

Effectiveness of planned teaching programme on blood components therapy in neonates among staff nurses

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Abstract: Blood component therapy is a very common intervention practiced in neonatal intensive care units. This study aims at assessing effectiveness of planned teaching programme (PTP) on blood components therapy in neonates among staff nurses. A pre-experimental research design of one group pre and post test design with an evaluative approach was used. It was conducted in RAPCC hospital at Mangalore. The researcher developed a demographic proforma, structured closed ended knowledge questionnaire and planned teaching programme on blood components therapy in neonates. The sample comprised of 50 staff nurses. Convenience sampling technique was used to select samples. Pre-test assessment revealed that most (64%) of staff nurses had poor knowledge, 36% had average knowledge on blood components therapy in neonates. Whereas, post-test revealed that 68 % had gained good knowledge, and 32% of them gained excellent knowledge. The total mean knowledge score (11.58 ± 2.29) which is 38% was found in the pre-test whereas the total mean knowledge score (23.52 ± 1.66) which is 78.53% was found in the post-test knowledge with showing an effectiveness with the total mean score of (11.86 ± 2.63) which is 39.53%. Significance of difference between pre-test and post-test was statistically tested by using paired 't' test and it was found highly significant ($t=19.19, p<0.05$). The findings of the study reveal that staff nurses had inadequate knowledge regarding blood components therapy in neonates before administration of PTP. There was significant increase in the knowledge of staff nurses on blood components therapy in neonates after the utilization of PTP. Hence, it is concluded that PTP is highly effective in improving the knowledge of the staff nurses .

Key Words: Key Words:-Blood components therapy, PTP, Knowledge, Staff Nurses.

1. INTRODUCTION:

A newborn is an infant who is within hours, days or up to a few weeks from birth. Blood components therapy is a life saving maneuver in which blood or blood products transfer from one person to another intravenously . This is usually done to replace blood cells and blood products in case of severe anemia, shock, a hemoglobin level of less than 130gm/L in neonates with cardio-respiratory disease who require increased oxygen carrying capacity and hemoglobin level of less than 80-100gm/L in neonates with tachypnea, tachycardia, recurrent apnea. Blood components therapy have undoubtedly been proven effective in many medical and surgical conditions, thereby particularly improving the survival of neonates with critical impairment of tissue oxygenation. It provides an immediate increase in oxygen delivery to tissues and is an effective and rapid intervention to treat anemia. The transfusion process is complex, involving many interlinking chains of events, and a multidisciplinary group of health professionals with different levels of awareness and understanding of transfusion practice. Concerns regarding the risks inherent in blood transfusions have stimulated advances in technologies to prepare and deliver blood components along with the development of alternative pharmacologic approaches to the actual administration of blood products.

2. LITERATURE REVIEW:

A retrospective case study was conducted in Malaysia to analyse data for blood component usage in a hospital. A survey was carried out on blood component transfusion. Packed red blood cells, platelet concentrate, fresh-frozen plasma, cryoprecipitate, whole blood and buffy coat were extracted from the computerized registers. Results determined that a total of 29,229 blood components have been used in this survey. Of 10,421 (35.65%) units of red cell, 8345 (28.55%) units of platelet concentrates, 8347 (28.56%) units of fresh frozen plasma, 2076 (7.10%) units of cryoprecipitate, 33(0.11%) units of whole blood and 1 (0.0003%) of buffy coat were used in neonates. This survey concludes information on blood component usage in hospitals and demonstrates last year's blood utilization of blood components and is relevant for quality management of transfusion practice, cost analyses and for planning local and regional blood donation programme.

3. MATERIALS AND METHOD:

One group pre-test, post-test design with pre-experimental approach was found to be appropriate to evaluate the effectiveness of planned teaching programme (PTP) on blood components therapy in neonates among staff nurses. No comparison with the control group is provided. The study was conducted in RAPCC Hospital, Mangalore among 50 staff nurses. Convenience sampling technique was used.

The tools used for the study were:

1. Demographic data.
2. Structured closed ended knowledge questionnaire regarding blood components therapy in neonates.

The tool was validated from 9 experts. The tool was found reliable and the reliability coefficient as 0.90

Description of Intervention

After obtaining administrative permission and ethical clearance, pilot study was conducted in five samples .The study was found feasible and amenable to statistical analysis. Then the study was conducted for 50 staff nurses who met the sampling criteria. To assess the knowledge, the planned knowledge questionnaire on blood components therapy in neonates was distributed to staff nurses with an instruction to complete and return them. Planned teaching on blood components therapy in neonates was administered on the same day following pre-test. A post-test was conducted by administering the same knowledge questionnaire after seven days of PTP. The completed questions were collected after 20 minutes. The collected data was analyzed by using descriptive and inferential statistics.

