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RESEARCH PAPER

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### Assessment of Nurse's Practices Regarding Blood Transfusion in Pediatric Unit in Elmek Nimer University Hospital, Sudan

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#### ABSTRACT

*This descriptive cross sectional study, aiming to assess practice of nurses about blood transfusion, was carried out at Elmek Nimer university hospital pediatric ward between January to April 2016. The sample composed of fifty nurses working in pediatric ward, evaluation sheet (check list) was used to collected data. The data was analyzed by using SPSS. The result represented two third (64 %) of studied nurses their good performance before blood transfusion process and 62% of them their average performance during and after blood transfusion process and most (84 %) of them knowing how to deal if complication occur. The study recommended that importance for nurses` to attend work shop and training courses about life saving procedures like blood transfusion.*

**Keywords:** Assessment, Nurse, Blood, Transfusion, Performance and Elmek Nimer.

#### INTRODUCTION

Blood being a vital component nourishes each and every functional units of human body and it is also acts as vehicle for carrying so many infective agents. When this blood is lost due to much condition such as accidents, trauma, congenital etc, under such circumstances

it is must that it has to be replaced through one or the other ways. Transfusion is used in a variety of medical conditions to replace lost components of the blood. Blood transfusion is one among the important methods of replacement of components of blood. (Potter and Perry, 2004).

The hematologic system consists of the blood and blood forming tissue of the body. The main hemopoietic organs are the bone marrow, liver, spleen, lymph nodes and thymus. blood is composed of plasma and cells erythrocytes, leukocytes, and platelets, (Michael cialclare Kumar Clarks, 2009), all blood cell develop from stem cell or precursor cell in that are produced principally in the bone marrow, there are three types of normal hemoglobin: Hgb A in the adult, Hgb A 2 minor adult hemoglobin, Hg b For fetal hemoglobin in fetal I .Total blood volume occupied by both cell and plasma in the vascular system, in children blood volume 8 % body weight (The clinical use of blood in general medicine, 1997).

Blood transfusion is the process of transferring blood or blood-based products from one person into the circulatory system of another, Blood transfusions can be life-saving in some situations, such as massive blood loss due to trauma, or can be used to replace blood lost during surgery. Blood transfusions may also be used to treat a severe anemia or thrombocytopenia caused by a blood disease. People suffering from hemophilia or sickle-cell disease may require frequent blood transfusions. Early transfusions used Whole Blood, but modern medical practice is to use only components of the blood, (Copyright © 2006, by Princeton University. All rights reserved). Blood products are often used to replace blood or particular components of the blood that have been lost by accident or illness. All blood products are made from blood collected from volunteer blood donors. Blood may be processed into the various blood components, Packed Red Blood Cells, Whole blood. Fresh Frozen Plasma, Platelets, Granulocytes. Benefits of blood transfusion Blood product transfusions save lives or improve the patient's condition. The number of patients who die or become seriously ill from a blood product is very small when compared to the benefits of blood products to the patients who receive a transfusion (<http://www.cincinnatichildrens.org/health/b/blood-transfuse/12:00pm 23/9/2012.>).

Complication of blood transfusion Immune Mediated Adverse Reactions: are those caused by a reaction of the patient's immune system against the blood product or a reaction of the immune cells in the blood product against the patient. Non-Immune Mediated Reactions: There are several possible non-immune mediated adverse reactions. Most of them are very rare. One of these is circulatory overload. Infectious Complications the blood product could be contaminated by bacteria, resulting in a potentially serious infection (<http://www.cincinnatichildrens.org/health/b/blood-transfuse/12:00pm 23/9/2012.>).

