



Assessment of the Practice of Bioethics Education in a Tertiary Institution of Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Authors IOR, OSI and AJP conceived and designed the study. Authors AOC, EGE, and AOV contributed to data acquisition and sorting. Data analysis and interpretation was carried out by AJP, UEF, and IOR. First draft of the manuscript was written by authors EOS, IOR, and OSI. All authors critically reviewed the manuscript for important intellectual content. Authors read and approved the final manuscript.

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ABSTRACT

Background/Aim: Bioethics examines the ethical problems that arise from advancements in biology and medicine, focusing on moral considerations related to healthcare policies and practices. The aim of this study was to assess the practice of Bioethics education in a tertiary institution in a state in Southern Nigeria, in order to foster the implementation of bioethical education in tertiary level.

Methodology: Focus group dialogues were conducted with fifth-year medical students, along with a key informant interview involving a department head. The data were analyzed following Creswell's six-step approach to qualitative analysis.

Results: Nine respondents were recruited for this study. In the course of data analysis, the following themes were identified: Integration, Teaching Methods, Evaluations, Significance, Personal Development, and Recommendations.

Discussion: The respondents all had a good knowledge on Bioethics and stated that practical sessions will be more useful than just class lectures. An earlier onset of Bioethical education before the start of clinical postings was also proffered.

Conclusion: Knowledge and practice of bioethics was high in this study and the study participants had positive attitude towards its education. Despite this, a lot has to be done to enhance its coverage and impact on the lives of students and educators. Each code obtained will help to foster medical ethics education for all institutions. In addition, further studies can be conducted on measures to help students internalize ethical issues.

Keywords: Practice; bioethics education; focus group; key informant; methods; assessments.

1. INTRODUCTION

1.1 Background

Life is a fundamental prerequisite for all human endeavors, and the quality of life forms the basis for humanity's advancement. Therefore, life education remains an endless educational focus. Bioethics brings ethical values and principles into consideration, evaluating the impact of human actions on human life, animal life, plant life, and the environment [1].

Bioethical reflection demands a firm foundation to ensure the incorporation of arguments from various scientific disciplines into the reasoning process [2].

From an educational perspective, teaching bioethics offers a chance to cultivate critical thinking and skills, emphasizing responsibility, democracy, and respect for others. This is especially important for building competencies in decision-making, health promotion, education, and empowerment [3].

Bioethics explores the ethical dilemmas arising from advancements in biology and medicine. It also involves moral evaluation in the context of healthcare policy and practice [4]. Bioethics addresses the ethical issues that arises at the

intersection of life sciences, biotechnology, medicine, politics, law, and philosophy. It covers the study of values, often referred to as "the ethics of the ordinary," in areas such as primary care and other medical fields. Additionally, ethics extends to numerous disciplines beyond the biological sciences [4].

The term "Bioethics" (from the Greek words bios, meaning life, and ethos, meaning behavior) was made known in 1926 by Fritz Jahr in an article discussing a "bioethical imperative" as regards the use of animals and plants in scientific research [5].

Ethics, also known as moral philosophy, is a part of philosophy that focuses on organizing, justifying, and proposing principles of right and wrong behaviour [6]. Ethics, along with aesthetics, addresses issues of value and forms part of the philosophical branch known as axiology [7]. Ethics aims to address questions of human morality by defining concepts like good and evil, right and wrong, virtue and vice, and justice and crime.

Bioethics is a trans-disciplinary field that examines ethical issues across healthcare, science, business, law, and policy. Areas of bioethical inquiry include medical ethics, animal ethics, and environmental ethics, with some

overlap between them [8,9]. As described by Potter, the concept of bioethics encompasses not only medical ethics but also all areas related to the concept of life. This framework can be applied to the ethics of various interventions involving human beings, including health education and promotion [10].

When students are done with secondary school, they experience significant changes in their environments, often living away from home for the first time. College exposes them to people from diverse backgrounds, values, and perspectives. Following the development of a solid foundation in moral character and ethical reasoning in primary school, and the application of these skills to certain topics in secondary school, college ethics education provides additional opportunities for application and refinement. In undergraduate programs, students begin to focus their studies by selecting specific tracks and majors. College courses in ethics can equip students with the tools to identify, address, and resolve ethical dilemmas they may face in their professional lives [11].

Bioethics education has been incorporated into undergraduate curricula in various ways. For instance, the Kennedy Institute of Ethics has launched several initiatives at Georgetown University that shows the wide range of opportunities for instructors to work together in creating interdisciplinary learning experiences centered on ethics [12].

