# **Organ Trafficking in Africa: Pragmatist Considerations**

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**Abstract:** This article focuses on assessing the situation of organ trafficking in Africa. In the mainstream thought, the broader ethical dilemma of organ trafficking is viewed within the moral contestation of altruism as a rule for organ procurement and the resulting worldwide organ shortage. The incapability of altruistic transplant *orthodoxy* to serve as an applicable foundation for a public policy is considered as a reason for organ trafficking. In fact, to battle organ trafficking, utilitarian-inclined studies suggest organ selling, compensated donations, and non-directed paid donations as practical alternatives. However, when investigating organ trafficking in Africa, the issue goes beyond the mere moral dilemma of altruism and organ shortage. Instead, in the region, organ trafficking is rooted within more systemic, structural, socio-economic, and political problems, grounded in the abuse of transplantation and connected to transplant tourism and migration. Thus, in the subsequent sections, this article looks at the context of organ trafficking in Africa and reassesses organ trading by incorporating it into the ethical debates of transplantation and organ procurement in general. The final part reflects on solutions with the reconsideration of the context of transplantation and organ trafficking in the region.

**Keywords:** Organ Transplantation, Organ Trade, Organ Trafficking, Africa, Pragmatism, Ethics

1. **Introduction**

Organ transplantation is a newly emerging medicinal science which has shown significant developments since the second half of the twentieth century. Advances in medical technologies such as mechanical ventilators, cardiac pacemakers, and drugs that maintain blood pressure have brought the threat of death under the physician, family, and patients’ control. Such technological advances have opened up ways to harvest fresh organs for transplantations. Newly emerging human tissue banking and organ freezing devices, as well as immuno-suppressive drugs have eased the task of tissue matching by further enhancing transplantation research (1). As a result, solid organ transplantations from both deceased and live donors have saved the lives of those affected by terminal organ failures and improved patients’ quality of life. Studies indicate that worldwide approximately 100,000 patients undergo organ transplantation annuall (2). For example, according to the Global Observatory on Donation and Transplantation (GODT) report, in 2018, the overall number of transplantations was 146,840 (3). Nevertheless, the worldwide transplantation rate is, in general, still far from meeting global needs. Besides, organ transplantation’s global distribution is highly unequal, showing a marked difference from region to region (4) (5). For instance, only a few countries in Africa have developed better systems of transplantation (6).

In recent years, organ trafficking—the “recruitment, transport, transfer, harboring, or receipt of living or deceased persons or their organs”(7)—has become a pressing issue in bioethics, in debates on transplantation, and in research on migration. Compared to other forms of illicit trafficking of humans, organ trafficking and its connection with migration is the least researched of all kinds of crimes (3, 4). Surprisingly, a 2017 report listed illegal organ trade as the fourth among the top 11 transnational crimes, with an estimated annual value ranging from $840 million to $1.7 billion (10).

Except in a few countries (such as Iran and Spain), the increasing number of patients who need organ transplantation has led to a critical shortage of organs. This organ shortage has fueled the development of the illicit organ trade and organ trafficking. Remarkably, the rising number of older people and their associated health complications, and the demand for organs in affluent nations, has become a challenge in terms of balancing the supply and demand of organs. In Europe, the number of available deceased and living donors seems insufficient to address the growing demand for organs (11). For instance, in 2017, the total supply of kidneys in the U.S.A. was 20,000. This number covers only 25% of the estimated patients on the waitlist for transplantation in that year. The total number of transplantations conducted was 39,712, less than half of the total number of patients who desperately needed transplantations. As a result of organ shortage, approximately 10% of transplantation took place in black markets, with patients desperately searching for transplantation through illegal means (12).

A shortage of organs and long waiting lists in resource-rich countries have pushed many desperate patients to travel to poorer countries where they can purchase organs from a paid donor and undergo transplantation. For instance, the WHO estimated that 10% of all global kidney transplants in 2004 were for patients from developed countries who traveled to low-income countries to buy organs (13). In 2005, around 66,000 kidneys were transplanted worldwide, and transplant tourism accounts for about 10% of total transplants (14). The Global Financial Integrity report also showed that kidneys are the most trafficked organ, given that it is possible to live with only one kidney. The report indicated that approximately 7,000 kidneys are illegally harvested and trafficked each year, and that one-fifth of all global kidney transplantations involve trafficked kidneys (5).

While less data is available from Western countries, people from the U.S.A., Australia, Canada, and European countries are reported to be the organ recipients in transplant tourism and organ trafficking (8), (15), (16). The major organ-importing countries in East Asia include Japan, Taiwan, South Korea, Malaysia, Singapore, and Hong Kong. In the Middle Eastern corridor, Israel, Saudi Arabia, and Oman take the upper hand by receiving organs traded illicitly (17). Patients from developing countries who have money but are unable to find transplantation facilities at home also travel to better-off countries for transplantation. For example, a 2019 study found that 90 living donor kidney transplants have been performed in Ethiopia since the first transplant in 2015. The country’s total number of transplantations was 300, of which 210 were involved donors outside of the country, mainly from India and Thailand (18). In fact, from the angle of ethics and policy, the incapability of altruistic transplant orthodoxy to serve as an applicable foundation for a public policy is considered as a reason for organ trafficking especially in high-income coutries.

