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The level of education as a determinant of awareness in the field of organs transplantation in the selected populations

Poziom wykształcenia jako czynnik determinujący świadomość z zakresu transplantacji narządów w wybranych populacjach

Summary

Transplantation is a procedure of cells, tissues or organs transfer within a single or between two bodies. The main problem of transplant medicine is a shortage of organs both in Poland and Europe that may be caused by the lack of people awareness in the field of transplantation related issues. The purpose of this study is to assess the knowledge of investigated population on this topic and also the attempt to answer the question: has the level of education an impact on respondents' awareness in the field of organs transplantation? Author's questionnaire contains 31 questions and was conducted in a group of 800 people living in the Province of Opole, Silesia and Lower Silesia. It was found that the level of respondents' knowledge on organs transplantation is satisfactory as well as the level of education affects to a statistically significant extend the respondents' knowledge. The higher the education, the greater awareness on the issues related to organs transplantation.

Keywords: transplantation, organ donor, education, awareness

Streszczenie

Transplantacja jest zabiegiem przeniesienia komórek, tkanek lub narządów w obrębie jednego organizmu lub między dwoma organizmami. Głównym problemem medycyny transplantacyjnej jest niedobór narządów występujący zarówno w Polsce, jak i w Europie, czego powodem może być brak świadomości społeczeństwa z zakresu zagadnień związanych z przeszczepianiem narządów. Celem pracy jest ocena wiedzy badanej populacji z zakresu transplantacji narządów oraz próba odpowiedzi na pytanie, czy poziom wykształcenia ma wpływ na świadomość ankietowanych w zakresie przeszczepiania narządów. Autorski kwestionariusz zawierający 31 pytań przeprowadzono w grupie 800 osób

zamieszkałych w województwie opolskim, śląskim oraz dolnośląskim. Ustalono, że poziom wiedzy respondentów z zakresu transplantacji narządów jest zadowalający oraz, że poziom wykształcenia w statystycznie istotny sposób wpływa na wiedzę respondentów z zakresu przeszczepiania organów. Im wyższe wykształcenie tym większa świadomość z zakresu zagadnień związanych z transplantacją narządów.

Słowa kluczowe: transplantacja, dawca narządów, wykształcenie, świadomość

Introduction

In Poland one person dies every five days waiting for organ donor. The reason of death is not the lack of treatment but a low number of organs for transplants. One donor can save the lives of up to four people and make next four longer. The number of transplants around the world is growing every year but the awareness of people is still very low. The term transplantation means the transfer of cells, tissues or organs within a single or between two bodies. Transplantation is an intensively expanding part of medicine which creates a unique opportunity to avoid death and allows millions of patients to live without the burden of chronic disease (Noszczyk, 2004).

The level of education is one of the most important factors in the development of human capital. The results of many epidemiological studies have proved that education is an important determinant of health as well as health related awareness and behavior. Although transplantation - as a field of medicine - is safe, effective and sometimes the only way to treat patients with end-stage organ failure, it faces many problems (Enderle, 2002). Its main problem is a shortage of organs that occurs both in Poland and Europe. The reason for that may be a lack of people awareness on issues associated with transplantation. Considering the size of problem which is a low number of transplanted organs it appears necessary to assess the knowledge in this field of the selected population (Rowinski, 2004).

People's attitude towards organs transplantation in Poland has been regularly monitored for several years. Numerous studies among adults on people's attitude towards organ transplant from a deceased person have been already performed.

Materials and methods

The survey was conducted among a random sample of people, age 18 to 65, living in the Province of Opole, Silesia and Lower Silesia. Research group consisted of 800 people, 522 women and 278 men, with the average age of 29.3 years. Participation in the study was completely voluntary and anonymous.

The research tool used in the study was the author's questionnaire containing 31 questions. The assessment of correlation in statistical analyzes was performed by chi-square test. All analyzes were made at a statistical significance level of $p=0.05$. To assess the correlation strength a V-Cramer measure was calculated. For each statistic a number of degrees of freedom and the level of statistical significance "p" - calculated for each chi-square test, were given. If the character * stands by the level of significance, it means that for one degree of freedom a chi-square statistic with Yates' correction was calculated, which is a necessary condition for one degree of freedom.

