



## An Overview of Transplant Tourism: “Kidney Business?”

<sup>1</sup>Popoola AB, <sup>\*2</sup>Yarube IU.

<sup>1</sup>University Health Services, Federal University Dutse, Nigeria.

<sup>2</sup>Department of Physiology, Faculty of Basic Medical Sciences, College of Health Sciences, Bayero University, Kano, Nigeria.

*\*Correspondence: Yarube IU, Department of Physiology, Bayero University, Kano, Nigeria  
E-mail: dryarube@yahoo.com*

### Abstract

Transplant tourism is important not only because of its medico-social but also economic significance. Kidney is, by far, the most transplanted organ the world over. Kidney transplant activities are worth billions of dollars, and that is associated with the good, the bad and the ugly – “kidney business”. This overview sought to highlight the good and bad side of transplant tourism with focus on the kidney. A literature search for relevant articles was carried out on Google scholar, PubMed and AJOL databases; and also Google search, using various combinations of keywords. The global burden of “kidney business” was highlighted, including the role played by African countries including Nigeria. Many countries of the world are involved in “kidney business”, but few of them play prominent roles as organ-exporting or organ-importing countries. Organ transplant is a veritable tool for achieving improved health and economic well being of individuals and the communities in which they live. However, transplant tourism comes with several negative consequences to the parties concerned. Global efforts in curbing the menace put together by various stakeholders, including the WHO and UNESCO, have yielded various degrees of successes. Though some countries such as Iran have achieved excellent results, for most other countries the battle is still far from won. The situation in Nigeria, a kidney-exporting country, exposes the vulnerability of the country to the menace of transplant tourism. One major problem here is paucity of reliable data to adequately assess the situation. To begin with, sound scientific researches are recommended for Nigeria in order to appreciate the extent of the problem and create a customized solution.

**Keywords:** Kidney Transplant, Transplant Tourism, Transplant Commercialism, Nigeria

### Introduction and Definition of Terms

Organ transplantation is a recognized treatment for end-stage organ failure, the world over.<sup>[1]</sup> Some of the organs commonly transplanted include kidneys, liver, heart, pancreas and intestine. According to the American Transplant Foundation one deceased donor can save eight people’s lives and can provide tissues that can improve the well-being of more than 100 recipients.<sup>[2]</sup> A healthy living donor can donate a kidney, a part of the liver, intestines, bone marrow or lungs while a deceased donor can donate organs such as the kidneys, heart, liver, pancreas, small intestines and tissues such as corneas, veins, tendons, ligaments, bones and heart valves.<sup>[2]</sup> Most organ transplantation involves kidney transplants. This is because the kidneys are majority, the organs in

greatest demand, and is the only human organ that can be wholly harvested from a living donor, with minimal harm to the donor, under conventional conditions. Another very important reason is the readily available “market” for the kidney comprising of people who want to buy kidneys and those interested in selling their kidney.<sup>[3]</sup>

Medical tourism is a term used to describe the phenomenon whereby patients travel across national borders to access healthcare somewhere else.<sup>[4]</sup> Medical tourism is a worldwide healthcare phenomenon valued at \$60 billion in 2006.<sup>[4]</sup>

The Bellagio Task force report brought to fore the global problem of organ trafficking.<sup>[5]</sup> In an effort to curb the growing menace of organ donor trafficking, organ sales, and transplant tourism, a summit meeting sponsored by The Transplantation Society (TTS) and the International Society of Nephrology (ISN), comprising of more than 150 representatives of scientific and medical bodies from all over the world, government officials, social scientists and ethicists, took place in Istanbul, in 2007.<sup>[6,7]</sup> During the Declaration of Istanbul summit key concepts were defined. Organ trafficking– “is the recruitment, transport, transfer, harbouring or receipt of living or deceased persons or their organs by means of threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability, or the receiving by a third party of payments or benefits to achieve the transfer of control over the potential donor, for the purpose of exploitation by the removal of organs for transplantation”.

Transplant commercialism– “is a policy or practice in which an organ is treated as a commodity, including by being bought or sold or used for material gain”. Travel for transplantation- “is the movement of organs, donors, recipients or transplant professionals across jurisdictional borders for transplantation purposes. Travel for transplantation becomes transplant tourism if it involves organ trafficking and/or transplant commercialism or if the resources (organs, professionals and transplant centres) devoted to providing transplants to patients from outside a country undermine the country’s ability to provide transplant services for its own population”.<sup>[8]</sup>

Transplant tourism is a form of international organ trade used to describe the phenomenon whereby patients travel outside their country for the main reason of obtaining organ transplantation services.<sup>[1, 9, 10]</sup> In contrast to other general forms of medical tourism, transplant tourism has been the subject of much controversy regarding issues such as the source of the transplanted organs, post-transplantation outcome, care offered to both donor and recipient,<sup>[4]</sup> and also ethical implications of the entire process. Organ transplant tourism involves commercial international transactions with buyers and sellers, exporters and importers.<sup>[3]</sup>

