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Knowledge and Attitudes of Autologous Blood Transfusion among Health Workers in Fort Portal Regional Referral Hospital

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ABSTRACT

Globally, Autologous blood transfusion (ABT) programs are not well developed and reasons differ from different countries. In East Africa including Uganda, Autologous transfusion has not exerted a significant impact on the transfusion requirements in our Centres and there is paucity of data regarding ABT. The main objective of this study was to assess knowledge and attitude of autologous blood transfusion among health workers in Fort portal regional referral hospital. Institution based cross sectional study design was used and simple random sampling was used to get 50 health workers. Data was collected by a self-administered questionnaire and analyzed using SPSS software version 21.00. More than half of the participants 30(60%) were diploma holders and majority 28(56%) had worked for 4-6 years. 42 (84%) had ever heard of autologous blood transfusion but none had ever practiced ABT. Reasons for not practicing were lack of equipment and fear of side effects. The study found out that ABT was not being practiced although all the respondents were willing to practice it if introduced by the hospital. The government through ministry of health should design guidelines concerning ABT and train health workers through CMEs.

Keywords: ABT, Health workers, Hospital, Government, Ministry of health.

INTRODUCTION

Blood is a specialized body fluid that is pumped through the body by the heart which delivers necessary substances such as nutrients and oxygen to the cells and transports metabolic waste products away from those same cells [1-8]. The ancient Egyptians recognized the important properties of blood and it was used to resuscitate the sick, rejuvenate the old and infirm by bathing them with it and they also used it as a tonic for the treatment of various disorders [9]. In 1740, Drs. Karl Landsteiner and Alexander Weiner experimented with the red blood cells of Rhesus monkeys. In 1901, Dr. Karl Landsteiner discovered the ABO blood group system, which was a very important factor in blood donation [10-14]. The use of stored blood began during World War 1 (1914-1918), but the first large scale blood bank was not created until 1937, in Chicago [15-20]. The Canadian surgeon (Major L.B Robertson) serving in Canadian Army Medical Corps in the first World War was responsible for introducing transfusion in the management of war casualties to the British Army [21-30]. Blood transfusion was generally accepted as the treatment of choice for severe blood loss by the end of the war. The blood transfusion refers to the process of administering whole blood or blood components to a patient through an intravenous needle or catheter placed in a vein [30-35]. It contributes to saving millions of lives each year in both routine and emergency situations, permits increasingly complex medical and surgical interventions and improves the quality of life of patients with a variety of acute and chronic conditions [35-40]. However, many patients still die or suffer unnecessarily because they do not have access to safe blood transfusion [40-46]. The timely availability of safe blood and blood products is essential in all health facilities, but in many developing and transitional countries there is a widespread gap between blood requirements and blood supplies [24]. Blood transfusion can be homologous (also known as allogenic), where blood that has been placed in general blood bank collected from different people is used for transfusion or Autologous (ABT) referring to blood donated by an individual for the purpose of transfusion back to the same individual [25-27]. There is agreement that ABD is a safe and effective method to avoid the risks associated

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with viral contamination [28]. Despite the acknowledgement that ABT is a safe alternative, evidence shows both a deficiency of autologous blood donation programs and an under-use of the existing programs with autologous blood collections representing less than two percent of the total blood collections [29]. Benefits of ABT include: a) eliminates the risk of transmission of infectious diseases such as HIV, hepatitis, and other viruses that may escape screening procedures for homologous blood donations; b) reduces the risk of allergies, febrile, and hemolytic reactions which have the potential to be fatal; c) eliminates the risk of all immunization to red cells, white cells and platelet antigens d) activates the bone marrow where blood cells are formed, allowing the patient's body to replace the blood lost during surgery more rapidly; e) benefits people who have rare blood types and for whom compatible blood is not easily available; f) decreases the demand on the homologous blood supply and g) may have a positive impact on transfusion practices due to the ready availability of autologous blood for surgical procedures [30].

METHODOLOGY**Study Design**

Institution based cross sectional study design was used to conduct this research.

Area of Study

The study was conducted in Fort portal regional referral hospital (FRRH) in western Uganda, Kabarole district.

Study Population

The target population comprised of Surgeons, Physicians, Interns, theatre attendants, laboratory scientists and blood bank staffs at Fort Portal Regional Referral Hospital.

