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"A Study to Assess the Level of Knowledge, Attitude, and Practice of Standard Safety Precautions among Staff Nurses in Kheda and Anand District"

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Key words

Knowledge, Attitude, Practice, Nurses, Standard safety precautions

Abstract

Introduction

The invasion and growth of microorganisms those are not ordinarily present in the body, such as bacteria, viruses, and parasites. An infection may be subclinical and exhibit no symptoms, or it may be clinically evident and exhibit symptoms. An infection may move through the blood or lymphatic vessels to become systemic or it may stay localised (body wide). Infections are not thought to be caused by microbes that exist naturally in the body.

Background of the study

No of whether a patient has a suspected or proven infection, Standard Precautions are the minimal infection prevention procedures that must be followed in any place where medical care is provided. These procedures are intended to safeguard DHCP as well as stop it from infecting patients. Standard safety measures are designed to lower the danger of spreading blood-borne and other infections from both known and unknown sources. These are the fundamental measures of infection control that must be taken, at the very least, when caring for all patients.

Objectives of the study were

1) To assess the Knowledge of Standard Safety Precautions among Staff Nurses in Kheda and Anand District.
2) To assess the level of Attitude of Standard Safety Precautions among Staff Nurses in Kheda and Anand District.
3) To assess the level of Practice of Standard Safety Precautions among Staff Nurses in Kheda and Anand District.
4) To find out association between knowledge score with selected demographic variables among staff nurses in Kheda and Anand District.

Major findings and results of the study

The age distribution of the sample is as follows: sample 35 (50.07%) belongs to the 20–30 age group, sample 19 (27.05%) to the 31–40 age group, sample 09 (13%) to the 41–50 age group, and sample 6 (08.70%) to the 51–60 age group.

70 samples, 52 (75.04%) of the nurses were female, and 17 (24.06%) were male.

Regarding the Educational Qualification of nurses out of 70 samples, 02(2.9%) was ANM, 11(15.09%) was GNM, 55(79.07%) was B.Sc. Nursing, 1(1.4%) was M.Sc. Nursing.

Regarding the Years of Experience of nurses out of 70 samples, 49(71%) was <5 Years, 51(21.07%) was 5-10 Years and 05(07.2%) was >10 Years.

Regarding the Family Monthly Income of nurses out of 70 samples, 0(0%) was < 5000 Rupees, 34(49.03%) was 5000-10000 and 35(50.07%) was >1000 Rupees

Regarding the Exposure/training in infection control practices of nurses out of 70 samples, 68(98.06%) said yes and 1(1.4%) said No.

According to knowledge regarding Standard Safety Precautions where 03(04%) had Inadequate knowledge 29(42%) had Moderate knowledge, 38(55%) had Adequate Knowledge.

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According to Attitude regarding Standard Safety Precautions where 06(09%) had Unfavourable Attitude 11 (16%) had Moderate Attitude, 53(77%) had Favourable Attitude.

According to practice on Standard Safety Precautions were found based on the practice questionnaire the nurses. Only 77.00 % nurses were found Favourable Attitude. 16.00% nurses with moderate favourable attitude and 9% nurses with unfavourable attitude.

Conclusion:

Conclusion of this research findings are as follows:

The majority of nurses has adequate knowledge and practice regarding Standard Safety Precautions. Only 4 % nurses was found that they do not follow proper Standard Safety Precautions. The study result evidence that almost school children's have appropriate practice regarding all the aspect of Standard Safety Precautions only few sample were found not to follow practice properly.

The present study was conducted among nurses working in hospital at Nadiad and Anand city in Gujarat. It can be concluded that the percentage of Standard Safety Precautions in terms of knowledge, attitude and practices among primary school children was found to be satisfactory. Majority of nurses seem wear whole personal protective equipment, recap the used needle after injection, washes hands after taking off the gloves filtered water, wears gloves when comes in contact with blood. Standard Safety Precautions cannot be ignored. It should be followed by every nurse in the hospital. Proper training, knowledge and guidance in the hospital can increase the awareness and importance of Standard Safety Precautions among nurses through coordinated education measures by clinical instructor. Based on our current research finding we believe that the educational authorities and higher authority in the country can develop and adopt policies and guidelines that will make way to have adequate access to resources, items and opportunities to maintain Standard Safety Precautions in the hospital. Hospital should provide Standard Safety Precautions education to nurses, to ensure that all nurses learn how to use infection control practices used to prevent transmission of diseases that can be acquired by contact with blood, body fluids, non-intact skin (including rashes), and mucous membranes.

