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Has Poland already overcome a resistance to transplantation? Public opinion about organ transplantation.

Czy w Polsce pokonano już niechęć do transplantacji? Opinie społeczne dotyczące przeszczepiania organów.

Summary

Transplantation is a very important and rapidly growing part of medicine that can save or prolong the patient's life or improve its quality. Public awareness and approval for organ transplantation in Poland is increasing. However the removal of organs from deceased still doesn't work well enough.

The aim of the study was to investigate the social aspect of transplantation (attempt to explore the main factors determining the opinion of people surveyed on organ transplantation).

A survey was conducted among residents of three provinces: Opole, Silesia and Lower Silesia. The study involved 800 people, age 18-70, with the average age of 29.3 years. The assessment of correlation in statistical analyzes was performed by chi-square test (χ^2) at a significance level of $p=0.05$.

The largest group were people aged 18-30, residents of large cities with secondary or higher education, Roman Catholics. Over 80% of respondents are proponents of transplantation, but only 67.1% declare a willingness to donate organs after death. A statistically relevant correlation between gender and place of respondents' residence and their attitude toward transplantation was found. Women and people living in cities with more than 50.000 inhabitants reported more often acceptance for organ transplantation. The research proved that age doesn't affect the attitude toward transplantation. The main reason for opponents of organ transplantation was a lack of confidence to the doctors involved in medical procedure of organ transplantation (67% of opponents).

The results of this study are similar to the extensive research conducted by Public Opinion Research Center (CBOS). A growing social acceptance for transplantation medicine is observed every year in Poland. Unfortunately the number of people who need an organ transplant is also growing. In 2012 in Poland only 50% of

people waiting for a kidney or liver transplant received this organ. The reason for the insufficient number of transplants is a low number of organ donors. The Poltransplant Report shows that nearly one in ten potential donor is excluded because of family or prosecutors opposition or their own beliefs. On one hand there is a general acceptance and declaration for organ donation, but on the other - a number of concerns surrounding those who will face the possibility of organ donation to the people who need it.

It was found that gender and place of residence are factors that largely determine the attitude of people toward transplantation.

Keywords: transplantation, public opinion

Streszczenie

Transplantologia jest bardzo ważną, dynamicznie rozwijającą się dziedziną medycyny, która pozwala ratować, przedłużyć życie pacjenta lub poprawić jego jakość. W Polsce wzrasta świadomość społeczna i aprobatą do przeszczepiania narządów, ale z różnych powodów pobieranie narządów od zmarłych nie funkcjonuje wystarczająco skutecznie.

Celem badania było poznanie społecznego aspektu transplantacji (próba poznania głównych czynników determinujących przekonania badanej zbiorowości osób odnośnie transplantacji narządów).

Badanie ankietowe (metodą sondażową) zostało przeprowadzone wśród mieszkańców 3 województw: opolskiego, dolnośląskiego i śląskiego. Badaniem objęto grupę 800 osób w wieku od 18 do 70 roku życia, a średnia wieku badanych wyniosła 29,3 lat. W analizach statystycznych do oceny zależności wykorzystano test chi-kwadrat (χ^2), na poziomie istotności $p=0.05$.

Najliczniejszą grupę stanowiły osoby znajdujące się w przedziale wiekowy od 18 do 30 lat, mieszkańcy dużych miast, z średnim bądź wyższym wykształceniem, wyznania rzymsko-katolickiego. Ponad 80% respondentów jest zwolennikiem transplantacji, ale jedynie 67,1% deklaruje chęć swoich oddania organów po śmierci. Stwierdzono istotną statystycznie zależność pomiędzy płcią i miejscem zamieszkania respondentów a postawą wobec transplantacji. Kobiety i osoby zamieszkujące miasta powyżej 50 tys. mieszkańców częściej deklarowały akceptację dla przeszczepiania narządów. W wyniku badań okazało się, iż wiek nie wpływa na postawę wobec transplantacji. Spośród przeciwników transplantacji narządów 67% ankietowanych jako powód podaje brak zaufania do lekarzy zajmujących się transplantacją organów.

Wyniki niniejszej pracy są zbliżone do obszernego badania przeprowadzonego w tym zakresie przez CBOS, z każdym rokiem w Polsce wzrasta społeczna akceptacja medycyny transplantacyjnej. Niestety, liczba osób wymagających przeszczepu również stale rośnie. W Polsce tylko 50% osób oczekujących na przeszczep nerki lub wątroby w 2012 roku dostało ten narząd. Powodem niewystarczającej liczby operacji jest niska liczba dawców organów. Ze sprawozdania Poltransplantu wynika, iż prawie co dziesiąty potencjalny dawca jest wykluczony z powodu sprzeciwu rodziny, prokuratury czy własnych zastrzeżeń. Z jednej strony mamy powszechną akceptację i deklarację gotowości oddania narządu, z drugiej – szereg obaw towarzyszących osobom, które staną przed możliwością oddania narządu potrzebującym.

