

Review Article
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Is Medical Success of Donation and Transplantation, A Rewarding Ethical and Social Progress?

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ABSTRACT

Organ transplantation is the great advance in medicine of the 20th century. Progresses in anti-rejection therapy have led to a globally statistical increase in its frequency.

However, it is important to call attention to the progressive of patients waiting lists, as well as the constant and sometimes its frequent mortality expecting for an organ that will not arrive, the so call "Organ Shortage". This vital problem is an evident exponent of a social behaviour, that is not conclusively defined towards organ donation.

This crucial paradox of the possibility of medically turning death into life, basically required by the donation of an organ, mainly from a deceased donor; without a doubt, facilitates this intention to analyse the causes of this social phenomenon, and the current or possible proposals to overcome this persistent global health crisis.

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Introduction

This article will analyse the real significance of the statistical advances achieved with the techniques of ablation, preservation and fundamentally with immunosuppressive therapies in current long-term graft survival, particularly referring to deceased donors, and as well to the persistence of long waiting lists, and the constant daily mortality of its patients.

The number of organ transplants performed worldwide has significantly increased for patients with advanced organ failure. As example in the United States (US), 41,354 organ transplants were performed in 2021, increasing by 5.9% compared to 2020 [1].

There is no exact timetable for the waiting list. How long the patient it will be to wait, is determined by the availability of donated organs, and as well the degree of compatibility between patient and donor. Currently, the national average wait time for transplant in US is 5 years for kidneys and between 4 and 11 months for vital organs [2]. In 2021, a total of 106,090 people were on the waiting list for potentially lifesaving organ transplants, according to data from the Health Resources and Services Administration (HRSA), 90,483 people are awaiting treatment for a kidney transplants. The demand for organs is growing steadily, generating a greater need to face these challenges. These data reveal the current importance extent of the organ shortage crisis. According to the HRSA, seventeen people die each day waiting for an organ

transplant, and another person is added to the waiting list every nine minutes. While 90 percent of adults accept organ donation, only 60 percent are registered as donors [3]. Approximately 50,000 people added to the transplant waiting list in the US. As 700,000 deaths in the US per year are attributable to end organ failure, on the other hand, 30% of those deaths could be prevented through organ replacement [4].

Misinformation about organ transplants and lack of knowledge by part of society, constitute significant barriers to organ donation. A review of education programs with an analysis of the various conscious and unconscious inhibition to donation, and with the inclusion of new proposals, could be a challenge for a potential change in the frequent denial of donation, mainly when the request confront the death of a beloved one. In this regard, it was state that two thirds of the adult population, although supportive towards organ donation, recognizes discomfort in making it. Distress reaction to organ donation, is an initial outcome, when people faced with the dead of a beloved one. Knowledge of the vital social significance of organ transplants, might postpone this negative reaction [5].

Specific studies on social behaviour towards organ donation, have shown that mistrust in the medical conduct, and ignorance of brain death concept, are main factors in family's refusal to donate. A study in Australia highlighted the controversy surrounding the brain death subject. Respondents indicated that they would not donate the organs of their relatives if their heart will be still beating [6].

To the overall success of an organ transplant program, public trust is critical

To become organ donation as a national resource, state's social education programs, at all levels, must give priority information on the vital medical and social need for organ donation mainly from deceased donors. New reports looking forward to improving the present performance of the transplantation program, recommends changes to the US organ-transplant management, improving fairness and equity, and reducing non-use of-donated-organs [7]. Religion is another factor of primary importance in social behaviour toward organ donation. The belief in the afterlife and the concern for maintaining the integrity of the body, are crucial factors as barriers to organ donation [8].

Up-to-date social behaviour shows that organ donation is spontaneous and massively accepted by society. Nevertheless, very often when a person dies, family members tend to reject this prior agreement. Consequently, due to this recurrent social conduct, organ shortages are still responsible for the increasing and "unfair mortality" of patients on waiting lists. This sad reality is despite the persistence of the motto: "Organ donation is a gift of life". A recent study showed that only 42% of the organs of deceased donors are use in the US. Similar social conduct has been observed in Europe [9].

Traying to resolve the current crisis, it is imperative to find all the reasons responsible for this frequent negative social behaviour to accept organ donation.

