses and midwives working at the two sectors mentioned above.

➢ *Exclusion Criteria:*

The exclusion criteria for this study were the other departments and those refusing to participate in the study.

D. Sampling:

➢ *Sample Frame:*

- Sample size: sample size is 76. Sample size was calculated using the formula:
- n = (Z2 x P x (1 - P))/e2

Where:
Z = value from standard normal distribution corresponding to desired confidence level
(Z=1.96 for 95% CI)
P is expected true proportion
e is the desired precision (half desired CI width).

➢ *Sampling Technique:*

Purposeful random sampling technique was the technique used for selection of the study participants because it is the method of picking instances in a methodical manner without using ahead knowledge of how the results will turn out yet, identifying a population of interest. Increasing credibility, not encouraging representativeness, was the goal.

E. Instruments of Investigation:

The data was collected using a self-administered questionnaire containing 27 questions, all written for objective achievement. *The questionnaire was divided into four parts:*

- Sociodemographic Data: Which contains the variable data, and it includes 4 questions
- Knowledge level on Hepatitis B: This contains closed question (YES OR NO) counting to be 12 questions
- Attitude towards hepatitis prevention: This contains closed (YES or NO) counting to be 6 questions
- Practice in preventing Hepatitis B: This contains closed (YES or NO) counting to be 5 questions.

The data was collected from Alban Gaded hospital.

➢ *Demographic Data:*

The collection of data was obtained using questionnaires that included 27 questions all questions were written for objectives' achievement.

➢ *Dependent Variables:*

The collection of data was based on age, gender, level of education, marital status, Knowledge, attitude and practice.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

F. Data Management and Analysis:

The study implemented a 27-item structured questionnaire consisting of one section for the personal information and three sections to examine the KAP level of nurses and midwives towards HBV infection. The data were collected from HCWs who met eligible criteria. The structured questionnaire consisted of four questions for demographic information, 12 questions for knowledge, six questions for attitude, and five questions for practice.

The main purpose of the knowledge questions was to measure the basic knowledge about etiology, natural history, modes of transmission, complications, and PEP to HBV. The response set of these questions was set as "yes" and "no" choices. Respondents with favorable attitudes are those who answered questions which indicated that they don't share needles, and also believed that early immunization at birth and vaccination are important to prevent HBV transmission recommending PEP for those who had been exposed to HBV. The questions regarding the practice section aimed to measure whether the participants would ensure their patients received the HBV vaccine, sterilize instruments before dealing with patients, and wear gloves.

The overall KAP score was determined based on the sum of correct answers to the 12 knowledge-based questions, six attitude-based questions and five practice-based questions. A correct response to each question received one point. Median was used to determine the cut-off point for each section of KAP; equal to or more than 9 out of 12 were considered as average knowledge, equal to or more than five out of six were considered as favorable attitudes, and equal to or more than four out of five were considered as safe practice. The questionnaire was constructed based on the supervisor's (Dr. Hiba) advice (Department of Community Medicine, Faculty of Medicine, Ibn Sena University). The Statistical Package for Social Sciences (SPSS) software version of 21 was utilized to analyze the data at hand. Descriptive statistics of SPSS provided frequency tables and the distribution of the variables.

G. Ethical Consideration:

Ethical consideration was obtained from Ibn Sena University, department of community medicine. Permission to conduct the study was given by Alban Gaded Hospital. Informed oral and written consent were obtained from nurses and midwives who were eligible for the study. The written consent was received from the participants when they signed the questionnaire and they were informed so. Nurses and midwives were ensured of confidentiality and privacy. Nurses and midwives were also informed of their freedom for giving their responses and the opportunity to withdraw from participating. Also, data from the field was secured for authorization personnel only.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

CHAPTER FOUR
RESULTS

Data was collected from nurses and midwives working at Alban Gaded hospital to assess the knowledge, attitude and practice towards hepatitis B infection control measures, the sample size was 95 (nurses and midwives altogether) from the selected criteria which was the emergency room, the patients' admission sector of obstetrics and the department of urology; results were as follows:

