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## Honorary blood donations in urban and rural areas in Poland

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### Abstract

#### Aim

The main purpose of the study was to compare blood donation awareness among students residing in urban and rural areas.

#### Subject and methods

The research tool was an anonymous, original questionnaire designed for the purpose of the study. The questionnaire was distributed among 439 people. In the first stage, authors selected randomly two fields of study at Medical University of Warsaw. Next, three years of study were randomly selected in these two chosen fields.

#### Results

Nearly 40% of the students admitted that they have donated blood or other compounds. There is statistically significant relation ( $p=0.0000$ ,  $F_i=0.25$ ) between blood donation and place of residence of respondents. Students living in cities more seldom showed they have donated blood or other compound. The most common reason that impels students to donate blood is the desire to help another human being.

#### Conclusions

The level of students' knowledge about blood donations issue is not good enough. It is recommended to introduce intensive information campaigns about the need of blood donation, for example in the form of social campaigns.

**Key words:** blood donations, donor, blood transfusion, health promotion.

### Introduction

The idea of honorary blood donations is a perfect example of engaging society into helping patients. Everyone between 18-65 years old is allowed to be a donor, although the upper age limit for the first time donors is 60. The main condition qualifying for blood

donation is good state of health in general and a list of other criteria including so called temporary and permanent disqualification.

Within six years the number of donors increased systematically from 64995 in 2005 to 77,729 in 2011. The biggest group of donors are men in the age of 18-30. The number of this group's members has stayed at similar levels all the time. On the other hand the number of donors in the age of 46-66 fell from 8667 in 2005 to 7117 in 2011. The number of women in the age of 18-30 who donate blood rose from 8333 in 2005 to 11380 in 2011. The number of first time donors, despite the relevant rise from 27999 in 2005 to 30895 in 2007 stays presently on the same level of 26208. The number of auto transfusions systematically rises, probably because of the increasing patients' knowledge level in this subject. In 2011 there were 39 more auto transfusions performed than in 2005. Every year the number of paid donations falls down. It is probably caused by the present law regulations which do not allow to sell blood and whoever had this possibility are now probably too old or are permanently disqualified due to their diseases. Unfortunately with the rise of blood donors number, the number of temporary and permanent disqualifications also increases. There were 797 permanent disqualifications in 2005 and this number rose to 1582 in 2011. The number of permanent disqualifications among the first time donors was 604 in the year 2005. During the next years this number tripled but in 2011 it fell to 961. The number of temporarily disqualified donors has multiplied six times since 2005. In the beginning it was 3620 and in 2011 it reached the level of 20787 (<http://hdkkroplazycia.wordpress.com/grupy-krwi/> accessed 18.05.2013, 2014 Internal data of Regional Center for Blood Donation and Transfusion in Warsaw)

## Methods

The research tool was an anonymous, original questionnaire designed for the purpose of the study. The questionnaire was distributed among 439 people. Respondents were selected using multistage random sampling techniques. In the first stage, authors selected randomly two fields of studies at Medical University of Warsaw. Next, three years of study were randomly selected in these two chosen fields.

The respondents were 182 students accommodated in urban areas (169 women and 13 men in the age of 20-56) and 257 students accommodated in rural areas (175 women and 82 men in the age of 20-25). The questionnaire consisted of 18 questions concerning blood donations and was divided into two parts. The first part of the questions concerned the donation of blood by the respondents and the presence of a real need for blood among their family or friends, while the second part checked the level of knowledge of the respondents. Statistical analysis of gathered results was made with the use of STATISTICA v.10. Differences between two respondents groups (living in urban and rural areas) were verified by Chi2 Pearson's test and connection between variables was assessed using Fi quartered coefficient for 2x2 tables and chance quotient (OR, odds ratio). The statistically relevant results were taken for statistical significance factor  $p < 0.05$ .

## Results

Nearly 40% of students admitted that they have donated blood or other compounds. There is statistically significant relation ( $p=0.0000$ ,  $Fi=0.25$ ) between blood donation and place of residence of respondents. Students living in cities more seldom showed they have donated blood or other compound. (OR=0.32, 95% CI: 0.31-0.33) (Table 1).

Table 1. Have you ever donated blood or other compound?

Have you ever donated blood or other compound?	Number of respondents (N=439)	
	N (%)	
	Yes	No
<b>Urban area</b>	42 (23.0)	140 (77.0)
<b>Rural area</b>	123 (47.9)	134 (52.1)
<b>Summary</b>	165 (37.6)	274 (62.4)

Source: Original research

The most common reason that impels students to donate blood is the desire to help another human being. This type of motivation was shown by 100% of students accommodated in the city and 61% of students from the rural areas. 12 % of respondents from both groups have shown a desire for getting a badge and an ID authorising the unpaid use of public transport. None of the respondents indicated response 'exemption from classes " (Table 2).

