



A Study to Assess the Level of Practice among Staff Nurses on Infection Control Standards in Labour Unit at Selected Hospitals in Udaipur

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ABSTRACT

This study aimed to assess the level of practice among staff nurses on infection control standards in labour unit at selected hospitals in Udaipur. The research approach employed in the present study is Evaluative approach. The research design used for the presents study is Pre-experimental one group pre-test- post-test design. The population of the study comprises of staff nurses working in labour unit in selected hospitals. The sample size comprises of 60 samples. The sampling technique used for present study was non probabilité purposive sampling technique. The study reveals that the mean post test practice score 37.18(82.62%) is greater than the mean pre test practice score 25.18(55.96%). The enhancement in level of practice of nurses is 12 (26.66%) supporting the post test practice score are higher than the pre test practice score. The data further represent that the 't' value of 15.79 is significantly higher than the table value 1.96 at 0.05 level of significance. This indicates that there was difference in pre test and post test practice score and further the data supports that the teaching programme regarding Infection Control Standards in labour unit is effective in improving the level of practice. The study concluded that the present study assessed the effectiveness of Infection Control Standards on practice among staff nurses working in labour unit. The study findings concluded that there was a significant difference in the level of practice on infection control in labour unit among staff nurses after the administration of Infection Control Standards.

KEYWORDS *Infection control standards, Staff Nurse, Labour*



INTRODUCTION

Child birth is a universally celebrating event, on occasion for dancing, flowers fireworks and gifts. Yet an everyday and every minute thousands of women having child birth experience not as a joyful event as it should be. Moreover healthy women are the foundation of a strong community and healthy newborns are the future.¹

Falling standards of care may include deteriorating infection control practices, resulting in an increased risk of institutionally acquired puerperal sepsis. Such kind of infections after childbirth is emerging as a cause of maternal mortality and morbidity, raising questions about the quality of obstetrics and postnatal care given to women and the efficacy of infection- control practices in hospitals which directly reflects the aspects of quality of obstetric care.⁴

The unhygienic delivery practices by health personnel, shortage of suitable clean implements and materials all contributes to the problem of infection after childbirth. The burden of this disease resulting from infection has led to a revival of general interest in infection control. Infection control measures aims to avoid infection by enhancing practices of hand hygiene, surgical asepsis, environmental hygiene, clean equipments and training of health care personnel.⁵

The maternal mortality rate from infection is higher. The world health organization (WHO) estimates that approximately 210 million women become pregnant each year and that 529,000 die from complications related to pregnancy. In the immediate post-partum period, sepsis is the common causes of maternal death. 99% of these maternal deaths occur in developing countries. Similarly, 99% of the estimated 4 million annual neonatal deaths occur in developing countries

NEED FOR THE STUDY

Pregnancy is a time of joy and excitement. Labour, the culmination of pregnancy, is the start of an incredible journey with great psychological, social and emotional meaning for the mother and her family. During this incredible journey of childbirth, a woman's genital tract, a bare surface prone to infections which are introduced by certain invasive procedures routinely done in labour unit such as vaginal examination, urinary catheterization, and artificial rupture of membrane, instrumental deliveries and also by the sub standard level of infection control practice.¹⁶

The burden of this disease resulting from infection has led to a revival of general interest in infection control. Infection prevention and control is integral to safe, effective and



ethical nursing practice. Ensuring the use of infection control standards is an important component of nursing. It aims to avoid infection (i.e. primary prevention) by enhancing practices of hand hygiene, surgical asepsis, environmental hygiene, clean equipments and training of health care. Therefore, collecting national data on maternal morbidity and mortality, reforming infection control guidelines and enrolling it hospital policies, providing holistic and flexible maternal health care, and initiating in-service educational programs in hospitals are recommended. Further research is needed on issues related to infection control practice in labour unit.¹⁷


Globalization and health (2021) a systematic review published provided information provided information on the contribution of puerperal sepsis in relation to maternal death. Data from individual studies were used to generate combined estimate of cause of death distribution by region; which reports 11.6% of maternal death in Asia were due to puerperal sepsis, 9.7% in Africa and 7.7% in Latin America, compared with only 2.1% in developed countries. Sepsis showed the highest between developing and developed countries, with odd ratio of 2.71 in Africa, 1.91 in Asia and 2.16 in Latin America compared with developed countries.¹⁸

