



Islamic Body on Ethics of Science and Technology

Islamic Educational, Scientific and Cultural Organization

-ISESCO-

**Basic Document
for the Establishment of
the Islamic Body on
Ethics of Science and Technology
(IBEST)**

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Introduction

Islamic legislation has five objectives that the individual and society should preserve, namely religion, the soul, the brain, offspring and wealth. The realization of these objectives is a pre-requisite for the thriving and prosperity of life.

The feeling of responsibility towards humanity constitutes the primary ethics for scientists who should never seek to destroy what God has established. Integrity of science entails that the scientist should limit himself to what he knows perfectly, and should never take up things in which his knowledge is just doubt and conjecture. Ethical values are the center of gravity in nations civilizations. The more we are committed to ethical values, the more we are able to preserve our civilization, and the moment we start relinquishing its ethics, we make it subject to destruction and downfall, and this is God's tradition in his universe.

Bioethics is a study of ethical issues coming out of health care fields and biology besides the study of social, legal and economic issues pertinent to ethical matters.

I- The need for an Islamic Body on Ethics of Science and Technology

In the light of the scientific and technological revolution spreading the world over and generating deep changes with a spectral character in the course of relations and mutual benefits in today's world, and after the magnificent advancement going in an unprecedented pace in communication and information fields, and the evolution in mathematics, electronics, genetics and the corollary ideas and new links, civilizational and economic as well as military superiority is no longer measured with the old and traditional criteria. There is a new equation for progress based primarily on the nature and ethics of human powers and the extent of its advancement and ability to understand and use constituents of the technological and scientific revolution, and deal with the mentioned ethics and regulations. There is consensus among specialists in development issues that human powers ethics is the most important factor in global development, and is the major indicator of progression and regression in today's world.

II- The Islamic Reference

Besides confirming the ethical order in God's previous messages, Islam went further and came up with a legislation that covers and regulates every aspect of humans' life with the aim of caring for people's interests in their life and in the hereafter. The source of this legislation is God's holy book and the prophet's recorded Sunna (teachings), which are binding to all Muslims.

Islam's care for science does not mean its procession without observing ethics and religion's rules which may lead to damaging man's interests. Rather, this care encircles science within a framework of ethics and fear of God who "taught man that which he knew not", something that protects the scientist against self-esteem, and immunizes science itself against being the means to cause damage on earth or to destroy life and creatures. For this reason, Quran associated firmly good and useful "science" that benefits humanity in its procession and the piety of the "scientist" and his commitment to common ethical standards and religion's instructions and inhibitions, so that the

scientist honored with this great title is the same one who fears God and uses his science for humans' common good. This very idea is well expressed in the Quranic verse : "Seest thou not that God sends down rain from the sky ? With it We then bring out produce of various colours. And in the mountains are tracts white and red, of various shades of colour, and black intense in hue. And so amongst men and crawling creatures and cattle, are they of various colours. Those truly fear God, among His Servants, who have knowledge : For God is Exalted in Might, oft-Forgiving." Sura Fatir (Originator), verses : 27-28.

While this Islamic verse makes available to men the means of scientific expertise through deep pondering over the cases of plants, animals, humans and inanimate objects, it, meanwhile, associates all this with the great ethical standard embodied in God-fearing and consideration of His punishment.

**Basic Document for the Establishment of the
Islamic Body on Ethics of
Science and Technology (IBEST)**

1. The importance of establishing the Islamic Body on Ethics of Science and Technology

Regarding the magnificent and rapid progress that took place and is still going on in the different fields of science and the scientific character marking scientific research in recent years, along with the substantial financial means invested in research, scientists' common interests and the scientific and financial institutions seeking a good employment of this progress, it becomes imperative to find some code of ethics and legislations to monitor and control this progress. As there is a difference in the laws established in various countries, there is an urgent need for an international code of ethics and regulations to organize such matters in different countries regardless of the religious, social and cultural background of these countries. There were established all over the world a number of institutions for ethics in the different fields of science, and a number of scientific conferences were held yielding numerous ethical documents to regulate scientific research and practice all over the world including only a few documents in the Islamic world.

It is indeed high time that efforts in the Islamic world to get united in this vital field under the Islamic Educational, Scientific and Cultural Organization (ISESCO) to coordinate efforts within the Islamic Body on Ethics of Science and Technology (IBEST) to make the voice and decisions of this institution the guiding principle in the Islamic world and make it well-heard and influential in the West to clarify the Islamic world's view in this important and vital field.

2. Objectives and missions of the Islamic Body on Ethics of Science and Technology

The Islamic Body on Ethics of Science and Technology will study all threats being posed by science and innovations in technologies to the welfare, respect and dignity of the Islamic society and provide necessary guidelines to scientists and the public as regards the ethical aspects and Sharia point of view to ensure respect and dignity of the Islamic principles and values. Since the technological progress is taking place with excessive speed, it is necessary to address all its ethical aspects as expeditiously as possible, so that a big gap between scientific advancements and ethical regulations monitoring these advancements may not happen. It becomes then imperative to make the work dynamics in this institution equally advanced and expeditious. The objectives and missions of the Islamic Body on Ethics may be summarized as follows :

2.1 The objectives of the Islamic Body on Ethics :

- 2.1.1 Directing the Muslim public opinion as regards the ethical aspects of some very important and crucial issues from the perspective of the Islamic Sharia.
- 2.1.2 Analysing and studying the risks involved by scientific and technological progress, with a view to preserving the identity of Muslim societies. The ultimate aim is to draw up the broad lines that will instruct the public as regards these dangers.

- 2.1.3 Contribution towards coordination and exchange of viewpoints among national committees on ethics of science and technology, in connection with Islamic regional issues as well as problems addressed by international committees.
- 2.1.4 Building Islamic consensus on ethical issues related to science and technology, drawing on studies, research works and statistics conducted by concerned committees and institutions in the Islamic countries.
- 2.1.5 Studying issues on practices related to medicine and biology, particularly as regards artificial fertilization, cloning, environmental issues, informatics and other crucial issues, observing the ethical and religious regulations in the Muslim societies, in particular, and in the light of the principles of human civilization, in general.
- 2.1.6 Urging educational institutions to introduce ethics in their teaching curricula, as part and parcel of the educational and training programmes of basic and higher education, with a view to enabling young scientists to further scientific research, observing ethical norms and principles.

2.2 Missions of the Islamic Body :

- 2.2.1 Setting up a database for ethics works that were prepared and published before in the Islamic countries, in particular, and at the international level;
- 2.2.2 Preparing a list of issues whose ethical sides should be addressed at the present time;
- 2.2.3 Instituting specialized committees to study the ethical sides of issues which were not studied before or have been addressed and new developments occurred that have made their revision ethically an imperative;
- 2.2.4 Organizing international conferences to discuss contemporary ethical issues which were previously studied ;
- 2.2.5 Introducing ethics in science as an integral part of educational and training programmes in order to instil in the student community awareness and responsibility as regards the importance of ethical issues. This necessitates elaboration of a curriculum for ethical regulations as a first step towards teaching it in universities in the Islamic countries, in particular;
- 2.2.6 Adopting creation of ethics' committees to review research works in the Islamic countries;
- 2.2.7 Conducting a media campaign as well as publishing guidelines, various analytical studies, simplified books and articles, to raise awareness and promote general consensus on ethical standards.

3. Formation of the Islamic Body on Ethics of Science and Technology

- 3.1 The IBEST's General Assembly : The IBEST's General Assembly is constituted of the Member States of the Islamic Educational, Scientific and Cultural Organization;

3.2 An Executive Committee : Member States shall nominate through voting an executive committee constituted of twelve member states;

3.3 Specialized Committees (Permanent Committees and others elected to address specific issues) : Member states shall select from among them through voting three subsidiary committees for biological, agricultural and media ethics. Other subsidiary committees may be set up should need be.

At the constitution of these subsidiary committees, it is recommended that the number of its members should not be more than twelve and less than six members to make them function properly. It is also recommended at the constitution of these committees that the different necessary specializations for their functioning should be represented, including experts in law, religion, sociology and philosophy along with specialists in medicine, agronomy and media. The involvement of representatives of society who stand for the views of the consumers is also recommended, and these committees may summon to their meetings some experts when looking through some issues.

IBEST will work in coordination with other regional and international organizations concerned with ethics. The Islamic Body will also develop its collaboration with the national bioethics committees in several countries.

4 The Working Method of the Islamic Body on Ethics of Science and Technology

4.1 The General Assembly of the Islamic Body :

The General Assembly shall undertake the following :

4.1.1 Setting the working strategy of the IBEST, in addition to priorities and regulations.

4.1.2 Electing the executive committee, defining its duties and nominating its sub-committees.

4.1.3 Adopting systems and regulations.

4.1.4 Entrusting the executive committee with some duties that IBEST considers and following up their discharge.

4.1.5 Adopting the works of the subsidiary committees after discussion and study by the executive committee.

4.2 The Executive Committee :

The Executive Committee shall follow up policies and plans prepared by the General Assembly.

