

“A STUDY TO ASSESS THE KNOWLEDGE OF NURSING STAFF MEMBERS TOWARDS INFECTION CONTROL MEASURES IN DHIRAJ HOSPITAL, PIPARIYA, VADODARA.”

Mr. Dinesh Sonera

3rd Sem. MBA Health Care Student
Department of Management,
Sumandeep Vidyapeeth Deemed to be University

Mrs. Mital Thakkar

Assistant Professor
Department of Management
Sumandeep Vidyapeeth Deemed to be University

Nagma Malek

3rd Sem. MBA Health Care Student
Department of Management,
Sumandeep Vidyapeeth Deemed to be University

ABSTRACT

Introduction: In the medical field, doctors, nursing staff, supporting staff and patients in every hospital should take precautions to protect themselves from common and serious infections of patients suffering from various diseases, directly and indirectly and the information about the infection should be available to the nursing staff and everyone associated with it. The aim of the study to assess the knowledge of nursing staff towards infection control measures in Dhiraj Hospital Pipariya, Vadodara.

Methodology: This is descriptive cross sectional study design was used. The data was collected among nursing staff those who are working in the Dhiraj Hospital. The data was collected through the closed ended Questionnaire. The collected data was analyzed with T test by using SPSS software.

Result: The result of the collected data was shows that there were 80% of the respondents were female and whose age is between 20-30 years. Most of the respondents whose working experience is between 1-5 years. The outcome of the study was shows that the p value under the gender, age and Marital status was greater than 0.05. Hence the null hypothesis is failed to reject.

Conclusion: The Knowledge of Nursing staff about hospital acquired infection is good.

Also, their practice to contain the spread of infection among patients, nursing staff & treating doctors is found to be satisfactory. Continuous Medical Education of nursing staff is required to keep their knowledge updated & for betterment of patient & society at large.

Keywords: Infection control, knowledge, nursing staff, Hospital

Introduction

Hospitals in india

Operations management in hospitals

Infection control as part of hospital services

Infection control is the practical discipline of preventing infections acquired in healthcare settings. Akin to a public health practice, infection control is an essential process of every healthcare organization. It addresses factors related to the spread of infections among patients, among staff, and between patients and staff. This includes preventive measures such as hand washing, cleaning, disinfecting, sterilizing, and vaccinating. Other aspects include monitoring and managing outbreaks of infection and investigating their causes. This Introduction Take This Website <https://www.usa.edu/blog/infection-control-nurse>

Infection control and the prevention of all infection remains a major goal within all healthcare settings, and lies with all healthcare professionals and personnel's responsibility to ensure this is achieved. The NHS and healthcare systems have specialized infection control teams to ensure an effective infection control programme has been planned and implemented, also regularly evaluate the effectiveness of programs and update their findings. The infection prevention and control team provide advice about the prevention and management of infection including outbreaks of diarrhea and vomiting, as well as promoting education and awareness to patients. They work closely with staff and senior members of the healthcare setting to ensure that correct policies and procedures are implemented. This Introduction Take on Google.

Review of Literature (atleast 10 rsearch studies on infection control)

1. Eyayu M., Motbainor A. and Gizachew B.(4th April-2022) :- This study was concluded that information in this study, it is found that more than 60% of the nurses in Bahir Dar City public and private hospitals had poor prevention and control practices to limit the spread of COVID-19. Gender, access to training on COVID-19, access to personal preventive equipment, access to infection prevention manuals, and favorable attitudes were significantly associated factors of nurses' prevention practices toward COVID-19. Therefore, continuous training on COVID-19 prevention practices, availing infection prevention guidelines in the working wards, improving their attitudes by providing

different training, and consistently providing PPE for proper intervention are very mandatory.