Table 1: Distribution of nurses (N=95)

Variables	N	%
Age	6	(6.3%)
15-24	31	(32.6%)
25-34	37	(38.9%)
45-54	12	(12.6%)
55 and Above	9	(9.5%)
Gender		
Female	59	(62.1%)
Male	36	(37.9%)
Education Level		
Primary-High School	9	(9.5%)
Diploma	22	(23.6%)
Bachelor	64	(67.4%)
Marital Status		
Married	28	(29%)
Single	67	(71%)

Table 1 shows a total of 95 nurses and midwives responded. (94.7%) of the 95 participants were nurses, and (5.3%) were midwives. (62%) of the participants were females and the rest of the participants (38%) were males. Most of the participants' age group fell between 35-44yrs (38.9%) and 25-34yrs (32.6%). A very good resounding majority of 80 participants (72.7%) had a bachelor's degree or more, whereas just 30 individuals (27.3%) had one.

Table 2: Knowledge Level on HBV (N=95)

knowledge level on hepatitis B			
		Frequency	**Percent**
Is hepatitis B marked by having a yellowish skin	Yes	83	87.3 %
	No	12	12.6%
Is hepatitis B marked by having sore joints	Yes	31	32.6%
	No	64	67.3%
Does hepatitis B attack the Liver	Yes	89	93.6%
	No	6	6.3%
Does HBV enter through digestion	Yes	65	68.4%
	No	30	31.5%
Can hepatitis B spread through sexual contact	Yes	86	90.5%
	No	9	9.4%
Can hepatitis B spread by sharing needles	Yes	95	100%
	No	0	0%
Can hepatitis B spread through saliva	Yes	28	29.4%
	No	67	70.5%
Can hepatitis B spread from mother to baby at birth	Yes	89	93.7%
	No	6	6.3 %
Is hepatitis B transmitted through sex only	Yes	0	0%
	No	95	0%
Do you think hepatitis B completely treated	Yes	73	76.8%
	No	22	23.2%
Can a patient with an acute hepatitis B infection fully recover in a span of 6 months	Yes	75	78.9%
	No	20	21.1%
Do you think early immunization at birth is necessary	Yes	61	64.2 %
	No	34	35.8%

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

Table 2 shows that 67.95% of the population has good knowledge about HBV, while 32.05% lack basic knowledge about it. Above, note the sections highlighted in green showing positive responses that match the right knowledge. Nevertheless the table clearly shows sections highlighted in red pointing out responses that were found to be critical, problematic and project a drastic lack of information from the participants;

- The 95 participants all voted against "transmission of HBV through sexy only" indicating that they're aware of other transmission routes of the virus.
- (76.8%) of the participants think hepatitis B can be infectious through digestion, which is wrong; HBV does not spread through food or water.
- (35.8%) claimed that early immunization at birth is not necessary, which was found critical, because that's a control measure that must take place under certain conditions.

Table 3: Attitude towards HBV (N=95)

Your attitude towards hepatitis prevention			
		Frequency	**Percent**
Do you avoid direct contact with the sufferers?	Yes	90	94.7 %
	No	5	5.3%
Would you do constant checkups to yourself at health services to ensure your safety?	Yes	95	100%
	No	0	0%
Were/Are you hepatitis B positive?	Yes	0	0%
	No	95	100%
If yes, was/is your case acute or Chronic?	Acute	0	0%
	Chronic	0	0%
Are you vaccinated against hepatitis B?	Yes	34	35.7%
	No	61	64.2%
Are you willing to educate the community about the hepatitis B precaution?	Yes	87	91.6%
	No	8	8.4%
Would you isolate yourself if you get exposed to hepatitis B?	Yes	95	100%
	No	0	0%

Table 3 shows that the participants' attitude towards HBV is above average showing 60.3% safe attitude.