The Executive Committee shall undertake the following :

4.2.1 Execution of the works assigned to it by the General Assembly.

- 4.2.2 Setting up the agenda of the General Assembly and suggestion of the issues to be studied.
- 4.2.3 Take the necessary steps for the constitution of subsidiary committees and approval thereupon by the General Assembly. It is recommended that one member of the executive committee be among the members of each subsidiary committee.
- 4.2.4 Collaborating with the national committees on ethics and specialists in Member States for exchange of advice and underscoring missions set and decisions taken.
- 4.2.5 Present issues suggested by some Member States to the General Assembly for discussion.
- 4.2.6 Contacting and collaborating with similar international organizations and institutions, along with similar committees in the world in order to exchange information and expertise.
- 4.2.7 Designate people to represent IBEST in important international meetings to present the viewpoint of the Islamic world.
- 4.2.8 Create a website equipped with significant information on the Islamic Body on Ethics, its activities and resolutions on different matters.
- 4.2.9 Collecting information and arranging it, through establishment of websites and databases, with a view to facilitating contact with scientists everywhere.
- 4.2.10 Prepare for the publication of periodicals and newsletters on various ethical issues that fall within the field of competence of the Islamic Body on Ethics, with a view to publicizing its role and activating it.

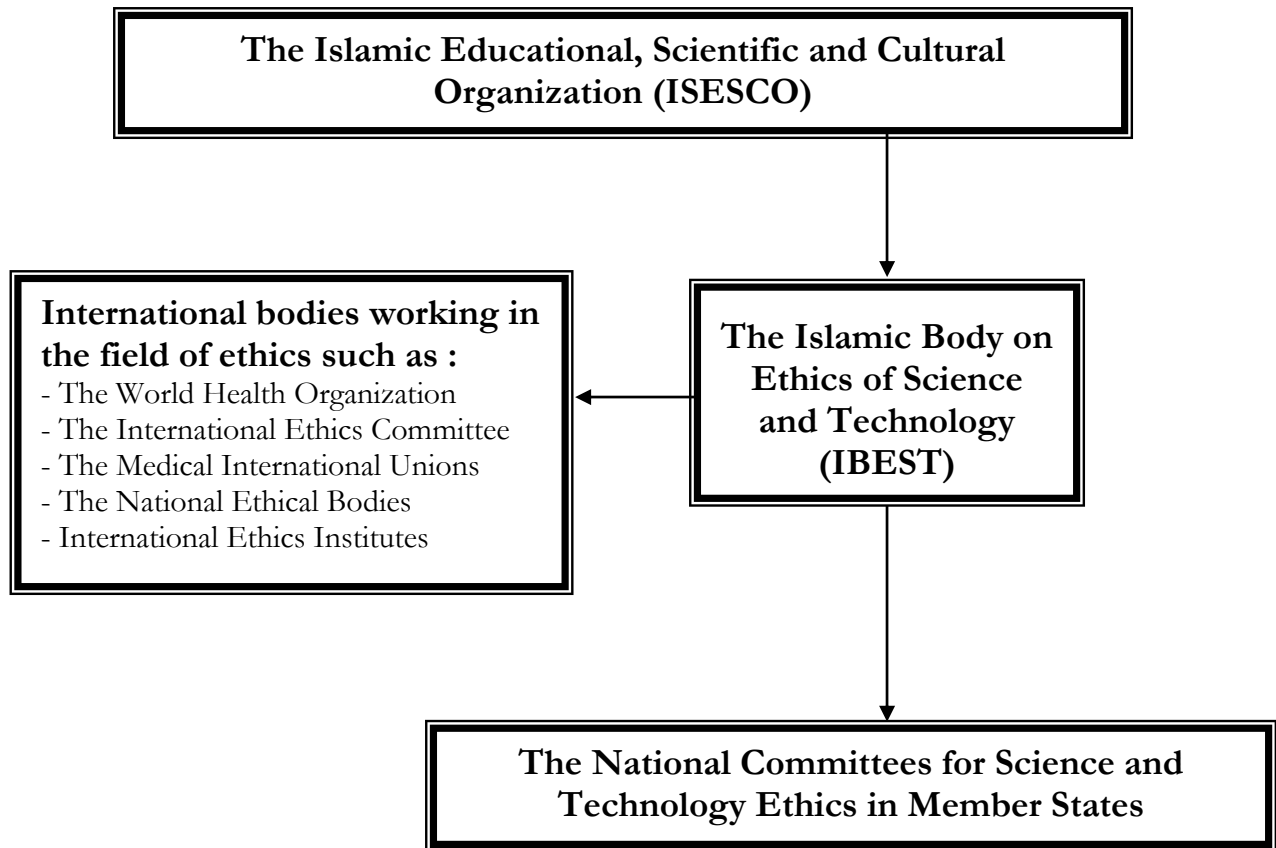
4.3 The specialized sub-committees :

Specialized sub-committees under the Islamic Body on Ethics of Science and Technology shall address such fields as biology, environment, informatics and technology. Other sub-committees can be created to address other issues;

- 1) The specialized subsidiary committees shall undertake the study of issues submitted by the executive committee on the basis of the General Assembly's recommendations to take the appropriate decisions thereto.
- 2) Secretaries of the subsidiary committees shall have the right to invite personalities out of the committees formation to attend some of its sessions in order to avail of their expertise and counsel.
- 3) Recommendations issued by the specialized sub-committees shall be submitted for approval by the executive committee.

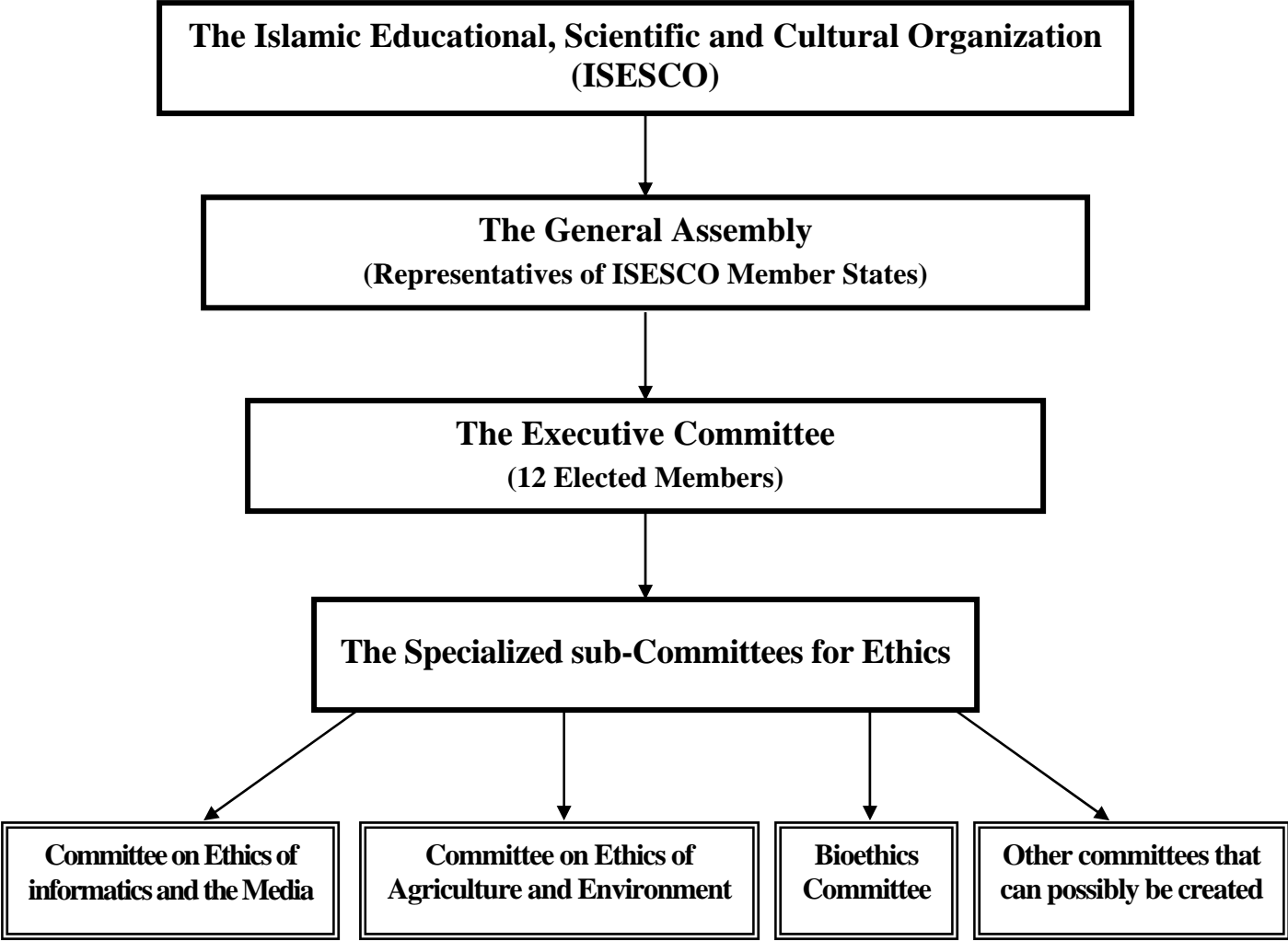
Format 1

The Organizational Framework of the Islamic Body on Ethics of Science and Technology



Format 2

The Formation of the Islamic Body on Ethics of Science and Technology (IBEST)



Appendix (1)

Ethics of Medical Professions

1. What do we mean by ethics ?

Ethics are defined as the basic principles on which laws, norms and codes by which specialized professionals abide. Considered as constructive rules to control behaviour, ethics seek to define the acts, relations and policies which may be considered right or wrong. It is necessary for every rule in the concept of ethics to be logical, coherent and consistent, based on accurate facts and data, and applicable to all people with justice and fairness. We find the principles of truth firmly established in different medical oath forms used in the past, and in the professional constitutions, and in papers related to medical research ethics. Geographical boundaries do not prevent the application of medical ethics everywhere. Although people are different and their cultures are dissimilar, they all agree on specific values, the most important of which is human dignity which is not subject to any bargaining.

