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Effectiveness of Planned Teaching Program on Knowledge Regarding the Infection Control Measures in Labour Room among the Staff Nurses Working in Maternity Unit in Selected Hospital of Panchmahal District

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Abstract:

Introduction: Pregnancy and childbirth are the most important events of a women's life. WHO reported that every minute a mother dies from complication in pregnancy and childbirth that means 1400 mothers die every day more than half a million mothers die every year. Many of the deaths could be prevented using existing knowledge and affordable tools. Objectives: To assess the existing knowledge of staff nurses working in maternity unit regarding infection control measures in labour room. To evaluate the effectiveness of the planned teaching programme on knowledge regarding infection control measures among staff nurses working in the maternity unit. To determine the association between pre-test knowledge score of staff nurse regarding infection control measure in labourroom. Materials and methods: An evaluative research approach with pre-experimental design was used. The sampling technique used was non - probability convenient sampling. Data was collected from selected Hospitals at Panchmahal District. Data collection was done from 10-09-2014 to 25-09-2014. The tool consist of section: 1 Demographic profile, section:2 – knowledge regarding Infection Control measures in labour room 30 items. The reliability of the tool was established by using the test retest method. Hence the tool was found to be reliable. Data was analyzed using descriptive and inferential statistics. Descriptive statistics used were frequency, mean, range and standard deviation. The data was also presented graphically. Results: The mean difference between the post test and pretest knowledge scores of staff nurses regarding the infection control measures in labour room was found to be highly significant ($t_{49}=1.69, p<0.05$). So hypothesis H_1 was accepted and hypothesis H_2 was only associated with age. Conclusion: Hence planned teaching program was affected for the staff nurses working in maternity unit regarding the infection control measures in labour room

Keywords: effectiveness, knowledge, planned teaching programme, infection control measures, staff nurses

1. Introduction

“Advanced education creates a more powerful workforce.”

Pregnancy and childbirth are the most important events of a women's life. Pregnancy, delivery is a normal physiological process. Most of the time the women achieve a normal pregnancy outcome without any complication.¹

WHO reported that every minute a mother dies from complication in pregnancy and childbirth that means 1400 mothers die every day more than half a million mothers die every year. The birth of a baby is a momentous occasion in the life of a couple.¹Health can be neither be demanded nor given, It can be neither be bought, nor sold; but the circumstances and services that are prerequisite to health can certainly be demanded and received as a right.²

The importance of a strong health system as the essential route to achieving improvements in maternal health and reductions in maternal mortality is widely accepted. Labour and delivery are especially hazardous times of pregnancy. Apart from the risks of severe bleeding and obstructed labour, life threatening infections can be introduced into the mother and baby's organs and bloodstream.³

2. Need for the Study

“Right practice is the safest investment towards hazard-free care.”

The importance of a strong health system as the essential route to achieving improvements in maternal health and reductions in maternal mortality is widely accepted.

Labour and delivery are especially hazardous times of pregnancy. Apart from the risks of severe bleeding and obstructed labour, life threatening infections can be introduced into the mother and baby's organs and bloodstream.

As per a report by WHO outlined the problem of hospital acquired infections that patient safety incidents occur in 4% to 16% of all hospitalized patients, and that hospital acquired infections affects Hundreds of millions patients globally.⁵

A prospective study of 71 burn patients at a postgraduate institute in Chandigarh found that up to 59 patients (83%) had hospital acquired infections.

Many studies have been conducted for the effectiveness of infection control strategies for a hospital, but till date concrete work has been done as seen from research appraisal about competencies of infection control strategies of the activities performed by the staff nurses in labour room. Hence investigator found a need for activities in labour room regarding infection control strategies through Self Instructional Module.⁴

3. Statement of Problem

Effectiveness of the planned teaching program on knowledge regarding the infection control measures in labour room among the staff nurses working in maternity unit in selected hospital of Panchmahal district.

