A Critical Appraisal of Inclusions of “Bioethics in Laboratory Medicine” into the Existing Postgraduate Curriculum of Pathology, Microbiology and Biochemistry

Anjankar Ashish P¹, Ninave Sudhir², Mishra Gaurav V³
¹Associate Professor, Department of Biochemistry, ²Professor & Head of the Department, Department of Forensic Medicine, ³Associate Professor, Department of Radiodiagnosis, Jawaharlal Nehru Medical College, Wardha, Maharashtra, India

Abstract

Introduction: Laboratory physicians confront with ethical issues in routine practice, but still ethics does not draw the importance it deserves. A critical appraisal of the existing postgraduate curriculum of Pathology, Microbiology and Biochemistry with reference to its Bioethical inclusions to their conformity with reference to Bioethical principles applicable to profession as included in UNESCO Declaration is needed.

Aim: To critically analyse the inclusions of “Bioethics in Laboratory Medicine” into the Existing Postgraduate Curriculum of Pathology, Microbiology and Biochemistry with reference to Bioethical principles incorporated in UNESCO Declaration

Material and Methods: It was a descriptive study for rapid review of literature for the purposes of identification and critical appraisal of bioethical considerations in Laboratory Medicine in existing Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology, Biochemistry with reference to Bioethical principles included in UNESCO declaration specially those applicable to profession and not propagation or advocacy.

Observations and Results: Upon critical analysis and mapping of the competencies in the Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology, Biochemistry with reference to the principles in the UNESCO universal declaration, 16 competencies were identified as professional ethical inclusions. 19 Competencies suggested in regards to “Bioethics in Laboratory Medicine” for Guidelines for Competency Based Postgraduate Training Programme for MD In these subjects to make them commensurate with UNESCO universal declaration

Conclusion: This has brought out subsequent omissions which need to be managed in order to make competencies in Existing PG curriculum of Pathology, Microbiology and Biochemistry comparable with the UNESCO universal declaration and therefore, make it better and standardised on global and international level.

Keywords: Bioethics, Laboratory Medicine, Postgraduate Curriculum
to laboratory services as well. Similar to other fields of medicine, Laboratory Medicine is required to obey and practice high ethical specifications.

The qualified staff of a medical laboratory is restricted by the ethical principles of their corresponding profession. “Ethical medical practice is the expected conduct of laboratory physicians” and that striving to achieve high ethical standards is an essential aspect of medical excellence.\(^1\) Overarching goal for laboratory physicians is to maintain professional integrity.

Around 70% of medical diagnoses now rely on pathology laboratory analyses\(^2\) emphasizes the crucial role that laboratory physicians play in patient care. The clinician must be committed to same ethical fabric as the laboratory physician to assure that results of the investigations are enforced in the patient’s preferable interest.\(^3,4\) The clinician’s judgment about diagnosis, prognosis and treatment are routinely based on results and interpretations of laboratory investigations. Permanent damage to the patient may be caused by inaccurate tests and their faulty interpretations.

The term Bioethics was coined in 1926 by Fritz Jahr in article about a ‘bioethical imperative’ regarding the use of animals and plants in scientific research.\(^5\)

The United Nations Educational, Scientific and Cultural Organisation was established at Paris, France on 4th November, 1946.\(^6\) Hence, it was on the 19th of October, 2005 at the 33rd General Conference of UNESCO, which was held at Paris, that the Universal Declaration on Bioethics and Human Rights was adopted by one and all.

Taking stock of the overall global situation, the academic committee of the Medical Council of India formulated a detailed draft pertaining to competency based undergraduate medical education invoked a module titled ‘AETCOM Module’ (Attitude, Communication, and Ethics),\(^7\) which was notified in the year 2018 and is incorporated in the ‘Competency Based Undergraduate Medical Education Curriculum’.\(^8\) Such systematic guidelines regarding ethical considerations are missing in the existing postgraduate Medical curriculum of Pathology,\(^9\) Microbiology\(^10\) and Biochemistry.\(^11\)

Laboratory physicians confront with ethical issues in routine practice, but still ethics does not draw the importance it deserves. A report by the IFCC Task Force on Ethics indicates that formal and proper teaching of ethics is missing from many clinical chemistry and laboratory medicine training programs and that there is a perceived need for training programs for ethical considerations in laboratory Medicine.\(^12\)

It is in this context that a critical appraisal of Postgraduate curriculum of Pathology, Microbiology and Biochemistry with reference to its Bioethical inclusions vis-à-vis professional ethics inclusions needs to be looked into for the purposes of an judicious operational mix of the two, so that the learner is oriented on the said arena in an all-round manner so that optimal results thereto stand generated.