Transplant tourism involves organs sourced from commercial buyers/sellers, living donors and/or trafficking.<sup>[4]</sup>

Transplant tourism as used in resolution WHA 57.18 and in international health policy discussion refers to overseas transplantation when a patient obtains an organ through the organ trade or other means that contravene the regulatory frameworks of their countries of origin.<sup>[1]</sup> It involves the purchase and sale of organs as well as other components of commercialized organ transplantation. There are also ethical implications of these phenomena, more so, in regions of poorly enforced or implemented ethical regulatory frameworks to protect live organ donors from strong-arm tactics, intimidation, exploitation and physical injury and harm.<sup>[1]</sup>

### **The Concept of “Kidney Business”**

According to the UN, trafficking in organs is a crime that occurs in three broad categories.<sup>[11]</sup> The first category entails traffickers forcing or deceiving their victims into giving up an organ, while the second entails victims formally or informally agreeing to sell their organ but end up being cheated because they are not paid for the organ or are paid less than the promised price, and the third category involves situations whereby vulnerable persons such as migrants, the illiterate, homeless, etc., are treated for an ailment that is non-existent, and subsequently their organs are removed without the victim’s consent. Although other organs are involved, the “business” of organ transplantation deals almost exclusively in kidneys. According to the WHO, kidney transplants are carried out in 91 countries all over the world, with 66 000 kidney transplantations performed in the year 2005.<sup>[1]</sup> In 2012, kidney transplants accounted for about 67.85% of the total organ transplants performed globally.<sup>[12]</sup> This article therefore reviewed transplant tourism with focus on kidney and uses the term “kidney business” to depict the dark side of transplant tourism.

The illegal trade in kidneys (“kidney business”) is a thriving business and the WHO estimates that about 10,000 black market operations involving purchased human organs take place annually- more than one per hour.<sup>[13]</sup> Organ Watch, a California based human rights organization puts the number of illegal kidney transplants carried out yearly at 15,000 – 20,000.<sup>[14]</sup>

“Kidney business” accounts for about 75% of the illegal organ trade worldwide. [13] It is estimated that about 5-10% of the global kidney transplants is accounted for by commercial transplantation, [4] and one in five kidneys transplanted each year from 2010 originated from the black market. [15]

Globally, there is a shortage of organs for transplantation. [1,4, 6, 8, 16,18] According to the WHO, the 106, 879 sold organs transplanted both legally and illegally in 2010, met just 10% of the global need with about 68.5% involving kidney transplants. [13, 14] The purchase and sale of organs is illegal in most countries of the world. [1,16,17,19] Stakeholders of the “kidney business” include: buyers/recipients who are usually patients on the waiting list in developed countries or not on any list in developing countries, dialysis funding bodies, middlemen/brokers, traffickers, hosting transplant centres with the health personnel, organ exporting countries and organ vendors or sellers. [4] The kidney sellers are most often than not, the poor and vulnerable, the displaced, refugees, the illiterates, prisoners, undocumented immigrants, [6] asylum seekers, debtors, ex-prisoners, run-away soldiers from Iraq and Afghanistan. The brokers or middlemen may be transplant surgeons, organised crime figures or even past kidney sellers themselves. They act as a link between the relatively rich kidney patients and the poor kidney sellers. The buyers are transplant tourists [6] who are usually desperate kidney patients with the finances to pay for a kidney in an “all-inclusive package”. [12]

The “kidney business” continues to be a thriving and booming trade because of the increasing prevalence of diabetes, hypertension, heart diseases, [12] with increasing number of patients with renal failure, existence of a “kidney market” as a result of increasing demand for kidney transplantation and global shortage in supply of kidney organs, lack of or poorly enforced regulations, death of patients on the transplant waiting list, increasing gap in wealth between the rich and the poor and between developed countries and their developing counterparts and also the advent of social media. Furthermore, a transplant gives the patient a better quality of life than a dialysis and it is economically advantageous in the long-run as a transplant costs far less than maintaining a patient on dialysis. [15,20] It is

estimated that each kidney transplant saves the society about \$90 000 to billions of dollars per year. [15] A year of dialysis in the US costs around \$45, 000.

In 2010, it was estimated that about 80 000 Americans were on the waiting list for kidney transplant, with only about 19 000 kidneys donated each year- about 68% sourced from cadavers and 32% from live donors. [15] In 2014 more than 17 000 kidney transplants were carried out in the US while about 8000 patients were too sick to receive a transplant or died while waiting for a transplant. [21] The average duration of stay on the transplant waiting list is about six years. [21]

### **Aim**

The aim of this write-up was to present an overview of transplant tourism with focus on the kidney, and touching on its dark side - “kidney business”.

### **Objectives**

To present an overview of the global menace of the “kidney business.”

To highlight current global efforts and the successes in curbing the practice of “kidney business.”