Table 2. What has impelled you to blood donation? (multiple choice possibility, question for respondents who gave positive answer to the first question)

What has impelled you to blood donation?	Number of respondents (N=439)			
	N (%)			
	Desire to help another person	8 chokolate bars	Badge and an ID	exemption from classes
<b>Urban area</b>	182 (100.0)	35 (19.2)	22 (12.0)	0 (0.0)
<b>Rural area</b>	157 (61.0)	39 (15.2)	31 (12.1)	0 (0.0)
<b>Summary</b>	339 (77.2)	74 (16.9)	53 (12.1)	0 (0.0)

Source: Original research

The reason for which a part of respondents has never donated blood was lack of time, shown by 59% of respondents from urban areas and 32% of respondents from rural areas. A common response among students living in the cities was also underweig (20% of responses), and among students living in rural areas – the fear of the sight of blood (13% of people) (Table 3).

Table 3. What is the reason that you have never donated blood? (multiple choice possibility; question for respondents who gave negative answer to question number one)

What is the reason that you have never donated blood?	Number of respondents (N=439)							
	N (%)							
	Chronic diseases	Infectious diseases	Overseas travels	Underweig ht	Taken medicines	Lack of time	Fear of the sight of blood	Too little knowledge
<b>Urban area</b>	7 (3.8)	2 (1.1)	0 (0.0)	36 (19.8)	15 (8.2)	107 (58.8)	0 (0.0)	15 (8.2)
<b>Rural area</b>	23 (8.9)	26 (31.4)	3 (1.2)	39 (15.2)	46 (17.9)	82 (31.9)	33 (12.8)	26 (10.1)
<b>Summary</b>	30 (6.8)	28 (6.4)	3 (0.7)	75 (17.1)	61 (13.9)	189 (43.1)	33 (7.5)	41 (9.3)

Source: Original research

Students living in cities often indicated that they experienced a situation where they needed the blood of another man for medicinal purposes ( $p=0.0002$ ). Demand for blood was shown by 10% of students accommodated in urban areas and 2% of students accommodated in rural areas (Table 4).

Table 4. Have you ever experienced situation in which you needed another person's blood for medical purposes?

Have you ever experienced situation in which you needed another person's blood for medical purposes?	Number of respondents (N=439)		
	N (%)		
	Yes	No	I do not know
<b>Urban areas</b>	18 (9.9)	157 (86.2)	7 (3.9)
<b>Rural areas</b>	5 (1.9)	249 (97.0)	3 (1.1)
<b>Summary</b>	23 (5.2)	406 (92.5)	10 (2.3)

Source: Original research

Nearly 30% of students in both groups indicated that someone in their family or friends was in the need of blood of another person for medical purposes. Almost 70% of respondents from the cities and 60% of respondents from rural areas denied that any of their relatives has needed another person's blood for medical purposes. The answer „I do not know” was given by 2% of students from cities and 12% of students from rural areas.

There is statistically relevant relation between the place of accommodation and relation with people who are honorary blood donors. Students who live in rural areas more often admitted to relations with people who are donors. (Table 5)

Table 5. Have you any friends who are blood donors?

Do you have any friends who are blood donors?	Number of respondents (N=439)		
	N (%)		
	Yes	No	I do not know
<b>Urban areas</b>	113 (62.1)	53 (29.1)	16 (8.8)
<b>Rural areas</b>	193 (75.1)	36 (14.0)	28 (10.9)
<b>Summary</b>	306 (69.7)	89 (20.3)	44 (10.0)

Source: Original research

Students were asked what effect on the donor's health regular blood donation has. Given answers were the same among both respondents groups ( $p=0.5047$ ). About 70% of both respondents groups said that blood donations do not have any influence on health, 20% assessed this influence as positive and 10% as negative.

As the shortest interval between successive blood donations for women, students of both groups most often indicated the correct answer - 3 months (63% of students living in rural areas, 44% of students living in urban areas). There is a statistically significant relation

between the place of accommodation and giving the right answer ( $p=0.0000$ ,  $Fi=0.19$ ). Students living in the cities more seldom gave the right answer ( $OR=0.45$ , 95% CI: 0.44-0.46).

The relevant relation was also observed between respondents' place of accommodation and the answer to the question about the shortest interval between donations for men ( $p=0.0000$ ,  $Fi=0.21$ ). The correct answer (2 months) was given by 37% of students living in cities and 59% of students from rural areas ( $OR=0.41$ , 95% CI: 0.40-0.42).

Nearly 70% of students from the cities and 74% of students from rural areas have indicated a proper amount of full blood given during one donation (450ml). In this matter no statistically relevant relations between both groups were found ( $p=0.0700$ ).