2. Mause A.N. & Aziz A.R. (4th April-2022) :-This study was concluded that information Infection control practices among nurses can be improved with the use of an intervention training program. The results of this study revealed that following the training, nurses' infection control practices improved. This study found that the training program is very effective, and that all nurses should be exposed to infection control training in order to provide them with the knowledge and skills they need to combat illness spread in the health-care context. Health-care executives should recognize the need of enacting rules that improve the working conditions of nurses and providing the required training to guarantee that infection control measures are followed. In the two teaching hospitals, a comparable study should be undertaken on other categories of health personnel.
3. Mervat S. A., Samia, Hanaa et al (2022): - This study was concluded that information Based on the findings and research questions of the present study, it was concluded that nearly more than one third of nurses in HC centers affiliated to health directorate in Shoubra El kheima had moderate total knowledge scored regarding to universal precautions of infection control, while more than half nurses unsatisfactory compliance (performance) towards universal precautions of infection control .However statistical relation between demographic characteristics of nurses and their compliance to infection control was insignificance, the results found that the 4centers had unsuitable construction. Also according to the relation between structure environment and nurses compliance to infection control measures was statistical insignificance. Indeed the study revealed statistically the proportion of nurses with poor knowledge had a higher unsatisfactory compliance while the result is almost statistically significance.
4. Hammoud S., Khatafbeh H., Zand A.&Kocsis B. (29th March 2021) :-This study was concluded that information In conclusion, this study reveals an acceptable (a score $\geq 70\%$) IC overall awareness score (16.55 ± 2.69) among nurses in Baranya County, Hungary. The awareness scores varied across IC areas; the score of SP was acceptable (10.10 ± 1.58), while the scores of HAIs (2.07 ± 0.71) and HH (4.38 ± 1.47) were not. Hospitals are encouraged to enhance their IC training programmes and increase the nurses' knowledge on IC measures. Further studies are needed to assess IC awareness of nurses at the national level.
5. Shrestha G.N., Thapa B. (Jul - Sep 2018):-This study was concluded that information The result of this study reveals that more than half of the respondents had adequate knowledge and only less than half of the respondents had good practice to prevent infection. There is no significant association between knowledge and practice with different selected variables of infection prevention like education, and year of experience. So, this study

suggests that continuing education courses, and refresher trainings are necessary for raising significant association between knowledge and practice. Similarly, the need for development and implementation of guideline/protocol as a reference guide will be helpful to increase knowledge and practice for prevention of infection in the hospital. There is also need of infection prevention clowercaseinorder to supervise, monitor and regulate all activities in preventing infection and reducing morbidity and mortality of hospitalized patient.

6. Mrs.Chitimwango P.C. (March 2017):- This study was concluded that information Based on the findings of the current study, it can be concluded that, despite performing well in knowledge and showing a positive attitude towards infection prevention and control, nurses had unsatisfactory practice levels regarding infection prevention and control, exposing the patients to infection-related diseases. The researcher described how the study was undertaken. It included the topic, described the background and rationale for the study, the problem statement, aim of the study, research objectives, a brief overview of the research methodology, the definition of terms and ethical consideration. An overview of literature regarding knowledge, attitude and practices of nurses in infection prevention and control was presented. The next chapter discusses the research methodology applied during this study.
7. Alrubaiee G., Baharom A., Shahar H.K, Daud S.M. &Basaleem H.O. (2017):- This study was concluded that information Based on the findings of this study, it could be concluded that the majority of the Yemeni nurses had fair knowledge and practices regarding NI control measures. Therefore, future research should focus on improving knowledge and practices among nurses through educational intervention, during either their training courses or in-service refresher courses by assessing their knowledge and practices before and after intervention. Further studies involving both public and private hospitals are also recommended.
8. Dr. I. Fashafsheh, Mr. A. Ayed, Mrs. F. Eqtaït, Mrs. L. Harazneh, (2015) :-This study was concluded that Based on the findings of this study, it can be concluded that nurses in the current study have good practice level regarding infection control. However, inspite of having knowledge about infection control, their overall knowledge didn't reach the good level.
9. Teshager F.A., Engeda E.H., &Worku W.Z. (30 November 2015):-This study was concluded that information Knowledge and practice of surgical site infection prevention activities among nurses working in Gondar and DebreMarkos Referral Hospitals were found to be low. Being male, serving for more than five years, and taking training on infection prevention activities were factors which were significantly associated with

knowledge of prevention of surgical site infection. On the other hand, being thirty years or older, being female, and being of diploma level were factors which were significantly associated with good practice of surgical site infection prevention activities. Therefore, efforts have to be made to update the knowledge of nurses regarding surgical site infection prevention activities. Moreover, hospital administrators should encourage highly educated nurses to focus on implementing their knowledge into practice.