WC Huskins, V. Manchandaz (2019) conducted a structured assessment of different facilities in Rajasthan and Odisha on infection control practice in labour and delivery room. The team completed the assessment in 5 community health centers and district hospitals using the infection control assessment tool. The result reported that cleanliness and general hygiene were conspicuously absent; hand hygiene practices were poor due to lack of awareness and supplies and there were concerns regarding storage and disposal of bio-medical waste. The study concluded that ensuring training of staff on asepsis procedures and uninterrupted supplies to labour and delivery room would enhance the infection control practice in labour room.²⁰

PROBLEM STATEMENT

A study to assess the level of practice among staff nurses on infection control standards in labour unit at selected hospitals in Udaipur

OBJECTIVES

 To assess the pre and post-test level of practice among staff nurses regarding



infection control standards in labour unit

☐ To compare pre and post-test level of practice on infection control in labour unit among staff nurses

☐ To associate the selected demographic variable with pretest level of practice on infection control standards in labour unit among Staff nurses working in labour unit

H1: There is a significant difference between the pre and post test level of practice on infection control in labour unit among the staff nurses working in unit at the $p < 0.05$ level of significance.

H2: There is a significant association of selected demographic variables with pretest level of practice on infection control standards in labour unit among staff nurses.

NH3: There is no significant association of selected demographic variables with pretest level of practice on infection control standards in labour unit among staff nurses.

MATERIALS AND METHODS

Research Approach: Evaluative approach was used in the study.

Research Design : Pre-experimental one group pre-test-post-test design was adopted for this study.

Sample: The samples selected for the present study comprises staff nurses working in labour unit at Pacific Institute of Medical Sciences (PIMS) Hospital & Paras JK Hospital of Udaipur. A sample of 60 staff nurses from 2 settings who fulfilled the sample selection criteria were selected for the study

Sampling Technique: In the present study 60 staff nurses were selected by purposive sampling technique.

Research Setting: It refers to the physical location and conditions which data collection takes place in the study. The present study has been conducted in Saraswati Chikitsalya medical shodh sansthan, Pacific Institute of Medical sciences, & Paras JK hospital Udaipur.

Population

Target Population

The target population of the study included all the staff nurses working in labour unit

Accessible population

The accessible population of the study included the staff nurses working in labour unit at selected hospital Udaipur.



DEVELOPMENT AND DESCRIPTION OF TOOL

After an extensive review of literature, discussion with the experts and with the investigators personal and professional experience, the investigator developed an observational checklist to assess the level of practice on infection control in labour unit among staff nurses.

The tool constructed in this study was divided into 2 sections:

Section A: Socio Demographic Variables

Consisted of socio demographic variables which included age in years, professional qualification, total years of experience in labour unit, previous knowledge about infection control practice and if yes, sources of previous information.

Section B: Observation checklist to assess the level of practice on infection control

The observational checklist consisted of 4 components to assess the level of practice on infection control among the health care personnel working in labour unit. The area includes ; Clean birthing room environment (8 questions), Infection control practice during labour and Birth (26 questions), Storage of clean and sterile supplies (4 questions) & Safe waste management (7 questions) respectively.

Plan for Data Analysis

Data analysis is a systematic organization and synthesis of research data and testing of research hypothesis using those data. The data obtained was planned to be analyzed by both descriptive and inferential statistics, on the basis of objectives and hypothesis of the study. Demographic data containing sample characteristics would be analyzed using frequency and percentage.

ANALYSIS OF THE DATA

The collected data was entered in a master sheet for tabulation and statistical processing. The data is analyzed and interpreted using descriptive and inferential statistics based on the objectives and hypothesis formulated for the present study.

The findings are presented under the following headings:

Section I: Description of demographic variables of staff nurses working in labour unit.

Section II: Findings related to practice scores of staff nurses regarding infection control standards during labour.