2. Principles and sources of medical professions ethics:

It is common that religious, philosophical, doctrinal and cultural values are the major sources of medical professions ethics including ethics of medicine. The Middle East region is unique, as known, for its being the cradle of the three main divine religions : Judaism, Christianity and Islam. Specialists in these three monotheist religions find them calling to similar ethical principles, and note that these principles are the major source of medical professions ethics in vast parts of the world.

Among the principles generally agreed upon, although some differences may occur from one culture to another, there are the following principles :

- 2.1 The life of a human being is respected along with his dignity and right to privacy and secrecy
- 2.2 The respect of the human being's dignity requires acknowledgment and respect of his right to choose, whether to accept or to refuse.
- 2.3 Bringing benefit and avoiding damage are two complementary principles requiring doctors to make huge efforts to bring about the patients' benefit and ward off damage when possible.
- 2.4 Justice entails equality in treatment among human beings.

3. The principal issues in medical and health care ethics

Here are examples of some main issues in medical and health care ethics

3.1 Medical Practice:

Since the outset of human civilization, medical practice in all cultures are regulated by codes and constitutions of ethics. Among the most famous codes known to all doctors, "Abouqratt Oath" was enriched by various principles passed on by several religions and cultures. Arabic and Islamic versions were set for the oath to be used in medicine universities in the Islamic world.

The value of medical practice emphasizing noble human treatment is evident indeed in the advice of the Muslim doctor Sallah Edine Ibn Youssef El Kahal Al Hamawi in the third century A.D. to his student learning the medical profession from him, in which he says: “Mind that this profession is a tribute from God given to he who deserves it as he becomes an intermediary between God and the patient in the search for care and recovery. When this recovery becomes the fruit of your efforts, you will be highly respected by people, well-reputed, reassuring and credible to them, and God will reward you properly in the hereafter, as the good you bring particularly to helpless poor people is great besides the noble character you acquire, which is that of generosity and compassion. You should then behave yourself on chastity, virtue, compassion, kindness, God-fearing especially when it comes to healing women, preserving peoples’ secrets, loving of good and religion, enthusiastic to learn, careless about sensual desires, keeping company with scientists, caring for patients recovery, seeking their good and well-being, and generous with the poor if able to.

As a number of Muslim countries are lacking in the necessary abilities and mechanisms to review research from an ethical perspective, it becomes imperative to work diligently towards strengthening these abilities and mechanisms.

3.2 The measurement and evaluation of human life

In its report issued in 1993 and entitled “the international development report: research in health”, the World Bank suggested some innovative ways to evaluate in quantity and compare the patients charges undertaken by different nations. In evaluating “life-long care years including periods of delay” and in estimating the life lost years because of premature death, the report considered hypotheses raising serious ethical issues.

Accordingly, scientists taking part in the forum on “the impact of technological and scientific progress on the future of health in the world” held in Charlottesville in the U.S.A in June 1994, and coorganized by the World Health Organization and the international organizations council for medical sciences, have expressed serious reservations on the scientific exactness of the “indicator” “the life-long cared for years including periods of delay”, recommended its estimation in cash, and emphasized the necessity of setting up scientifically exacted and ethically approved measures for medical practice and allocation of resources.

3.3 Euthanasia

There is no specific definition of what is called “euthanasia”. The meaning of this expression differs from one person to another, although this did not prevent the existence of some agreement about its meaning by experts in the field whose majority content themselves with a description of what is called “forthright or positive “euthanasia” or “facilitating efficient death”, which can be divided into three categories :

- premeditated killing to the person who expresses the wish to die.
- suicide with the help of experts.
- premeditated infanticide to children born with physical disabilities, threatening or not their life, by halting their feeding.

However, the expression “passive euthanasia” or “facilitating excited death” is a misleading and delusive expression. It hints at practices which, if applied to patients in extremis, will be considered an extension of good medical care actions, as they do not differ in principle from similar decisions taken in other medical fields. Among these practices figure :

- Cessation of any cure whose continuation proves to be of no avail.
- Dismissal of starting a cure whose inefficiency is proved.
- Intensification of efficient cure to stop severe pain, knowing that this kind of cure may shorten life.

As these practices are undertaken when life’s end is close, and are followed by instant death, though not in all cases, they were called “euthanasia” (mercy killing) by some people.

3.4 Transplantation of body Organs

The World Health Organization has set in 1991 a number of guiding principles while the Islamic research Academy in Al Azhar and the Fiqh (Islamic Scholarship) Academy in Mecca have issued numerous other directives. The Islamic Organization for Medical Sciences adopted the viewpoint that came in a booklet by the Islamic thinker Hassan Hathout that can be summed up as follows : “society should assume collectively the responsibility of caring for the sick person as it has to guarantee the health needs of this person without causing harm to others. This includes, inter alia, providing body limbs and liquids to the person who needs them and whose life is endangered without them such as transfusing blood to a bleeding person or transplanting a kidney to a patient whose kidneys are damaged in an irreparable way. In this case, the donor is carrying out a collective duty on behalf of the whole society. However, donation should not be in any way a result of coercion, family embarrassment, social pressure or else, neither should the donor’s financial need be exploited.

This entails the finding of a mechanism to arrange these directives in a systematic way. Members of the medical profession assume more responsibility in establishing laws, rules and regulations which govern body organs donation during the life of the donor or after his death through a testament, family approval, and the creation of a bank of body cells and organs liable to be transplanted.

3.5 AIDS

The Islamic Organization for Medical Sciences, the World Health Organization’s Regional Office and the Islamic Fiqh (Islamic scholarship) Academy co-organized a jurisprudential forum in Kuwait in December 1993 on “An Islamic conception of the social problems of AIDS”. In this forum, the World Health Organization presented a basic informative document saying : “not every AIDS-infected person is inevitably a sinful or adulterer. A person can be infected through the transfusion of contaminated blood or through sexual intercourse with a married person who is infected himself”.

The person infected with the AIDS virus should receive cure and medical care in accordance with his health condition, regardless of how he was infected. He has also to inform his doctor of his health condition to protect him and other patients from the risk of infection. The doctor should keep curing the infected person taking all the precautionary procedures to protect himself and others. It is recommended to inform the virus-infected person of the infection and how to act to hinder the deterioration of his condition or the transmission of the infection to others. Likewise, the patient should not be aggrieved, insulted or defamed because of his infection.

3.6 Marketing Medicines :

It is generally admitted that the mode of using medicine in a society is extremely influenced by the kind of information that representatives of the pharmaceuticals industry present. This influence is evident from the large scale of unreasonable prescription of medicaments by doctors, and the irrational disposing of medicaments by apothecarists. Members of the medical profession have confirmed this truth in a number of issued documents to regulate the medicaments marketing practices. At the international level, the International Union of Medicaments Producers. Associations released an ethical code in order to regulate activities related to marketing pharmaceuticals.

At the World Health Association's conference held in May 1986, the World Health Organization's Member States in decision 27-93, adopted the international document related to the ethical standards of medicaments marketing. The said decision urged the member states to:

- Observe these ethical standards in the actions taken to guarantee a consolidated marketing of medicaments to improve health care through the reasonable use of medicaments
- Monitor and work towards the execution of the actions taken whenever necessary. The WHO East Mediterranean Regional Office (EMRO) collaborates in this respect with the Member States to establish national legislations to regulate the activities of the representatives of medicaments industry professionals, and urge meanwhile the professional unions of apothecarists, medical servants and the consumers and Media actors to :
- Apply the ethical standards in a way suitable to its fields of specialization, activity and responsibility
- Take actions in compliance with these standards and apply adopted ones.

The above-said document was rectified by virtue of decision (W.H.A.) 16-47 taken by the World Health Association in May 1994.

