



Survey on knowledge, attitude and practice about blood donation among continuing medical education (CME) students in Sichuan province, China



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ABSTRACT

The study was to assess the knowledge, attitude and practice of blood donation among continuing medical education students in Sichuan. This study was carried out on 841 continuing medical education students using a self-administered structured questionnaire. The statistical analysis was done by using the SPSS software. Among the 800 students, 424 were donors and 417 were non-donors. The score of knowledge (mean 11.71 ± 2.22 VS 8.46 ± 3.27) and attitude (mean 9.19 ± 2.42 VS 7.08 ± 2.02) in donors were statistically significant higher than the non-donors. The moral responsibility of altruism was the major reason for donating blood and worrying of the sanitation and getting infectious disease during donation was the major reason for not donating blood. Being male, aged more than 40, worked in grassroots hospital were predictors of being a blood donor. Blood services should take more efforts to improve donation experience and reinforce the positive KAP of CME students through blood donation training could help more grassroots people to know the blood donation and abandon the prejudice of blood donation.

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1. Introduction

Blood donation by donors is the major source for blood and blood components. Blood donation can be life-saving for individuals when they need large volumes of blood in a surgery or transplantation [1]. In China, the blood banks or blood centers are obligated to provide adequate, safe and sustainable blood or blood components to meet the utilization needs in surrounding areas, therefore, the recruitment of low-risk, safe and adequate donors poses a big challenge to these organizations especially in the areas where traditional cultural beliefs as well as lack of certain knowledge are often common barriers to blood donation from general population [2,3]. The Chinese traditional cultural beliefs often exaggerate the harm of blood donation, so it is believed that blood donation would reduce vitality or it could be disrespectful of one's ancestors.

Although, according to the National Health and Family Planning Commission of the PRC, in 2015 there were 10 blood donors out of 1000 people, which just meets the recommendation of WHO [4], blood services currently in China are still facing shortage of blood all over the country, and the demand for blood is rising day by day,

particularly in some large cities, like Beijing, for example, where some surgeries are delayed or even cancelled for lack of blood [5]. Some studies reported that positive attitude, beliefs, altruism and high level of knowledge are associated with a higher likelihood of becoming a blood donor [6–8]. Medical students are expected to have a good knowledge, be aware of shortage of blood and they will potentially promote blood donation [9]. In China the students must pass the adults' university entrance exam before they have the opportunity to be offered the continuing medical education (CME), which is a specific form of continuing education that helps students in the medical field maintain competence and learn more professional knowledge so as to get a junior college degree or bachelor's degree and complete the education with their spare time. Currently the Chinese government encourages blood donation to extend from city to communities and rural townships, and most of these students are working in grass-root hospitals which are located in urban communities and rural townships. Therefore these students face mostly the grass-root people who are a major potential source of blood donation in China, and their knowledge, attitude, and practice (KAP) will have important impact on the willingness of grass-root people to donate blood.

Some studies reported that the KAP studies provided information on strategies that could be formulated to sustain voluntary blood donation [10,11]. The aim of our study was to assess the KAP of blood donation among CME student, estimate the positive fac-

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tors associated with being a blood donor, and help improve the effectiveness of donor recruitment in China.

2. Material and methods

2.1. Study design

The study was carried out at the Off Campus Teaching Administration of continuing medical education in Chengdu, Southwest Medical University from 2013 to 2015. The CME students came from different areas all over the Sichuan province. A total of 1000 questionnaires were prepared in the study.

2.2. KAP questionnaire

The questionnaire was designed by the authors through consulting various parameters that were included in “Methodological Guidelines for Socio-Cultural Studies on Issues Related to Blood Donation” and similar studies [12,13]. The questionnaire with a total of 57 questions was divided into three sections associated with knowledge, attitude and practice respectively and in combination with demographic details. One point was awarded for each correct answer and zero point for each incorrect answer. According to the total score in the section, the attitude (total 18 points) and knowledge (total 18 points) was classified into low (0–6 points), medium (7–12 points) and high (13–18 points) level.

2.3. Statistical analysis

The statistical analysis was carried out with SPSS (version 19, SPSS Inc). Qualitative or categorical variables were described as frequencies and proportions. Differences in examined variables were assessed by the Chi square test. To assess the factors in relation to donors, the multivariate logistic regression was performed. $P < 0.05$ was considered statistically significant.

