

## ORIGINAL ARTICLE

# BLOOD DONOR MOTIVATION IN THE CONTEXT OF SOCIODEMOGRAPHIC CHARACTERISTICS AND MOTIVATIONAL FACTORS

Pavĺina Rabasov<sup>1</sup>✉, Karel Pavlica<sup>1</sup>, Roman Pospřil<sup>1</sup>, Hana Konen<sup>2</sup>, Zuzana ermkov<sup>3</sup>

<sup>1</sup> Department of Health and Social Studies, Faculty of Social Studies, University of Ostrava, Czech Republic

<sup>2</sup> Institute of the Humanities in Helping Professions, University of South Bohemia in Ceske Budejovice, Czech Republic

<sup>3</sup> Blood Centre of University Hospital Ostrava, Czech Republic

Received 26<sup>th</sup> May 2025.

Accepted 13<sup>th</sup> August 2025.

Published 2<sup>nd</sup> March 2026.

### Summary

**Introduction:** The motivation of donors to donate substances of human origin, such as blood and its components, bone marrow, gametes, and others, is influenced by various factors, such as sociodemographic characteristics, motivational factors, and the level of social competence.

**Aim:** To describe and analyse the motivation of donors to donate blood and blood components in relation to sociodemographic characteristics and motivational factors at the Blood Centre of the University Hospital Ostrava.

**Design and Methods:** Quantitative research based on an anonymous questionnaire survey, followed by inferential analysis of bivariate data. The self-designed questionnaire included 13 questions focusing on motivation to donate, donation experience, anonymity in donation, and sociodemographic data (gender, age, education, size of place of residence, monthly household income, and type of profession).

**Results:** Six of the nine motivational factors were found to be statistically associated with sociodemographic characteristics. Age influenced attitudes towards commemorative medals ( $p=0.013$ ). Gender was significant for four factors: the publication of donor lists ( $p=0.050$ ), special health insurance ( $p=0.003$ ), media coverage of donor and recipient stories ( $p=0.000$ ), and more targeted information campaigns ( $p=0.013$ ). Education was associated with declared donor preference in the event of an organ shortage ( $p=0.010$ ) and with the publicity of donor lists ( $p=0.048$ ). Household income was significant in relation to commemorative medals ( $p=0.000$ ) and declared donor preference in cases of organ shortage ( $p=0.003$ ). The results of our research supported the Technology Agency of the Czech Republic (TA CR) research study No. TL05000144, which formulated, for example, basic principles of compensation for donation in the Czech Republic and fundamental recommendations for recruitment campaigns targeting living body part donors.

✉ University of Ostrava, Faculty of Social Studies, Department of Health and Social Studies, eskobratrsk 16, 702 00 Ostrava, Czech Republic  
pavlina.rabasova@gmail.com

**Conclusions:** Motivating donors to donate human substances plays a key role in sustaining the health system and saving lives. Understanding individual donor characteristics and preferences is important for developing motivational strategies to encourage new and existing donors to donate. Our research findings contribute to the targeted sustainability of blood and blood component donation programmes.

*Keywords:* Substances of Human Origin; Blood and Plasma Donors; Social Determinants; Sociodemographic Characteristics; Motivation

## Introduction

One of the prerequisites for the proper functioning of the human organism is the cooperation of individual body systems. If the balance of cooperation between the individual body systems is disturbed, due to disease or injury resulting in blood loss or insufficient oxygenation of tissues, the result is the activation of the body's compensatory mechanisms to counterbalance the resulting losses. However, these compensatory mechanisms are not permanent and have time limits within the human organism, with adverse consequences for the organism. There is a gradual failure of one or more organs or body systems, leading to refractory damage and even death of the organism. Early and prompt medical intervention is essential in this case (1).

Thanks to modern technology, new medical disciplines such as transplantation, transfusion, and regenerative medicine have emerged to replace parts of another person's body in cases of certain types of failure:

That is, organs, blood and its components, bone marrow, gametes, etc. (the collective name according to REGULATION (EU) 2024/1938 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 June 2024 on quality and safety standards for substances of human origin intended for human use is "substances of human origin") (2). However, these fields of medicine are dependent on people's willingness to provide organs and substances of human origin; in the vast majority of countries, this means donating. The Czech Republic is bound by the Convention on Human Rights and Biomedicine – Communication No. 96/2001 Coll. (3), which states in Article 21 that "The human body and its parts shall not be a source of financial gain as such." Only compensation for costs associated with donation is allowed (4), which should be based on the difficulty of the specific donation procedure from the donor's perspective (5).

In the process of donating substances of human origin, such as blood and its components, the eligibility of donors must be considered, as not everyone can donate blood. Donor eligibility criteria usually include factors such as age, weight, general health, and lifestyle habits. Donors must be in good health, within a certain age range, and must not have certain medical conditions or infectious diseases.

Strict testing criteria are set for blood donation to ensure the maximum safety of transfusion as far as possible, in accordance with currently available testing techniques. This includes, inter alia, mandatory testing for the presence or absence of infectious diseases (HIV, HBV, HCV, and syphilis). The blood donation process usually involves donor registration, completion of an examination questionnaire by medical staff to ensure eligibility, the actual donation, followed by a recovery period and refreshments. Whole blood collection itself usually takes approximately 10 minutes. For plasma and blood component collection, the collection time is between 45 and 90 minutes. Men can donate whole blood four times a year, and women three times a year. For platelet or plasma donations, the intervals are different. Blood can be donated at hospital blood centres, specialised donation centres, or mobile blood drives organised by health organisations (6,7). These centres regularly organise campaigns to promote blood donation, which also aim to encourage more people to donate blood regularly and to educate the public about the societal importance of blood donation.

Volunteering plays an important role in the blood donation process, as blood donation is voluntary and free of charge. People usually donate blood out of altruism (8) and a desire to help others in need. However, the motivation of donors to donate substances of human origin, such as blood and its components, can be influenced by various

factors, such as sociodemographic characteristics, motivational factors, and the level of social competence. Currently, financial incentives are increasingly emerging as a motivating factor, as shown by the Ethical Review on advertisements seeking body part donors (9).