10. Ghadamgahi F., Zighaimat F, Ebadi A., Houshmand A. (2011):-This study was concluded that information most nurses do not have enough awareness about controlling nosocomial infections. Therefore, the nursing staff need to receive correct and complete trainings about nosocomial infections and the method of preventing them, especially for the advantages that the prevention of nosocomial infections have for protecting the health of these people, their families and other patients and society. Therefore, periodic and in-service trainings in this domain are suggested.

Statement of the problem

The Present Study

Objectives and Hypotheses

A. Hypothesis:

H1: There is no significance difference in the knowledge of nursing staff with respect to Gender

H2: There is no significance difference in the knowledge of nursing staff with respect to Age

H3: There is no significance difference in the knowledge of nursing staff with respect to Marital Status

Aim of the Study: -

The aim of the study to assess the knowledge of nursing staff members towards infection control in Dhiraj Hospital Pipariya, Vadodara.

Material and Methods: -

Study Design: The Questionnaire based survey study

Sample Size: The population of the study shall be the nursing staff members in Dhiraj Hospital Pipariya, Vadodara.

Following formula can be used to determine sample size.

Sample size= $N/1+N_e2$

Where, Population Size, $N= 384$ | Margin of error= $e=0.05$ at 95% confidence level

Total Population (N) is 384 nursing staff members in Dhiraj Hospital Pipariya, Vadodara.

The sample size thus yielded is 196 nursing staff members in Dhiraj Hospital Pipariya, Vadodara. How were they chosen – what sample technique

Methodology: 196 nursing staff were included in the study. who were willing to participate in the study voluntarily. The data collection tool was a researcher-made questionnaire. Which was designed in two parts; The study will include 196 nursing staff were included in the study. who were willing to participate in the study voluntarily. The data collection tool was a researcher-made questionnaire. Which was designed in two parts; The first part consisted of questions related to demographic characteristics and the second part consisted of questions related to infection control. The first part consisted of questions related to demographic characteristics and the second part consisted of questions related to knowledge about infection control.

The study will include 196 nursing staff who were willing to participate voluntarily in the study. The data collection tool will be a researcher-made questionnaire designed in two parts; the first part will be related to demographic characteristics and the second part consisted of statements related to infection control.

B. Selection Criteria:

1. Inclusion Criteria:

All the nursing staff members working in Dhiraj Hospital who are having at least healthcare diploma qualification and having at least three years of job experience in hospital wards & willing to participate in the study

2. Exclusion Criteria:

The Nursing staff members working in Dhiraj Hospital and not willing to participate in the study

C. Material or equipment for the study:

The structured Questionnaire will be prepared referred from the research article which is validated by the author. The tool was taken from the research article of “A survey of nurses' awareness of infection control measures in Baranya County, Hungary” by Sahar Hammoud et al (2021)

D. Source of Data:

The filled Questionnaires will be obtained from the nursing staff members

Measures : knowledge about infection control (whos scale is used, scale details, reliabilities) missing

Data Processing and Analysis

Statsitital tests used

Limitations

Result: Why demographics for infection control which is internal varabiell, demographics are external. What connection

The gender, age, marital life and experience of the nursing staff working within the hospital affects every nursing staff working in the hospital as often female nursing staff are more intelligent. While the male nursing staff is often gifted, the number of females is higher at 80.5 percent. While the number of male nursing staff is 19.5. Similarly, age is divided into three categories. Nursing staff below 20 years of age is 24.5% while nursing staff between 20 to 30 years of age is 68% which is the highest. This step of chip control can keep well Subject knowledge is also very good They have 7.5% of nursing staff aged 30 to 40 years who have board experience but knowledge of modernity and latest technology may not be that good. In terms of marital life, married nursing staff is 44% while unmarried nursing staff is 56%. Marital nursing staff who are mentally attached to the family to some extent will remain mentally attached to their family even during their duty. While unmarried nursing staff will perform the duty very efficiently. According to the work experience, 34% of the nursing staff with less than one year of experience would need to impart knowledge about infection control and 55% of the nursing staff with one to five years of experience would be very well aware of themselves and patients against infection control and carefully Will do his job. And finally nursing staff with more than five years of experience which is 11% will also play a great and important role they will be aware of that infection control. Will fully sensitize patients and staff, educate them about infection control, provide them with information and train nursing staff on the latest.