**Rationale Of The Study:**

In this context, the inclusions pertaining to ethical considerations in laboratory Medicine in postgraduate Medical curriculum of Pathology, Microbiology and Biochemistry in regard to their objective, scope, operation, outcome and relevance needs to be critically looked. A critical appraisal of the existing postgraduate curriculum of Pathology, Microbiology and Biochemistry with reference to its Bioethical inclusions to their conformity with reference to Bioethical principles applicable to profession as included in UNESCO Declaration is needed.

The appraisal of the Bioethics in Laboratory Medicine inclusion therein also become inevitably necessary to assess as to whether the said inclusions incorporate the tenets and principle of bioethics as have evolved over a period of time with reference to their applicability to professional ethics as applicable to modern medicine to be upheld in practicing of the same by the registered medical practitioners of the modern medicine.

**Research Question**

Are there any limitations and resultant scope for update for ethical considerations in the Laboratory Medicine in the existing postgraduate curriculum of Pathology, Microbiology and Biochemistry?
Aim

To critically analyse the inclusions of “Bioethics in Laboratory Medicine” into the Existing Postgraduate Curriculum of Pathology, Microbiology and Biochemistry with reference to Bioethical principles incorporated in UNESCO Declaration

Objectives:

1. To identify the bioethical inclusions in existing Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology and Biochemistry

2. To critically analyze the bioethical inclusions in existing Guidelines in regard to their conformity with reference to Bioethical principles applicable to profession as included in UNESCO Declaration.

3. To suggest update and inclusions of “Bioethics in Laboratory Medicine” in these Guidelines so as to make them comparable with the Bioethical principles incorporated in UNESCO Declaration.

Material and Methods

Period of Study : Six Months

Design : Descriptive Study

Duration : October 19 to March 20

Procedure :

Rapid review of literature for the purposes of identification of bioethical considerations in Laboratory Medicine in existing Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology and Biochemistry with reference to Bioethical principles included in UNESCO Declaration specially those applicable to profession and not propagation or advocacy.

Further, to critically appraise the conformity of the bioethical inclusions in Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology and Biochemistry with reference to their conformity with the bioethical principles as applicable to the profession in the UNESCO Declaration.

Then, to work out the appropriate extenuation in Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology, Biochemistry by incorporating the non-included bioethical principles as applicable to laboratory Medicine incorporated in UNESCO Declaration by structuring it in the form of a competency.

Data:

Identifying Bioethical inclusions in existing Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology and Biochemistry, which is already applicable to various medical colleges under the ambit of Medical Council of India.

Critical appraisal of the said identified Bioethical inclusions with reference to their conformity with the bioethical principles as applicable to the profession included in UNESCO declaration.

Further, to work out the inclusion of non-included bioethical principles in the form of structured competencies as “Bioethics in Laboratory Medicine” and their incorporation in these Guidelines with reference to their learning levels including their mode of assessment.

Collection Tool

Critical appraisal of the guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology, Biochemistry document against the Bioethical principles as applicable to profession in the UNESCO Universal Declaration.

Observations And Results

Amongst the UNESCO Universal Declaration, principles 3 to 20 were listed as professional bioethical inclusions which were directed towards the learner and his profession directly. The remaining principles were directed towards the states, international affairs and regulation i.e. advocacy. These were therefore excluded.

This study analyzed a total number of 16 competencies, enlisted in Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology and Biochemistry with their respective learning domains, levels as per Miller’s pyramid, and assessed in as against the principles.
included in the UNESCO Universal Declaration laid down by the UNESCO.

These 16 competencies enlisted in Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology and Biochemistry reflected either single or multiple principles as per the UNESCO universal declaration of human rights and bioethics. Therefore these 16 competencies in Competency Based Postgraduate Training Programme were identified as professional ethical inclusions.

So, we had two sets – one set of competencies enlisted in Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology and Biochemistry and another set of UNESCO universal declaration principles.

Of these 16 competencies enlisted in Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology and Biochemistry, 4 competencies dealt with the cognitive domain and 12 competencies dealt with higher domains of learning – psychomotor and affective.