Stwierdzono iż płeć i miejsce zamieszkania należą do czynników w dużej mierze determinujących postawę osób wobec transplantacji.

Słowa kluczowe: transplantacja, opinia społeczna,

Introduction

Transplantation is a very important and rapidly growing field of science which requires profound interest and understanding of the transplant (Scisło *et al*, 2013). It involves a transplant of organs from a living or deceased donors (Noszczyk, 2004) that allows to save or prolong patient's life or improve its quality (Rowiński *et al*, 2004). It is connected with a number of ethical problems. With the increase of awareness and adaptation to this relatively new method of treatment, fears and concerns on organ transplants should be gradually reduced. Organ transplants performed in order to save the life or health are in Poland almost commonly approved. Public Opinion Research Centre (CBOS 2012) conducts research in the field since 1994 and already then more than 80% of adults surveyed expressed their support for the transplantation of organs from deceased persons. In 2011 that figure amounted to 96%. However, for some reasons, taking organs from deceased doesn't work well enough. On one hand, it may be caused by defective medical or organizational procedures at hospitals, on the other hand the objection of family is still a real problem. It is not legally binding but in practice it is the reason why physicians resign to remove organs. (CBOS 2012)

Aim of the study

The aim of the study was to investigate the opinion of respondents on transplantation and to answer the question: Do factors such as age, gender and place of residence have an impact on the opinion in the field of organ transplantation?

Materials and methods

The survey was conducted among residents of provinces: Opole, Silesia and Lower Silesia. It was aimed at people aged 18-70 (average age of a total study population - 29.3 years). Research group consisted of 800 people, 522 women and 278 men. Participation in the study was completely voluntary and anonymous. Method performed in this research was a survey. Author's anonymous questionnaire containing 31 questions was used.

The assessment of correlation in statistical analyzes was performed using chi-square test (χ^2) at a significance level of $p=0.05$. To assess the correlation strength a V-Cramer measure was calculated that showed a moderate value. Furthermore, for each statistic a number of degrees of freedom and the level of statistical significance "p" - calculated for each χ^2 test, were given.

Results

The vast majority of the respondents of the study group were women. People surveyed were of age 18-70 but the major part of respondents were those aged 18-30. Dominant group of respondents were citizens of big cities with secondary or higher education. Vast majority of surveyed declared to be Roman Catholics, and the division of them in terms of marital status was almost equal. Detailed socio-demographic data are included in Table 1.

Tab. 1. Socio-demographic structure of study group (N=800).

Socio-demographic data	Name of variable	Value of variable	
		N	Percentage (%)
Gender	Woman	522	65%
	Men	278	35%
Age	18-30	572	71%
	31-45	151	19%
	Over 45	77	10%
Place of residence	Village	217	27%
	City with up to 50.000 inhabitants	271	34%
	City with over 50.000 inhabitants	312	39%
Education	Primary	58	7%
	Vocational	67	8%
	Secondary	346	45%
	Higher	319	40%
Marital status	Single	407	51%
	Married	393	49%
Religion	Roman Catholics	711	89%
	Other/irreligious	89	11%

(Source: own research)

Only 34% of respondents believe to have enough information on organ transplants while 56% of them think that their knowledge in this field is not sufficient. Ten percent of respondents have no opinion on the subject.

Tab. 2. Respondents' attitude toward organ transplantation by gender (N=800).

Question: Are you for/against organ transplantation ?	Gender		Total
	Woman	Men	
For	84.3%	79.1%	82.4%
Against	2.3%	6.5%	3.8%
No opinion	13.4%	14.4%	13.8%
$\chi^2=9.146$ $df=2$ $p=0.01$ $V=0.107$			

(Source: own research)

Table 2 presents respondents' attitude toward organ transplantation. Among 800 respondents, 660 people are proponents of organ transplantation, 110 respondents have no opinion on the subject and 30 people are strongly opposed to organ transplants. Women are more often advocates of transplantation. A statistically significant correlation between gender and the attitude toward transplantation was found ($p < 0.05$).

Tab. 3. Respondents' attitude toward organ transplantation by place of residence (N=800).

