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Knowledge And Attitude Of The ANM Students Regarding Blood Borne Infections In Selected ANM Training Centre In Ganjam, Odisha

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Abstract:

The risk of contracting a blood-borne infection is greatly increased when someone comes into unintentional contact with blood or other bodily fluids; this is particularly true for healthcare providers (HCP). Infections acquired in the workplace may be greatly reduced if stringent control measures are put into place, such as the use of secure equipment, efficient waste management, vaccination, and prompt treatment of exposures, including the administration of post-exposure prophylaxis. The purpose of this research was to evaluate the perspectives, beliefs, and post-exposure prophylaxis (PrEP) behaviors of Auxiliary Nurse Midwifery (ANM) students. The researchers also wanted to learn what characteristics drive healthcare professionals at a particular ANM training facility in Ganjam, Odisha, to report occupational exposures. Even while most persons in the study had a positive impression of PEP, the study also showed that few people really understood or put into practice the principles of PEP. Therefore, it is recommended that healthcare providers have extensive training in post-exposure prophylaxis for blood-borne viruses. Their use of post-exposure prophylaxis should be encouraged, and they should be constantly watched and evaluated on how well they follow basic measures to prevent the spread of infection.

Keywords: Knowledge, attitude, ANM Students, Blood borne infections, ANM Training Centre, Ganjam and Odisha.

Introduction:

Blood borne viruses are a category of viruses that may be passed from person to person by contact with infected body fluids and tissues, most often blood. The term "blood borne viruses" (BBV) refers to this group of viruses (Figure a). Because of the risk of blood contamination, healthcare professionals are exposed to a significant risk from not only the hepatitis B virus and the hepatitis C virus, but also the human immunodeficiency virus (1). The most prominent cause of concern for those who work in the healthcare industry is their potential for exposure to blood and other bodily fluids (BBF). On the workplace, being exposed to blood and other body fluids might potentially raise the risk of developing a blood borne virus; however, the severity of this risk can

change based on a number of different factors. The severity of the injury, the volume of blood or body fluid that was conveyed to the healthcare professional, the worker's own immunological status, and the viral load that was present in the source patient's blood or body fluid are some of these factors (2–4).

The high incidence of infections among patients and the increased occupational risk among healthcare workers are both significantly influenced by unsafe practices, such as the careless handling of contaminated needles, the administration of unneeded injections upon request, the reuse of inadequately sterilized needles, the improper disposal of hazardous waste, and the overcrowding of healthcare facilities. Because of this, occupational exposure to blood and other bodily fluids represents a significant threat to the general population's health. It is possible that the risk of illness caused by occupational exposures may be effectively reduced by adhering to stringent infection control policies (5-7).

These practices include the use of clean equipment, appropriate waste disposal, immunization, and prompt treatment of exposures (including post-exposure prophylaxis) (Figure b). Exposure to BBF, which includes blood and other body fluids, has been associated to the transmission of 26 distinct viruses that have been identified as the source of documented occupational infections in healthcare workers. BBF includes blood and other body fluids. On the other hand, it is generally agreed that the three viruses HBV, HCV, and HIV are the most significant contributors to occupational infections in Cameroon. The severity of the illnesses that these viruses induce as well as the high prevalence of the viruses themselves among patients are two reasons why this is the case (8, 9). According to research conducted by the World Health Organization (WHO), occupational exposure among healthcare workers is responsible for 2.5% of all HIV infections and 40% of all instances of hepatitis B and C throughout the world. Since more than 90 percent of these illnesses may be avoided via proper hygiene and sanitation, addressing them should be a high priority for the public health systems in countries with low incomes. Post-exposure prophylaxis, often known as PEP, is a method that is recommended as a preventive measure by the World Health Organization (WHO) for healthcare personnel who have been exposed to potential health risks. In addition to ensuring that they comply with the PEP standards themselves, they should also keep a careful watch on any injuries or illnesses that may have been brought on by such occurrences in the workplace (10-12).