Africa shows that bioethics education and ethical issues have often been unintentionally acknowledged, minimized, or ignored by local governments for the past fifty to sixty years. This oversight is unacceptable given the necessary role of bioethics in promoting and safeguarding the well-being of humanity [13].

In Nigeria, the West African Bioethics (WAB) Training Programs, supported by the National Human Genome Research Institute of the National Institutes of Health and a research grant from the Fogarty International Centre, offer strong leadership in the field of bioethics education. Empirical studies assessing research ethics knowledge have shown that most participants possess a considerable understanding of the subject [14].

Recently, bioethics has grown into a thriving interdisciplinary field of scholarly study, evolving over the past decades from bedside

consultations to engaging in public policy discussions and broader cultural and social dialogues focused on everyday life issues. Today, bioethics is increasingly recognized as an independent discipline. In many Western countries, the field is well-structured, offering undergraduate minors and majors, high school courses, masters and doctoral programs, as well as professional associations [15].

Incorporating ethics into education at every level presents a valuable approach to enhancing ethical literacy and teaching students to evaluate their subjects from an ethical perspective [16].

This study provides an account for the value and use of Bioethics in the 'shaping' of students of tertiary institutions.

At present, Bioethics is not included in the curriculum of all tertiary institutions in the researchers region, and its integration has not been a focus in recent research. This study aims to address the existing knowledge gap in this area. Additionally, the division between science and values, particularly ethical considerations, can be seen as a relatively recent development in Western and secular contexts [17].

The purpose of the study was to assess the practice of Bioethics education in a tertiary institution using Ambrose Alli University, Ekpoma, Edo State as the area of study in order to foster the implementation of bioethical education in tertiary level. The study further sought to explore the following specific objectives:

1. To demonstrate self-perception on the importance of Bioethics in education.
2. To assess students' knowledge on Bioethics.
3. To determine the level of acceptance of the implementation of Bioethics to curriculum by school administrators.

2. METHODOLOGY

2.1 Study Area

The study was done in a tertiary educational institution, Ambrose Alli University (Faculty of Clinical Sciences), sited in Irrua, Esan Central Local Government Area of Edo State, Nigeria. The Faculty of Clinical Sciences has 16 departments, closely associated with Irrua

Specialist Teaching Hospital which is located adjacent to the school.

2.2 Study Design

A cross-sectional design with a Focus Group Discussion and Key Informant Interview was adopted for this study.

2.3 Study Population

The study population was fifth-year medical students of the Faculty of Clinical Sciences, Ambrose Alli University and a school administrator (Head of Department).

2.4 Selection Criteria

2.4.1 Inclusion criteria

1. Fifth year students who consented to be part of the study and who have received basic lectures in Ethics.
2. School administrators (Head of Department).

2.4.2 Exclusion criteria

1. Those ill or too sick to participate in the study.
2. Those that are away from school at the time of the study.
3. Those that have not had lectures in medical ethics.
4. Those that did not consent.

2.5 Study Duration

This study spanned from April to October, 2019.

2.6 Sample Size

The sample size comprised of 9 responders (8 students and a school administrator). The reason for a small concise sample size is to allow for a robust, in-depth discussion to achieve desirable results.

2.7 Sampling Technique

An invitation was sent through the class representative and consenting students gave their contacts. The Head of Dentistry Department was invited directly and she obliged. Consent forms were handed to each responder after describing the purpose of the research to them.

The sampled population was made up of fifth year students who had completed a course in ethics education, and have had clinical exposure, and a head of department. Overall, focus group discussions were successfully conducted in 2 sessions and key informant interview in a session.

2.8 Study Instrument

Focus group discussion and interview guides were used to find out students' views in detail. Focus group interviews are advantageous compared to one to one interviews in terms of clarifying questions, receiving more extensive comprehensive opinions by means of interactions among the participants and seeking answers to the questions like "why?", "how?" and "what?" [18,19,20].

2.9 Data Collection Method

For each focus group interview, four students were invited. Two focus group sessions were conducted within the same week in a classroom, led by two moderators (the study's author and a colleague) trained in facilitating focus group discussions. The first moderator asked the questions and distributed papers with the questions, while the second moderator handled the technical aspects of recording and took notes during the session.

At the start of the interviews, the students were briefed on the purpose of the focus group and the objectives of the study. They were informed that the sessions would be recorded, and only their code names would be used. After obtaining signed informed consent, each student was assigned a code (A-H), which was used during the transcription of the recordings.

