Original Research Article

Effectiveness of planned teaching on knowledge regarding nurses role in blood transfusion

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A R T I C L E   I N F O

A B S T R A C T

Introduction: Blood transfusion is an art as well as a science though it comes with many risks but still it is an important life-saving procedure. Blood transfusion is a nursing procedure, assessment during the procedure is critical because of the risk of allergic reactions. Many studies had been done to assess the knowledge of nurses' role in blood transfusion and the results are varied, we conducted this study to see asses the same in Central India hospital.

Aim: To assess the effect of teaching on nurses role in blood transfusion.

Materials and Method: 40 staff nurses were selected with nonprobability convenient sampling technique from hospital. Tool was prepared with step by step procedure. Prior to the preparation of the tool the investigator consulted experts in the field and gathered information regarding blood transfusion, purpose, indication, contraindication, procedure, nurses role in case of transfusion reaction, standard care of guideline and nurses role of blood transfusion. Planned teaching and semi structured questionnaire was prepared.

Result: We got different scores at pre and post test which was statistically significant means teaching has positive role on knowledge of nurses regarding nurse's role in blood transfusion.

Conclusion: Planned teaching can be an effective tool for improving the knowledge of the nurse regarding blood transfusion.

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1. Introduction

Blood transfusion is an art as well as a science though it comes with many risks but still it is an important life-saving procedure.[1] Blood transfusion procedures have evolved greatly, still many risks involved in it like incidence of immunological complications, transfusion of infections like bacterial, viral, immunomodulation, and litigation were 11.4/100,000 associated with blood transfusion.[2] There is increase in awareness of avoidable risk, and improved reporting systems had developed better safety procedures where in severe hazards of transfusion (SHOT) report scheme reported 13 deaths due transfusion, though the risks are avoidable, serious morbidity due to transfusion, such as

that incurred by ABO incompatibility, remains persistent.[3]

Blood transfusion is a nursing procedure, assessment during the procedure is critical because of the risk of allergic reactions. Procedure includes replacement or transfusion of blood or blood components via IV administration.[4] Blood products used for transfusions usually are separated red blood cells, plasma fluids, and platelets. A safe blood transfusion needs that staff must have knowledge of the patho-physiology of blood transfusion its reactions, symptoms and treatment. Staff nurses can reduce the errors and complications by implementing good blood transfusion policies, and educational training and initiatives.[5]

Many studies[1,2,5] had been conducted worldwide to assess the knowledge of nurses' role in blood transfusion and the results are varied, we conducted this study to see

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asses the same in Central India hospital.

2. Aim

To assess the effect of teaching on nurse's role in blood transfusion.

3. Materials and Methods

3.1. Study design

This study was conducted in a selected government hospital. It was a 1000 bedded hospital. In that ICUs are 10 bedded. In that hospital there is centralized unit of blood transfusion dedicated for Thallesemia. Thallesemia unit is 20 bedded. Nurses were doing 3 shifts i.e. morning, evening and night. Permission from institutional authority was taken to conduct study. 40 staff nurses were selected with nonprobability convenient sampling technique from hospital. Tool was prepared with step by step procedure. Prior to the preparation of the tool the investigator discussed with expertise in the field and gathered information regarding blood transfusion, purpose, indication, contraindication, procedure, nurses role in case of transfusion reaction, standard care of guideline and nurses role of blood transfusion. Planned teaching and semi structured questionnaire was prepared.

3.2. Sample

The study sample consisted of 40 staff nurses working in selected hospital.

3.3. Inclusion criteria

1. Nurses working in selected hospital
2. Nurses having experience of more than three months
3. Nurse willing to participate in the study

3.4. Exclusion criteria

1. Nurses having less than three months of experience

The teaching plan consisted of comprehensive information regarding blood transfusion which includes:

1. Review of physiology of blood.
2. Definition
3. Purpose
4. Indications
5. Contraindication
6. Complication
7. Principle
8. Equipment
9. Procedure

3.5. Tool II: Questionnaire Session consist of Session I and II

3.5.1. Section I

Consisted to demographic data, which mainly includes Educational qualification, Additional courses attended, Duration of experience, current age group and Gender.

3.5.2. Section II

This mainly includes the data regarding the knowledge related with blood transfusion.

3.6. Data collection consists I, II and III stages

3.6.1. Data collection procedure

Stage I : Data collection from the staff nurses was done their duty hours. A few minutes were spent in rapport building an obtaining consent, and then the samples were given a pretest using the semi structured questionnaire schedule.