At the Selected ANM Training Center, there is a severe lack of information on occupational injuries, the reporting of workplace exposures, and the use of post-exposure prophylaxis among healthcare professionals. The fact that this study's pretest results imply a paucity of information on the knowledge, attitude, and practices of healthcare professionals at the Selected ANM Training Centre only

serves to heighten the issues that are already present in this field. Mesfin and Kibret contend that an individual's knowledge, attitude, and conduct are all factors that play a part in the prevention of illness. The primary objective of this research was to ascertain the level of knowledge held by healthcare professionals working at the Selected ANM Training Centre about post-exposure prophylaxis for blood-borne viruses. In addition to that, the factors that influence the reporting of occupational exposures in healthcare settings were looked at (13-15).

Literature Review:

One estimate puts the number of healthcare workers (HCWs) who get percutaneous exposure to blood-borne viruses each year at around three million (16). This number accounts for around 300,000 cases of HIV transmission, 9,000 instances of hepatitis C infection, and 20,000 cases of hepatitis B infection. Mucocutaneous transmission, which includes contact with BBF spray, and percutaneous transmission, which involves injuries such as needle-stick injuries (NSIs), are the two principal ways that a person might be exposed to blood-borne pathogens (17-19). The recommendations for universal precautions (UPs) were first published in 1987 by the Centers for Disease Control and Prevention (CDC). 1996 was the year in which the alterations were made, and they were brought about as a direct result of an improved awareness among persons about job dangers. Research has indicated that healthcare practitioners in wealthy countries have a lack of awareness and comprehension of Universal Precautions (UP), despite the fact that clear recommendations have been made about this topic. The situation is even more precarious in developing countries like India, where there is still not enough of a focus placed on the safety of workers in the workplace (20-22). Universal precautions are a set of protocols that, according to the Centers for Disease Control and Prevention (CDC), are designed to reduce the risk of transmitting blood-borne diseases such as hepatitis B virus (HBV), human immunodeficiency virus (HIV), and other blood-borne conditions during the delivery of medical care in any environment (CDC). These protocols are intended to prevent the spread of the human immunodeficiency virus (HIV). In accordance with the procedures that have been established, HIV, HBV, and any other blood-borne infections have the ability to enter the bloodstream as well as any other bodily fluids of any human. When working with blood or bodily fluids that have been contaminated with blood, it is essential to employ protective measures such as gloves, gowns, and masks in accordance with the rules provided by the Universal Precautions program (23). These guidelines state that this is necessary to prevent the spread of blood-borne pathogens. In circumstances in which there is a risk of blood spatter coming into contact with the nasal membranes, it is prudent to wear a face shield in order to protect oneself from the potential for

injury. It is strongly recommended that needles and any other potentially dangerous sharp items be stored in containers that cannot easily be opened (24). The following recommendations are for medical professionals, such as doctors and nurses, as well as patients and auxiliary workers, who are engaged in activities that involve bodily fluids or patient care. Last but not least, it is strongly suggested that all people working in the healthcare industry take safety measures to lessen the likelihood that they may be injured by sharp implements such as needles, scalpels, and other similar instruments (25).

Research Methodology:

Study design:

The current study used a quasi-experimental pretest-posttest approach with a control group.

Research Approach:

The current study will use a quantitative research technique.

Population:

The population for this research consists of ANM training students from selected ANM training centers in Ganjam.

Sampling Technique:

The use of purposive sampling has been employed in the present investigation.

Sample Size:

The study's sample size consisted of 400 students undergoing ANM training from six ANM training centers. Out of the total of six facilities, one is designated as the Government ANM Training Centre, while the other five centers are classified as private establishments. The following is a list of six centers that were used as a sample source in the research.

1) Disha Institute of Nursing, R.C Church Road, Berhampur, District Ganjam, Odisha
2) Lingaraj Institute of Medical, Gopalpur, Berhampur, District Ganjam, Odisha
3) Janakalyan Institute of Nursing and Health Science, Purushottampur, District Ganjam, Odisha
4) School of Nursing and Health Science by New Hospital Society, Hill Patna, Berhampur, Odisha
5) Om Sai School of Nursing Jagannath Vihar, Berhampur, District Ganjam, Odisha
6) Government Anm Training Centre, City Hospital, Berhampur, District Ganjam, Odisha

Statistical Analysis:

Data was collected by personal interview after verbal consent. A database was created in MS Excel. Chi square test was used for comparing proportions and statistical significance was taken as $p < 0.05$.