1. Introduction

the invasion and growth of microorganisms that are not ordinarily present in the body, such as bacteria, viruses, and parasites. An infection may be subclinical and exhibit no symptoms, or it may be clinically evident and exhibit symptoms. An infection may move through the blood or lymphatic vessels to become systemic or it may stay localised (body wide). Natural bodily microorganisms are not regarded as infections.[1]

A living thing that can only be observed under a microscope. Protozoa, algae, fungus, and bacteria are all examples of microorganisms. Viruses are sometimes categorised as microbes even though they are not believed to be living things.[2] Nosocomial infections, also known as healthcare-associated infections (HAI), are an infection or illnesses that develop while undergoing medical treatment but were absent at the time of admission.[3] Less than 1% of bacteria, for instance, are hazardous germs that can enter our bodies (the host) and cause illness. Infectious diseases like the flu and measles are brought on by microbes.[4]

No of whether a patient has a suspected or proven infection, Standard Precautions are the minimal infection prevention procedures that must be followed in any place where medical care is provided. These procedures are intended to safeguard DHCP as well as stop it from infecting patients.[5]

Standard safety measures are designed to lower the danger of spreading blood-borne and other infections from both known and unknown sources. These are the minimal degree of infection control precautions that should be applied to all patient care.[6]

Before entering and after leaving a patient's room, all healthcare professionals and family members must promptly practise good hand hygiene. Each unit has a sink near the entryway. In addition to various places throughout our facility, patient rooms now have alcohol-based hand sanitizer available. Rub your hands vigorously with the sanitizer or thoroughly wash your hands with soap and water. If you see that someone has neglected to wash their hands, especially a member of the staff, please remind them.[7]

2. Literature Review

Michelle Kermode, Damien Jolley, (2005) conducted a study on "Compliance with Universal/Standard Precautions among health care workers in rural north India". A cross-sectional survey was conducted with

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266 HCWs from 7 rural north Indian health care settings (response rate, 87%). Information was obtained about UP compliance as well as a number of other pertinent factors that could affect compliance (e.g., demographic information, perception of risk, knowledge of blood borne pathogen transmission, perception of safety climate, and barriers to safe practice). Partial knowledge and understanding of UPs were present, and UPs compliance was low; for instance, only 32% of participants used eye protection when advised to do so and 40% of them at least occasionally recapped needles. After adjusting for confounding factors, compliance with UPs was linked to a longer time spent at the job, understanding of the transmission of blood-borne pathogens, perception of fewer barriers to safe practise, and a strong commitment to the workplace safety climate.[8]

Gulifeiya Abuduxike Songul Acar Vaizoglu, (2021) conducted a cross sectional study on "An Assessment of the Knowledge, Attitude, and Practice toward Standard Precautions among Health Workers from a Hospital in Northern Cyprus". A self-administrated questionnaire was used in a cross-sectional survey of 233 healthcare professionals in a teaching hospital. Eight knowledge, seven practise, and five attitude items made up the questionnaire. The participants' average age was 32.95 (SD: 9.70), and 62.2% of them were female. 37.3% of the staff had a satisfactory positive attitude (>3 correct answers), 30.9% had a satisfactory level of practise (>3 correct answers), and 57.5% of the workforce had a satisfactory level of correct knowledge (>5 correct answers). The results showed that participants did not follow recommended safety procedures to the fullest extent possible, highlighting the need for an ongoing training programme that is specific to each participant's job and level of risk exposure.[9]

3. Research Methodology

Research Approach: - Quantitative approach

Research Design: - Non Experimental Descriptive research design.

Research Variables

1) **Dependant variables:** Knowledge, Attitude and Practice of Standard safety precautions
2) **Demographic variables:** Demographic variables of nurses such as Age, Gender, educational qualification, years of experience, family monthly income, exposure/training in infection control practices.
3) **Sampling method: -** Stratified Random sampling technique

Study population: - Nurses working in ICU of selected hospitals

Study Setting: Hospitals of Kheda and Anand District

Study Size: - 70 nurses

Sample criteria

Inclusion criteria

1. Nurses who are working in the ICU of selected hospitals.
2. Who will be available at time of data collection and are willing to participate.

Exclusion criteria

1. Those who are not to participate in the research study.
2. The nurses who will are sick or absent at the time of data collection.

TOOL FOR DATA COLLECTION

Section-1: It includes information on the demographics of nurses, such as their age, gender, class, education level, number of years of experience, and exposure to or training in infection control measures.