4. The Economic aspects of medicine ethics

As patients are most likely the only service-demanders who request permission from another person to get the services they need, the medical practice ethics play a significant economic role. In this respect, doctors are the main decision-makers concerning health and

medical expenditure. It is noticeable in this respect that the doctors' immoderation in prescribing medicine and application of a paid-service mode to get their pay are the principal reasons behind the costs' increase in a host of health care systems. In a number of countries, patients consider health insurance documents as current accounts, leading doctors and health care services agents to act on this basis, which caused a significant increase in health care costs.

Health services providers may establish health care organizations as it is the case in the U.S.A. It is common that the profession's ethics constitute a strong motivation to offer the best care, even at the expense of the economic interest of these organizations. Yet, insurance companies often set out to establish or buy such organizations, which make doctors themselves under the control of entities that have not taken the medical oath, and to whom the rates of shares and profits are more important than the patients' interests. Sometimes, owners of private economic enterprises (hospitals, health care organizations, insurance companies) resort to exerting economic pressure on their doctors, which leads to ethical problems. Among the most sensitive issues in this respect figures the employment of insufficient funds in medical care. In fact, equity and fairness in providing health care regardless of the economic and financial situation of the receiver of this care, have been important factors behind the setting up of medicine ethics constitutions.

The difficult economic situations in a number of less developed countries led to the deterioration in health conditions. Some observers noticed that the health conditions in Africa are currently worse than they were a decade before.

Economists point out that the allocation of resources in health care systems are two most important requirements of medicine ethics in these countries.

Appendix (2)
Ethics of Medical Research

Introduction

Ethics are the principles of good behavior. Generally, there is no disagreement as regards the ethical principles, these representing a basic human value. The difference may reside in their interpretations in particular cases.

Efforts have to be made as concerns the performance of experiments on humans, in order to optimize the benefits of research. The human being subjects of the experiment should not suffer, and their participation should be done upon informed and conscious consent. In the cases related to data gathering, privacy should be secured; respect of society implies the respect of privacy and the individual's consent to be a subject to research.

The principle of equity implies that all the concerned parties should benefit equally and gain the expected rewards of the experiment without any discrimination.

As concerns experiments conducted on animals, mercy is a principal ethical condition. Besides, integrity is the most valuable principle in medical research.

Our century has witnessed a significant revolution in medical research. New horizons, for which society was not fully prepared, have been opened on the legal and ethical levels. These horizons include transplantation, assisted pregnancy, and progress in the field of fertilization. Today, societies are making significant investments in medical research, because they are becoming stakeholders in this field, and are therefore eligible to express their positions.

Progress in medical knowledge means the development of research in connection with conducting experiments on humans. No half solutions should be presented as concerns the respect of the welfare of individuals and the benefits that society gains.

Some violations of the principles of ethics of scientific research have been committed. The most atrocious of these violations were revealed during the Nuremberg Trial. This resulted in the *Laws of Nuremberg* in 1947, with the purpose of regulating the experiments conducted on humans, and the International Medical Union was created in 1946, adopting the Helsinki Declaration that sets directives for the Medical Researchers Society.

Research has become a modern international phenomenon in medical research, which was no longer confined to national borders. We need to go through the principal values that govern medical research in order to apply the same criteria on participants in sampling from different countries. It is feared that countries with less strict ethical values could be manipulated in order to achieve a progress in medical knowledge, especially if the result would benefit to other countries.

Medical research has become an industrial investment. Industries aim at gaining economic benefits, and there are fears that economic interests might usher medical research unto ethically unwarranted dimensions.

I- Kinds of medical research :

From an ethical point of view, four kinds of medical research can be identified :

1. Research related to conducting experiments on humans: this category of research gives rise to the most of ethical fears. It can be divided into two sub-categories :
 - a) Research which aims at curing or enhancing : It is conducted on patients that expect possibly good results from their participation.
 - b) Research which has a purely scientific purpose : volunteers do not expect any benefit. They only contribute to the progress of science. This category of research requires more protection at the ethical level.
2. Research conducted on humans, but which is not experimental. This includes research on epidemics and field research. Although experiments are not conducted in this field, they might violate the privacy of individuals or of society.
3. Research related to experiments conducted on animals : little interest is given to this category.
4. Research that is not related to experiments conducted on humans or animals. These experiments are limited to the environment and water and food resources. This category also relates to the principles of ethics that govern research in general, be it scientific or not.

II- Research :

The ethical concerns should be discussed at all stages of the research process :

1. Choosing the research subject.
2. Planning the research : No research protocol should be accepted unless it addresses all the aspects of the study's ethical concerns.
3. The implementation of the study: the quality of the ethical protection originates in the potential of its implementation.
4. Reports and dissemination of information.

III- Experiments on Humans :

The research subject :

1. Evidence should be produced that the suggested therapy or measure can be more efficient than the existing solutions.
2. Data resulting of studies on animals or on a limited number of humans should be gathered, ensuring security and efficiency. An ethically approved research is one that is conducted through clinical trials on three consecutive stages 1,2,3.

3. Clinical trials cannot be justified in the cases of treatments that are not affordable in the country or community. For instance, expensive drugs should not be tested in a poor country where they cannot be sold. This applies particularly to industrial and international research.
4. Only experts who have a perfect knowledge of the subject's scientific background and the qualified personnel who have the necessary means should take part in the research.
5. The research should not be contrary to the cultural, ethical, legal and religious values of society.

IV- Planning the research :

1. Planning a scientific research is an ethical requirement. A planning that does not answer the questions of the research is not acceptable from an ethical point of view. Patients should not be exposed to unjustified interventions. The sample's size should be sufficient enough, but not larger than what is required, to produce statistically acceptable results.
2. Possible risks should be evaluated and compared to potential positive results. The risks should be minimized by all possible means. Research should include alternative evidence and treatment should be assessed once side effects are noticed.
3. Participants should be informed and they should express their free consent to participate in the experiment. Experiments on mentally retarded children should concern only the illnesses they suffer from, pending the approval of their parents or guardians.
4. Discretion is an essential requirement in medicine. Data should be kept secret either by restricting access to registered information or coding the patient's name.

V- Implementing the experiments

1. An ethically approved plan is one that can be well implemented.
2. The ethical principle of the alleviation of pain implies that during implementation, limits should be set, so that the treatment would be stopped if risks appear.
3. The principle of respect includes the possibility for patients to retire at any stage of the implementation without damage.

VI- Experiments on human volunteers.

Progress in scientific knowledge depends on the data gathered from experiments on humans who participate on a voluntary non-profit basis. They participate voluntarily to help others who avail of the results of the research. A high level of ethical engagement is required in this kind of research.

1. Research should be conducted only if there is a chance that the yielded result would lead to a progress in scientific knowledge and in medicine and if it is not possible to gather data through other means such as experiments on animals.
2. Particular interest should be given to knowing if the participants are not subordinates of the researcher such as students, nurses or prisoners. Participation should be done on an entirely voluntary basis.
3. Material incentives should not influence the informed consent process.
4. It is not acceptable that volunteers from one social category bear the burden of research. The ethical principle of equitable justice implies that volunteers should come from different categories.
5. Volunteers should be compensated for any harm caused upon them because of the experiment. An insurance system should be set up for this purpose.

VII- Epidemics and field studies

This category of research uses observation and generally requires that intervention should be limited to asking questions or conducting a routine medical check or, occasionally, x rays controls. These studies do not imply apparent risk, but they might violate the participant's privacy.

VIII- Free informed consent

Participants should understand and approve the motives of the data gathering. In the case of large societies, consent is obligatory.

A) Secrecy :

The data concerning the participants in field studies are categorized as follows :

- a. Non-interlinked information that cannot be linked to the concerned participants. Secrecy is not at risk in this case.
- b. Interlinked information, these can be :
 - i. Unknown if the information cannot be linked to the concerned participant unless a code or other means known only by the participant are used, so that the researcher cannot identify the participant.
 - ii. Non-nominative : the case where the information can be linked to the participant through a code known by the participant and the researcher (the participant's identity cannot be revealed).
 - iii. Nominative, when the information is linked to the concerned participant, mainly through the usage of their name. Secrecy is required in this case.

B) The benefit :

- 1.The participant has the right to know the possible complications and should receive the necessary care.
- 2.The community has the right to know the results of the study or any possible applications.
- 3.The researcher should assume the ethical responsibility of improving the health practices in the light of the study's result.
4. The local community should be involved as much as possible and they should be taught the necessary skills. An ethically correct study of epidemics or field research should yield results for the community in which they are conducted. What is called 'the Safari Research' should not be encouraged.

IX- Medical research on animals :

Achieving progress in biology knowledge requires experiments on living animals such as mice, monkeys and dogs. Using animals also requires a high level of ethical responsibility as regards the treatment administered.

A) The research subject :

1. Artificial fertilization systems or imitation examples using computers should be considered as much as possible as an alternative to experiments on animals.
2. Experiments on animals should have as objective the evaluation of knowledge or should be a necessary step before conducting experiments on humans.

B) Planning the research :

1. The researcher should choose the appropriate animal that will produce the relevant results.
2. The researcher should use as few animals as possible.

