Effect of Applying Nursing Intervention Program on Reducing Complications of Blood Transfusion

Thesis

Submitted for Partial Fulfillment for the Requirements of the master Degree

In Nursing Science

(Medical Surgical Nursing)

By

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Summary

Blood transfusion is a lifesaving procedure for millions of patients worldwide. At some times delay in blood transfusion can be fatal and cause complications that could lead to loss of lives. Every second, someone in the world needs blood transfusion for surgery, trauma and severe anemia. The blood transfusion rate for any blood component in hospitalized patients remains uncertain ***(Seif, 2016)***.

Transfusion reactions are defined as adverse events associated with the transfusion of whole blood or one of its components. These may range in severity from minor to life-threatening. Reactions can occur during the transfusion (acute transfusion reactions) or days to weeks later (delayed transfusion reactions) and may be immunologic or non-immunologic. A reaction may be difficult to diagnose as it can present with non-specific, often overlapping symptoms. The most common signs and symptoms include fever, chills, urticaria (hives), and itching. Some symptoms resolve with little or no treatment. However, respiratory distress, high fever, hypotension (low blood pressure), and red urine (hemoglobinuria) can indicate a more serious reaction.(**Jolee& Kendall,2018).**

- Aim of the study:

The present study was aimed to:

- Assess the patient to determine the basic needs.
- Develop and implement the nursing intervention program based on the assessment of basic needs.
- Evaluate the effect of the implemented nursing intervention program on incidence of blood transfusion complications.

- Research design:-

A quasi-experimental design was utilized.

-Research Hypothesis:

At the end of the present study patients who will receive the nursing intervention program of blood transfusion will have fewer complications than those patients who will not receive this program.

- Setting:-

This study was carried out at the medical units at El-Fayoum University Hospital.

- Subjects:-

A Purposive sample of 100 adult patients who met the inclusion criteria and agree to participate in the study; then they were divided into two equal groups (study and control group, 50 patients in each).

Inclusioncriteria:

Adult patients aged 18 years or more who required for blood transfusion.

Exclusioncriteria:

Heart problem, Arrhythmia, sever infection, hyperthermia**,** thalassemia, disseminated intravascular coagulation(DIC), hemophilia.

- Tools of data collection:-

Data were collected using the following three tools:

Tool (1)- patient interview assessment questionnaire:(Appendix I)

Which will be developed by investigator based on literature review and includes two parts.

Part(1) Sociodemographic data about the patient (10 items) patient name, age, sex, level of education ,occupation ,marital status ,blood group, Rh type , Residence , income

Part(2) past and current medical history which include (4 items)

Type of blood transfusion, past and present history taking,History of previous blood transfusion, Complete blood count investigation

Tool (2) Patient progress record which include measuring vital signs ,pre transfusion, first 15 minute of transfusion, after 30 minute of transfusion ,every one hour till end of transfusion, 24 hour of transfusion.

Tool (3)Assessment of blood transfusion complications

This tool adopted from **(Khalil, 2011*)*** it includesall complications that might be occur forthe patient during and post-blood transfusion following and included the parts:

Hemolytic reaction (5items)

Febrile reaction (7items)

Allergic reaction mild (4items) and sever (6items)

Cardiac overload(6items)

Contaminated blood administered (5items)

- The main results of the study:-

1- The mean age in study group was (43.67±4.37) and (47.22±5.12)in control group ,while more than half of them was male (74% & 56%) and married (78% & 86%) for both study&control groups respectively and the majority ofthem was blood group (A) with (42% and 34%)

and (74%and70%) for Rh(+VE) in both study&control groups respectively .

2- the educational level (32%) for study group patient's in secondary school level and (22%) for control group in relation to occupation does not work patient (30%) for study group and (27%) for control group patient's with non-statistically significant difference between two groups in the others demographic data with p-value >0.05.

3- Liver cirrhosis is the most common (14%) and hematemesis (13%) with statistically significant difference between two groups as regards Diabetic, Hematemesis and Renal failure with p-value(p=0.023, 0.041, 0.042), while non statistically significant difference between two groups in the others medical diagnosis with p-value >0.05.