Results

The majority of study population were women (65%) (Fig. 1).

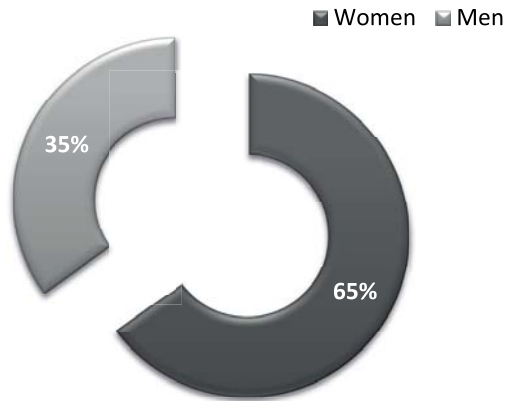


Fig. 1. Sex of respondents.
(Source: own research)

The major part of the study group were people aged 18-30 (71%). Nineteen percent of respondents were 31-45 years old. The smallest group consisted of people over 45 years of age (10%) (Fig. 2).

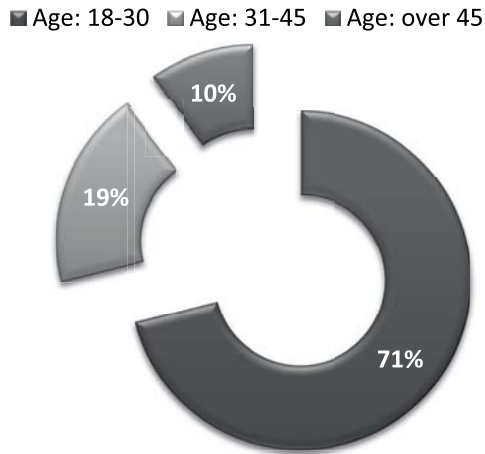


Fig. 2. Age of respondents.
(Source: own research)

Dominant group of respondents were people with secondary (45%) and higher education (40%). Vocational education was declared by 8% while primary education by 7% of respondents (Fig. 3).

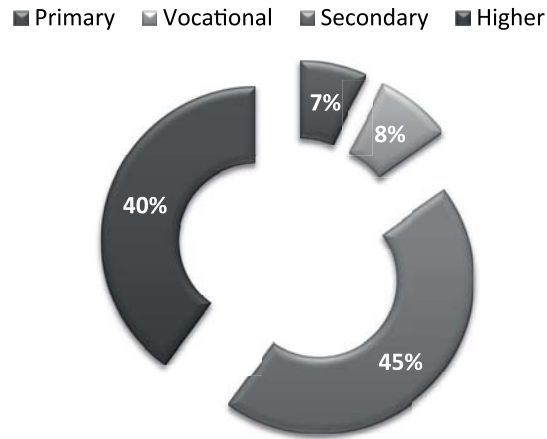


Fig. 3. Education of respondents.
(Source: own research)

The most of respondents (91%) know what the organs transplantation is. They are also able to give a correct definition of this term (Fig. 4).

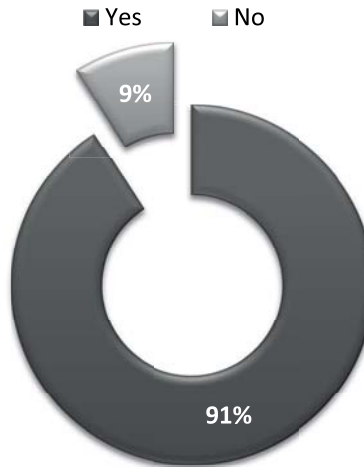


Fig. 4. Respondents' answer to the question: Do you know what the organs transplantation is?
(Source: own research)

Statistically relevant correlations

In a question: Do you know what the organs transplantation is? a statistically relevant correlation between the answer and a level of education was found. With the growth of education level we observe an increase of the correct answer to the above mentioned

question (Chi-square = 25.148 df=3, p<0.001 V=0.177) (Tab.1).