Question: Are you for/against organ transplantation ?	Place of residence			Total
	Village	City (up to 50.000 inhabitants)	City (over 50.000 inhabitants)	
For	77.0%	79.6%	88.8%	82.4%
Against	3.7%	5.5%	2.2%	3.8%
No opinion	19.3%	14.9%	9.0%	13.8%
$\chi^2 = 17.084$ $df = 4$ $p = 0.002$ $V = 0.146$				

(Source: own research)

Table 3 shows percentages with regard to respondents' residence. The largest group of people supporting organ transplantation are those living in cities with more than 50.000 inhabitants. Among those undecided the biggest group are people living in rural areas. A statistically significant correlation between the place of residence and attitude toward transplantation was found ($p < 0.05$). A correlation between age of respondents and attitude toward organ transplantation was analyzed and presented in Table 4. Statistically significant differences ($p > 0.05$) were not found.

Tab. 4. Respondents' attitude toward organ transplantation by age (N=800).

Question: Are you for/against organ transplantation ?	Age (in years old)			Total
	18-30	31-45	over 45	
For	82.9%	82.1%	80.5%	82.5%
Against	3.5%	2.0%	9.1%	3.8%
No opinion	13.6%	15.9%	10.4%	13.8%
$\chi^2 = 8.398$ $df = 4$ $p = 0.078$ $V = 0.102$				

(Source: own research)

Among the opponents of organ transplantation, 67% of them (20 people) give, as a reason for that, a lack of trust to the doctors involved in organ transplantation. The next 13% (4 persons) say that their objection is caused by the little knowledge in this field. Another 13% (4 person) indicate their religion as a reason for opposition to organ transplant, 7% of opponents (2 persons) consider transplantation as a modern form of cannibalism.

Tab. 5. Respondents' attitude toward organ transplantation by gender (N=800).

Question: Would you agree to donate your organs after death for the purpose of transplantation?	Gender		Total
	Woman	Men	
Yes	69.5%	62.6%	67.1%
No	4.6%	10.8%	6.8%
I don't know, I have never thought about it	25.9%	26.6%	26.1%
$\chi^2= 11.654$		df=2	p=0.003
			V=0.121

(Source: own research)

Tab. 6. Respondents' attitude toward organ transplantation by place of residence (N=800)

Question: Would you agree to donate your organs after death for the purpose of transplantation ?	Place of residence			Total
	Village	City (up to 50.000 inhabitants)	City (over 50.000 inhabitants)	
Yes	63.6%	62.0%	74.0%	67.1%
No	7.4%	9.2%	4.2%	6.8%
I don't know, I have never thought about it	29.0%	28.8%	21.8%	26.1%
$\chi^2=13.031$		df=4	p=0.01	V=0.128

(Source: own research)

Respondents were asked about their willingness to donate organs after death. The vast majority of respondents, exactly 537 people, declare willingness to donate their organs for the purpose of transplantation in case of their death while more than 50 surveyed wouldn't agree for that and 209 of respondents have never thought about it. It should be noted that 82.5% of the respondents are proponents of transplantation, but only 67.1% declared their willingness to donate organs after death. Near 7% of respondents wouldn't agree to donate organs after death for the purpose of transplantation, but only 3.8% of surveyed declared to be opponents of organ transplantation. More women than men would be willing to give organs after death (Table 5). A statistically significant correlation between respondents' gender and the consent for organs donation for transplantation after death was found

($p < 0.05$). The residents of cities with population of over 50.000 inhabitants would agree to donate organs after death more often (74%) than people living in cities with less than 50.000 citizens (62%) and rural areas (63.4%). In addition, a statistically significant correlation ($p < 0.05$) between the place of respondents' residence and a consent for organs donation after death was found (Table 6). Taking into account the age of the respondents, it can be said that people aged 31-45 would be willing more often to give organs for transplantation. The analyzes showed that no statistically significant correlation ($p > 0.05$) between the age of respondents and consent for organs donation for transplantation after death was found (Table 7).

Tab. 7. Respondents' attitude toward organ transplantation by age (N=800).

Question: Would you agree to donate your organs after death for the purpose of transplantation ?	Age (in years old)			Total
	18-30	31-45	over 45	
Yes	66.4%	70.9%	64.9%	67.1%
No	6.8%	4.6%	10.4%	6.8%
I don't know, I have never thought about it	26.7%	24.5%	24.7%	26.1%
$\chi^2=3.224$		df=4	p=0.521	V=0.063

(Source: own research)

Tab. 8. Respondents' attitude toward organ transplantation by gender (multi-choice question, N=800).