To create awareness of the problem and highlight the role of Africa and Nigeria in the “kidney business.”

### **Justification**

The global shortage of organs [1,4,6,8,16-18] is a major contributory factor to the rise in transplant tourism [6] with organ trafficking accounting for about 5-10 percent of the annual global kidney transplants. The unavailability of reliable data, especially from developing countries has hindered an accurate assessment of the extent of the burden of human and organ trafficking for transplantation, with the reported numbers mostly based on estimations and rumours. [6] The poor countries of the developing world hold a precarious position serving as the source of these organs. [1,3,6] This write-up hopes to draw the attention of stakeholders, policy makers, health care professionals and the general public to the menace of transplant tourism as ‘kidney business’, and what to do about it.

### **Methodology**

A literature search for relevant articles was carried out on Google scholar and PubMed and AJOL

databases using various combinations of keywords - kidney or organ transplantation, commercial, transplant tourism, organ trafficking. The abstracts were read and if considered relevant, the entire articles were retrieved. Endnote Desktop and Mendeley Desktop citation managers were used in saving and managing the relevant references. The references of the pulled articles were also considered. Due to paucity of articles relating to the subject matter in Africa and Nigeria in specific, a Google search was also conducted, therefore media reports were also considered as complementary sources of information. A precedent for this is reported in the bulletin by the WHO. [1]

### **Organ Exporting Countries**

This refers to the countries of origin for those selling organs. They include India, China, Egypt, Bolivia, Brazil, Iraq, Israel, Estonia, Republic of Moldova, Pakistan, Peru, South Africa, Turkey. However, kidney sellers can be found almost in any country. [12]

In the past, those looking to sell their organs generally came from developing countries; however recent reports indicate that this phenomenon now also occurs in large parts of Europe. [14] The European Union affirms that the global financial crisis is the main reason behind this. Reports indicate that people with financial constraints in Greece, Spain, Italy and the Balkan countries are offering their organs for sale. [14]

According to the WHO, globally, the leading transplant tourism hub is in South Asia. [22] India was for many years regarded as a “warehouse for kidneys”, with one of the highest number of kidney transplants in the world, offering low cost and almost immediately available organs for transplantation. Through sale and purchase, organs from local donors are transplanted to foreigners. [1] To curb the rising spate of the thriving illegal transplantation, the government of India enacted the Human Organ Transplantation Act of 1994 banning the organ trade. [1] The enactment of this law resulted in a decrease in the foreign organ recipients in India but with a resultant rise in the number of foreign recipients in other countries such as Pakistan and Philippines, however there still exists a thriving underground organ market in India. [1] Reports indicate that about 2000 Indians sell their kidney

each year. [1,22] Kidney sales are also legal in the Philippines, but residents are only allowed to sell a kidney to a Filipino if no middleman is involved. [20]

In 2005, reports indicated that around 12 000 kidney and liver transplants were performed in China. There were allegations that most of the transplanted organs were sourced from executed prisoners; [1] an allegation which the government denied. This practice has attracted international condemnation and China’s health ministry in Beijing has promised to stop harvesting organs from prisoners by 2017. [13] China’s illegal organ market is alleged to be worth a massive \$1 billion a year, [23] with political prisoners (mainly the Falun Gong practitioners) and death row prisoners being used as live organ donors. Since the 1980s when China began withdrawing funding for hospitals, the sale of organs has become the major source of funding for the hospitals, with transplants ranging from about \$60 000 to above \$170 000, depending on the operation. [23] A documentary report indicates that about 11 000 organs are harvested from political prisoners each year in China. [24] Although China has the second highest rate of transplants globally, Red Cross estimates put the number of registered organ donors at 37. [24]

In Pakistan, about two third of the nearly 2000 renal transplants performed in the year 2005, were on foreigners. [1] Although selling of one’s organs is illegal in Pakistan, the “kidney business” continues to flourish due to the high level of poverty and loopholes in legislation. Likewise, in the Philippines, about a quarter of the 468 kidney transplants performed in 2003, was on foreigners. [1]

The case of Iran is unique in that it is the only country where paid donation is practised legally but restricted to only citizens. [1] Globally, there is advocacy for altruistic organ donation for transplantation. However, altruistic organ supply has been grossly inadequate to meet the increasing demand for organs. This has led to some experts calling for the establishment of a well-regulated system of organ donation with the provision of financial incentives to organ donors, in a bid to bridge the wide gap between organ demand and supply. [25] This approach was adopted by Iran which set up a state-sponsored, compensated, middleman-free and regulated living-unrelated donor

kidney transplant program in 1988.<sup>[25]</sup> Success was recorded such that by 1999, the number of renal transplants had significantly increased and the renal transplant waiting list was completely eliminated. Of the total 19,609 renal transplants performed by the end of 2005, about 78% were sourced from living-unrelated donors and many ethical issues arising from commercial kidney transplants were prevented.<sup>[25]</sup> As a result of this, Iran is the only country to have successfully eliminated the organ waiting list.<sup>[25,26]</sup>