Study variables**Dependent Variables**

Knowledge and attitude of Autologous blood transfusion.

Independent Variables

Age, Sex, Religion, Marital status, Department, Qualification, Monthly income, Work experience.

Sampling Methods & Procedures

Simple random sampling was used in this study. Those who were reachable shall be the, Surgeons, Physicians, interns, theatre attendants, blood bank staffs and laboratory scientists at Fort Portal Regional Referral Hospital.

Sample Size Calculation

The sample size required for the study will be calculated based on the formula by Kish to estimate a single population proportions.

$$N = \frac{Z^2 p(1 - p)}{\delta^2}$$

Where,

N = estimated sample size

P = anticipated practice of ABT. Obed et al. [31] found it at 3.4%. So, P = 0.034

Z = standard normal variation ant 95% confidence (1.96)

δ = margin of error (5%)

the calculated sample size will be, $\frac{1.96^2 \times 0.034(1-0.034)}{0.05^2} = 50$ Sample will be taken.

Data Collection

Self-administered English questionnaire was used. The questionnaire will include socio demographic factors, knowledge and attitude.

Data Processing

The collected data was checked for its completeness, consistency and accuracy before analysis. The data was presented by using descriptive and analytic statistics. The data was entered and analyzed by using SPSS software version 21.00.

Ethical Considerations

Ethical clearance was sought from KIU faculty of clinical medicine and dentistry. In addition to that, Permission was sought from the administrators of Fort portal regional referral hospital. A verbal consent was obtained from the study participants after explaining the purpose of the study. The respondents were assured of anonymity and confidentiality.

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RESULTS

Table 1: Qualification of respondents (N=50)

Variables	Frequency	Percentage
Qualifications		
Certificate	6	12
Diploma	30	60
1 st degree	10	20
Masters	4	8

Table 2: Duration of practice N=50

Variables	Frequency	Percentage
Duration of practice (years)		
1-3	12	24
4-6	28	56
7+	10	20

Table 3: Departments N=50

Variables	Frequency	Percentage
Departments		
Surgical	16	32
Pediatric	7	14
Medical	9	18
Obstetrics/Gynecology	10	20
Blood bank	3	6
Laboratory	5	10

Majority of the respondents (84%) had ever heard of autologous blood transfusion compared to 16% who had not.

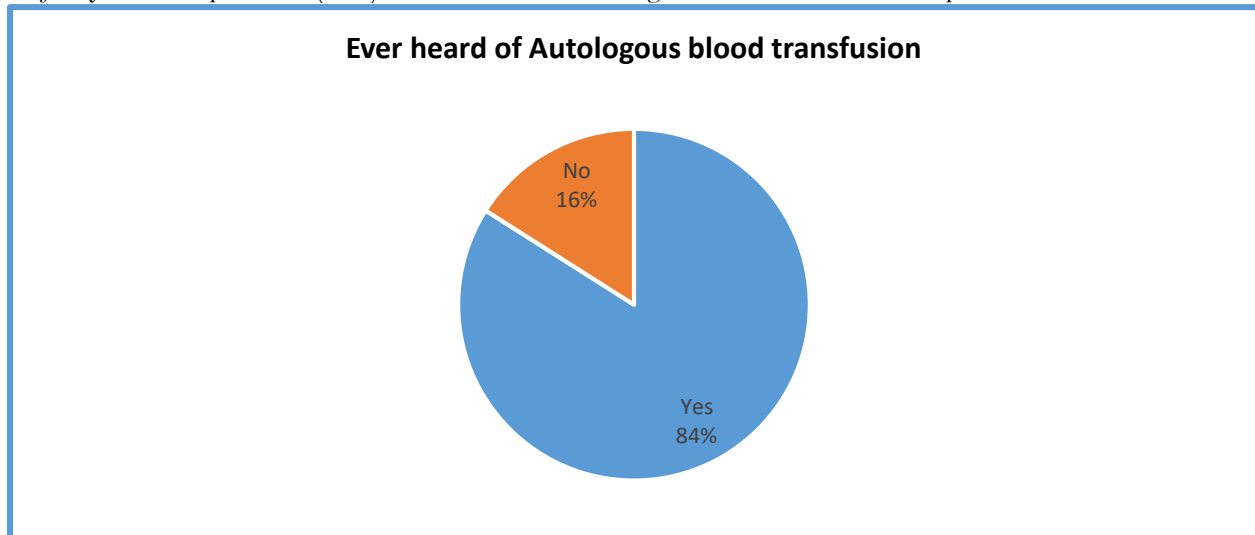


Figure 1: Ever heard of autologous blood transfusion (N=50)