Part –I: Area wise pre test practice score of staff nurses.

Part –II: Area wise post test practice score of staff nurses.

Section III: Comparison of the pre and post test level of practice on infection control in



labour unit among staff nurses.

Section IV: Findings related to association between pre-test practice score and selected demographic variables of staff nurses.**SECTION I: DESCRIPTION OF DEMOGRAPHIC VARIABLES OF STAFF NURSES WORKING IN LABOUR UNIT**

Age: Depicts that majority of the respondents 30% belongs to the age group of <20 & 26-30 years, 26.7% respondents were 21-25 years, 13.3% respondents were >30 years.

Professional qualification: Depict that majority of the respondents 38.3% were PBBS nursing or B.Sc Nsg, 36.7% respondents were GNM, & only 25% respondents were having M.Sc. Nsg..

Experience: Depict that majority of the respondents 45% had 1-3 years of experience in labour unit, 30% have 4-6 years experience, 15% have >6 years experience, & only 10% have <1 years experience.

Knowledge: Depict that majority of respondents 53.3% have no previous knowledge and 46.7% have previous knowledge about infection control practice

Source of knowledge; Depict that majority of the respondents 50% having in-service education, 21.4% nurses having knowledge from seminar or workshop, 17.9% nurse having knowledge from other source, only 10.7% staff nurses having knowledge from media.

SECTION –II: ASSESSMENT OF PRE TEST PRACTICE SCORE OF STAFF NURSES REGARDING INFECTION CONTROL STANDARDS DURING LABOUR

The findings related to practice score of respondents are organized under the following headings:

Part-I

Table 1: Area wise pre test practice score of staff nurses regarding infection control standards
N=60

| Areas | Maximum score | Mean | Mean % | SD |
|--|---------------|-------|--------|------|
| Clean birthing room environment | 8 | 4.17 | 52.13 | 1.22 |
| Infection control practice during labour and Birth | 26 | 15.28 | 58.26 | 3.22 |
| Storage of clean and sterile supplies | 4 | 2.38 | 59.5 | 1.03 |
| Safe waste management | 7 | 3.35 | 47.85 | 1.26 |

Table 1: Depict that the maximum mean percentage obtained by the respondents is 59.5% with SD of 1.03 in the aspect of Storage of clean and sterile supplies, 58.26% with SD of 3.22 in the aspect of Infection control practice during labour and Birth, 52.13% with SD 1.22 in the aspect of Clean birthing room environment and the minimum mean percent



obtained by the respondents is 47.85 with SD of 1.26 in the aspect of concept of Safe waste management.

Part-II

Table 2: Area wise post test practice score of staff nurses regarding infection control standards.

N=60

| Area | Maximum Score | Mean | Mean Percentage | SD |
|--|---------------|-------|-----------------|------|
| Clean birthing room environment | 8 | 6.38 | 79.75 | 0.87 |
| Infection control practice during labour and Birth | 26 | 21.35 | 82.11 | 2.11 |
| Storage of clean and sterile supplies | 4 | 3.50 | 87.5 | 0.60 |
| Safe waste management | 7 | 5.95 | 85 | 0.85 |

Table 2: Depicts that the maximum mean percentage obtained by the respondents is 87.5% with SD of 0.60 in the aspect of Storage of clean and sterile supplies, 85% with SD of 0.85 in the aspect of Safe waste management, 82.11% with SD 2.11 in the aspect of Infection control practice during labour and Birth and the minimum mean percent obtained by the respondents is

