

# Cadaveric organ donation in China

## A crossroads for ethics and sociocultural factors

Yijin Wu, PhD<sup>a</sup>, Robert Elliott, PhD<sup>b</sup>, Linzi Li, MD<sup>c</sup>, Tongwei Yang, PhD<sup>d</sup>, Yusen Bai, MD<sup>c</sup>, Wen Ma, PhD<sup>e,\*</sup>

### Abstract

In this paper, we will discuss several ethical issues concerning cadaveric organ donation from the perspective of sociocultural factors that are unique to China under the condition that China has ended the use of executed prisoner's organs for transplants. It is found that though great developments have been made in organ transplantation, the ethical issues relating to organ transplantation still face dilemmas in China. It is argued that organ donation and transplantation in China could make further progress if the ethical issues proposed in this paper can be carefully considered.

**Abbreviations:** COTRS = China Organ Transplant Response System, RCSC = Red Cross Society of China, WHO = World Health Organization.

**Keywords:** cadaveric organ donation, China, ethical issues, sociocultural factors

### 1. Introduction

The People's Republic of China has become the second largest country in demand of organ transplants in the world. Each year, there are approximately 300,000 patients on the waiting list for organ transplantation.<sup>[1]</sup> However, due to the lack of transplantable organs, only about 10,000 patients' needs are eventually satisfied.<sup>[1]</sup> Currently, cadaveric organ donations account for 97% of all organs used in transplantation in China<sup>[2]</sup> and thus, it will remain the major source of organs available for transplantation in the future. Although there has been a gradual increase in cadaveric organ donations, the demand for organ transplants in recent years far surpasses the supply.<sup>[3]</sup>

In this paper, we discuss several ethical issues concerning cadaveric organ donation from the perspective of sociocultural factors that are unique to China under the condition that China has ended the use of executed prisoner's organs for transplants.<sup>[4]</sup> We argue that China will experience an increase in the number of cadaveric organ donations if the ethical issues and proposal presented in this paper would be considered carefully.

### 2. Historical development and current status of organ procurement from death-row prisoners in China

In 1984, the first "Provisional Regulation on the Use of Dead Bodies or Organs from Condemned Criminals" was enacted, directing the Supreme People's Procuratorate, the Ministry of Public Security, the Supreme People's Court, the Ministry of Public Health, the Ministry of Justice and the Ministry of Civil Affairs requiring certain actions to be followed.<sup>[5]</sup> The provisional regulation stipulates capital prisoners who would like to donate their corpse or organs to a medical institution or an individual in need should be permitted to do so out of their own free will prior to their execution. It indicates organ harvesting from death row prisoners was officially permitted. However, the regulation did not make explicit the kind of consent that is needed from death row prisoners, either verbal or written. Since then, the source of transplant organs remains a very sensitive topic.

In December 2005, Huang Jiefu, then Vice Minister of the Ministry of Health, admitted courageously that organ harvesting from death row prisoners for organ transplantation constitutes approximately 95% of organ transplants in China.<sup>[5]</sup> In May 2007, the Regulation on Human Organ Transplantation, enacted by the State Council, was put into practice with the aim of standardizing organ transplantation in China.<sup>[3]</sup> The Council embarked on the road of organ-transplant reform in China. The 2007 regulation stipulates that people who would like to donate their organs for transplant must provide written consent. This may apply equally to condemned prisoners, as there was no law or regulation in China that differentiates death row prisoners from the general public for organ donation at that time. It may also indicate that executed prisoners giving written consent will be allowed to donate their organs. In 2010, the Standing Committee of the National People's Congress enacted the Criminal Law Amendment adding "organ trafficking crime" to combat against crimes of organ trafficking.<sup>[6]</sup> Furthermore, China piloted voluntary organ donation programs in parts of the country in 2010 and made it a nationwide program in 2013 with the aim of reducing its dependence on prisoner transplants and expanding the pool of eligible donors.<sup>[7]</sup>

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<sup>a</sup> School of Translation Studies/Editorial Office for Medical Humanities in the Developing World, Qufu Normal University, <sup>b</sup> School of Foreign Languages, Linyi University, <sup>c</sup> Tancheng Maternal and Child Health Hospital, <sup>d</sup> School of Medicine, Shandong University, <sup>e</sup> Center for Clinical Neurolinguistics, School of Foreign Languages and Literature, Shandong University, China.