C) Implementing the study :

1. The welfare of the animals should be guaranteed in terms of lodging, food, environment and veterinary care. Animals are generally looked after by veterinarians who specialize in experiment animals.
2. Avoiding- or minimizing- the harm caused on animals is an ethical requirement. Measures or interventions that may cause pain to animals should be done after total anesthesia, in accordance with veterinary rules. If, in the course of the experiment, it is noticed that the animal might suffer permanent and unbearable pain, they should be killed painlessly.
3. Experiments on animals should be conducted only by researchers who have sufficient expertise.

D) Research Ethics

A research, be it medical or not, should be judged in terms of integrity. There are three aspects of integrity in research.

E) Scientific Integrity :

1. Data should be gathered with precision and impartiality. A relevant method here is that of dual generalization of the clinical trial; when researchers do not know the kind of medicines to be administered on the participants in the research. Another method is the random one, when the researcher does not have to decide to administer a given treatment to several persons. The decision is taken at random and intentional scientific deception is not tolerated.
2. In the data analysis stage, researchers should not obtain results that they cannot justify. The researcher should explore all the sources of bias in the data and the alternative interpretations of the results. These should be studied and statistical tests should be used to determine the level of trust in associations that are not the fruit of coincidence.
3. The research should be written in ample detail so as to enable other researchers to conduct the same experiments and review the results.

F) Credit :

1. Researchers should be rewarded for their research. A person who has not genuinely participated in a research should not be rewarded for it. Who should be considered as genuine author of a research paper ?

The International Committee of Editors of medical reviews presented in 1985 publication guides stating that the scientific background is a necessary condition to publish a research.

2. Reference should be made to previous research works on the same subject. The researcher should not take credit for an existing idea or one that has been studied by other researchers before him. Reference should also be made to previous studies that have given different results.
3. Researchers should introduce themselves to their colleagues. It is not acceptable that a researcher declares the findings of a research to the public before he makes them known to his colleagues in scientific reviews and during meetings.
4. Credit should be given to those who participate in the research, and they should be introduced to the public.

G) Conflict of interests :

Researchers must have interests in the research. They can have intellectual properties or commercial interests. These have to be declared.

H) Financial integrity :

Researches and projects receive financial support from governments or international or private funds. The support should be used to meet the needs, as agreed in the research protocol. Expenses should be kept in registers, and precise periodical and final financial reports should be presented.

I) Ethical responsibilities in Medical Research

Ethical responsibility in research includes :

1. Researchers :

Total and immediate responsibility involves the researcher who should have an inherent respect of the ethical directives. A research protocol is not considered as complete if it does not discuss the ethical aspects of the study that implies experiments on humans or animals..

2. Research institutions :

The research institution is responsible for the ethical quality of the researches conducted on humans. An ethics committee has to be constituted. This committee should present directives on the ethical aspects of the study and certify it, on behalf of the institution, as being accurate or not. Members should include other health professionals, mainly nurses. The committee should be completely independent of researchers, and any member who has a direct interest as regards a particular proposal, should not participate in the evaluation process.

3. Drugs National Agency :

A new drug or device that is not officially approved for use on humans should not be used without the consent of the competent authorities of a state.

4. Authors in the field of medicine

Reports on researches that do not observe the ethical standards should not be approved for publication.

5. Financing agencies and organizations

A proposed research should not be financed by a national or international agency unless the ethical aspects of the study are elucidated and guarantees are given as concerns control, by an institutional review committee, of ethical principles.

Appendix (3)

Ethics and Law

I- Directives on methodical measures for ethics, and the law :

Human legislation is present even in the cultures that are distinguished as materialistic in terms of principles set and public awareness about this materialistic tendency.

Illustrated judicial legislations and laws govern the medical practice and the management of industrial plants, hospitals and universities where research is conducted. In addition, rights of individuals as concerns physical and mental safety are guaranteed by civil laws. These questions are identified and elaborated by civil institutions such as tribunals. These are generally influenced to unequal degrees by the predominant religious culture in society, so much so that they can influence measures taken. This makes us ask the following question:

Can the legislation founded on the principles of legally illustrated law be adopted to ensure that medical research is conducted in accordance with ethically approved criteria ?

The interaction between ethics and laws produce continuous and mutual complications that are difficult to elucidate by simple formulas. For instance, one of the simplest general ethical rules is that the law has to be respected, but the law has to be evaluated on the light of ethical rules and it has to be reformed in order to preserve these rules. The legislative institutions and tribunals, among other institutions, meticulously study the laws adopted in society, assess and change them when possible so as to preserve the coherence between the law and the community's ethical expectations. There is no general obligation to respect unethical laws, but a halfway solution ranging between the violation and the respect of unethical laws represents a kind of legitimate challenge that aims at reforming these laws.

Laws usually endeavor to adapt with the ethical options of behaviour and do not try to change the behavior of those who consider them as unethical. Tribunals and legislative institutions are generally aware of this fact. While they have the authority to guarantee high levels of respect of the law, they can also raise the positions of the ethical behaviour through the legal modeling of the ethical option. The law can deal with the unethical behaviour as well as the ethical one, so that individuals could adopt an ethical behaviour and avoid the unethical one. While there is concern that the law could have ethical ends and could be straightforward in the ethical orientation, it is also feared that the right behavior would be respected only because it is a law, not out of a spontaneous deterrent that orients the human behaviour.

The ethics adopted in legislations might prevail through the legal oppression of the unethical behaviour. However, we are always tempted by the idea of orienting medical research through legislation in order to avoid ethical errors that might result of the researchers' violation of the law. For instance, American researchers who abide by the federal and private laws and measures regulating medical research on humans benefit from legal protection. However, it is known that the respect of the ethical rules in research involving humans is better achieved if researchers are invited to consider the ethical principles and to make ethical judgments out of the experiments of more experienced colleagues rather than consult their institution's lawyer.

II- Methodical measures and legislated rules

While methodical ethical measures are instituted and published by authorized agencies, but do not represent official agencies and medical associations and professional unions, it is the financing agencies acting independently of governments and research centers in universities that offer directives of correct ethical practices. These directives might define the main ethical principles and set priorities. They facilitate the mission of researchers at the planning stage on the basis of the latter's approach to the questions that pose ethical challenges. Therefore, researchers acquire a deep insight of the ethical questions raised in their research suggestions and develop expertise as concerns the necessary equilibrium between the contradictory ethical issues. Researchers and those who review their suggestions from an ethical point of view should consider not only the way ethical issues are exposed and the proposed solutions, but also the way to adapt methodical directives to deal with these issues.

One complex issue is that the directives seem sometimes to present an ethical principle as a predominant directive, at the expense of other values considered by researchers and critics as equally important. This requires a reconsideration. In other words, the institution or agency that has set the methodical directives should be invited to review them so as to make it possible to consider new expertise and factors. Regardless of this reconsideration being made or not, researchers, critics and research institutions can express their own interpretation as regards the implementation of the directives. Some degree of flexibility can be achieved when a decision concerning ethics has to be taken.

In contrast, the legislations that have been issued seem to be rigid and stiff. They have been adopted not only for the purpose of orientation, but to control the future behaviour. These legislations are the result of the beliefs of legislators and what they have decided as regards the difference between the right behaviour and the wrong one. They use the legal jurisprudence that they have as legislators and in charge with putting laws into effect. They have the authority to sanction those who violate their decisions. Courts apply the adopted legislation, even retroactively, as concerns the research practices, but they usually refuse to act in an advisory role concerning the following question :

Does a research comply with the existing legislations ?

These legislations' language does not allow for a degree of flexibility in implementation and it can be modified only through the legislative process that has produced it.

The model of legislation that supports the ethical decision-making is situated between the flexible theoretical and unofficial models related to the methodical directives, and the theoretical models of the adopted legislations, which are considered as inflexible but they benefit from legal protection. The legislation itself might not be a description of the rules that are derived from ethical origins. However, the legislation provides decisions that are taken in the aftermath of certain described operations such is the case with the committees that are constituted in accordance with defined measures and ethical directives. Such committees are efficient from a legal point of view. A legal opposition may rise as concerns the legislation authorizing the

committees to review the ethical aspects, through the approval of the measures that limit the legal rights of the individuals subject to experiments.

III- Directives on methodical measures for ethics :

Detailed texts whose authors claim to be providing future researchers and members of review committees, in charge with examining suggestions and research manuscripts, with instructions as regards ethical principles to be put into effect will possibly be released.

Among the most detailed of these texts are those explaining in detail how some practices can be performed, so as to provide information concerning the realization of medical research papers, such as information concerning possible risks and dangers as well as the expected benefits in favor of the participants who might run risks. In addition, privacy requirements should be defined. These include encoding the names of the participants, keeping the codes in secret tenures, defining who should obtain the information. Perhaps, nobody can reveal the texts relative to the directives of the methodical measures, but researchers deal with them. Among these are the treaties relative to the appropriate individuals eligible to take part in the research and the studies. Such texts might be more than a simple list of articles to be taken into consideration by those who prepare and review research proposals, about which little directives are available.

