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**RATIONALE FOR RELIGIOUS DENOMINATIONS IN RUSSIA TO  
PARTICIPATE IN ORGAN DONATION PROMOTION**

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***Abstract***

The paper is concerned with the profile of religious organizations viewed as one of the forces to promote organ donation among the Russians. The authors analyzed the attitude of the most famous global religious denominations towards the key ethical issues related to organ transplantation, as well as the influence of religious leaders on the success of national organ donation and transplantation initiatives. This brought about the conclusion that there are no regulatory documents adopted by world religions, currently prohibiting this type of health intervention. Moreover, internationally there are a few examples of successful support provided by leaders and ordinary religious figures of various denominations to national centers of organ donation and transplantation. The medical and sociological findings indicate that there are statistically significant groups among Russian students and surgical patients of health organizations who consider the opinion expressed by a religious denomination as crucial in shaping their attitudes towards the challenges of organ transplantation and organ donation. Thus, the activities performed by religious organizations in Russia could enable a certain part of the country's population to develop a sound understanding of security, humanity and the need for organ donation programs, which would definitely support the elaboration of a national organ transplantation policy.

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## 1. Introduction

The success of national programs in the field of organ donation and transplantation depends on three fundamental factors: the arrangement of this type of high-tech health framework in the country, the creation of full-fledged legal support for such ethically complicated health intervention and the social acceptance of transplantology, the latter aspect being a priority (Rithalia, McDaid, Suekarran, Myers, & Sowden, 2009). One of the impacts shaping the attitude of residents towards organ donation and transplantation has always been the religious identity of the population and the importance of religious norms within the society of a particular state (Rithalia et al., 2009). First of all, the importance of the rhetoric of religious figures about the problems of transplantation and donation of human organs is justified by the fact that this matter is inextricably intertwined with the issue of death and subsequent events. These ideas are not within the competence of medicine; they actually go far beyond our human minds. In terms of both a society that lives following the tenets of a particular religion and a secular state, it is solely religious sources that can help a person find noteworthy pronouncements as to what awaits him after the cessation of life activity (Bagnenko & Reznik, 2017).

## 2. Problem Statement

In recent years, due to the globally increased migration activity of the population and the prevalence of historical religions in Europe, the relevance to promote transplantation programs by representatives of religious denominations has significantly increased (Oliver, Woywod, Ahmed, & Saif, 2011; Krupic, Sayed-Noor & Fatahi, 2017). Furthermore, according to medical and sociological data, subject to different social groups the influence of the religious factor on transplantology attitudes varies significantly. Thus, among the teachers of secondary schools in Bosnia and Herzegovina, there is no established relationship between religiosity and attitudes towards organ donation (Sadic, Sadic, Krupic, Fatahi, & Krupic, 2016). A survey conducted among different age groups in Poland revealed some features depending on the age and the religion exercised (Kobus, Małyszko, & Małyszko, 2016). However, in a situation where decision-making on organ donation is called upon, religious identity turns out to be essential in determining the possibility to remove deceased organs (Oliver et al., 2011; Randhawa & Neuberger, 2016). Obviously, the most relevant method to address this issue is not just studying the public opinion on organ donation but conducting surveys among individual target groups.

## 3. Research Questions

In the Russian Federation, transplantology is evolving mainly in metropolitan clinics. Only every fourth region of the country has transplantation centers, consequently, organ donation programs are basically implemented there (Gautier & Khomyakov, 2018). The work of regional transplantation centers in Russia is hampered by a number of challenges primarily related to low public confidence (Romanov, Abaeva, & Smirnova, 2018). Accordingly, the whole range of impacts actuating the social position, including religious dimension, needs to be addressed. The most noteworthy are the results of a survey conducted by the Levada Center in 2013 (Bagnenko & Reznik, 2017), which were presented both on the website of this analytical center and in the bibliography (2014). According to the data obtained, 19% of Russians deny the possibility to allow their organs to be removed after death explaining this by their

religious beliefs. However, the Church takes one of the last places as a desirable source of information on transplantation issues: only 8% of the respondents expressed their desire to obtain information from this public institution (Analytical centre named after Yu. Levada, 2014). It is obvious that reasonable attitude of the most prevalent religious denominations in Russia towards the issues of organ donation and their possible impact on the population needs to be further explored.