Traveling for medical services may not be a problem from a patients’ perspective. However, the challenge is that most transplants undertaken in this manner are linked to organ commercialism and organ trafficking. Various studies and reports indicate that illicit organ transplantation, trade, and trafficking are associated with transplantation tourism (16), (15) (13). In transplant tourism, most transplantations are done illegally by using illegal organ vendors, trafficking in organs, or trafficking in humans for organ removal. This medical tourism targets the poor, migrants, asylum seekers, and prisoners as potential organ transplantation sources. This business has made the less affluent sections of societies as well as migrants vulnerable to social, psychological, economic, and health problems (15), (13), (19), (17), (20), (22). Africa’s situation is highly interconnected with worldwide transplant tourism and the associated trafficking of organs as well as the trafficking of humans for organ removal. Unlike the situation in affluenct nations, organ trafficking in the region is caused by a more sytemtic, socio-econmoic and political problems instead of altruism’s inefficacy as a rule of organ procrument and the resulting organ shortage.

This paper approaches organ trafficking with the sensitivity to context of trasplatation and organ trafficking in Africa, and revisits it from perspective of pragmatist bioethics. In pragmatist bioethics, previous moral cases and associated judgments and pre-given moral principles cannot be used as an ever lasting solution to a given problem arising in a different situation, since a unique problem requires a unique solution. In this regard the context where the moral problem arise determines the solution. Moreover, rules and principles in ethics are not decisive and final; instead, they have the logical status of a working hypothesis, and are necessary in order to have a clear picture of the problem and to help guide us in the search for solutions (23) (24). Depending on the type of bioethical issue under investigation, a consideration of a particular society’s rules, practices, customs, and habits regarding the problem is essential as a background to provide moral judgment or suggest solution to the problem. The behavior of key actors and stakeholders involved, the rules and responsibilities related to agents, the maxim developed from agents’ previous moral judgments, and agents’ habits are also important during ethical delibration and analysis(25) (26) (27). Thus, this article uses these pragmatic insights and assesses the situation of organ trafficking in Africa. It also positions organ trafficking in terms of ethical debates on transplantation and organ procurement and reflects on its ethical status in the African context. The last part of the paper presents a pragmatist reconsideration of organ trafficking and provides solutions to control organ trafficking in the region.

1. **The Context of Organ Trafficking in Africa**

Africa is underdeveloped in terms of transplantation medicine. This treatment is still inaccessible for most African populations who are considered medically suitable for transplantation. The region’s overall transplant centers number no more than 70; only a few well-established transplantation centers in a few countries provide solid organ transplantations (6). Domestic organ demand contributes to organ trafficking in the worldwide context, but organ trafficking in the African context is highly interconnected with the global organ trade, migration, and transplant tourism. In the region, the Northern and Southern African corridors are primary routes of organ trade and trafficking. The Northern corridor is the primary site that combines kidnapping and murder of humans for organ harvesting, with Egypt and Libya named as major organ trafficking areas. In 2007, Egypt was identified as the major organ-exporting country globally (13). Organ trafficking syndicates in Egypt are further connected with brokers in Libya and Sudan. The network mainly targets immigrants from East African countries such as Sudan, Eretria, Ethiopia, and Somalia (28). The trafficked organ’s end-users in the Northern corridor include patients from Israel, Saudi Arabia, Kuwait, the U.S.A., and some European countries. Patients from Sudan, Libya, Jordan, and countries of the Persian Gulf are also the recipients of Egypt’s trafficked organs.

In 2018, over 700 incidents of organ trafficking occurred in Northern Africa and the Middle East alone (29). However, the number is estimated to be much larger, as most cases go unreported and organ trafficking is done through secretly organized mafia groups that include health care professionals and political bodies. Brokers use various mechanisms for trapping people and stealing their organs. In Africa, organ traffickers use mechanisms such as stealing organs from a patient being treated for a minor sickness, coercion using money and physical force, and cheating. Recent studies have reported that organ trafficking in the Sinai Desert, which is commonly called Sinai Trafficking in academia, is unique regarding the use of violence, torture, and killing of migrants crossing to Israel. Particularly, migrants from Eritrea, Sudan, and Ethiopia are exposed to networked traffickers who work clandestinely from Egypt and Israel. Brokers who facilitate their travel to Israel via Sinai demand that migrants pay a ransom, and those who are unable to pay the ransom are forced to cover their travel expenses by giving up their organs (30).