Ethical Consideration:

The University of Ganjam, which is situated in the state of Odisha, is home to an institution known as the Faculty of Health Science Ethical Review Board. This board granted ethical approval for the endeavor. The regional delegation responsible for public health was successful in obtaining administrative permission. The directors of the

institutions that hosted the study provided their verbal consent, and this consent was also documented. In the end, a formal consent was acquired from every participant who was included in the research. This ensured that their participation was entirely voluntary. The respondents' privacy was protected by the use of anonymous questionnaires, which also prevented any personal information from being revealed. In addition to this, only the primary researcher had access to the database that included the study results.

Result and Discussion:

Knowledge, attitude and practice of ANM and B.Sc. nursing Students on blood borne

Diseases:

The data pertaining to knowledge, attitude, and practice about blood borne infections were collected, analyzed, and interpreted using descriptive and inferential statistical techniques. The data is organized in a systematic manner. The data analysis was systematically categorized into the table (a). According to Table (a), the demographic data of ANM students, or those who took part in the study "Assess the knowledge, attitude, and practice of ANM students on blood borne diseases in selected schools of Nursing in Ganjam (Dist.), Odisha," is distributed frequently and by percentage.”

Distribution of Clinical Experience Variables of ANM and B.Sc. nursing Students on blood borne Diseases:

In selected nursing colleges in Ganjam (Dist.), Odisha, Table (b) showed the frequency and percentage-wise distribution of clinical experience characteristics for ANM students on Blood Borne Diseases.

General Information of Knowledge of ANM and B.Sc. nursing Students on Blood Born Diseases:

Table (c) displays the distribution of students pursuing Associate of Nursing (ANM) and Bachelor of Science in Nursing (BSN) degrees based on their overall understanding of blood-borne illnesses. A total of ten inquiries were posed, with the majority of participants (250) demonstrating awareness of AIDS, whereas the smallest subset of individuals (180) had knowledge of the specific pathogen responsible for causing AIDS. The results of the research indicate that both ANM and B.Sc. nursing students possess a rudimentary comprehension of blood-borne disorders, suggesting the necessity for further enhancement of their knowledge in this area.

Discussion:

Multiple surveys conducted throughout the whole of India have shown that the majority of healthcare staff employed in India's most prestigious healthcare facilities are lacking in expertise. The results of this investigation demonstrate that this is correct. The results of our research are supported by the findings of the majority of other studies

conducted by a variety of authors on behalf of various categories of healthcare professionals. These studies looked at the importance of hand washing, wearing gloves, a coat, and a mask. When it came to learning about basic precautions and adhering to them, nursing students performed far better than medical students did in almost every aspect. In contrast to the findings of a previous research, nursing students performed much better on the awareness portion of the exam than medical students did. However, the majority of these research focused on analyzing the disparities between medical professionals and nurses. Medical students often have an inflated sense of self-importance, which makes them less likely to take universal health precautions seriously. What we discovered to be true, which is that health care providers only minimally follow general measures, has been validated by other investigations. It is probable that secondary HCWs did not adhere to the norms of Universal measurements because they did not fully comprehend what those standards included. This caused a much lower level of compliance in this group than was anticipated.

Figures and Tables:

Figures:

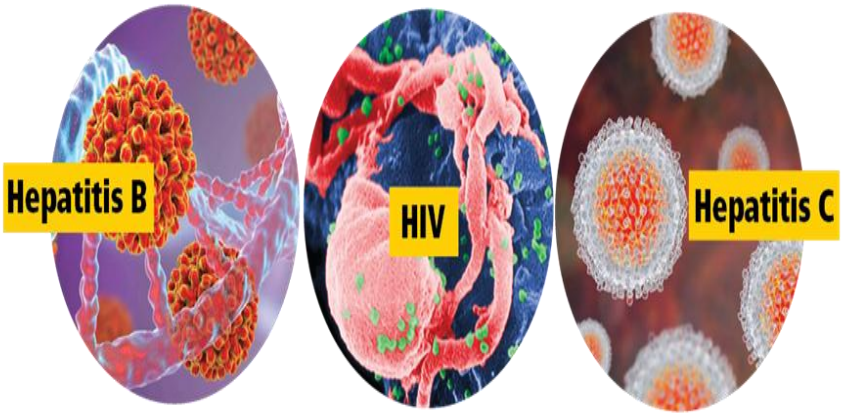

Figure (a) Blood Borne Viruses

Figure (B) Transmission Routs Of Blood Borne Pathogens

Tables:

