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Motivations and attitudes towards the act of blood donation among undergraduate health science students

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ABSTRACT

Background: Undergraduate students are a target for blood donation, as they constitute a young healthy and well-informed group.

Aim: To understand motivations and attitudes underpinning the act of blood donation among undergraduate health science students.

Materials and methods: Cross-sectional study enrolling undergraduate students of a College of Health Sciences in the Northeast of Portugal (January/February, 2017). Data collection tool was a self-administered questionnaire covering questions about motivations (n = 8) and attitudes (n = 5) towards the act of blood donation. Participants were classified by donation status into donors (one previous donation) and non-donors (never donated). Multiple logistic regression models were used to assess the association between each attitude and motivation on donation status. Odds-ratio (OR) and respective 95% confidence intervals (95%CI) adjusted for potential confounders, were obtained.

Results: Out of 362 participants, 12.7% (n = 46) had ever donated blood and 56.5% (n = 26) of them were regular donors. Out of 316 non-donors, 88.0% (n = 278) will donate blood under request. There were no differences between donors and non-donors regarding the attitudes towards blood donation. From all motivations only “be a civic duty” had a significant impact on donor status, such that participants reporting this motivation are more likely to be blood donors (OR = 2.58; IC95%:1.34-4.99) than their counterparts.

Conclusion: This study revealed that 80.0% of undergraduate health science students are non-donors, but they are available to donate blood under request. Campaigns and advertising methods focused on the emergent needs for blood donation could play an important role in the recruitment of new donors among undergraduate students.

1. Introduction

Blood transfusion is an essential resource for health care systems, which contributes to increasing life expectancy and quality of life of people suffering acute critical illness or chronic diseases [1]. Nowadays health care providers manage serious haemorrhagic complications after surgery, delivery or major accidents [2–5], severe blood disorders [6] and oncologic conditions [7,8] demanding blood transfusion. In these circumstances, a large volume of blood is required to meet so many diverse needs and many countries face the challenge of an increasing need of blood or its components.

Blood is a precious health resource as it is obtained from people who donate blood [1]. Health services should provide sufficient blood to meet needs. Sourcing blood from voluntary non-remunerated blood donors (VNRBD) is the most effective way to ensure safe and sufficient blood supply [1]. Therefore, the recruitment and retention of VNRBD is a great challenge for health care systems around the world [9].

Voluntary non-remunerated blood donation has been considered an act of pure altruism [10]. According to the Theory of Planned Behaviour, the intention of donating is the most important determinant of the act of donating blood [10–12]. There is a body of research about the factors underlying the gesture of blood donation, in order to increase

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the number of VNRBD [10,11,13–16].

The motivations underlying the intention of donating blood are a complex network which change over time [14], or according to the environmental circumstances [10] as well as after planned strategies with positive impact on the intention of donating blood [17]. Although the prosocial behaviour which includes the altruism and collectivism has been reported as main motivator [18], other factors such as perceived need of blood [15,18], level of knowledge about blood donation [10,14,16], self-esteem and campaigns [11,15,18] have an impact in blood donation. Knowledge about factors underpinning the act of donating blood will allow the policy-makers to foresee strategies, messages and social interventions in order to increase the number of VNRBD [11,15].

Although there has been an increasing awareness of the need to donate blood there has been also a decrease in blood donation in several countries [15,19]. Over the last seven years, the number of blood donors in Portugal decreased by 40%, which is a matter of concern for the Portuguese National Healthcare System [20]. Therefore, there is a need to optimize strategies of recruitment and retention of blood donors.

Undergraduate students are a preferred target for blood donation campaigns, as they constitute a young healthy and well-informed group [19,21–27]. The Portuguese Institute of Blood and Transplantation (IPST) has been organizing blood harvesting campaigns in Higher Education Institutions, enrolling undergraduate students. However, the success of such campaigns depends on motivations and attitudes of this particular group towards blood donation. Therefore, it is important to understand this group in regards to their motivations and attitudes towards the act of blood donating. Such knowledge will allow the improvement of strategies to encourage young people to donate blood voluntarily with no reward.

