

Assessment of Knowledge, Attitude, and Practice toward Blood Transfusion among Healthcare Providers in Bungoma West Hospital

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Abstract

Blood transfusion involves the transfer of blood from donors to patients. A blood transfusion is carried out every day in the hospital. When blood transfusion is done correctly, lives are saved, and improvements in healthcare occur. However, it may also lead to immediate, late, delayed, and chronic complications. It was a cross sectional study carried out over 2 months in Bungoma West Hospital. The aim of the study is to assess the KAP towards blood transfusion among healthcare providers. Data were collected using a structured questionnaire. Of 114 participants, 44% were aged 31 - 40 years, indicating that facing negative reactions after blood transfusion and being worried about getting affected by any infection have a small positive association, with the specific values coming in at $r = 0.313$, $p = 0.000$. 34% of 21 - 30 years knew fever after blood transfusion and feeling like refusing blood transfusion has a significant and moderate positive correlation, with the specific values coming in at $r = 0.650$ and $p = 0.000$. The findings of this study have helped us figure out how healthcare providers feel, what they know, and what they do during a blood transfusion.

Keywords

Knowledge, Attitude, Blood Transfusion, Practice

1. Introduction

Blood transfusion is a procedure whereby blood or blood components are replaced in an individual in need of them via the intravenous route. Blood transfu-

sion is one of the most common measures undertaken in hospitals. According to [1], it is tremendously well organized. It is one of the five most commonly used medical procedures and has become a routine therapeutic procedure regardless of the availability of cheaper and safer alternatives. However, it has been observed that inadequate knowledge in hospital settings has been frequently reported during these procedures. This might be a reflection of limited knowledge on transfusion medicine [2].

The information from doctors regarding blood transfusion provides considerable inspiration on the lucid operation of blood products. The assessment in this study recognized their strengths and weaknesses in order to improve quality and transfusion practices. Furthermore, (WHO, 2010) states that clinicians' knowledge about blood transfusion procedures and their products, preparation, storage, demands, doses, and administration may have a great impact on patient care and transfusion outcomes. Therefore, transfusion practice and inappropriate transfusion may jeopardize patient safety. It is a commonly used therapeutic procedure and not a risk-free intervention. Many health disorders may be associated with it, for example, transfusion-transmitted infections, transfusion of incorrect blood products, hyperkalemia, and hemolytic reactions [3].

The aim of blood transfusions for health care providers is to understand all possible risks of blood transfusion, in addition to the possible therapeutic benefits. HCPs should be able to address any doubts expressed by patients, which will increase patient safety and awareness. According to [4], the expected result of any transfusion should be cautiously monitored against the potential risks of unwanted complications. Physicians should be well educated to evaluate the risks, benefits, and side effects of their medical therapies. They should be aware of the possible adverse effects associated with the transfusion of allogeneic blood products [4].

This study focused on assessing the perceptions and awareness among all healthcare practitioners in Bungoma West Hospital regarding the risks, associated diseases, and necessity of blood transfusions to identify the factors that influence these perceptions. It is the consequence of a multifaceted chain of activities, numerous complicated types of therapeutic and paramedical control. According to the reports of the World Health Organization, it can be said that out of all the reported countries, 10 countries were not able to screen blood by proper methods [1]. Thus, lack of appropriate blood screening during transfusion has led to the lack of appropriate or accurate blood transfusion. Results from a research study have reported that 50% of the patients died after one year of blood transfusion [3]. Survival rates from blood transfusion varied with the age of the patient and cannot be differentiated by gender. The main purpose of this study was to understand the attitude, knowledge, and practice of healthcare providers during the process of blood transfusion. Additionally, the study will evaluate the impact of such attitudes on the understanding of healthcare providers in the blood transfusion sector. In addition, the study aims to assess any correlations

between the demographics, knowledge, attitude, and practice of healthcare providers in BGMWH.

2. Methods

Eligibility criteria

Participants (HCPs) who underwent blood transfusion in BGMWH, adults (21 to 50 years), and were willing to participate. Those who never underwent blood transfusion and/or were less than 18 years old were excluded.

Design & Settings

A cross-sectional design, including a self-administered online and paper-based survey (10 questions for 114 participants), was used to achieve the study objectives using a convenience sample. A version of the survey was used to meet the study's objectives. All individuals were informed about the steps that were to be followed in the conduct of the research. All the participants were asked not to disclose their names, since personal information is to be kept confidential to respect the privacy of the patients. Permission to use the tool was obtained by the PI.

Data collection

A self-administered, structured, pretested, paper-based questionnaire comprising 10 questions was used to collect the data. General information like age, sex, department in which they were currently working, and information regarding previous training programs regarding blood transfusion was also included in the questionnaire. The data collection period was from 1st June 2024 to 31st July 2024.