2.10 Data Management

2.10.1 Measurement of variables

The researchers posed several open-ended questions to the respondents, encouraging them to elaborate on their views regarding the medical ethics education they received in their fifth year of medical training. These questions included:

- What is your knowledge on bioethics?
- What are your thoughts on integrating ethics education into the medical education curriculum? (KII specific)

- What are your opinions on the teaching methods?
- What are your thoughts on how students' learning in bioethics is evaluated and the assessment methods use?
- What do you think are the positive aspects of bioethics education?
- Has bioethics education influenced any changes in your opinions or behavior? If so, could you provide examples?
- What aspect(s) of bioethics education do you think need(s) to be improved in your institution?

The data collection was completed following the second focus group discussion.

2.10.2 Data analysis

Immediately following the interviews, the researchers transcribed the data verbatim. Both interviews were organized into tables that included the students' code names, interview questions, and their responses. This structured format facilitated the analysis of the data. The transcribed text was reviewed several times to identify repetitive words and phrases relevant to the study's objectives, and codes were established. Subsequently, themes or categories (knowledge, importance, and implementation recommendations) were created based on the interconnected codes. The findings will be interpreted and presented in the fourth chapter, with direct quotes from some participants used to support the findings [21].

2.11 Study Limitation

The limited number of focus group interviews might be viewed as a limitation; however, it falls within the recommended range for such studies. There is no specific number of interviews prescribed for collecting information in this case [22]. Barbour indicates that conducting 2 to 4 focus group interviews is adequate for data collection [23].

The study was carried out in a single faculty (Clinical Sciences) and it may not be generalized to other faculties (Basic Sciences). Therefore, the findings of this study may not highlight what happens at the lower classes.

3. RESULTS

Two focus group discussions and a key informant interview and two focus group

discussions were held and a total of nine respondents (a female administrator and eight students: five males and three females) participated in the interviews. The groups consisted of four students each. The average age of students was 26 years (min: 23 - max: 29). The average discussion time was approximately 52 minutes and 20 minutes for the key informant interview. The interviews were completed in October 2019.

Upon completing the qualitative data analysis, seven themes were identified. Table 1 presents the themes along with their corresponding codes. The statements categorized under the theme "suggestions" were evaluated and organized into codes, which are displayed in a separate table due to their length (Table 2).

3.1 Importance of Bioethics in Education

All respondents stressed on the importance of Bioethics. Physicians are anticipated to be aware of their ethical, legal, and moral responsibilities in their practice and to conduct themselves accordingly. Bioethics education, especially when taught early, helps the clinicians in discharging their duties effectively while bearing in mind their safety and wellbeing of the patient as regards the four basic principles of Medical Ethics as postulated by Tom Beauchamp and James Childress- authors of the textbook "Principles of Biomedical Ethics". In general, Bioethics promotes a safety culture and sets appropriate safeguards culminating in better healthcare delivery systems.

A few remarkable expressions were as follows: "It guides patient-doctor relationship", "It distributes the benefits and burden of care across society", "It would enhance a safety culture and set appropriate safeguards" and "It will grossly reduce the incidence of medico legal issues".

3.2 Students' Knowledge on Bioethics

Broad-gauged knowledge on Bioethics was expressed by all respondents. Bioethics, with special focus on Medical Ethics, guides the functioning of professions. In Medicine, the four principles of autonomy, beneficence, non-maleficence and justice apply values to the clinical practice and in scientific research. These principles are judged and weighed against each other, taking into consideration the scope of their application, and this allows doctors, care providers and families to create a treatment plan and work towards a common goal.

Table 1. Themes and codes identified at the end of the qualitative data analysis

Themes	Codes
Incorporation	Very Helpful Cannot be over-emphasized Great importance Essential Welcome development
Education Methods	Lectures only Inadequate
Assessments	Written exams only Good Inadequate
Importance	Better healthcare systems Protects doctors' rights Protects patients' rights Safety culture Appropriate safeguards Dos and don'ts of the profession
Self-change	Positive Confidentiality Misconceptions corrected Politeness Patient-doctor relationship Boundaries
Aspect to be improved	Methods Assessments Incorporation time
Suggestion	(in a separate table for sake of long sentences)