- The rows highlighted in green indicate that all 95 participants voted (YES) for both questions:
- *Would you do constant checkups to yourself at health services to ensure your safety?*
- *Would you isolate yourself if you get exposed to hepatitis B?"*

The row highlighted in red indicates that the majority of the participants (64.2%) voted (NO) for the question:

- *"Are you vaccinated against HBV?"*
- This response showed dramatic normalization for not being vaccinated against HBV amongst the HCWs studied.
- The rows highlighted in yellow indicate a point of limitation, that can be manageable and will be discussed further more in chapter 8 **"8.1 Disclosure"**

Table 4: Practice in Preventing HBV (N=95)

Practice in preventing hepatitis B			
		Frequency	**Percent**
Do you make sure your patients are vaccinated against hepatitis B	Yes	85	89.5 %
	No	10	10.5%
Do you use gloves when dealing with patients	Yes	83	87.4%
	No	12	12.6%
Do you ensure cross-matching of blood samples before giving patients blood transfusions	Yes	95	100%
	No	0	0%

Table 4 shows excellent practice of the participants' behavior towards HBV safety measures with a score of 92.3% safe practice. The majority confirmed that they check whether or not their patients are vaccinated against HBV. A slight increase of the participants not using gloves when handling a patient was noticed and highlighted in red.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