\* Correspondence: Wen Ma, Center for Clinical Neurolinguistics, Shandong University, No.5, Hongjialou Road, Li Cheng District, Jinan 250100, Shandong, China (e-mail: 1779806996@qq.com).

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On September 1, 2013, the Provisions on Human Organ Procurement and Allocation (interim) came into force.<sup>[7]</sup> It stipulates that a record of every donated organ must be entered into the China Organ Transplant Response System (COTRS) for managing and monitoring the equitable distribution of donated organs. On November 1, 2013, transplant professionals attending the China National Transplantation Congress reached a consensus on the Hangzhou Resolution on organ donation and transplantation, and they agreed unanimously that organ procurement from executed prisoners should be phased out soon.<sup>[4]</sup> At the National Organ Transplant Congress on October 30, 2014, the Chairman of the China's National Organ Donation and Transplantation Committee, Huang Jiefu (2015) demanded that all hospitals in China should stop using organs from death row prisoners immediately and voluntary organ donations from the general public would be the only source for organ transplants in China, beginning January 1, 2015.<sup>[4]</sup> Since then, several of the world's foremost transplant professionals, who had ever called for the international transplant community to boycott China's unethical organ procurement, have had increasingly positive attitudes towards the transplantation system reform in China.<sup>[8-10]</sup> On August 22, 2015, the National Organ Procurement Organization and Forum on International Organ Donation was held in Guangzhou.<sup>[11]</sup> A good number of international transplant professionals, including the former President of the Transplant Society, Francis Delmonico, the incumbent President, Philip O'Connell, and Director of Organ Transplantation of World Health Organization (WHO), Jose R. Nuñez, attended the meeting. Before the meeting, these International Transplant Professionals visited a number of China's transplant centers. After conducting field observations, they concluded that China had made great achievements in organ transplants, and that high praise should be given to the reform of China's organ donation and transplantation system. On November 11, 2015, Huang Jiefu was awarded the Gusi International Peace Prize to praise for his outstanding contribution toward the development and reform of China's organ transplant policies and procedures.<sup>[12]</sup> This suggests that China has finally weaned itself off the dependence of organ harvesting from death row prisoners.

The significance of stopping the use of organs from executed prisoners is twofold. On one hand, it shows much respect for death row prisoners and their families. On the other hand, it shows that everyone is treated equally with respect to organ donations. After ending the procurement of organs from executed prisoners, a growing number of people are now willing to donate their organs after their death. In 2015, over 7000 vital organs were donated and 2766 cases of organ transplants were made; an increase of 62.5% compared to 2014.<sup>[13]</sup> Data revealed that almost 11,300 vital organs were donated nationwide in 2016, an increase of 45% from 2015.<sup>[14]</sup>

### 3. Major factors influencing the cadaveric organ donation

With respect to the shortage of donated organs, 2 urgent issues should be addressed immediately. First, traditional cultural factors exert negative influence on people's willingness to donate their organs. In terms of Chinese traditional culture on life and death, there are fundamental beliefs such as "the infant should be born with the skin intact and elderly people should be given an elaborate funeral after their death; people need to meet their forefathers with their whole body in the Netherworld and our body, including hair and skin, which was given by our parents,

should not be damaged."<sup>[15]</sup> Taoists associate an intact dead body with respect for ancestors or nature. Taoists believe that organs have a one-to-one relationship with nature.

Simply put, traditional Chinese culture holds that people should keep the body intact up to their burial or cremation, which is treated as an expression of respect for the dead, our ancestors, and for nature. Thus, organ transplantation seems to be unconscionable in China. A questionnaire survey on the attitudes and opinions of Guangzhou citizens on organ donation showed that the traditional belief is one of the main factors affecting individual's willingness to become an organ donor.<sup>[16]</sup> Thus, it is a current pressing matter to consider how to fundamentally change people's understanding and perceptions toward organ donation and transplantation.

Second, brain death is not legally accepted in China. This is also an important factor influencing the number of transplantable organs. The National Health and Family Planning Commission in 2013 enacted the "Criteria and practical guidance for the determination of BD in adults," which specifies the clinical criteria for the assessment of the brain death.<sup>[17]</sup> However, this guidance does not have the force of law. At present, the cardiac death is still regarded as the sole indicator of a legal death in China.