The aim of this research is to understand the motivations and attitudes underpinning the act of blood donating among undergraduate health science students.

2. Materials and methods

2.1. Participants

This study is a part of a large cross-sectional study carried out at a College of Health Sciences in Northeast Portugal. Regular undergraduate students attending classes during five weeks between January and February 2017 were eligible for this study (internship students were excluded). From 1140 regular undergraduate students enrolled in this College, 32% (n = 369) were invited to participate from which 2% (n = 7) refused.

This research was approved by the ULSNE Ethical Committee. Informed consent was taken from all participants and adequate procedures were implemented to respect the confidentiality and anonymity of the research data.

2.2. Procedure

Data collection tool (DCT) was a self-administered questionnaire designed by the authors and based on a review of the literature about blood donation [15,22,25,27–29]. All students who participated and answered to the questionnaire were informed in advance that their contribution would be voluntary and that all information obtained would be used for the only objective of the research.

2.3. Measures

For the present analysis we considered four groups of variables. The first group included the following sociodemographic variables: gender, age (< 23 and > = 23 years old), degree program (nursing, biomedical and laboratory science, pharmacy technician, nutrition and

gerontology), year of study (first, second or third/fourth) and participation in volunteer activities (yes or no). The second group covered the following general issues related with the act of blood donation: donor status (at least one previous blood donation or never donated blood), father and/or mother are blood donors (yes, no, don't know) and blood donation campaigns at school (yes, no, don't know). The third group was applicable only to non-donors and covered questions about reasons hindering blood-donation and about availability to donate at request. The fourth group was focused on specific information about blood donation grouped into two domains: attitudes (five *yes/no* questions) and motivations (eight questions graded on a five-point Likert's scale “not important”, “slightly important”, “fairly important”, “important” and “very important”) towards the act of blood donation.

2.4. Statistical analyses

The outcome of interest is the blood donation status dichotomized into blood donors (at least one previous donation) and non-donors (never donated blood). The Chi-square test was used to compare groups by donation status in regards to sociodemographic variables, general issues related with the act of blood donating, attitudes and motivations. Multiple logistic regression models were used to assess the association between each attitude and each motivation on the blood donation status (blood donor *versus* non-donor). Answers about motivations were re-categorized into two groups: one group included participants answering “very important” and the other group included participants who assigned other answer options. We obtained odds-ratio (OR) and respective 95% confidence interval (95%CI) adjusted for potential confounders. All sociodemographic variables and general blood donation issues revealing a significant association with blood donation status were considered as potential confounders and they were included in the regression models.

Statistical analyses were done by using SPSS (Statistical Package for the Social Sciences), version 22.0, and significance level was set at 0.05.

3. Results

From 362 participants, 83.4% (n = 302) were female, 83.7% (n = 314) aged less than 23 years old, 27.1% (n = 98) were involved in volunteer activities and the highest proportion of students were enrolled in the nursing degree program (48.3%; n = 175) and in the first degree year (47.0%; n = 170). One fourth of students (25.4%; n = 92) reported that their parents were blood donors and a similar proportion (24.8%; n = 90) reported that there were blood donation campaigns at schools they had attended. Only 12.7% (n = 46) of students were classified as blood donors (at least one previous donation) from which 56.5% (n = 26) are regular donors.

Table 1 shows the differences between donors and non-donors in regards to sociodemographic variables and general issues related with blood donation. Significant differences were found only between groups by age, where older students presented a higher proportion of donors (25.0% *versus* 10.8%; p = 0.012).

From 316 non-donors, 88.0% (n = 278) reported that they are available to donate if requested. The most common reasons for not donating blood were “no one ever asked for donation” for 36.7% (n = 116) and “never thought to donate” for 25% (n = 79) of non-donors (Fig. 1).

There were no significant differences between groups by donation status in regards to attitudes towards the act of blood donation. Almost all donors and non-donors will donate blood to a family relative or friend or after an urgent call for blood. The proportion of donors and non-donors who will donate blood after a blood donation campaign was, respectively, 76.1% and 66.1% (p = 0.239). Among donors and non-donors 15.2% and 21.8% of students (p = 0.403), respectively, will donate blood for monetary reward (Fig. 2).