#### **4. Purpose of the Study**

With this in mind, the purpose of the study was, based on the attitudes of the most common religions in Russia towards the problems of organ transplantation as well as medical and sociological data, to determine the possibilities for the country's population to understand the need to support organ donation and human organ transplantation through the promotion of this idea by the representatives of religious denominations. The objectives of the study are as follows:

- explore the attitude of the most widespread religions in Russia to the problems related to organ donation and transplantation of human organs;
- to analyze the influence of religious denominations on the success of national programs for the transplantation of human organs across the world;
- to study the potential of religious community to affect the development of donation and transplantation programs in Russia using the example of several social groups.

#### **5. Research Methods**

The study of the evolution and modern attitude of religions, the analysis of the role of religious communities in shaping public attitudes towards organ donation and transplantation were based on foreign and domestic publications available in the PubMed and RSCI databases.

Medical and sociological research was conducted at educational and medical organizations of the Nizhny Novgorod region where, since 2006, organ transplantation and organ donation programs have been actively implemented: living-related and cadaver donor kidneys and livers are systematically transplanted, the first pancreatic transplants are performed (Gautier & Khomyakov, 2018). This region is also interesting for carrying out the research due to the multi-confessional population, as it houses religious organizations of several Christian forms (Orthodoxy, Catholicism, Gregorianism, Adventism), Islam, Judaism. The possibility of religious denominations to influence the transplantology attitude of the population was based on the results of a questionnaire survey among 168 students of the Nizhny Novgorod State University named after N.I. Lobachevsky in non-medical bachelor's programs, and 130 patients of the Volga District Medical Centre under Federal Medical and Biological Agency. The analysis of the qualitative characteristics and the reliability of the results obtained were carried out using the Pearson Chi-square test.

#### **6. Findings**

The content analysis showed that the very principle of transplanting organs to save the lives of people who suffer from serious incurable diseases is supported by the postulates of the overwhelming majority of religions practiced by Russians. Only members of relatively small religious communities that

deny all types of surgery firmly reject the transplantation of human organs (Khubulava, 2016; Oliver et al., 2011). Christianity regards organ donation as an act of self-sacrifice for the love of one's neighbors (Khubulava, 2016; Oliver et al., 2011). In Islam, saving a person's life and alleviating seriously ill patients suffering is deemed as the destiny of holy people (Ebrahim, 2000; Khubulava, 2016; Oliver et al., 2011). The principles of Judaism uphold everything aimed at saving a human life (Lavee, Ashkenazi, & Steinberg, 2010), except for a group of Hasidim, orthodox Jews, who regard many medical interventions as an invasion not only in a human body but also in the divine (Khubulava, 2016).