Sample size

The planned recruitment number was 114. However, the target was around 200 physicians. The calculated sample size was initially 110, which was later increased to 120 to avoid incomplete responses. The list of hospital participants from BGMWH included participants (HCPs) who underwent blood transfusion in BGMWH, and they comprised adult volunteers. The exclusion criteria were used, and participants who did not undergo blood transfusion were excluded. All the participants were between 21 to 50 years of age.

Study procedure

The study duration and timeline of data collection were from June 1st, 2024, to July 31st, 2024.

Ethical considerations

The study was conducted only after BGMWH review and exemption (Ref. No. BGMW/002/01/25)

Data analysis

The data analysis was performed using the SPSS tool to assess the attitude, knowledge, and practice toward blood transfusion among healthcare providers in Bungoma West Hospital, which is based in Bungoma County. Understanding people's perception of blood transfusion is imperative, as it helps make credible decisions within the healthcare industry.

The results are displayed in the Tables format. For this qualitative data, the ex-

ecuted descriptive statistics will be used for the age variable. (See **Table 1**) The aim of the analysis is to determine if blood transfusion refusal thoughts are related to age, facing a negative reaction after blood transfusion, and the number of months one has participated in taking blood transfusion service.

3. Results

Social -demographic characteristics of the study population

Of 114 respondents, most were of age group 31 - 40 years 50 (44%), male respondents 86 (75%), married 102 (89%). The HCW had mainly tertiary education. Most HCW (100%) were of high social status as per **Table 1**

Table 1. Social -demographic characteristics of the study population.

Variables	Number (n)	Percent (%)
Gender: Female	28	25
Male	86	75
Age: 21- 30	39	34
31-40	50	44
41 - 50	25	22
Above 50	0	0
Marital status: Married	98	86
Single	12	11
Separated	3	3
Educational or Professional level:		
Diploma	87	73
Degree	24	21
Master	3	3
Doctorate	0	0
Others	0	0
Religion: Christianity.	112	98
Islam	2	2

Table 2. Participation in any educational program in relation to blood transfusion.

Educational Programs	Frequency (n)	Percentage (%)
YES	44	38.59
NO	70	61.41
TOTAL	114	100

Table 2 shows whether or not a respondent has participated in any educational program related to blood transfusion. From the table, 70 respondents representing

61.41% indicated they have not participated in any educational program, while 44 respondents representing 38.59% indicated they have ever participated in an educational program.

Table 3. Knowledge level of HCWs on blood transfusion.

Knowledge level	Correct responses	Incorrect responses
a) Have you heard of blood transfusion?	114 (100%)	0 (0%)
b) Have you ever faced any negative reaction After blood transfusion?	17 (15%)	97 (85%)
c) Have you ever faced fever after blood transfusion?	86 (75%)	28 (24.6%)
d) Have you ever felt like refusing blood transfusion?	98 (86%)	16 (14%)
e) Are you worried about getting infected with any infection?	112 (98)	2 (2%)
f) Underwent or experience blood transfusion training?	90 (79%)	24 (21%)
g) Are you satisfied with The quality of care provided in BGMWH?	111 (97%)	3 (3)
h) For how many months Have you been taking the blood transfusion services?	77 (88%)	37 (12%)
i) Have you obtained consent from the patient prior to a blood transfusion?	111 (97%)	3 (3%)

Of the healthcare workers, 100% (n = 114) showed good knowledge on blood transfusion in theoretical knowledge-based questions. (Table 2) summarizes the responses to individual theoretical knowledge-based questions. Fifteen percent of the respondents were facing negative reactions after blood transfusion, and 74%, facing negative reactions after blood transfusion, had a strong positive response. The analysis has indicated that facing negative reactions after blood transfusion and being worried about getting infected with any infection has a weak positive

association ($r = 0.313$, $p = 0.000$). Fever after blood transfusion and feeling like refusing blood transfusion had a significant and moderate positive correlation ($r = 0.650$, $p = 0.000$). Moreover, the study, facing fever after blood transfusion and being worried about getting affected by any infection, has a significant and moderate positive correlation ($r = 0.433$, $p = 0.000$). Feeling like refusing blood transfusion and being worried about getting affected with any infection are moderately correlated ($r = 0.650$, $p = 0.000$).

Also, the results shown in **Table 1**, show the valid sample size that participated fully within the study was 114 participants. Of the total participants, no participant aged between 18 years and 20 years of age participated in the study. Those aged between 21 and 30 years were 39, with 50 participants aged between 31 and 40 years. Of those who participated in the study, 25 participants were aged between 41 and 50 years, and 0 were aged above 50 years of age.