Brokers in Egypt and Sudan also use money to induce individuals to voluntarily sell their organs, especially targeting the poor, illiterate, rural-urban migrants, and other asylum seekers (28). Studies show that people passing in this direction are usually cheated or end up with a much smaller payment than what they were promised (28), (15). In this regard, various reports document the targeting of the poor and migrants. For instance, in 2016, nine Somali migrants had their organs removed and their bodies were dumped in the sea near Alexandria, Egypt (31). In 2015, in the northern Sinai Peninsula, Egyptian police found the bodies of 15 African migrants, most of them from Sudan. They appeared to have been shot, and some of their organs had been removed (32). Similar reports of bodies with missing organs were found in Nigeria and the Lake Chad Basin (33). The 2011 Coalition for Organ Failure Solutions (COFS) report indicates that 57 Sudanese refugees reported to be victims of organ trafficking. Most of them came from Darfur, through human traffickers (34). The victims reported health deterioration and adverse social, economic, and psychological problems resulting from forced organ removal. The terrorist groups that call themselves ISIS (the Islamic State of Iraq and Syria) or ISIL (the Islamic State of Iraq and the Levant), who operate in the Middle East, are accused of selling their captives’ organs for transplants (35). Similarly, recent news reports in Libya also show that West and East African migrants are exposed to terrorist groups operating in the region.

The Southern part of Africa is the second hub of illegal transplantation, organ trade, and trafficking. In the Southern corridor, South Africa is mentioned as the second hub of organ trafficking. Illegal transplantation, organ trade, and trafficking in South Africa are connected to the boom in private sector engagement in transplantation which occurred between 2001 and 2003. The recent reports of organ trafficking in South Africa are connected to the police record of Net Care’s St. Augustine Hospitalin Durban, which conducted thousands of illegal kidney transplants between 2001 to 2003 (36), (22). Transplant tourists coming from Israel and Eastern Europe accounted for the highest number of recipieents in the Southern corridor of Africa. South African citizens, as well as people trafficked from Brazil and Israel, were organ transplantation sources for transplant tourists in this country.

Today, reports of a new wave of organ trafficking of forced organ removals and organ theft targeting the poor and migrants are coming from East African countries, as well as from conflict-prone areas in Central and West Africa. However, for the last three decades, in the Northern and Southern African corridors, Egypt, Libya, South Africa, and other conflict-prone and migrant areas of the continent have been hot spots of organ trafficking. In such organ commercialism and trafficking, various human and legal-personal actors are involved, both from within the region and from outside. This regional and global dimension of organ trafficking makes the issue more systemic, structural, socio-economic, and political, grounded in the practice’s abuse, and connected to transplant tourism and migration.

1. **The Ethical Dilemma of Organ Trafficking, and the Context of Africa**

The broader ethical dilemma of organ trafficking rests on the contestation of altruism as a rule for organ procurement and the resulting worldwide organ shortage. The incapability of altruistic transplant orthodoxy to serve as an applicable foundation for a public policy is often considered a reason for organ trafficking (37). In fact. the debates on organ transplantation ethics rests on various moral principles, broadly categorized as utilitarian and deontological in their ethical-philosophical orientation. Regarding transplantation, both approaches agree that it is a significant achievement in terms of improving the life of patients, thought there is a marked difference between them regarding organ procurement and solutions for organ trafficking.

Organ trafficking itself is not debated in ethics as a controversial issue, since it is an inhuman act and a crime. Instead, the ethical controversy over organ trafficking rests on the method of organ procurement and illegal transplantation. Specifically, the ethical dimension of organ trafficking is viewed in light of the method of organ procurement, illegal transplantation, and organ selling, which further fuels organ trafficking. In mainstream ethics and in the laws on transplantation medicine, organ transplantation rests on altruistic organ donation that favors genetically related donors as a method of organ procurement. However, the problem is that this method of organ procurement is incapable of satisfying the increasing organ demand, which further drives illegal organ transplantation and the resulting organ trafficking. Thus, alternative recommendations such as organ commerce and compensation for donors are suggested as solutions to satisfy the increasing demand for organs.

The debate on organ trafficking rests on the above two ethical standpoints. From the deontological standpoint, permitting organ selling by bypassing the rule of altruistic donation is considered a reason for organ trafficking. On the other hand, in the utilitarian perspective, the incapability of altruistic donation to satisfy the rising organ demand is mentioned as a reason for organ trafficking. For instance, in the deontological Kantian approach, Cohen argues that selling an integral human body part corrupts the very meaning of human dignity. Selling organs alienates human dignity because it implies considering human beings as mere commodities in terms of body parts, since organ selling disembodies human beings and denies dignity. However, for Cohen, human beings are embodied beings seen in terms of organic wholeness. The embodied integrity of humans is observed within the human body’s wholeness (38). Further, in the Kantian approach, organ selling is viewed under the big umbrella of social justice and society’s good. In this approach, organ selling by bypassing altruism is part of organ trafficking, and permitting organ selling is considered as opening the door for organ trafficking. From the aspect of social good, organ selling is exploitative and coercive, making the low-economic sections of societies as well as migrants vulnerable to physical, psychological, and socio-economic exploitation. Mainly on the seller’s side, organ selling, and the resulting organ trafficking, bring associated social, economic, psychological, and physical health impacts. Thus, the deontological approach appeals to altruistic donation and legal control of organ trafficking as a primary solution for organ trafficking, rather than compensation, paid organ donation, or organ selling (15), (16).