A small group of respondents (36% of students living in the cities and 39% of rural areas residents) indicated a proper amount of full blood that has to be donated by a woman to get a 1<sup>st</sup> degree badge and ID of honorary blood donor which entitles to use unpaid public transport in Warsaw (15 litres). There was no statistically significant relation between given answers ( $p=0.4958$ ). A similar situation had place in the question about the amount of full blood that has to be donated by a man to get the 1<sup>st</sup> degree badge and ID of honorary blood donor that entitles to use unpaid public transport in Warsaw ( $p=0.7999$ ). The correct answer (18 litres) was given by 40% of students living in the cities and 39% of students from rural areas.

Students were asked if the necessary condition to donate blood is to be fasting before the procedure. There is statistically significant relation between answers given by students from both groups ( $p=0.0047$ ,  $Fi=0.13$ ). Students from cities almost twice as often as students from rural areas have given the correct answer ( $OR=1.90$ , 95% CI: 1.86-1.94). The incorrect answer was given by 32% of students accommodated in rural areas and 20% of students accommodated in urban areas.

Only every third respondent (33% of students from the cities, 29% of students from rural areas) gave the correct answer to the question about the upper age limit for donors (65 years). There were no statistically significant differences between both groups ( $p=0.3973$ ). Students accommodated in urban areas get their knowledge on donations from hospitals (63%), TV (52%), Internet (46%) and universities (47%). The main sources of knowledge for students accommodated in rural areas are friends (84%), Internet (79%), universities (71%) and the TV (66%) (Table 6).

Table 6. Where have you heard about blood donations? (multiple choice question)

Where have you heard about blood donations?	Number of respondents (N=439)						
	N (%)						
	Internet	TV	Press	Flyers	Hospital	University	Friends
Urban areas	84 (46.1)	95 (52.2)	73 (40.1)	33 (18.1)	115 (63.2)	86 (47.3)	78 (42.9)
Rural areas	203 (79.0)	170 (66.1)	116 (45.1)	85 (33.1)	90 (35.0)	182 (70.8)	216 (84.0)
Summary	287 (84.5)	265 (60.4)	189 (43.1)	118 (26.9)	205 (46.7)	268 (61.0)	294 (67.0)

Source: Original research

The majority of students think that the media show too little information about honorary blood donations. There is a statistically significant difference between the answer given to the question about providing this type of information by the media and a place of respondent's residence ( $p=0.0000$ ). Students from rural areas have more often indicated, that a need of honorary blood donations is not published enough in media (the summary of answers "probably not" and "definitely not") (Table 7).

Table 7. Do you think that the need for blood donations is well publicized in the media?

Do you think that the need for blood donations is well publicized in the media?	Number of respondents (N=439)				
	N (%)				
	Definitely yes	Probably yes	Probably not	Definitely not	I do not know
<b>Urban areas</b>	24 (13.2)	44 (24.2)	60 (33.0)	49 (26.9)	5 (2.7)
<b>Rural areas</b>	8 (3.1)	57 (22.2)	129 (50.2)	46 (17.9)	17 (6.6)
<b>Summary</b>	32 (7.3)	101 (23.0)	189 (43.1)	95 (21.6)	22 (5.0)

Source: Original research

## Discussion

The analysis of material needed to lead a discussion has shown relevant deficiencies in literature of discussed subject range. It can be concluded that the number of studies on the problem of blood donation is far too small and it would be recommended to conduct intensive research in this area.

Results of the research have shown relevant deficiencies in the level of knowledge about blood donations and also a small number of donors among students. We should focus especially on the clear difference in the number of correct answers taking the criteria of accommodation place. It seems to be surprising that residents of rural areas who can possibly have a limited access to information on daily basis – for example to social campaigns on billboards, have better knowledge about blood donations. You could have assumed, that cities residents will have a relevant advantage, although after the research, completely different conclusions have risen. Also interesting is the fact that in rural areas there are more people who at least once donated blood or its component even though it might seem that urban residents are more aware of the need for blood donation and have better possibilities for donating it. Facing the impossibility of getting to the researches necessary to lead the discussion in classic form, the authors appealed to the available researches.

Although it should be noted that studies show that the best results in informing and recruiting new blood donors have persons who already are donors (Nilsson Sojka, Sojka 2008).