Tab. 1. Do you know what the organs transplantation is? * Education

			Education				Total
			Primary	Vocational	Secondary	Higher	
Do you know what the organs transplantation is?	Yes	% with education	86.2%	76.1%	90.2%	95.0%	90.6%
	No	% with education	13.8%	23.9%	9.8%	5.0%	9.4%
Total		% with education	100.0%	100.0%	100.0%	100.0%	100.0%

(Source: own research)

Transplantation of organs from living donors.

Nearly 40% of respondents believe that both kidneys, the entire liver, heart and both lungs can be transplanted from a living person. 51% of respondents know that in ex vivo transplant one kidney, part of the liver or lobe of a lung is taken. 11% of respondents have no knowledge in this field (Fig. 5).

- Kidney, part of the liver, lobe of the lung
- Both kidneys, entire liver, heart and both lungs
- I don't know

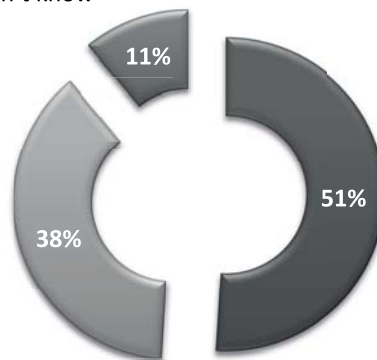


Fig. 5. Respondents' answer to the question: What kind of organs can be transplanted from a living person?

(Source: own research)

Statistically relevant correlation

In a question: What organs can be transplanted from a living person? a statistically relevant correlation between the answer and a level of education was found. With the growth of education level we observe an increase of the correct answer to the above

mentioned question (Chi-square = 26.359 df=6, p<0.001, V=0.182) (Tab.2).

Tab. 2. What organs can be transplanted from a living person? * Education

			Education				Total
			Primary	Vocational	Secondary	Higher	
What organs can be transplanted from a living person?	one kidney, part of the liver, lobe of the lung	% with education	41.4%	31.3%	49.7%	58.0%	50.9%
	kidneys, liver, heart, lungs	% with education	53.4%	47.8%	39.9%	31.7%	38.3%
	I don't know	% with education	5.2%	20.9%	10.4%	10.3%	10.9%
Total		% with education	100.0%	100.0%	100.0%	100.0%	100.0%

(Source: own research)

Cancer vs organ transplantation

■ Can't be a donor ■ Can be a donor ■ I don't know

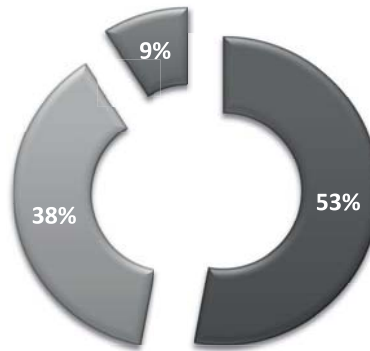


Fig. 6. Respondents' answer to the question: Do you think that a person with cancer can be an organ donor ? (

Source: own research)

The majority of respondents (53%) know that cancer is an absolute contraindication to being an organ donor while 38% of them are of the opposite opinion, 9% of respondents were not able to answer the above question (Fig. 6).

Statistically relevant correlation

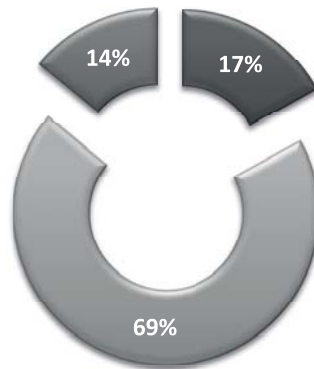
In a question: Do you think that a person with cancer can be an organ donor? no statistically significant correlation between the answer and a level of education was found (Chi-square = 7.440, df=6, p=0.282, V=0.096).

