REVIEW ARTICLE

IJETV Vol. 7, Issue 2, 2021 Print ISSN: 2394–6822 Online ISSN: 2395–4272

Impacts of Forensic Outcomes on Cadaveric Organ Donations in Malaysia

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Abstract

In forensic medicine, there can be times when the dilemma of having to choose between harvesting organs from cadaveric donors versus the need to complete the forensic analysis to savor the equally important forensic outcomes becomes tricky as well *cul de sac* of one on another. The deliberation of the seemingly practical junction is of academic value and ethical considerations that need to be dissected upon. As such, the impacts of forensic outcomes on cadaveric organ donations in Malaysia through the lenses of (i) academic benefits of forensic outcomes, (ii) ethically justified considerations of the dilemma, and (iii) available data helpful in navigating through the two competing needs.

Keywords: Autopsy, Ethical justification, Malaysia, Organ donation.

Int J Eth Trauma Victimology (2021). DOI: 10.18099/ijetv.v7i02.8

Introduction

Organ transplant is an excellent medical advancement, particularly in the era of modern medicine. It brings hope, potentials, and a new lease of life to patients who are otherwise likely to succumb to death or subject to poor quality of life for as long as they are still alive. In today's medical technologies and developments, almost all our organs are transplantable, from major organs such as kidneys, heart, lungs, pancreas, uterus, and intestines, to corneas, skin, bones, ligaments, tendons, and even our face. Technically, all of those are transplantable from either cadaveric or living sources, except for the heart exclusive to cadaveric donations in the sense of brain death patients. As such, health authorities worldwide work on increasing the rate of organ donations to match the unbalanced demands, especially when it comes to the needs of kidneys, lungs, liver, and heart, which are life-changing and even lifesaving to patients on the waiting lists.[1]

Zooming in to the subject of cadaveric organ donations, it is uniquely different compared to living organ donations in the sense that it is not readily limited to recipients who are genetically or emotionally related, most obvious in countries where living organ donations are heavily regulated to curb the issue of organs selling. In countries such as Iran, which legalize the selling of organs, the difference between cadaveric and living organ donations is more subtle.[2] Therefore, as most countries do not allow for the sale of organs, the beauty of cadaveric organ donations (compared to living organ donations) is epitomized by the vast choices of potential recipients able to benefit from the systems that are no more limited to genetically or emotionally related donor-recipient relationship. Even living donors can still donate altruistically to non-biologically or non-emotionally related recipients. Most systems employ rigorous and thorough reviews or rather complicated organs allocation systems, which in the cadaveric organ donations are hassle-free in that sense.

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How to cite this article: Jalil IJA, Ahmad MAH, Mohd Isa NA, Nizamani SM, Islam MN. Impacts of Forensic Outcomes on Cadaveric Organ Donations in Malaysia. Int J Eth Trauma Victimology. 2021; 7(2):37-43.

Source of support: Nil

Conflict of interest: None

Received: 30/07/2021; **Received in revised form:** 30/09/2021; **Accepted:** 06/10/2021; **Published:** 20/01/2022

In 2018, around 25,000 patients in Malaysia were on the waiting list for kidney transplants alone, but only 30 to 40 kidneys are available each year for transplant. It was also projected that the number of patients requiring kidney transplants increases as much as 1,000 every year, but as of August 2018, only 424,143 people have pledged to become organ donors.[3]

In Malaysia, the Malaysian Medical Council has its Guideline on Organ Transplantation (MMC Guideline 006/2006), whereby item 8 of the document's annexure (on the guideline for organ transplantation from living donors) specifically discusses that organ donation by living unrelated donors is "primarily not accepted unless in special circumstances". It goes on to explain that such special circumstances "may prevail when there is no suitable living donor or cadaveric donor for liver transplant" that still need to go through approval from the Unrelated Transplant Approval Committee (UTAC). However, apart from the liver, no other organs were mentioned further to explain the prohibition of genetically or emotionally unrelated donors. Item 3 of the main document also highlights that "even in organ transplantation where the live donor is possible and available, such as kidney transplantation, the main or preferred source of organs is still the cadaver" .[4]