This contemporary experience might indicate the need for new strategies for organ donation and transplantation. Organ shortage should be considered as a prolonged silent pandemic, requiring as a "fundamental" therapy, the human body, primarily after life. It is crucial to recognize that this unusual "death/life" therapeutic paradox, depends exclusively on a positive social attitude towards organ donation. Unfortunately, over the years, social bias towards organ donation, has been the main cause of the persistent "unjust deaths" of hundreds of patients on the endless waiting lists.

This critical situation might be modified through in-depth reviews, by government policy makers in the areas of health and education, with the objective of generating solutions of real efficiency for the well-being of people, and to reverse this daily reality that threatens life.

Looking forward to developing a social behaviour towards organ donation, for both donors and recipients, it is essential to review current guidelines advocating by global education programs. Appropriate policies and new standardized guidelines are needed, along with substantial educational initiatives, to ensure patient safety, and global awareness for potential donors.

The review of current education programs, and new courageous research proposals, mainly concerning death barriers, and as well, remarking the ethical and moral significance of the persistent social donation conflict, and its tragic consequences, are essential to fight against objective barriers against organ donation, mainly in face of the death of a loved one.

Various surveys have shown the US society's organ donation rejection fears, especially concerning the deceased donor. Recent statistics considering around 40% of European Union (EU) citizens have these concerns [10,11].

Baruch A. Brody considers that: "It is morally outrageous that the problem of choice should exist at all. The suggestion that we can choose (to ask or not to ask), on a rational basis is offensive". Although we can continue to pass legislation on organ donation, in an attempt to give an improvement to society's natural inertia, the support and enforcement of all medical professionals, is critical to obtain some success [12].

Although some authors believe that the voluntary and altruistic practice of organ donation should be preserved, it is impossible to overlook the failure of this attitude to supply an adequate number of organs. In this regard it is important to mention some proposals performed in the last 20 years [13].

The notion that the body after life is a unique and irreplaceable source of health, was mentioned in 2002 [14]. However, we should acknowledge, that as long ago as 1970, Dukeminier, a lawyer Professor, wrote in the Michigan Law Review: "Society must face the fact that cadaver organs can be used to save human life, perhaps their own, and that a hard choice must now be made". As well, at that time the author advertises: "The possibility that a market for organs, will be a result of the scientific successes in interchanging human parts, and the consequent imbalance that will be arise, between the quantity of organs supplied and the quantity demanded. Currently, and probably in the future, unless our laws are changed, it seems likely that the quantity of organs supplied for transplantation will not equal the quantity demanded. Unless effective means are found to increase the number of organs available for transplantation, the purchase of organs to meet human needs may be difficult to avoid" [15].

Despite these remarkable ideas and premonitions, made by a law professor more than 50 years ago, it is hard to understand how these concepts were not introduced at all its levels, on the never significantly modified organ donation's social education programs. The legal modifications of consent for organ donation, fundamentally implies a voluntary conduct, in terms of the attitude that the potential donor or his family, still make to the final decision on organ donation.

Nevertheless, the law Caillavet, approved in France in 1976, makes everyone as an organ donor, except those who have been explicitly refused. The official rule defined that to accept this alternative (Opt Out), of not being an organ donor, the individual decision it should be officially registered.

The controversial social response in the organ shortage solution, would indicate the need for a combination of new proposals in social education and legislation rules, that clearly defines the possible solution to the crisis, providing legal protection to both patients and the medical professionals. This option requires social education strategies renewal, to change current people behaviour towards organ donation. Presumed consent is considered a contributing factor to donation rates. However, this is a subject widely debated between the public and specialists in this field. A recent study that compared the opt-in (informed consent) and opt-out (presumed consent) policies in five countries, carried out by the Organization for Economic Co-operation and Development (OECD), found no significant differences in the rates of deceased donors' statistics. However, a reduction in the number of living donors was observed in the opt-out countries [9].

Paul Ramsey well-defined that presumed consent "Would deprive individuals of the exercise of the virtue of generosity" [16]. However, the most telling objection, was that presumed consent

was not acceptable to the public. Ethical objections to presumed consent, can be summarized by referring to the ethical values necessary to promote any organ procurement system:

- a) To saving lives.
- b) To improving quality of life,
- c) To promoting through acts of generosity, a sense of community.
- d) To respecting individual autonomy, showing emotional impact for the decedent, and for the wishes of the family.

