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Ethics and Integrity in Research

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What are research ethics and research integrity and why are they important?

Research ethics and integrity practices make sure that research is conducted according to the **highest standards of practice**, and with the **minimal risk of adverse or harmful outcomes or consequences**. The research community and a wider public will have **confidence** in the outcomes of your research and the **quality** of your research output will be enhanced.

What do we get from good Ethics and Integrity????

- Research is conducted honestly
- Provides confidence that conclusions drawn from research can be relied upon to be accurate
- Minimises potential risks to researchers and participants of research, protecting the vulnerable and ensuring their safety and wellbeing
- Safeguards data collected during the course of research, particularly sensitive data, respecting confidentiality
- Avoids unfair allegations of misconduct, whilst ensuring that genuine concerns are appropriately investigated
- Prevents people being drawn into terrorism
- Ensures conflicts of interest are identified and avoided

What do I need to consider?.....

If your project involves any of the following, you will need to think about how to address these. Are there potential risks to researchers and participants involved in the research? This could be either the activity to be undertaken or the location the research is to be conducted. For example:

- Are you investigating illegal behaviours or activities?
- Could the dissemination of your findings adversely affect participants?
- Will your research be carried out in a hazardous area or in an area not recommended for travel?
- Does your research concern groups which are legally construed as terrorist or extremist?
- Will the research expose either researcher or participants to situations or circumstances they might find distressing?

What do I need to consider??....

Are you collecting personal data, either face to face or online? If so,

- How will you obtain the consent of participants?
- How will this be securely stored and maintained?
- How will this data be used?
- With whom will it be shared?
- How and when will it be disposed of?

What do I need to consider.....

Will any of the participants be classed as vulnerable? For example:

- Are any of them under 16 years of age?
- Unable to communicate in the language in which the research is conducted?
- Members of a stigmatised or marginalised social group?
- Have a relationship with the researcher (either personally or professionally)?
- How will you show that any participants have agreed to take part?
- Will they be able to give informed consent individually?
- Will consent need to be obtained from parents or guardians?

Will the purpose of your research be concealed from participants at the outset?

Definitions

Research Ethics: Research ethics provides guidelines for the responsible conduct of biomedical research. Research ethics is specifically interested in the analysis of ethical issues that are raised when people are involved as participants in research.

Research Integrity: Active adherence to the ethical principles and professional standards essential for the responsible practice of research

Generally speaking of Ethics

When most people think of ethics (or morals), they think of rules for distinguishing between right and wrong, such as the Golden Rule ("**Do unto others as you would have them do unto you**"), a code of professional conduct like the Hippocratic Oath ("**First of all, do no harm**"), a religious creed like the Ten Commandments ("**Thou Shalt not kill...**"), or a wise aphorisms like the sayings of Confucius. This is the most common way of defining "**ethics**": norms for conduct that distinguish between acceptable and unacceptable behaviour.

Why it is important to adhere to ethical norms in research????

- norms promote the aims of research, such as knowledge, truth, and avoidance of error. For example, prohibitions against **fabricating, falsifying, or misrepresenting research data** promote the truth and minimize error.
- since research often involves a great deal of cooperation and coordination among many different people in different disciplines and institutions, ethical standards promote the **values that are essential to collaborative work**, such as trust, accountability, mutual respect, and fairness.
- many of the ethical norms help to ensure that **researchers can be held accountable to the public**.
- ethical norms in research also help to **build public support for research**. People are more likely to fund a research project if they can trust the quality and integrity of research
- many of the norms of research promote a variety of other important moral and social values, such as **social responsibility, human rights, animal welfare, compliance with the law, and public health and safety**.

Responsible research conduct

1. **Honesty and fairness** in proposing, performing, and reporting research;
2. **Accuracy and fairness** in representing contributions to research proposals and reports;
3. **Proficiency and fairness** in peer review;
4. **Collegiality** in scientific interactions, communications and sharing of resources;
5. **Disclosure** of conflicts of interest;
6. **Protection of human subjects** in the conduct of research;
7. **Humane care** of animals in the conduct of research;
8. Adherence to the mutual responsibilities of mentors and trainees.

Brief history - ethical guidelines for the conduct of research

- **Nuremberg Code (1946-1947)**
- **Helsinki Declaration (1964)**
- **Belmont Report (1979)**
- **Animal Welfare Act**

Case Study Example 1

Query Jamal is a graduate student working under the supervision of professor, Dr. Kerry. Dr. Kerry is conducting research on tooth decay and has gathered data from hundreds of dental patients. Jamal uses Dr. Kerry's data to analyse a research question that he came up with on his own about tooth enamel erosion. His question is his own idea, but is still based on what he learned about tooth and enamel decay under Dr. Kerry. Jamal's friend, Darcie, helped Jamal design a statistical computer program for data analysis, but did not contribute in any other way to the research. When writing up his results, Dr. Kerry helped Jamal write the methods section of his manuscript and reviewed his final results and conclusions, as well as the final draft of the entire manuscript.

How should authorship be decided in this case?

Answer

Jamal should be listed first as the primary author because he is most closely involved in the research project. Dr. Kerry should be listed second as co-author because she meets the ICJME requirements of authorship. Darcie does not meet the criteria for authorship, but she should be acknowledged for her contribution if she so consents.

Case Study – Example 2

Belinda is publishing her first article that builds on the research of a similar project she did three years prior with her colleague, Isaiah. In Belinda's current article she has placed a graph from the article she and Isaiah co-authored about their previous research. Isaiah created the original graph.

Does Belinda have to site the previous article?

Answer

Yes. Belinda is using the ideas of another person(s). Even though the graph came from an article she herself worked on, she should appropriately cite the prior publication to show that:

- a) the data and results depicted in the graph are not new and have been previously published;
- b) the idea originated with another entity (in this instance the other entity is the research team of Belinda and Isaiah).