4- TheMean ± SD for patient hemoglobin level in study group was (8.14±0.97) and (8.23±0.70) for control group while Mean ± SD for patient red blood cells in study group was (3.00±0.48) and (3.32±0.47) for control group patient with highly statistically significant difference between two groups as red blood cells when p-value was <0.001**.

5- past and current history of chronic illness for both study & control groups it shows that the majority of them has diabetes mellitus (32% & 36%) for both study& control groups respectively and there was no any statistical significant difference between two groups regarding chronic illness expect kidney diseases with p-value (p=0.004).

6- History of blood transfusion for both study&control groups it show total (53%) of patient in present study have red blood cells transfusion and (37%) of patient have whole blood while one patient have platelets transfusion ,there was highly statistically significant

difference between two groups as regards causes of transfusion with p-value <0.001** and statistically significant difference between two groups in previous blood transfusion and type of transfusion with p-value (p= 0.004, 0.014) .

7- There were statistically significant difference between two groups in patient vital signs as regard patient pulse after end of transfusion ,after 24 hours of transfusion and patient diastolic blood pressure first 15 minutes of transfusion with p-value (p=0.029,0.017,0.032), while non statistically significant difference between two groups in other items of patient vital signs with p-value >0.05.

8- complication during blood transfusion for both study&control groups ,total hemolytic reaction in study group was (8%) in comparing(50%) in control group also total febrile reaction was (6%)in study group in comparing to (22%) for control group as well as total mild allergic reaction was zero % in study group in comparing to (10%)for control group and there was highly statistically significant difference between two groups as regard Hemolytic reaction with p-value (p= <0.001) and there was statistically significant difference between two groups as regard Febrile reaction andMild Allergic reaction with p-value (p=0.021 and 0.022)

9- Occurring of patient complication in study group less than in control groupas hypotension and tachypnea are most common signs of complications it has statistically significant difference between two groups in Assessment of patient complications first 24 hours of transfusion as regard Hemolytic reaction with p-value (p= 0.046)

10- Highly incidence of complications occursin control group during transfusion and first 24 hours of transfusion (10% and 8%) compared to study group during transfusion and first 24 hours of transfusion was (4% and 2%).

11- There was non-statistically significant relation between demographic dataand incidence of complication during blood transfusion for study group and control groups.

12- there was statistically significant relation between demographic data & incidence of complication first 24 hours of transfusion for study group as regards patient age with p-value(p=0.008) and there was non-statistically significant relation between demographic data & incidence of complication first 24 hours of transfusion for control group.

13- There was highly statistically significant relation between past history of chronic illness & incidence of complication during blood transfusion for study group as regard hypertension with p-value <0.001** and there was statistically significant relation in diabetes mellitus with p-value (p=0.035).

14- There was highly statistically significant relation between past history of chronic illness & incidence of complication during blood transfusion for control group as regard kidney disease with p-value <0.001**, while statistically significant relation in diabetes mellitus with p-value (p=0.031).

15- There was statistically significant relation between past history of chronic illness & incidence of complication first 24 hours of transfusion for study group as regard hypertension when p-value (p=0.006).

16- There was statistically significant relation between past history of chronic illness & incidence of complication first 24 hours of transfusion for control group as regard Diabetes mellitus when p-value (p=0.005).

- The study concluded that:-

Results of the present study were successful in obtaining the hypothesis. And there was highly statistical significance decrease in the incidence of blood transfusion complications among study group in comparing to control groups .as well there no any relation between Socio-demographic data and incidence of complications that indicate high effect of the provided interventionprogram.

- The study recommended that:

1- The application of developed nursing intervention program for blood transfusion in the similar sitting and medical units.

2- Follow up study is suggested to confirm the long term impact of the intervention program.

3- The study should be replicated using a strong randomize control of clinical trial with blind assessment of the outcome for more evidence of its positive impact.