Role of the nurse the nurse is responsible for insuring that the right unit of blood is to be administered to the right patient after typing and cross matching by the lab. This is done by checking the lot, serial numbers, blood type, and expiration date with another nurse or qualified lab personnel. Then the unit of blood has to be checked off with another nurse before administration (Oldham et al., 2009). Only registered nurses are allowed by law to administer blood products. Before administering the unit, the nurse has to get consent forms signed by the patient or a qualified representative of the patient, except in the cases of trauma or life saving situations if the patient is unable to make that decision. All patients or parent have the right to refuse transfusions. After consents are signed and the blood is checked by appropriate personnel, the nurse has to take a complete set of vital signs for a baseline. After starting the transfusion, the vital signs must be checked after 15 minutes, then 30 minutes from then, then at one hour. Then vital signs must be checked every hour,

according to hospital protocol. The vital signs are checked this often to monitor for a reaction to the blood. If a reaction occurs, then the transfusion must be stopped immediately and normal saline infused. Blood can only be transfused with normal saline. Some doctors may give premedication's before transfusion to reduce the chance of a reaction. a unit of whole blood (packed red blood cells) must be infused over 3.5-4 hours, but not over 4 hours from the time of the start of the transfusion, (<http://hes.ucfsd.org/gclaypo/circulatorysys.html>).2:00-pm, 23.9.2012.)

## MATERIAL AND METHODS

**Study design:** Descriptive, cross-sectional hospital-based study, to assess nurse's practice regarding blood transfusion, was cared about in January to April 2016

**Study area:** Elmek nimir university hospital at Shendi city, river Nile state, Sudan, which is located north of Khartoum about 176 Km, and 110 km south to Eldamer, the capital of River Nile State. The hospital was established in early 2000s and stands as a landmark institution in medical Education.

**Study population and sample size:** All nurses' work at Elmek Nimer university hospital in pediatric ward was included in this study (50 nurses).

**Data Collection Tools:** Evaluation sheet (check list) was developed by the researcher to collected data about performance of the nurses regarding blood transfusion process.

**Data analysis:** Data was analyzed and tabulated by using appropriate statistical analysis program (spss), and chi-square used.

Ethical consideration:

Agree consent from Elmek Nimir hospitals administer was obtained prior the study and verbal consent was obtained from all participants in selected hospital.

## RESULTS

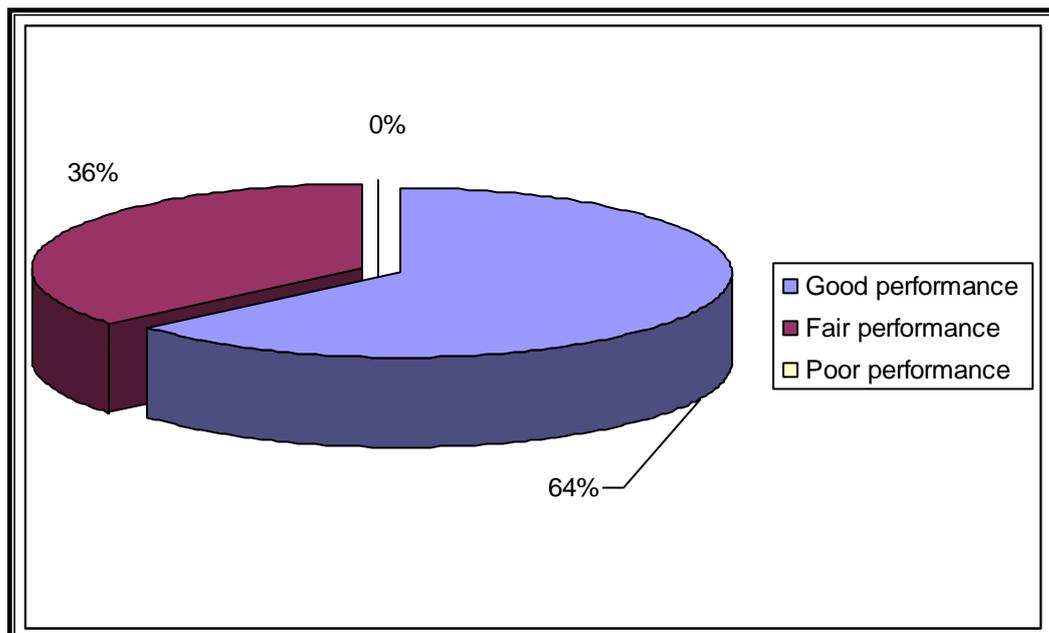


Figure 1. distribution of study group in relation to their performance before blood transfusion process.