Question: Would you agree to donate one of your kidneys, part of a liver or lung, during your life, to a person who need it ?	Gender		Total	
	Woman	Men		
Yes, to a family member	86.0%	74.5%	81.3%	
Yes, to a close person (not blood-related)	1.7%	2.9%	50%	
Yes, to a stranger	0.2%	1.1%	12%	
Not to anyone mentioned above	1.9%	7.6%	3.9%	
To other person	0%	0.4%	3.9%	
I don't know	10.2%	13.7%	12%	
$\chi^2=25.678$		df=5	p<0.001	V=0.179

(Source: own research)

Tab. 9. Respondents' attitude toward organ transplantation by place of residence (multi-choice question, N=800)

Question: Would you agree to donate one of your kidneys, part of a liver or lung, during your life, to a person who need it ?	Place of residence			Total
	Village	City (up to 50.000 inhabitants)	City (over 50.000 inhabitants)	
Yes, to a family member	81.6%	80.4%	83.7%	82.0%
Yes, to a close person (not blood-related)	0.9%	2.2%	2.9%	2.1%
Yes, to a stranger	0.5%	0.4%	0.6%	0.5%
Not to anyone mentioned above	2.3%	6.3%	2.9%	3.9%
To other person	0.0%	0.4%	0.0%	0.1%
I don't know	14.7%	10.3%	9.9%	11.4%
$\chi^2=13.89$	df=10	p=0.178	V=0.132	

(Source: own research)

Nine percent of respondents have a declaration of will. Among 730 persons without such declaration, 40% of them argue that they don't know where to get this document, 29% of respondents (229 people) explain not having declaration of will with other reasons. Interestingly, 28% of respondents don't have a declaration because they have never heard of it and only 3% don't have it because of their negative attitude toward organ transplantation. In addition, 730 respondents who don't have such declaration, were asked about willingness to sign this document, 49% of them (360 people) have expressed readiness to sign it while 314 people (43% of respondents) couldn't at the moment make a decision on signing or not signing the document (option "I don't know"). Eight percent of respondents (56 people) don't want to sign a declaration of will. Little over 80% of respondents (651 people) declared to donate one of their kidneys, part of a liver or lung to a family member. Half of respondents (401 people) would agree to donate an organ during life if a person in need was a no blood-related friend, while 12% of them (96 people) don't know if would decide for this. Twelve percent of respondents (96 people) are ready to donate organs during life to a stranger, 2% of respondents (31 people) declare that they would offer their organs during life for a persons other than these mentioned above and next 2% of respondents (31 people) wouldn't agree to donate organs during their life.

A statistically significant correlation (Table 8) between gender and the respondents' consent for organ donation during life was found. Women, more likely (86%) than men (74.5%), declare to donate one of their kidneys, part of a liver or lung to a family member ($p < 0.05$).

A statistically significant correlation (Table IX) between place of residence and respondents' consent for organ donation during life was not found ($p > 0.05$).

A statistically significant correlation (Table X) between age and respondents' consent for organ donation during life was not found ($p > 0.05$).

Tab. 10. Respondents' attitude toward organ transplantation by age (multi-choice question, N=800)

Question: Would you agree to donate one of your kidneys, part of a liver or lung, during your life, to a person who need it ?	Age (in years old)			Total
	18-30	31-45	over 45	
Yes, to a family member	82.2%	81.5%	81.8%	82.0%
Yes, to a close person (not blood-related)	2.6%	1.3%	0.0%	2.1%
Yes, for a stranger	0.7%	0.0%	0.0%	0.5%
Not to anyone mentioned above	3.5%	2.6%	9.1%	3.9%
To other person	0.2%	0.0%	0.0%	0.1%
I don't know	10.8%	14.6%	9.1%	11.4%
$\chi^2=12.814$	df=10	p=0.234	V=0.127	

(Source: own research)

The majority of respondents (65% – 521 people) said that financial compensation wouldn't be for them an incentive to make a decision about becoming an organ donor, 21% of respondents (169 people) couldn't at the moment express their opinion on this topic and 110 of 800 respondents are ready to give their organs for transplant for financial reward.

Tab. 11. Respondents' attitude toward organ transplantation by gender (N=800).

Question: Would the financial compensation be for you an incentive to donate an organ or its part for the purpose of transplantation ?	Gender		Total
	Woman	Man	
Yes	11.5%	18.0%	13.8%
No	67.8%	60.1%	65.1%
I don't know	20.7%	21.9%	21.1%
$\chi^2=7.364$	df=2	p=0.025	V=0.177

(Source: own research)

Tab. 12. Respondents' attitude toward organ transplantation by place of residence (N=800).