3. Result

3.1. Demographic of donors and non-donors

The final sample of 841 CME students responded to the questionnaire including 424 donors (50.42%) and 417 non-donors (49.58%) and the response rate was 84.1% (841/1000). 79.43% of the students came from grass-root hospitals (668/841). Details of demographic characters were represented in proportion in Table 1. Male students (64.19%) were more likely to be donors than female

Table 1
Demographic characters of CME students.

	Donors (424)	Non-donors(417)	Total (841)
Gender ($P < 0.00$)			
Male	147 (64.19)	82 (35.81)	229
Female	277 (45.26)	335 (54.74)	612
Age ($P < 0.00$)			
18–29	264 (44.00)	336(56.00)	600
30–39	112 (62.22)	68(37.78)	180
40–49	48 (78.69)	13 (21.31)	61
Education ($P = 0.02$)			
Bachelor degree	46 (61.33)	29 (38.67)	75
Junior college	341 (50.59)	333 (49.41)	674
High school and below	37 (40.22)	55 (59.78)	92
Working unit ($P < 0.00$)			
Class 3 hospital	40 (34.19)	77 (65.81)	117
grassroots hospital	369 (55.24)	299 (44.76)	668
Private hospital	15 (26.79)	41 (73.21)	56
Department ($P = 0.51$)			
Radiology	61 (45.52)	73 (54.48)	134
Gynaecology and obstetrics	25 (47.17)	28 (52.83)	53
Clinical lab	45 (54.88)	37 (45.12)	82
Clinical	293 (51.22)	279 (48.78)	572

students (45.26%), and donor students aged from 40–49 (78.69%) had a higher proportion than others. Students with high school and below education background (40.22%) were less likely to be donors than other groups. Students from grass-root hospital (55.24%) were more likely to be blood donors.

3.2. Knowledge about blood donation

We collected data about the basic knowledge about blood donation to determine whether it influenced the decision to donate (Table 2). In general, compared to non-donors, donors were more likely to have more basic knowledge about donation such as physical requirement for donation, time between two donations. On most of the questions, the number of correct responses between donor and non-donor students was statistically significant ($P < 0.05$). The mean of knowledge score obtained by the donor students was 11.71 ± 2.22 , while the non-donor students was 8.46 ± 3.27 . According to the scores, we classified three level of knowledge: low, medium and high, students with high level knowledge were more likely to be donors, and that was statistically significant among the three levels. (Table 3).

Table 2
Responses to knowledge questions by donors and non-donors.

Questions	Positive response		P-value
	Donors (424)	Non-donors (417)	
Weight requirements to donate blood	392 (92.45)	308 (73.86)	$P < 0.001$
Time interval of two blood donation	382 (90.09)	286 (68.59)	$P < 0.001$
The age to participate in blood donation	401 (94.58)	319 (76.50)	$P < 0.001$
Can not donate with infectious diseases	382 (90.09)	324 (77.70)	$P < 0.001$
Female can't donate blood three days before and after the menstrual period, and pregnancy in the past one year or abortion in six months	354 (83.49)	330 (79.14)	$P = 0.100$
Would donating blood is threat to health?	191 (45.05)	183 (43.88)	$P = 0.741$
Is it necessary to rest a long time after blood donation?	187 (44.10)	218 (52.28)	$P < 0.020$
Is it necessary need a lot of nutrition after blood donation?	181 (42.69)	224 (53.72)	$P < 0.001$
Could donate blood when you catch a cold and have a fever for a week or after take medicine?	384 (90.57)	350 (83.93)	$P < 0.004$
Could donate blood when you lack of sleep or feel tired or after drinking?	390 (91.98)	356 (85.37)	$P < 0.002$
Could donate blood after you get HBV vaccine within 24 hours?	309 (72.88)	259 (62.11)	$P < 0.001$
Do you know the difference between the blood components and whole blood ?	308 (72.64)	230 (55.16)	$P < 0.001$
Do you know the concept of autologous blood transfusion and its benefits ?	360 (84.91)	296 (70.98)	$P < 0.001$
Do you know the right of voluntary blood donation?	321 (75.71)	261 (62.59)	$P < 0.001$

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