The present study focuses on blood donation and its components and is part of the project "Quality and Sustainability of Body Part Donation Programmes in the Czech Republic" – TA CR No. TL05000144 (2021–2023).

### **Aim**

The aim of this study is to describe and analyse the motivation of donors to donate blood and blood components in relation to sociodemographic characteristics and motivational factors at the Blood Centre of the University Hospital Ostrava.

### **Methods**

#### ***Design***

An anonymous questionnaire survey was conducted for the purpose of this study. An anonymous, self-administered questionnaire was used to obtain information on the sociodemographic characteristics and motives of donors for body part donation, which included 13 questions and focused on the following areas: motivation for donation, experience with donation, anonymity in donation, and sociodemographic characteristics (gender, age, education, size of place of residence, monthly household income, and type of profession).

#### ***Sample***

The study population consisted of donors from the Blood Centre at the University Hospital Ostrava. The inclusion criteria for the study were age 18 years or older, completion of blood, plasma, or blood component donation, and returning the questionnaire by placing it into a non-detachable box. In the research period from 1 June 2022 to 31 October 2022, 563 donors were contacted. Forty-six questionnaires were discarded due to incomplete or incorrect completion. The final sample (N=517; 100%) consisted of men and women in a ratio of 346:171; 66.9%:33.1%. The minimum age for both sexes was 18 years. The maximum age for women was 57 years, and for men was 63 years, while the mean age for women was 40 years, and for men was 39 years.

#### ***Data Collection***

The distribution and collection of questionnaires took place from 1 June 2022 to 31 October 2022 at the Blood Centre of the University Hospital Ostrava. The questionnaire survey was conducted with the approval of the Ethics Committee of the University Hospital Ostrava with reference number 199/2022. Full anonymity of respondents was ensured during the distribution, collection, and analysis of questionnaires.

#### ***Data Analysis***

Data from the completed questionnaires were coded and tabulated in MS Excel. The data were then analysed using SPSS statistical software and processed using descriptive statistics (absolute and relative frequency, arithmetic mean, median, standard deviation, maximum and minimum values). For the purpose of inferential analysis of bivariate data, the Chi-square test – the independence test for contingency tables was used. Statistical tests were evaluated at the level of statistical significance  $\alpha = 0.05$ .

### ***Results and Discussion***

This study is a partial output of a research investigation that focused on the analysis of the motivation of blood and blood component donors in the context of sociodemographic characteristics, motivational factors, and social competencies. The study was conducted within the framework of the TA CR project entitled Quality and Sustainability of Body Part Donation Programmes in the Czech Republic – No. TL05000144.

Due to the large amount of research data, this paper presents results focusing solely on the analysis of blood and blood component donor motivation in the context of sociodemographic characteristics and motivational factors.

The first stage of the research data analysis focused on the sociodemographic characteristics of blood and blood component donors at the Blood Centre of the University Hospital Ostrava. In particular, we were interested in the analysis of gender, age, education, size of place of residence, monthly household income, and type of profession.

## **Gender**

In blood donation, gender does not play a decisive role. Blood donation centres focus on the health and history of the donor rather than on the donor's gender. Nevertheless, there are some specific aspects that may differ depending on gender.

In our study, of the total sample (N=517; 100%), two-thirds of the donors who completed the questionnaire were male (n=346; 66.9%) and one-third were female (n=171; 33.1%). This is largely due to the fact that women are excluded from blood donation during pregnancy and lactation. It may also be influenced by the menstrual cycle, when women prone to heavy menstrual bleeding are more susceptible to iron deficiency, which may affect their ability to donate blood. Therefore, heavy menstrual bleeding, low haemoglobin and iron levels, pregnancy, and lactation are limiting factors for donor blood or plasma collection (10,11,12,13).

In our study, the distribution of donors is further influenced by the fact that a large proportion of donors are members of the emergency services (Table 1), where women are a minority if they are represented in these services.

## **Age**

Age is an important but not the only factor in blood donation. In the Czech Republic, the minimum age limit for donors is 18 years to ensure health safety, as younger individuals may have lower haemoglobin levels. The maximum age limit is set at 65, and 60 for first-time donors, due to the risk of health complications at an older age. For donors over 65 years of age, a physician's consent is required. These limits protect the health of both donors and recipients (10,11).

A simple comparison of means in our study (men 38.9; women 38.3) shows no significant difference ( $p=0.472$ ). Although women in the Czech Republic tend to live longer than men (life expectancy at birth in 2020 was 81.4 years for women and 76.5 years for men) (14), men in our cohort have been donating blood for longer than women (the highest age for women is 57 and for men, 63). The decline in female donors is noticeable between the ages of 25 and 35, which is probably related to pregnancy and motherhood.

## **Education**

Higher levels of education are usually associated with a better understanding of health promotion and disease prevention issues, which can lead to better-informed health decisions (15,16).

In the distribution of our sample (N=517; 100%) by education, 41.0% of persons (n=212) reported having a university degree, while according to the 2021 census data, 18.7% of the Czech population has a university degree (17). Thus, it appears that people who go to the University Hospital Ostrava to donate blood have a significantly higher level of education than the general population of the Czech Republic. Secondary education was reported by 57.6% (n=298) and primary education was reported by 1.4% of donors (n=7).

Comparison of education between men and women showed no significant differences. Of the total sample (N=517; 100%), 6% more women than men had a university degree, namely 45.0% of women and 39.0% of men with a university degree, but this difference was not significant. Secondary education was reported by 53.2% of women and 59.8% of men, and primary education was reported by only 1.8% of women and 1.2% of men.

### **Size of place of residence**

In the case of a blood and blood component donation programme, potential donors from smaller cities or rural areas may face the limiting factor of poor accessibility to a blood centre or complications with commuting (18). Burgdorf *et al.* (19) also confirm the lower prevalence of blood donors from rural locations compared to donors from urbanized areas.

