

### **Knowledge and awareness among nurses regarding the blood transfusion services and practices in a tertiary care teaching hospital**

Sir,

The cumulative analysis of the United Kingdom (UK) Serious Hazards of Transfusion (SHOT) report reveals that overall the most common adverse incidents are caused by errors, resulting in the transfusion of an incorrect component or one that does not meet the specific requirements of the patient.<sup>[1]</sup> Nurses play a significant role in correct, scientific, and safe usage of blood and its components and if they can do it correctly, the probability of incidence of blood transfusion risks will be reduced to a minimum.<sup>[2]</sup>

We performed a cross sectional study at our tertiary care teaching hospital to determine the knowledge and awareness

level of nurses regarding blood transfusion services and practices using a questionnaire containing 20 multiple-choice questions and recorded the correct responses. We randomly selected 100 nurses (50 Grade-I and 50 Grade-II nurses) from medical and surgical wards, intensive care units (ICUs), operation theatres, and Emergency areas of the hospital. In our setup, the Grade-I nurses who are senior to the Grade-II nurses, perform bedside patient care activities as well as administrative tasks. The questionnaire used was designed after referring to a study by Mitra *et al.*<sup>[3]</sup> and was divided into five categories [Table 1]. The knowledge and awareness of the nurses was not compared area wise in the study. The statistical analysis was done using the Statistical Package for Social Sciences (version 15.0, Chicago, USA).

The correct response rates [Tables 1 and 2] of “Awareness related” questions were highest among both Grade-I (70%) and

**Table 1: Response outcome of the questionnaire (n = 20) among nurses**

Category of question (Number)	Question detail	Number and percent of correct response		
		Grade I nurses (n = 50)	Grade II nurses (n = 50)	Total nurses (n = 100)
		Number (%)	Number (%)	Percent
Blood donation related (2)	Time duration between two blood donations	44 (88)	36 (72)	80
	Deferral period if a donor has received blood or blood components	11 (22)	12 (24)	23
Component and process related (2)	Time within which components are to be prepared from whole blood (WB)	40 (80)	46 (92)	86
	Pretransfusion testing on a blood unit	16 (32)	13 (26)	29
Storage related (2)	Storage temperature of packed red blood cells (PRBCs) and WB	37 (74)	46 (92)	83
	Storage temperature of whole blood collected for platelet preparation	19 (38)	28 (56)	47
Transfusion practice related (11)	Transfusion transmissible diseases	30 (60)	33 (66)	63
	Most common cause of fatal transfusion reaction	37 (74)	27 (54)	64
	First thing to do when a transfusion reaction is suspected	41 (82)	36 (72)	77
	Optimum time gap for transfusion after issue of blood	10 (20)	9 (18)	19
	Physical checks on blood units	43 (86)	49 (98)	92
	Most common adverse reaction related to whole blood transfusion	14 (28)	7 (14)	21
	Types of transfusion reaction	26 (52)	19 (38)	45
	Mismatched transfusion	28 (56)	23 (46)	51
	Massive transfusion is not a transfusion reaction	19 (38)	21 (42)	40
	Causes of transfusion reaction	32 (64)	26 (52)	58
	Universal donor is O Negative PRBCs	6 (12)	14 (28)	20
Awareness related (3)	Discovery of ABO blood group system	50 (100)	50 (100)	100
	Importance of Rh system in hemolytic disease of the newborn	47 (94)	47 (94)	94
	World Blood Donor Day 2011 slogan	8 (16)	9 (18)	17

**Table 2: Question categories and percentage (%) of “correct” response by nurses**

Category of questions (Number)	Grade-I nurses (n = 50)	Grade-II nurses (n = 50)	Total (n = 100)	P-value
Blood donation related (2)	55	48	51.5	0.227
Component and Process related (2)	56	59	57.5	0.593
Storage related (2)	56	74	65	0.013*
Transfusion related (Pretransfusion checks and other bedside transfusion practices) (11)	61.1	57.1	59.1	0.198
Awareness related (3)	70	70.7	70.3	0.832

\*P < 0.05, hence significant

Grade-II (70.7%) nurses. The overall mean correct response rate for all the 20 questions taken together was 60.7% [Table 2]. No statistically significant difference in correct response rate was observed in all the question categories [Table 2] except for the “storage related” question category ( $P = 0.013$ ) among Grade-I and Grade-II nurses.

Aslani *et al.*,<sup>[4]</sup> in their study, showed that 18.8% of nurses gave a correct response for “optimum time between the issue of blood/ blood components and their transfusion” that is similar to our study (19%). Bayraktar *et al.*<sup>[5]</sup> measured the nurses’ knowledge and practice related to blood transfusions where only a few had scores higher than 50 out of 100. The statistically significant correct responses by Grade-II nurses rather than the Grade-I nurses for “storage related” questions probably reflects that the Grade-II nurses are more involved in handling the blood components for bedside transfusions. We suggest that on-the-job training and education sessions focused toward pretransfusion checks and bedside practices may help further improving the nurses’ knowledge.

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#### Conflicts of interest

There are no conflicts of interest.

**Shweta Talati, Anil Kumar Gupta, Ashish Jain<sup>1</sup>**

Departments of Hospital Administration and  
<sup>1</sup>Transfusion Medicine, Postgraduate Institute of  
 Medical Education and Research (PGIMER),  
 Chandigarh - 160 012, India.


**Correspondence to:** Dr. Ashish Jain,  
 Department of Transfusion Medicine,  
 Postgraduate Institute of Medical Education and  
 Research (PGIMER),  
 Chandigarh - 160 012, India.  
 E-mail: ashishjain16@gmail.com

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