The directives that include a more ample discussion of the major ethical principles might take different forms. Some of these can be based on ethical principles such as the respect of individuals, and protecting them. There is a concise definition of these principles, but they show how they can be applied on certain categories of research papers. These methods may explain for instance that a halfway solution can be reached as concerns autonomy, which is an essential element for the respect of individuals. This holds true in cases when doctors ask patients to take part in an experiment. The directives show that patients' consent is necessary and that obliging them to participate in the experiment is contrary to ethics.

These directives might suggest that doctors should not ask their patients to participate in these experiments (that is to become subjects to their experiments). This task should rather be left to other doctors who are not responsible for those patients.

The directives could end at this point, but some other directives can be made regardless of the stance a doctor should take when one of his patients is asked to participate in the research of other doctors unknown to the doctor and who do not represent the researcher in this case. This issue raises certain points relative to the conflict of interests. There are some other instructions included in some directives, consisting in that the directives should explain this question. Since it is normally known that a doctor should request the patient's consent to participate in the experiment, it is usually not possible to avoid this, because doctors generally have motives to observe their patients and are ready to conduct the research.

One of the most privileged methods used in defining the directives consists in the researchers asking their patients to be subjects of the experiments. In the proposals made by these doctors, it is provided that patients should not be subject to pressures or even motivation. These

methods influence the patient's approval and are considered to be unethical. Researchers should also provide solutions in the case of a conflict of interests. This is a useful method because it increases the researchers' awareness of the difficulty in dealing with ethical aspects. It also sheds light on the importance of the patient's consent being based on correct information. This method also requires that researchers plan their research in a way to be consistent with ethical principles. It also sensitizes them concerning questions that may be asked by members of review committees, as it informs those members about the issues they should ask researchers to address. However, this method does not provide the kind of answers that have the approval of the review committee.

Another method consists in separating the principal issues and identifying the ethical methods relating to the research subject. It discusses the strong and weak points of every method. The comparison will allow the definition of a given method. This method might be the most privileged one or might make it possible to find remedies for the weak points in the other methods.

In research works relating to human reproduction, the issues can be tackled at the level of assisted In vitro Fertilization (IVF) and of introducing pre-embryos in the uterus. The generally recognized ethical principles requires the transfer of all pre-embryos resulting of external fertilization. Discussing this issue might enable us to address the damage caused by multiple pregnancies on mothers and the fetuses and the question of avoiding damage on all the participants in the experiment.

Deciding the transfer of a pre-embryo, which reduces the possibilities of delivery, can be discussed through the principle of ethical engagement. The same principle will be applied to the transfer of a limited number of pre-embryos. Using three or four embryos increases the chance of delivery in the future, but it also increases the risks of multiple pregnancies.

Another method consists in transferring three pre-embryos after informing the patient. If three of them are transplanted, abortion remains possible unless it appears that delivery of twins is possible. The patient can deliver one child instead of twins if inevitable circumstances require it. These circumstances include the patient's poor health condition or if the embryos suffer from serious problems. This choice includes a discussion of the independence of patients and providers of medical services. Patients unwilling to have twins and health professionals unwilling to carry out abortion might find that unacceptable. The alternative here consists in allowing the patient to freely choose the transfer of one, two or three embryos. But given that the first allows only a minimum of technology, the question of equity in sharing the sources between the competing patients to obtain that technology will be discussed later.

The ethical directives can be theoretical in this case when they are oriented towards a research in a relatively specialized field such as the positive and the negative aspects of human reproduction. This requires research in questions such as contraception and abortion, assisted delivery, transfer of pre-embryos, etc.

Ethical directives be set by specialists should in medical ethics and health professionals rather than by unspecialized agencies.

The agencies that finance research might prefer, in most cases, the less theoretical methods in their definition of the issues towards which researchers might be sensitive ; and for which they can propose solutions that will be evaluated by members of the evaluation committee.

IV- The Issue of Conflicting Solutions

The aim of these directives is to focus on the fact that researchers and members of review committees know the same ethical questions and should address them by referring to the relevant ethical principles. They also have to define the facts they consider as controversial, the ethical issues worthy of priority and the controversies between the individuals representing the first ethical level and society as a whole –and this is the most important ethical level. The evaluation here might be different, given that the decision-making process on the ethical level in medical research does not correspond to one behaviour-related rule. The main function in the ethical evaluation process is the evaluation of the ethical aspects of medical research and providing ethically motivated solutions. A problem can have more than one solution. Moreover, there might be different ways to define the principal issues in a research paper.

The objective of these directives should be the coherence and consistency, not only of results, but also of the evaluation process. What makes it possible to judge a solution to be ethical is not only the solution itself, but the process of analysis and ethical interpretation as well as the discussions that have allowed such solutions. For instance, researchers who ask an authority about the right thing to do and follow its directives is considered to behave in accordance with ethical rules, but they are not considered to have taken an ethical decision. This means that in order to take an ethical decision, the researcher should integrate in the ethical analysis and interpretation. These directives can help us through the definition of the ethical principles, show how to interact with particular issues and how solutions to some problems can be found. Decision-making is not a mechanical process. It requires an intellectual effort from the decision-maker. It also requires the ability to justify why a decision, and not another, was taken. Unlikely decisions are not necessarily unethical, but are not retained in the light of other decisions. A decision that is retained on the basis of an ethical criterion might not be retained according to any other decision that has the same value.

For instance, protecting the privacy of patients who participate in experiments can be a priority through doing away with personal data that can be identified immediately after the end of the study. This makes it impossible to conduct another experiment based on the same patient and the same research. One ethical requirement is to safeguard utmost privacy or to leave the door open for the research to develop into other studies, and this can be possible only if the data relative to the first study is preserved and investigations are made concerning patients, but it is difficult to achieve these two ethical objectives. A researcher might opt for the privacy of the data whereas another might opt for the progress of the research.

Some factors might be decisive here according to the cases. For instance data has different levels of significance. For example, publishing the pregnancy history of a married woman is less delicate than publishing her sterility, abortion or sexual diseases history.

Members of ethical review committees should submit the solutions suggested by researchers. They might also have to make sure that the alternative solutions have been meticulously studied. Besides, they should not impose their solutions as alternatives to those suggested by researches upon study and research.

The burden in the ethical decision-making process falls on the researchers. The mission of the members of committees does not consist in taking a separate decision, but in the evaluation of the decisions taken by researchers. If a decision is ethically correct, the committee members have to approve it even if they prefer another one.

Appendix (4)

Ethics Evaluation Committees

Introduction

The ethical directives are usually based on the hypothesis that the proposals of researchers should be evaluated by research ethical evaluation committees that have legal authorities. The directives relative to the ethics of research might include the definition of directives for institutions, even regarding the creation of ethical evaluation committees.

The committees can be created on national, local and international levels in hospitals, universities, health departments in schools. Directives can be addressed to various levels in the evaluation committees in order to define the adequate evaluation methods at all levels.

The committees should include members who specialize in more than one discipline or members that specialize in fields other than the researchers' specialization. This means the existence of a scientific representation which includes the researchers medical specializations besides others such as nursing, social action, hospitals administration, lawyers, religion, ethics and sociology.

Both genders (men and women) should also be represented in these committees along with social and financial groups . People speaking on behalf of the patient, object of these experiments, should also be represented. Members have to carry out their duties as individuals who do not represent some given institutions except religious people who are allowed to represent the institutions they belong to. Lawyers are not to be admitted if they represent particular institutions, as they will be expressing the views of their clients or be accused of inappropriate professional conduct in case of interests mismatching.

Some people suggest such directives adding all these elements to review committees. These committees should be relatively small to facilitate meetings at suitable venues and dates, and reaching decisions in appropriate times. These committees usually leave out much detail to common sense, and entail the official appointment of somebody to be president of the committee and a secretary to organize meetings and record its proceedings and decisions.

The directives may not specify the presence of researchers in meetings, but usually require their representation in committees. Establishing contact is imperative to allow researchers to answer questions addressed to them, though this can be done through correspondence.

Moreover, directives seldom specify how to take or make decisions. Consensus may be adopted as a mode to reach decisions. However, the right of opposition by each member may have a damaging effect. Also, having a majority vote may not be satisfactory as it favors a majority that is not specialized on a study which experts find unethical as it falls short of scientific validity and is statistically unreliable. Having a majority of two or three thirds of the members may be desirable though it raises the risk of not considering the view of religion or a private lawyer who may have good reasons to oppose a certain suggestion.

It is agreed that reaching consensus in decision-making is better, through committees' presidents who monitor meetings and are worthy of interest and capable of judging things properly.

Setting up measures for ethical committees' members conduct through ethical directives is a rare practice. In other words, these directives seldom deal with the ethics of ethical review committees, and the secrecy of the research has to be safeguarded. Members should take this element into consideration so that they would not use the ideas they get through research reviews to achieve commercial gains by using these ideas in their own research works or the researches they supervise as consultants in commercial institutions.