The distribution of our sample (N=517; 100%) according to the size of the place of residence shows that the largest number of people (n=211; 40.8%) who donated blood or other blood components during the study period live in a city with more than 100,000 inhabitants. One hundred and fifty-seven donors (30.4%) reported residing in areas with up to 10,000 inhabitants, 98 donors (19.0%) reported residing in areas with up to 100,000 inhabitants, and 51 donors (9.9%) reported residing in areas with up to 1,000 inhabitants. A more detailed analysis shows that most of the respondents live in Ostrava (41%), with the rest commuting to Ostrava from smaller municipalities. The most represented category outside Ostrava is municipalities with a population between ten and one hundred thousand (30%).

### **Monthly household income**

Monthly household income can influence motivation to donate blood, but the relationship between income and donation also depends on personal values, life experiences, and social relationships. People with lower socioeconomic status face greater health challenges and have lower health literacy (20,21). A study by Burgdorf *et al.* (19) showed that people with middle to high incomes have a fourfold higher prevalence of blood donation than those with the lowest incomes. Higher income may mean greater financial stability and flexibility in accessing health information and donor programmes. Some people are motivated by prosocial desires and a wish to help others (22).

The most frequently reported monthly household income in our sample (N=517; 100%) was between 35,000 and 60,000 CZK (n=264; 51.1%), followed by incomes over 60,000 CZK (n=160; 30.9%). Respondents with a household income between 20,000 and 35,000 CZK accounted for 16.1% (n=83), and respondents with a household income below 20,000 CZK accounted for just ten (1.9%).

### **Type of profession**

The motivation to donate blood can be quite individual and may vary between individuals, regardless of their profession. For example, workers in helping professions may be expected to have higher levels of altruism, empathy, and prosocial behaviour (23,24). Thus, some professions may instil certain values and attitudes that support blood donation as part of caring for others and society.

In terms of career paths, the results of our survey were surprisingly positive. Of the total sample (N=517; 100%), the largest number of donors were from the marketing and management sector (n=82), followed by the armed forces and security services (n=77), with the same number working in the service sector (n=77). A further 69 people reported working in engineering and automotive, and 52 in information technology, the most represented groups. In contrast, the least represented groups were the unemployed (n=2), those on parental leave, and the retired (three each).

In our study period, the group of four people who did not indicate their professional direction (for safety reasons) (median 108, mean 123) donated blood most frequently. In second place were three retired individuals (median 90, mean 104). A group of 25 individuals working in manufacturing also donated blood very frequently (median 65, mean 95). The group from the armed forces and security services ranked eighth in terms of median values in our table. The group that donates the least is students (median 4, mean 7), but this is primarily due to their young age.

Focusing on the highest number of donations by individuals' profession among the economically active, the most frequent number of donations (n=470) was made by donors in the Services sector, followed by those in the Manufacturing sector (n=410), Armed Forces and Security Forces (n=393), Engineering and Automotive (n=349),

Education (n=300), Marketing and Management (n=286), Information Technology (n=250), and Healthcare and Veterinary Care (n=214) (Table 2). For those who were not economically active, the most frequent donors were students (n=27), although the three retired individuals had the highest number of donations (n=135). The four remaining individuals who did not indicate their profession and, therefore, their economic activity, donated 200 donations.

**Table 1.** Distribution of donors by economic activity.

Economic activity	N	Min.	Max.	MedX	Average	Standard deviation
<b>Economically active persons</b>	478	1	470	22.5	53.0	75,293
<b>Economically inactive persons</b>	35	1	135	5.0	17.0	30,225
Students	27	1	40	4.0	6.67	8,731
Retired persons	3	87	135	90.0	104.0	26,889
On parental leave	3	5	25	14.0	14.67	10,017
Unemployed persons	2	2	57	29.5	29.50	38,891
<b>Not specified</b>	4	76	200	108.0	123.0	55,486
<b>Total</b>	517	1	470	21.0	51.11	73,763

Legend: N – total number; Min. – Minimum (minimum number of donations per donor); Max. – Maximum (maximum number of donations per donor); MedX – median of a specific value or parameter associated with a given data set.

**Table 2.** Distribution of donors by occupation among economically active persons.

Career direction	N	Min.	Max.	MedX	Average	Standard deviation
<b>Marketing &amp; Management</b>	82	1	286	14.5	30.70	46,127
<b>Services</b>	77	1	470	30.0	62.61	88,969
<b>Armed Forces and Security Forces</b>	77	1	393	20.0	51.74	83,447
<b>Engineering and automotive industry</b>	69	1	349	36.0	65.19	81,090
<b>Information Technology</b>	52	1	250	23.0	51.40	66,653
<b>Healthcare and veterinary care</b>	29	1	214	16.0	34.48	51,932
<b>Manufacturing</b>	25	1	410	65.0	95.28	100,507
<b>Non-specialised and interdisciplinary occupations</b>	19	1	196	35.0	53.84	54,006
<b>Science, education</b>	19	2	300	11.0	46.32	87,365
<b>Construction and surveying</b>	13	1	193	40.0	65.92	67,230
<b>Government administration</b>	8	1	210	15.0	51.50	76,377
<b>Self-employed persons</b>	8	1	74	38.0	36.00	29,135
<b>Total</b>	478	1	470	22.5	53.00	75,293

Legend: N – total number; Min. – Minimum (minimum number of donations per donor); Max. – Maximum (maximum number of donations per donor); MedX – median of a specific value or parameter related to a given data set; Self-employed – self-employed person.

### Experience with the type of donor collection

As part of the research, we also investigated the donors' experiences with different types of donations at the Blood Centre of the University Hospital Ostrava. Specifically, we examined which types of donations they had experience with. Of the total sample (N=517; 100%), the majority of donors reported donating whole blood (n=283; 54.7%), while approximately one third reported donating both blood and plasma (n=161; 31.1%). The donation of blood, plasma, and platelets was less common (n=47; 9.1%), and the donation of plasma only was reported by 2.1% of donors (n=11). Fifteen donors (2.9%) did not report any experience with donation.