Table (a) Amount and Frequency ANM and B.Sc. nursing demographics are distributed with care. Students at a selected nursing college studying blood-borne disorders N=400

Sr. No.	Demographic variables		No. of nursing Students	%
1.	Category	Trained Blood Borne Diseases:	-	0.0%
		Not trained in Blood Borne Diseases:	400	100.0%
		Trained in Blood Borne Diseases:	-	0.0%
		Not trained in Blood Borne Diseases:	400	100.0%
2.	Age	16 - 20 Years	200	50.0%
		21 - 25 Years	150	35.0%
		26 – 30 Years	50	15.0%
3.	Sex	Female	300	75.0 %
		Male	100	15.0 %
4.	Education	Diploma in nursing	400	100.0%
		Diploma in Public Health Nurse	-	0.0%
		Diploma in Public Health MPHN	-	0.0%
5.	Institution	Government	100	25.0%
		Private	300	75.0%
6.	Category of Nurses	ANM	200	50.0%
		B.sc Students Nurses	200	50.0%
7.	No. of Years of Experience as a Student Nurse	Government	0	0.0%
		Private	0	0.0%
		Both	400	100.0%
8.	Type of Family	Nuclear Family	250	75.0 %
		Joint Family	150	25.0 %
9.	Religion	Hindu	240	40.0 %
		Muslim	30	30.0 %
		Christian	80	25.0 %
		Others	50	5.0%
10.	Marital Status	Single	350	75.0%
		Married	50	25.0 %
		Divorced	-	0.0%
		Widow	-	0.0%
11.	Residential Area	Urban	200	50.0 %
		Rural	150	40.0 %
		Remote	50	10.0 %
12.	Dietary Pattern	Vegetarian	100	75 %
		Non – Vegetarian	300	25 %

Table (b) Amount and Frequency ANM and B.Sc. nursing students' clinical experience variables on STDs (sexually transmitted diseases) and AIDS were distributed wisely at a few nursing schools N=400

Sr. No.	Clinical experience variables		No. of nursing Students	%
13.	current training in hospitals	Private Sector	400	100.0%
		Govt. Sector	-	0.0%
14.	Department Current Working in	OBG in Nursing	280	60.0 %
		Community Health Nursing	120	40.0 %
15.	Have you heard about the AIDS virus?	Yes	400	100.0%
		No	-	0.0%
16.	If so, how did you learn about it?	Radio	300	75.0%
		Newspaper		
		Magazine		
		Films		
		Friends		
		Doctors		
		Pamphlets		
		Posters		
		Medical journals Nursing curriculum	100	25.0%
17.	Have you ever encountered a patient with AIDS?	Yes	400	100.0%
		No	-	0.0%
18.	Have you ever cared for an AIDS sufferer, if yes?	Yes	400	100.0%
		No	-	0.0%
19.	Where did you care for a patient with AIDS?	Government hospital	380	93.0 %
		Private hospital	08	4.0 %
		Community	12	10.0 %
20.	Have you participated in the AIDS training?	Yes	350	90.0 %
		No	50	10.0 %
21.	If so, where did you go for the AIDS training?	Govt. Organization	300	75.0 %
		Non-Govt. Organization	100	25.0 %
		Abroad	0	0.0%
22.	length of the program	1day	300	75.0 %
		More than 1 day	100	25.0 %
23.	You participated in the training program when?	4 months before	200	50 %
		2 month before	200	50 %