Table 1 Frequency Distribution of Demographic Factor			
Demographic Factor		Frequency	Percent
Gender	Female	161	80.5
	Male	39	19.5
Age	Less than 20 Years	49	24.5
	20-30 Years	136	68.0
	30-40 Years	15	7.5

Marital Status	Married	88	44.0
	Unmarried	112	56.0
Work of Experience	Less than 1 Year	68	34.0
	1-5 Years	110	55.0
	More than 5 Years	22	11.0

T-Test

Gender:	N	Mean	Std. Deviation	Std. Error Mean	Mean Difference	t value	p value
Female	161	16.12	2.504	.197	0.842	1.859	0.064
Male	39	15.28	2.675	.428			

The above table shows the mean score and standard deviation of male and female which is 16.12 (SD±2.504) and 15.28 (SD±2.675) respectively. Mean difference values is 0.842 and p value is 0.064 which is greater than 0.05. So the result shows that there is no significant difference in the knowledge between the Gender Hence the null hypothesis is failed to reject.

Marital Status	N	Mean	Std. Deviation	Std. Error Mean	Mean Difference	t value	p value
Married	88	16.08	2.623	.280	0.213	0.586	0.559
Unmarried	112	15.87	2.506	.237			

The above table shows the mean score and standard deviation of male and female which is 16.08 (SD±2.623) and 15.87 (SD±2.506) respectively. Mean difference values is 0.213 and p value is 0.559 which is greater than 0.05. So the result shows that there is no significant difference in the knowledge between the Gender Hence the null hypothesis is failed to reject.

Oneway ANOVA

Table The Difference in the knowledge among the respondents with respect to Age					
Age	Sum of Squares	df	Mean Square	F	p value
Between Groups	7.362	2	3.681	0.562	0.571

The above Table shows the knowledge amongst the respondents with respect to age using ANOVA. The p Value of F test is 0.571 which is greater than 0.05. Here there is a significant difference between the knowledge of different age category. Hence the null hypothesis is rejected.

Post Hoc Tests

(I) Age :	(J) Age :	Mean Difference (I-J)	Std. Error	Sig.
Less than 20 Years	20-30 Years	-.376	.426	.652
	30-40 Years	-.680	.755	.640
20-30 Years	Less than 20 Years	.376	.426	.652
	30-40 Years	-.304	.696	.900
30-40 Years	Less than 20 Years	.680	.755	.640
	20-30 Years	.304	.696	.900

The above Table and Graph show the knowledge of Infection control measuring amongst the Nursing staff in Dhiraj Hospital. Here the results of the category shows that there is no significant difference between all three category, hence their p value is greater than 0.05. So here the null hypothesis is failed to reject.

Discussions

According to Review of Literature 2, a study was conducted in April 2022 on 40 nursing staff at a central pediatric teaching hospital in Baghdad city, Iraq. Accordingly, the nursing staff in the age group of 21 to 30 years is 60 percent which is 68 percent as per our assessment. Which is higher than both under 20 age group and 30 to 40 age group. According to the assessment of Baghdad, the number of female nursing staff is more and in our assessment also the number of female nursing staff is more. While in work experience, the number of nursing staff with less than five years of experience is higher in the assessment of Baghdad and the number of nursing staff with one to five years of experience is also higher in the assessment done by us at Dhiraj Hospital Vadodara Gujarat. We assessed married and unmarried nursing staff in our assessment while Baghdad's assessment included their education, training.

Literature Review No. 1 as on 4 April 22 conducted research on prevention and control of infection in Covid-19 in public and private hospitals in Bahirdar CT. While literature review 7 conducted in Private Hospital Sana'a City Yemen in which nosocomial infection control was evaluated.

The Knowledge of Nursing staff about hospital acquired infection is good. Also, their practice to contain the spread of infection among patients, nursing staff & treating doctors is found to be satisfactory. The knowledge of Infection control measuring amongst the Nursing staff in Dhiraj Hospital.