Given the benefits expected from an increased availability of deceased organs for transplantation, and in view of the shortcomings of the current required request approach to donation, it is worthwhile to conduct further research on presumed consent. This research will be required to assess the merits and feasibility of presumed consent, and to design a system that would fulfil ethical, religious, and legal requirements.

Should be of significant interest to review the following measures

- a) To make easy to understand an opting-out system to refuse to donate, in manner that it was understanding to the feelings of patients and their families.
- b) To planning an educational program for both donors and the public, that will educated them about the benefits of the presumed consent law [17].

Current action proposed to improved organ shortage

Until the earliest 1980s, organ rejection episodes reduced the success of transplantation. In 1987, related with therapeutic advances it was informed that in the US, as result of continuous medical improvement, more patients in need of organ transplant than ever have received the “gift of life” [18].

Up today, the efforts to try to solve this serious medico-social problem, have fundamentally focused on the important advances in immunosuppressive therapeutics, the improving the mechanical preservation of organs, and breakthroughs in research in supplementary techniques such as xenotransplantation and the potential use of the stem cells.

However, the shortage of donor organs continue represents a defiant global problem. For instance, according to the UNOS database, there were 41,354 transplants performed in the US. Nevertheless, 116,566 patients remained on waiting lists while another 6,564 died waiting for the life-saving organ. The demand for donor organs by far exceeds the supply. Alleviation of the donor organ shortage and expansion of the transplant donor pool are important challenges that must be faced [19].

The informed potential success and public acceptance of organ donation and transplant today, is related to the multidisciplinary efforts of basic scientists, immunologists, surgeons, and public educational programs. Even so, should be substantial, that it was mentioned that the number of transplants during the last three decades has multiplied by two, and that on the other hand, concomitantly the number of patients on waiting lists has been multiplied by six. These results clearly demonstrate that the demand for donor organs far exceeds the supply. On the other hand, should be of interest that, Melanie Miller, an ethicist, in 1987, evaluating the revolutionary concepts, stated by Dukeminier in 1970, define: “So far nothing has changed” [12,15].

The cruel reality is that the field of transplantation, in constant evolution, has never been definitively resolved, with a complexity of problems always in force, mainly relate to an incomplete acceptance

regarding organ donation of the society, on a global level.

Review of proposals

Organ shortage is a social, psychological, ethical, moral, and political challenge, responsible of an unjustifiable damage to public health: Patients on waiting lists are “unfairly” dying every day. In a way, the truth is that society itself, is denying the people a chance to live. Many factors may dissuade people from donating organs, such as fear and prejudice, due to ignorance or simply to being misinformed.

Up to now, the message to support organ donation has been one based on altruism and solidarity. However, despite numerous education campaigns, targeting both the general population and medical teams, the refusal rate of organ donation for transplantation remains unacceptably, making a debate of new legal strategies for organ donation to be explore. Significantly not all the people do not yet readily accept that ‘using’ body parts, when life ends is morally justify, and does not violate ethical precepts. Understanding this dilemma is essential if this problem will try to be surmounted. Trying to enlarge the donor pool, living donor transplants was improved. As well, poor quality donors, the so call marginal diseased grafts, are also being increasingly accepted. We suggested the potential impact of promoting a different transplantation program, that will considering personal feelings toward new approaches to organ donation.

New different concepts should be discussed

- a) During life, we might become organ recipients rather than organ donors.
- b) The dead body is a unique source of health.
- c) Organ donation means to share life [20].

As mentioned before, a critical analysis of the reasons for the uncertain people behaviour toward donation, suggests that the current message to society has not been able to develop a positive change in the social conduct. As a define proposals, we have suggested a change of the classic slogan “Donate is a gift of life” for “Donate is to share life”.

In addition, we have proposed the following ideas as useful options to modify current behaviors toward donation

- a) During life we are all potential recipients of a transplant.
- b) All monotheistic religions accept organ donation and transplantation.

An improved social education, that allows an actual knowledge of this problem, will be a challenge to facilitate people understanding a significant human right acquired by Society: To receive the required organ transplant needed for its live. The slogan: “Our body after death is a unique and irreplaceable source of health”, might be a valid symbolic challenge, searching a behaviour social change, concerning organ donation.

Body integrity remains a central issue for the negative behaviour toward organ donation. As well, it is the fear of mutilation, the anxiety of losing any part of our body structure. These ideas can generate an ethical-moral people’s negative behaviours, regarding the handling that our bodies or those of ours loved ones receive at the time of death [21].