### **Organ Importing Countries**

This refers to the countries of origin of those buying organs for transplantation. Organs Watch reported that Australia, Canada, Israel, Japan, Oman, Saudi Arabia and USA are the major organ importing countries.<sup>[1]</sup> In some of these countries, the number of patients travelling abroad for kidney transplants exceeds the number of those undergoing transplant locally.<sup>[1]</sup>

Prior to 2008, Israel was a thriving hub for international organ trade as there was no law prohibiting it. Transplant tourism flourished with many patients in need of kidney transplants travelling to medical centres abroad to receive them. In contrast to other western countries, only about 10% of Israeli adults hold donor cards and only 45% of families donate deceased organs.<sup>[27]</sup> Organ donation in Israel is a subject of much controversy. The low rate of organ donation is attributable to the religious beliefs. Most Israeli rabbis object to commercialization of organ transplants and unnecessary mutilation of cadavers but accept transplants to save lives.<sup>[27]</sup> However, compensating an organ donor for his or her time, inconvenience, discomfort and recovery is in line with traditional Jewish law and ethics.<sup>[28]</sup> A study conducted in Israel, involving 799 respondents, showed that about two-thirds had not signed a donor card, over half of the respondents objected to giving or receiving compensation for donation and compensation for organ donation had minimal effect on motivation to donate during life and after death.<sup>[29]</sup> The factors that mostly inhibit donation are lack of information, relatives' view of donation and type of organ involved in donation while the factors that motivate donation are mostly, the health status of the donor and the knowledge that donation saves lives or that

there exists a shortage of organs for transplantation.<sup>[29]</sup>

In 2008, the legislative arm of the Israeli government, the Knesset, passed laws regulating organ donation (Organ Transplantation Law 2008).<sup>[3]</sup> The laws approved benefits for organ donors and also defined brain death as an acceptable indication of death.<sup>[30]</sup> The law also prohibited organ trafficking, receiving financial compensation for organ donation and mediation in order to receive a donation. In addition to several other incentives given to donors, the laws also gave preference to donors who sign donor cards whenever they are in need of an organ in the future.<sup>[3,27,30,31]</sup> In a bold attempt to further address the issue of organ shortage while at the same time addressing the religious controversy surrounding organ donation, Israel's chief Rabbinate issued an organ donation card of its own, allowing organs to be harvested from potential donors provided brain death is confirmed under the strictest letter of the law.<sup>[32,33]</sup> This resulted in more than 230 rabbis registering for organ donor cards as well as raising awareness and acceptance among the majority religious Israeli public.<sup>[32]</sup>

### **“Presumed Consent” Laws**

This is also known as ‘opt-out’ system. In an effort to increase the supply of organs available for transplantation and curb the menace of the “kidney business”, some countries have adopted legislations of “presumed consent”, in which an individual is considered as a potential organ donor in the absence of explicit opposition to donation before his death.<sup>[34,35]</sup> Explicit opt-in organ donation systems require individuals, while alive, to give their consent to become potential donors in the event of their death. In contrast, explicit opt-out organ donation systems adopt the concept of presumed consent.<sup>[35]</sup> Hard opt-out system does not require the family of the deceased to be consulted, whereas in soft opt-out system, the family's wishes are considered as in the opt-in system.<sup>[34]</sup> Some of the countries with presumed consent include: Austria, Belgium, Bulgaria, Croatia, France, Greece, Israel, Italy, Portugal, Spain, Turkey, Sweden, Estonia, Hungary, Finland, Singapore, Norway, Poland, Luxembourg and Slovenia.<sup>[35]</sup> Available evidence suggests that countries with presumed consent laws have increased organ donation rates 25 to 35% higher

than countries with explicit opt-in laws.<sup>[35]</sup> However, this has raised ethical concerns.

### **Role of Nigeria and Africa in “Kidney Business”**

Nigeria, often referred to as the “Giant of Africa” enjoys an unrivalled position as the most populous country in Africa and the 7<sup>th</sup> most populous country in the world, with a population of 170 million and growth rate of 2.45%.<sup>[36]</sup> Although Nigeria has Africa’s largest economy, over 62% of the population lives in extreme poverty.<sup>[36]</sup> According to Transparency International, Nigeria currently scores 26 out of 100 and ranks 136 out of 168 countries, on the Corruption Perception Index.<sup>[37,38]</sup> The hardest hit by corruption are the poor; and even the health and medical services, that are among the least corrupt government institution are considered corrupt by 41% of Nigerians.<sup>[37]</sup> In addition to a general lack of or poorly implemented laws and policies, Nigeria has all the necessary ingredients for a thriving “kidney business”. It offers to be a safe operational haven for criminal gangs who engage in kidnapping and human trafficking. Nigeria is geared towards providing a blooming ready market source for kidney donors. There is a general paucity of available articles and official reports on the burden of this menace. Unofficial media reports indicate an increase in this trend amongst the Nigerian populace. There are emerging media reports of Nigerians actively seeking markets online and some being coerced, exploited, kidnapped, tricked into selling their kidneys in Asian countries such as India and Malaysia.<sup>[39-42]</sup> Allegedly, those involved in looking for markets to sell their kidneys are the internet fraudsters, popularly referred to as “yahoo-yahoo boys”.<sup>[39,41]</sup> The teeming population of Nigerian youths, mostly unemployed, desperate to escape the intricate web of poverty, are at an increased risk of falling victims to unscrupulous brokers and organ traffickers.