In general, the most common type of blood collection is the so-called whole blood collection, which involves about 400,000 donations per year. Plasma collection in hospital facilities is around 200,000 donations per year, and platelet collection is reported to be around 18,000 donations per year (25). WHO data (26) show the number of non-autologous whole blood donors for 2018; in the case of the Czech Republic, this was 417,251 donors. If we look at neighbouring EU countries, the numbers are very similar; for example, Austria had 422,786 donors. However, Poland shows a significant difference, with 1,223,209 donors per year. However, geographical conditions, the demographic distribution of the population, and the cultural and religious context must be taken into account.

### Number of donations

In terms of the number of donations per donor, the minimum number of donations in the total cohort (N=517; 100%) was one donation and the maximum number of donations per donor was 470. For the total sample, the median was 21. This means that half of the individuals in the sample had fewer than 21 donations, and half had more than 21 donations. The average number of donations per person was 51.11. The first donation was recorded in 45 cases during the study period.

In terms of sociodemographic data, it can be seen that significantly more men donate blood (or plasma) and have more donations per person (the median for women is 12 and for men 31, and the average for women is 25 and for men 64). Our results also correlate with those of a systematic review by Piersma *et al.* (27), which shows that men are more frequent donors than women.

In terms of education, donors with a high school education are predominant, and this also applies to the frequency of donation (the median for those with a high school education is 30, and for those with a university education, it is 15; the average for those with a high school education is 60, and for those with a university education, it is 37). In terms of monthly household income, the data do not differ much (Table 3).

**Table 3.** Distribution of donors by gender, education, and monthly household income.

		N	Min.	Max.	Median	Average	Standard deviation
<b>Total</b>		<b>517</b>	<b>1</b>	<b>470</b>	<b>21.0</b>	<b>51.11</b>	<b>73,763</b>
Gender	Men	346	1	470	31.0	63.96	83,822
	Women	171	1	214	12.0	25.10	35,202
Education	High School	298	1	470	30.0	59.68	82,399
	University	212	1	286	15.0	37.15	54,521
Monthly household income	Up to 35 thousand	83	1	320	20.0	50.61	77,676
	Up to 60 thousand	264	1	393	21.5	54.25	74,458
	Over 60 thousand	160	1	470	21.0	46.94	71,953

Legend: N – total number; Min. – Minimum (minimum number of donations per donor); Max. – Maximum (maximum number of donations per donor).

### Motivating factors for donation

The second important stage of our research investigation was the analysis of strategic measures, that is, factors that support donors' motivation to donate and the analysis of the relationship between motivational factors and selected sociodemographic characteristics (age, gender, education, monthly household income). This analysis also included an assessment of respondents' views on the issue of anonymity in the donation programme, which may also influence motivation to donate.

The motivation to donate blood varies depending on the individual. Many feel an obligation to help and see donating as a way to save lives (22). The idea of needing blood themselves is a strong motivation (28). Donating is considered a noble and civic duty (29), and some choose to donate due to personal experience or the influence

of family and friends (30). For some, it is also an opportunity for regular health testing (31). According to Trimmel et al. (32), most donors have altruistic tendencies and a sense of commitment to the community, with altruistic motivations predominating for whole blood donors, while compensatory motivations predominate for plasma and platelet donors.

The motivation to donate blood can be increased through various strategies, such as educational campaigns on the importance of blood donation and the use of social media to spread stories about donation. Direct communication between health professionals and donors of plasma can also encourage participation in programmes (33). Creating a welcoming environment and providing quality services during the donation process is also important (34). Although donation is voluntary, small rewards, such as gifts or tickets, can motivate participation in events.

When asked what could increase people's willingness to donate tissues or organs, most of the donors interviewed at the Blood Centre of the Ostrava University Hospital in our research replied that vouchers for regeneration procedures, for example, could be helped by a regeneration treatment at a spa (59.8%), a declared preference of the donor if he/she needs this kind of help and there are not enough body parts (54.2%), and also by more information campaigns about the fate of people (52.6%), increasing or differentiating the amount for tax deduction (50.9%), special health insurance for donors (48.8%), or publishing stories about donors and the people they have helped in the media (43.3%). Social events for donors can contribute significantly to motivation, according to only 19.0% of respondents. Conversely, what donors say would not help at all is the regular publication of their list (56.1%) and commemorative medals (51.2%).

As part of the bivariate data analysis, we focused our attention on the relationship between the scores of these nine motivational factors and selected sociodemographic characteristics (age, gender, education, and monthly household income). After data preparation (N=517), the sample consisted of two-thirds male and one-third female participants. This ratio roughly corresponds to the proportion of men and women who come to the University Hospital Ostrava to donate blood. However, when assessing individual motivating factors, the greater number of men overshadowed the results for women. Since it is important for us to see how both men and women perceive the motivation to donate, especially for the sake of precisely targeted motivation campaigns, we proceeded to apply weights to the data (Table 4). Thus, the responses from women will have the same weight in the result as the responses from men. We used weights when working with all hypotheses to avoid splitting the sample into separate male and female groups, which would limit the use of chi-square tests. The question about age was open-ended, so we divided the obtained ordinal variable into four age categories (Table 5).