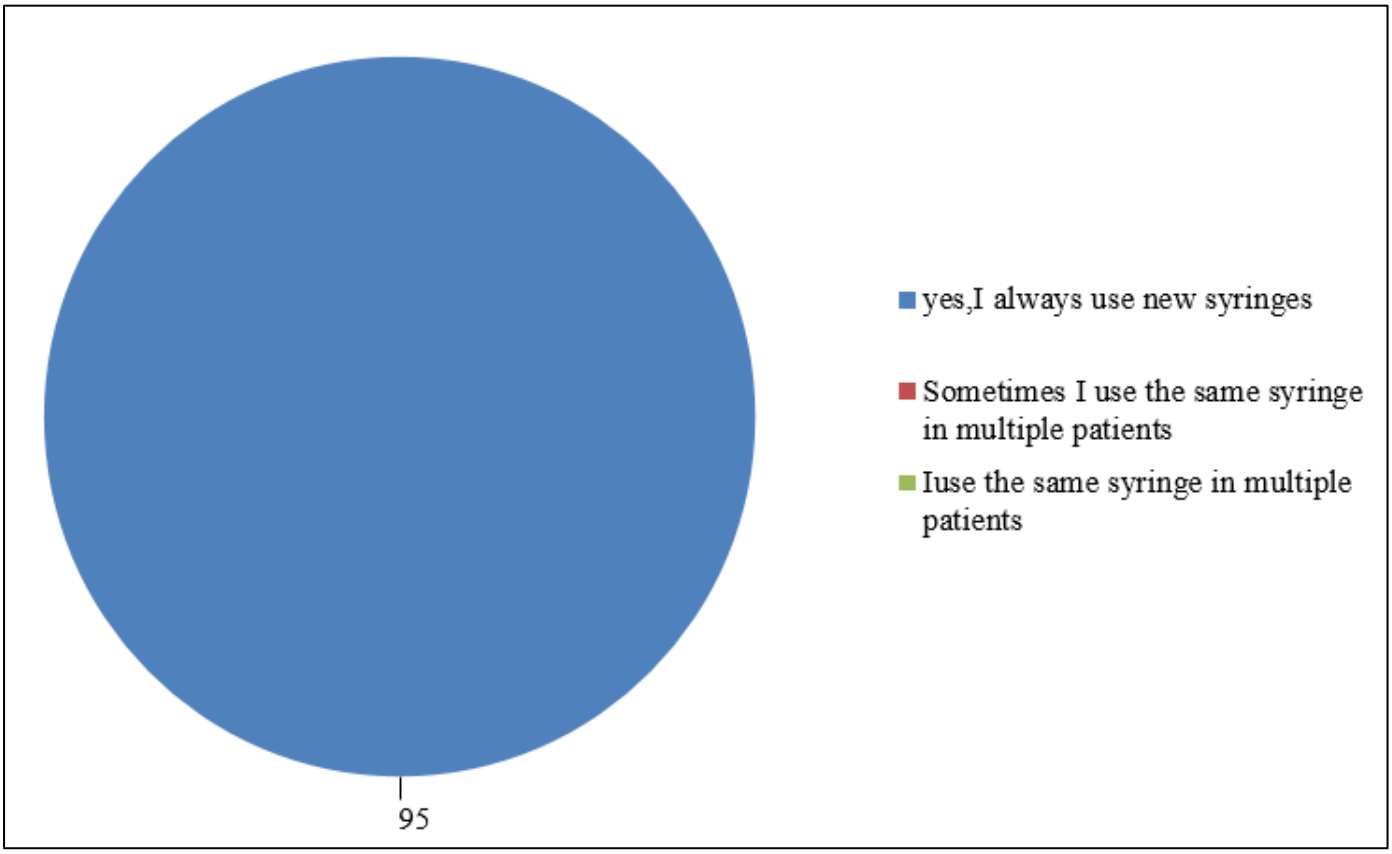


Fig 1: Shows the Percentage Usage of New Syringes when Dealing with Different Patients (N=95):

Figure 1 shows an excellent percentage upon usage of new syringes when dealing with patients. All participants use new syringes whether they are operating on a single patient or different ones.