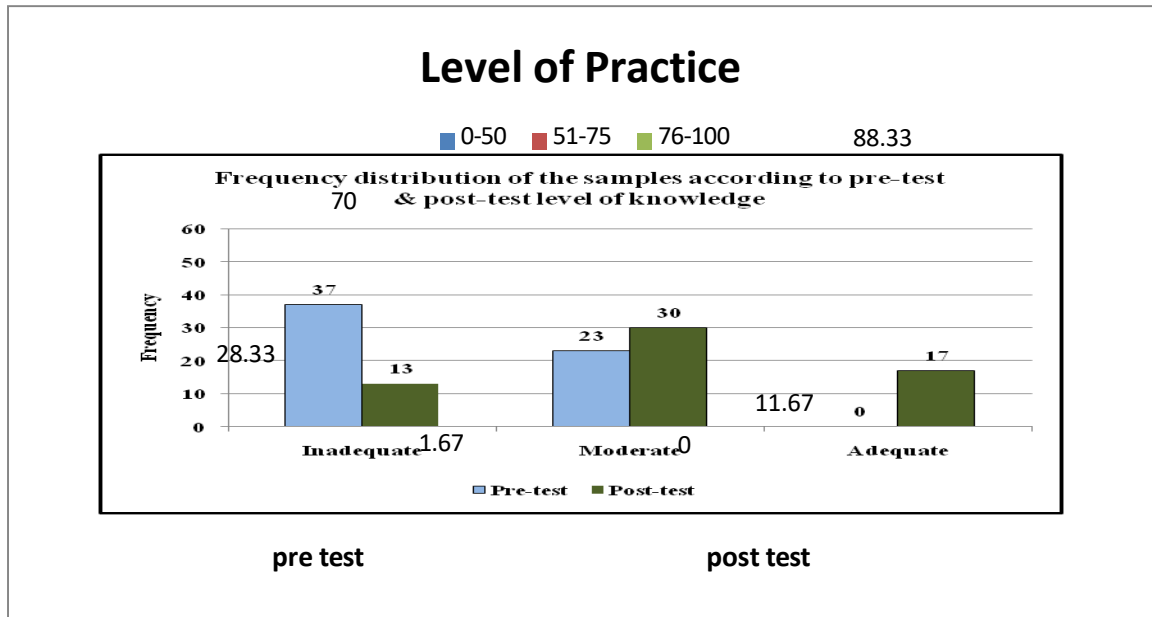
79.75 with SD of 0.87 in the aspect of Clean birthing room environment.

Part-III

Table 3 Distribution of Respondents by the level of Infection control Practice score N=60

| Level of Infection control Practice | Pre test | | Post test | |
|-------------------------------------|-----------|------------|-----------|------------|
| | F | % | F | % |
| Average Fair Practice (0-50%) | 17 | 28.33 | 00 | 00 |
| Good Practice (51-75%) | 42 | 70 | 07 | 11.67 |
| Excellent Practice (76-100%) | 01 | 1.67 | 53 | 88.33 |
| Total | 60 | 100 | 60 | 100 |

Table 3: The table & Figure represents the level of practice of respondents regarding infection control standards. The result showed that in pretest 70% respondents have good practice, 28.33% have Average fair practice and 1.67% have Excellent practice. In posttest 83.33% respondents have Excellent practice, 11.67% have Average fair practice and no candidate have average fair practice.



SECTION III: COMPARISON OF THE PRE AND POST TEST LEVEL OF PRACTICE ON INFECTION CONTROL IN LABOUR UNIT

Table 4 Comparison of the pre and post test level of practice on infection control in labour unit among staff nurses N=60

| | Mean | Mean Percentage (%) | SD | Enhancement | Enhancement percentage (%) | df | “t” Test | Inference |
|-----------|-------|---------------------|------|-------------|----------------------------|----|----------|-----------|
| Pre test | 25.18 | 55.96 | 4.88 | 12 | 26.66 | 59 | 15.79 | S |
| Post test | 37.18 | 82.62 | 3.28 | | | | | |

S = Significant

Table 4: The result reveals that the mean post test practice score 37.18(82.62%) is greater than the mean pre test practice score 25.18(55.96%). The above table also depicts that the enhancement in level of practice of nurses is 12 (26.66%) supporting the post test practice score are higher than the pretest practice score. The data further represent that the ‘t’ value of 15.79 is significantly higher than the table value 1.96 at 0.05 level of significance. This indicates that there was difference in pre test and post test practice score and further the data supports that the teaching programme regarding Infection Control Standards in labour unit is effective in improving the level of practice.

H1: There is a significant difference between the pre and post test level of practice on infection control in labour unit among the staff nurses working in unit at the $p < 0.05$ level of significance.