HIV, HCV vs organ transplantation

The most of respondents (69%) believe that HIV or HCV infected person can be an organ donor for transplantation. The correct response in this regard was given by 17% of them who indicated that HIV or HCV infection is an absolute contraindication to being a donor.

Lack of knowledge in this field was declared by 14% of respondents (Fig. 7)

■ Can't be a donor ■ Can be a donor ■ I don't know



Statistically relevant correlation

In question: Do you think that a HIV or HCV infected person can be an organ donor? no statistically significant correlation between the answer and a level of education was found (Chi-square = 9.670, df=6, p=0.139, V=0.110).

Declaration of will

The majority of respondents (55%) can correctly define the term of declaration of will. Frequently reported definitions are:

- „written consent for organ donation after death”
- „written consent for own organ donation after death in order to transplant them to those who need it”
- „a personal statement on agreement for organ donation after death” 45% of respondents declare a lack of knowledge in this field (Fig. 8).

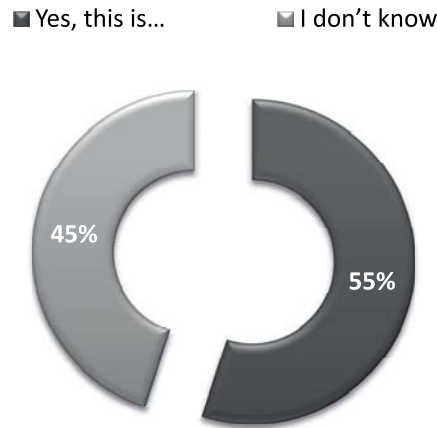


Fig. 8. Respondents' answer to the question: Do you know what the declaration of will is ?
(Source: own research)

Statistically relevant correlation

Tab. 3 Do you know what the declaration of will is? * Education

			Education				Total
			Primary	Vocational	Secondary	Higher	
Do you know what the declaration of will is?	Yes, this is ...	% with education	37.9%	16.4%	55.1%	67.1%	55.4%
	I don't know	% with education	62.1%	83.6%	44.9%	32.9%	44.6%
Total		% with education	100.0%	100.0%	100.0%	100.0%	100.0%

(Source: own research)

In a question: Do you know what the declaration of will is? a statistically significant correlation between the answer and a level of education was found. People with higher education (67,1%) more often than those with secondary, vocational and primary education could give the correct definition of this term (Chi-square = 66.006, df=3, p<0.001, V=0.287) (Tab. 3).

The objection to organ donation after death.

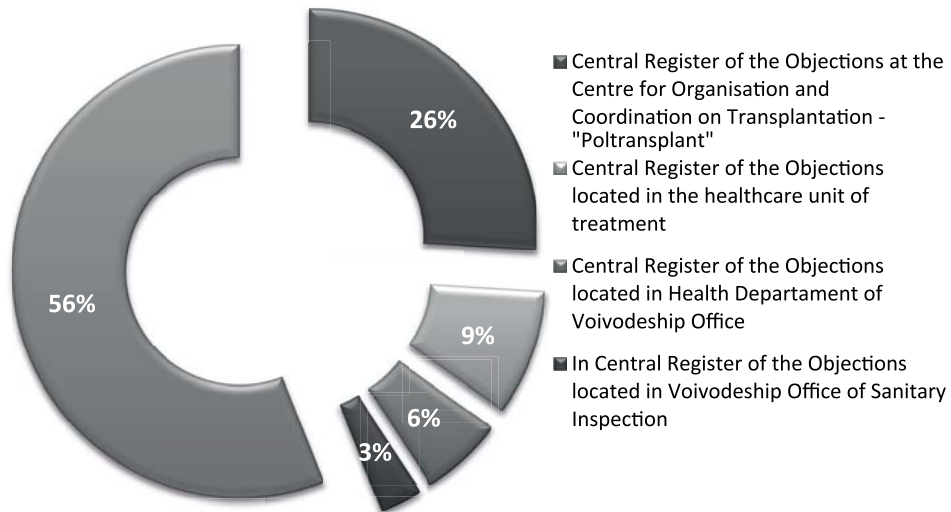


Fig. 9. Respondents' answer to the question: Where can you report the objection to organ donation? (Source: own research)