The questionnaire provided by students of the 3rd year of sociology about the attitude of donors towards blood donations issue and a questionnaire led by the Virtual Magazine of Nurse and Midwife among students of nursing at Public Medical Higher Vocational School in Opole make you reflect and compare results with the results of this original research.. In both questionnaires the most common answer to the question about the main motivation for blood donors was the wish to help another person: cities residents – 100%, rural areas residents – 60% of answers. In the questionnaire of sociology students 10,99% of answers was the will to help the person they know and 71.98% to help the person they do not know and in the questionnaire of the Virtual Magazine this is the answer given by 71% of respondents. Also the answers to the question about the situation, when someone related to the respondent was in need of blood transfusion were similar and it is 29% for the cities and 26.37% for rural areas. The question about the blood donors among the respondents' families and friends show that the urban and rural areas residents know more donors than the other studies show. This is respectively 62% and 75% in opposition to the very low number of 37.91%. The difference may be caused by differently formed questions. In this original research the respondents were asked about the relation with donors not only from their families but also among friends. The important questions are those about the familiarity with social campaigns and the evaluation of their effectiveness. Respondents from this original research and the respondents who were sociology students gave very similar answers (respectively 33% and 50%) which were that the effectiveness of the blood donations promoting campaigns are not good enough. Students of nursing from PMWSZ, who do not donate blood, have other reasons than nursing students of the author's questionnaire. The most common answer given to the question about the reason for not donating blood by the urban residents is the lack of time – 59% (32 people) which contrasts sharply with answers of respondents from PMWSZ, where this answer was given only by one person from the group of 85. The questionnaire led by Virtual Magazine confirmed the author's observations about the knowledge level of nursing students. Results of this questionnaire say that the concerns about blood donations among students are the result of low subject knowledge (<http://www.ankietka.pl/wyniki-badania/51730/krwiodawstwo.html> accessed 17.05.2013, [http://www.nursing.com.pl/Kształcenie\\_Co\\_studenci\\_wiedz\\_o\\_krwiodawstwie\\_35.html](http://www.nursing.com.pl/Kształcenie_Co_studenci_wiedz_o_krwiodawstwie_35.html) accessed 21.05.2013).

Studies show that people often do not know the criteria for becoming a blood donor or contraindications (Beal, van Aken 1992).

Worth emphasizing is also the fact that the WHO attaches great importance to the promotion of unpaid donation of blood by, for example, emphasizing the issueduring a World Health Day (WHA58.13. *Proposal to establish World Blood Donor Day*. Fifty-Eighth World Health Assembly, Geneva, 16–25 May 2005. Geneva, World Health Organization, 2005)WHA A58/38. *Proposal for establishment of World Blood Donor Day. Report by the Secretariat*. Fifty-Eighth World Health Assembly, Geneva, 16–25 May 2005. Geneva, World Health Organization, 2005)

It should also note on the cultural dimension of unpaid donation of blood. In some countries, blood donor who is a family member is better seen than a non related person. This is due to the belief in lower risk of transfusion-transmissible infection (Al-Drees, 2008).

## Conclusions

1. The level of students' knowledge about blood donations issue is not good enough; it is recommended to introduce intensive information campaigns about the need of blood donations, for example in the form of social campaigns.
2. The low number of blood donors is the result of lack of time, so it seems to be right to organize outbound blood donations actions more often.

3. Social campaigns, even though there are a lot of them, do not appeal to the society, it would be proper to search for new ways of honorary blood donations promotion.

## References

Al-Drees AM. Attitude, belief and knowledge about blood donation and transfusion in Saudi population (2008), *Pak J Med Sci* 24 (1):74–79

Beal R, van Aken WG. Gift or good? (1992) contemporary examination of the voluntary and commercial aspects of blood donation. *Vox Sang*, 63:1–5

[hdkkroplazycia.wordpress.com/grupy-krwi/](http://hdkkroplazycia.wordpress.com/grupy-krwi/) accessed 18.05.2013

Internal data of Regional Center for Blood Donation and Transfusion in Warsaw, 2013

Nilsson Sojka B, Sojka P. The blood donation experience: self-reported motives and obstacles for donating blood (2008) *Vox Sang*, 94:56–63

WHA58.13. *Proposal to establish World Blood Donor Day*. Fifty-Eighth World Health Assembly, Geneva, 16–25 May 2005. Geneva, World Health Organization, 2005

WHA A58/38. *Proposal for establishment of World Blood Donor Day. Report by the Secretariat*. Fifty-Eighth World Health Assembly, Geneva, 16–25 May 2005. Geneva, World Health Organization, 2005

[www.ankietka.pl/wyniki-badania/51730/krwiodawstwo.html](http://www.ankietka.pl/wyniki-badania/51730/krwiodawstwo.html) accessed 17.05.2013

[www.nursing.com.pl/Kształcenie\\_Co\\_studenci\\_wiedz\\_o\\_krwiodawstwie\\_35.html](http://www.nursing.com.pl/Kształcenie_Co_studenci_wiedz_o_krwiodawstwie_35.html) accessed 21.05.2013

## Author Statement

The authors declare that they have no conflict of interest