Regarding organ donation, it is of interest to analyse the interest of the potential relationship between mutilation, cremation, levels of mourning and family behaviour, and the guiding principle of monotheistic churches, on the current social education programs.

Cremation was totally prohibited in the middle age. In France; nowadays ~40% of the French choose to be cremated, 85% in Switzerland and 90% in the UK and Scandinavian countries. In the US, the cremation rate was 53.1% in 2018. In a recent study, acceptance of cremation is associated with a better attitude towards organ donation, and acceptance of autopsy [22].

Undoubtedly, generating a clear understanding of the relationship between cremation and organ donation, must be defined by specialists with experience in the areas of ethics, social conduct, and psychological and religious aspects, with a clearly outline respect for autonomy, and evaluating the importance of receiving an organ from a deceased donor.

Considering that the idea of mutilation can limit the potential supply of organs available for transplantation, the concept that our body after death is the only and irreplaceable source of health, should be pedagogically introduced in social education programs, as a challenge searching to modify psychological behaviours, in the minds of people.

Invoking the significance of mutilation, as an inhibition of donation before death, with its vital social significance, and the importance of the current massive choice of cremation, might be an issue of vital significance to be resolved by experts in social education [23]. Training of young people throughout the incorporation of topics on donation and transplants in curricular programs, periodically carried out in schools, colleges and universities, may be another way to develop a change in people's attitudes toward organ donation [24,25].

A Specific Legality for the Practice of Transplantation

As the main cause of this health crisis, is related to relatives' refusal to donate the organs from a deceased patient, a project for a new education policy must be designed to positively increase donation rates.

Different legal solutions have supported organ donation; however, a point of view not yet analysed, is whether a negative attitude towards donation, could not be considered, from an ethical point of view, as an action compatible with the abandonment of endangered people.

Regarding the social response to current legal aspects related to consent for organ donation, it has been defined that informed consent is a central legal and ethical obligation, during any medical treatment. The absolute need for a clear understanding of society of this subject, through the most correct medical information, has been underlined. Organ transplantation currently presents a multifactorial social challenge. It has been suggested that a defined analysis of this problem, can help to obtain a positive social response to consent for organ donation in the face of the death of a loved one. In daily practice, consent to organ donation, can be intensified, when professional and legal aspects by state's health responsible, will develop proposals to society, based on full knowledge of the vital significance, that positivity or denial of donation consent, might represent for them or their families. People must clearly understand and accept, that deceased donor organs can save human lives, including their own. Achieving this objective, must require a well-founded and defined decision, and a medicolegal policy that allows society to preserve its own life without reservations. Obviously, new legal strategies regarding organ donation and transplantation, must maintain the principles of justice, utility, and respect for people, as fundamental ethical values. Failure to assess these factors, is ethically and

legally unacceptable. The lack of organs constituting an urgent social demand, has been considered, when this action does not imply personal risks, as a legal responsibility and a social duty. Concerning this social demand and its consequences, in 2006, in search of a potential solution to the problem Howard issued this significant proposal: "The rescue of a person in danger of death, when the action does not involve personal risks, is a legal responsibility" [26].

To prevent that new ethical-legal concepts, which could be considered by society as contrary to the principles of autonomy, and generate a potential public conflict, new educational programs must present a broad pedagogical explanation of the foundations, that justify these structural modifications.

Society's conceptual recognition of its responsibility concerning organ donation consent, will allow people to accept the potential socio moral-legal consequence to refusing to "rescue" someone in danger of death. The use of organs and tissues for transplantation, should be a fair agreement and a conscious social duty [20].

Ethical considerations of economic aspects of transplantation practice at international level

An important aspect of potentials barriers to public controversial attitude toward organ donation, might be the current aspects of global economy related with organ transplantation. In particular, and as an example, we will refer to the international costs of kidney transplantation.

The organ transplantation budgets are significantly different all-over, dependent on the unique circumstances of each country. This difference in the costs of this medical act, at international level, is paradoxical mainly considering that the only total solution of this medical act, is the transplantation of an organ, particularly from deceased donors [27].

The disproportion of prices in relation to the practice of organ transplantation, clearly contradicts the ethical precepts defined internationally. It was outlined that ethics in transplantation, to the welfare of society, should be supported by new and innovative laws, and strategies, founded on principles of altruism and integrity, looking forward to increasing organ supply [28].