The most of respondents (56%) don't know where they can report an objection to organ donation in case of their death, 26% of them gave a correct answer saying that this objection is reported to the Central Register of the Objections at the Centre for Organisation and Coordination on Transplantation - "Poltransplant", but 9% of respondents wrongly believe that the objection to organ donation shall be notified to the Central Register of the Objections located in the healthcare unit of their treatment (Fig. 9.)

Statistically relevant correlation

In a question: Where can you express an objection to organ donation? a statistically significant correlation between the answer and a level of education was found. Respondents with vocational education more often than other people admitted lack of knowledge in this field (Chi-square = 74.817, df=12, $p < 0.001$ $V = 0.306$) (Tab. 4).

Tab. 4. Where do you think you can express an objection to organ donation? * Education

			Education				Total
			Primary	Vocational	Secondary	Higher	
Where do you think you can express an objection to organ donation?	In Central Register of the Objections located in Health Department of Voivodeship Office	% with education	5.2%	1.5%	7.3%	6.3%	6.3%
	In Central Register of the Objections located in Voivodeship Office of Sanitary Inspection	% with education	5.2%	3.0%	2.8%	1.9%	2.6%
	In Central Register of the Objections at the Centre for Organisation and Coordination on Transplantation	% with education	10.3%	6.0%	20.2%	39.8%	26.1%
	In Central Register of the Objections located in the healthcare unit of their treatment	% with education	6.9%	4.5%	11.0%	8.8%	9.3%
	I don't know	% with education	72.4%	85.1%	58.7%	43.3%	55.8%
	Total	% with education	100.0%	100.0%	100.0%	100.0%	100.0%

(Source: own research)

Financial compensation for organ donation

The majority of respondents (55%) gave the correct answer to the question: Do you think that financial compensation for organs donation in Poland is legal? They indicated that it is not in accordance with the Polish law. With regard to 36% of respondents a lack of knowledge on that issue was reported, 9% of respondents indicated the wrong answer saying that financial compensation for organs donation in Poland is a lawful practice (Fig. 10).

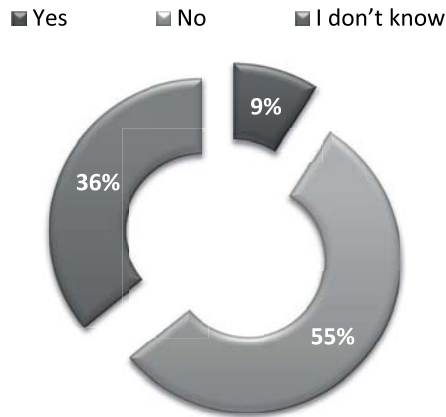


Fig. 10. Respondents' answer to the question: Do you think that financial compensation for organs donation is a lawful practice in Poland? (Source: own research)

Statistically relevant correlation

In a question: Do you think that financial compensation for organs donation for the purpose of transplantation is a legal practice in Poland? a statistically significant correlation between the answer and a level of education was found. Respondents with higher education could most often answer correctly (Chi-square = 27.569, df=6, p<0.001, V=0.186) (Tab. 5).

Tab. 5 Do you think that financial compensation for organs donation for the purpose of transplantation is a legal practice in Poland? * Education

			Education				Total
			Primary	Vocational	Secondary	Higher	
Do you think that financial compensation for organs donation for the purpose of transplantation is a legal practice in Poland?	Yes	% with education	20.7%	9.0%	7.3%	7.5%	8.5%
	No	% with education	34.5%	40.3%	55.9%	61.1%	55.1%
	I don't know	% with education	44.8%	50.7%	36.8%	31.3%	36.4%
Total		% with education	100.0%	100.0%	100.0%	100.0%	100.0%

(Source: own research)

Knowledge on legislation in the field of organs transplantation

The majority of respondents (76%) don't know the legal regulations on organ transplantation while 24% of them admitted to be familiar with this law (Fig. 11).