It was reported the number of brain dead people caused by traffic accidents is about 60,000 in China, annually.<sup>[18]</sup> However, a great majority of brain dead patients cannot be declared dead by a physician. On the one hand, there are no legal criteria for determining *brain death*. On the other hand, a large number of Chinese citizens are unfamiliar with the concept of *brain death*.<sup>[19]</sup>

Family members tend to think their loved ones are still alive and can be resurrected when they are told their loved ones are brain dead while their hearts are still beating. It has been reported that among the patients who meet the neurological standard for determining death in Chinese hospitals, 20% of their relatives strongly require the doctors to continue to treat the brain dead patient at all costs.<sup>[18]</sup> Therefore, if the doctor does not actively rescue the patient who has been declared brain dead before respiratory and cardiac arrest, family members will argue the ensuing death was caused by the doctor's breach of duty (negligence). Medical disputes may then ensue. Once the attending physician who declared the patient brain dead is prosecuted for negligent homicide, the consequences will be unbearable. The legal significance of recognizing brain death is to have the general population clearly understand death and the critical point between life and death. Of equal importance, increased legislation on brain death can optimize the allocation of medical resources and avoid the waste of scarce medical resources on brain dead patients. New legislation on brain death could also provide a legal basis for organ transplantation and open up a broader space for its development in China.

In a survey of 969 respondents on their attitudes toward organ transplantation and legislation on brain death, Song et al.<sup>[20]</sup> reported that most of the respondents do not have access to the information about brain death. While 74% of the respondents recognized and accepted the neurological standard for determining death, 92% considered it necessary to enact legislation on brain death, 61% thought it was time for legislation on brain death and that brain dead organ donors should be an important source for transplantable organs. Although a majority of the general population lacks sufficient knowledge about brain death, survey responses indicate that respondents show favorable attitudes toward the need for legislation after being educated

on information on brain death. Hence, it is extremely important to advance people's understanding of the concept of "brain death" among the general population and to enact new legislation on brain death at the national level.

If both problems can be solved, the number of donor organs may very well increase remarkably. Considering China's national condition on organ donation and transplantation, there is a long way to go before both issues can be completely settled.

#### **4. Strategies to increase the cadaveric organ donation**

Because a donor can provide organs for several different recipients, it seems that increasing the number of cadaveric organ donations is a possible way to bridge the gap efficiently between the demand and availability of organs. In view of China's sociocultural reality, there are 4 strategies by which to make this possible.

##### **4.1. Enhancing public education on organ donation**

A large number of Chinese citizens do not fully understand organ donation, resulting in their unfavorable attitudes toward organ donation.<sup>[21]</sup> Thus, it is necessary to improve the general public's understanding and knowledge about organ donation. In a survey of the effect of education on soldiers' willingness to donate their organs, Yilmaz<sup>[22]</sup> reported that sufficient education has the potential to correct false perceptions, change negative attitudes, and ultimately lead to higher organ donation rates. Also, scholars in China demonstrated similar research findings, and they reported that increasing the publicity and education on organ donation could change citizens' negative attitude toward organ donation and increase the donation rates.<sup>[23,24]</sup>

An education program could very well help change public sentiment toward organ donation.<sup>[25]</sup> In other words, cultural misconceptions about organ donation and transplantation could be corrected through public health education, which might very well contribute to changing the public's negative attitude toward organ donation. And thus, it is clear that education is a useful strategy to increase cadaveric donations.

On one hand, future educational efforts should focus on increasing the number of the potential donors who may consent to donate their organs when they are alive. On the other hand, given that families in China are given the legal option to refuse consent for organ donation and even over-rule an individual's wishes to donate organs,<sup>[26]</sup> efforts should also be made to educate families with dying or deceased relatives.

##### **4.2. Organ procurement from brain dead patients**

In the legal sense in a number of Western countries, brain death is viewed as the sign of the end of life. However, no legislation and regulation on brain death exists in China. Brain death is the irreversible loss of brain function without any beneficial effect from treatment, on which consensus has been reached in most developed countries. Although no legislation on brain death exists in China, the National Health and Family Planning Commission has released the Criteria for Clinical Determination of Brain Death, which provides guidelines on how to define brain death (Brain Injury Evaluation Quality Control Centre of National Health and Family Planning Commission 2013). In recent years, a large number of cases about organ donation from brain dead donors are reported favorably, which are captured by

the headlines of many national and regional media,<sup>[3]</sup> thereby contributing to the acceptance of brain death by the general public and paving the way for new legislation in China.