**Table 4.** Proportion of men and women in the blood donor cohort from FN Ostrava before and after consideration.

Item	Before considering		After considering	
	Frequency	Percent	Frequency	Percent
Men	346	66.9	258	49.9
Women	171	33.1	259	50.1
Total	517	100.0	517	100.0

**Table 5.** Distribution of respondents by age.

Age	Frequency	Percent
<= 29	105	20.4
30–39	151	29.2
40–49	195	37.7
50+	66	12.8
Total	517	100.0

Six of the nine motivational factors listed in the questionnaire were found to be dependent on some sociodemographic characteristics (Table 6, Graph 1). The dependence between the ratings of motivational factors and age categories was confirmed only for the possibility of awarding commemorative medals ( $p=0.013$ ). Attitudes towards rewarding donors with commemorative medals differed particularly between the youngest age category and middle-aged participants. An overwhelming majority of people aged under 29 believe that this could slightly increase interest in donation, while only a third of the respondents in the 40-49 age group believe this. In contrast, almost 60% are sceptical about this possibility. The negative evaluation of this item concerning the commemorative medal is very interesting, because in the Czech Republic the awarding of a commemorative medal has a long-standing tradition, and commemorative medals of various types are awarded for a certain number of blood donations. For example, the Czech Red Cross has been regularly awarding non-donating blood donors with the so-called Blood Cup for the first donation, which is given to the blood transfusion station, for over half a century. For 40 donations, the Gold Medal of Professor Jan Jánský is awarded at a festive assembly, and for 250 donations, the Czech Red Cross Donation of Blood - Gift of Life (Donum sanguinis - Donum vitae) plaque is awarded at a national festive assembly (35). Despite all positive or negative evaluations of motivating factors, it is very important to respect individual motivational preferences, as for some donors, the award of a commemorative medal may have a deep personal meaning.

The ratings of motivational factors with respect to gender differed between men and women in four cases: regular publication of the donor list ( $p=0.050$ ), special health insurance for donors ( $p=0.003$ ), publication of stories of donors and the people they have saved in the media ( $p=0.000$ ), and more targeted information campaigns ( $p=0.013$ ). Men are more sceptical than women about the motivating factor: publication of the donor list. While 60% of men think it will not help, only 47.9% of women share this opinion.

The correlation between the ratings of motivational factors and education was confirmed for two of the nine factors listed in the questionnaire: the donor's declared preference if they need this kind of help and there are insufficient body parts available ( $p=0.010$ ) and the regular publication of the donor list ( $p=0.048$ ). The donor's declared preference if they need this kind of help and there are insufficient body parts available is seen as a stronger motivating factor by respondents with a university education (63.8%) compared to respondents with a secondary education (50.0%). Respondents with a university education are more sceptical about the regular publication of the donor list – 61.2% of them think that it does not help to motivate donation at all, compared to just under half of the respondents with a secondary education (48.6%).

The correlation between the ratings of motivational factors for organ donation and the level of household income of the respondents was also demonstrated for two of the nine factors listed in the questionnaire: Commemorative Medal ( $p=0.000$ ) and the donor's declared preference if they need this kind of help and there are not enough body parts available ( $p=0.003$ ). The significant motivational potential of the donor's preference, if needed, is seen more by respondents from households with an income above 60,000 CZK (63.6%), followed by 55.8% of respondents with an income between 35,000 CZK and 60,000 CZK, and only 40% of respondents with an income of up to 35,000 CZK. Respondents from households with the highest incomes, in particular, find receiving a commemorative medal the least motivating – 62.3% of them think that it will have no effect on their motivation to donate. Although none of the groups consider it to be a significant motivating factor, more than half of the respondents from the lowest-income households think that it might slightly motivate them to donate (55.8%), which is the highest relative to the other groups.

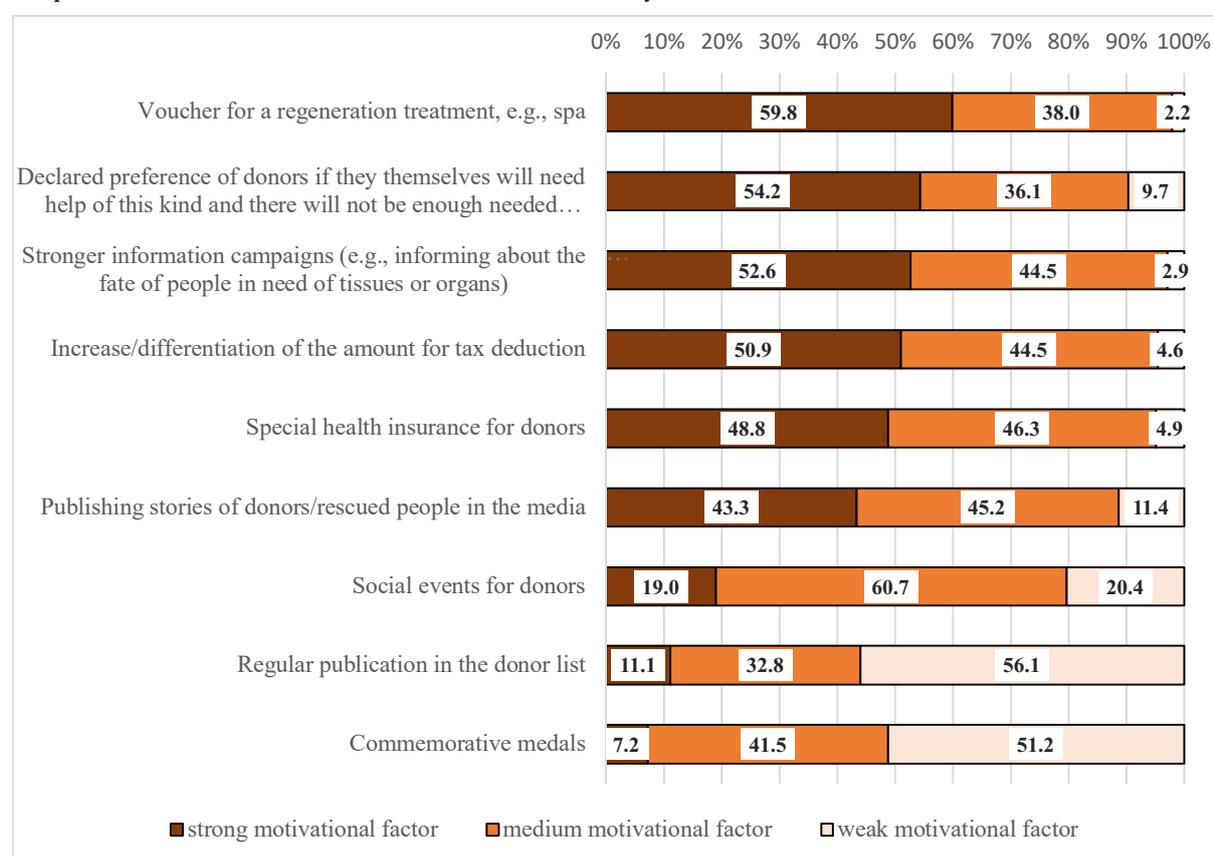
In our research, we also considered the issue of donor anonymity, which may be associated with the motivating factors for blood donation. Of the total sample ( $N=517$ , 100%), 47.0% of donors feel that blood donation should be anonymous, 5% of donors do not believe blood donation should be anonymous, and 48.0% of donors have no strong opinion on the anonymity of blood donation. For plasma donation, 46.8% of donors favour anonymity and 4.8% favour non-anonymity. 48.4% of donors have no strong opinion on the anonymity of plasma donation. Respondents favour non-anonymous donation for kidneys (40.2%), uteri (30.9%), bone marrow (28.2%), eggs (30.8%) and sperm (29.8%).