Despite the already depressive figures, an additional hindrance of the effort to further improve the rate of organ donations, particularly the cadaveric organ donations, may come in the form of forensic evaluations, which necessitate turning down golden opportunities to harvest valuable organs.[5] Nevertheless, it is important to understand that forensic evaluation is not of lesser importance than organ donations, albeit the wonders of cadaveric organ donations to patients on the waiting lists in particular. As cadaveric donors can come from various case backgrounds, including homicides, suicides, road traffic accidents, or even medically puzzling scenarios; forensic outcomes are pivotal in constructing a complete conclusion that is central in delivering justice, answers, and closures to any case relevant parties.[6] Having a cadaveric donor who had pledged to donate organs is not simply an excuse to refute forensic evaluations and outcomes.

Given the dilemma of choosing between harvesting organs from cadaveric donors, versus the need to complete the forensic analysis to savour the equally important forensic outcomes; it is of academic value and ethical considerations that need to be dissected upon. As such, this writes up will further explore the impacts of forensic outcomes on cadaveric organ donations in Malaysia through the lenses of (i) academic benefits of forensic outcomes,(ii) ethically justified considerations of the dilemma and (iii) available data useful in navigating through the two competing needs.

Materials and Methods

This study adopts electronic library-based research by going through scientific databases such as PubMed, Google Scholar, and Web of Sciences to provide insight on impacts of forensic outcomes on cadaveric organ donations in Malaysia by looking into other sources such as academic journals' articles, credible reports, and relevant authoritative websites. The keyword "forensic outcomes" was used in combination with "cadaveric organ donation", "autopsy", "post-mortem", "forensic investigation", "organ donation", "Malaysia", "ethical justification", "bioethics" and "organ donation". All original articles, discussions, and scientific documents were included from 2016 onwards.

Discussions

Academic Benefits of Forensic Outcomes

Forensic outcomes offer excellent academic benefits which are helpful in many circumstances, including ascertaining the actual cause of death in criminal or suspected criminal cases, allowing proper claims of insurance pay-outs following one's death as well as providing clinical conclusions in medical mortalities of complicated conditions.[7]

These benefits often become a conflicting predicament whenever the not-so-common chance of cadaveric organ donation presents itself. Nevertheless, it is wise to detail these benefits of forensic outcomes that are potentially but adversely denying the golden opportunities of harvesting organs from cadaveric organ donations.

Criminal or Suspected Criminal Cases

Once the police bring a dead person's body for an autopsy, there is no denying that such authority to order a thorough and complete post-mortem examination is legally valid and forensically sound. However, one should also be attentive to the reasons behind the order for autopsies, particularly if the dead person has pledged to be an organ donor. In Malaysia, where organ donation is an opt-in system rather than opt-out, as in Singapore, the United Kingdom, or Spain; receiving and honoring the deceased's pledge to donate organs is always tempting and responsibly perceived. But, simply arguing against conducting forensic examinations can be shallow, and denying the valuable forensic outcomes in certain cases is utterly irresponsible. It gets even more precarious in cases of apparent suicides where suicide notes are left indicating their wishes to donate organs.[8]

Forensic outcomes help investigators get a better picture of what might have transpired through the alleged criminal events. Forensic investigations such as DNA or fingerprints pieces of evidence are not necessarily capable of impacting the cadaveric organ donations. However, autopsies, in general, will involve a prolonged period of non-perfusion to vital organs, exposing them to biochemical processes of decaying and dying itself, cutting open organs for a complete forensic examination– all at the expense of patients on numerous waiting lists that could have benefited from the cadaveric organ donations as opposed from the autopsies. However, the value of forensic outcomes in such criminal cases is central to the investigation and the eventual judicial processes and outcomes.

In cases where the deceased had pledged as an organ donor is found to be in situations suspected of crime such as murder or vehicular accidents resulting from drunk driving cases; forensic outcomes are also vital in ascertaining the cause of death and to delivering justice to the perpetrators.[9] On the other hand, forensic outcomes can also help to free the accused who are innocent. In this regard, dissecting and examining organs to the point that they are no more transplantable to organ recipients is as important and noble as harvesting those organs for the benefit of organ recipients.