Unlike the deontological Kantian approach, in the utilitarian approach organ transplantation is seen as a more libertarian and consumer-oriented principle. Similarly, the issues of organ procurement and organ shortage are seen in a more utilitarian sense, involving a more libertarian and consumer-oriented principle. For instance, regarding organ selling, those who are able to broker or buy a human organ should not be prevented from doing so. Likewise, the principles of autonomy, beneficence, non-maleficence, and justice are construed in light of an individual’s freedom of decision making, preferring the seller’s right to sell and the patient’s right to purchase an organ in a free market system. In this approach, organ selling is considered a win-win situation for both (39), (40). The utilitarian approach looks at organ trafficking in connection with organ shortage, which is further connected to the incapability of altruism as rule of organ procurement. Hence, increasing organ supply through a flexibility of rules for organ procurement is suggested as a lasting solution to the problem of organ trafficking. For this purpose, studies under the utilitarian moral category recommend compensation (41) (42), a non-directed paid donation (37), and regulated organ selling (40) (39) (43) as options to increase organ supply and to control organ trafficking.

For instance, Clay and Block (2012) claim that the legalization of the sale of body parts in legitimate free market activity decreases human body parts’ price and discourages human organs’ theft, which the present laws cannot control. Furthermore, in a free enterprise system, the original owner of the organ (or his/her estate) will receive the profit from the sale, and the recipient also benefits from the free transaction of organs (40). Friedlaender (2002) also supports legislation governing regulated kidney sales, since the shortage of organs and organ trafficking are getting worse. He further claims that patients’ welfare is neglected and left them to unregulated market transactions by failing to consider legal alternatives of paid donations. Moreover, considering the prevailing practice, patients, donors, and commercial go-betweens are already trading organs through black markets. Thus, Friedlaender suggests that regulated organ trading is a morally acceptable option for the patient’s welfare, the sustainability of transplantation medicine, and control of the organ black market (43).

From the pragmatist standpoint, the incapability of altruistic transplant orthodoxy to serve as an applicable foundation for a public policy may be the reason for organ shortage and organ trafficking. Since organ trafficking is connected to the global organ shortage, more utilitarian solutions such as organ selling, compensated donations, and non-directed paid donations may be suggested as practical alternatives to battle organ trafficking. On the other hand, in a context where there is no universal healthcare system and the majority of people are poor, permitting organ selling and introducing compensated donation opens up further avenues for organ trafficking instead of controlling it. Hence, sticking to altruistic donation with strict legal control of organ trafficking may be suggested as a second alternative. However, in pragmatist ethics, the earlier two options can be taken as possible hypotheses or preemptive guides to look at the problem afresh with a sensitivity to context.

As discussed earlier in this paper, when we view the context of organ trafficking in Africa, the issue goes beyond the mere moral dilemma of altruism and organ shortage. Africa is under-developed in terms of organ transplantation. There are shortages of medical facilities, physicians, and nurses in the region. In fact, only a few countries have standardized medical facilities for transplantation. Based on a 2016–2018 report, 62 transplantation centers are found in Africa, and transplantation from deceased donation is only provided in South Africa. In most countries, donation and transplantation of organs and tissue is not consolidated enough and national transplantation programs lack effective coordination and referral systems. In fact, only 15 countries (Egypt, South Africa, Algeria, Burkina Faso, the Comoros, Côte d’Ivoire, Ethiopia, Kenya, Mauritius, Namibia, Nigeria, Rwanda, Senegal, Uganda, and Zimbabwe) have legal requirements governing organ donation and transplantation. When it comes to specific laws governing the prohibition of organ trade and organ trafficking, this is limited to only nine countries (Algeria, Burkina Faso, the Comoros, Côte d’Ivoire, Mali, Namibia, Nigeria, Rwanda, and Senegal). The import and export of organs seems permitted or is not explicitly mentioned in law in most African countries. Only three countries (Algeria, Burkina Faso, and the Seychelles) have explicitly prohibited the import or export of organs, and only three countries (Ghana, Namibia, and Rwanda) have authorized the import and export of organs (6).