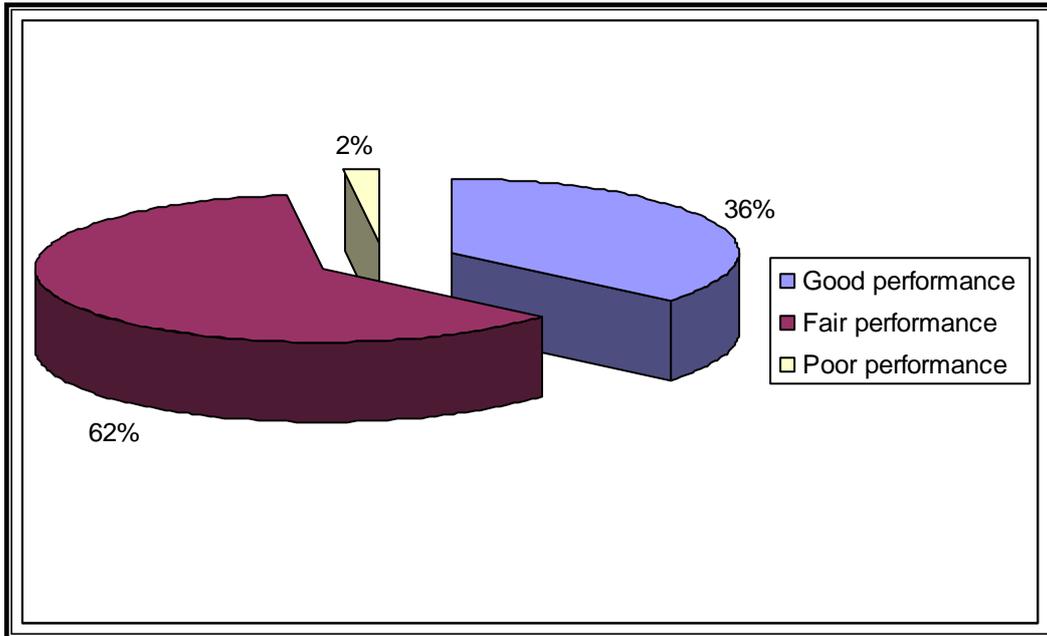


Figure 2. Distribution of study group in relation to their performance during blood transfusion process.