Section-2: It contains structured self administered questionnaire to assess the knowledge, Attitude and practice regarding Standard Safety Precautions.

METHOD OF DATA COLLECTION

The study tools consisted of consent forms, information sheets. The questionnaire is prepared in English. Then, it will be translated into Gujarati by a linguistic expert keeping semantic equivalence.

Reliability checked by test–retest correlation method.

4. Findings

The results of data analysis are presented under the following headings.

Section I: Analysis of socio-demographic characteristics of nurses.

Section II: Analysis of knowledge, attitude and practice regarding Standard Safety Precautions among Staff Nurses.

Section III: Analysis of association of knowledge and socio demographic variables scores of Staff Nurses with their selected demographic variables.

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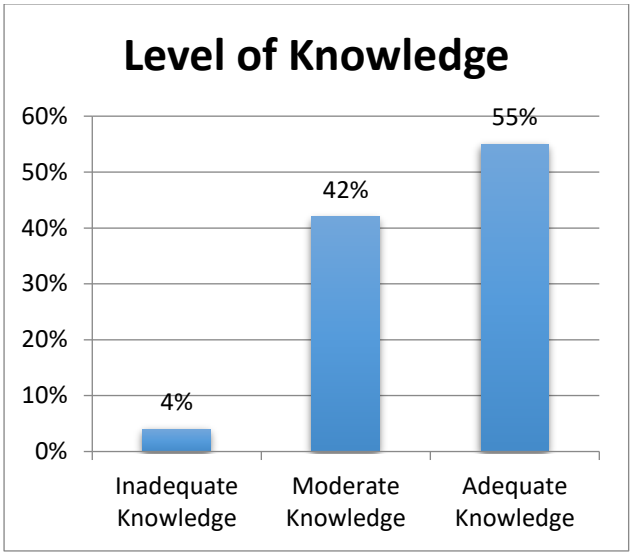
SECTION-I: ANALYSIS OF SOCIO-DEMOGRAPHIC CHARACTERISTICS OF NURSES

SR.NO	DEMOGRAPHIC DATA	FREQUENCY	PERCENTAGE
	Age in years		
	20-30 Years	35	50.07%
	31-40 Years	19	27.05 %
	41-50 Years	09	13.0 %
	51-60 Years	06	8.70%
	Gender		
	Male	17	24.06 %
	Female	52	75.04 %
	Educational Qualification	02	2.9 %
	ANM	11	15.09 %
	GNM	55	79.07 %
	B.Sc. Nursing	01	1.4 %
	M.Sc. Nursing		
	Years of Experience	49	71 %
	<5 Years	15	21.7 %
	5-10 Years	05	7.2 %
	>10 Years		
	Family Monthly Income	0	0
	< 5000 Rupees	34	49.3 %
	5000-10000 Rupees	35	50.7 %
	>1000 Rupees		
	Exposure/training in infection control practices	68	98.6 %
	Yes	1	1.4
	No		

SECTION–II

SECTION-2: ASSESSMENT OF KNOWLEDGE AMONG STAFF NURSES

SL. No.	Level of knowledge	No. (60)	Percentage (%)
1	Inadequate Knowledge	3	4%
2	Moderate Knowledge	29	42%
3	Adequate Knowledge	38	55%
Total		**70**	**100 %**



Bar Graph showing distribution of nurses based on level of knowledge regarding Standard Safety Precautions.

Range, mean, Standard Deviation and Co-efficient of variation of knowledge among nurses.

Knowledge	Max. score	Knowledge					
		Min.	Max.	Range	Mean	Mean %	SD
Overall	15	6	15	9	11.31	76 %	1.77

Above table shows the knowledge range was 6-15, mean 11.31 mean percentages was 40% and standard deviation was 1.77.

Frequency and percentage distribution of nurses according to attitude regarding Standard Safety Precautions.

SL. No.	Level of attitude	No. (70)	Percentage (%)
1	Unfavourable Attitude	6	9%

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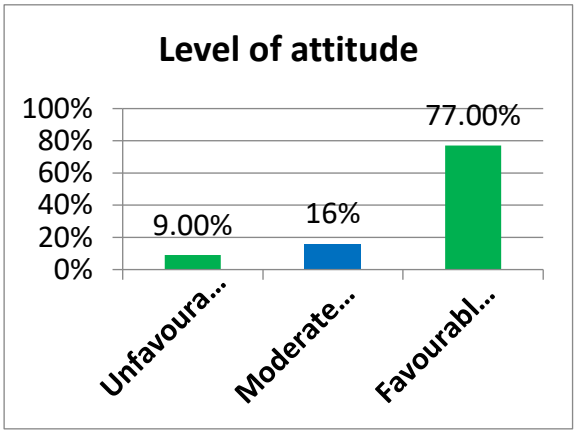
2	Moderate Attitude	11	16%
3	Favourable Attitude	53	77%
Total		**70**	**100 %**

Above table shows the level of attitude, 6 (9%) of Nurses have Unfavourable Attitude, 11 (16%) have Moderate Favourable attitude and 53 (77%) have Favourable attitude.