Considering the inaccessibility of transplantation medicine and low transplantation rates in Africa, organ trafficking is related to domestic organ shortage to a lesser extent. In fact, when we look at records in Egypt, Libya, and South Africa, organ trafficking is connected to transplant tourism and organ theft targeting migrants, the poor, and asylum seekers. In the region, organ trafficking is rooted in more systemic, structural, socio-economic, and political problems, grounded in the practice’s abuse, and connected to transplant tourism and migration. Thus, instead of mainstream pathways such as organ selling and paid donations, we can argue that pragmatist multimodal solutions formulated with the consideration of the nature and progress of organ transplantation on the continent, cultural values of the societies, and key actors involved in organ trafficking is paramount to control organ trafficking in Africa. In this regard, strategies that combine technical, ethical, and legal aspects of transplantation within the African context are required in order to control organ trafficking in the continent. Concerning this, I have identified five pragmatist solutions important to address organ trafficking in the region, both for short and log term.

1. **Increasing Organ Supply by Controlling Transplant Tourism**

Organ trafficking in Africa is connected with transplant tourism and cross-border organ commerce targeting migrants and low-income societies. The problem has a global dimension, which goes beyond the increasing local demands for new organs. Hence, controlling transplant tourism and addressing the increasing organ demand nationally, regionally, and worldwide is essential to control organ trafficking. Transplant tourism can be controlled through the official banning of transplantations for foreigners and employing legal remedies or imposing fines on those engaged in such activities. However, multimodal technical, ethical, and legal solutions, as well as innovative models that encourage more donations, are essential to increase organ supply and control illegal transplant, trade, and trafficking.

Depending on the culture, religion, and technical facilities available in a specific region, living-related donations, unrelated living donations, deceased donations after brain death (DBD), extended criteria donations, or donations after cardiac death (DCD) may be used to increase organ supply. However, increasing resources for transplant medicine and optimizing resource use in Africa is one of the technical mechanisms helpful for increasing the supply of organs in the region (5) (36). Africa is under-developed in terms of organ transplantation. Only a few patients have access to transplantation, and it is inaccessible to rural communities. There is a shortage of medical facilities, physicians, and nurses. Only a few countries have standardized medical facilities for solid organ transplantation, and deceased donation is limited to South Africa (5), (6).

Religious and cultural factors play a significant role in the rate of live and deceased organ donation. For instance, South Africa ranks first in Africa in terms of transplantation; however, compared to countries in Europe, the donation rate is insufficient. A study on Zulu communities shows the Zulu family structure and spiritual belief’s influence on organ donation. The study shows that people in the community preferred live-related donation instead of cadaver organ donation. The Zulu communities’ attitude to death and the spiritual union they establish with their ancestors makes them reluctant to donate (44). Similarly, in Asian countries such as Japan, Malaysia, and the Philippines, it is more challenging to obtain cadaver kidneys for renal transplantation because of certain sociocultural beliefs and customs.

In Egypt, cultural and religious factors limit transplantation from deceased donors (45). Surprisingly, there is considerable potential to harvest organs from deceased donors in Africa. For instance, compared to other continents, the traffic accident rate in Africa is high. If medical, clinical, and technical facilities are well established, the traffic accident may easily cover the local demands of organs (36). Nevertheless, compared to live donations, deceased donations require a different infrastructure than living donations. Hence, investing in the technical, nursing, and logistical dimensions of transplantation and transplant theatres to harvest organs from deceased donors is essential to increase organ supply without resorting to organ trafficking. In this regard, nurses’ and physicians’ proper role should be clarified based on clinical practice guidelines concerning end-of-life, organ donor referral systems, and the dead-donor rule (46).

The scarcity of organs worldwide is prompting a modification of the dead-donor rule, mainly by interpreting it more broadly (Robertson, 1999). In this regard, increasing organ supply from deceased donors requires flexible rules regarding consent, modification of the criteria of death, and technologization of organ harvesting theatres. The standard strategy which is frequently mentioned in connection to the bypassing of the dead-donor rule is to expand the donor criteria to encompass donation after cardiac death (DCD), in addition to donation after brain death criteria (DBD) (47), (11). In fact, in collaboration with multi-regional working groups, transplant societies, and governments, in 2010 the WHO developed a new approach called the “critical pathway” to increase organ harvesting from deceased donors. The pathway’s objective is to give a systematic approach for a deceased organ donation by considering both DBD and DCD. In the critical pathway, patients with a devastating brain injury or lesion, patients hospitalized in an intensive care unit and sustained with a mechanical ventilator, and patients with circulatory failure arriving at a hospital in the emergency ward are identified as medically suitable organ donors (48). There has been a similar initiative in China to implement a Chinese critical pathway, based on a pilot study in 2010 and 2012 on the Chinese culture and their attitude to DCD. In addition to the two critical pathways, the Chinese pathway combines DBD and DCD and introduced the third option called organ donation after brain death (DBCD), followed by circulatory death as a third critical pathway (49). Since organ trafficking targets live-donors, a shift towards deceased donation with education and awareness increases organ supply and controls organ commerce. This strategy is significant, especially for Africa, to increase organ supply without permitting organ selling or paid donation.