4. DISCUSSION:

A significant increase in the post-test score was observed in staff nurses on the overall knowledge of blood components therapy in neonates. Hence the research hypothesis “the mean post-test knowledge score of the staff nurses will be significantly higher than the mean pre-test knowledge scores” was accepted ($t= 19.19, p<0.05$). It revealed that PTP was very effective in improving the knowledge level of the staff nurses regarding blood components therapy in neonates. The finding of this study is consistent with the study conducted to evaluate the effectiveness of PTP on basic life support in terms of knowledge and skill of staff nurses. It shows significant difference between the pre-test and post-test knowledge and skill scores of staff nurses on basic life support and the ‘t’ value was 19.49 and it showed that PTP was very effective .

5. RESULT:

Part I: Description of demographic characteristics of staff nurses.

Part II: Distribution of pre-test knowledge level of the staff nurses regarding blood components therapy in neonates.

Table No 1: Pre-test knowledge level of staff nurses regarding blood components therapy in neonates.

(n=50)			
Pre-test			
Score	Grade	Frequency	%
0-6	Very poor	Nil	Nil
7-12	Poor	32	64
13-18	Average	18	36
19-24	Good	Nil	Nil
25-30	Excellent	Nil	Nil

Figure 1.1: Description of area wise mean, SD, mean % of pretest knowledge scores

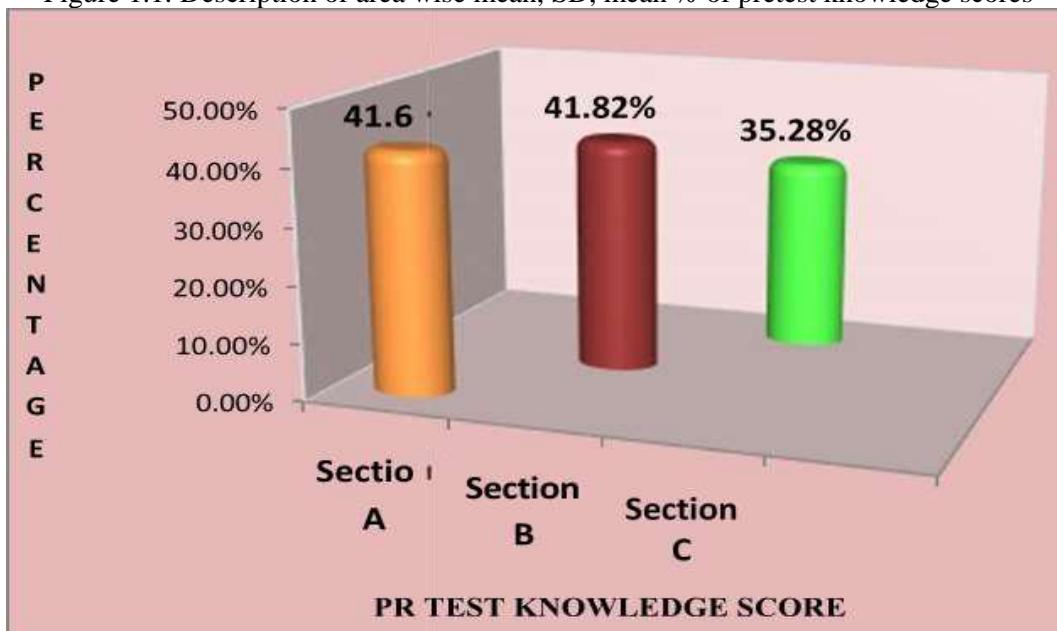


Table No.2: Post-test knowledge level of staff nurses regarding blood components therapy in neonates

(n=50)			
Post-test			
Score	Grade	Frequency	%
0-6	Very poor	Nil	Nil
7-12	Poor	32	64
13-18	Average	Nil	Nil
19-24	Good	34	68
25-30	Excellent	16	32

Figure 2.1: Description of area wise mean, SD, mean % of post test knowledge score



Table No. 3: Chi square values showing association between pre-test knowledge scores and sample characteristics.