Question: Would the financial compensation be for you an incentive to donate an organ or its part for the purpose of transplantation ?	Place of residence			Total
	Village	City (up to 50.000 inhabitants)	City (over 50.000 inhabitants)	
Yes	14.7%	14.0%	12.8%	13.8%
No	63.1%	66.1%	65.7%	65.1%
I don't know	22.1%	19.9%	21.5%	21.1%
$\chi^2=0.855$	df=4	p=0.931		V=0.033

(Source: own research)

Men, more likely than women, would agree to donate their organs for financial compensation (Table 11). A statistically significant correlation between gender and respondents' opinion on financial compensation, that could be an incentive to donate organs for the purpose of transplantation, was found. The results of analysis on respondents' place of residence (Table 12) proved that no statistically significant correlation was found between the place of residence and the opinion on financial compensation – as an incentive to organ donation ($p>0.05$). People with age over 45 years predominately declare that the financial reward is not the motivator for organ donation (Table 13). In addition, a statistically significant correlation between age and respondents' opinion was found ($p<0.05$).

Tab. 13. Respondents' attitude toward organ transplantation by age (N=800)

Question: Would the financial compensation be for you an incentive to donate an organ or its part for the purpose of transplantation?	Age (in years old)			Total
	18-30	31-45	over 45	
Yes	14.3%	13.2%	10.4%	13.8%
No	64.5%	60.3%	79.2%	65.1%
I don't know	21.2%	26.5%	10.4%	21.1%
$\chi^2=9.992$	df=4	p=0.041		V=0.112

(Source: own research)

Less than 40% of respondents (319 people), answering the question: Did media reports published in Poland have an impact for your attitude toward organ transplantation?, said that they don't know any reports in this field, 38.8% of the respondents (310 people) answered that these reports didn't affect their attitude to organ transplantation. In the opinion of 17.6% of respondents (141 people) media events have changed their attitude toward organ transplantation from positive to negative while 3.7% of respondents (30 people) said that these events only made them more convinced in their negative attitude toward organ transplants.

Discussion

Organ transplantation have been already performed to more than 20.000 Poles. Number of people who received an organ is growing by 1.500 every year. The most often transplanted organ are kidneys which in 2012 were transplanted to 1136 people. The number of organ transplants in Poland is increasing every year which is connected with availability of funds dedicated to this part of medicine and employment of transplant coordinators. According to Polish law no objection is tantamount to consent for organ donation, except of minors, for which a legal guardian is a decision-making person. According to Mr Ryszard Kozłowski - President of the Association "Gift of Life", Poland has achieved in the last year a better results in efficiency of transplantation in comparison to the average of EU countries. Unfortunately, the number of people requiring a transplant is still increasing. In 2012 in Poland, only 50% of people waiting for a kidney or liver received the organ. According to the Poltransplant only 30% of people have received a heart transplant. The reason for the insufficient number of transplants surgeries is a low number of organs donor. The Poltransplant report shows that in the period 2006-2011 every year nearly one in ten potential donor was excluded because of family or prosecutors objection or their own beliefs. The current situation should be improved through a program "Partnership for transplantation" that is implemented since 2009 by the Polish Union of Transplantation Medicine (Rowinski *et al*, 2004).

On 23. January 2013 in Białystok a conference "Transplantation as a gift of life – medical, legal and ethical aspects" was held during which detailed statistics on transplants performed between 1966-2012 were presented. According to analizys 400 people are waiting for heart transplant. High attention was paid to research conducted by CBOS in 2011 on attitude of Poles toward organ transplantation. Presented results were similar to those of our project. More than 90% of respondents have a positive attitude toward transplantation medicine. Good evidence for that is a number of notifications of potential bone marrow donors, which currently amounts to more than 123.000 people. To increase a number of transplants a lot of work and effort of many institutions must be done. It concerns especially local goverments (owners and supervisors of hospitals), hospitals' directors, medical staff, Church as well as schools and universities that educate young generations. Organs transplantation still raises a lot of emotions among people as it contains ethical, cultural and moral aspect connected with life and death. People often treat transplantation as waiting for a death of another human being. We should remember that one donor can save the lives of up to four people. An important aspect in life of Poles is fact that transplantation medicine is supported by the Catholic Church. Since 2001 a program for transplantation is implemented with a budget of 450 million PLN. It will go on education, training in the field of transplantation, specialized equipment, development of transplant coordinators' network and many other investments. The program will be conducted until 2020. (Antoszkiewicz *et al*, 2009; Guzowski, 2013)

Conclusions

1. A statistically significant correlation between gender and place of residence and the respondents' attitude toward transplantation was found ($p < 0.05$),
2. Research results show that age doesn't determine the attitude of respondents toward transplantation (no statistically significant differences were found)
3. The main reason for non-acceptance of organ transplantation is a lack of trust to the doctors.

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