

# A Study to Assess the Knowledge and Practice of Staff Nurses Regarding Prevention of Infection During Procedures in Operation Theatres of Selected Maternity Hospitals at Jaipur with a View to Develop an Information Booklet

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## ABSTRACT

Prevention is always better than cure. If we all know that something with the passage of your time might become dangerous, then it's better to require a precautionary step to combat the danger. Therefore, looking into the intensity of the problem and investigators experience of working at Mahila Chikitsalaya, Sanganeri Gate, it is very important to find out the level of knowledge and practice of staff nurses updated with the standard protocols of surgery and infection prevention for the better post-operative results to avoid the post-operative complications. A quantitative study research approach was used with descriptive research study design for this study. 40 staff nurses were assessed by total enumerative sampling technique. The result showed that the highest mean percentage obtained by the respondents was 58% with SD of 2.14 in the aspect of knowledge regarding prevention of infection, highest mean percentage obtained by the respondents was 51% with SD of 4.93 in the aspect of practice regarding prevention of infection. There is Moderately Positive Correlation ('r' value 0.565) between knowledge and practice score of staff nurse regarding prevention of infection during procedures. The study result showed that the staff nurses had inadequate knowledge and inappropriate practice regarding prevention of infection during procedures in operation theatres and moderately positive correlation between knowledge and practice of staff nurses.

**Key words:** Knowledge, Practice, Staff nurses, prevention of infection, procedures in operation theatres, maternity hospital.

## INTRODUCTION

Prevention is always better than cure. If we all know that something with the passage of your time might become dangerous, then it's better to require a precautionary step to combat the danger.

Surgical site infections (SSIs) remain one among the foremost common causes of threatened surgical complications; they account for 14% to 17% of all hospital-

acquired infections and 38% of nosocomial infections in surgical patients.

A National Audit Office Report stated that currently 30% of hospital acquired infection could be prevented by better application of existing knowledge and implementation of realistic infection control policies. Practice is heavily influenced by "the way it's always been done", which can flow from to the layout of the department

and therefore the profile of infection control practice in the hospital.

An SSI is defined as an infection occurring within 30 days of surgery, or within one year of an implant. There are probably 100 000 different bacteria species in our body, only 0.1% of which are cultivable. Bacteria can multiply every 20 minutes. The enormity of the problem is clear. Antibiotics will not solve the problem. A holistic approach is required.

Centers for Disease Control and Prevention guidelines for the prevention of SSIs emphasize the importance of excellent patient preparation, aseptic practice, and a spotlight to surgical technique; antimicrobial prophylaxis is additionally indicated in specific circumstances. Therefore, the prevention of SSI requires a multidisciplinary approach and therefore the commitment of all concerned, include that of those who are liable for the planning, layout and functioning of operating theatres.

The last six months data (January to June 2019) of operation theatre of Mahila Chikitsalaya, Sanganeri Gate, Jaipur reveals that out of the 884 major surgeries and 890 minor procedures done. 110 cases registered for resuturing due to infection. Many times the cases are resutured in ward and OT without their registration for resuturing.

Therefore, looking into the intensity of the problem and investigators experience of working at Mahila Chikitsalaya, Sanganeri Gate, it is very important to find out the level of knowledge and practice of staff nurses updated with the standard protocols of surgery and infection prevention for the better post-operative results to avoid the post-operative complications.

#### **STATEMENT OF THE PROBLEM:**

“A study to assess the knowledge and practice of staff nurses regarding prevention of infection during procedures in operation theatres of selected maternity hospitals at Jaipur with a view to develop an information booklet.”

#### **OBJECTIVES OF THE STUDY:**

1. To assess the level of knowledge regarding prevention of infection among staff nurses in operation theatre of selected maternity hospitals.
2. To assess the practice regarding prevention of infection among staff nurses in operation theatre of selected maternity hospitals.
3. To find out the relation between the level of knowledge and practice regarding prevention of infection among staff nurses in operation theatre of selected maternity hospitals.
4. To find out the association between the level of knowledge regarding prevention of infection among staff nurses in operation theatre with selected demographic variables.
5. To find out the association between the practice regarding prevention of infection among staff nurses in operation theatre with selected demographic variables.

#### **HYPOTHESES**

- ❖ H<sub>1</sub>: There will be significant correlation between level of knowledge and practice regarding prevention of infection during procedures among staff nurses in OT.
- ❖ H<sub>2</sub>: There will be significant association between level of knowledge regarding prevention of infection during procedures and selected demographic variables.
- ❖ H<sub>3</sub>: There will be significant association between practice regarding prevention of infection during procedures and selected demographic variables.

#### **METHODOLOGY**

Researcher selected quantitative research approach and descriptive research design to assess the knowledge and practice regarding prevention of infection during procedure among staff nurses in operation theatre. The study was conducted at Mahila Chikitsalaya, Sanganeri Gate, Jaipur. Sample of the study consisted of 40 staff nurses were assessed by total enumerative sampling technique. Data was collected

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after getting formal permission from higher authority of the concerned department and informed consent taken from participants.

Tool for data collection consists of structured knowledge questionnaire and checklist for practice.