Table 2. Statements/Codes under the theme *Suggestions*

Aspect	Suggestion
Methods	Activities allowing for discussions and interaction with clinicians Use of case studies Socializing with patients Organizing seminars builds interest and recollection Opportunity to put the knowledge given in the lectures into practice. Interpreting assignments and providing students with feedback Methods should be aimed at making the students think out solutions instead of memorizing answers Discussion and movie sessions will improve interest and recollection Sessions should be open to voluntary participation Affording to students the opportunity of more practical sessions Inviting students to Ethics Conferences Planned meeting with clinicians Practical sessions aimed at causing behavioral changes Teaching aids
Assessments	Use of case demonstrations Asking case-based questions in examinations Report on book assignments
Incorporation time	Introduction of bioethics to preclinical students or just at the start of clinical, that is, in their fourth year of study will grossly improve educational outcome

3.3 Willingness to Implement Bioethics to Curriculum by School Administrators

Incorporation of Bioethics into the medical curriculum is a welcome development as it will afford the student the opportunity to be abreast with the dos and don'ts of their intended profession. Students are exposed to the relationship between Biotechnology, Medicine, Politics, Law and Philosophy. Already implemented in this institution, Bioethics education is gaining grounds in the country, with medical schools being the forerunners. However, more studies should be done in other education cadres to assess the willingness of school administrators to implement bioethics to curriculum.

4. DISCUSSION

The students' readiness to share their thoughts during the focus group interviews, along with their active involvement, facilitated the gathering of diverse data. This section discusses the findings in relation to the literature review and the themes derived from the interview analysis.

The mean age of the students was 26 years which was higher than 22.5 years in a qualitative study by Ahmet Can Bilgin et al in 2018 [24]. This could be explained by differences in data collection and differences in age ranges.

In this study, all the respondents had a good knowledge of Bioethics and all the students expressed their opinions on the importance of Bioethics education. This was in concordance with a study by Johnston C. Haughton in 2007 which reported that students agreed with the importance and necessity of medical ethics education [25]. A few remarkable expressions were as follows: "It guides patient-doctor relationship", "It distributes the benefits and burden of care across society", "It would enhance a safety culture and set appropriate safeguards" and "It will grossly reduce the incidence of medico legal issues". Thus, the incorporation of Bioethics education is a welcome development and its importance cannot be over-emphasized (Theme: Incorporation, Importance).

The respondents felt a strong need to share their views on the methods employed in bioethics education. The following codes were identified under this theme: "lectures only" and "inadequate." They expressed that students

found ethics lectures to be unengaging and impractical. Aldughaiter et al. noted that students were generally opposed to didactic lectures. Additionally, a notable finding in this study was that students linked lectures with assessments and viewed them as an easy means of achieving a grade [26]. Improvement is thus required (Theme: Education methods, Aspect to be improved).

Like all other subjects in medical education, bioethics also requires assessment, and the respondents supported this idea. Effective teaching and assessment methods facilitate better internalization, ultimately resulting in positive behavioral changes. A study by Ozan S, Timbil S, Semin S, et al. involving first-year medical students revealed that 82% did not see the need for assessment, while 40% of sixth-year students from the same faculty believed that assessing medical ethics education was essential [27] (Theme: Assessments, Behavioral Change).

On the part of school administrators, implementing Bioethical education programs has a positive bearing, as voiced in the key informant interview. It is a welcome development. However, many factors come into play such as political will, sourcing for and distribution of resources. A 2004 survey in the US and Canada revealed that 78% of medical schools incorporated ethics into their preclinical courses [28]. This is an affirmation of the finding in this study.

5. CONCLUSION

Knowledge and practice of bioethics was high in this study and the study participants had positive attitude towards its education. Despite this, a lot has to be done to enhance its coverage and impact on the lives of students and educators.

6. RECOMMENDATIONS

Each statement or code obtained from the respondents' expressions and placed under the theme "suggestions" can be considered as suggestions to the faculty for developing a better bioethical educational system.

When bioethics education is incorporated into medical curricula, it is crucial to highlight the differences between ethical reasoning and scientific reasoning, pointing out that the methods for acquiring scientific knowledge is not

the same as those for reaching ethical conclusions. To enhance educational methods, seminars and case demonstrations can be beneficial.

An earlier incorporation of bioethical education, preferably at the very start of clinical sciences, which is in the fourth year, will be most beneficial. This was also emphasized the students.

More studies should be done and extensively documented towards ethics especially in the African climate.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Authors hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts. This guarantees the fact that the originality of the study was maintained.

CONSENT

Informed consent was obtained from the respondents after communicating the purpose and benefits of the study to them, as well as assuring them of confidentiality.

ETHICAL APPROVAL

Ethical approval was sought from the Ethical review board of ISTH. Permission was obtained verbally from the Class Representatives of the 500 level class.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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