Bar Graph showing distribution of Nurses based on level of attitude regarding Standard Safety Precautions.

Range, mean Standard Deviation and Co-efficient of variation of attitude among nurses.

Knowledge	Max. score	Knowledge					
		Min.	Max.	Range	Mean	Mean %	SD
Overall	75	47	72	25	63.07	84 %	5.54

Above table shows the knowledge range was 47-72, mean 63.07 mean percentages was 84% and standard deviation was 5.54.

Practice followed by the nurses

SL. No.	Items for practice	Yes%	No%
1.	Do you wear whole personal protective equipment kit while entering into infectious patient's room?	82%	18%
2.	Do you use eye protection during patient care, such as goggles or glasses, to avoid splashes or sprays of bodily fluids like blood?	50%	50%
3.	In order to shield mucous membranes from body fluids/blood, splashes, or sprays when providing patient care, do you wear a gown?	40%	60%
4.	When you provide patient care, do you wear a surgical cap or bonnet?	89%	11%
5.	Do you wear gloves when giving patients injections?	80%	20%
6.	Do you switch gloves when administering an injection to a different patient?	30%	70%
7.	After an injection, do you recap the used needle?	100%	0%
8.	Do you dispose the used needle in the special sharps' container?	95%	5%
9.	Do you Washes hands after taking off the gloves?	100%	0%
10.	Do you Wears gloves when comes in contact with blood?	100%	0%

SECTION –III

Association between knowledge and socio demographic variables among nurses. (N=70)

DEMOGRAPHIC DATA	F	Level of Knowledge			χ^2-Value	Tabulated Value P-Value
		Adequate	Inadequate	Moderate		
Age in years					**5.83**	**P<0.05**
20-30	35	17	2	16	**df = 6**	**Sig 0.00**
Years	15	12	1	6		
31-40	19	13	0	6		
		5	0	1		

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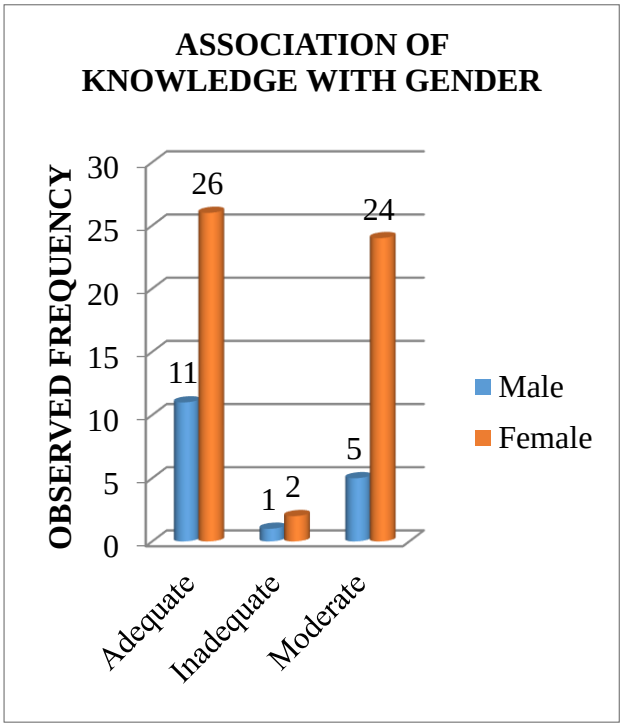
Years 41-50 Years 51-60 Years	09 06				**NS**	**3.48**
Gender Male Female	175 2	1 2	5 24	0 0	**1.49 df = 2 S**	**P<0.05 Sig 0.005.99**
Educational Qualification ANM GNM B.Sc. Nursing M.Sc. Nursing	02 11 15 50 1	0 11 26 0	1 0 1 1	1 0 28 0	**44.45 df = 6 NS**	**P<0.05 Sig 0.007.81**
Years of Experience <5 Years 5-10 Years >10 Years	49 15 05	25 9 3	3 0 0	21 6 2	**1.46 df = 4 S**	**P<0.05 Sig 0.0019.48**
Family Monthly Income < 5000 Rupees 5000-10000 Rupees >1000 Rupees	03 43 5	0 23 14	0 3 0	0 8 21	**11.07 df = 2 NS**	**P<0.05 Sig 0.00011.07**
Exposure/ training in infection control practices Yes No	68 1	37 0	3 0	28 1	**1.40 df = 2 S**	**P<0.05 Sig 0.00012.59**