The most common motivations assigned as “very important” by the

Table 1
Sample characteristics by blood donation status.

		n (%)		p.value
		Donors	Non-donors	
Gender	Male	10 (16.7)	50 (83.3)	0.313
	Female	36 (11.9)	266 (88.1)	
Age (years)	< 23	34 (10.8)	280 (89.2)	0.012
	> = 23	12 (25.0)	36 (75.0)	
Degree program	Nursing	29 (16.6)	146 (83.4)	0.139
	Biomedical and laboratory science	7 (10.4)	60 (89.6)	
	Pharmacy technician	5 (7.5)	62 (92.5)	
	Nutrition	2 (5.3)	36 (94.7)	
	Gerontology	3 (20.0)	12 (80.0)	
Degree year attendance	1st	20 (11,8)	150 (88,2)	0,757
	2nd	10 (15,4)	55 (84,6)	
	3rd e 4th	16 (12,6)	111 (87,4)	
Fez/faz voluntariado	Sim	14 (14,3)	84 (85,7)	0,600
	Não	32 (12,2)	230 (87,8)	
Pais dadores	Sim	13 (14,1)	79 (85,9)	0,769
	Não /Não responde/Não sabe	33 (12,2)	237 (87,8)	
campanhas na escola	Sim	15 (16,7)	75 (83,3)	0,263
	Não/Não responde/Não sabe	31 (11,4)	241 (88,6)	

Bold values mean that the p value is lower than 0.05.

participants were “shortage of blood stock” for 77.8% of donors and 65.1% of non-donors, and “civic duty” for 64.4% of donors and 40.3% of non-donors (Fig. 3).

The results obtained from logistic regression models are displayed in Table 2. Only age was significantly related with blood donation status, therefore age is the only potential confounder considered in the models. Accordingly, none of attitudes has a significant impact on blood donation status. From all motivations only “be a civic duty” has a significant impact on blood donation status, such that students that assigned this motivation as “very important” are more likely to be a donors (OR = 2.58; IC 95%: 1.34–4.99) than their counterparts.

4. Discussion

This study showed that among undergraduate health science students, the proportion of those who had ever donated blood is low (12.7%) and only half of them are regular donors. However, among non-donors, there are a large proportion of students who reported to be available to donate blood. Indeed, the majority of both donors and non-donors were willing to donate blood to a relative, or a friend or even after an urgent call for blood. It is noteworthy that the main reasons for not donating blood were “no one ever asked for donation” and “never thought to donate”. Overall donors and non-donors are very similar in regards to attitudes towards the act of blood donation and the only

motivation that appears related with the donation status is to feel blood donation as a civic duty.

In our setting, the proportion of who had ever donated blood is lower than the one reported in other similar settings where the proportion of blood donors among undergraduate students varied between 18% and 41% [19,21–24,26,27]. Such a finding highlights the need of planning strategies in order to motivate undergraduate students in our setting towards blood donation. In accordance with other studies assessing blood donation among undergraduate students [22,24,27], the main reason for not donating in our setting was “no one ever asked for donation”. According to the answers of non-donors included in our study, they don’t reject the act of blood donation. Indeed, almost all students will donate blood to a family member or friend or after an urgent call for blood. This finding foresees recruiting strategies of new donors based on well planned campaigns and advertising methods focused on the emergent need of blood donation. Such strategies should highlight the social value of blood donation, as anyone could need blood, including family members or friends. Taking into account that undergraduate students are enrolled in degree programs, those responsible in planning academic subjects could play an important role in increasing awareness regarding blood donation among students.