One option to have "brain death" well understood among the general population is by means of a massive propaganda campaign with the aim of increasing the number of transplantable organs from brain dead donors. To avoid the occurrence of "illegal procurement" patients will be diagnosed as *brain dead* just because their organs are needed for transplantation, the procurement of organ(s) from brain dead donors must meet the following 4 protocols in China: there must be at least 2 doctors involved to declare brain death, including an attending physician and an attending neurologist, and the doctor(s) in transplant centers should not engage in the declaration of a patient's brain death; the person who could be declared brain dead should go through a strict medical examination, and the life indicators of the brain dead must meet the international standard of brain death as well as the national standard recently enacted by Ministry of Health in China; after being reviewed and approved by the ethics committee, the diagnosis of brain death could be finally put in place; and on the basis of voluntary informed consent for organ donation from the family of the brain dead patient, the brain dead patient's organ(s) can be procured legally.

##### **4.3. Reasonable incentives**

China's regulation on human organ transplantation stipulates that human organ donation must follow the principle of voluntarism and altruism. Organ donation relies heavily on altruism, which may lead to the current inadequate supply of organs for transplantation, and thus causing thousands of patients on organ waiting lists to die each year.<sup>[25]</sup> The organ donors and their families themselves even have to pay some of the expenses for the organ donations,<sup>[27]</sup> which will increase the donor's economic burden and will likely hinder their enthusiasm for organ donation. An opinion poll conducted by Canton Public Opinion Research Center in Guangzhou found that, of the 1066 respondents, 66% argued the incentive received by the donor is insufficient.<sup>[28]</sup>

There are reports from organ transplant coordinators that family members of potential deceased donors often inquire whether or not their deceased loved one's hospital, funeral, or burial expenses will be paid.<sup>[29]</sup> In view of organ donations, the donor saves the recipient's life and improves the recipient's health-related quality of life. This is a noble act being worthy of praise. Traditional Chinese ethics hold that 'you scratch my back and I'll scratch yours; a drop received in need will be repaid with a whole river'.<sup>[15]</sup> People who do a favor for 1 person, even though it is tiny, deserves a huge return, let alone saving one's life. Thus, it is reasonable to assume the single action of the donor could be appropriately incentivized.

We propose the incentive should be defrayed by the state instead of by the recipient. On one hand, the recipient will pay a lot of money for the transplant surgery, and thus will degrade his/her ability to defray the incentives. On the other hand, the donor's family having knowledge of the recipient's identity may lead to an emotional entanglement or financial disputes. The recipient's information should be kept confidential to the donor's family.

Although the use of incentives to increase donation rates is a controversial strategy, some regions and countries around the world have tried to implement this strategy to increase donations. In 2011, the Nuffield Council on Bioethics proposed the Nation Health Service in the United Kingdom should pay the funeral

expenses of organ donors.<sup>[30]</sup> As another strategy for increasing low numbers of donations, several U.S. states offer income tax credit on the final return of a deceased donor and an income tax credit for registering as an organ donor.<sup>[31]</sup>

According to the statement from the Human Organ Donation and Transplantation of the World Medical Association,<sup>[32]</sup> although payment for donation and transplantation must be prohibited, reasonable reimbursement of expenses is permissible. It can also be supported by Matas's and Hays's<sup>[33]</sup> argument that, if incentives are implemented properly, reimbursement could be ethically sound. To a certain degree, a reasonable incentive indicates the recognition and praise of the donor's contribution to organ donation and could also comfort the mental suffering borne by donors' families. However, the measure involving direct cash payment to family members of cadaveric donors is not ethically sound. When a large cash payment is offered to an extremely vulnerable family, the tremendous pressure to accept the offer may cast doubt over the voluntariness of the consent to organ donation from their deceased loved ones.<sup>[34]</sup> Here, we attempt to propose reasonable incentives involving defraying the donor's medical, burial, or funeral expenses, inscribing the donor's name on a monument, paying the education expenses for the donor's children, offering medical insurance for the donor's family members and so on, may be a feasible way to increase the enthusiasm of potential donors and their families for organ donation and the number of cadaveric organ donations. For instance, the donor often suffers from a severe illness such as a brain tumor, silicosis, or other disease, that is, their families often have to pay a lot of money for treating their terminal illness. It has been found the families of organ donors tend to lead a difficult life and some families even do not have the ability to pay their children's tuition.<sup>[1]</sup> Thus, it seems reasonable to propose buying medical insurance for donors' families and/or paying the education expenses for donors' children reducing the economic burden for donors' families and make the their family members feel warm and comfortable. It seems these are not only humanistic aids, but also ethically sound practices.

