



Ethics in Biomedical Research

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Outline



- What is Ethics in Research
- Importance of Ethics in Biomedical Research
- Core Ethical Principles of Research
- Informed Consent
- Ethical Review Committees
- Research Misconduct

■ Objectives

❖ By the end of this lecture, students should be able to:

1. Define Ethics and explain its purpose.
2. Understand the Importance of Ethics in Biomedical Research.
3. Recognize the Core Ethical Principles of Research
4. Understand Informed Consent

❑ What is Ethics in Research?



- Is the set of **moral principles** and **professional standards** that guide how research should be conducted to ensure **honesty**, **fairness**, and **protection of participants**.
- It ensures that research is done in a **responsible and trustworthy way**.



❑ Importance of Ethics in Biomedical Research



- Ethical research is essential because it:
 - i. Protects participants from physical and psychological harm
 - ii. Ensures voluntary participation.
 - iii. Maintains public trust in science.
 - iv. Promotes honesty and transparency
 - v. Prevents misuse of research data
 - vi. Avoidance of plagiarism and data falsification

❑ Core Ethical Principles of Research:



- The core ethical principles of research are fundamental guidelines that ensure research is conducted responsibly and protects participants.

1. Respect for Persons (Autonomy)
2. Beneficence
3. Justice

❏ What is Informed Consent



- Is the process by which a **research participant** is given clear and **complete information about a study** and **voluntarily agrees** to take part.
- It ensures that participation is **knowledgeable** and **voluntary**.

➤ Example:

- A patient signs an informed consent form before participating in a drug trial.

❑ Main Elements of Informed Consent:

- In informed consent, participants must be told:
 1. The purpose of the research.
 2. The procedures involved.
 3. Possible risks and benefits.
 4. Their right to refuse and withdraw at any time.
 5. How their information will be kept confidential.

Informed Consent

(Title of the project)

Participant's name

*We invite you to take part in _____ which seeks to
_____ on the _____/20_____. Participating in
this project is totally voluntary.*

The purposes of this project are

You are being offered this opportunity because

*An estimated _____ number of people will participate in this
_____. The duration of this project will be _____.*

If you agree to participate in this project, your involvement will last for

❑ What is Ethical Review Committees



- Are **official groups** that **evaluate research projects** to make sure they are **ethical**, **safe**, and **respectful to participants**.
- They review studies involving **humans** or **animals** before the research begins.



☐ **Main roles of Ethical Review Committees:**



1. Protect participants.
2. Review research design.
3. Ensure informed consent.
4. Monitor ethical standards.

➤ Ethical Review Committees may also be called: **Institutional Review Boards (IRBs)**, **Research Ethics Committees (RECs)**.

❑ Confidentiality and Privacy in Research:



➤ Privacy in Research:

- Is respecting a participant's **right to control personal information** and **personal involvement in the research**. In research, privacy includes:
 - i. Collecting only **necessary information**
 - ii. Conducting interviews in **private settings**
 - iii. Allowing participants to **choose what information to share**

❏ Confidentiality in Research:



- Is **protecting the information** collected from **participants** so it is not disclosed to unauthorized people.

➤ In research, confidentiality includes:

1. Storing data in secure files or password-protected systems.
2. Using codes instead of names.
3. Limiting access to data to authorized researchers only.
4. Reporting results in group form, not identifying individuals

❏ What is Research Misconduct:

- Refers to **unethical** and **dishonest** behavior in conducting or **reporting research**. It violates the principles of **honesty**, **accuracy**, and **integrity** in science.

➤ Main types of research misconduct:

1. Fabrication (inventing data).
2. Falsification (changing results).
3. Plagiarism (copying work)

❑ **Consequences of research misconduct:**



- i. Loss of professional reputation
- ii. Withdrawal of published papers
- iii. Legal or disciplinary action
- iv. Loss of public trust in science.

❑ Ethical Issues in Biomedical Research:



➤ Research on Vulnerable Groups. Special protection is required for:

- Children, Elderly patients, Mentally impaired individuals

✓ Example:

- Parental consent is required when children participate in research.
- Researchers must obtain permission before using blood or tissue samples.

❏ **Role of Medical Analysis Students:**



➤ **Students must:**

- Follow ethical guidelines in laboratory work
 - Respect patient confidentiality
 - Report accurate results
 - Avoid plagiarism
- Example: Not sharing patient test results outside the laboratory.

❏ Case Examples (Ethical Situations):



➤ Case 1: Research with Children:

- A researcher wants to test a new learning program in a school. Some students agree to participate, but their parents were not informed.
- **Ethical issue:** Children cannot give full legal consent.
- **Correct action:** Obtain parental/guardian consent and child assent before participation.

❑ **Case Examples (Ethical Situations):**



➤ **Case 2: Breach of Confidentiality:**

- A researcher shares participants' personal medical data with colleagues outside the research team without permission.
- **Ethical issue:**
- **Correct action:**

❖ Quiz:

1. The ethical principle that aims to maximize benefits and minimize harm is called _____.
2. The ethical principle concerned with fairness in participant selection and treatment is called _____.
3. The process through which participants receive relevant information and voluntarily agree to participate is called _____.
4. An independent body that reviews research involving human participants is commonly called an _____ Review Committee.
5. Ethical research should protect participants from unnecessary physical and psychological harm.
6. Participants should be forced to participate if the research has important scientific value.
7. Plagiarism has no effect on the credibility of scientific research.
8. Name the three core ethical principles of research.
9. List the main elements of informed consent.
10. What is an Ethical Review Committee.
11. Differentiate between privacy and confidentiality.

References



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2. World Medical Association. (2013). Declaration of Helsinki.
3. Council for International Organizations of Medical Sciences (CIOMS). (2016). International Ethical Guidelines for Health-related Research Involving Humans.



Thanks