Insurance Claims Purpose

In this modern-day, more and more people subscribe to health and life insurances to better protect their and their loved ones' economic safety. In submitting the insurance claims following one's death, the insurance companies, more often than not would understandably request for the cause of death.[10] In straightforward cases where the cause of death can be clinically confirmed, the need for autopsy may not arise, hence not impacting on the cadaveric organ donations processes. However, in cases where there were suspicions of suicides or foul play; it is justifiably acceptable as it would be unfair for the insurance companies to be paying out to the families of the insured person who committed suicide to trigger the pay-out to be received by their loved ones.

Such circumstances would be more significantly disturbing in cases where a young person is found dead or died in the

emergency department of a hospital following motor vehicle accidents, and the person was subscribing to hefty life insurances premiums. In such a young person, their organs are more likely to be in healthy conditions and suitable for cadaveric organ donations. As such, the dilemma between allowing for smooth life insurance claims by forensically ruling out suicides versus harvesting his or her organs for cadaveric organ donations is significantly a crossroad needed to be wisely negotiated or navigated.

Whenever such cases involve a pledged organ donor, the much-needed forensic outcomes would be needed if the cause of death cannot be clinically determined. Again, for a complete forensic outcome such as determining or ruling out medical conditions as the culprit behind the death such as extensive coronary blockages, the dissected heart is no more transplantable. Even the time taken to complete the forensic examinations would mean that his or her organs are no more transplantable.[11] However, in forensically confirming the cause of death, both parties, the insurance companies and the benefactors of the insurance policies, are given adequate evidence in the form of forensic outcomes that is fair to everyone.

Having discussed the sort of cases that are clinically tricky and puzzling to determine the exact cause of death, it is paramount to note that straightforward cases not requiring forensic examinations in determining the cause of deaths should be subjected to autopsies, even more, if the deceased has pledged as an organ donor. Insurance companies do accept the clinical cause of death in straightforward cases without irresponsibly mandating for unnecessary forensic examinations.

Medically Uncertain Mortalities

Medicine is an art that keeps developing and evolving. Many medical conditions are still not thoroughly known in discussing causes of diseases; they are often referred to as "unknown aetiology". Medicine also do from time to time, present with inpatient mortalities that are rather puzzling in nature.[12] Defensive medicine practicable nowadays also leads to mortality review which can sometimes be accusative to a specific person or department, even it should be done to improve the quality of healthcare services rather than fault-finding.[13]

At this point, even the deceased's next of kin will be facing challenges in making up their mind on the clinicians' request of whether to go for forensic investigations in the form of a complete post-mortem autopsy or to allow for the cadaveric organ donations. The next of kin would already be grieving, busy making funeral arrangements as well as having to choose between forensic outcomes, or cadaveric organ donations, or neither of both.

Forensic outcomes can shed light on an actual scenario of what might have transpired clinically in such clinical cases that are potentially beneficial in terms of medical development and better clinical care or even controversial in terms of fault-finding behaviours. In this regard, forensic examinations can produce forensic outcomes that also educate clinicians to better judge and decide for future patients.[14] However, when such a patient in issue is a pledged organ donor, a difficult decision will need to be made to either harvest his or her organs as he or she had pledged or subject the patient to forensic examinations at the expense of other patients in the organ transplants waiting lists.

Ethically Justified Considerations

Clinical practices are full of ethical issues. From the righteousness of obtaining informed consents to patients' confidentialities and the likes of considering the forensic outcomes on cadaveric organ donations. Ethical dilemmas can be discussed and argued through many ethical theories, among them is the Principlism Theory covers four main elements of respect for autonomy, justice, beneficence and non-maleficence.[15] In considering the impacts of forensic outcomes, all of the four elements are worth deliberating.