Huang<sup>[3]</sup> argues that humanistic aids to donors' families is reasonable.<sup>[3]</sup> It does not go against the principle of gratuitousness, but is a good reflection of mutual aid, benevolence, and social interdependence. He pointed out that humanistic aids should be carried out after the organ donation in case donors are willing to donate their organs without the financial incentives.

In July 2012, the State Council of China issued a guideline for promoting the development of the Red Cross Society of China (RCSC) which is in charge of China's organ donation program.<sup>[35]</sup> According to the guideline, the central government would step up to provide funds for RCSC to promote the development of organ donation in China. Currently, 5 pilot provinces and cities (Zhejiang, Tianjin, Jiangxi, Jinan, and Liaoning) have successfully launched a financial compensation project.<sup>[36]</sup>

With the rapid development of the Chinese economy, central and local governments spend increasing amounts of money on healthcare. As mentioned above, 5 pilot provinces and cities have launched financial incentives successfully. We believe this practice will be extended to other provinces and cities in the near future. Also, Chinese people have increasingly realized the importance of advancing the development of organ donation and transplantation and they are actively participating in helping donor families. It is clear that organ donation in China is undergoing a period of robust development and the financial incentives could be sustained over the long term.

#### 4.4. A "soft" mandated choice

Although we have proposed 3 useful strategies to increase organ donations, there are still many challenges and obstacles. Therefore, we would like to discuss another strategy that may be useful to increase the number of potential organ donors more efficiently in contemporary China. In most circumstances, potential donors are unable to indicate their consent to organ donation themselves as they are incapacitated by a life-threatening illness.<sup>[37]</sup> Family members are able to do so, but they are often unaware of their loved one's end-of-life preferences, so it is very likely that family members are going to reject the request for organ donation of their deceased relatives.<sup>[25]</sup> A survey conducted in a Chinese hospital shows that, although a large number of inpatients would like to donate their organs, they do not have a full understanding of the organ donation process; this inevitably causes them to have no access to declare their willingness for organ donation.<sup>[38]</sup>

As a consequence, it is plausible to argue the lack of expressed intention by the deceased is just one of the problems that results in the severe shortage of deceased organ donation in China. Mandated choice appears to be a possible way to deal with this problem. Under mandated choice, all adults would be required to decide for themselves whether or not they wish to donate on their deaths and their decisions would be controlling.<sup>[39]</sup> However, mandated choice proposed by Western scholars is characterized by liberal individualism; far more different from Western culture, Chinese culture puts more importance on family values.

Traditionally, a Chinese person is usually "family-centered"; an individual depends on his family for his identity and for his financial, physical, emotional, and spiritual needs.<sup>[40]</sup> In Chinese Confucian culture, an individual tends to regard his or her life, not as "belonging to him/herself," but rather as belonging to his or her family.<sup>[41]</sup> Therefore, in reality, the individual donation is hard to be achieved without support from the family. Accordingly, it is necessary to establish an appropriate organ donation policy that is compatible with the Confucian familism. Seen in this light, "soft" mandated choice may be more suitable for Chinese cultural and socioeconomic system. The term "soft" means that informed consent should be obtained from both the donor and his/her family before the organ donation can occur.

As Klassen et al. (1996) note,<sup>[42]</sup> communication and consensus between caregivers and the family are critical, even in situations where advance directives exist. In recent years for the perceived justice and transparency of organ procurement and organ allocation in China, citizens are increasingly willing to donate their organs after their death. It is reported that, since 2010, about 39,000 volunteers have registered in the China Human Organ Donation Management Center as potential organ donors.<sup>[43]</sup> The majority of them have obtained consent from their families.<sup>[44]</sup> This indicates a growing number of Chinese families support their family members to donate their organs after death. In addition, traditional Chinese culture may provide some convenient conditions for the implementation of "soft" mandated choice. Confucianism argues the surviving family members should respect and accomplish the unfulfilled will of the deceased.

