Original Article

Knowledge and Attitude towards Transfusion Transmissible Infections among New Blood Donors at Blood Bank of Mandalay General Hospital in Myanmar

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Objectives: To study the level of knowledge and attitude towards transfusion transmissible infections among new blood donors at blood bank of Mandalay general hospital in Myanmar.

Materials and Methods: From April 1st to December 31st, 2016, a cross-sectional descriptive study was conducted among 406 new blood donors at blood bank of Mandalay general hospital in Myanmar. Participants in this study were interviewed using structured questionnaires. Stata 13 was used to conduct the statistical analysis.

Results: About 53.7% of new blood donors were males and 46.3% were females. Regarding knowledge level, a high percentage of new blood donors (87.7%) had low knowledge of transfusion transmissible infections, while 12.3% had high knowledge. Almost all new blood donors (98.5%) had a positive attitude, with only a few (1.5%) having a negative attitude.

Conclusion: Despite a high percentage of low knowledge among new blood donors at blood bank of Mandalay General Hospital in Myanmar, there was a positive attitude towards transfusion transmissible infections. A positive attitude can result from adequate knowledge, which can lead to good practices. It is recommended that the community be educated on the prevention of transfusion transmissible infections and safe blood transfusion.

Keywords: Attitude, Blood bank, Knowledge, New blood donor, Transfusion transmissible infections

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INTRODUCTION

A blood transfusion can help save a person's life. Humans have long recognized blood as a "vital force and essence of life", as evidenced by the study and interest in blood knowledge [1-3]. If a person has certain medical conditions or has lost blood as a result of an injury or during surgery, he or she may require a blood transfusion. A healthy person (a donor) provides blood, blood components, or blood products, which are then administered to the patient being treated in a medical procedure known as a blood transfusion. Unsafe transfusion, on the other hand, leads to several life-

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threatening complications and increases the incidence of transfusion-transmitted infections (TTIs) [4,5].

Infections transmitted through blood transfusions are a major source of concern for safety of the patients. The occurrence of the TTIs varies by country, depending on the TTIs load in the population from which blood units are sourced [6]. Because the infected person serves as a reservoir for the infection and can transmit the disease while asymptomatic, transfusion transmissible infectious diseases have long-term consequences for recipients, families, and communities [7]. TTIs are a significant modern medical care burden in Myanmar, but the precise burden is unknown due to a lack of data, a lack of awareness, the high cost of screening tests, limited access to a health facility, the absence of a surveillance system, and the presence of asymptomatic people.

Raising awareness and fostering a positive attitude toward blood donation are priorities for all blood transfusion centers. Comprehensive studies that measure the community's present level of awareness, knowledge, beliefs, and attitude towards blood donation should be conducted as the first step to achieving these goals [8]. This present study aimed to investigate the level of knowledge and attitude towards TTIs among new blood donors at blood bank of Mandalay General Hospital (MGH) in Myanmar.

MATERIALS AND METHODS

Study design, Study population and Study period

A cross-sectional descriptive study design was used for this study. The population of the study were new blood donors who came to blood bank at MGH for donation of blood. The blood bank of MGH was purposefully chosen due to an annual demand of 180,000 units of blood and being one of Myanmar's largest national blood banks [9]. Mandalay General Hospital is a 1,500-bed tertiary hospital in the upper region of Myanmar with a wide range of specialties.

This study was conducted in 2016 from April 1st to December 31st. The Epi-info version of the statistical software was used to determine the sample size, and the calculated sample size after a 10% drop out was 406. The inclusion criteria were new blood donors between the ages of 18 and 55, those who were declined to donate during the first stage screening process, and those whose immediate post-donation health status was excluded from this study.

Research Instrument

The questionnaire in this study was structured and consisted of four parts: 1) socio-demographic characteristics (five questions), 2) blood group and types of donations 3) knowledge on TTIs, 4) attitude towards TTIs. There are six questions in the knowledge on TTIs (awareness of TTIs with two items, source of knowledge with five items, name of TTIs with four items, mode of transmission with eight items, methods of prevention with seven items), and the majority of these questions used "Yes/No" answers. The scores were then summed and divided into two groups: low knowledge and high knowledge. There are 11 questions in the attitude towards TTIs section, with both positive and negative statements. For positive statements, the score was assigned as "strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5)", while for negative statements, the scoring was reversed. In terms of attitude towards transfusion transmissible infections, there are seven positive statements and four negative statements. The scores were then summed and divided into two groups: positive attitude and negative attitude.

Data collection procedure

The permission to collect data at blood bank of MGH was initially requested and granted by the Ministry of Health and Sport, as well as hospital administrators. In this study, a sample of 406 new blood donors who came for blood donations at MGH's blood bank was chosen using simple random sampling. One research assistant was hired and trained prior to data collection on how to build rapport and collect data. The researcher and research assistant collected data in person every weekday because blood donors are only permitted to donate blood at blood bank of MGH from Monday to Friday. Participants were informed about the study's objectives and benefits, as well as their anonymity, confidentiality, and the ability to withdraw from the interview at any time before the data collection process. They have also been informed that there would be no risk or harm in taking part or refusing to take part in this study.