Views on the anonymity of blood and plasma donation vary according to individual values and cultural context. Anonymity protects donors' privacy and can be motivating for those who do not wish to face external pressure (36).

**Table 6.** Significance of chi-square test of independence for all sociodemographic characteristics examined.

Motivational factors	Age	Gender	Education	Household income
Declared preference of donors if they themselves will need help of this kind and there will not be enough needed body parts	0.549	0.309	<b>0.010</b>	<b>0.003</b>
Increase/differentiation of the amount for tax deduction	0.240	0.069	0.755	0.214
Commemorative medals	<b>0.013</b>	0.591	0.266	<b>0.000</b>
Voucher for a regeneration treatment, e.g., spa		0.149	0.067	
Regular publication in the donor list	0.148	<b>0.050</b>	<b>0.048</b>	0.607
Special health insurance for donors		<b>0.003</b>	0.075	
Social events for donors	0.377	0.078	0.100	0.089
Publishing stories of donors/rescued people in the media	0.355	<b>0.000</b>	0.219	0.587
Stronger information campaigns (e.g., informing about the fate of people in need of tissues or organs)		<b>0.013</b>	0.163	

**Graph 1.** The Power of Motivational Factors: A Correlation Analysis.



It is important to ensure that donation is conducted according to high standards of safety and ethics. However, considerations and preferences for anonymity are diametrically opposed in the case of sperm, oocyte, or embryo donation. This is particularly the case with respect to personal identity, medical history, or familial relationships (37).

## Conclusion

The donation of blood and blood components has a direct impact on the health and lives of many people, and the dedication and willingness of donors to donate blood certainly deserve recognition and support, since blood

donation in the Czech Republic is voluntary. Research on the motivational factors related to blood donation is crucial. This makes it possible not only to maintain and develop suitable conditions for blood donation but also to educate and motivate the public to take part in this important act, which has a lasting positive effect on society as a whole.

The results of our research identify some relationships between motivation to donate and selected sociodemographic characteristics of blood donors at the Blood Centre of the University Hospital Ostrava and provide insight into their typological diversity. Six of the nine motivational factors listed in the questionnaire were found to be dependent on selected sociodemographic characteristics. Thus, we can say that education and household income play a role in assessing a donor's stated preference, if applicable. Different age groups and income brackets have differing attitudes towards receiving a commemorative medal as a motivating factor. The regular publication of the donor list as a motivating factor is perceived differently by men and women and by respondents with secondary and higher education. Special health insurance is perceived differently by women and men, as are the publication of donor and recipient stories in the media and more prominent information campaigns. Based on our results and those of the TA CR research study No. TL05000144, its co-authors formulated the basic principles for compensation of donations in the Czech Republic (38).

Understanding the individual characteristics and preferences of blood donors is important for developing motivational strategies that can encourage new donors and improve conditions for existing ones. However, social, ethical, legal, and health principles are vital when designing motivational strategies. The co-authors of the research study No. TA CR TL05000144, which involved several institutions including the Faculty of Medicine at the University of South Bohemia in České Budějovice, the Faculty of Social Studies at Masaryk University in Brno, the Faculty of Social Studies at the University of Ostrava, University Hospital Pilsen, Motol University Hospital, University Hospital Ostrava, Thomayer University Hospital in Prague, Hospital České Budějovice, and the Faculty of Law at Masaryk University in Brno, formulated the following key recommendations for recruitment campaigns aimed at living body part donors: Prohibition of stating the amount of financial compensation or non-financial 'compensation' (gifts of more than symbolic value) in advertisements or recruitment campaigns; Visible social recognition for donors; A clearly defined system for the use of donated body parts; Clear specification of situations where there is a shortage of substances of human origin; Social pressure, i.e. the socially acceptable creation of a certain level of pressure to donate body parts (39).

The results of our research, together with the comprehensive results of the TA CR research study No. TL05000144, thus contribute to the targeted sustainability of blood donation programmes.

### **Acknowledgements**

This research was supported by the Technology Agency of the Czech Republic under the project "Quality and Sustainability of Body Part Donation Programmes in the Czech Republic" (Project No. TL05000144).

### **Authors' declaration of potential conflict of interest**

The authors have no conflict of interest.

### **Adherence to Ethical Standards**

This article contains only anonymous data. All procedures performed in studies involving human participants were in accordance with the ethical standards of the relevant institutional and/or national research committee and with the 1964 Helsinki Declaration and its subsequent amendments, or with comparable ethical standards.