Sl. No	Sample Characteristics	\leq Median	$>$ Median	χ^2	Level of significance
1.	Age in years				

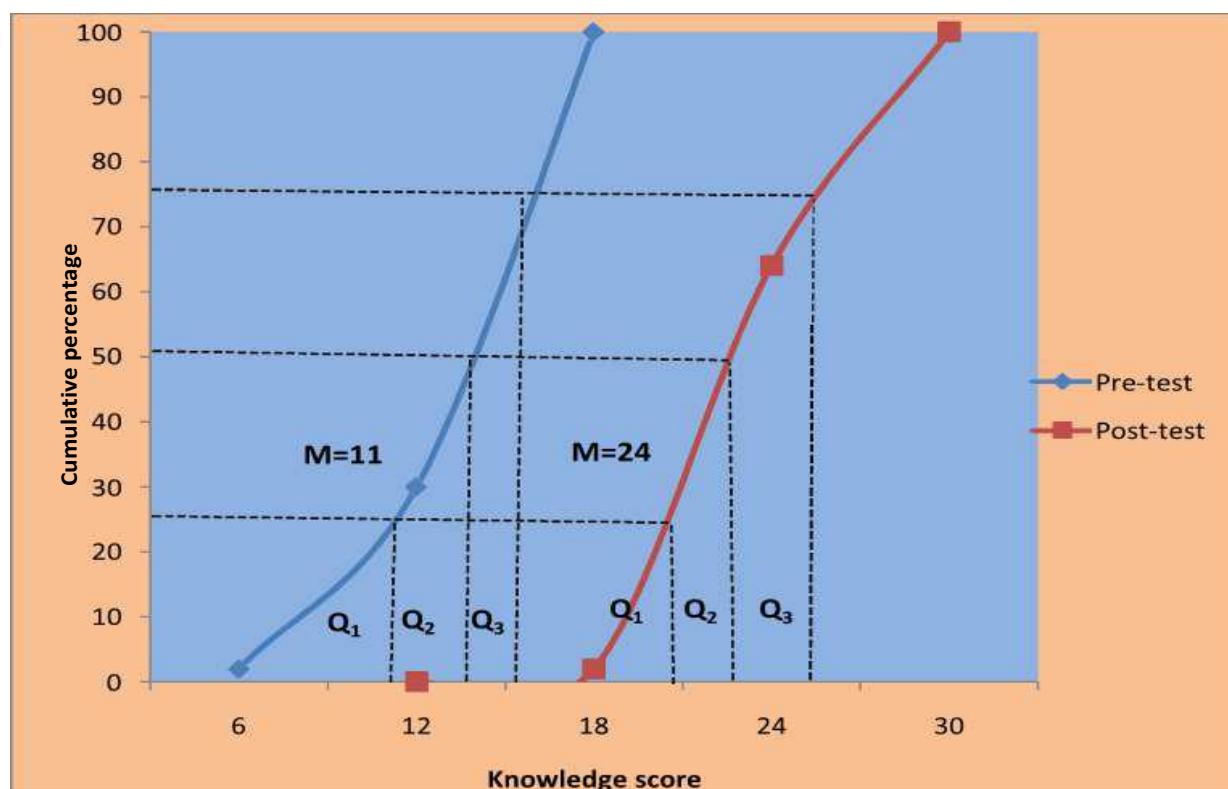
a. 21-30 yrs	11	3	3.28	Not significant
b. 31-40 yrs	4	6		
c. 41 and above	3	3		
2. Professional qualification				
a. General Nursing & Midwifery	16	7	6.096	Significant*
b. Post certificate				
B.Sc Nursing	1	4		
c. B.Sc Nursing	1	1		
3. Years of experience				
a. < 1 year	2	0	1.9005	Not significant
b. 1-3 years	6	4		
c. > 3 years	9	9		
4. In service education				
a. Yes	1	4	4	Significant*
b. No	17	8		

$\chi^2_1 = 3.84, \chi^2_2=5.99; P < 0.05, M=12$

*significant

The chi square values of demographic variables like age, years of experience were (3.928, 1.9005) not significant at 0.05 level of significance. On the contrary the chi square values of professional qualification and inservice education was significant at 0.05 level of significance. Hence alternative hypothesis H_2 is accepted for the demographic variables of professional qualification and attended in-service educational programmes on blood components therapy in neonates. The alternative hypothesis H_2 is rejected for the demographic variables age and years of experience. Thus it is concluded that there is significant association between pre test knowledge score of staff nurses regarding blood components therapy in neonates and their professional qualification and their exposure to inservice education programmes on blood components therapy.

Figure 3.1 : Quartile distribution of staff nurses regarding blood components therapy in neonates among staff nurses



The data presented in the Ogive shows significant difference between the pre-test and post-test knowledge score. The pretest median was 11 whereas post-test median score was 24 showing a difference of 13. The Ogive plotted shows that the first quartile score of post-test was higher than the third quartile score of pre-test. It reveals that there is a significant increase in knowledge of staff nurses regarding blood components therapy in neonates after the administration of planned teaching programme. Hence the planned teaching program was effective.

6. CONCLUSION:

The difference between the pre-test and post-test knowledge score was highly significant ($t=19.19, p<0.05$) indicating the effectiveness of the planned teaching programme in improving knowledge of the staff nurses regarding blood components therapy in neonates.

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