Africa, as a continent is also not immune to the menace of the “kidney business”. It is the world’s second largest, second most populous continent, the poorest and most under-developed continent in the world.<sup>[43]</sup> It is thus a haven for exploitation of the poor and vulnerable by unscrupulous individuals, and people willing to make ends meet, irrespective of the cost. Egypt and South Africa are recognised as organ exporting countries.<sup>[1]</sup>

According to media reports, organ trafficking also occur in Mozambique, and involves mainly the sale of human kidney used mostly for transplants, and witchcraft in some cases.<sup>[44, 45]</sup> Reports of investigations showed that trafficking in human organs in Mozambique is organised by South African crime gangs.<sup>[45]</sup>

Ever since the first live-donor kidney transplantation in Egypt in 1976, there has been no established agency saddled with the responsibility to regulate the allocation of organs and transplant practices. As a result, organs for transplantation were sourced from commercial living donors and organ trafficking with about 500-1000 licensed transplants and 100-200 unlicensed transplants occurring annually.<sup>[46]</sup> According to the WHO, Egypt is one of a half dozen organ trafficking hotspots.<sup>[47]</sup> Organ traffickers remove kidneys “either by inducing consent, coercion or outright theft”.<sup>[46]</sup> Until recently, Egypt was among the few countries that prohibited deceased organ donation and as a result, commercial living donors account for between 80-90% of living kidney donors in Egypt.<sup>[46]</sup> In the recent past, commercial organ transplants in Egypt involved mostly domestic internal organ trafficking with organs sourced from nationals, however, there is now more evidence suggesting that vulnerable foreigners especially Sudanese and other sub-Saharan African refugees and asylum seekers are increasingly becoming victims of organ trafficking with the transplants conducted mostly in private health enters.<sup>[46]</sup> In February 2010, a national law on transplantation was passed in Egypt, providing a legal framework for the prohibition of organ trafficking and allowing deceased donor transplantations. This law succeeded in curtailing the “kidney business” before the January 2011 revolution, albeit, it is yet to be fully implemented.<sup>[46]</sup>

In South Africa, reports indicate that there are 100,000 people being trafficked annually and about 17% of people trafficked within a two-year period involved organ trafficking.<sup>[48]</sup>

### **Factors Promoting the Continuous Existence of “Kidney Business”**

Despite the near global condemnation of this phenomenon and enactment of laws prohibiting it,

there has been a continued persistent growth of the “kidney business”. The WHO, in 2004, called on member states to take measures to protect the poorest and vulnerable groups from transplant tourism and the sale of tissues and organs, including attention to the wider problem of international trafficking in human tissues and organs.<sup>[8]</sup> The importance of this was further underscored, principles outlined and proposals made, during an international summit on Transplant Tourism and Organ Trafficking convened by the Transplantation Society and International Society of Nephrology in Istanbul, Turkey- The Declaration of Istanbul, 2008.

One of the most important factors fuelling the “kidney business” is poverty. Developing countries are faced with the challenge of poverty, with large proportion of the population living below the poverty line.<sup>[4]</sup> Often times, individuals are faced with the option of selling their organs to pay off debts. The poor economic situation in most developing countries has contributed in no small way to the growth of the “kidney business” as the poor continue to sell their organs for financial gain. Countries of origin of donors in the “kidney business” are the developing countries where there is poor economic power, while the recipients are mostly rich people in developed countries. Thus the “kidney business” is said to “flow from poor, under-developed countries, to rich, developed ones”<sup>[49]</sup> and could be said to be one of the ways by which the developed countries prey on their developing counterparts. This phenomenon has been described by some experts as “neo-cannibalism”.<sup>[50]</sup> Closely related to poverty, is the problem of bribery and corruption and this is evident by the poor score of these countries in the corruption perception index reported by Transparency International.<sup>[1]</sup>