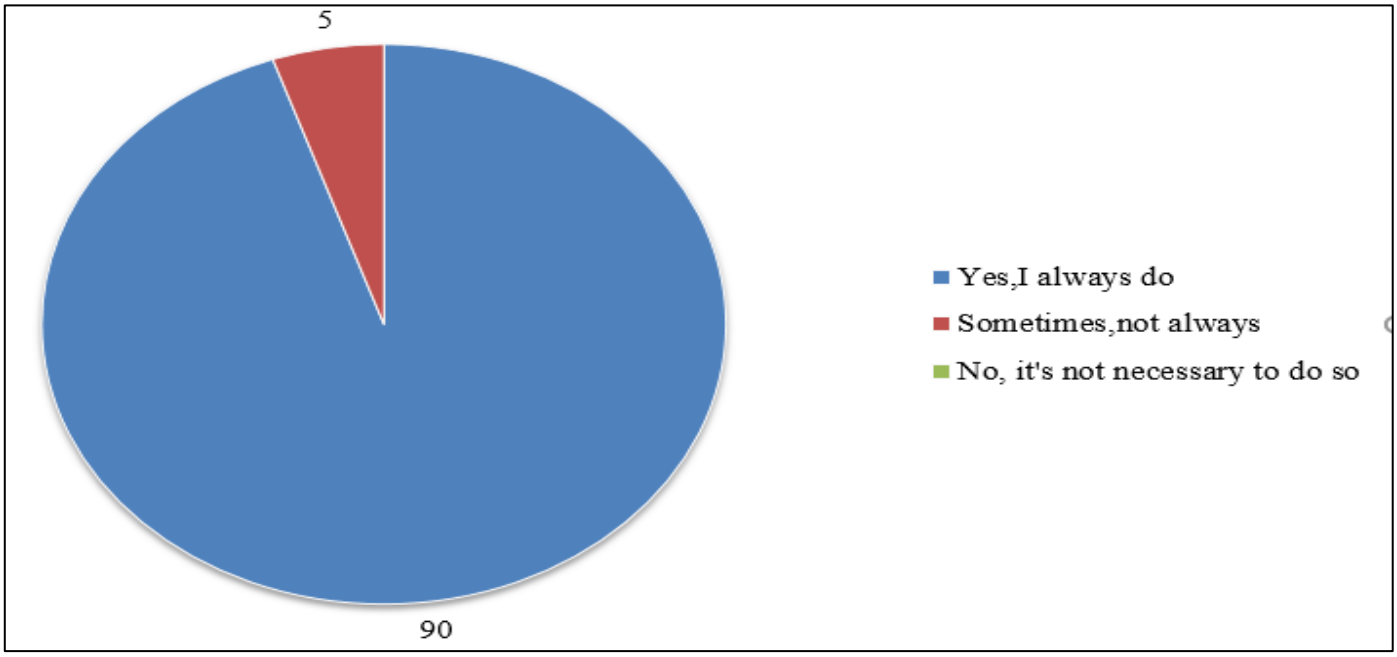


Fig 2: Shows the Number of Nurses and Midwives that Sanitize their Hands after they have Dealt with the Patient (N=95):

Figure 2 shows an excellent percentage upon the participants practice towards sanitizing their hands after dealing with patients. Almost all of the nurses and midwives (95%) always sanitize their hands and very few (5%) only do sometimes.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

CHAPTER FIVE
DISCUSSION

As mentioned previously, HBV vaccine remains as a predominant prophylactic measure for Hepatitis B. It is paramount for healthcare workers to receive the vaccination before completion of their healthcare training- as this is the period of highest exposure to the viral antigen. Furthermore, vaccination provides long term immunity as well as prevents the spread of Hep B as a Healthcare acquired infection (HAI). The clinicians Knowledge, Attitude and Practice (K.A.P) are crucial for the prevention of disease for HCWs and patients respectively. Therefore, HCWs must have correct and current scientific information and practice with proper and consistent application. The current study focuses on the evaluation of the knowledge of nurses and midwives towards HepB, the attitude towards Hep B and finally, the practice towards Hep B infections within Alban Gaded hospital. The findings demonstrate that 60% have adequate knowledge about infection prevention. The proportion of knowledgeable participants is higher than the 2019 article about K.A.P towards HBV infection among nurses and midwives in two maternity hospitals in Khartoum, Sudan [13]. Implications of the study suggest that HCWs in Alban Gaded:

*Lack evidence based knowledge about the disease and infection prevention, lack appropriate scientific information regarding post exposure treatment and infection prevention principles [Table 2].

*The participants showed a bias response, see [Table 3] “Were/Are you HBV positive” and denied. That was noticeable because although the question was designed in a confidential manner to give the participant a safe space to answer rightfully, the dramatic response to (NO) showed a gap that can be related to other valid reasons that should be furthermore investigated.

* Other factors such as the age and the educational level met the safe ground of all participants with the following findings:

- The majority are between 25-44yrs (71.5%)
- (67.4%) of the total population hold a bachelor degree

➢ *Study Limitations:*

*There are a few limitations due the cross-sectional nature of the study. The explanatory and outcome variables of the study do not have any temporal relationships. The high response rate does not overrule social desirability and recall bias as these are self-reported results. Another limitation of the study is that it is limited to one public healthcare facility.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

CHAPTER SIX
CONCLUSION

In Alban Gaded hospital, the majority of the nurses and midwives were aware of HBV infection. But a sizeable majority of the participants lacked the necessary understanding of early immunization after birth. The study found a probability of high risk infection due to exposure under the poor level of HBV vaccine coverage rate including the fact the minority don't tend to wear gloves. Moreover a clear point of limitation was noticed, see Table 4 third question, where it asks whether you are or ever was infected by HBV. All the participants denied, showing a sense of partiality. Further occupational exposure prevention measures, training programs on HBV infection, including post-exposure prophylaxis, and increasing the vaccination rate of all HCWS are also strongly encouraged.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

CHAPTER SEVEN
RECOMMENDATIONS

Hepatitis B virus causes liver disease and up to 2 billion people have been in contact with the virus worldwide. It can cause both acute and chronic disease. The routes for transmission are through blood, mother to infant at time of delivery and sexually. Chronic hepatitis B infection is a risk factor for development of liver cirrhosis and hepatocellular carcinoma. Prevention of hepatitis B virus infection is highly desirable. Since the early1980s hepatitis B vaccine has been available. It can effectively prevent the disease and has been found to be safe. The World Health Organization, WHO, has recommended all countries to implement the vaccine in their children's vaccination programs and many countries have followed this recommendation.

