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Bioethics Development

When and How Bioethics Started?

The Beginning of Bioethics in Egypt: Moral and ethical codes have a long history and they were dealt with in several philosophical and medical traditions. In all cultures, from the inception of humanity, medical practice was regulated by codes of ethics. Medical practice in both developing and developed countries is shaped by the level of growth in general and that of science and technology in particular.

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Spectacular advances in medicine have increased patient expectations and put pressure on medical society (Serour, 1994).

The beginning of Egyptian bioethics dated back to the times of the Pharaohs, where there are many historical evidences that ethical and moral codes were proposed and instructions were given to respect them in the well-known Papyrus documents. Among the first principles of what is now called bioethics were those conceived in Pharaonic Egypt the Goddess MAAT, which represents the concept of truth, justice, righteousness, balance, and order, dates back to 4000–3500 BC. It calls for individual responsibility for the community – including health, no fear of death, and for those who are wealthy and powerful to use these advantages not to exploit those less fortunate but rather to help them (Karenga, 2003).

Known collectively as the Coffin Texts, the spells contain the earliest known body of Egyptian teaching on ethics.

The Coffin Texts are well-known literature for death. They were given to the dead to take along on their trip into the underworld. The earlier but better-known Pyramid Texts, which were written on the monumental tombs built for pharaohs in the latter part of the Old Kingdom (2980–2275 BC), contain the first known written record that man believed in a life after death. The Coffin Texts, which were composed for the tombs of noblemen rather than kings, express a more complicated insight: that man in the next world will be rewarded for his good acts and punished for evil ones.

Smith Papyrus (1,700 years BC, third dynasty Egypt) shows the first medical ethics guidelines (1,300 years before Hippocrates: Have an expectant attitude and trust nature's healing. Be observant of the patient's condition (Sleem, Elkamary & Silverman, 2008).

However, more constructed guidelines were developed later, history tells that different oaths were proposed for treating physicians, among them are (Source: Serour & Omran, 1992).

Moses Maimonides Oath

Moses Maimonides, who was an Egyptian Jewish scholar, and the private physician to Salah El Din the Great (AD 1135–1204) developed an oath and prayers. His oath clearly stated the two principles of beneficence and non-maleficence: "I shall use my professional skills to help in achieving the objectives of all living creatures to live in peace and him to perfect his ego. I swear to fight through my work so as to reduce danger, noise, attempts at impairment of purity of earth, air, and water pollution and fight destruction of natural beauty, mineral elements and wildlife" (Serour & Omran, 1992: 53). The oath extended the two principles of beneficence and non-maleficence to the environment and did not restrict it to human beings.

Abil Hassan Ibn Radwan Oath

Abil Hassan Ibn Radwan who was an Egyptian scientist and a doctor more than 500 years ago, advised that a physician should distinguish himself with seven virtues:

1. Be impeccable in behavior, physically fit, intelligent, good looking, appreciative, studious, and cal.
2. Be well dressed, good smelling, clean in hands, and clothing.
3. Be secure on patient secrets, and never to divulge anything pertaining to their disease.
4. His drive to cure his patient should be stronger than his desire to obtain payment. His desire to treat the poor should be greater than his desire to treat the rich.
5. Be keen on learning and on rendering help to people.
6. Be good hearted, endowed with chastity, and honest in his speech. Whatever he sees, women and riches, while visiting homes of his patients, he should hold in respect and refrain from taking advantage of them.
7. Be trustful, and never to prescribe a deadly medicine or to inform others about it or to prescribe a drug which aborts a fetus. He should treat his enemy with good intention just as he would do with a friend (Serour & Omran, 1992: 54).

Cairo Medical School Oath

The medical oath which was adopted on the occasion of the opening the medical school in Cairo during the reign of the founder of the Modern Egypt, Mohamed Aly Pasha (AD 1806–1848) included the three principles of beneficence, non-maleficence, and justice.

It stated that:

1. The physician should be keen to preserve the conditions of honor, help and doing good in his practice (Beneficence).
2. The physician should serve the poor free of charge and should not overcharge his patients (Justice).
3. The physician should not use his profession in doing harm, should never prescribe a poison, a harmful or an abortion-inducing drug to a pregnant woman (Non-maleficence).