Several studies have been published mentioning the factors that determine the intention to donate blood among undergraduate students [19,21–27]. The knowledge about such factors will allow us to motivate

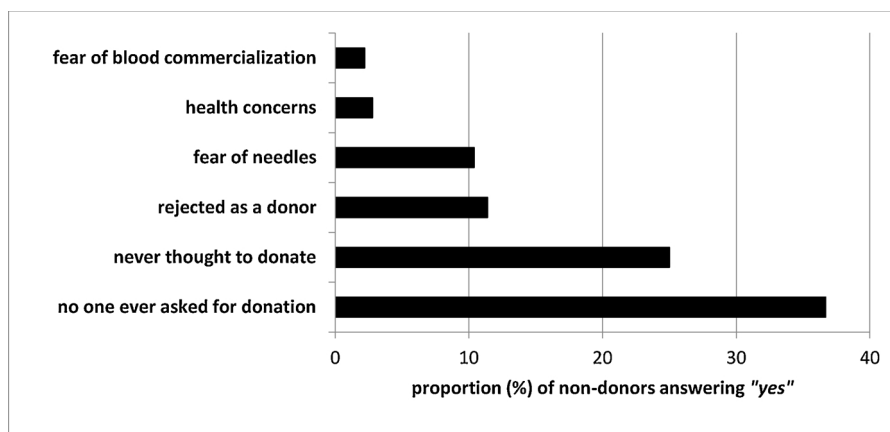


Fig. 1. Reasons for not donating blood among 316 non-donors.

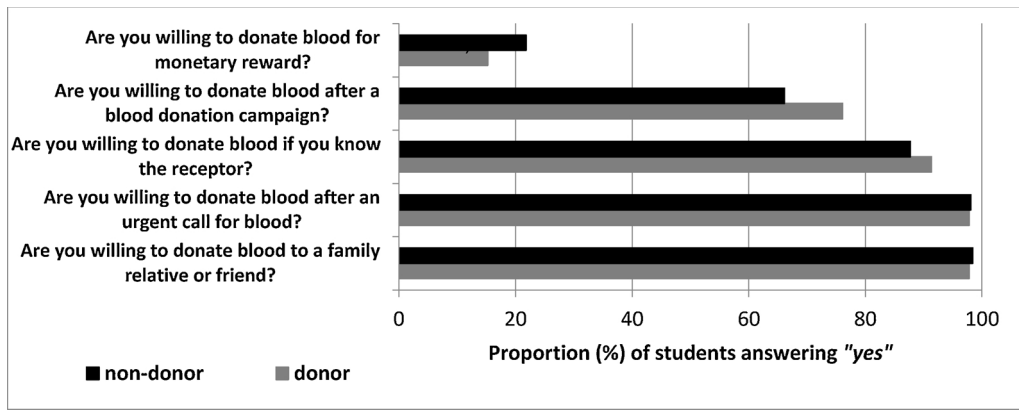


Fig. 2. Attitudes towards the act of donating blood among donors (n = 46) and non-donors (n = 316).

