



International forum

## Knowledge, attitude, and practice towards blood donation among health care providers in hospitals at Bahir Dar City, Ethiopia



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### ARTICLE INFO

#### Article history:

Received 14 November 2016

Received in revised form 11 April 2017

Accepted 18 April 2017

#### Keywords:

Knowledge

Attitude

Practice

Blood donation

Health care providers

Ethiopia

### ABSTRACT

Like other sub-Saharan Africa, in Ethiopia there is a shortage of adequate and safe blood supplies. Health care providers are potential resource and promoter of voluntary blood donation. This study was conducted to determine the knowledge, attitude and practice towards blood donation among health care providers in Bahir Dar City, Ethiopia. Paper based questionnaire was distributed to 276 health care providers from May 01 to June 30, 2016. Overall, 42.8% had donated blood at least once. Of these, males accounted for 60%. The median age of blood donors was 26 years. Voluntary-unpaid donation was 21.2%. Overall, 75.5% health care providers were knowledgeable. The levels of knowledge were significantly different among different disciplines (One-way ANOVA;  $F = 69.7$ ;  $P = 0.004$ ). Males were more knowledgeable than females ( $P < 0.05$ ). The overall favorable attitude was 78.6%. Previous practice of blood donation determined the odds of favorable attitude to be a future regular voluntary-unpaid blood donor (OR: 5.7, 95% CI: 3.2–10.4). Majority of health care providers had adequate knowledge and favorable attitude. However, voluntary-unpaid donation practice (21.1%) was lower compared to 100% target of voluntary-unpaid donation. There should be motivation packages to enhance voluntary-unpaid blood donation among health care professionals.

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## 1. Introduction

Blood transfusion can be a life saving intervention for blood loss related to road traffic accidents, pregnancy complication, malaria, anemia, hemorrhage, surgery and chemotherapy. Safe and sustainable blood supply is an essential component in the health care system worldwide. Particularly, in developing countries there are a huge demand and shortage of safe blood supplies [1]. The need for blood transfusion is higher in sub-Saharan Africa because of the high prevalence of anemia, malaria, high rate of road traffic accidents and pregnancy-related complications [2,3]. Hence, Ethiopia is not exceptional.

According to World Health Organization (WHO) report, 112.5 million blood donations are collected globally every year. Of these, 50% blood donations are collected in high-income countries [3]. There is a significant difference in access to blood donation between

low and high-income countries. Accessing voluntary-unpaid blood donation is a big problem in most of the developing countries [4]. For instance, the median blood donation rate in high-income countries is 33.1 donations per 1000 people while 4.6 donations per 1000 people in low income countries [3].

In Ethiopia, blood transfusion services had been provided by the Ethiopian Red Cross society since 1969 through federal ministry of health (FMoH). Currently, the National Blood Transfusion Services has taken responsibility from the Ethiopia Red Cross Society under the management of FMoH and Regional health bureaus. Blood bank and transfusion services include collection, processing, storage and provide human blood intended for transfusion. According to World Health organization (WHO) report, the number of functional blood banks has increased from 12 to 25 each covering hospitals within 100 km radius. Moreover, number of hospitals accessing safe blood and blood products increased from 48% in 2012 to over 90% in 2014 [5]. However, blood transfusion service in Ethiopia are still depends on family and replacement donors [6].

Voluntary-unpaid blood donations are the fundamental resources for safe and adequate supply of blood. The risk of

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transfusion-transmissible infections is lowest in blood donated by voluntary-unpaid blood donors compared to replacement and paid donors [7,8]. However, blood donation by voluntary-unpaid blood donors is lower in many countries. For instance, in 72 countries, more than 50% of the blood donation is still depending on family/replacement and paid donors [3]. In Ethiopia, a study conducted in Addis Ababa showed that only 32.6% of health care providers ever donated blood and 2.6% of them were regular blood donors [9]. Furthermore, studies in the adult population in the community showed that 16–18% of adults had experience of blood donation [10,11].

The knowledge and beliefs towards blood donation in the community can be empowered by health care providers' knowledge, attitude and practices. Health care providers are potential resources of voluntary-unpaid donation in the health care facilities. Moreover, they promote voluntary-unpaid donation in the public at community levels. Hence, adequate and safe blood supply can be achieved. However, they are under-utilized in Ethiopia. For instance, a study conducted in Addis Ababa, showed that the practice of blood donation among health care providers was only 32.6% [9]. Furthermore, data on knowledge, attitude and practices towards blood donation among health care providers are not well studied except one study conducted in Addis Ababa [9] in Ethiopia. This study was therefore conducted to determine the knowledge, attitude and practice (KAP) towards blood donation among health care providers in hospitals. Furthermore, this study investigated gender and discipline difference related to KAP on blood donation.