However, keeping in mind that modern technologies and public views on organ donation and organ transplantation did not seem to be possible at the time when the world's recognized religious sources were written, it was impossible for clergy to render a clear vision of this issue. Accordingly, later theological analysis was conducted with reference to various indirect sources and statements, resulting in likely discrepancies and ambiguous attitudes of some religious denominations to transplantation and organ donation, as well as to many other problems of bioethics (Khubulava, 2016). A striking example of the above is the changing attitude of Judaism, Christianity and Islam leaders as to whether it is permissible to procure organs from the deceased. For centuries, the attitude towards a violation of bodily integrity of the dead followed a dogma of the coming Resurrection of the dead on the Judgment Day. With this in view, right up to the end of the nineteenth century, the sanctity of the dead was an imperative norm in all forms of Christianity, which entailed a number of obstacles to the growth of medicine, since performing work in anatomical theaters was illegal and threatened with severe punishment (Khubulava, 2016). However, there were numerous exceptions for the elect. For example, it was extensively practiced to procure cadaveric organs of royal persons and their relatives with a view to embalming and burying them in different places. It would also be appropriate to recall a posthumous separation of the bodies (relics) of Christian saints and martyrs that was widespread in those days. In addition, the holy healers Kozma and Damian, who transplanted the leg of a deceased moor according to the Apocrypha, have been deeply revered by Catholics for centuries. Following the religious worldview to lose its priority in the 19<sup>th</sup> century (secularization of life), thanks to the achievements of medicine, the patient's status was transformed from merely pending the transition to another world (patient from Latin *patiens*) to aspiring to heal or improve one's health. As a consequence, religious leaders were forced to reassess the relevant standards, and the Catholic Church is now taking a diametrically opposite position to the historical one, supporting the removal of organs from a person after his death for the purpose of transplantation, with the assent of a dead (Oliver et al., 2011). The foregoing is regulated by an official document – the Charter for Health Care Workers (1994 with modifications and amendments) (Khubulava, 2016). The Basics of the Social Conception of the Russian Orthodox Church also noted that the posthumous donation of human organs and tissues "can become a manifestation of love extending to the other side of death," thus, organ removal does not contradict the possibility of the Resurrection of the donor on the Judgment Day (Khubulava, 2016). The prohibition to violate the bodily integrity of the dead is traditional for Islam as well but Resolution No. 26 (1/4) on Organ Transplantation of a Living or Deceased Person in 1988 (adopted at the 4<sup>th</sup> session of the Council of the Islamic Fiqh Academy) also permitted post-mortem removal (Ebrahim, 2000; Khubulava, 2016; Oliver et al., 2011), although the representatives of different schools of this religion express far different opinion on this issue (Messina, 2015; Padela & Duivenbode, 2018). Judaism is characterized by the greatest difficulty

in the issue under account. It constitutes reformist, conservative and orthodox schools and the position of rabbis may also be different (Khulava, 2016; Lavee et al., 2010; Lavee, Ashkenazi, Stoler, Cohen, & Beyar, 2013).

In Buddhism, there is no rigid reporting relationship as in religious organizations of Abrahamic religions. Hence, the regulations of clergy have no priority and the interaction between national and religious principles is more likely to take place. However, the sanctity of the dead is one of the core principles. What is more, the removal of organs is considered as a form of punishment to atone for the crimes committed. In addition, Buddhism regards a human body as the property of the whole clan. Therefore, the removal of organs even from criminals is possible only with the assent of all family members (Bülow, 2008; Zhang, 2017).

There is one issue that all the most global popular religions agree about. It implies the gratuitousness and voluntariness of organ donation, i.e. donation is perceived as an act of giving another person the time of their lives (Ebrahim, 2000; Khulava, 2016). Accordingly, donation can take place only with a conscious donor's desire, which is expressed by Catholic, Orthodox, Jewish and Islamic sources, with this provision being obligatory for both in vivo and posthumous donation. The donation should be free of charge. It is, therefore, unacceptable for donors to receive financial benefits (Ebrahim, 2000; Jotkowitz, Agbaria & Glick, 2017; Khulava, 2016). Buddhism also encourages family altruism in addressing the issue of post-mortem donation (Bülow, 2008).

The equation of brain death with a person's death, assumed as a proof of a legal death of a person with a beating heart, provoked a wide discussion among religious communities and theologians. Russian Orthodox Church recognizes in the Basics of the Social Conception that the historical perception of human death as a cessation of heartbeat and breathing in the modern world has become obsolete and it is not advisable to maintain the vital activity of individual organs and their systems with the inevitable death of the whole organism (Khulava, 2016). In 1986 the participants of the III International Conference for Muslim Lawyers and in 1988 – the IV session of the Committee on Islamic Law supported the idea of brain death and, with reservations, the possibility of organ removal following the pronouncement of death (Ebrahim, 2000). The Jewish religious leaders are ambiguous in their opinion regarding the removal of organs from patients after the pronouncement of brain death: some approve this intervention, provided that the criterion for the termination of spontaneous breathing is fulfilled, whereas conformists, on the contrary, insist on the cessation of heartbeat (Bülow, 2008).