Respect for Autonomy

In the Malaysian context, where a deceased had pledged to be an organ donor, even the decision post-mortally is at the hand of a person who is lawfully in possession of his or her body (under Section 2 of the Human Tissues Act 1974 [*Act 130*]). It ultimately comes back to the deceased's autonomous decision to donate his or her organs to be considered respecting or otherwise. In clinical settings, the need for forensic outcomes should be carefully weighed against the deceased's autonomy in wanting to donate his or her organs.[16]

Respect for autonomy also needs to be comprehensively assessed in criminal situations. Not only the authorities are with the police officers or the Magistrate of a particular case, but clinicians need to consider that the deceased's decision to donate his or her organs may not be made while considering the chance of him or her ending up dead in a criminal nature. Thus, the element of respect for autonomy in this sense must be deliberately explored in assessing the impacts of forensic outcomes on cadaveric organ donations.[17]

The autonomy of those who are legally in possession of the body needs to be respected as well. In this regard, for them to be fully autonomous, clinicians play a central role in giving them the whole picture of what is going on and what are the implications of any of the decisions are going to be in their specific cases. They should not be misled or withheld from any of the relevant information; chances to seek the second opinion or consult any other person should also be adequately presented to those who need to make such an important decision.

Justice

Justice can be served distributive, procedurally, retributively and restoratively. Distributive and restorative justice is particularly relevant to the subject of forensic outcomes impacting cadaveric organ donations. In distributive justice, the decision to subject one to forensic examinations instead of favouring cadaveric organ donations must apply to the next case with similar parameters. It will be a distributive injustice

to apply one set of rules or decisions to a particular group and another set for another group.[18]

In restorative justice, forensic outcomes are prioritized over cadaveric organ donations, more so in the cases of crime or foul play. The impact of forensic outcomes in this scenario is particularly instrumental in delivering justice to the victims and the accused. Restorative justice is delivered in the context of reprimanding the perpetrators and in the form of acquitting the innocently accused person. As such, forensic outcomes do limit the cadaveric organ donations on a bigger picture, but in case-specific issues; it serves as an important tool for the judicial system.[19]

The element of justice needs to be discussed from the deceased's point of view as well. In cases of a deceased had pledged to be an organ donor, or having a living will on that matter, to either respect their autonomy to proceed with organ donations or to instead subject their body for forensic examinations at the former's expense, the eventual decision need to be just. Should the scenario of his or her death warrant forensic outcomes rather than their wish to be a cadaveric organ donor, then it would be just to do so. If it would not do the deceased any justice in not respecting his or her autonomy to decide what happens to his or her body and organs posthumously, then the ethically correct decision justice-wise is to honor the deceased's wish to go for the cadaveric organ donations.

Beneficence

The element of beneficence is the hallmark of medical services. Be it forensic medicine or another patient-based discipline such as internal medicine, surgery, pediatric or obstetrics and gynecology services, the benefits of instituting any form of investigations or therapeutic options are of utmost importance. Going after forensic outcomes that reduce the rate of cadaveric organ donations due to a long period of organ non-perfusion and cutting open organs for forensic examinations, the beneficence of the whole process should be judged on a case-to-case basis.[20]

As discussed earlier, cadaveric organ donations are richly benefitting to several patients on the organ transplants waiting lists, particularly in Malaysia where the number of people who have pledged to donate organs still needs to improve further. In balancing the benefits of forensic outcomes such as described in item 2.1 above, each case is unique and has a solution that fits all might be tricky. The bottom line in this argument is that the benefits of forensic outcomes should be greater than the already advantageous cadaveric organ donations should one opt to forego harvesting organ donations from the relatively rare golden opportunity of an organ donor ended up dead on his or her doorstep.[21]

In cases with absence or limited degree of beneficence in subjecting the deceased to forensic examinations rather than cadaveric organ donations, one should be clear enough to opt for the cadaveric organ donations rather than having less-benefiting forensic outcomes. Even in criminal cases, if the circumstances and scientific evidence are pointing to be non-beneficial forensic outcomes likely, the ethically correct decision should always move away from forensic examinations. Should it be statutorily wrong to do so, judicial review or court orders can be looked for to help decision making in unique and relevant cases?