## 2. Methods

### 2.1. Study design, period and setting

A cross-sectional study was carried out among health care providers working in hospitals in May, 2016. The study was conducted in 2 public and 2 private hospitals at Bahir Dar city in May, 2016. This study included physicians, nurses, midwifery, laboratory technologist, pharmacists, health officers and radiologists.

### 2.2. Sample size and sampling

A sample size of 290 was calculated using the Epi info 7.0 software (CDC, Atlanta, USA) considering a total population of 1,200 health care providers in both hospitals. Expected maximum correct answer on questions for knowledge, attitude and practices of blood donation was 50%. A 95% confidence level and marginal error (5%) were assumed. The number of study participants from each hospital was allocated proportionally considering the total health care providers.

### 2.3. Data collection instruments

We developed standard questionnaires by extracting some item-question from articles indexed in the Pub Med Central [9,12,13]. The questionnaires were modified slightly in line with the local context. A total of 34-item questions were self to determine health care providers knowledge, attitude and practices towards blood donation. The six-item-questions were used to identify, professional categories, years of services and educational levels. The knowledge and attitude of health care providers were assessed each by 12-item questions. The five-item questions were used to survey practices of blood donation.

### 2.4. Data collection

Prior to data collection the standard questionnaire were piloted in order to meet the stated objectives of the study. We the principal

investigators administered the questionnaires in hard copy to each study participants during working hours in each hospital. The filled questionnaires were collected after one day. Data collection was supervised by senior advisors.

### 2.5. Operational definition

*Voluntary-unpaid:* Blood donors who donated blood without receiving neither payment nor for replacement for family/friends.

*Family/replacement:* Blood donation for their families or relatives

*Paid donation:* Blood donation in return of money or for payment

*Practice:* In this paper defined as health care providers who donated blood at least once in their life time.

### 2.6. Data analyses

Data was entered into Statistical Package for Social Science (IBM Corp. Released 2011. IBM SPSS Statistic Armonk, NY: IBM Corp). The response alternatives for knowledge items were dichotomous. Mean knowledge was calculated for each knowledge item questions. The questions on attitude used the five Likert-style responses. Favorable attitude was computed by combined agree and strongly agree on each questions. Chi-square test was computed on categorical variables. One-way-ANOVA was computed to test the null hypotheses that levels of knowledge is the same across different disciplines of health professional. P value of <0.05 (two sided) was taken as statistical significance.

### 2.7. Ethical clearance

The Research Ethics Review Committee of the College of Medicine and Health Sciences of Bahir Dar University has approved the ethical clearance. Furthermore, verbal consent was obtained from each study participants.

## 3. Results

### 3.1. Demographic profiles

A total of 276 health care providers with 95.2% response rate took part in the study. Males accounted for 154 (55.8%) of the study participants. The median age and years of service were 27.0 and 3.5 years, respectively. The participants were from both private and governmental hospitals in the town. Almost half the study participants of were single 136 (49.3%). Majority (90.2%) of the health care providers were Orthodox Christianity follower followed by Muslim followers 19 (7.0%). Regarding educational status, 73.2% of health care providers had first degree and above in their profession. In this survey, Internists & general practitioners (17.4%), gynecology and obstetrics (3.0%), surgery specialists (2.6%), pediatricians (0.7%), nurses (46.7%), midwifery (5.8%), medical laboratory personnel (9.4%) and others which include pharmacist, health officers and radiologist (14.5%) took part in the study. Table 1 depicts the age, years of service and categories of health care professionals.

### 3.2. Level of knowledge

Overall, 75.5% of the study participants correctly answered the knowledge assessment question-items on blood donation. Among health care providers, laboratory technologist with 86.8% and medical doctors with 81.7% were knowledgeable on blood donation, respectively. Statistically significant association were observed among different disciplines of health care providers on specific knowledge assessment questions (One-way ANOVA;  $F = 69.7$ ;  $P = 0.004$ ). For instance, 80.7% of laboratory technologists and 39.0%

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