Observing the respect of ethical rules

The principal objective of these directives is to prevent the unethical behaviour and make possible the decision-making process. They do not aim at playing the role of the police as regards the behaviour of researches because it is possible to ask the institutions in charge of research to see to it that researchers respect the protocols in force and to sanction those who violate these protocols. Thwarting , tracking or sanctioning scientific fraud is usually performed outside the circles of ethical directives committees. However, it is possible to ask institutions to adopt methods to dissuade researchers from violating the protocols in force and to enforce these protocols. These institutions can withdraw the money that was paid or stop financing researchers who violate the protocols. This constitutes a penalizing measure against the researcher. They can also dismiss a researcher who infringes the rules. Generally a work contract stipulates the respect of these rules. Researchers should inform their research ethical committees or other similar committees of any suggested amendments to be introduced and to obtain their approval before they adopt those amendments. It is preferable to inform about a proposed amendment so that the committee could decide if the addition introduced requires an ethical revision.

**Suggestions of the Member States
Regarding the Establishment of the Islamic
Body on Ethics for Science and Technology**

Hashemite Kingdom of Jordan

1- Importance of setting up an Islamic Body of Ethics:

In addition to the contents of the base document, I propose that this organisation endeavour to set up an institute or academic departments within universities that would dispense training to graduates and other role-players for raising awareness about this issue, and ensure the follow-up of all developments regarding ethical issues.

2- Objectives of the Islamic Body of Ethics (Page 2)

In addition to the objectives laid out in the document:

- Prepare annual reports, publish studies and organise specialised workshops
- Cooperate with international organisations interested in ethics.

3- Creation of an Islamic Body of Ethics (page 3)

In addition to the contents of the base document, I propose that the following sentence be added to item 3 on the activities of the commission: determine the terms of reference of each commission.

4- Working Method of the Body

First: General Committee of the Body:

In addition to the four points of the document, I propose a fifth one on: Determination and definition of the ethical issues related to developments in medical and biological sciences and research.

Second: Executive Council

Add the sentence: "and set the dates of meetings" to point 2."

Add the following tasks:

- 1- Cooperation with specialised international organisations
- 2- Encouraging research visits of academics and the exchange of expertise in ethics
- 3- Organisation of specialised workshops for the purpose of training interested persons
- 4- Taking the necessary measures for the study and drafting of reports on new developments in ethical issues that arise from new scientific developments
- 5- Publishing of reports and organisation of lectures

Republic of Gambia

Comments on the proposed Body of the Islamic Scientific Ethics

Introduction

Having read the aims and objectives of your organization to set up a body of Islamic scientific Ethics, which is going to be entrusted with the task of guiding the necessary scientific progress in the Islamic World, I wish to record here my sincere gratitude and commitment to be a part of any serious and sincere efforts to help the Ummah attain its rightful place.

There is no doubt that happiness in its true Islamic sense cannot be attained until and unless certain conditions are met: the most important among all conditions is knowledge. Knowledge in its general sense has always been a necessity for happiness as understood by Islam. This is because material and immaterial progress towards perfection is conditional to knowledge.

Science is a special kind of knowledge and we all know that it was the symbiosis between science and technology, which brought the material progress and development in the west .

Today in this modern age, the material underdevelopment of the whole Muslim world is mainly due to its lack of necessary scientific knowledge. I am of the opinion that the physical backwardness of the Muslim world cannot be removed merely by importing the western technology gadgets. Because of the fact that technology is nothing but applied science, in order for the Muslim world to gain material independence, its technology must be based on strong Islamic scientific knowledge. I strongly believe that material independence is a prerequisite for spiritual progress of the Muslim world. It is against this background that sincere efforts towards scientific knowledge have become necessary for the Muslim world.

Problem

The fact that we need scientific knowledge combined with the fact that superiority over science and scientific knowledge belongs to the West makes our task a very tough one. In order for us to gain complete material emancipation, we cannot but to import the Western science but at the same time, there is something in Western philosophy of science, which is inherently dangerous to the fundamentals of our faith. The position of Imam Abu Hamid Al-Ghazzali (d.1111) pertaining to this matter illustrates this point. Here is one of the areas in which the body of Islamic scientific ethics can play a vital role. Being the holiest and the most comprehensive book on earth, the holy Qur'an is a book that contains ethical as well as scientific truths. The Islamic proposition that science and scientific knowledge should also be ethical was something that the Western positivists of the modern age used to deny. However, with the advent of the

postmodern age the Western point of view with regard to science-ethic relationship is now changing closer to the Islamic position. It should, therefore, be stressed here that formulation of an ethical guidelines for the progress of science in the Muslim world is not something we emulate from the West but it is inherently an Islamic approach to knowledge.

We know that the study of ethics as an independent discipline came relatively late and is foreign to the Islamic civilization. Yet, in order to settle what seemed in the past to be a dichotomy between science and ethics, the functionalization of such a body has become a post-modern necessity.

Islamic Scientific Ethical Basis

A long time ago, Aristotle classified ends into: *Instrumental Ends and Intrinsic Ends*. To Muslim scientists, scientific endeavors should lead to an instrumental end. This is so because it is this end, which conforms to the meaning of ethics in Islam.

Etymologically speaking, the Arabic words *adab and khuluq* are used among other things to denote the word ethic in English. While the latter occurs in the Qur'an the former occurs in the hadith of the Prophet and in the Arabic poetry. Both words express a sense of well-behaved attitude towards a higher and superior authority, which in the sense of Islam is Allah. It is against this background that Muslim scholars of the past and present discuss different ethics (*adaabs*) like ethics of eating, drinking, material relation, medicine so on and so forth.

Due to the fact that Islam is the final message, today, with the emerging complex human problems, which cannot escape the grip of science, Muslim scholars, especially jurists and ethicists must contribute their quotas in providing Islamic jurisprudential as well as ethical solutions to project the Islamic point of view to the whole world.

The Structure and objectives of the Islamic Body of Ethics

As far as I am concerned, the structure and objectives of the Islamic body of ethics is well drafted. I think unless future practices prove me wrong, I have nothing to omit or to add to the present proposed structure and functions entrusted to the subcommittees.

Dr. Omar Jah Jr., Head of Islamic and Arab language Studies Program University of the Gambia

State of Palestine

Comments on the Action of the Islamic Body of Ethics

The concept of the creation of an Islamic body of ethics deserves encouragement and support since it aspires to tackle Islamic concepts from a scientific angle and address these issues with the largest possible base of intellectuals in the Islamic world to ensure that the principles of Islamic culture are solidly fostered in the minds of all Muslims, irrespective of their fields of interest or speciality. Out of my conviction of the importance of creating this board, I would like to briefly present my proposals and ideas on the matter:

- 1- Ethical concepts must be linked to the principles of the Islamic faith so that these ethics become firmly entrenched in the mind of every Muslim. Ethics that material thought and interests govern are far from solid and constant.
- 2- Islamic ethics must be consolidated through an in-depth knowledge of the laws of Fiqh that govern many of our practices. At the level of medical sciences there are a number of Shariah rulings that were tackled by scholars in the past and the present and that spring from an ethical human perception. Jurists have addressed issues such as euthanasia, the constraints of artificial insemination and organ transplants.

In terms of administrative and economic laws, there are a number of detailed Fiqh rulings that regulate administrative work such as the need to preserve public interests and to make merit-based choices of administrative staff. In the economic field, the code of transactions is rich in detailed rulings that call for preventing harm, proscribe fraud, ordain the respect of contracts and commitments and ban monopoly and usury.

- 3- Human sciences such as sociology, education, psychology and even Arab literature should all be submitted to Islamic concepts within the framework of the Islamisation of knowledge. Noble Islamic ethics should also have a marked presence in these sciences to redress concepts that run counter to the Islamic ethics, such as machiavellism and materialism.
- 4- I propose that the body focus its efforts, with the help of academics from universities of the Islamic world, on devising practical conceptions of how to introduce course modules for popularising Islamic concepts within educational curricula, particularly at university level. For example, a student of medicine must also study one or two modules that will enlighten him on fiqh laws that are relevant to his field. The same applies to the student in economics, and so on so forth. I further propose that a compulsory course be introduced at university level, all branches included, and that would provide the student with knowledge on Islamic ethical principles. The Islamic culture course, taught nowadays in most universities of the Islamic world, may be steered in this direction.

5- The Body may publish books on concepts about which people should acquire knowledge and address these to groupings of intellectuals. The Body may also contact doctors and engineers orders, the union of authors and similar other organisations.

6- I finally suggest that the Body contact the ministries of education in the Islamic world in order to introduce ethical concepts to young generations through the channel of school curricula, particularly at the secondary school level, to ensure that these concepts are properly entrenched in their minds.