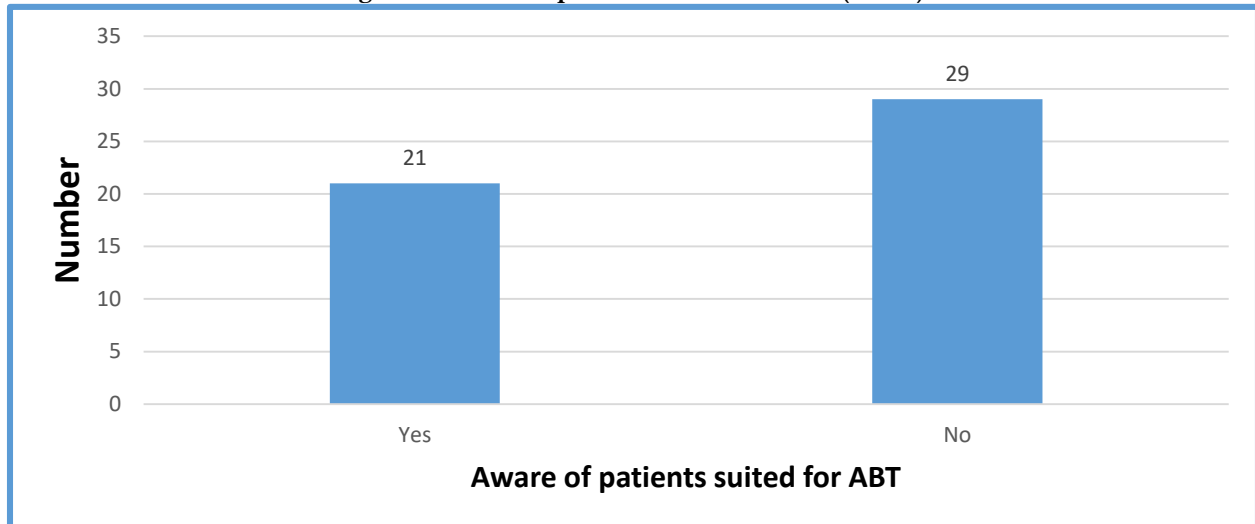
Awareness of patients suited for autologous blood transfusion

Twenty nine (29) (58%) of the respondents were not aware of patients suited for ABT as shown in figure 2.

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Figure 2: Aware of patients suited for ABT (N=42)



Out of the 42 participants that have ever heard of ABT, 11 (26%) had knowledge on how ABT was done and 31 (74%) had no knowledge on how ABT was done.

The 11 participants that had knowledge on how ABT is done had never practiced ABT (Table 2).

Table 4: Practice of ABT (N=11)

Variables	Frequency	Percentage
Ever practiced ABT		
Yes	0	0
No	11	100

Out of the 11 participants that had knowledge on how ABT is done, 7(64%) said it is because there are no equipment and no protocols pertaining ABT in the hospital, 2(18%) said it is because the process is time consuming and the other 2(18%) said it is because they fear the side effects.