The wide gap between the demand for organs for transplantation and the supply of illicit organs continues to fuel the “kidney business”. The number of patients on the transplant waiting list is growing at a rate of 20% annually in the US, and it is estimated that the available number of brain-dead potential donors is around 14, 000 to 15, 000 while only 55% of the next-of-kin of deceased potential donors give their consent for the deceased’ organs to be harvested.<sup>[20]</sup> This huge disproportionality between the demand and supply of illicit organs

created a room for unscrupulous individuals who pose as middle men between the organ buyers and sellers, and also criminal gangs<sup>[6]</sup> who kidnap and engage in human trafficking and organ harvesting for sale. “Kidney business” is thriving as a result of the disproportionate increase in number of people who require transplants relative to the number of available organs from licit sources. An additional compounding factor is the lack of law enforcement or policies to curtail this menace. This creates an opportunity for middlemen to exploit and for organised crime to thrive.<sup>[26]</sup> Thus they exist to bridge the gap in supply of organs via illicit means. The middle men offer the poor sellers about \$5000 dollars to buy their organs and often times they end up paying far less. They in turn sell the organs to the rich for as high as \$150 000 to \$200 000.<sup>[13, 50]</sup>

There is a general dearth of deceased organ donation. The deceased organ donation is poorly developed or even non-existent in developing countries and even where available, in developed countries; it is grossly insufficient to meet the rising organ demand. This has made people resort to sourcing kidneys from live donors and this is mostly via illicit means through coercion, exploitation, human trafficking and organ harvesting. Reports indicate that 27 000 organ transplantation from living donors take place yearly and this represents 39% of all kidney transplants.<sup>[51]</sup> In the US, within a period of 13 years, from 1990 to 2003, the number of kidney donations from deceased donors increased by 33%, while the number of kidney transplant patients on the waiting list grew by 236% during the same period.<sup>[49]</sup> Similar trends are observed in rich countries, where longer life expectancy is creating a higher demand.<sup>[49]</sup> Socio-cultural and religious sentiments have further hampered the success of the deceased donor programme.<sup>[3,4,27,28, 30-32]</sup>

With the possible exception of the donors, the huge profits to be made by the middlemen or brokers, the human traffickers, organ harvesters, and other stake-holders continue to fuel the “kidney business”. With an estimated 68, 500 renal transplants performed yearly, the kidney is the most commonly transplanted organ with about 3, 400 to 6, 800 (5 – 10%) of the kidney transplants accounted for by trafficking.<sup>[50]</sup> The “kidney business” has an estimated global retail value ranging from \$514

million to \$1 billion per year.<sup>[50]</sup> For some people, such massive profit margins are too good to overlook.

The lack of, or poorly implemented legislation mostly in developing countries and weakly implemented laws against organ trafficking and organ sales, mostly in developed countries, is also another important factor in the “kidney business”.<sup>[20,50]</sup> In places where there are legislations, the loopholes therein are exploited. A wide gap exists between what has been agreed to on paper and what is being put into practice.<sup>[6]</sup>

Desperation on the part of both the sellers and the buyers also plays a key role in “kidney business”. The sellers are desperate to improve their economic welfare and settle their debts, so they are forced to consider such options as selling their organs. On the other hand, the buyers are desperate to improve their health status through obtaining a transplant. After spending years on the transplant waiting list, with the continuous cost of maintenance dialysis and the risk of deteriorating health condition and death, they are forced to consider sourcing for organs from live donors. Successful kidney transplantation is associated with a longer life, better quality of life and mental function relative to continuous dialysis.<sup>[52,53]</sup> Most often than not, these organ donors are gotten illegally through the kidney market.

Additionally, there is a preference for organs from live donors because kidneys from living kidney donors last longer and work better than those from deceased donors.<sup>[54]</sup> When compared to suitably qualified dialysis patients on the transplant waiting list, the relative risk of death in patients who have had kidney transplants is increased for the first three months’ post-transplantation, but falls to one third, by the first year.<sup>[53]</sup> On average, the life span of a kidney from a deceased donor is 10-15 years while that from a live donor is 15-20 years.<sup>[12]</sup> Transplantations involving kidneys from live donors are associated with a better outcome and longer graft survival,<sup>[52,55]</sup> with a median graft survival from living donors being about 20 years and that from cadaver donors, about 12-13 years.<sup>[53]</sup> Furthermore, pre-emptive transplantation (involving patients who have never been dialysed) is associated with a better

graft survival, irrespective of whether the kidney is from a live donor or cadaver.<sup>[53]</sup>

The advent of technology and social media has helped in increasing the “kidney business”. A quick search online will link one to websites advertising the purchase of organs. Human organs are put on sale on e-bay and other sites in the internet.<sup>[6]</sup> While some sites are explicit in their advert, others are implicit and lure their prospective sellers through bogus filling of forms through which they gather the victim’s data. Some brokers also use the internet to advertise their services. Prospective sellers also use the internet to advertise their kidneys for sale, stating their blood groups, health status, country of origin, age etc. Technology has also helped in facilitating the activities of criminal gangs specializing in human and organ trafficking.

### **Consequences and Effects of “Kidney Business”**

The menace of this phenomenon cannot be ignored. The “kidney business” has far reaching consequences and effects on the donors/sellers, recipients/buyers, and the society.