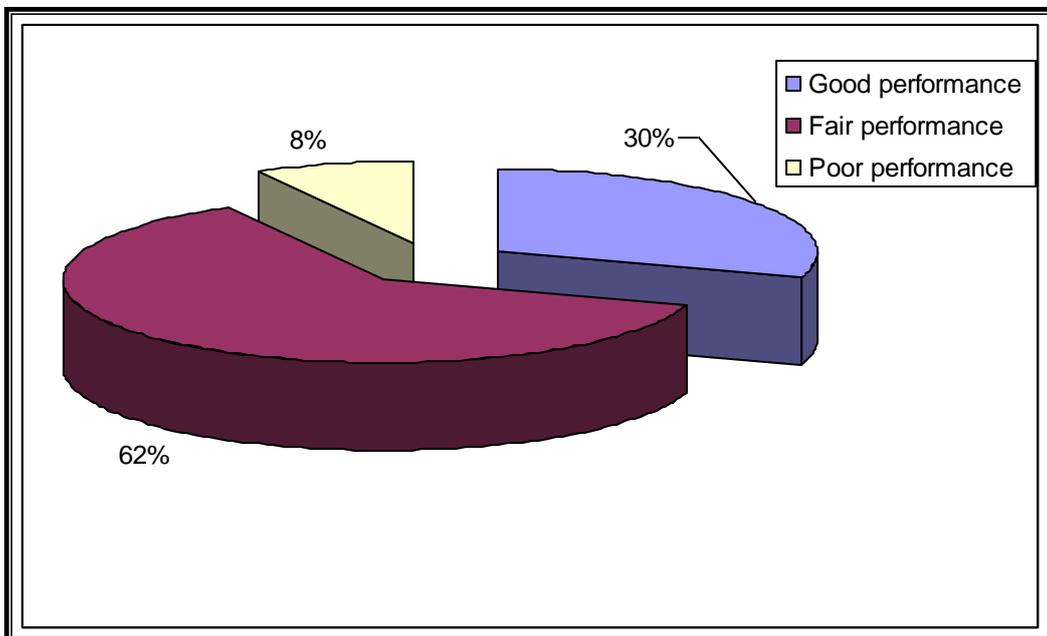


Figure 3. Distribution of study group in relation to their performance after blood transfusion process.

**Table 1. Distribution of study group in relation to their knowledge about complication of blood transfusion.**

Variable	Frequency	Percent
Complication of blood transfusion:		
Infecous complication	19	38%
Non infecous complication	3	6%
Metabolic complication	10	20%
No complication after computability test	18	36%
Total	50	100%
If complication is occur		
Stop blood transfusion	3	6%
Infuse normal saline and give allergic medication	3	6%
Notify the physician	2	4%
All above	42	84%
Total	50	100%

**Table 2. Distribution of study group in relation to their knowledge about role of the nurses.**

Variable	Frequency	Percent
Role of the nurses		
Integral part to optimise appropriate use of blood	3	6%
Reduce procedure risk and improve transfusion practice	3	6%
No any responsibility for transfusion nurse	2	4%
A & B	42	84%
Total	50	100%

## DISCUSSION

Regarding the performance of studied nurses the results represent that less than two third (64%) of studied nurses were good performance before blood transfusion (prepare the equipment, hand washing ,reassurance the child according to their age about this procedure, vital sign and document the procedure while more than third of them their performance as average because the nurses were insufficient skills about blood transfusion and the nurses did not attended any courses or work shop about blood transfusion . The study suggested that there is a need for a blood transfusion policy and current practical guidelines.

The study showed more than half (62%) were average performance during and after blood transfusion such as (vital sign, infuse normal saline, observe the child closely, remain at bed side for child transfusing and collect the equipment after procedure) refer to absences of training program and work shop to nursing staff about life saving procedures like blood transfusion make their performance failed from good to average and poor performance.

Regarding complication of blood transfusion most of studied nurses knowing about how to deal if complication occur because the blood transfusion is very common procedure in pediatric ward and the nurse facing numerous complication results from blood transfusion.

Finally the study represents that the most of the nurses were aware about nurses role in blood transfusion process that agree with text ([http://www.rch.org.au/clinicalguide/guideline\\_index/Blood\\_product\\_transfusion,5:00pm,6.10.2012.](http://www.rch.org.au/clinicalguide/guideline_index/Blood_product_transfusion,5:00pm,6.10.2012.)) which state that. The nurse is responsible for insuring that the right unit of blood is to be administered to the right patient after typing and cross matching by the lab. This is done by checking the lot, serial numbers, blood type, and expiration date with another nurse or qualified lab personnel. Then the unit of blood has to be checked off with another nurse before administration with insignificant statistical test because the study found no correlation between years of experience of the nurses and nursing role.

## CONCLUSION

Based on the findings on the present study concluded that: Regarding the performance of studied nurses the study clarified that less than two thired of studied nurses their performance were good before blood transfusion ,also (62%) of studied nurses they have average performance during and after blood transfusion process .

## RECOMMENDATION

In the light of the findings and conclusion of this study the following recommended:

- 1- Importance of work shop and training program for the nurses about blood transfusion.
- 2- Importance of self learning about all the update knowledge and performance regarding nursing technique and procedures.
- 3- Importance introducing workshops and training programme or training courses for nurse's staff about life saving procedures like blood transfusion from time to time.

## ACKNOWLEDGEMENTS

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