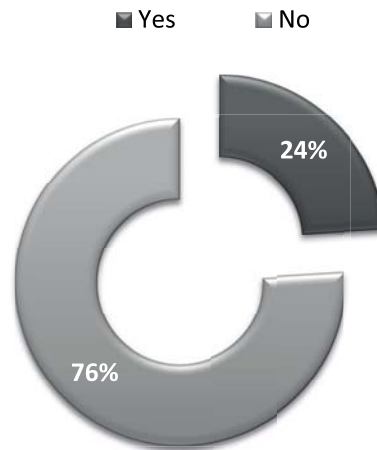


Fig. 11. Respondents' answer to the question: Do you know the Polish law on organs transplantation ?
(Source: own research)

Statistically relevant correlation

In a question: Do you know the Polish law on organs transplantation? a statistically significant correlation between the answer and a level of education was not found (Chi-square = 6.279, df=3, p=0.099 V=0.089).

The law on organs transplantation

Knowledge on the transplantation law was reported by 28% of the respondents who pointed out a presumed consent – no objection during life – as a requirement for organ donation, 29% of those who declared knowledge on this legislation gave wrong answer saying that no objection during life and family's consent enable organ transplantation. Twenty two percent of respondents believe that the necessary condition for taking organs from deceased person is his consent during life. Wrong answer was given also by 17% of respondents who said that taking organs from deceased person requires a consent of potential donor during his life and family's agreement after his death as well, 4% of questionnaires who declared earlier the knowledge on transplantation law also answered poorly as they indicated that according to this law a consent of family members of the deceased is the only condition for taking organs.

Statistically relevant correlation

In a question: What are in your opinion legal provisions on organs removal from the deceased person in Poland? a statistically significant correlation between the answer and a level of education was not found (Chi-square = 6.279, df=3, p=0.099, V=0.089).

Discussion

Transplantation medicine, as no other medical specialty, faces a number of very difficult moral, ethical and legal problems. In many countries, including Poland, there is still a big resistance to organ donation for transplant. The main problems of

transplantology in this country are a little willingness to donate organs after death, as well as opposition of family of deceased persons. Although the second one is not legally binding, it is usually the reason why physicians resign to take organs. Is it the result of a lack of awareness that human, who agrees to donate organ after his death, proves Christian charity that saves the lives of others? (Osiecki J., Religia Z., 2009).

The term transplantation means a method of treatment in which a surgical transfer of tissue or organ to the human body cavity is performed. The vast majority of respondents (91%) gave the correct definition of organ transplantation. People with higher education, more often than other people, show their knowledge on this issue.

Organs for transplant can be obtained from a deceased or living donor. In second case, the recipient is usually a relative of donor. The most often transplanted organs are:

- kidney
- lung lobe
- part of a liver

According to research on transplantation procedures, performed by Szczepanski and Pawlica, 72% of respondents don't know which organs can be transplanted. The survey showed that the majority of respondents correctly indicated that a living person can be a donor of a kidney, part of the liver and lung lobe. Definitely better knowledge in this field have residents of cities with a population over 50 thousand people and those with higher education. 38% of respondents believe that a living person can donate both kidneys, entire liver, heart and lungs that is considered as unacceptable. In this matter a question may arise: does the answer of 306 respondents comes from their distraction or from their belief that it is acceptable to take from a living person also a heart, kidneys and both lungs (Pawlica B., Szczepański M., 2003).