Recipients who source for organs via the “kidney business” are at risk since transplantation care for the recipients requires an expertise best provided by a transplant centre that is devoted to the patients well-being and care and not to his resources.<sup>[6]</sup> Foremost amongst the effects is the morbidity and mortality associated with commercial kidney transplantations.<sup>[1]</sup> In a study carried out on commercial kidney transplant tourism in Pakistan, the patients were not cleared for transplantation with a pre-transplant work-up, 80% of the 36 patients followed up post-transplant were found to be hepatitis-C virus or HBsAg positive, seven patients died within two months of transplantation, sixteen patients developed wound infections with post-operative hernias and the one year graft and patient survival rates were found to be 68% and 80% respectively.<sup>[56]</sup> In countries where there are laws prohibiting the “kidney business”, and these laws are implemented, it exposes the buyers to the risk of being prosecuted. Furthermore, there is no guarantee about the health status of the live donors, especially when a middleman or broker is involved. They are thus at risk of contracting various viral infections such as HIV, hepatitis B and C, fungal, parasitic and



bacterial infection,<sup>[1,9,56]</sup> and are also at risk of being exploited because of their obvious desperation to have a transplant.<sup>[1]</sup> There is an increased risk of surgical complications and acute graft rejection especially when the transplantation surgery is performed under sub-standard conditions.<sup>[57]</sup>

The “kidney business” also exposes donors/sellers to serious health risks. As is often the case in developing countries, recovery from surgery is much more difficult when you don’t have clean water or decent food.<sup>[50]</sup> Moreover, the pre-operative work-up and post-operative care of such donor patients is often lacking.<sup>[1]</sup> The poor donors of the world also face a constant threat of coercion, exploitation, deception and human trafficking for organ harvesting. Often times they end up being short-changed and paid less than they were initially offered.<sup>[1,14,56,58]</sup> Rather unfortunately, the bad economic situation of the poor donors after paid organ donation do not last long, or even become worse as a result of the limited employability resulting from poor health status post-organ donation.<sup>[1,59]</sup> The only stakeholders who gain a lot from the transaction are the rich recipients, the surgeons, the hospital administrators, the brokers or middlemen and the traffickers.<sup>[13]</sup> In addition, the paid kidney sellers experience regret, depression and discrimination.<sup>[1]</sup>

The illicit organ trade is parasitic, predatory criminal enterprise feasting on society’s poor. It is a perfect example of man’s inhumanity to his fellow man, and of the rich “preying” upon the poor. When organs are offered for sale to the highest bidder, the society’s poor are deprived of the organs that they also desperately need, thus helping to perpetuate the inequalities that exist in the global economic system.<sup>[50]</sup>

### **The Call for a Regulated Commercial Organ Trade - Arguments for and Against**

As a result of the socio-economic, medical, religious debates occasioned by the increase in “kidney business” globally, various experts and stakeholders have put forward arguments for and against the establishment of a regulated commercial organ trade aimed at legalization of organ sales. Despite a near universal advocacy for altruistic organ donation, the supply of these organs still remains largely

inadequate to meet the increasing global demand for organs for transplantation. These solutions are aimed at increasing the supply of organs for transplantation while curbing the illicit organ trade. There is no simple solution to the problem. Living donor kidney transplantation seems to be the only recourse to supplement the supply of organs from deceased donors. However, the success of altruistic supply of organs from living donors has been frustrated by unscrupulous brokers, who are criminally exploiting the situation for their personal gains, and also by varied socio-cultural, religious and medical objections.

In 2004, the World Health Assembly (WHA - the decision-making body of the WHO and its 183 member states) adopted resolution WHA57.18 urging member states to take measures to protect the poorest and vulnerable groups from transplant tourism and the sale of tissues and organs, including attention to the wider problem of international trafficking in human tissues and organs.<sup>[60]</sup> At the summit convened in 2008, by the Transplantation Society and the International Society of Nephrology that led to the Declaration of Istanbul on Organ Trafficking and Transplant Tourism, it was agreed that organ trafficking and transplant tourism violate the principles of equity, justice and respect for human dignity and should be prohibited.<sup>[8]</sup> The World Health Assembly in Resolution 44.25 further called on all countries to prevent the purchase and sale of human organs for transplantation. Except in Iran and the Philippines, the sale of organs for transplantation is banned in all countries.<sup>[20,50]</sup>

Commercialization of organ donation has been a subject of much debate. Advocates of this approach believe that it is a readily available alternative means to boost the abysmally low supply of organs from deceased donor programmes. Many end-stage renal patients requiring renal transplant do not have living, genetically related donors,<sup>[19]</sup> hence the only recourse for getting a transplant is altruistic organ donation or paid donation. Others further argue that the individuals have the right of control over their body parts even at a detriment to their lives.<sup>[16]</sup>