Within the present research, the priority is given not only to analyzing the attitudes of various religious denominations to the problems of donation and organ transplantation, but also the potential of religions to influence the promotion of these policies by the population. According to some literary sources, the extent of religion's influence on the issues under account varies from country to country. A great number of publications testify in favor of religious factor in the secular state of Israel (Jotkowitz et al., 2017; Lavee, et al., 2010; Lavee, et al., 2013; Skorecki & Horton, 2017). The religious state of the Islamic Republic of Iran, with the support of religious leaders, is developing programs for post-mortem donation (Ghods, Savaj, 2006), while in another Muslim country, Pakistan, post-mortem donation is just evolving (Bhatti & Saud Dal, 2017) . We did not find any evidence of the significant religious impact on the issues of organ donation in the USA, Canada, and Latin America. In addition, the active migration processes of the last century

contributed to the establishment of multi-religious societies that tend to erase religious boundaries (Bülow, 2008). Thus, in Japan and China there is a gradually decreased negative impact of Buddhism on the standpoint of the population concerning the post-mortem organ donation (Bülow, 2008; Tasaki, 2014). Obviously, it is not the provisions of religious doctrine that matters, but daily communications and outreach to society promoted by clergymen. There is a widely known premise of the Catholic Church in Spain: “*No se lleve sus organos al cielo. En el cielo saben que los necesitamos aquí*” (Do not take your organs to heaven; heaven knows that we need them on earth). The success of the national donation and transplantation program in this country was made possible, in particular, thanks to the active support of Catholic priests (Rodríguez-Arias, Wright, & Paredes, 2010). Unfortunately, in this study, the authors were not able to establish examples of active support for transplantation and organ donation by religious organizations in Russia.

In order to define the target group for which the opinion of religious community would be crucial to shape their attitude towards organ donation and transplantation, the authors conducted a medical and sociological study through the questionnaires for two groups of respondents. The first group comprised 130 surgical patients, people of different age groups (from 29 to 81 years) who all had certain surgery. That is, the respondents in this group experienced health problems, limited opportunities, reduced quality of life, etc. The authors also examined the subjective attitude of the respondents towards religious people.

The second group consisted of 168 first and second-year students of the local university. The authors believe that due to being quite young and relatively inexperienced, this group of respondents shaped their attitude mainly determined by their social environment.

Each respondent was asked to answer the question as to whether the opinion of a representative of a religious denomination would be crucial for them when being requested for consent for a posthumous organ donation. There were two answers involved: yes or no.

In the group of students, the opinion of a religious denomination in deciding whether to consent to a posthumous organ donation was significant for  $11.3 \pm 2.4\%$  of respondents. In the group of surgical patients, the share of respondents who noted that the opinion of a religious denomination was significant when deciding whether to consent to a post-mortem donation was  $23.0 \pm 3.7\%$ . Thus, in both studied groups there is a statistically significant share of respondents for whom the opinion of religious leaders is decisive on the issue considered, although, among the patients this share is significantly larger than the one among the students ( $\chi^2 = 7.39$  with a critical value of 3.84,  $P_{value} = 0.0065$ ).

The survey showed that  $79.2 \pm 3.6\%$  of the patients considered themselves believers ( $71.5 \pm 3.6\%$  worshiped Orthodox Christianity,  $7.7 \pm 2.3\%$  – Islam). However, only  $30.0 \pm 4.5\%$  of those who considered themselves as religious people commonly rely on religious figures when making a donation decision. The authors did not get far different answers to the question posed between the group of believers and the entire group of patients ( $\chi^2 = 1.66$  with a critical value of 3.84). They also failed to establish a statistically significant difference in the possible influence of religious representatives on the opinion of respondents professing Christianity and Islam ( $\chi^2 = 0.63$  with a critical value of 3.84).

## 7. Conclusion

With no specific guidelines provided in the original sources on the topic under account, inevitably following the progress of science, the leaders of world religious denominations express their attitude to transplantation and donation in strategic documents none of which currently prohibits organ donation and transplantation. Organ donation, both *in vivo* and posthumous, is perceived in these documents as an act of humanity and human love that insist on voluntariness and unselfishness. Most of the eminent Abrahamic leaders, following the progress of science, reviewed their attitude to many problems related to organ transplantation: the possibility of organ removal from the dead, pronouncement of a person's death on the basis of their brain death provided there are certain signs of vital activity of other organs. Thus, the extent of influence of religious bodies on society's relations to donation and organ transplantation in a country does not so much depend on a particular religion but on the activity of clergy towards this issue, which is confirmed by the successful interaction between medicine and religion in a number of countries.