## RESULTS

**Table 1: Frequency and percentage distribution of demographic variables N = 40**

Demographic Variables	Category	Frequency	Percentage (%)
Age (In Years)	≤25	2	5
	26 – 38	35	88
	39 – 50	2	5
	>50	1	3
Gender	Male	14	35
	Female	26	65
Professional Qualification	GNM	32	80
	BSc. Nsg	8	20
	MSc. Nsg	0	0
Experience (in years) in nursing service	≤5	19	48
	6 – 15	17	43
	16 – 30	3	8
	>30	1	3
Experience in O.T	≤5 Years	33	83
	6 – 10 Years	6	15
	11 – 20 Years	0	0
	21 – 30 Years	1	3
Any in service training regarding infection prevention and control in O.T	No	37	93
	Yes	3	8

**Table 2: Distribution of staff nurses by the level of knowledge N=40**

Level of Knowledge	Score	Frequency	Percentage
Inadequate Knowledge (0-50%)	0-17	9	22.5%
Moderate Knowledge (51-75%)	18-26	31	77.5%
Adequate Knowledge (>76%)	26-34	0	0%

**Table 3: Distribution of staff nurses by the level of practice N=40**

Practice Score	Score	Frequency	Percentage
Inappropriate (0-50%)	0-15	17	42.5%
Appropriate (51-100%)	16-30	23	57.5%

**Table 4: Mean, mean percentage and standard deviation of knowledge score of staff nurses.**

Max. Score	Mean	Mean %	Median	Standard deviation
34	19.6	58%	19	2.14

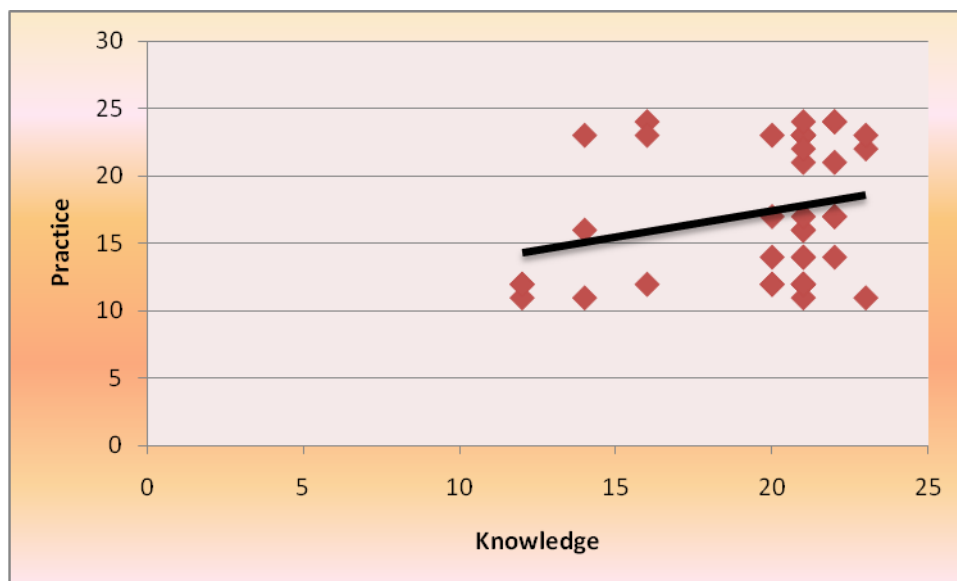
**Table 5: Mean, mean percentage and standard deviation of practice score of staff nurses.**

Max. Score	Mean	Mean %	Median	Standard deviation
30	17.25	51%	17	4.93

**Table 6 : Correlation between knowledge and practice among staff nurses**

Correlation value	Type of correlation	Tabulated value	Result
0.56	Moderately positive	0.304	Significant

DF- Degree of freedom =38 Level of significance=0.05



**Figure 1: Correlation between knowledge and practice of staff nurses.**

**Table 7: Association between knowledge score with selected demographic variables of staff nurses**

S. N.	demographic variable	Category	Inadequate	Moderate	Adequate	df	Calculated $\chi^2$	T' value (0.05)	Statistical Significance
1	Age	≤25	1	1	0	6	8.622	12.59	NS
		26 – 38	6	29	0				
		39 – 50	2	0	0				
		>50	0	1	0				
2	Gender	Male	4	10	0	2	0.455	5.99	NS
		Female	5	21	0				
3	Professional Qualification	GNM	6	26	0	4	1.29	9.49	NS
		BSc. Nsg	3	5	0				
		MSc. Nsg	0	0	0				
4	Experience (in years) in nursing service	≤5	5	14	0	6	1.33	12.59	NS
		6 – 15	4	13	0				
		16 – 30	0	3	0				
		>30	0	1	0				
5	Experience in O.T (In Years)	≤5	7	26	0	6	0.725	12.59	NS
		6 – 10	2	4	0				
		11 – 20	0	0	0				
		21 – 30	0	1	0				
6	Any in service training regarding infection prevention and control in O.T	No	9	28	0	2	4.001	5.99	NS
		Yes	0	3	0				