In addition, Buddhism holds that if a deceased person's will cannot be achieved, his/her soul will break up and fail to transmigrate. It indicates to a great extent the family would consent to organ donation from their deceased loved one who has expressed the intent to donate his/her organs before death.

## 5. Equitable allocation of organs from deceased donors

In the past, inequity in allocating donated organs occurred frequently in China. For example, the allocation of donated organs in some hospitals may be contingent on the social status and/or economic background the recipient patient holds. According to a survey of young people's attitudes toward cadaveric organ donation in China, respondents worry their donated organs will be inequitably allocated, or even sold, although they are more likely to donate their organs than their elders.<sup>[45]</sup> Motivation to donate is correlated with whether or not the donated organs could be equitably distributed.<sup>[46]</sup> To make organ allocation fair and transparent, the Chinese Organ Allocation and Sharing System was set up in 2013 to ensure all the patients on the waiting list have equal access to organ transplantation.

The Regulation on Human Organs Acquisition and Distribution Management, enacted in 2013, stipulates that all of the cadaveric donor organs must be allocated through this system. The criteria for allocating organs are not based on the patient's social status and wealth. In contrast, built into the complicated calculation are medical factors such as type and severity of the illness, distance from donors, compatibility of the organ to the recipient, and many others.<sup>[45]</sup> The system automatically calculates the rankings for all patients on the waiting list and frequently updates their condition to ensure continued accuracy.<sup>[45]</sup> To some extent, this new system seems to be able to guarantee the equitable allocation of organs. However, much attention should be paid to a good number of ethical issues in order to make the allocation more equitable and transparent.

A decision to place a patient on the transplant waiting list must be based strictly on medical eligibility criteria and must be compliant with the principles of justice and utility. Specifically, a thorough ethical evaluation should be made by the ethics committee to determine patient eligibility for placement on the waiting list. Without the intervention of the ethics committee, the transplant professionals may unethically place some patients on the transplant list which can jeopardize the integrity of the entire transplant system. In addition, the ethics committee could make the decision on whether a special group of patients, such as vegetative patients, prisoners, and psychopaths, who need an organ transplant, could be placed on the organ transplant waiting list.

A discretionary decision made by the ethics committee to include or exclude particular groups of patients for placement on the list is shown to be fair and nondiscriminatory. Immediate measures should be taken by the ethics committee to stop unethical practices when an unreasonable allocation is found. The unethical cases should be forwarded to the Ministry of Health to determine whether to suspend or cancel the qualification of the Transplant Center for Organ Transplant, if necessary. Therefore, the ethics committee involved can further strengthen the fairness and transparency of organ allocation.

Last, but not the least, we argue the committee should consist of members who come from different fields, including doctors, lawyers, bioethicists, family representatives, and community members. The multidisciplinary committee could promote more transparency and justice in ethical review. When more than two-thirds of the committee members agree on putting the patient on the waiting list, it will take effect. This could minimize or eliminate the unethical practice of placing on the waiting list those

patients who are not suitable, and thus will ensure an equitable outcome in the allocation of organs for transplantation.

## 6. Conclusion

Although great developments have been made in organ transplantation, the ethical issues relating to organ transplantation still face dilemmas in China. Ethical analysis of organ donations in China has not kept pace with the rapidly advancing clinical technologies that make successful organ transplants more feasible. In this study, we firstly demonstrated the historical development of organ procurement from death row prisoners and major factors impeding the development of cadaveric organ donation. Next, we proposed 4 strategies that may increase the cadaveric organ donation based on Chinese sociocultural factors, including enhancing public education on organ donation, procuring organs from brain dead patients, implementing reasonable incentives, and encouraging a "soft" mandated choice. In addition, we discussed several ethical issues concerning the equitable and transparent organ allocation.

Standardizing the ethical practices across the board can promote the healthy development of organ donations. We hope the discussion can draw more national and international attention to the future development of cadaveric organ donation system in China. However, it should be noted that China's organ donation system and practices should not only conform to the international ethical principles, but should also take into account Chinese sociocultural factors.

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