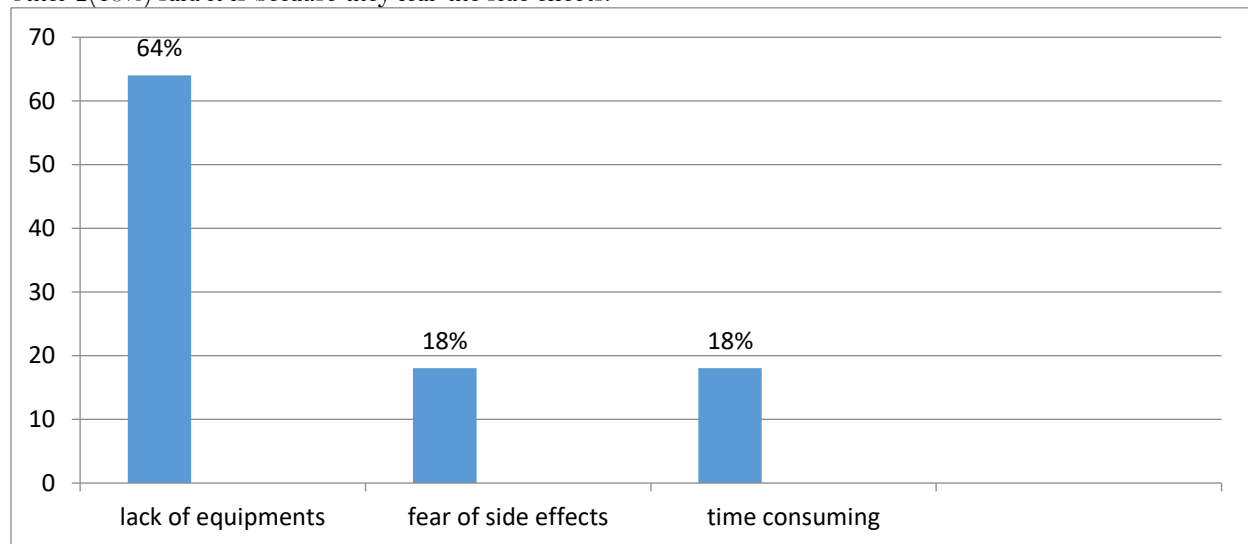


Figure 3: Reasons for not practicing ABT N=11

Twenty nine (29) (69%) were not aware of side effects of ABT (figure 4).

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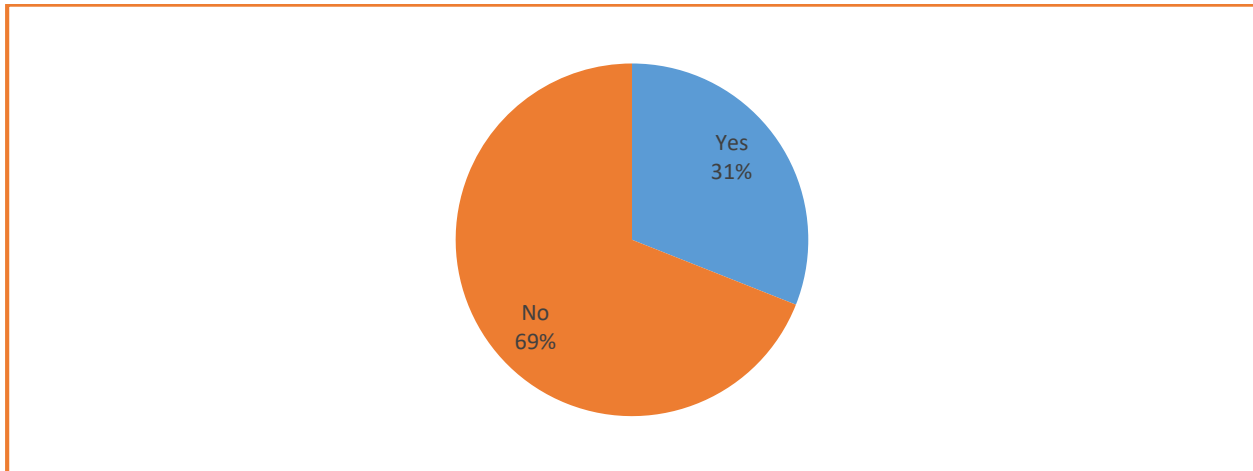


Figure 4: Aware of side effects of ABT N=42

DISCUSSION

In this study, majority of the respondents (84%) had ever heard of autologous blood transfusion although 58% of the respondents were not aware of patients suited for ABT. This concurs with a study by Misganaw et al. [32] in Ethiopia where 83% of the respondents were aware of ABT but 59.1% were did not know the minimum interval between donations. 69% of the respondents in this study were not aware of side effects of ABT. This disagrees with a finding by Manikandan et al., (2013) in their Nigeria study where 64.8% were aware of the side effects that may happen during ABT. Knowledge is an important predictor of practice of any procedure by health workers [33]. In this study, all participants had never practiced autologous blood transfusion. This finding is in line with Ahmed et al. [34] in their study in Pakistan where all the respondents were not practicing autologous blood transfusion.

CONCLUSION

Despite the limitation of limited literature, from this study we concluded that people had limited knowledge on ABT (89%) and the few that had knowledge (11%) were not practicing it.

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