**Table 4: Association between practice and selected demographic variables of staff nurses.**

S.N.	demographic variable	Category	Inappropriate	Appropriate	df	calculated $\chi^2$	T' Value (0.05)	Statistical Significance
1	Age	≤25	1	1	3	0.833	7.82	NS
		26 – 38	15	20				
		39 – 50	1	1				
		>50	0	1				
2	Gender	Male	5	9	1	0.406	3.84	NS
		Female	12	14				
3	Professional Qualification	GNM	17	15	2	7.391	5.99	S
		BSc. Nsg	0	8				
		MSc. Nsg	0	0				
4	Experience (in years) in nursing service	≤5	8	11	3	0.988	7.82	NS
		6 – 15	8	9				
		16 – 30	1	2				
		>30	0	1				
5	Experience in O.T (in Years)	≤5	16	17	3	2.861	7.82	NS
		6 –	1	5				
		11 – 20	0	0				
		21 – 30	0	1				
6	Any in service training regarding infection prevention and control in O.T	No	16	21	1	0.111	3.84	NS
		Yes	1	2				

## DISCUSSION

The result of the study showed that the majority of respondents 31 (77.5%) had moderate knowledge and 9 (22.5%) had inadequate knowledge regarding prevention of infection during procedures in OT. The mean knowledge score was 19.6, mean% was 58% and standard deviation (SD) was 2.14.

Similarly result showed that majority of respondents 23 (57.5%) had appropriate practice and 17 (42.5%) had inappropriate practice regarding prevention of infection during procedures in OT. The mean practice

score was 17.25, median 17, mean% was 51% and standard deviation was 4.93.

Correlation between knowledge and practice:- Results show that according to Karl Pearson's correlation coefficient formula calculated 'r' value (0.565) is less than 1 but more than 0 i.e. (0 < r < 1). Hence there is Moderately Positive Correlation between knowledge and practice score of staff nurse regarding prevention of infection during procedures. So hypothesis H<sub>3</sub> is accepted.

The computed Chi-square value indicated that there was no significant

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association of knowledge of staff nurses with demographic variables.

The computed Chi-square value indicated that there was significant association of practice with demographic variables i.e. professional qualification of staff nurses.

## CONCLUSION

On the whole carrying out the present study was an enriching experience to the investigator, the study result showed that the staff nurses had inadequate knowledge and inappropriate practice regarding prevention of infection during procedures in operation theatres and moderately positive correlation between knowledge and practice of staff nurses. An information booklet distributed to the staff nurses was useful for them.

## REFERENCES

1. Burns Nancy, Susen K Grove, Understanding Nursing Research Building on Evidence Based Practice. 6<sup>th</sup> edition. e-book, Elsevier (P) Ltd, 2010
2. Operating Room Nurses' Knowledge and Practice of Sterile Technique [Internet]. ResearchGate. [cited 2018 Oct 13]. Available from: [https://www.researchgate.net/publication/285565515\\_Operating\\_Room\\_Nurses'\\_Knowledge\\_and\\_Practice\\_of\\_Sterile\\_Technique](https://www.researchgate.net/publication/285565515_Operating_Room_Nurses'_Knowledge_and_Practice_of_Sterile_Technique)
3. Chin Jacob, Nursing Research Methods of Critical Appraisal and Utilization. Philadelphia: Mosby Year Book, 1994, Pp - 228
4. Verma SR, Yadav A, Narwal R. A study to assess the knowledge and practice regarding aseptic technique adopted during labour among staff nurses. International Journal of Medical Research and Review. 2018 Dec 31;6(8):487-92.
5. Birgand G, Azevedo C, Toupet G, Pissard-Gibollet R, Grandbastien B, Fleury E, et al. Attitudes, risk of infection and behaviours in the operating room (the ARIBO Project): a prospective, cross-sectional study. BMJ Open. 2014 Jan 2;4(1):e004274.
6. Ht D, P D, A G, Dt J, Me K, Cn M. Essential Surgery: Disease Control Priorities, Third Edition (Volume 1) [Internet]. PubMed. 2015 [cited 2019 Jan 13]. Available from: <https://pubmed.ncbi.nlm.nih.gov/26740991/>
7. Pathak A, Mahadik K, Swami MB, Roy PK, Sharma M, Mahadik VK, et al. Incidence and risk factors for surgical site infections in obstetric and gynecological surgeries from a teaching hospital in rural India. Antimicrob Resist Infect Control [Internet]. 2017 Jun 14 [cited 2018 Oct 11\];6. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5471730/>
8. Polit DF, Beck CT. Nursing research: principles and methods. Philadelphia: Lippincott Williams & Wilkins; 2004.
9. Sahran. Patient safety and infection control in operation theatre: A prospective observational study in a tertiary care hospital of India [Internet]. [cited 2020 Oct 13]. Available from: <https://www.jpsiconline.com/article.asp?issn=2214-207X;year=2018;volume=6;issue=2;spage=38;epage=44;aulast=Sahran>
10. Wood and Haber, Nursing Research: Methods, Critical Appraisal and Utilization, 8th Edition. St. Louis Mosby, 2005.

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