Non-maleficence

First, do no harm. The very basis of the non-maleficence element in principlism ethics was formed way before these days of modern medicine. Practicing the art of treatment should not be inflicting further harm to the already suffering patients, or in our case; the deceased.[22] In the case of cadaveric organ donations, limiting the source of organ donors can be harmful to the other patients in need of such organs. Performing full and thorough forensic examination also in a way harms the organs in such a way that they are no more transplantable.

However, in any particular case whether of criminal, insurance claim issues or medically problematic mortalities; not having the luxury of forensic outcomes will also cause potentially worse harms. Again, balancing the possible harms as well as other elements of principlism ethics is the hallmark of good ethical practice. It is case-specific as every single case has its unique characters and parameters. Great harm in one situation, maybe lesser harm in another situation.[23] So long the principle of non-maleficence is held onto and wisely applied in clinical scenarios, harms can be negated or at least reduced.

In assessing the impacts of forensic outcomes on cadaveric organ donations in Malaysia, the element of non-maleficence should also be weighed in on the subject of racial and religious sensitivities. Malaysia is a multi-racial and multi-religious country. Each has its stake in forensic examinations as well as on the subject of cadaveric organ donations itself. Clinicians should approach this subject sensibly and wisely as not to cause unnecessary misunderstandings or insults. Being emphatic can help in such situations, but more importantly, is to be non-provocative towards the next of kin or whoever is legally or socially in possession of the deceased's body.

Available Data Helpful in Navigating through the Competing Needs of Forensic Outcomes Versus the Benefits of Cadaveric Organ Donations

In situations where adequate data are available, the relationship between forensic outcomes and cadaveric organ donations can be quantitatively and qualitatively studied in detail. The first issue that can be forked out from such a relationship is whether the rate of cadaveric organ donations has been significantly impacted by the need to obtain forensic outcomes. It can be assessed by obtaining the number of deceased who pledged for organ donations or agreed by the next of kin for the organs to be donated, but organ harvesting was not done due to the need for forensic outcomes in such cases. As discussed earlier, such needs for forensic outcomes may arise in criminal cases, insurance claims issues, or even medical mortalities, which call for forensic explanations.

Another issue is the other way around; which is whether any significant issues arise as a result of the absence of desired forensic outcomes due to cadaveric organ donations.

This can be achieved by studying judicial cases, complicated insurance claims or pay-out issues, and medical mortalities that are affected by the lack of forensic outcomes due to the need for cadaveric organ donations. The relationship between the quality of forensic outcomes obtained from cadaveric sources, which also proceeded with organ donations, can be assessed should such data are accessible. Similarly, it can be studied by observing judicial issues, insurance claims, or medical mortalities directly related to the quality of forensic outcomes that are compromised to give way to cadaveric organ donations.

These studies can help policymakers formulate a proper, effective and efficient mechanism to deal with conflicting needs between forensic outcomes and cadaveric organ donations. That way, the needs for forensic outcomes were not inconsiderably shoved away to give way to cadaveric organ donations. In parallel, it can also contribute to the cadaveric organ donations' rate not unnecessarily affected by the need to obtain forensic outcomes.

A recent study in Queensland, Australia found that out of 177 reportable deaths (which were referred for organ donations over four years), 10 cases were recommended restrictions from proceeding with organ harvesting. Of the 177 cases, none that proceeded with organ donations caused significant impacts on the cause of death findings and the ensuing criminal proceedings. It was also concluded that organ donations had a limited impact on autopsy findings and court proceedings, and coronial findings or judicial outcomes were not significantly affected in those cases where organ harvesting was not carried out to preserve the forensic outcomes.[24] Another study by the same lead author also dived into literature reviews of 27 studies on the subject of the impact of organ donation on coronial processes and forensic investigation found that in favoring for forensic outcomes, organs are lost and not transplantable well as no study suggest that organ retrieval can significantly impact on the cause of death determination or judicial outcome for that matter. It was concluded that better forensic decision making and strategies would increase the availability of organs for transplantation.[25]