4. Objectives of the Study

1. To assess the existing knowledge of staff nurses working in maternity unit regarding infection control measures in labour room.
2. To evaluate the effectiveness of the Planned teaching programme on knowledge regarding infection control measures among staff nurses working in the maternity unit.
3. To determine the association between pre-test knowledge score of staff nurse regarding infection control measure in labour room.

4.1. Hypothesis

- H_1 : The mean post-test knowledge score of subject exposure to the planned teaching programme on knowledge of infection control measure in labour room will be significantly higher than the mean pre-test knowledge score .
- H_2 : There will be a significant association between pre-test knowledge score of infection control measure and selected demographic variable.

4.2. Assumption

The study assumes that:

- The staff nurses will have some knowledge regarding Infection Control measures.
- Knowledge about Infection Control Strategies among staff nurses working in the Maternity unit in selected hospitals, Vadodara will be increased after giving planned teaching programme on Infection Control measure.

4.3. Inclusion Criteria

1. Staff nurses those who are working in the maternity unit
2. Staff nurses those who are willing to participate in the study.
3. Staff nurses those who were present at the time of data collection.
4. Staff nurse who has done ANM and GNM courses.

4.4. Exclusion Criteria

1. Staff nurses who have already participated in similar study, but not available at the time of study.
2. Staff nurses who have already attended the pilot study.
3. Staff nurses who are not willing to participate in the study.

5. Material and Method

5.1. Research Approach

The research method adopted for the present study was the pre-experimental approach as the study aimed In view of the nature of the problem under study and to accomplish the objectives of the study assessment was found to be appropriate to describe Effectiveness of the planned teaching program on knowledge regarding the infection control measures in labour room among the staff nurses working in maternity unit in selected hospital of Panchmahal district.

5.2. Research Design

In the present study, the investigator selected pre-experimental approach, one group pre-test and post-test design, keeping in the view the objectives of the study, the investigator, observed the groups prior to the intervention (the pre-test). After the pre-test, intervention (Planned teaching programme) was administered to the same group and was then again assessed (the post-test).

5.3. *Setting*

The study will be conducted in selected maternity hospital at Panchmahal district.

5.4. *Variable*

5.4.1. Independent Variables

In this study is planned teaching programme on knowledge regarding infection control measures in labour room among Staff Nurse working in the maternity unit.

5.4.2. Dependent Variable

In this study, it refers the knowledge of the staff nurse regarding infection control measures in labour room.

5.5. *Population*

The population is all the staff nurses working in maternity unit in selected hospitals, Panchmahal district.

5.6. *Sample*

The samples for the present study were staff nurses working in maternity unit in selected hospital Panchmahal district.

5.7. *Sample Size*

In the study the sample size constitutes of 50 staff nurses working in maternity unit in selected hospital Panchmahal district.

5.8. *Sampling Technique*

Convenience sampling technique is used for the selection of sample.

5.9. *Data Collection Instrument*

In this study data collection instrument was structured knowledge questionnaire.

5.10. *Development of the Tool*

After an experience review of literature and discussion with the experts, a structured knowledge questionnaire was prepared to assess the knowledge of staff nurses regarding the infection control measures in labour room.

The following steps were carried out in preparing the tool:

- Literature review
- Validity of tool
- Reliability
- Experts opinions and discussion, personal experiences, and discussion with peer groups

5.11. *Description of Tool*

On modifying the tool as per the expert's suggestion the final tool consists of two parts.

5.11.1. Part I

Information on demographic variables of respondents containing four items such as age, gender, religion, stream of higher education, family income, previous participation.

5.11.2. Part II

Structured knowledge questionnaire consisting 30 items on knowledge about infection control measures in the labour room.

All items are given score of one for each correct answer and zero for a wrong answer.

| - | Scoring interpretation |
|---------|------------------------|
| good | 21-30 |
| average | 11-20 |
| Poor | 1-10 |

5.12. *Content Validity*

The tool was submitted to 7 experts of department of obstetric and gynaecological nursing.