The Egyptian Medical Oath

The Egyptian Medical Syndicate for example developed an oath, which the physicians swear before they start their medical practice (the seventh year). The oath observes three ethical principles: justice, beneficence, and non-maleficence. It states that the physician will protect human life in all its stages and in all conditions and circumstances. He will do his utmost to rescue it from death, disease, pain, and anxiety (beneficence). He will strive in the pursuit of knowledge and harness it for the benefit of mankind and not for his/her harm (non-maleficence). He will extend his medical care to the near and the far, to the virtuous and the sinner and to friend and enemy (justice).

The Oath of the Muslim Doctor (1981)

Adopted by the first International Conference on Islamic Medicine held in Kuwait in 1981 and published by the Islamic Organization of Medical Sciences, Kuwait, in 1982, then adopted by the current Egyptian medical syndicate, it included the main four ethical principles.

It stated that the physician will respect people's dignity and their privacy, and will not disclose their secrets (autonomy). It also indicated beneficence, non-maleficence, and justice as the other oaths.

Formal Bioethics Development

With the increasing demand for observing ethical values and with the observed increasing trend of violation of ethical values by researchers conducted in Egypt, a grant was made available by the Ford Foundation (FF) to the International Islamic Center for Population Studies and Research, Al-Azhar University to fund a working group of medical, legal, and religious scholars to develop a code of bioethics for reproductive health research in Egypt and to support a conference to discuss and ratify the code and plan for its implementation at the beginning of 1 January 1991. The working group met bimonthly during the first 6 months of the grant, then monthly for 3 months preceding the conference. The conference was conducted during the period 11–13th of December 1991. The date was chosen to coincide with the yearly meeting of the Ethics Committee of the International Federation of Gynecology and Obstetrics (FIGO) which was held in Cairo during this period. By choosing that date, the members of FIGO who are internationally recognized scholars in reproductive bioethics were able to participate in the conference. The conference was held under the patronage of the highest religious authority in Egypt, the Grand Sheikh of Al-Azhar and attended by the most eminent scholars and experts from Egypt and abroad. As a result of the conference, the first committee of bioethics ever formed was approved by the Rector of Al-Azhar University. This was the seed for a long way to disseminate widely the concept of bioethics, the proceeding and the guidelines for ethical research were published and due to the high demand for it, it was published repeatedly for several times (Ragab, 2009).

The bioethics curriculum was developed in early 2000 to be introduced to the faculty of medicine, Al-Azhar University. The curriculum was developed and tested and it is currently being taught to the medical students of the fourth year. Eventually with the progress in the field, this curriculum needs to be, continuously updated. In the year 2012, the updating process has started and is expected to be finalized soon.

Who Have Been the Major Actors/Forces?

The International Islamic Centre for Population Studies and Research, Al-Azhar University has a long history of introducing ethics into the Muslim countries. The first initiative in this regard was an international conference on "Bioethics in Human Reproduction Research in the Muslim World," which was organized by the Center in Cairo, December 1991 as mentioned above. From there, bioethics became institutionalized in the center's activities and in cooperation with other funders, conferences and workshops were organized and books on bioethics published.

Maryland University (USA) in collaboration with Ain-Shams University promoted Bioethics Education and Research Ethical Committees in Egypt since the last decade.

UNESCO and ISESCO supported many bioethics activities in Egypt as in many places of the world. The Ford Foundation contributed to building capacities, for example, supporting individuals to participate in the European Master of Bioethics program.

What Have Been the Major Concerns over Time?

In the 1990s, Sandra Lane, a program officer of the Ford Foundation at that time, observed major violations of bioethics in some studies that include giving children fatal experimental drugs, while safe drugs were available in addition to administration of intravenous fluids to premature infants in a manner that diverted greatly from generally accepted guidelines for parenteral therapy and endangered their lives. In fact, many of the observers commented on that and highlighted the need for establishing research committees (Lane, 1994).

In a study of Wazaify, Khalil, and Silverman (2009) the therapeutic misconception was analyzed. The majority of research participants expressed inaccurate beliefs regarding the degree with which individualized care will be maintained in the research setting.

Khalil, Silverman, Rafaat, El-Kamary, and El-Setouhy (2007) examined the attitude, understanding, and concerns regarding medical research among Egyptians through a qualitative study. The study participants recognized the value of medical research and have a great deal of trust regarding medical research and their participation in research. There were, however, concerns with the level of research risks associated with several types of medical research. Many of the participants demonstrated confusion in regard to research methodologies. The publication recommended enhancing educational efforts regarding general research concepts to enhance the validity of informed consent.