The donor must be of high health condition. There are many contraindications to the organ transplantation, such as the majority of cancer diseases and virus infections. Absolute contraindication is the presence of a malignant tumor with the exception of primary brain tumor, basal cell carcinoma and cervical cancer "in situ". The majority of respondents know that cancer is an absolute contraindication to being an organ donor; women are more aware of this. However 305 of them think that a person with cancer can donate his organ for transplantation. Absolute prohibition on organs removal for transplantation concerns HIV-positive individuals at high risk of AIDS infection, HBV-positive persons in case of recipient not infected with HBV as well as HCV-positive persons in case of recipient not infected with HCV. 551 people of the study group said that HIV-positive or HCV-positive person can be a donor. 14% of the respondents declared lack of knowledge in this field. Only 136 people are aware that a person infected with HIV or HCV can't donate organs for transplant.

The growing problem of current transplantation in Poland is trade of human organs by so-called paid donors. Advertisements for sale of human organs can be more frequently found in internet. Prices range from a few to tens of thousands of polish zloty (PLN). People increasingly offer to sell every internal organ without which a man can live on. The main reason of these activities are financial problems. Organ donors don't reflect on the possible consequences of the surgery and criminal responsibility. All international organizations (World Health Organization, Council of Europe, European Parliament), governments of

most countries as well as medical and scientific associations unanimously condemn organ donation for money and any attempts to trade them. Polish law explicitly prohibits not only organ donation for money, but also all advertising and brokering activities. Most respondents had knowledge in this field - 441 people found that organ trafficking is in Poland illegal. Lack of knowledge on this topic was declared by 36% respondents while 9% of them are convinced about the admissibility of organ donation due to material benefits.

The issue of transplantation is regulated in Poland by the Law of 1. July 2005 on preservation, storage and transplantation of cells, tissues and organs. According to this Law a legal permission for taking cells, tissues, organs from the deceased exists if this person didn't express an objection during life. However, because of ethical considerations and customs, doctors feel the need to inform family about their intention to take organs from their deceased relative.

The logic of solution on so called presumption of consent is based on the assumption that no objection is understood as the acceptance for taking an organ. Survey performed by Public Opinion Research Center (CBOS) proves that three-fifths of Poles (60%) don't know the law on organ donation existing in their country. One in four (24% - 7 points less than in 2005) incorrectly indicates that it is a rule that requires active consent, and only one in six (16% - 6 points more than in 2005) responds correctly saying that it is a principle of presumed consent. Similar results were presented by Pawlica and Szczepanski in their research which shows that 70% of respondents have no knowledge on the transplantation law (230) (Act 2005). On the basis of this study it can be concluded that 76% of respondents don't know the law on organ transplantation. Knowledge in this field was declared by 24% of persons surveyed. Among those declaring this knowledge only 28% of them indicated presumed consent as a condition for taking organs from deceased persons. 29% are convinced that the condition for removal of organs from deceased person is no objection of potential donor during his life and a consent of family after his death.

The declaration of will is an information document in which an adult declares a will to donate organs, tissues or cells for the purpose of transplantation in case of his death. The CBOS research shows that less than half of the respondents (45%) have heard on the declaration of will while slightly more (52%) didn't come in contact with information on this issue. Knowledge on the existence of such written declaration depends on education – better educated respondents have heard more often about it. The study showed that more than half of the respondents (55%) know what a declaration of will is and can give a correct definition of this term. Reason for the changes that have occurred in this field, in comparison to a study conducted by CBOS, may be a great interest of media on organ transplantation that has led to many actions promoting transplantation in society (CBOS Report, 2011).

According to Polish law, expressing opposition to organ donation need to be reported to the Central Register of the Objections at the Centre for Organisation and Coordination on Transplantation located in Warsaw. Szczepanski and Pawlica study shows that 70% of respondents don't know about the existence of this Register. Similar conclusions can be made on the basis of our research. More than a half of respondents (56%) don't know where to report an objection to organ donation in case of their death. Persons with vocational education and living in cities with up to 50 thousand inhabitants have minimal knowledge in this field (Pawlica B., Szczepański M., 2003).

Conclusions

- The level of respondents' knowledge on organs transplantation is satisfactory
- The level of education has a statistically significant impact on respondents' knowledge in the field of organs transplantation. The higher the education, the greater awareness on issues related to organs transplantation.

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