### **References**

1. Schiller AM, Howard JT, Convertino VA. The physiology of blood loss and shock: New insights from a human laboratory model of haemorrhage. *Experimental Biology and Medicine*. 2017;242(8):874–883. doi:10.1177/1535370217694099

2. European Parliament and Council of the European Union. Regulation (EU) 2024/1938 of the European Parliament and of the Council of 13 June 2024 on standards of quality and safety for substances of human origin intended for human application and repealing Directives 2002/98/EC and 2004/23/EC. Official Journal of the European Union. 2024 Jun 13;L1938:1–80. Available from: [https://eur-lex.europa.eu/legal-content/CS/TXT/PDF/?uri=OJ:L\\_202401938](https://eur-lex.europa.eu/legal-content/CS/TXT/PDF/?uri=OJ:L_202401938)
3. Ministerstvo zdravotnictví České republiky. Nařízení vlády č. 96/2001 Sb., o standardech kvality a bezpečnosti pro látky lidského původu určené k použití u člověka. Zákony pro lidi. 2001. Available from: <https://www.zakonyprolidi.cz/ms/2001-96#f5323046>
4. Svatoš R, et al. Kompenzace za dárcovství částí těla v České republice – analýza stavu. Dílčí výstup výzkumného projektu TAČR TL05000144 – Kvalita a udržitelnost programů dárcovství částí těla v ČR, 2021–2023. České Budějovice: Fakulta zdravotnických studií Jihočeské univerzity; 2022. Available from: [https://www.zsf.jcu.cz/images/ZSF/veda-a-vyzkum/projekty/VystupyTL05000144\\_darcovstviCastiTelaCR/kompenzaceDarcovstviCastiTela.pdf](https://www.zsf.jcu.cz/images/ZSF/veda-a-vyzkum/projekty/VystupyTL05000144_darcovstviCastiTelaCR/kompenzaceDarcovstviCastiTela.pdf)
5. Čermáková Z, Honzová I, Chmel R, et al. Náročnost dárcovských procedur pro živé dárce částí těla. Dílčí výstup výzkumného projektu TAČR TL05000144 – Kvalita a udržitelnost programů dárcovství částí těla v ČR, 2021–2023. České Budějovice: Fakulta zdravotnických studií Jihočeské univerzity; 2022. Available from: [https://www.zsf.jcu.cz/images/ZSF/veda-a-vyzkum/projekty/VystupyTL05000144\\_darcovstviCastiTelaCR/DilciVystup1-NarocnostDarcovskychProcedur.pdf](https://www.zsf.jcu.cz/images/ZSF/veda-a-vyzkum/projekty/VystupyTL05000144_darcovstviCastiTelaCR/DilciVystup1-NarocnostDarcovskychProcedur.pdf)
6. Zeger G, Selogie E, Shulman IA. Blood donation and collection. In: Blood Banking and Transfusion Medicine. 2007. p. 157–82. doi:10.1016/B978-0-443-06981-9.50016-8
7. Řeháček V, Masopust J, et al. Transfuzní lékařství. 1st ed. Praha: Grada Publishing a.s.; 2013. ISBN 978-80-247-4534-3.
8. Monteiro TH, Ferreira IJDR, Junior ACFP, et al. Barriers and motivations for blood donation: an integrative review. Hematology, Transfusion and Cell Therapy. 2023;46(3):283–288. Available from: <https://pubmed.ncbi.nlm.nih.gov/38008595/>
9. Motal J. Etický posudek na reklamy shánějící dárce částí těla. Dílčí výstup výzkumného projektu TAČR TL05000144 – Kvalita a udržitelnost programů dárcovství částí těla v ČR, 2021–2023. České Budějovice: Fakulta zdravotnických studií Jihočeské univerzity; 2023. Available from: [https://www.zsf.jcu.cz/images/ZSF/veda-a-vyzkum/projekty/zmen\\_eticky\\_posudek\\_imprim\\_11-09-2023.pdf](https://www.zsf.jcu.cz/images/ZSF/veda-a-vyzkum/projekty/zmen_eticky_posudek_imprim_11-09-2023.pdf)
10. Sbirka zákonů České republiky. Vyhláška č. 143/2008 Sb., o stanovení bližších požadavků pro zajištění jakosti a bezpečnosti lidské krve a jejích složek. 2008.
11. World Health Organization. Blood donor selection: guidelines on assessing donor suitability for blood donation. Geneva: WHO; 2012.
12. Smith GA, Fisher SA, Dorée C, et al. A systematic review of factors associated with the deferral of donors failing to meet low haemoglobin thresholds. Transfusion Medicine. 2013;23(5):309–320. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/tme.12046>
13. Browne A, Fisher SA, Masconi K, et al. Donor deferral due to low hemoglobin—an updated systematic review. Transfusion Medicine Reviews. 2020;34(1):10–22. doi:10.1016/j.tmr.2019.10.002
14. Český statistický úřad. Česko v číslech, 2021. Praha: Český statistický úřad; 2021. Available from: <https://csu.gov.cz/docs/107508/440b1b80-b9c7-a9d4-012c-ad0fa94df8ec/32020321.pdf?version=1.0>
15. Gumà J, Solé-Auró A, Arpino B. Examining social determinants of health: the role of education, household arrangements and country groups by gender. BMC Public Health. 2019;19(699):1–9. doi:10.1186/s12889-019-7054-0
16. IHME-CHAIN Collaborators. Effects of education on adult mortality: a global systematic review and meta-analysis. The Lancet Public Health. 2024;9(3):e155–165. Available from: <https://www.thelancet.com/action/showPdf?pii=S2468-2667%2823%2900306-7>
17. Český statistický úřad. Sčítání 2021. Praha: Český statistický úřad; 2024. Available from: <https://scitani.gov.cz/vzdelani#null>
18. Cimaroli K, Páez A, Newbold KB, et al. Individual and contextual determinants of blood donation frequency with a focus on clinic accessibility: a case study of Toronto, Canada. Health & Place. 2012;18(2):424–433. doi:10.1016/j.healthplace.2011.12.005
19. Burgdorf KS, Simonsen J, Sundby A, et al. Socio-demographic characteristics of Danish blood donors. PLoS One. 2017;12(2):e0169112. doi:10.1371/journal.pone.0169112
20. Čeledová L, Holčík J, et al. Nové kapitoly ze sociálního lékařství a veřejného zdravotnictví. 1st ed. Praha: Univerzita Karlova, Karolinum; 2017. ISBN 978-80-246-3809-6.