While efforts to establish research ethics committees (RECs) in countries of the Middle East, including Egypt, have recently increased, the quality and consistency of ethical review remain unclear (Sleem, El-Kamary, & Silverman, 2010). In general, commentators have voiced concerns that RECs might not be able to promote high standards of human subject protection due to inadequate financial and material resources, lack of adequately trained REC members, insufficient diversity of membership, lack of REC independence and inability to monitor approved protocols. In order to overcome the problem of the little data that are available regarding processes of ethics review, member composition, training members, workload and resource needs of RECs, and challenges that RECs encounter in the region, Sleem et al. (2010) designed a study that revealed variability among respondent RECs in many of the structural and operating processes, including member composition, existence of written standards of practice and conflict of interest policies, access to adequate financial and material resources, and protocol review.

What Resources Have Been Developed (e.g., Books, Programs, Media, Networks, Societies)?

The International Islamic Center for Population Studies and Research, Al-Azhar University published several books:

- The proceedings of the first international conference on “Bioethics in Human Reproduction Research in the Muslim World.” Due to the increasing demand on this particular book, it was reprinted for the second time (in the year 2008).
- The Ethical Guidelines for Human Reproduction Research in the Muslim World, 1992.
- The proceedings of a workshop in collaboration with ISESCO on “Ethical Implication of Assisted Use Reproductive Technology for the Treatment of Human Infertility,” Cairo, 1997.
- The proceedings of a workshop in collaboration with ISESCO on “Ethical Implication of Assisted Use Reproductive Technology for the Treatment of Infertility. Update,” Cairo, 2000.
- The proceedings of a conference, in collaboration with the Ford Foundation on “Ethics of Medical Information and Medical Advertisement,” Cairo, 2003.

All these activities created awareness of medical ethics in Egypt and paved the way for acceptance of the need to introduce bioethics in the medical curriculum and to establish Ethics Committees.

The Regional Resource Center for Bioethics that was established in the year 2010 with the support of UNESCO started some activities and collaborated with other bodies. Another body was formed with the assistance of UNESCO, is the Arab Network of Women’s Health in 2011. The Regional Resource Center and the Arab Network of Women Health organized a regional conference in Cairo, 7–8 December 2011 to examine bioethical aspects of women’s health. It was a good opportunity to network between experts.

Current Bioethics Infrastructure

- (a) Teaching of bioethics at university and other levels: A master program had been started in the USA that includes 12 months of courses at Maryland Baltimore Campus and another year for a research project in Egypt. Opportunities for PhD are available, but outside Egypt. Members of research committees had the chance to participate in other certificate programs that are available for the Egyptians through the program with Maryland University, however, this program, as all donor’s dependent programs, is lacking sustainability.

On the undergraduate level, bioethics, for a long time has been a part of Forensic Medicine teaching, it is only recently introduced as a separate subject, but to the undergraduate students only. Al-Azhar University is the only one that has produced a curriculum of Bioethics. The curriculum links between basic

ethics and Islamic teachings. It affirms that all the ethical principles have roots in Islam texts.

It should be stated here that there is no separate department for Bioethical Studies and there are no PhD studies in the discipline in Egypt. However, with the growing number of bioethics Master holders, it is expected that separate bioethics programs will be established in the near future.

- (b) Bioethics committees: Al-Azhar University Bioethics Committee was the first committee to be established in the year 1992. The national bioethics committee started in 1996 by a Ministerial decree of the Ministry of Higher Education and Scientific Research. Starting from the year 2002, many ethical committees have been established in response to the funding agencies' requirements. Currently, there are 13 ethical research committees federally approved to review researches funded by USA. However, not much have been done regarding hospital ethics committees, what routinely done is review of some cases during different departments, meeting. There is an obvious need to promote hospital ethics committees.

The first meeting for the Egyptian Ethics committees was held in Ain Sokhna, a beautiful sea side city in Egypt during 16–18 October 2008. Since then many activities were carried, among them, forming a network and developing guidelines. Till now, there are no National Guidelines developed.