The importance of economic factors in social behavior towards organ donation and transplantation, concerning medical costs, should be analysed in the solution of organ shortage emergency. This suggestion could also be considered at the level of the pharmaceutical industry. Immunosuppressive drugs are expensive. Concerning the cost for transplanted patients' medication will be prescribe practically during all their life. In contrast, the same drugs, as treatments for different systemic diseases, depending on their evolution, can be transitory. Would not these considerations, justify a different budget, for different patients, to be evaluate by the pharmaceutical industry?

A reasonable rationalization of the costs of transplantation, a medical intervention that mainly requires the use of the organs of a deceased person as a fundamental solution, might be considered by definers of health policies, at different medical and institutional levels and as well by the pharmaceutical industry, looking forward to carry-out an essential and a positive social response to organ donation.

New information addressed to society, by global educational programs, concerning new proposals regarding organ

transplantation costs, may be an strategic achievement to change the current public attitude towards donation. Different ethical statements, which evaluate the need for a fair economic prescription in the cost of this new medical activity could generate a positive social response.

Discussion and Conclusions

An unequivocal education can promote a culture that will works to resolve organ shortage. Presently, barriers and misinformation, must be considered when conducting trials to develop a positive social organ donation behaviour, particularly in medical professionals and young people. Schools must incorporate programs on organ donation and transplantation into their curricula, to prepare children for their future role in a society, that will require a full understanding of this urgent medical dilemma: People are dying unnecessarily due to organ shortage. Early childhood education, might be a force helping to change current social ambiguous opinion, concerning consent to organ donation.

New and well-defined legal concepts, must be enforced in relation to the significance of the rejection of donation, and the immediate consequences of this people conduct, sentencing patients on waiting lists, to an irremediably and unjust death.

Furthermore, the global economic implications of paradoxical costs of organ transplantation, on people feelings, must be carefully analysed, considering that for the main success of transplantation, is fundamental the human organ, mainly from a deceased donor. This dramatic reality, well recognized by society, justifies the alternative of believing in a positive global consensus of the people on organ donation, if organ transplantation will cost like any difficult surgical intervention, without the prerequisite of an organ donated by a human. Likewise, the costs of defined therapies for organ transplantation, prescribed for life, could also be considered at the level of the pharmaceutical industry, in comparison with the cost of similar therapies, generally not prescribed throughout the patient's life.

The technical and scientific evolution of organ transplants have been remarkable. However, the shortage of organs, and the ever-increasing deaths of patients on transplant waiting lists, clearly show that the current situation needs to change.

New proposals, that might create doubt and produce complex reactions, in all levels of society, require experts' pedagogical discussion alternatives, and clear social diffusion for main acceptance by the society at all its levels.

Throughout the last decades, a favourable evolution in survival, including vital organs of the transplanted patient, has been highlighted. Although the increase in statistics is mentioned considering the number of transplants, few studies have related this favourable result, to the maintenance or even increase of waiting lists. Although the therapeutic and functional progress achieved over time has been underline in organ results, no significant modification in social education programs, is frequently mentioned in the literature.

We believe that a real advancement in the evolution of organ shortage, will undoubtedly be achieve, when new proposals for its accomplishment, significantly expression of a social clear understanding of the philosophy towards donation, will be expressed by a suggestive disappearance of the patient's unjust death, waiting for the organ that will not arrive.