Later the planned teaching was given to the group consisting 40 participants, each session taking approximately 25 to 30 minutes followed by discussions, where the participants cleared their doubts. This process continued until the researcher obtained the required sample size.

Stage II : Analysis of data to assess the knowledge and identify existing practices. The data obtained from the questionnaire was analyzed by the investigators. This helps to find out their knowledge regarding blood transfusion.

Stage III : After a gap of five days the post test was administered to the same participants individually to make sure they were not influencing each other's responses.

4. Observations

As we can see in Table 1 mean of pretest and post- test were 8.58 and 18.78 respectively.

Before calculating the "t " value, Null hypothesis (H_0) and alternate hypothesis (H_1) was stated. The two tailed"t " value for 0.05 level of significance was 2.02

The degree of freedom i.e. .df = 39,

H_0 – There is no difference in the mean of pre test and post test knowledge score after administration of planned teaching programme about blood transfusion among staff nurses working in hospital.

H_1 – There is difference in the mean of pre test and post test knowledge score after administration of planned teaching programme about blood transfusion among staff nurses working in hospital.

The calculated "t" value was found to be 24.68 for knowledge. As the calculated value was greater than the table "t" value of 2.02 at 0.05 level of significance with the degrees of freedom of 39 so null hypotheses (H_0) was rejected.

Table 1: Comparison of pretest and post test knowledge scores

S. No.	Knowledge Level				MD	SEMD	Calculated t value
	Pre-test		Post test				
1	M1	SD1	M2	SD2	10.2	0.413	24.68
	8.58	2.54	18.78	1.07			

df = 39, level of significance is 0.05 for 't ' table value of 2.02
MD= Mean Deviation
SEDM= Standard error of mean Deviation

5. Result

In our study the mean pretest and post- test scores was 8.58 and 18.78 respectively and "t" value was found to be 24.68 for knowledge which was greater than the table "t" value of 2.02 at 0.05 level of significance with the degrees of freedom of 39 so null hypotheses (H_0) was rejected.

6. Discussion

In our study the mean pretest and post- test scores was 8.58 and 18.78 respectively and "t" value was found to be 24.68 for knowledge which was greater than the table "t" value of 2.02 at 0.05 level of significance with the degrees of freedom of 39. As there is difference in the mean of pre test and post test knowledge score after administration of planned teaching programme about blood transfusion among staff nurses working in hospital which implies that planned teaching can improve the knowledge of nursing staff regarding blood transfusion.

A study on 100 nurses from three hospitals in Ankara, Turkey which shows nurses delivers undesirable practices because of to insufficient knowledge on blood transfusion.[6] a study at Shahrekord University of Medical Sciences, Iran on nurses ' knowledge of blood transfusion reveals nurses knowledge of blood and blood component was average and insufficient.[7] So they constituted blood transfusion committees in hospitals to increase the quality of these common procedures by providing trainings to nurses.[7]

The study at United Kingdom on nurses' knowledge retention of safe transfusion practice following a standardized teaching and learning programme within a School of Nursing in Scot land, UK, states degradation of knowledge during study period and there is positive influence of experience on knowledge retention at 6 months but no effect at 12 months.[8]

The study was conducted in France by Saillour-Glenisson F et al concluded that low training and transfusion activity were key determinants of poor transfusion-related knowledge and practice.[9]

The study conducted in Gardner-Webb University to assess the nurse's knowledge on blood transfusion, shows a minority of nurses gained education regarding blood conservation in their nursing programs.[10]

The study conducted Belal M. Hijji et al to assess the Knowledge and practice of blood transfusion shows that many nurses lack knowledge regarding patient preparation before blood collection, and the importance of proper patient identification also 279 (92%) reported that they would thaw up blood using invalid and, potentially, harmful methods.[11]

The study conducted in Iran Department of Nursing & Midwifery, Zabol Medical Science University by Ali Reza Piri, shows that 26.2% of healthcare workers had low-level knowledge, 22.1% moderate and 51.6% acceptable knowledge.[12]

The study conducted in Malta that subjects lacked knowledge, which was predominant in to the reactions which occurs as a result of transfusion.[13]

The study conducted in Mali at Bamako and Kati to determine the level of knowledge and practice of medical staff personnel shows that 70.9% of the staff not trained in blood transfusion. Insufficient knowledge about blood transfusion amongst 53.9% of staff and excellent in 46.1%. 42.9% of medical staff has a basic knowledge of blood products, their indications, and related accidents.[14]

7. Conclusion

Planned teaching can be an effective tool for improving the knowledge of the nurse regarding blood transfusion.

8. Conflict of interest

None.

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