Conclusion:-

The Knowledge of Nursing staff about hospital acquired infection is good. Also their practice to contain the spread of infection among patients, nursing staff & treating doctors is found to be satisfactory. Continuous Medical Education of nursing staff is required to keep their knowledge updated & for betterment of patient & society at large.

Bibliography:-

1. Eyayu M., Motbainor A. & Gizachew B. (2022) Practices and associated factors of infection prevention of nurses working in public and private hospitals toward COVID-19 in Bahir Dar City, Northwest Ethiopia: Institution-based cross-sectional study Article reuse guidelines: <https://uk.sagepub.com/en-gb/eur/journals-sagepub.com/journals-permissions> DOI: 10.1177/20503121221098238 journals. SAGE Open Medicine: SAGE Journals (sagepub.com)sagepub.com/home/smo
2. Mousa A.N., Aziz A.R. (2022) Effective of an Intervention Program on Nurses Practices Concerning Infection Control Measures in Pediatric Surgical Wards DOI: <https://doi.org/10.53350/pjmhs22164807>
3. Mervat S. A., Samia, Hanaa et al (2022) Nurses' Compliance with Universal Precautions for Infection Control in Health Care Centers in Shoubra El Kheimah Egyptian Journal of Health Care, 2022 EJHC Vol 13. No.1
4. Hammoud S., Khatatbeh H., Zand A. & Kocsis B. (2021) A survey of nurses' awareness of infection control measures in Baranya County, Hungary: © 2021 The Authors. Nursing Open published by John Wiley & Sons Ltd. Sahar Hammoud (0000-0003-4682-9001) (orcid.org) Nursing Open. 2021;8:3477–3483. Haitham Khatatbeh (0000-0003-2019-6621) (orcid.org)
5. Shrestha G.N., Thapa B. (2018) Knowledge and Practice on Infection Prevention among Nurses of Bir Hospital, Kathmandu: J Nepal Health Res Counc 2018 Jul-Sep;16(40): 330-5: <https://jnhrc.com.np/index.php/jnhrc/article/view/1466>
6. Mrs. Chitimwango P.C. (March 2017) Knowledge, Attitudes And Practices Of Nurses In Infection Prevention And Control Within A Tertiary Hospital In Zambia: Stellenbosch University <https://scholar.sun.ac.za>
7. Alrubaiee G., Baharom A., Shahar H.K., Daud S.M. & Basaleem H.O. (2017) Knowledge and practices of nurses regarding nosocomial infection control measures in private hospitals in Sana'a City, Yemen: Alrubaiee et al. Safety in Health (2017) 3:16 DOI 10.1186/s40886-017-0067-4: © The Author(s). 2017 Open Access (<http://creativecommons.org/licenses/by/4.0/>): Creative Commons — Attribution 4.0 International — CC BY 4.0

8. Ayed A., Fashafshen I., Eqtait F.A., & Harazneh L. (January 2015) Knowledge and Practice of Nursing Staff towards Infection Control Measures in the Palestinian Hospitals: Journal of Education and Practice www.iiste.org ISSN 2222-1735 (Paper) ISSN 2222-288X (Online) Vol.6, No.4, 2015
9. Teshager F.A., Engeda E.H., & Worku W.Z. (30 November 2015) Knowledge, Practice, and Associated Factors towards Prevention of Surgical Site Infection among Nurses Working in Amhara Regional State Referral Hospitals, Northwest Ethiopia: <http://dx.doi.org/10.1155/2015/736175>; Hindawi Publishing Corporation Surgery Research and Practice Volume 2015, Article ID 736175, 6 pages (hindawi.com)
10. Ghadamgahi F., Zighaimat F, Ebadi A., Houshmand A. (2011) Knowledge, attitude and self-efficacy of nursing staffs in hospital infections control : Iranian Journal of Military Medicine Fall 2011, Volume 13, Issue 3; 167-172 :loaded from militarymedj.ir on 2022-11-07 :<http://militarymedj.ir/article-1-826-en.html> Knowledge attitude and self-efficacy of nursing staffs in hospital infections control - Journal Mil Med - می‌آزن بطن مل جم - (militarymedj.ir)