Hypothesis was tested at 0.05 levels. The calculated ‘t’ value 15.79 is significantly higher than the table value 1.96 at 0.05 level of significance. This indicates that there is significant



difference between the pre test and post test practice score hence the research hypothesis H1 is accepted.

SECTION IV: FINDING RELATED TO ASSOCIATION BETWEEN PRE TEST PRACTICE SCORES WITH SELECTED DEMOGRAPHIC VARIABLES

This section deals with analysis and interpretation of the data collected to find out the association between knowledge score and different demographic variables age, gender, education qualification, occupation, area of residence, personal habits, nutritional habits, disease condition, previous knowledge and source of information regarding obstructive sleep apnea. A parametric chi square is used to describe the association between knowledge score and demographic variables

Table 5 Association between pre test level of practice with selected demographic variables
N=60

| Variables | Above median | Below median | Total | χ^2 | Df | P Value (0.05) | Inference |
|--|--------------|--------------|-----------|----------|----|----------------|-----------------|
| 1. Age in years | | | | | | | |
| < 20 years | 7 | 11 | 18 | | | | |
| 21-25 years | 2 | 14 | 16 | | | | |
| 26-30 years | 11 | 7 | 18 | | | | |
| >30 years | 5 | 3 | 8 | 9.89 | 3 | 7.82 | Significant |
| Total | 25 | 35 | 60 | | | | |
| 2. Professional Qualification | | | | | | | |
| GNM | 11 | 11 | 22 | | | | |
| PBBSc Nsg/ B.Sc. Nsg | 10 | 13 | 23 | 2.05 | 2 | 5.99 | Non significant |
| M.Sc. Nsg | 4 | 11 | 15 | | | | |
| Total | 25 | 35 | 60 | | | | |
| 3. Total Years of Experience in Labour Unit | | | | | | | |
| < 1 year | 2 | 4 | 6 | | | | |
| 1-3 years | 10 | 17 | 27 | | | | |
| 4-6 years | 8 | 10 | 18 | 1.18 | 3 | 7.82 | Non Significant |
| >6 years | 5 | 4 | 9 | | | | |
| Total | 25 | 35 | 60 | | | | |
| 4. Previous Knowledge about Infection Control Practice | | | | | | | |
| Yes | 7 | 21 | 28 | | | | |
| No | 18 | 14 | 32 | 6.00 | 1 | 3.84 | Significant |
| Total | 25 | 35 | 60 | | | | |
| 5. If Yes, Sources of previous information | | | | | | | |
| In service education | 3 | 11 | 14 | | | | |
| Mass-media | 2 | 1 | 3 | | | | |



| | | | | | | | |
|------------------|----------|-----------|-----------|------|---|------|--------------------|
| Seminar/Workshop | 2 | 4 | 6 | | | | Non Significant |
| Others | 2 | 3 | 5 | 2.52 | 3 | 7.82 | |
| Total | 9 | 19 | 28 | | | | |
| S- Significant | | | | | | NS- | Not |

The obtained χ^2 value for age in years (9.89) & previous knowledge about Infection Control Practice (6.00) are higher than the table value (7.82) & (3.84) which indicates that there is a significant association between pre test knowledge score with demographic variables.

The obtained χ^2 value for Professional qualification (2.05), Total Years of Experience in labour Unit (1.18), & If Yes, Sources of previous information (2.52) are less than the table value which indicates that there is no significant association between pre test knowledge score and selected demographic variables at $p < 0.05$ level.

H2: There is a significant association of selected demographic variables with pretest level of practice on infection control standards in labour unit among staff nurses

NH3: There is no significant association of selected demographic variables with pretest level of practice on infection control standards in labour unit among staff nurses.

The Chi-square test was carried out to determine the association between the pretest knowledge and demographic variables. Out of which age in years & Previous Knowledge about Infection.

CONCLUSION

The present study assessed the effectiveness of Infection Control Standards on practice among staff nurses working in labour unit. The study findings concluded that there was a significant difference in the level of practice on infection control in labour unit among staff nurses after the administration of Infection Control Standards.



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