Note: S-Significant at 5% level (p<0.05), NS-Not significant at 5% level (p>0.05).
(f)= **Frequency, (%) =Percentage.**

The table displays the findings of the chi square analysis that was performed to ascertain the association between the nurses' selected demographic traits and the mean variations in their knowledge of common safety precautions.

Age, gender, educational attainment, years of experience, family monthly income, and exposure to or training in infection control procedures were taken into account when determining the association between knowledge and these factors. Age and years of experience among all demographic variables were shown to be significantly (P value 0.05) linked with knowledge.

The aforementioned demographic characteristics, which demonstrate a significant correlation between level of knowledge and nursing demographics, support the research hypothesis and support the rejection of the null hypothesis.



Cylinder diagram showing association between Age & level of knowledge among staff nurses.

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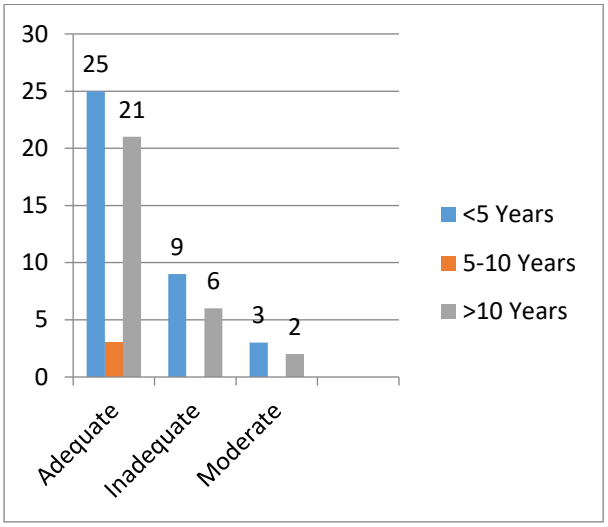

Column diagram showing association between Years of Experience among nurses.

References

[1] Charles Patrick Davis [Internet].2021[updated 2021 March 29; Available from: https://www.rxlist.com/infection/definition.htm

[2] NCI's Dictionary [Internet]. Microorganism. Available from: https://www.cancer.gov/publications/dictionaries/cancer-terms/def/microorganism

[3] Sikora A, Zahra F. Nosocomial Infections. [Updated 2022 Jul 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from:

[4] https://www.ncbi.nlm.nih.gov/books/NBK559312/#:~:text=Nosocomial%20infections%20also%20referred%20to,during%20the%20time%20of%20admission.

[5] Society M. Microbes and disease | Microbes and the human body [Internet]. Microbiologysociety.org. 2022 [cited 29 July 2022]. Available from:

[6] https://microbiologysociety.org/why-microbiology-matters/what-is-microbiology/microbes-and-the-human-body/microbes-and-disease.html

[7] Standard precautions in health care [Internet]. Who.int. 2007 [cited 29 July 2022]. Available from: https://www.who.int/docs/default-source/documents/health-topics/standard-precautions-in-health-care.pdf

[8] Standard precautions in health care [Internet]. Who.int. 2022 [cited 29 July 2022]. Available from: https://www.who.int/publications/m/item/standard-precautions-in-health-care

[9] Critical Care - ICU: Safety [Internet]. Saskatoonhealthregion.ca. 2022 [cited 29 July 2022]. Available from: https://www.saskatoonhealthregion.ca/locations_services/Services/CriticalCare-ICU/Pages/Safety.aspx

[10] Kermode M, Jolley D, Langkham B, Thomas MS, Holmes W, Gifford SM. Compliance with Universal/Standard Precautions among health care workers in rural north India. American journal of infection control. 2005 Feb 1;33(1):27-33.

[11] Abuduxike G, Vaizoglu SA, Asut O, Cali S. An assessment of the knowledge, attitude, and practice toward standard precautions among health workers from a hospital in northern cyprus. Safety and health at work. 2021 Mar 1;12(1):66-73.