21. Kajanová A, Řimnáčová Z. Health literacy of the poor. *Pomahajúce Profesie*. 2019;2(1):5–16. Available from: [http://www.pp.fsvaz.ukf.sk/wp-content/uploads/2019/09/5\\_16\\_Kajanov%C3%A1\\_%C5%98imn%C3%A1%C4%8Dov%C3%A1\\_Health-literacy-of-the-poor.pdf](http://www.pp.fsvaz.ukf.sk/wp-content/uploads/2019/09/5_16_Kajanov%C3%A1_%C5%98imn%C3%A1%C4%8Dov%C3%A1_Health-literacy-of-the-poor.pdf)
22. Ferguson E, Hill A, Lam M, et al. A typology of blood donor motivations. *Transfusion*. 2020;60(9):2010–20. doi:10.1111/trf.15913
23. Zášková H, Kubicová A. Prosocial behaviour in helping professions. *Kontakt*. 2008;10(1):150–158. doi:10.32725/kont.2008.021
24. Stevens M, Moriarty J, Manthorpe J, et al. Helping others or a rewarding career? Investigating student motivations to train as social workers in England. *Journal of Social Work*. 2012;12(1):16–36. doi:10.1177/1468017310380085
25. Český červený kříž. Typy odběrů krve. 2024. Available from: <https://www.cervenkykriz.eu/typy-odberu>
26. World Health Organization. Global status report on blood safety and availability 2021. Geneva: WHO; 2021. Available from: <https://www.who.int/publications/i/item/9789240051683>
27. Piersma TW, Bekkers R, Klinkenberg EF, et al. Individual, contextual and network characteristics of blood donors and non-donors: a systematic review of recent literature. *Blood Transfusion*. 2017;15(5):382. doi:10.2450/2017.0064-17
28. Buciuuniene I, Stonienė L, Blazevičienė A, et al. Blood donors' motivation and attitude to non-remunerated blood donation in Lithuania. *BMC Public Health*. 2006;6(1):166. doi:10.1186/1471-2458-6-166
29. Misje AH, Bosnes V, Gåsdaal O, et al. Motivation, recruitment, and retention of voluntary non-remunerated blood donors: a survey-based questionnaire study. *Vox Sanguinis*. 2005;89(4):236–44. doi:10.1111/j.1423-0410.2005.00706.x
30. Sojka BN, Sojka P. The blood donation experience: self-reported motives and obstacles for donating blood. *Vox Sanguinis*. 2008;94(1):56–63. doi:10.1111/j.1423-0410.2007.00990.x
31. Bani M, Strepparava MG. Motivation in Italian whole blood donors and the role of commitment. *Psychology, Health & Medicine*. 2011;16(6):641–649. doi:10.1080/13548506.2011.569731
32. Trimmel M, Lattacher H, Janda M. Voluntary whole-blood donors, and compensated platelet donors and plasma donors: Motivation to donate, altruism and aggression. *Transfusion and Apheresis Science*. 2005;33(2):147–155. doi:10.1016/j.transci.2005.03.011
33. Godin G, Germain M. How to motivate whole blood donors to become plasma donors. *Journal of Blood Transfusion*. 2014;2014:752182. doi:10.1155/2014/752182
34. Martín-Santana JD, Cabrera-Suárez MK, Deniz-Deniz MDLC, et al. Donor orientation and service quality: Key factors in active blood donors' satisfaction and loyalty. *PLoS One*. 2021;16(7):e0255112. doi:10.1371/journal.pone.0255112
35. Český červený kříž. Oceňování bezpříspěvkových dárců krve. 2024. Available from: <https://www.cervenkykriz.eu/ocenovani-darcu>
36. World Health Organization. Blood donor counselling: implementation guidelines. Geneva: World Health Organization; 2014. Chapter 4, Ethical and legal considerations in blood donor counselling. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK310579/>
37. Allan S. Donor identification. Victorian legislation gives rights to all donor-conceived people. *Family Matters*. 2016;(98):43–55. Available from: [https://aifs.gov.au/sites/default/files/fm98-sa\\_0.pdf](https://aifs.gov.au/sites/default/files/fm98-sa_0.pdf)
38. Technology Agency of the Czech Republic No. TL05000144. V4 – Recommendation on the method of compensation in relation to the donation of substances of human origin: Output of the research project TA CR TL05000144 – Quality and sustainability of the body part donation programme in the Czech Republic, 2021–2023. 2023. Available from: [https://www.zsf.jcu.cz/images/ZSF/veda-a-vyzkum/projekty/230710\\_doporuceni\\_zpusobu\\_vypoctu\\_kompenzaci\\_2023.pdf](https://www.zsf.jcu.cz/images/ZSF/veda-a-vyzkum/projekty/230710_doporuceni_zpusobu_vypoctu_kompenzaci_2023.pdf)
39. Technology Agency of the Czech Republic No. TL05000144. V5 – Strategy for recruiting living donors of body parts: Proposal of principles. Output of the research project TA CR TL05000144 – Quality and sustainability of the body part donation programme in the Czech Republic, 2021–2023. 2023. Available from: [https://www.zsf.jcu.cz/images/ZSF/veda-a-vyzkum/projekty/231031\\_23\\_letak\\_v5\\_strategie\\_tacr\\_kon.pdf](https://www.zsf.jcu.cz/images/ZSF/veda-a-vyzkum/projekty/231031_23_letak_v5_strategie_tacr_kon.pdf)