- (c) Expert bodies/centers: The International Islamic Center for population studies and research was the first and it took about three decades to have more centers, currently the main universities in Egypt (Cairo, Ain-Shams, Alexandria, Assiut, and Mansoura) have expert bodies. A resource center was needed and with support of UNESCO, the center is now established at the Egyptian Academy of Sciences.
- (d) Relevant legislation: The first national committee for reviewing researches was developed after a Ministerial Decree of Higher Education and Scientific Research in 1996. However, Al-Azhar University had established its committee before that date (1992). The Medical Syndicate has its own legalization and committee that examine the misconduct of the medical doctors after a complaint of a patient or a referral from the court.
- (e) Public debate activities: The public is concerned with the increase of medical misconduct either technically or in behavior. Recently, media reported on many of the mistakes and misconduct of some medical doctors, although few, but this has percussion on the public. Some incidents of harassment of clients and recording video tapes secretly without consent were discovered.

Public debate was raised, and still, on issues concerning organ donation and the definition of death since there is a close link. This debate has been influenced much by theological perspectives. Theologians needed a clear medical opinion on these issues from trusted medical experts, which was lacking as the medical experts were in conflict regarding the definition of death.

Another debate, which is peculiar of Egypt and some parts of Africa, is the medicalization of female genital cutting/mutilation (FGC/M). Nearly 75 % of the practice, which is a traditional one that involves cutting some of the external

genitalia of girls (clitoris and labia minora), is conducted by medical doctors. Although the practice is criminalized by a recent law in Egypt, still many of the FGC/M practices are conducted as many believe wrongly that it is required by Islam (Fahmy et al., 2010).

- (f) Other: Recently, with the increasing of the influence of Islamists in the educational system and other governmental bodies, it is expected to have more debates on gender issues, human rights, reproductive and sexual health. Consequently, bioethics scholars and activists should be ready to clarify the ethical and moral aspects of such issues.

Major Bioethics Issues and Discussions

- (a) Beginning of life: at what stage during the pregnancy does the fetus become a human being? Answering this question is central to the debate. Some believe that it is after 120 days, others believe that it is 42 days, depending on the Quran and the traditions and sayings of the prophet Mohammed (peace be upon him). However, there is an emergent medical opinion which is accepted by the theologians that the crucial point is at 14 days from conception. Any of these definitions allow embryo and stem cell research and allow for early abortion, provided that there is a medically justified cause, however, it should never exceed 120 days of pregnancy.
- (b) End of life: The common belief among the public and the theologians is that the end of life is a divine decision and should not be taken by humans. Consequently, there is no much debate about the issue currently.
- (c) Health and disease: The fatalistic attitude of the majority of the public shapes the perception of health and diseases that they are from GOD. However, seeking treatment is a following of Islamic Teachings, according to the Prophet (PBUH): "God did not create a disease without creating its treatment; some knew it and some do not." In this regard, Muslim Scholars believe HIV/AIDS have treatment, but no one know it, currently.
- (d) Health care system, access to health care
In Egypt, where resources are limited and a major part of the national budget goes to the military, available basic health service is well below accepted standards in the public sector. Urban bias exists, since big and well equipped health facilities are there, while in rural areas even basic services either do not exist or lack the necessary equipment and/or personnel. Health insurance for all is a promise of all governments of Egypt, but never fulfilled. In the private sector, very expensive centers that are well equipped and having the best staff do exist. However, the expensive centers would only be able to offer service to a relatively small sector of the society. This should not be at the expenses of providing basic health care service to the major sector of their population.
- (e) Traditional medicine: Traditional medicine does exist side by side with the modern medicine; however, there are major concerns about it, as there is no body that controls its use. Advertisements that give wrong information and

magnify the impact of certain herbal extracts abound on different private satellite channels. It should be mentioned here, that most of these products are advertised as aphrodisiacs.

- (f) Genetics: Genetic engineering and gene therapy were discussed widely among Muslim scholars. Hathout (2006) argued that genetic engineering involving the introduction of the genes of one species to another is not permissible except as a means of treating illness and alleviating suffering. Nontherapeutic manipulations are controversial and the majority of scholars are cautious regarding its implications on the society level and the universe as whole (Bayaumi & Ali, 2001). Gad El-Hak (1992) argued that human gene therapy should be restricted only to therapeutic indications. Somatic cell gene therapy is encouraged as it involves remedy and alleviation of human suffering. However, enhancement genetic engineering or eugenic genetic engineering would involve change of Allah's creation which may lead to imbalance of the whole universe and should be prohibited. Gene therapy to manipulate hereditary traits such as stature, beauty, intelligence is a serious attempt as it might imbalance the life of man (Serour, 2001).