Data processing and analysis

All questionnaires were kept in a drawer with a lock the same day they were collected, and only the researcher had access to these data. Data entry was done by using Epi data software. Stata version 13 was used to perform statistical analysis. Frequency and percentages were interpreted for all categorical variables.

RESULTS

Socio-demographic characteristics of new blood donors

Table 1. Socio-demographic (SD) characteristics of new blood donors.

Characteristics (n=406)	Frequency (n)	Percentage (%)
Age group (years)		
<20	215	52.9
21 – 30	145	35.7
31 – 40	32	7.9
41 – 50	13	3.2
51 – 55	1	0.3
Gender		
Male	218	53.7
Female	188	46.3
Marital Status		
Single	342	84.2
Married	60	14.8
Widowed/Divorced	4	1.0
Education		
Primary School	9	2.2
Middle School	78	19.2
High School	319	78.6
Occupation		
Government employee	20	4.9
Private employee	107	26.4
Own business	41	10.1
Student	226	55.7
Dependent	12	3.0

Table 1 shows socio-demographic characteristics of new blood donors. This present study included 406 new blood donors, 53.7% of whom were male and 46.3% of whom were female. More than half of the new blood donors (52.9%) were under the age of 20, with 35.7% being between the ages of 21 and 30, 7.9% being between the ages of 31 and 40, 3.2% being between the ages of 41 and 50, and 0.3% being between the ages of 51 and 55. As for education, about 78.6% of new blood donors completed high school. In terms of marital status, about 84.2% of new blood donors were single, 14.8% were married, and 1.0% were divorced/widowed. Regarding occupation, more than half of the new blood donors (55.7%) were students, while 26.4% were private employees, 4.9% were government employees, 10.1% owned their own businesses, and 3.0% were dependent.

Table 2. Blood group and types of donations by new blood donors.

Blood group and types of donations (n=406)	Frequency (n)	Percentage (%)
Blood group		
A	95	23.4
B	138	33.9
AB	36	8.9
O	137	33.8
Types of Blood donations		
Voluntary	367	90.4
Replacement	39	9.6

Table 2 shows blood group and types of donations by new blood donors. Among 460 new blood donors, about 33.9% were blood group B, followed by 33.8% ("blood group O"), 23.4% ("blood group A"), and 8.9% ("blood group AB"). A large proportion (90.4%) volunteered for donation, while 9.6% were as replacement among new blood donors.

Knowledge on TTIs

Table 3 shows total knowledge level of new blood donors regarding TTIs. A high percentage of new blood donors had low knowledge (87.7%) while 12.3% of new blood donors had high knowledge regarding TTIs.

Table 3. Knowledge and Attitude levels towards TTIs.

Levels	Frequency (n)	Percentage (%)
Knowledge		
High	50	12.3
Low	356	87.7
Attitude		
Positive	400	98.5
Negative	6	1.5

Attitude towards TTIs

Table 3 shows attitude level towards TTIs of new blood donors. Almost all new blood donors (98.5%) had a positive attitude towards TTIs, while only a few new blood donors (1.5%) had a negative attitude.

Table 4. Detailed attitude towards TTIs.

Detailed Attitude towards TTIs (n=406)	Frequency (Percentage)				
	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
HIV, Viral Hepatitis B, Hepatitis C, and Syphilis cannot infect those who have only been promiscuous once*****	234 (57.6)	63 (15.5)	28 (6.9)	18 (4.4)	63 (15.5)
It is important to use a condom for promiscuity	2 (0.5)	4 (0.9)	15 (3.7)	70 (17.2)	315 (77.6)
It is not necessary to avoid tattooing to prevent TTIs*****	212 (52.2)	61 (15)	33 (8.1)	27 (6.7)	73 (17.9)
It is necessary to vaccinate against Viral Hepatitis B	9 (2.2)	12 (2.9)	18 (4.4)	66 (16.3)	301 (74.1)
Even my spouse has viral Hepatitis B or C, and if I don't have either of those or it is necessary to donate blood, I will do so*****	111 (27.3)	56 (13.8)	27 (6.7)	43 (10.6)	169 (41.6)
It is needed to have safe blood for blood donation	4 (0.9)	4 (0.9)	1 (0.3)	57 (14.0)	340 (83.7)
It is necessary to remind anyone infected with Syphilis, HIV, or Hepatitis B or C not to donate blood	16 (3.9)	4 (0.9)	8 (1.9)	77 (19.0)	301 (74.1)
It is necessary to notify the blood bank if anyone has HIV, Hepatitis B, or Hepatitis C and has donated blood	14 (3.5)	9 (2.2)	25 (6.2)	66 (16.3)	292 (71.9)
Before making a blood donation, anyone must answer all of the questions for the blood donor	9 (2.2)	4 (0.9)	4 (0.9)	63 (15.5)	326 (80.3)
Any blood donor can donate blood if they do not answer all of the questions asked of them prior to donating blood*****	214 (52.7)	51 (12.6)	12 (3.0)	32 (7.9)	97 (23.9)
It is necessary to come and see the test results after donating blood	16 (3.9)	13 (3.2)	1 (0.3)	57 (14.0)	319 (78.6)