24.	What was the program's content?	General information on AIDS & Nursing care for AIDS patient	400	100.0%
		Not related to Nursing	00	0.0 %
25.	Have you had an AIDS or STD evaluation?	Yes	300	75.0 %
		No	100	25.0 %
26.	Have you received any source or reference material?	Yes	350	85.0 %
		No	50	15.0 %
27.	Do you believe the training you received will prepare you to care for AIDS patients?	Partially ok	400	100.0%
		Not at all adequate	0	0.0%
		Adequate	0	0.0%

Table (c) Distribution of General Information of Knowledge on Blood Born Diseases N=400

Sr. No.	General Information of Blood Born Diseases	No. of nurses	%
1	What is STD?	221	58.5%
2	What is HIV?	215	56.9%
3	What is AIDS?	250	64.7%
4	What is the causative organism of AIDS?	180	42.1%
5	What are the modes of transmission of Blood Born Diseases ?	206	52.3%
6	Who are the people at risk for contracting AIDS?	208	54.3%
7	What is the test done to diagnose STD?	203	51.0%
8	What is the test done to diagnosis Blood Born Diseases ?	201	50.4%
9	What is the test done to confirm Blood Born Diseases ?	204	51.2%
10	Do you know any other confirmation test or fool proof test?	15	56.6%
	Overall average	223	53.8%

Conclusion:

In summary, it can be seen that although individuals had a general understanding of universal precautions, the depth and accuracy of their knowledge were rather limited. Although medical students exhibit below-average adherence to universal precautions, nursing students demonstrate above-average compliance. at conclusion, it is imperative to implement urgent measures aimed at enhancing healthcare worker (HCW) adherence to universal precautions at tertiary healthcare facilities (HCFs) in India (21-23). Hence, it is essential to devise strategies aimed at promoting the implementation of universal precautions, taking into account factors such as behavioral modification, the provision of accurate information, and the practical application of acquired

knowledge. It is recommended that healthcare personnel, including medical and nursing students, receive comprehensive orientation training programs and continuous lectures on universal precautions (25, 26).

References:

1. Ujesh SN, Jayaprada R, Ramakrishna N, Sharma KK, Rao MH, Samantaray A, Madhusudhan M. A study of microbiological profile and its antimicrobial susceptibility patterns related to central line-associated bloodstream infections in respiratory intensive care unit in a tertiary care hospital. Journal of Clinical and Scientific Research. 2020 Jan 1;9(1):25-30.
2. Ji Y, Huang J, Jiang G, Liu Q, Xiao D, Deng J. Investigation of the occupational exposure to blood-borne pathogens of staff at a third-class specialist hospital in 2015–2018: a retrospective study. Scientific Reports. 2022 Jan 27;12(1):1498.
3. Allesranzi B, pittet D. (2009) Role of hand hygiene in healthcare associated infection and prevention. Journal of hospital infection. Jan;73: 305- 315
4. Agaral M, Thomas P. (2003) Prevalence of post op nosocomial infection in neuro surgical patients and associated risk factors-a prospective study. NJI. Sept;107(3):625 – 620.
5. Talaat E, Shamia E. (2010) Developing a control action plan for infection prevention at the endoscopy unit. Journal of international Academic research. July ;2(4): 412-420.
6. Picheansathian W, Pearson A, Suchaxaya P. (2008) The effectiveness of a promotion programme on hand hygiene compliance and nosocomial infections in a neonatal intensive care unit. International Journal of Nursing Practice. Aug;14(4):315-21
7. Barbara C. C, Josephene L. (2004) Hand hygiene practices in a neonatal ICU. A multimodal intervention and impact on nosocomial infection. Pediatrics official journal of the American academy of Pediatrics. Nov; 114 (5):565- 571.
8. Ahmed N, Eshra DM, Nassar BM, El-Shikh AA. (2000) Study of nosocomial respiratory infections and nurses' performance related to infection control measures in artificially ventilated patients. Journal of Egypt Public Health Assoc.;75(1-2):199-217
9. Eskander H., Morsy W., Elfeky H. (2013) Intensive Care Nurses' Knowledge & Practices regarding Infection Control Standard Precautions at a Selected Egyptian Cancer Hospital. Journal of Education and Practice; 4 (19): 160- 174
10. Mahmud N. and Abdul Sahib S. (2011) Assessment of Nurses' Practices Toward Infection Control Standardized Precautions in Azady Teaching Hospital in the City of Kirkuk. Iraqi National J. for Nursing Specialties; 24(1): 52 – 58
11. Jankovic S, Bojanic J, Jovic-Vranes A, Marinkovic J, Jankovic J. Knowledge,

attitudes and practices towards blood-borne pathogens in healthcare workers in Banja Luka, Bosnia and Herzegovina. Open Medicine. 2009 Dec 1;4(4):409-14.