Article 3 – Human dignity and human rights was reflected in maximum number of competencies (n=12 competencies). This was followed by Article 4 – Benefit and harm (n= 8 competencies) and article 5 – autonomy and individual responsibility (n=8 competencies). Further, Article 14 – Social responsibility and health was noted to be reflected in 7 competencies (n=7 competencies) followed by article 10 – equality, justice and equity, article 11 – non-discrimination and non-stigmatization, article 12 – Respect for cultural diversity and pluralism, article 16 - Protecting future generations, article 18 – decision making and addressing bioethical issues were noted to be reflected in 3 competencies each (n=3 competencies). Article 8 – respect for human vulnerability and personal integrity, Article 13 – solidarity and cooperation, article 15 – Sharing of benefits issues were noted to be reflected in 2 competencies each (n=2 competencies). Article 6 – consent, article 7 – persons without the capacity to consent, and article 9 – privacy and confidentiality, article 20 – Risk assessment and management were noted to be reflected in 1 competency each. (n=1 competency).

However, article 17 – Protection of the environment, the biosphere and biodiversity and article 19 – ethics committee had no reflection in the Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology and Biochemistry.

**Discussion**

Upon critical analysis and mapping of the competencies in the Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology and Biochemistry with the principles in the UNESCO universal declaration, 16 competencies were identified as professional ethical inclusions. There are 2 principles in the UNESCO universal declaration which have no representation in the Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology, Biochemistry – articles 17 and 19. They are as under:-

Article 17 – Protection of the environment, the biosphere and biodiversity

Article 19 – Ethics committee

These principles should be adequately represented in Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology, Biochemistry in order to make it commensurate it in conformity with the UNESCO universal declaration. These principles need to be articulated by working out their placement, learning level and modes of teaching and assessment.

The competencies framed for article 17 are two – first covering the cognitive domain with K and KH levels in the Miller’s pyramid and second covering the psychomotor and affective domains with S and SH levels in the Miller’s pyramid respectively. The competencies framed for article 19 are two – first covering the cognitive domain and second covering the psychomotor and affective domain with K, KH and S, SH levels in Miller’s pyramid respectively.

Addition of the suggested competencies would take into account the omissions realised in Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology and Biochemistry when critically appraised as against the UNESCO universal declaration of human rights and bioethics so
as to make it commensurate with the latter in the best way possible.

Protocols and guidance materials on ethical issues related to laboratory medicine have developed by many countries and professional agencies. For instance, the International Organization for Standardization (ISO) has created ISO 15189:2012 “Medical laboratories – Requirements for quality and competence”. Numerous professional organizations have outlined codes of ethics for clinical laboratory professionals. Despite importance of ethics in laboratory Medicine, there is variability in education that is focused on ethics in the laboratory Medicine.

So, there is a perceived need for systematic training programs for ethical considerations in laboratory Medicine in the existing Postgraduate Curriculum of Pathology, Microbiology and Biochemistry. Inclusions of “Bioethics in Laboratory Medicine” in systematic manner into the Existing Postgraduate Curriculum of Pathology, Microbiology and Biochemistry with reference to Bioethical principles incorporated in UNESCO Declaration will raise awareness with regards to various ethical dilemmas during their day to day working in Medical Laboratory.

The competencies framed under “Bioethics in Laboratory Medicine” are covering the cognitive domain with K and KH levels in the Miller’s pyramid and remaining competencies covering the psychomotor and affective domains with S and SH levels in the Miller’s pyramid respectively.

Modes of teaching these competencies are didactic lectures as well as large and small group discussions, focussed group discussions. Modes of assessment for the cognitive domains can be in the form of short answer questions, long answer questions as a part of the respective theory examination. Modes of assessment of the psychomotor and affective domains can be in the form of viva voce, oral examination and clinical case presentation.

Conclusion

The present study deals with the mapping and matching of the competencies included in Guidelines for Competency Based Postgraduate Training Programme for MD in Pathology, Microbiology and Biochemistry with the UNESCO universal declaration on human rights and bioethics. This has brought out subsequent omissions which need to be managed in order to make competencies in Existing PG curriculum of Pathology, Microbiology and Biochemistry comparable with the UNESCO universal declaration and therefore, make it better and standardised on global and international level. These recommendations as suggested competencies pertaining to exclusions in Existing PG curriculum and addition of “Bioethics in Laboratory Medicine” can fulfil the realised omissions in the existing PG curriculum of these subject’s competencies.

Limitations

A detailed study of actualized operation and outcome thereto are beyond the scope and ambit of the present study taking into account the actualization of the suggested competencies thereto.

Ethical Clearance:

Institutional Ethical Committee Clearance was obtained from Institutional Ethical Committee of university.

Bibliography