Leaving the “kidney business” unregulated gives room for brokers, organ traffickers, and transplant surgeons to exploit and operate with impunity and

minimal disregard for the health and welfare of the vulnerable donors. Some advocates believe that if donor exploitation is eliminated, then the payment to the donor can be morally justified.<sup>[19]</sup> Establishing measures to boost the organ donor pool in developed countries so that their organ demands are met, will help in curbing the increase in transplant tourism in developing nations.<sup>[61]</sup> Establishment of a regulated paid donor system will help in increasing the organ supply, reducing the waiting time on the renal transplant list. It will also result in economic benefits for the poor donors as well as economic benefits for the society since, in the long term, transplantation is much more cost effective than maintenance hemodialysis. <sup>[17]</sup> If the world comes to accept the idea of a regulated paid kidney donation system, what then is a fair market price for this vital human organ? Using average wages and several other variables, a Nobel-winning economist suggested about \$15, 200,<sup>[15]</sup> while others proposed \$40, 000 to be paid to the donors.<sup>[16]</sup>

Opponents of the commercialization of organ donation have also put forward various arguments. They posit that paid organ donation will give birth to further exploitation of the donors, coercion, and a growing black market <sup>[17]</sup> and that in principle, paid kidney donation may be alright, however, problems may arise in its organization and regulation.<sup>[62]</sup> Some opine that, commercialization of organ donation can never be made ethical because it would always place the weakest and poor at a disadvantage.<sup>[62]</sup> They further argue that paid organ donation systems can never be effectively regulated to prevent exploitation of the poor and vulnerable donors, and that the health care of the recipient patient is undermined when health care professionals are influenced by financial gains, to the detriment of patient care.<sup>[62]</sup> Some argue that sale of human organs is wrong from a socio-cultural and religious point of view and is akin to living off one's flesh.

### **Successes Recorded in the Fight against “Kidney Business”**

While the scourge of the “kidney business” rages on,<sup>[7]</sup> it is imperative to point out that there have been successes recorded in the global fight against the menace of the “kidney business”.<sup>[6]</sup> This is a result of concerted efforts, guidelines, recommendations and regulations by various

stakeholders- both national and international- notable among which are: World Health Organization's Guiding Principles on human cells, tissue and organ transplantation, The declaration of Istanbul on organ trafficking and transplant tourism, Asian Task force Recommendations on organ trafficking, UNESCO initiative to tackle organ trafficking, the United Nation, the Council of Europe<sup>[6]</sup>, The Transplantation Society (TTS) and other non-governmental organizations, the International Society of Nephrology (ISN), various scientific and medical bodies, government agencies, social scientists and ethicists.

The academia is also not left out in this fight against the menace of the “Kidney Business”. A number of journals such as *Transplant International*, *Experimental and Clinical Transplantation* (the official journal of the Middle East Society for Organ Transplantation, MESOT), *Kidney International*, *Transplantation*, *Clinical Transplantation*, *Nephrology Dialysis and Transplantation*, the *Journal of the American Society of Nephrology* and the *Clinical Journal of the American Journal of Transplantation*, adopted policies endorsing the Declaration of Istanbul. Some journals do not accept articles whose data are derived from transplantations of organs from executed prisoners. <sup>[7,63]</sup> There has also been a report of articles being retracted from academic journals due to the authors contravening the journals principles of adherence to the Declaration of Istanbul. <sup>[64,65]</sup> International and national professional medical societies and journals are also exhorted not to accept abstracts, publications or presentations in which the source of the data is from organs of executed prisoners.<sup>[66]</sup>

The growth of the “kidney business” has been inhibited since the Declaration of Istanbul, even in developing nations in which its effect is most felt.<sup>[67]</sup> Various degrees of successes have been recorded in India, Pakistan, China, Egypt, the Philippines, Colombia and Latin America, Israel and North America.<sup>[7,67]</sup> Worthy of note is the reduction in the annual number of Israeli patients who engaged in kidney transplant tourism, from a high of 155 in 2006 to a record low of 35 in 2011, and the number of foreign transplant recipients in the Philippines decreased from 531 in 2007 to only two in 2011.<sup>[3]</sup>

## Conclusion and Recommendations

It is high time the global community accepted the realities of our predicament as it relates to organ transplantation. Xenotransplantation, an emerging possibility is not without its ethical, religious, and socio-cultural controversies. While the successes recorded in the fight against the “kidney business” are laudable, the fight is far from over, especially for developing nations. The global community cannot continue to ignore or be indifferent to the predicaments of the increasing number of desperate-for-survival patients with end stage organ failure requiring transplantation, the exploitation and coercion of the poor and vulnerable donors, the expanding international ring of criminal human and organ traffickers, the greedy, unscrupulous and exploitative brokers, the complicit medical “un”-professionals and health institutions.

There is no easy answer to this perennial problem. There is a pressing need for developing countries to establish an efficient and sustainable deceased organ donation system while also embarking on massive public enlightenment campaigns on deceased and altruistic organ donations. Developed countries on the other hand, should strive to further strengthen the available organ donation systems. The Iranian example is worth a second look.

## Conflicts of Interest

The authors declare no conflict of interest in writing this article.

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