Russia is a secular state whose residents have the opportunity to profess different religions, among which the most widespread are Abrahamic, primarily Orthodox Christianity. However, one must not forget that the majority of adult Russians were brought up in the society that denied any religious affiliation and even punished citizens for their respect for any religious practices and beliefs.

Accordingly, it is quite natural that most of the surgical patients who took part in the survey said that they considered themselves to be believers –  $79.2 \pm 3.6\%$ , representatives of Orthodoxy and Islam. However, only a third of the group of patients who considered themselves religious people, when making a personal donation decision would rely on the opinion of their religious denominations. A similar contradiction between the interest in the opinion of religious representatives and the reference to their religion when making a donation decision is demonstrated in the above study by Levada-Center. In the authors' opinion, the foregoing reflects the insufficient insight of Russians into the religious norms along with the lost custom that was abidden by believers in the past to coordinate their actions with clergy and receive their blessings on important actions. In other words, we deal with with an external manifestation of the religious affiliation of representatives of a secularized society.

Nevertheless, the study showed the presence of statistically significant groups of respondents for who regard the opinion of a religious denomination on organ donation as crucial. Every tenth student and every fourth surgical patient think so. The established difference between these groups can be explained by the fact that patients are more aware of the situation when their physical abilities are limited, the quality of life is reduced, they are helpless and, as a result, need to look for moral support that the religion often serves for a suffering person.

Thus, we believe that, taking into account the basic regulations initiated by the world religious leaders and the experience of foreign countries, as well as the presence of a target group among Russians, the active social work of religious denominations in the Russian Federation could have a significant impact on a certain part of the population to shape their humanity awareness of organ donation and the need to support this area of medicine. .