Hathout (2006) and many other scholars, are of the opinion that, stem cell research on the preimplantation embryo may be justified if the aim is to save actual patients suffering from serious illness, on the basis of the juridical rule of choice of the lesser of two evils. Stem cells derived from adults gain acceptance of the vast majority of Muslim scholars.

Islamic scholars differentiate between PGD for medical purposes which is currently a routine practice offered to high-risk parents, to help them having healthy children, and the controversial preimplantation genetic manipulation which is aiming at enhancement. As a result of PGD, gender selection whether for medical or social purposes has been debated and there are conflicting views. While the vast majority of Islamic scholars approve gender selection for therapeutic purposes or in selected cases for social reasons, where there is a need for a fetus of the selected gender (Serour, 2001). The minority approves gender selection for social reasons without any restrictions.

- (g) Reproductive medicine: Regarding human cloning a distinction must be made between reproductive cloning aimed at the birth of identical individuals and nonreproductive cloning limited to the *in vitro* phase. Hathout (2006) argued that cloning is outside the bounds of religious permission if used for production. Its use for purely research purposes may be permissible during the very early stages before body systems are formed (Hathout, 2006; Serour, 1995).

Regarding assisted reproductive techniques, adoption is not allowed in Islam, however, there are many verses in Quran that indicate that sponsoring orphans is encouraged and rewarded. In this regard, treating infertility and assisted reproductive techniques are welcomed and encouraged by Muslim religious leaders. From the early days on, scholars supported assisted reproductive techniques, using different modalities, provided that there is no third party like surrogacy, egg or semen donation, and the technique should be

carried out during the validity of marriage contract, not for divorced women or a widow (Gad El-Hak, 1992; Serour, 1995).

- (h) Medical research: medical research was discussed extensively by participants of the International Conference of Bioethics in 1991. The participants came to consensus on the following:
1. Evidence should be available to indicate that the proposed therapy or procedure can be superior to currently available alternatives.
 2. Adequate data must be available from animal studies and from studies on a small number of human subjects to confirm safety and to suggest effectiveness. The ethically acceptable practice is to do clinical trials in three successive phases, I, II, and III, and only to move to the next phase after the successful completion of the previous phase.
 3. It is unjustifiable to do clinical trials with drugs that are unlikely to become available to people in the country or community. For example, drugs that are likely to be non-affordable or non-marketable should not be tested in a given population. This applies in particular to industrial and international research.
 4. Research should only be done by investigators who are fully aware of the scientific literature on the subject, who are well qualified and who have the necessary facilities.
 5. The research should not conflict with the society's cultural, moral, religious and legal values.
- (i) Public health: Although preventive medicine is at the heart of public health, lacking health education is affecting it negatively. Bilharzia is an endemic disease that is transmitted through Nile water, which is essential for the farmers for irrigation and they cannot stop using it. However, with health education, these risks can be minimized. Also anemia is a problem for women in reproductive age and can be corrected with proper health knowledge. Health, especially reproductive and sexual health, are lacking and affecting much the public health.
- (j) Infectious diseases: The ministry of health has strong and up to date standards and protocols for infection control; they are not applied in many settings. There are concerns of lack of infection control in health delivery points in villages and in remote and slum areas.
- (k) Transplantation medicine and organ donation: The Sharia allows organ donation from a healthy person to another sick person to save his/her life provided that the donor is not seriously harmed from this donation and the involved benefits exceed or overweight the potential risks. Organs may be transplanted according to medical norms provided the donor does not need the organ he/she gives or will be harmed by this donation. The free informed consent must be obtained without pressure, coercion or exploitation (Serour, 1994).

Information emerged recently through media about gangs that target street children and the poor to buy their kidneys. The operations are usually done in poor settings with many complications.