***** *Negative Statement*

A detailed attitude towards TTIs is described in table 4. More than half of new blood donors answered "strongly disagree" with the following negative statements: "HIV, Viral Hepatitis B, Hepatitis C, and Syphilis cannot infect those who have only been promiscuous once (57.6%)", "It is not necessary to avoid tattooing to prevent TTIs (52.2%)", and "Any blood donor can donate blood if they do not answer all of the questions asked of them prior to donating blood (52.7%)". About 41.1% of new blood donors answered disagree (both of "strongly disagree" and "disagree') on "Even my spouse has viral Hepatitis B or C, and if I don't have either of those or it is necessary to donate blood, I will do so". A significant percentage of new blood donors (83.7%) answered "strongly agree" on "It is needed to have safe blood for blood donation".

DISCUSSION

Over than half of new blood donors in this present study were under the age of 20 and male. Blood donors can be between the ages of 18 and 65 according to the world health organization (WHO) if they meet the required physical and hematological criteria and provide consent [10]. The present study's findings are supported by the findings of WHO and study in Iran that more male and young people in low- and middle-income countries donate more blood than in high-income countries [11, 12]. It is necessary to investigate why fewer females donate blood. In terms of marital status, this study's findings contrast with two studies conducted in Iran, which found that the preponderance of new blood donors were single and that could be due to more active status of single people, and blood donation awareness should be conducted among married couples [12, 13].

The most donated blood groups in this study were "blood group O" and "blood group B," which are supported by a Japanese study that people with "blood group O" seem to be more willing to donate blood than those with other blood groups, and an Indian study that people with "blood group B" are the most commonly blood donations group [14, 15]. These results could be explained by people's belief that individuals of all blood groups can be medically transfused with blood group "O" [14]. This result is also consistent with the finding from Ministry of Health, Philippine that a most notable blood group among blood donations is "blood group O". [16]. Regarding type of blood donation, a high percentage of voluntary type of this present study is contrast with the study in Ethiopia where there is low percentage of voluntary blood donor [17]. Due to low levels of TTIs, regular voluntary blood donors are essential for the safe transfusion and supply of blood [18]. All blood donors should be encouraged to establish blood services that are entirely voluntary.

The finding this present's study is supported by the study in Malaysia that the majority of new blood donors had low knowledge [19]. This result is inconsistent with the findings in Ethiopia, where less than half of blood donors had above-average knowledge levels [17]. The current study's findings contrast with a study in India by means of good overall knowledge among new blood donors [20]. Another study in Hong Kong found that blood donors generally have good knowledge regarding blood safety [21]. The difference between these studies could be due to the age and education background of blood donors, with those with a medical background having more knowledge on blood donation. Another reason could be a lack of health education and awareness about blood donation in the Myanmar community.

In terms of attitude towards transfusion transmissible infections, this present study revealed a positive attitude among new blood donors, which is supported by a Nigerian study among health care workers [22]. Although the study population and geographic area are not the same in these two studies, both found a positive attitude towards blood safety. A positive attitude towards transfusion transmissible infections is critical in ensuring safe transfusion therapy. The attitude of new blood donors towards the statement that if they do not have viral Hepatitis B or C and their spouse does not have these viruses, they will donate blood if necessary revealed negative. This finding can be attributed to the low level of knowledge in this study, who should be educated and trained on safe blood donation.

This present study is the first study which was conducted among new blood donors to assess their knowledge and attitude towards TTIs in Myanmar, which could be useful for both related health authorities in developing and implementing the necessary health education and awareness program for the community, as well as researchers in conducting future research. This study only included new blood donors who came to MGH's blood bank, limitation of generalization may be occurred.

CONCLUSION

Although a high percentage of low knowledge was found in this present study among new blood donors at blood bank of Mandalay general hospital in Myanmar, there was a positive attitude towards transfusion transmissible infections. Adequate knowledge can result in a positive attitude, which can lead to good practices. This study's findings will be extremely effective to Myanmar's Ministry of Health in developing and implementing a strategy for safe blood transfusion. It is necessary not only to establish a blood bank in the community, but also to educate the community concerning blood transfusion safety and the prevention of TTIs, because education has a significant impact on people's attitude. It is recommended to conduct more education programs aimed at raising awareness in the community.

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analysis, results interpretation, original draft preparation, review, and editing. All authors reviewed and approved the manuscript.

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