A study in France indicates that approximately 30 cases per year, which make up 4% of deaths involving legal proceedings, need forensic outcomes more than cadaveric organ donations. To reduce the conflict between forensic outcomes and cadaveric organ donations, local authorities have formed guidelines to increase the effectiveness of communication between agencies and standardising practices so that the rate of cadaveric organ donations does not unnecessarily affect by the needs for forensic outcomes.[25] Another published report by the same lead author and a few others described the organ procurement issues at the crime scene. It explains in detail the differences of risks for crime scene contamination in an already dead and non-heart-beating person versus emergency treatment rendered by emergency medical personnel. Again, the conflict of procuring organs for cadaveric organ donations collides with criminal investigations, which needed efforts both from scientific and procedural rigour as well as the judicial policy of zero refusals to harmonize the two conflicting needs).[27]

An interesting report emerged from Spain where excellent coordination between a forensic institute, local judicial system, and local tissue bank has demonstrated that seamless interaction between related agencies can provide a win-win situation in the battle of requiring forensic outcomes versus making full use of cadaveric organ donations. Albeit the donated organ, in this case, is mainly the cornea, it still offers hope and directional policy to cater to both needs. It highlights that ironically, the number of autopsies performed in the forensic institute has positively contributed to increasing the number of tissues available for cadaveric organ donations. This sort of relationship is not only exemplary but more importantly, proves that the need for forensic outcomes should not limit cadaveric organ donations. On the contrary, it should drive the rate of cadaveric organ donations to the next level it can achieve.[28]

Conclusion

In conclusion, the impacts of forensic outcomes on cadaveric organ donations in Malaysia can be methodologically phrased as inversely repressive on each other. The need for forensic outcomes can be seen as denying the opportunity to savour cadaveric organ donations. In an opt-in organ donation system applicable to the Malaysian setting, such needs to purposely neglect an incredible opportunity to harvest organs for the benefit of patients on the organ transplant waiting lists are sadly uncomfortable, to begin with. Given the advantages and rates of cadaveric organ donations as opposed to living organ donations, it appears at a glance that it should never be turned down by any means.

However, understanding and valuing the importance of forensic outcomes, makes the tensionless provocative. The values of forensic outcomes in criminal cases, complicated insurance claims, and medically puzzling mortalities are not less important than the already noble and much sought after cadaveric organ donations. In forensic outcomes, the impacts of prolonged organs non-perfusion periods, structural and physiological damages to organs which are cut open for forensic examinations, and the chemical process of dying itself are scientifically produced, leading to harvesting organs from such cadaveric donors, not a practical option anymore.

It is also important to approach the dilemma with sound ethical justifications. Adopting the principlism ethical theory; the elements of respect for autonomy, justice (particularly distributive and restorative justice), beneficence, and non-maleficence should be well-balanced in any case that arises. The concept of one size fits all is not an option in such ethical and clinical dilemmas, as each situation warrants its unique interpretation of scenarios and parameters. In each scenario, every element of the principlism ethical theory has differing weightage assigned to, depending on the uniqueness of the case.

Access to valuable data directly related to the relationship between forensic outcomes and cadaveric organ donations is interestingly educative. Most kinds of the literature suggest a possible win-win situation where forensic outcomes were not impacted in any significant ways by cadaveric organ

donations and vice versa. Although it is obvious that the need for forensic outcomes does limit the rate of cadaveric organ donations, it has also been shown that judicial outcomes were not significantly affected by forensic examinations done in cases where cadaveric organ donations still proceeded. On another end, no significant judicial improvements were seen in cases where forensic outcomes were prioritized over cadaveric organ donations. Literature has also shown that effective and efficient coordination between related agencies can make a win-win situation for forensic outcomes and cadaveric organ donations a beautiful reality, co-existing harmoniously and has been shown to support each other's needs as opposed to canceling out each other's rate of success.

Overall, the impacts of forensic outcomes on cadaveric organ donations in Malaysia can be quantitatively and qualitatively analyzed with the correct data set, but more importantly, is first to understand the complicated nature of the seemingly opposing relationship. Understanding and unwinding the principal reasons and justifications of both options will help us to harmonize the conflicting duo of modern medicine better. It is fundamental to appreciate the qualities of both sides to make significant grounds both in terms of applications of the forensic outcomes and the success rate of lifesaving, life-changing of cadaveric organ donations.

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