This research is to help assess the percentage of health workers in Al Ban Gaded who are knowledgeable towards infection control measures of hepatitis B.

- We recommend the medical director at the hospital to enforce a system/unit that's responsible for ensuring the vaccination of all the HCWs at Alban Gaded hospital against HBV infection, and increase and sustain their KAP towards HBV, its transmission routes and the importance of early immunization at birth in certain situations.
- College students in Ibn Sena University should be aware of the consequence of improper consciousness and behavior towards HBV control measures because the studied area happens to be the environment they engage with for medical training purposes.
- We recommended that the Students' Affairs Department at the university, enforce classes and provide enough extracurricular activities to insurance all medical students at the campus are safe, vaccinated and aware of all the post exposure prophylaxis.
- Furthermore we recommend a more comforting and confidential approach to assist in figuring out whether or not the third question on **Table 3** was of discomfort to the participants to answer honestly, because of the high prevalence of the HBV infection in Sudan the statistics showed contradiction that could be true but shows inconvenience compared with previous studies.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

CHAPTER EIGHT
DISCLOSURE: (LIMITATIONS)

The research was carried out within the framework of the university's teaching hospital, the public medical institution (Alban Gaded hospital) so there was no conflict of interest and it did not conflict with the hospital's policy. We only needed a statement from the university to the hospital asking for permission to study its population.

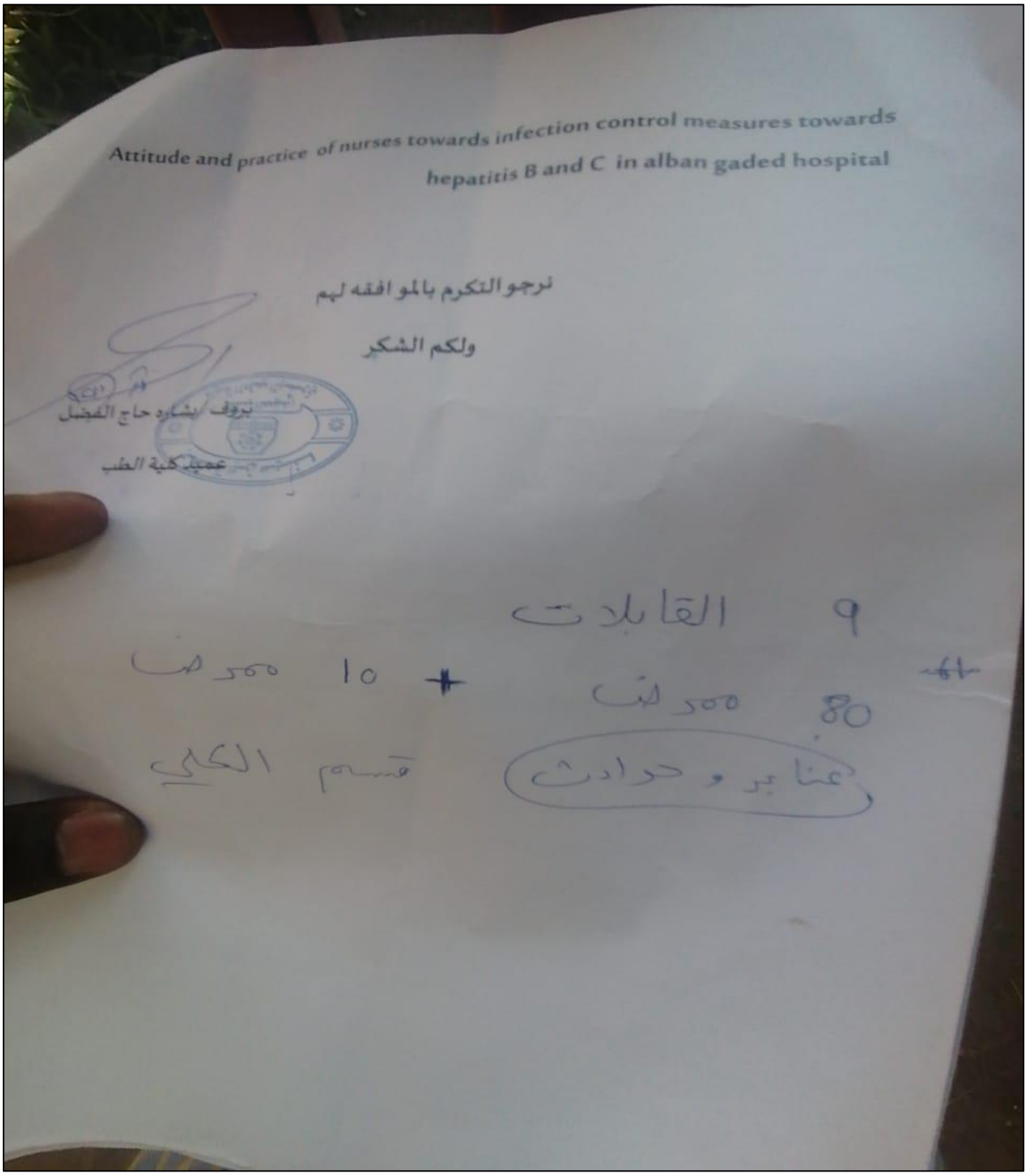
ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