## References

- Analytical centre named after Yu. Levada, (2014). Donation and organ transplantation in public opinion of Russians. *Transplantologiya. The Russian Journal of Transplantation*, 1, 8-19.
- Bagnenko, S. F., Reznik, O. N. (2017). Key problems of transplantation development and the objectives of higher medical education. *Transplantologiya. The Russian Journal of Transplantation*, 9, 192-210. <https://dx.doi.org/10.23873/2074-0506-2017-9-3-192-210>
- Bhatti, Hafeez, A. B., Saud Dal, F. (2017). Living Donor Liver Transplantation in Pakistan. *Transplantation*, 101, 1507–1508. <https://dx.doi.org/10.1097/TP.0000000000001737>
- Bülow, H. H. (2008). The world's major religions' points of view on end-of-life decisions in the intensive care unit. *Intensive Care Medicine*, 34, 423–430.
- Ebrahim, A. F. (2000). The living will (Wasiyat Al-Hayy): a study of its legality in the light of Islamic jurisprudence. *Med Law*, 19, 147-160.
- Gautier, S. V., Khomyakov, S. M. (2018). Organ donation and transplantation in Russian Federation in 2017 10<sup>th</sup> report of the National registry. *Russian Journal of Transplantology and Artificial Organs*, 20, 6-28. <https://dx.doi.org/10.15825/1995-1191-2018-2-6-28>
- Ghods, A. J., Savaj, S. (2006). Iranian Model of Paid and Regulated Living-Unrelated Kidney Donation. *Clinical Journal of the American Society of nephrology*, 1. 1136-1145. <https://dx.doi.org/10.2215/CJN.00700206>
- Jotkowitz, A. B., Agbaria, R., & Glick, S. M. (2017). Medical ethics in Israel—bridging religious and secular values. *The Lancet*, 389, 2584-2586. [https://dx.doi.org/10.1016/S0140-6736\(17\)30700-6](https://dx.doi.org/10.1016/S0140-6736(17)30700-6)
- Khubulava, G. G. (2016). Religious and ethical aspect of transplantation. *Medicinskij al'manah*, 4, 31–35. <https://dx.doi.org/10.21145/2499-9954-2016-4-31-35>
- Kobus, G., Małyszko, J. & Małyszko, S. J. (2016). Do Age and Religion Have an Impact on the Attitude to Organ Transplantation? *Transplantation Proceedings*, 48: 1354-1359 <https://dx.doi.org/10.1016/j.transproceed.2016.02.055>
- Krupic, F., Sayed-Noor, A. S. & Fatahi, N. (2017). The impact of knowledge and religion on organ donation as seen by immigrants in Sweden. *Scandinavian Journal of caring sciences*, 31. 687-694. <https://dx.doi.org/10.1111/sucs.12379>
- Lavee, J., Ashkenazi, T., Gurman, G., & Steinberg, D. (2010). A new law for allocation of donor organs in Israel. *Lancet*, 375, 1131-1133. [https://dx.doi.org/10.1016/S01406736\(09\)61795](https://dx.doi.org/10.1016/S01406736(09)61795)
- Lavee, J., Ashkenazi, T., Stoler, A., Cohen, J., & Beyar, R. (2013). Preliminary Marked Increase in the National Organ Donation Rate in Israel Following Implementation of a New Organ Transplantation Law. *American Journal of Transplantation*, 13. <https://dx.doi.org/10.1111/ajt.1200>
- Messina, E. (2015). Beyond the Officially Sacred, Donor and Believer: Religion and Organ Transplantation. *Transplantation Proceedings*, 47, 2092-2096. <https://dx.doi.org/10.1016/j.transproceed.2015.06.031>
- Oliver, M., Woywod, A., Ahmed, A. & Saif, A. (2011). Organ donation, transplantation and religion. *Nephrology Dialysis Transplantation*, 26: 437–444. <https://dx.doi.org/10.1093/ndt/gfq628>
- Padela, A. I., Duivenbode, R. (2018). The ethics of organ donation, donation after circulatory determination of death, and xenotransplantation from an Islamic perspective. *Xenotransplantation*, 25, 1-12. <https://dx.doi.org/10.1111/xen.12421>
- Randhawa, G., Neuberger, J. (2016). Role of Religion in Organ Donation—Development of the United Kingdom Faith and Organ Donation Action Plan. *Transplantation Proceedings*, 48, 689-694. <https://dx.doi.org/10.1016/j.transproceed.2015.10.074>
- Rithalia, A., McDaid, C., Suekarran, S., Myers, L., & Sowden, A. (2009). Impact of presumed consent for organ donation on donation rates: a systematic review. *British medical Journal*, 338, a3162. <https://dx.doi.org/10.1136/bmj.a3162>
- Rodríguez-Arias, D. Wright, L., & Paredes, D. (2010). Success factors and ethical challenges of the Spanish Model of organ donation. *Lancet*, 376, 1109–1112. [https://dx.doi.org/10.1016/S0140-6736\(10\)61342-6](https://dx.doi.org/10.1016/S0140-6736(10)61342-6)

- Romanov, S. V., Abara, O. P. & Smirnova, G. Y. (2018). Ways to improve the use of donor resources in the Nizhny Novgorod Region. *Transplantologiya. The Russian Journal of Transplantation*, 10, 15-22. <https://dx.doi.org/10.23873/2074-0506-2018-10-1-15-22>
- Sadic, S., Sadic, J., Krupic, R., Fatahi, N. & Krupic, F. (2016). The Influence of Information and Religion on Organ Donation, as Seen by School Teachers in Bosnia and Herzegovina. *Materia socio-medica*, 28, 373–377. <https://dx.doi.org/10.5455/msm.2016.28.373-377>
- Skorecki, K., Horton, R. (2017). Israel: health and beyond. *The Lancet*, 389, 2551–2562. [https://dx.doi.org/10.1016/S0140-6736\(17\)30877-2](https://dx.doi.org/10.1016/S0140-6736(17)30877-2)
- Tasaki, M. (2014). 20-Year Analysis of Kidney Transplantation: A Single Center in Japan. *Transplantation Proceedings*, 46, 437-441. <https://dx.doi.org/10.1016/j.transproceed.2013.10.052>.
- Zhang, Q. X. (2017). Impact Factors and Attitudes toward Organ Donation among Transplantation Patients and Their Caregivers in China. *Transplantation Proceedings*, 49, 1975–1981. <https://dx.doi.org/10.1016/j.transproceed.2017.09.022>