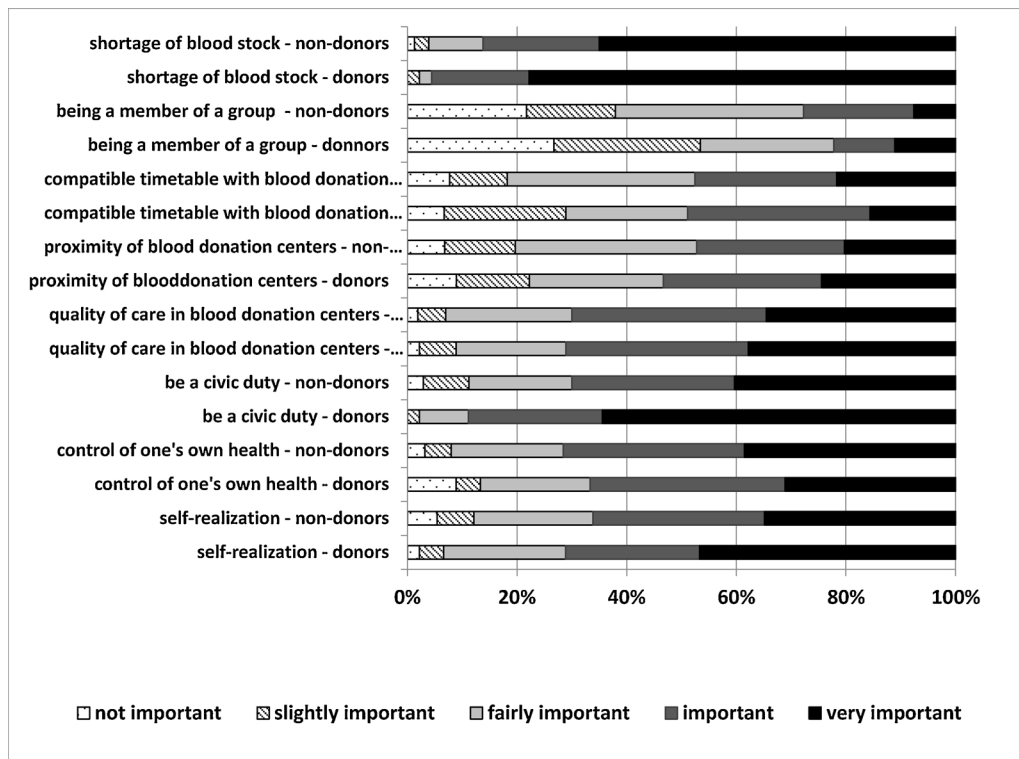


Fig. 3. Motivations towards act of blood donation among donors (n = 46) and non-donors (n = 316).

Table 2
Results from logistic regression models (donors versus non-donors).

		OR ^a (95%CI)
Attitudes ^b	Are you willing to donate blood if you know the receptor?	1.62 (0.54 – 4.83)
	Are you willing to donate blood after an urgent call for blood?	0.88 (0.10 – 7.67)
	Are you willing to donate blood to a family relative or a friend?	0.60 (0.07 – 5.29)
	Are you willing to donate blood after a blood donation campaign?	1.68 (0.82 – 3.48)
	Are you willing to donate blood for monetary reward?	0.67 (0.28 – 1.57)
Motivations ^c	Self-realization	1.87 (0.97 – 3.57)
	Control of one's own health	0.82 (0.41 – 1.64)
	Be a civic duty	2.58 (1.34 – 4.99)
	Quality of care in blood donation centers	1.19 (0.62 – 3.29)
	Proximity of blood donation centers	1.27 (0.61 – 2.68)
	compatible timetable with blood donation centers	0.64 (0.27 – 1.52)
	Be a member of a group	1.52 (0.54 – 4.26)
	Shortage of blood stock	1.96 (0.92 – 4.14)

^a Adjusted for age.

^b Reference group: students answering “no”.

^c Reference group: students answering all options except “very important”.

young, healthy and informed people to donate blood.

Self-satisfaction [24,27], public promotion [27], moral responsibility and altruism [25] are the motivations towards to blood donation more frequently reported in previous research. A large proportion of undergraduate students in our setting reported self-realization, civic duty and the shortage of blood stock as motivations to donate blood. The act of blood donation has been related to moral superiority and can be based on feelings of responsibility and duty [12]. Such issues become keystones within a system of sourcing blood from voluntary non-remunerated blood donors [30]. Blood donation campaigns should emphasize the civic duty of all members of society in increasing blood stock.

Fear of diseases due to the act of blood donation has been considered a factor hindering blood donation [24,25]. Low level of knowledge about blood donation has been considered a factor with negative impact on the act of blood donation [26]. In our sample, the proportion of students who reported health concerns was low (2.8%). However such a finding still reveals the need of information about the safety of blood donation.

The proportion of donors in our sample is low, particularly regular donors, which could be a limitation when factors driving blood donation are under discussion. Future research should be conducted in a larger number of donors, in order to gain more detailed knowledge about this issue in our setting.

5. Conclusion

This study revealed that more than 80% of undergraduate health science students in our setting had never donated blood, but they are available to do so blood on request. According to Portuguese legislation, blood donation is a civic duty for all healthy citizen allowing to meet blood needs for the community [31]. Therefore, campaigns and advertising methods describing the gesture of blood donation as an important civic duty overcoming the emergent need of blood donation and on the could play an important role in the recruitment of new donors among undergraduate students.

Conflict of interest

None.

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