5.13. *Reliability*

The reliability of the instrument was established by administering the tool to 5 staff nurses in Bhagat hospital, Lunawada, Panchmahal district. The co-efficient of internal consistency was computed for structured knowledge questionnaire, using split half technique. The reliability of the test was found out using Karl Pearson product moment correlation formula. The reliability of the structured knowledge questionnaire (schedule) was found to be 0.88 which indicates that the tool was reliable.

5.14. Plan for Data Analysis

Data analysis is the systematic organization and synthesis of the research data and testing of research hypothesis using the data. For the present study, the data obtained were analyzed in respect to the objectives of the study by using descriptive and inferential statistics. The plan of data analysis was worked out by the experts in the field of statistics and nursing. Frequency and percentage for the analysis of demographic data, Mean, standard deviation of pretest and post-test scores, Paired 't' test for testing effectiveness of planned teaching program and research hypothesis, Chi square test would be applied to determine the significance of the difference between mean scores of pretest and post-test subjects.

6. Results

The Data Is Analyzed And Presented Under The Following Sections:

- SECTION I: Description of Sample Characteristics.
Baseline data containing sample characteristics would be analyzed using frequency and percentage
- SECTION II: Determine pre-test knowledge score of staff nurses regarding infection control measures
- SECTION III: Analysis of effectiveness of plan teaching program regarding infection control measures.
- SECTION IV: Association of demographic variable with pre-test knowledge score.

6.1. Section A: Description of the Demographic Variables of Staff Nurses (N=50)

| Sr. No | Characteristic | Categories | Frequency | % | | |
|---------------|----------------------------|--------------|---------------|-------------|----|-----|
| 1 | Age | 21-30 | 21 | 42% | | |
| | | 31-40 | 12 | 24% | | |
| | | 41-50 | 12 | 24% | | |
| | | Above 50 | 5 | 10% | | |
| | | Total | 50 | 100% | | |
| 2 | Gender | Male | 05 | 10% | | |
| | | Female | 45 | 90% | | |
| | | Total | 50 | 100% | | |
| 3 | Religion | Hindu | 18 | 36% | | |
| | | Christian | 19 | 38% | | |
| | | Muslim | 13 | 26% | | |
| | | Other | 00 | 00% | | |
| | | Total | 50 | 100% | | |
| 4 | Stream Of Hogher Education | Anm | 23 | 46% | | |
| | | Gnm | 22 | 44% | | |
| | | B.Sc Nursing | 05 | 10% | | |
| | | Total | 50 | 100% | | |
| | | 5 | Family Income | Below 5,000 | 00 | 00% |
| 5,100-10,000 | 05 | | | 10% | | |
| 11,000-15,000 | 07 | | | 14% | | |
| Above 15,000 | 38 | | | 76% | | |
| Total | 50 | | | 100% | | |
| 6 | Previous Participation | | | Yes | 38 | 76% |
| | | | | No | 12 | 24% |
| | | Total | 50 | 100% | | |

Table 1: Frequency and Percentage Distribution of Staff nurses According to Their Personal Characteristics (Demographic Variables) (N=50)

6.2. Section B: Assessment of Pre Test Knowledge Score of Staff Nurses (N=50)

| Percentage and Mean of the Pre-test | | | | | | |
|-------------------------------------|----|---------|---------|-------|-------------|------|
| | N | Minimum | Maximum | Mean | Percentage% | S.D |
| Total | 50 | 7 | 21 | 13.08 | 26.16% | 5.73 |
| Valid N (list wise) | 50 | | | | | |

Table 2: Pre-Test Knowledge Score regarding infection control measures in labour room.