- (l) Emerging technologies (nanotechnology, information technology): Since Egypt is a developing country with limited health resources, expensive nanotechnology and new technology do not exist and they are not welcomed by the ethics community as they believe that, resources should be properly allocated with ultimate justice.
- (m) Intensive care: Intensive care units are available, but they are not sufficient to accommodate the increasing demand. However, for the public, the fatalistic attitude prevents many of using it. It is not surprising, that many persons who need to be admitted do not do that because of the rejection of their families.
- (n) Palliative care: Palliative care is accepted and welcomed by the public and by the providers; however, it is a private practice mainly. Only few public clinics do exist and mostly exist within cancer treating centers.
- (o) Care for the elderly: The tradition in Egypt is that families are responsible of taking care of the elderly. However with the decline of the extended families, the growth of the aging population as a result of improving health, and the emerging trend of small nuclear families as a result of the family planning program, family support is lacking. This compounded by the limited number of elderly homes, the available homes are expensive. Consequently, unless the government of Egypt takes action, the problem, that care for the elderly is increasingly inadequate, will continue to exist.
- (p) Chronic diseases: Diabetes and hypertension are increasing in the country, while some educational programs exist but they do not reach the public. Leprosy patients usually are isolated in certain camps. The HIV/AIDS incidence is very low; people living with HIV/AIDS used to be isolated in fever hospitals, however, currently, only those who develop symptoms are isolated. Stigma, expelling from work, divorce are facing people living with HIV/AIDS.
- (q) Psychiatric care: For a long time, chronic mentally ill patients were isolated in specialized hospitals, might be for life. However, currently, there is a trend to treat them in public hospitals.
- (r) Pediatric care: Because children are valued parents seek care as early as possible even in the private sector. However, in certain parts of the country, the preference for male children is so clear that, when a son becomes ill, the parents seek care immediately, while for a girl, they may seek advice from a neighbor or a pharmacist.
- (s) Emergency care: It is a complex issue, as the decision to seek care is in the hands of the head of the family, and if the decision would be taken, the traffic jam in Cairo or the lack of transport in rural areas, or the lack of personnel and equipment in the health facility to deal with the emergency will be obstacles.
- (t) General practice: The Ministry of Health is promoting family health doctors and health insurance for all; however, due to economic constraints and political instability, these efforts did not succeed.
- (u) Health promotion and education: The country lacks health promotion and education, especially in his field of reproductive/sexual health. However, there are many attempts to deal with the issue.

- (v) Scientific and professional integrity, conflict of interest, corruption: The scientific and professional integrity is promoted widely by different Universities and the National Research Academy; however, still, there are many incidents where false results of research were presented and copying other researchers' work without acknowledging.
- (w) Relations with industry and donors/sponsors: Before the start of the efforts to promote bioethics in the country, Egypt was the place of many research projects sponsored by the industry; many drugs were tested without informed consent.

Future Challenges

- (a) In the field of bioethics infrastructures.
There is a need for national guidelines and there is need for more ethics committees. The ethics committees should be independent and protected. Legalization should be proposed to organize the ethical committees work and to empower them.
- (b) In the field of new and emerging issues.
The new emerging issues are always discussed at large by the concerned experts and theologians who usually come to an opinion that takes into consideration the teaching of Islam and the needs and welfare of the people. However, with increasing number and influence of conservative Islamists after 25 of January revolution, there are greater risks of more conservative attitudes toward issues like organ transplantation, contraception, young age at marriage, and female genital mutilation.
- (c) After the revolutionary events of 25 January 2011, conservative Islamists became a powerful force in the country. However Islamists are not unified. While the majority is moderate, there are some fundamentalists that have a great number of followers and have a strong voice. Any ethical debate should take into consideration the Islamic point of view.

Summary Conclusion

The current study dealt with the development of bioethics to date, the current bioethics infrastructure, the major bioethics issues and discussions at the moment and the challenges for the years to come.

It is hard to identify the beginning of bioethics in Egypt as the recorded history is full what are considered to be ethical guidelines. Different oaths were recorded that contain what are now called ethics principles. Islam is the religion of the vast majority of the population. Consequently bioethics guidelines were driven from its teachings.

The first Biomedical Research Committee was established at Al-Azhar University and the first National Committee was established in the year 1996. About the year 2002, many bioethics committees were established in nearly all 17 University

in the country and a network was established and coordination strengthened but, till now, although there are some attempts, no approved national guidelines were promoted.

After the 25 January 2011 revolution, the country is polarized into two positions: the majority are Islamists and they are obeying the teaching of Islam, which in its ideal level is consistent with ethical and moral values; the minority is more liberal and views human rights as the central issue that should not be bounded by any constraints. This could be one of the challenges, as the Islamists are not unified and there are a growing number of conservatives that might harm efforts to promote bioethics.

The debate on ethical issues, so far, is driven by Islamic teachings which are rich and full of supporting evidence on all issues that needs ethical reflection. Providing the theologians with the medical facts will be necessary so that they will come with the ethical guidelines concerning relevant issues.

Thus, bioethics activists should work hard to promote the discipline and to work on developing National Guidelines and to network, not only among themselves, but also with different stakeholders, mainly religious leaders, legislators, and health policy makers.

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