In connection with deceased-donation, reforming the consent system from an “opt-in” to an “opt-out” system and reforming the technical, medical, legal, and ethical modalities of the dead-donor rule is one of the most effective strategies to increase potential organ donors. Compared to countries with an opt-in system, there is a higher procurement rate for organs in countries with presumed consent laws (14). Therefore, adopting presumed consent would reduce the number of organs obtained through the black market. In fact, in Africa, cultural and religious factors play a significant role in consent and organ donation. For instance, in the Zulu community, consent for organ donation depends on the extended family, especially males (44). A recent study in South Africa and Ghana shows that only a small percentage of people show a willingness to donate organs, partly related to lack of knowledge (36), (50). Thus, to increase the consent rate, discussions and public awareness initiatives need to be sensitive to observed religious and cultural reservations about organ donation (51). Besides, education and awareness focusing on increasing the number of live donors is essential, in addition to increasing the consent rate of deceased-donors. A proper donor pool system which protects donors and their families is imperative to increase organ supply (20). In this regard, the government’s role is also critical in terms of formulating a national policy for general public education and expanding organ donation and transplant services. The active role of government is critical when we see that countries such as Belgium, Spain, Portugal, and Austria scored high regarding organs retrieved from deceased donors.

The contending issues for the low rate of organ donation is its dependence on the principle of altruism. In this regard, depending on context, studies suggest a non-related compensated donation, regulated non-directed paid donations, and centralized organ selling as alternatives to live donations. In Israel donor incentivization, and in Iran centralized organ selling, as well as other compensation packages in other countries, have been implemented to expand donation and control organ trafficking. The Iranian model is often criticized for the low payment of organ sellers and its exploitative nature. Contrary to non-related compensated donation, regulated non-directed paid donations are suggested as pragmatist solutions for countries with well-established national health care systems. Specifically, a compensated donation is suitable in a welfare society with a national health care system where all basic needs are guaranteed to all individuals irrespective of social standing, economic situation, gender, and ethnicity. Mainly, compensation is suggested as the best alternative for European countries with a welfare system, in order to address poor kidney vendors’ exploitation in the developing world, and who are exposed to organ trafficking (42). However, considering the real African context, permitting organ selling and directed or non-directed paid donation worsens organ trafficking instead of controlling it.

Regarding compensated donation, its practicality and non-exploitation of the poor are questionable amidst of the poor legal, technical, and organizational infrastructure in Africa. When we consider African countries’ health care systems, only Tunisia and Botswana have universal health care systems (52). Rwanda, Ghana, Nigeria, Tanzania, Kenya, Uganda, and Cameroon are currently moving towards community-based health insurance schemes that offer protection for the poor (53). A few countries have rules and regulations governing transplantation and organ trafficking. In this regard, compensating donors through health safety and insurance is imperative. However, given the absence of financial health risk management and insurance systems in Africa, it is challenging to implement compensated or paid donation without first changing the existing health policy into a universal healthcare system.

1. **Control and Policing of Illegal Organ Transplant, Trade, and Trafficking**

Fighting organ trafficking must combine uncompromised law enforcement with heavy penalties for brokers and physicians involved, with a radical revision of the living donations procurement methods (37). Unlike other forms of crime, illegal transplants connected to commercialized or trafficked organs are easily detectable, since transplantation happens with identifiable hospitals. In Africa, transplant centers are limited in number and are easily identifiable by the public and governments. As this is the case, organ trafficking can be controlled through effective legal control and policing of illegal transplants, transplant tourism, and organ selling. In this regard, establishing a centralized patient and donor registry at the national, regional, and continental level plays a paramount role in monitoring transplant and tracing the legality of donated organs and tissue.

In Africa, health facilities are limited, and only a few clinics and hospitals, close to 70 in number, provide transplantation services. Thus, the respective countries’ national governments can easily control the domestic illegal organ transplantation through the registry of hospitals, patients, donors, and the available organs. Hand in hand with the central registry, denying access to medical services for patients who undertook transplantation abroad or in a country outside organ transplantation centers registered in the central organ transplant unit effectively controls transplant tourism, trade, and trafficking in organs. Home country measures through insurance and extraterritorial criminalization of persons receiving organs from other countries or engaging in such kind of trade is another strategy to control transplant tourism. Home countries can discourage their citizens from engaging in transplant tourism by making these patients ineligible for insurance coverage relating to an illegal transplant. Since transplant tourists have to take immunosuppressive drugs and require other post-transplant treatments, doctors and pharmacists can monitor and report patients who have engaged in illegal transplantation (50), (54), (17). Further, the criminalization of organ vendors, patients, health care workers, and institutions, together with heavy fines, is a significant manner in which to control illicit transplant, trade, and trafficking. In this regard, it is essential to integrate the criminalization and control system of transplant, trade, and trafficking on the continent with international organizations and security departments, local, national, and regional security agencies, and authorities considering it a criminal act. In addition, as Cohen claims, strengthening laws against this crime and removing any loopholes that encourage corruption is important to control illegal organ transplant, trade, and trafficking (55).