REFERENCES

[1]. Badawi MM, Atif MS, Mustafa YY. Systematic review and meta-analysis of HIV, HBV and HCV infection prevalence in Sudan. Virol J. 2018; 15:1–16.
[2]. Mudawi H. Epidemiology of viral hepatitis in Sudan. Clin Exp Gastroenterol. 2008;1:9–14.
[3]. Y. M. Mesfn, K. T. Kibret, and O. Schildgen, "Assessment of knowledge and Practice towards Hepatitis B among Medical and Health Science Students in Haramaya University, Ethiopia," PLoS ONE, vol. 8, no. 11, p. e79642, 2014.
[4]. S. Chouhan, "Hepatitis B prophylaxis practice among medical Students: An overview," Hepatitis B Annual, vol. 5, no. 1, p. 102, 2008.
[5]. B. Anagaw, Y. Shiferaw, Y. Belyhun et al., "Seroprevalence of hepatitis B and C Viruses among Medical Waste Handlers at Gondar Town Health Institutions, Northwest Ethiopia," BMC Research Notes, vol. 5, no. 55, 2012.
[6]. New York, NY, USA, 2nd edition, 2005 Konlan KD, Aarah-Bapuah M, Kombat JM, Wuffele GM. TOPIC: "The level of nurses' knowledge on occupational post exposure to hepatitis B infection in the Tamale metropolis, Ghana". BMC Health Serv Res. 2017; 17:254. https://doi.org/10.1186/s12913-017-2182-Article. PubMed. PubMed Central. Google Scholar.
[7]. Singhal V, Bora D, Singh S. Hepatitis B in health care workers: Indian scenario. J Lab Physicians. 2009; 1(2):41–8. https://doi.org/10.4103/0974-2727.59697.Article. PubMed. PubMed Central. Google Scholar.
[8]. Abeje G, Azage M. Hepatitis B vaccine knowledge and vaccination status among health care workers of Bahir Dar City Administration, Northwest Ethiopia: a cross sectional study. BMC Infect Dis. 2015; 15(1):1–6.
[9]. Elsheikh TA, Balla SA, Abdalla AA, Elgasim MA, Swareldahab Z, Bashir AA. Knowledge, Attitude and Practice of Heath Care Workers Regarding Transmission and Prevention of Hepatitis B Virus Infection, White Nile State, Sudan, 2013. Am J Health Res. 2016; 4(2):18–22.,
[10]. Centers for Disease Control and Prevention (CDC). Updated US public health services for the management of occupational exposure to HBV, HCV and HIV and Recommendations for Post exposure Prophylaxis. Infect Dis Clin Pract. 2001; 10(6):338–40, Article, Google Scholar.
[11]. https://ejhm.journals.ekb.eg/article_14506.html
[12]. https://pubmed.ncbi.nlm.nih.gov/30563497/
[13]. https://pubmed.ncbi.nlm.nih.gov/31783744/
[14]. https://www.researchgate.net/profile/Hind-Elamin
[15]. https://pubmed.ncbi.nlm.nih.gov/34648609/