The obtained logistic model was significant since the p-value was <0.05 . The explained variation within the outcome variable was 75.4%, and it correctly classified 98% of the cases.

Based on the regression results, $r = 0.865$ indicates that there is a strong correlation between the variables. R-squared = 0.748 shows that 74.8% of the model variation is due to the predictor variables. The age and months of participation in blood transfusion services are good predictors within the model since the p-values of these coefficients are less than the alpha level of 5%. Having faced negative reactions after a blood transfusion was not significant within the model.

4. Discussion

This study was conducted in a tertiary care hospital as an assessment survey project about the knowledge, attitude, and practice towards blood transfusion among healthcare workers in the hospital. In this study, 114 healthcare workers were assessed. Among 86, males were more assessed than females, and the study was mostly conducted among the age group of 21 - 50 years. Blood transfusion is one of the most familiar methods used in hospitals, and it is tremendously well organized [5]. As stated by [4], the expected result of any transfusion should be cautiously monitored against the potential risks of unwanted complications. There are several health disorders that may be associated with blood transfusion, for example, transfusion-transmitted infections, transfusion of incorrect blood products, hyperkalemia, and hemolytic reactions [3]. From the results, it can be asserted that there was a difference within the age groups in the number of participants who reported undergoing or experiencing a blood transfusion. The difference was witnessed when it came to satisfaction levels with the quality of care provided in Bungoma West Hospital. Finally, the same difference was observed in the number of months the participants received blood transfusion services [5]. Feelings such as refusing blood transfusion and being worried about being affected by any infection were moderately correlated ($r = 0.650$, $p = 0.000$). These findings were found in another research study, where patients were afraid of blood

transfusions [1]. They reported feelings of getting scared to perform a blood transfusion as they thought that they would get infected. Thus, it can be said that this finding is justified. From the findings, which are clearly shown, the valid sample size that participated fully within the study was 114 participants. Of the total participants, none aged between 18 years participated in the study. This shows that all the participants were adults and were very helpful in this study. Fifty-six participants were aged between 31 and 40 years, and 58 participants were aged between 21 and 30 years. Those who were able to identify the exact results were adults, and they largely participated in this study. For those who participated in the study, it was easy to obtain the required results for the study. The age group that was highly involved was from 31 to 40 years of age. The individuals who experienced fever after blood transfusion is relatively high and, at the same time, individuals are afraid of being infected with other diseases and donating blood. The age and months of participation in blood transfusion services are good predictors within the model since the p-values of these coefficients are less than the 5% alpha level. Having faced negative reactions after a blood transfusion is insignificant within the model, as shown in **Table 3**. The results have stated that negative reaction after blood transfusion and fever after blood transfusion are strongly associated with each other. The negative reactions of blood transfusion are thus fever, and the same findings have been observed in another research study [2]. Thus, this finding can be justified. Facing negative reactions after a blood transfusion can thus be stated to be common [6]. The results have also shown that the fear of getting affected by new infections was less prevalent than the fear of fever.

Thus, it can be said that this fear had less prevalence in blood transfusion and has not been mostly considered a common negative reaction [7]. Most of the patients reported that fear of fever was the major reason behind rejecting blood transfusion. However, the findings have stated that feelings of refusing blood transfusion and worrying about being affected by infections are not strongly correlated. This means that refusals of blood transfusion are not mostly connected with post-transfusion infection chances. This finding has been observed in another research study [4]. The selection of participants comprised people of all ages. In other words, it can be said that people of all age groups require blood transfusions in many situations [3]. For this reason, people of all age groups were selected for the research.

5. Conclusion

Based on the obtained results, attitude, knowledge, and practice collectively affect blood transfusion. Some individuals develop a fever after a blood transfusion. The analysis indicated that facing adverse reactions after blood transfusion and being worried about getting affected by any infection have a small positive association. According to the findings, a fever following a blood transfusion and a negative reaction to the transfusion are both highly correlated. Fever is one of the adverse effects of blood transfusion, and similar results were seen in another research in-

vestigation. Therefore, it may be said that this conclusion is supported. Thus, it may be said that having unfavorable responses following a blood transfusion is common [4]. The findings also indicated that worry about contracting new diseases was less common than fever. Therefore, it may be concluded that this anxiety was less prevalent and was not generally thought to be a common adverse reaction to blood transfusion. The study has addressed the aim as well as the objectives. However, more research needs to be done in the future to learn more about the topic and find new facts.

Ethical Statement

Hospital Ethical Committee (Ref. No. BGMW/002/01/25).

Conflicts of Interest

There are no conflicts of interest.

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