Organ trafficking and trafficking in persons affects all regions of the world. Thus, organ trafficking calls for a robust and coordinated response from the international community at large. International cooperation in criminal matters is crucial to prosecuting organized criminal groups engaged in organ and human trafficking (56). In this regard, increasing extra-legal measures, international cooperation, and a focus on the causes and victims of organ trafficking, rather than criminal law alone, are essential to control organ trafficking and trafficking in humans for organ removal (57). Domestic, regional, and international legal and semi-legal instruments are powerful legal tools to deal with organ trafficking. In fact, several non-binding international instruments have been designed to control organ trafficking. The most crucial multilateral convention for the prosecution of both traffickers in human beings for organ removal and organ traffickers is the United Nations Convention Against Transnational Organized Crime (UNTOC). There are also regional legal instruments against organ trafficking. For instance, the 2008 Council of Europe (CoE) Convention on Action Against Trafficking in Human Beings is a legal instrument useful to manage organ trafficking, especially in European member states. The 1997 CoE Convention on Human Rights and Biomedicine, with its supplementary protocol dating from 2002, is another legal instrument regarding transplantation and associated abuses (57).

However, when it comes to Africa, other than international laws, declarations and resolutions on organ and tissue transplantation by the WHO, and regional laws concerning human trafficking and children’s rights, there is no clearly stated convention or regulation addressing the issue of illegal transplantation, organ trade, and organ trafficking. Even in countries where there are international, regional, and domestic laws governing transplant tourism, the lack of strong political will from the government is the main reason for the existing illegal transplantations, organ trade, and trafficking. Thus, strong government willingness to formulate laws addressing transplantation and criminalization, and the substant fining of those who engage in such illegal transplant and organ trade are imperative to control organ trafficking.

1. **Towards a Pan-African** **Transplant Registry**

The long-term mechanism to handle illicit organ transplant, trade, and trafficking in Africa is establishing a pan-African transplant registry system. Considering Africa’s situation, most countries do not have central organ registry systems. In fact, the establishment of a continental Africa Renal Registry has recently taken off. In March 2015, the African Renal Association of Nephrologists (AFRAN) organized a workshop for African nephrologists and decided to establish an African Renal Registry for the first time (58). Broadening this insight and establishing a pan-African transplant registry is important to control organ trafficking. This system can be designed through a record of transplant centers, patients, donors, available organs, and transplantations in the continent.

A pan-African transplant registry system will help organize a task force and regional units, especially in the migrant areas, to control transnational illegal organ trade and trafficking. Today, integrating Africa through trade and investment is a top priority of the continent. Regional economic integration and attempts to unite African countries economically are underway in West and East Africa. However, integrating the use of available medical resources, health professionals, and technical knowledge has not yet been placed on the agenda of the African Union (AU) or other regional organizations. Some countries (such as South Africa, Tunisia, and Algeria) have advanced medical resources to offer transplantation options for patients from other countries. However, most patients who need transplantation in the region either die without having a transplant or go to Asia, the Middle East, or European countries to receive treatment. In addition to the absence of a cooperative use of the region’s medical resources, there is no common security front and legal control against trafficking in organs on the continent.

Establishing a pan-African organ registry system at the continent level is important in order to cooperatively use the available medical supplies, professionals, and organs in the region, as well as establishing a universal legal instrument. As Miller argues, a pan-African Transplant Registry can serve as institutionalized power for Africans to decide on the price of immunosuppressive drugs and develop a center of excellence on the continent (5). The system can also help to initiate cooperation among nations on the continent to control migration and human trafficking. Studies indicate the existence of a gap regarding seeing illegal organ transplantation in connection with migration worldwide (9). Looking at Africa’s situation, illegal organ transplantation and organ trade are connected with trafficking in humans and migration. In this regard, establishing a pan-African organ transplantation center would help control organ trafficking by connecting it to migration and human trafficking.

1. **Sustainable Economic Solutions Targeting the Poor and Migrants**

In Africa, organ trafficking is more systemic, structural, socio-economic, and political, grounded in the practice’s abuse, and connected to transplant tourism and migration. As indicated elsewhere in this paper, organ trafficking in Africa is connected to migrant areas on the continent. Thus, devising strategies focusing on migrants and poor and vulnerable sections of society in different parts of the continent is important to minimize the vulnerability of these sections of society to organ trafficking and trafficking in person for organ removal. Education and awareness targeting migrant source countries and human and organ trafficking hotspots are critical to bringing change in the long term.