12. Baheti AD, Tullu MS, Lahiri KR. Awareness of health care workers regarding prophylaxis for prevention of transmission of blood-borne viral infections in occupational exposures. Al Ameen J Med Sci. 2010;3(1):79-83.
13. Sharma A, Sharma A, Sharma A. Knowledge among nursing students of blood borne viruses and practices to prevent transmission. Sri Lankan Journal of Infectious Diseases. 2017 Oct 18;7(2):100-5.
14. Rossouw TM, Van Rooyen M, Louw JM, Richter KL. Blood-borne infections in healthcare workers in South Africa. SAMJ: South African Medical Journal. 2014 Nov;104(11):732-5.
15. Mahore R, Mahore SK, Mahore N, Awasthi R. A study to assess knowledge and awareness about the Hepatitis B and C among nursing college students of Central India. J Evol Med Dent Sci. 2015 Apr 9;1(4):5033-9.
16. Paudel D, Prajapati S, Paneru D. knowledge and perception on Hepatitis B among Nursing students: An Institual based study in Kathmandu, Nepal. International Journal of health science and research. 2012; 2:57-66.
17. M Magdi H, Ramadan Abd El-Fatah S, Ahmed Nawal A, Hafez Afefe A. Knowledge, attitudes and practice of nurses working with HIV/AIDS patients. Egyptian Journal of Health Care. 2015 Sep 1;6(3):45-55.
18. Khalooei A, Kahlooei S. Primary prevention of blood borne pathogens among nursing staff of teaching hospitals of Kerman University of Medical Sciences. Journal of Jahrom University of Medical Sciences. 2017 Jun 1;15(2).
19. Sanjel S, Tuladhar S, Khanel K. Knowledge and practices on preventive measures of blood borne diseases among non-medical attendants working in Dhulikhel Hospital, Kathmandu University Hospital. Kathmandu University Medical Journal. 2013;11(3):210-5.
20. Mohamed SA, Wafa AM. The effects of an educational program on nurse's knowledge and practice related to hepatitis C virus: a pretest and posttest quasi-experimental design. Australian Journal of Basic and Applied Sciences. 2011;5(11):564-70.
21. Baheti AD, Tullu MS, Lahiri KR. Awareness of health care workers regarding prophylaxis for prevention of transmission of blood-borne viral infections in occupational exposures. Al Ameen J Med Sci. 2010;3(1):79-83.
22. Abd El-Nasser G, Abed El Baset E. Assessment of students' knowledge and attitude toward hepatitis B and C in Sohag University/Egypt. kufa Journal for Nursing sciences. 2013 Apr 25;3(1).
23. Janjua NZ, Razaq M, Chandir S, Rozi S, Mahmood B. Poor knowledge–

predictor of nonadherence to universal precautions for blood borne pathogens at first level care facilities in Pakistan. BMC infectious diseases. 2007 Dec; 7:1-1.

24. Garus-Pakowska A, Górajski M, Szatko F. Knowledge and attitudes of dentists with respect to the risks of blood-borne pathogens A cross-sectional study in Poland. International journal of environmental research and public health. 2017 Jan;14(1):69.
25. Siddique K, Mirza S, Tauqir SF, Anwar I, Malik AZ. Knowledge attitude and practices regarding needle stick injuries amongst healthcare providers. Pak J Surg. 2008;24(4):243-8.
26. Wang H, Fennie K, He G, Burgess J, Williams AB. A training programme for prevention of occupational exposure to blood borne pathogens: impact on knowledge, behavior and incidence of needle stick injuries among student nurses in Changsha, People's Republic of China. Journal of advanced nursing. 2003 Jan;41(2):187-94.