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

ANNEXES



ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

Control measures of Hepatitis B

This questionnaire is to help a group of medical students scale the knowledge, attitude and practice of nurses towards infection control measures of hepatitis B in Alban Gaded Hospital, reassuring that all the information taken from each participant will remain confidential.
By filling the form below, you are giving full consent for the information you share to be used to carry on the research.
Thank you for your participation.

SECTION I

1. Age:
   a. 15-24 ( )
   b. 25-34 ( )
   c. 35-44 ( )
   d. 45-54 ( )
   e. 55 and above ( )

2. Gender:
   a. Male ( )
   b. Female ( )

3. Educational level:
   a. Primary/High school ( )
   b. Diploma ( )
   c. Bachelor ( )

4. Marital status:
   a. Single ( )
   b. Married ( )

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

SECTION II

Knowledge level on hepatitis B

1. Is hepatitis B marked by having a yellowish skin?
   Yes ( )
   No ( )

2. Is hepatitis B marked by having sore joints?
   Yes ( )
   No ( )

3. Does hepatitis B attack the Liver?
   Yes ( )
   No ( )

4. Does HBV enter through digestion?
   Yes ( )
   No ( )
5. Can hepatitis B spread through sexual contact?
   Yes ( )
   No ( )

6. Can hepatitis B spread by sharing needles?
   Yes ( )
   No ( )

7. Can hepatitis B spread through saliva?
   Yes ( )
   No ( )

8. Can hepatitis B spread from mother to baby at birth?
   Yes ( )
   No ( )

9. Is hepatitis B transmitted through sex only?
   Yes ( )
   No ( )

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

10. Do you think hepatitis B can be completely treated?
    Yes ( )
    No ( )

11. Can a patient with an acute hepatitis B infection fully recover in a span of 6 months?
    Yes ( )
    No ( )

12. Do you think early immunization at birth is necessary?
    Yes ( )
    No ( )

SECTION III

Your attitude towards hepatitis B prevention.

1. Do you avoid direct contact with the sufferers?
   Yes ( )
   No ( )

2. Would you do constant checkups to yourself at health services to ensure your safety?
   Yes ( )
   No ( )

3. Were/Are you hepatitis B positive?
   Yes ( )
   No ( )

   If yes, is/was your case acute or is it chronic?
   Acute ( )
   Chronic ( )

4. Are you vaccinated against hepatitis B?
   Yes ( )
   No ( )

5. Are you willing to educate the community about the hepatitis B precautions?
   Yes ( )
   No ( )

6. Would you isolate yourself if you ever get exposed to hepatitis B?
   Yes ( )
   No ( )

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24OCT293

SECTION IV

Practice/Behavior in preventing hepatitis B.

1. Do you make sure your patients are vaccinated against hepatitis B.
Yes ( )
No ( )

2. Do you use gloves when dealing with patients?
Yes ( )
No ( )

3. Do you sanitize your hands after finishing with the patient?
Yes, I always do ( )
Sometimes, not always ( )
No, it's not necessary to do so ( )

4. Do you ensure cross-matching of blood samples before giving patients blood transfusions?
Yes ( )
No ( )

5. Do you always use new syringes when dealing with different patients?
Yes, I always use new syringes ( )
Sometimes I use the same syringe in multiple patients ( )
I use the same syringe in multiple patients ( )