Most migrants become vulnerable to such organ transactions and trafficking because of economic reasons in their home countries. Thus, to address the issue in the long term, devising a sustainable economic solution in those countries is essential. For example, in Egypt, criminalization alone cannot address the problem of illegal organ trade. Social exclusion and economic migration are the primary factors that push low-income individuals, asylum seekers, and migrants into the illegal organ trade. Thus, a solution that considers the cultural, social, and economic situations of these migrant areas is essential to control organ trade and trafficking (28). In this regard, international and regional organizations’ role in economic aspects, security, health, and education, as well as other areas, is important in order to improve migrant source countries’ economic situations. On the emigrant side, a sustained global economic and social support and education awareness on the risks of illegal organ trade to East and West African countries can help minimize migration and migrants’ exposure to organ piracy. In this regard, the European Union has to revise its policy towards security in North Africa regarding emigrant source countries’ economic and social sustainability. Besides, it is essential to establish a regional security force and observatory group working on organ and human trafficking in the region. Especially, controlling medical facilities (such as mobile organ harvesting clinics and devices, brokers and professionals working in clandestine or in the registered legally functioning hospitals) is imperative to address illegal organ trade and trafficking hotspot areas in the North and South corridor of Africa.

1. **Revising Health Care Professionals’ Codes of Conduct**

As presented elsewhere in this paper, organ trafficking in Africa is a systemic, structural, socio-economic, and political problem grounded in the practice’s abuse and connected to transplant tourism and migration. The practice’s abuse is connected to the misconduct of health professionals, physicians, nephrologists, and others working in the health sector. Organ trafficking is undertaken clandestinely with a network of brokers, health professionals, and health care institutions from different parts of the world. Indeed, compared to other criminal activities, the distinctive feature of transplant-related crimes is the necessary involvement of health professionals (48). The driving force for physicians and brokers to engage in organ selling and trafficking in organs is financial gain (12).

On the contrary, health professionals are crucial sources of information to understand organ trafficking networks. They are significant information sources, especially in the information phase, the pretransplant phase, and the posttransplant phase (59). However, the paradox is that most health care professionals do not take seriously legal and ethical responsibilities to report organ trafficking or illegal transplants. For example, in a recent study in the Netherlands, most health professionals are silent regarding the reporting of transplants done with unknown organs or organs from abroad (22). Thus, revising the medical codes of conduct and devising ethical, legal, and criminal control, as well as fining health professionals, is a matter of urgency regarding the control of illegal transplantation. Health professionals should not turn a blind eye or passively facilitate transplant-related crimes. Instead, they are responsible for educating patients about risks related to transplant tourism and transplantation with purchased organs (60).

As Glaser emphasizes, to control organ trafficking, countries should also impose mandatory reporting requirements on doctors who suspect that a patient has obtained an organ from a trafficked person or has obtained a trafficked organ (55). Physicians and surgeons have a responsibility in terms of the safety and legal condition of transplants. Hence, physicians’ and surgeons’ awareness and responsibility from the perspective of ethics and law help to control organ trafficking (20). Besides, activists, civil society, and physicians play a significant role in eliminating or combating illegal organ trade in Africa. For example, studies indicate that health-related civil societies in Israel and Pakistan have improved the control of organ trade and organ trafficking (17). In Egypt’s case, a revision of fines for professionals engaged in illegal transplantation has brought change after the 2010 introduction of new legislation. However, many African countries do not have rules and regulations addressing organ transplantation and related crimes. For instance, in South Africa, even though the health care system has the expertise and facilities to provide solid organ transplantation, there is a marked lack of legislation and regulatory guidelines from national to hospital level (46). Thus, an emphasis on revising health professionals’ codes of conduct, setting out national regulations governing transplantations, and integrating it with the country’s criminal codes helps to address organ trafficking. Besides, developing policies regarding health care professionals’ and health institutions’ economic ground is significant, since it is the main reason health professionals and institutions engage in illegal transplant and organ trafficking. In this regard, formulating universalized ethical norms addressing health care institutions and health care professionals at the national and regional level is pertinent for the future progress of transplantation medicine in the region.

1. **Conclusion**

Worldwide illegal transplant, organ trade, and trafficking are connected with transplant tourism and organized networks of organ and human traffickers. The situation in Africa is highly interconnected with global organ trade, migration, and medical visits. These days, in Africa, reports of forced organ removal, inducement, and theft, focusing on the poor and migrants, are coming from East African countries and conflict-prone areas in Central and West Africa in a new wave of organ trade. However, in the Northern African corridor, Egypt and Libya, and South Africa in the Southern corridor, have been hotspot for three decades. In such illicit transplantations and commercialism, various natural and legal-personal actors are involved. Thus, organ trafficking in Africa is caused by more systemic, structural, and socio-economic problems grounded in migration and transplant tourism than the mere moral dilemma of altruism's inefficacy. Hence, on the systemic and socio-economic side, increasing the supply of organs by controlling transplant tourism, controlling and policing illegal transplants, the organ trade, and trafficking, as well as establishing a central regional transplant registry system, and seeking sustainable economic solutions focusing on migrant areas, is essential to control organ trafficking both in the short and long term. Organ trafficking is also grounded in the abuse of the practice, mainly by health professionals. In this regard, revising professional codes of conduct addressing organ and tissue transplantation is imperative to control illegal transplant, organ trade, and organ trafficking in the region.

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