These are my main perceptions of the action of the Body. I pray Allah to grant the people in charge of this Body success in serving Islam and Muslims, and in disseminating Islamic concepts and ethics among

The Great Socialist People's Libyan Arab Jamahiriya

With reference to the memorandum entitled: « **Document on the Project for the creation of the Islamic Body on Ethics of Sciences and Technology** », submitted to « The Second Islamic Conference of Ministers of Higher Education and Scientific Research », held in Tripoli, on May 3-6, 2003, I address the following points:

The components of the document and some relevant observations:

1/ Introduction/ The need for an Islamic Body on Ethics as regards Sciences and Technology/ The Islamic Reference:

(a)- In fact, the researcher addressed the importance of such an institution from the particular perspective of the Islamic Sharia, and set forth grounds which are not most often disputed but which may, as a whole, be taken as representing a single viewpoint; thus, not encompassing all the religious aspects of the subject.

I think that this main aspect requires alone a detailed study to be conducted by a number of scholars and researchers in religious, social and philosophical areas, so that the introduction covers all that may put the emphasis on the necessity to give due attention to the ethical and behavioural aspects as regards scientific and technological practices.

(b)- It seems that the specialization of the respectable scholar (in fields of health and medicine) found its clear expression in this section, as well as in the appendixes annexed to the document; namely, (the ethics of health-related professions/ ethics as regards medical researches/ legal ethics/ ethics revision committees).

Indeed, the medical issue constitutes a main and vital aspect in the area of ethical and behavioural practices. However, it is not the sole focus area; as there are other ethical and behaviour-related questions touching upon several other scientific and technological fields.

(c)- In spite of the importance of the religious grounds for the creation of such an institution, we should not content ourselves with it. Otherwise, every Islamic state would create its own Islamic institution for scientific and technological ethics.

I deem it very important that the introduction contains the grounds, reasons and explanations concerning the Islamic world's need for such an institution, given that this is a political region and a vital space in need of shoring up its civilizational track with ethical and conduct bases founded on the Islamic religious and conduct-related fundamentals, and the universal human principles prevailing the world over.

In fact, this institution is designated by the appellation « Islamic » not only because it is founded on religion and Sharia, but it owes it to the fact that it involves the Islamic states and their relevant institutions.

The document:

1) The importance of creating the Islamic Body on Ethics:

Since the introduction aims at upholding the creation of such an institution, it should have been arranged in a broader way, away from the spirit of « vindication », but with due reference made to the other regional and international attempts and undertakings, taking into account their potential contribution to the stream of scientific and technological ethics and practices in the world over.

Of course, we should bear in mind the effective contribution of the Islamic states and their institutions in the works of the departments, institutions and committees set up by the United Nations Educational, Scientific and Cultural Organisation (UNESCO).

I think it is important to rewrite and arrange this section in such a way as may reflect, in the most obvious and objective manner, the reasons and grounds which justify the creation of an Islamic institution, away from seclusion and chauvinism, and in consonance and co-ordination with the international and regional institutions and bodies.

Formal observations:

- * « *Tashri'at* », rather than « *dawabit kanounia* », is the appropriate translation into Arabic of the word *Legislations*. Likewise, the expression « *mandhour akhlaki* » (*ethical perspective*) is not the appropriate translation into Arabic of the English term *Code of ethics*.
- * Words like « *yatashaddak* » (to vaunt) should not be used in such an official document.
- * It is more linguistically correct to say « *muhimm* » rather than « *haamm* »; both meaning (important).
- * Once again, we draw attention to the exaggerated emphasis given to the medical aspects.

2) The objectives:

These cannot be seen as objectives in the common meaning of the word; rather, the document refers to some of the instruments, means and missions.

3) Formation: the document suggests that the institution be composed of the following:

- *General Commission.
- *Executive council.
- *Ethics sub-committees.

Arab Republic of Egypt

Comments on the Draft Document of the Islamic Board of Ethics Proposed by the Islamic Educational, Scientific and Cultural Organisation

- Modifying the board's proposed name to that of Islamic Board for Scientific and Technical Ethics
- With regards to the objectives of the board (page 2):
merge items 5 and 6 into one item.
- With regards to the composition of the board (page 3):

- * Modify the formulation of paragraph 2 to read as follows:

- The board shall be made up of 12 members representing twelve countries.*

- * Modify the formulation of paragraph 3 to read as follows:

- Four sub-commissions for medical, agricultural, biological and information ethics*

- * Modify the formulation of paragraph 6 to read as follows:

- Establish contacts with international ethical boards throughout the world (instead of in the West)*

- * Addition of an eleventh paragraph to read:

- Lay down bridges of cooperation between the board and national commissions for scientific and technological ethics.*

Republic of Niger

On the Proposed Creation of a Body of Ethics for Sciences and Technology

Not a day goes by without the Muslims being victims of deadly violence somewhere in the world. From the Sudan to Nigeria, Algeria to Egypt, Turkey to the Philippines, to Kosovo, Chechnya, Palestine, Kashmir and Indochina, the war against Islam rages on. Yet, Islam remains a religion of tolerance that makes it possible to create a balance between rights and obligations, favors progress and development, encourages research, production and work. Islam is a shield against Aids, drugs, criminality, corruption, theft, rape, sectarianism, suicide, and the Mafia that is unfortunately often present in non-Muslim countries. In South Africa, for example, seventy persons are murdered every day according to the Interpol, 1 000 000 women are raped every year, 75% of black women are victims of rape, and break-ins occur at a rate of one every minute. In Johannesburg alone, 36 muggings are committed every day, while in Iran and Saudi Arabia, the jewelers do not lower their shutters when they answer the call to prayer! Why then are negative clichés used to describe the Muslim world? Answers will follow under the headings of Importance, Objectives and Functioning of the Islamic Body of Ethics for Sciences and Technology.

I. Importance

For the past few years, the world has been experiencing at a hectic rhythm the ‘age’ of globalization to the benefit of peculiarities. Every day, scientific and technical inventions fill up newspaper columns with the aim of drawing the largest audience, and with a total disregard for the basic rules of ethics. Yet, the Islamic world holds in its possession infallible and efficient values against the logic of self-destruction that we are being precipitated towards by scientists. In fact, advocating genetic engineering implies a modification of God’s creation, which may lead to a destruction of the universe’s balance. The Quran and the sunnah recommend the respect of human dignity, the safety of the human genetic matter and the inviolability of the human being. It is here, in fact, that the importance of an Islamic body for ethics comes into play since this Body will request measures for the protection of the embryo in accordance with national, cultural, religious and social morals. The role of such body acquires further importance when we consider the vastness of the Muslim space: United Nations statistics predict that by 2020 there will be 2.5 billion Muslims, which figure will increase to 4.412.000 000 by the year 2100. The same UN statistics estimate the numbers of Christians, in 2100, at 2.228.000.000 and at 1.421.000.000 that of the disciples of the Chinese civilization. In brief, and even when downplaying these figures, at that point in time, 4 out of every 10 persons will be Muslims. The analysis of these figures will bring out a future world peopled in its majority by Muslims. Preparing this victory lies in the hands of today’s decision-makers who can do so by extending their support to the creation of

an Islamic body of ethics for sciences and technology which should achieve the planet's security through the fulfillment of a set of objectives.

II. Objectives

These objectives are many in the light of the numerous challenges that arise every day at the same accelerated pace as scientific and technological progress. However, this should not serve as a pretext for discouragement. The Islamic Body should take stock of all documents drawn up within the Islamic world on the issue of ethics and should also:

- Sensitize both Muslim and non-Muslim peoples about the dangers that besiege the global as well as those inherent to the globalization;
- Convene national and international conferences that would denounce all scientific actions that strongly challenge the cardinal principles of the Muslim religion;
- Ponder the necessity of drawing up a program based on the moral standards of Muslim societies;
- Disseminate this program within elementary and secondary-level schools in order to foster these indisputable values in future students;
- Make provision for the teaching of ethics and moral values within the faculties of sciences in the Islamic territories;
- Draw the attention of doctors, agronomy specialists, veterinarians and patients to the risks inherent to genetic engineering, be it at the human, animal or plant life level.

III. Composition and Function of the Body

1. A General Committee of the board made up of 49 Member States;
2. An elected Executive Council made up of 12 members. In Niger, we are of the opinion that the choice of the members of the Executive Council should be based on the geopolitical criteria of the country, the proportion of Muslims within each country, their degree of commitment, and the country's degree of progress. It is advisable that an elective system based on university programs be avoided as it is necessary to take into consideration certain singularities proper to Muslim countries;
3. The Ethics Sub-Committee: the election of this committee's members must be carried out following objective criteria and should in no way simulate the western system that favors materialistic individual interest over the group's well-being. Keeping in mind the numerous challenges that the Islamic Ummah has to meet, all efforts should be geared towards reaching consensus in order to avoid frustration and friction among the various delegations. The choice of representatives must therefore be made according to geographical criteria and not to the old classification of African states according to the desires of the West.

The importance of such a board in achieving man's security needs no further emphasis. But the activities of the board must be carried out with a lack of passion and bring into play all values while avoiding opportunism in order to adhere to the cardinal virtues of Islam and that ordain equity, justice, tolerance and humility.

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