References

1. Health Resources and Services Administration, U.S (2022) Department of Health & Human Services. Organ Procurement & Transplantation Network. OPTN. All-time records again set in 2021 for organ transplants, organ donation from deceased donors <https://optn.transplant.hrsa.gov/news/all-time-records-again-set-in-2021-for-organ-transplants-organ-donation-from-deceased-donors>.
2. GIFT of LIFE. DONOR PROGRAM. The Waiting Lists <https://www.donors1.org/patients/resources-for-transplant-patients/the-waiting-list>.
3. Fleck A (2022) The Organ Shortage Crisis in the U.S. ORGAN DONATION IN THE US. Statista <https://www.statista.com/chart/27495/organ-donation-waiting-list-and-completed-transplants/>.
4. Ward A, Klassen DK, Franz M, Sebastian Giwa, Jedediah K Lewis, et al. (2018) Social, economic, and policy implications of organ preservation advances. *Curr Opin Organ Transplant* 23: 336-346.
5. Sanner MA (2006) People's attitudes and reactions to organ donation. *Mortality* 11: 133-150.
6. Kerridge IH, Saul P, Lowe M, J McPhee, D Williams (2002) Death, dying and donation: organ transplantation and the diagnosis of death. *Med Ethics* 28: 89-94.
7. New Report Recommends Changes to U.S (2002) Organ Transplant System to Improve Fairness and Equity, Reduce Non-use of Donated Organs, and Improve the System's Overall Performance. News Release. NATIONAL ACADEMIES OF SCIENCES, Engineering, and Medicine <https://www.nationalacademies.org/news/2022/02/new-report-recommends-changes-to-u-s-organ-transplant-system-to-improve-fairness-and-equity-reduce-nonuse-of-donated-organs-and-improve-the-systems-overall-performance>
8. Wen T (2014) Why don't more people want to donate their organs? *The Atlantic* <https://www.theatlantic.com/health/archive/2014/11/why-dont-people-want-to-donate-their-organs/382297/>
9. Etheredge HR (2021) Assessing global organ donation policies: Opt-In vs Opt-Out. *Risk Manag Health Policy* 14: 1985-1998.
10. Lewis A, Koukoura A, Tsianos G-I, Athanasios Apostolos Gargavanis, Anne Ahlmann Nielsen, et al. (2021) Organ donation in the US and Europe: The supply vs demand imbalance. *Transplant Rev* 35:100585.
11. Scholz N (2020) Organ donation and transplantation Facts, figures and European Union action. BRIEFING. European Parliament. Research Service. Members' Research Service 1-12.
12. Miller M (1987) A proposed solution to the present organ donation crisis based on a hard look at the past *Circulation* 75: 20-25.
13. Łuków P (2020) Pure Altruistic Gift and the Ethics of Transplant Medicine. *J Bioeth Inq* 17: 95-107.
14. Cantarovich F (2002) Improvement in organ shortage through education. *Transplantation* 73: 1844-1846.
15. Dukeminier J Jr (1970) Supplying Organs for Transplantation. *Michigan Law Review* 68: 811-866.
16. Ramsey P Response, KL Vaux, S Vaux, M Stenberg (2002) *Covenants of Life, Philosophy and Medicine*. Springer 77: 201-234.
17. Mehlman MJ (1991) Presumed Consent to Organ Donation: A Reevaluation. *Health Matrix. Journal of Law-Medicine; Cleveland, Ohio* 1: 33-66.
18. Starzl TE, Makowka L (1987) Organ Transplantation - Then and Now. *Hosp Physician* 23: 28-36.

19. Kupiec-Weglinski JW (2022) Grand Challenges in Organ Transplantation. *Front Transplant* 1: 897679.
20. Cantarovich F (2022) Review and Proposals Regarding Organ Donation Education. *Jap J Clin & Med Res* 2: 1-6.
21. Lester D (2005) Organ Donation and the Fear of Death. *Psychol Rep* 96: 769-770.
22. Febrero B, Almela J, Ros Madrid I, José Alfonso Arias, Juan José Ruiz-Manzanera, et al. (2022) The New Age of Organ Donation—What Factors Have an Influence on the Attitude of Older People? An Attitudinal Survey in Southeastern Spain. *Int J Environ Res Public Health* 19: 8524.
23. Cantarovich F (2017) Social Security and Social Transplantation. *ARC J. Nurs. and Healthc* 3: 23-25.
24. Siebelink MJ, Eduard Verhagen AA, Roodbol PF, Marcel JIJ Albers, Harry BM Van de Wiel (2017) Education on organ donation and transplantation in primary school; teachers' support and the first results of a teaching module. *Plos One* 12: e0178128.
25. Cantarovich F (2004) The Role of Education in Increasing Organ Donation. *Ann Transplant* 9: 39-42.
26. Howard RJ (2006) We Have an Obligation to Provide Organs for Transplantation After We Die? *Am J Transplant* 6: 1786-1789.
27. Arshad A, Anderson B, Sharif A (2019) Comparison of organ donation and transplantation rates between opt-out and opt-in systems. *Kidney Int* 6: 1453-1460.
28. World Health Organization (2010) WHO Guiding Principles on Human Cell, Tissue and Organ Transplantation. WHO/HTP/EHT/CPR/2010.01. As endorsed by the sixty-third World Health Assembly in 1- 9.

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