6.3. Section: C Analysis of Effectiveness of Planned Teaching Program

This section reveals to analysis of effectiveness of planned Teaching Program on Knowledge regarding infection control measures in labour room among staff nurses working in maternity unit. In order to test the statistical significance between the pre-test and post-test knowledge score, the following hypothesis was formulated:

6.3.1. Testing the Research Hypothesis H1

- H1: The mean post-test knowledge score for staff nurses working in maternity unit regarding infection control measures in labour room will be significant higher than their mean pre-test knowledge score.

| | Mean | Mean Difference | % | SD | P | Significance Level |
|-----------------|-------|-----------------|--------|------|------|--------------------|
| Pre-test Score | 13.08 | 08.41 | 26.16% | 5.73 | 0.05 | Significant |
| Post-test score | 21.56 | | 43.12% | 8.41 | | |

Table 3: Comparison of the pre-test and post-test knowledge score of staff nurses
N=50, df=49, t 0.05=1.67

6.4. Section: D Association of Demographic Variable with the Level of Pre-Test Knowledge Score of Staff Nurses.

This section deals with the findings of the association between Pre-test knowledge of infection control measures in labour room with selected socio-demographic variables.

- H₂: There will be significant association between pre-test knowledge of staff nurses with their selected demographic variables.

| Demographic Variable | Good | Avg. | Poor | χ^2 | D.F | Level of Significance at 0.05 level | |
|----------------------------|-------------------|------|------|----------|-------|-------------------------------------|----|
| Age in year | 21-30 Years | 00 | 18 | 3 | 1.918 | 6 | NS |
| | 31-40 Years | 00 | 09 | 03 | | | |
| | 41-50 years | 00 | 10 | 02 | | | |
| | Above 50 | | | | | | |
| Gender | Male | 00 | 03 | 02 | 3.6 | 2 | S |
| | Female | 45 | 09 | 36 | | | |
| Religion | Hindu | 00 | 13 | 05 | 5.52 | 6 | S |
| | Christian | 00 | 16 | 03 | | | |
| | Muslim | 00 | 09 | 04 | | | |
| | Other | 00 | 00 | 00 | | | |
| stream of higher education | ANM | 00 | 19 | 04 | 4.66 | 4 | S |
| | GNM | 00 | 18 | 04 | | | |
| | B.Sc nursing | 00 | 02 | 03 | | | |
| Family Income | Below 5,000 | 00 | 00 | 00 | 3.4 | 6 | S |
| | 5,100- 10,000 | 00 | 04 | 01 | | | |
| | 11,000- 15,000 | 00 | 05 | 02 | | | |
| | Above 15,000 | 00 | 31 | 07 | | | |
| 6.previous participation | Yes | 00 | 31 | 07 | 5.44 | 2 | S |
| | No | 00 | 08 | 04 | | | |

Table 4: Association of Demographic Variable with the Level of Pre-Test Knowledge Score of staff nurses

7. Discussion

Among all subjects 28.53% improved their knowledge after administering the PTP. The post-test score was 71.86%, which was higher than their pre-test knowledge scores 44.33%.

The mean difference between the post test and pretest knowledge scores of staff nurses regarding the infection control measures in labour room was found to be highly significant ($t_{49}=1.69$, $p<0.05$).

Gain in knowledge scores was found to be significant at $p<0.05$ level in the areas of Hospital acquire infection ($t_{49}=0.438$), General Measures ($t_{49}=3.02$), Methods of Sterilization ($t_{49}=-14.65$), and Biomedical waste ($t_{49}=-9.029$) suggesting that the PTP was effective in increasing the knowledge of subjects in all the areas.

8. Conclusion

Assessment of the knowledge regarding the infection control measures in labour room among the staff nurses working in maternity unit is the main concept of this study. This will help the staff nurses to gain knowledge in the areas concerned.

Most of the staff nurses knowledge scores were poor (44.33%) before the PTP. But after introducing the PTP it facilitated them to learn which is evident in the post-test knowledge scores, where staff nurses gained scores 71.86%.

After the introduction of PTP, the post-test measures showed that there is a significant increase in the knowledge of staff nurses on infection control measures in the labour room.

Increase in the knowledge can bring about changes in the practice and this in turn will prevent them from spreading infection in labour room.

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