Case Study – Example 3

Dr. Connelly is a faculty member at Springer University. He has been asked to review a publication for a biomedical journal. After receiving the article, he realizes the author is a student working under the guidance of a fellow faculty member in a neighbouring department. The faculty member happened to mention the merits of the student at a recent social gathering.

Does Dr. Connelly have a reportable conflict of interest?

Answer

The peer review process relies on a foundation of confidentiality. Dr. Connelly should contact the journal editor and report his belief that the manuscript originated from the university where he is employed. He and the editor should then open a dialogue about how this could potentially effect his participation in the peer review process and how to proceed.

Case study example 4

Dr. Garrath is a gynaecological physician and an investigator on a research project for a pharmaceutical company testing a new topical treatment for a sexually transmitted disease that must be administered frequently and can cause itching and irritation. The company is paying her a rate of \$2,000 per person enrolled.

Does she have a conflict of interest?

Answer

Yes. Dr. Garrath's obligation to her patients has the potential to be compromised by her personal interests. While her job is to protect and promote her patients' welfare and health, at \$2,000 per person enrolled, she might be tempted to recruit more people into the study for her personal financial benefit by encouraging her patients to participate and downplaying the side-effects and burdens of participation. Dr. Garrath should very carefully evaluate whether this conflict of interest might impact her patients' health and welfare and how to solve this potential conflict before agreeing to be an investigator. She should also report this potential conflict to the proper administration authority at the clinical site where she is practicing

Study Case Example -5

Joanne is a researcher at George Kent College. She collected data on rural mental health patients and just published an article on her research in a scholarly journal.

Joanne plans to independently write a book about her research and develop educational tools that she can sell to professionals. Joanne is partly funded through her college, but most of her research was paid for with a private stipend from a charitable foundation.

Joanne is reluctant to publicly disclose her data before her book is finished.

Can she hold off on sharing her data until she completes her book?

Answer

Joanne has published an article on her data and according to NIH policies, she should be prepared to disclose her data at the time of publication. However, Joanne is not funded with NIH dollars. She would have to use her judgment about publishing her data and be prepared to give a strong reason to the editor of the journal (i.e. she is writing a book) as to why she isn't sharing her data at this time.

Research Misconduct

Research misconduct is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results.

Fabrication is making up data or results and recording or reporting them.

Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.

Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.

Research misconduct does not include honest error or differences of opinion

Ethical Principles

Honesty: Strive for honesty in all scientific communications. Honestly report data, results, methods and procedures, and publication status. Do not fabricate, falsify, or misrepresent data. Do not deceive colleagues, research sponsors, or the public.

Objectivity: Strive to avoid bias in experimental design, data analysis, data interpretation, peer review, personnel decisions, grant writing, expert testimony, and other aspects of research where objectivity is expected or required. Avoid or minimize bias or self-deception. Disclose personal or financial interests that may affect research.

Integrity: Keep your promises and agreements; act with sincerity; strive for consistency of thought and action.

Ethical Principles.....

- **Carefulness:** Avoid careless errors and negligence; carefully and critically examine your own work and the work of your peers. Keep good records of research activities, such as data collection, research design, and correspondence with agencies or journals.
- **Openness:** Share data, results, ideas, tools, resources. Be open to criticism and new ideas.
- **Respect for Intellectual Property:** Honor patents, copyrights, and other forms of intellectual property. Do not use unpublished data, methods, or results without permission. Give proper credit or acknowledgement for all contributions to research. Never plagiarize.
- **Confidentiality:** Protect confidential communications, such as papers or grants submitted for publication, personnel records, trade or military secrets, and patient records.
- **Responsible Publication:** Publish in order to advance research and scholarship, not to advance just your own career. Avoid wasteful and duplicative publication.

Ethical Principles.....

- **Competence**

Maintain and improve your own professional competence and expertise through lifelong education and learning; take steps to promote competence in science as a whole.

- **Legality**

Know and obey relevant laws and institutional and governmental policies.

- **Animal Care**

Show proper respect and care for animals when using them in research. Do not conduct unnecessary or poorly designed animal experiments.

- **Human Subjects Protection**

When conducting research on human subjects, minimize harms and risks and maximize benefits; respect human dignity, privacy, and autonomy; take special precautions with vulnerable populations; and strive to distribute the benefits and burdens of research fairly.

Other Deviations

- Publishing the same paper in two different journals without telling the editors
- Submitting the same paper to different journals without telling the editors
- Not informing a collaborator of your intent to file a patent in order to make sure that you are the sole inventor
- Including a colleague as an author on a paper in return for a favor even though the colleague did not make a serious contribution to the paper
- Discussing with your colleagues confidential data from a paper that you are reviewing for a journal

Other Deviations

- Using data, ideas, or methods you learn about while reviewing a grant or a papers without permission
- Trimming outliers from a data set without discussing your reasons in paper
- Using an inappropriate statistical technique in order to enhance the significance of your research
- Bypassing the peer review process and announcing your results through a press conference without giving peers adequate information to review your work
- Conducting a review of the literature that fails to acknowledge the contributions of other people in the field or relevant prior work

Other Deviations....

- Stretching the truth on a grant application in order to convince reviewers that your project will make a significant contribution to the field
- Stretching the truth on a job application or curriculum vita
- Giving the same research project to two graduate students in order to see who can do it the fastest
- Overworking, neglecting, or exploiting graduate or post-doctoral students
- Failing to keep good research records
- Failing to maintain research data for a reasonable period of time

Other Deviations....

- Making derogatory comments and personal attacks in your review of author's submission
- Promising a student a better grade for sexual favors
- Using a racist epithet in the laboratory
- Making significant deviations from the research protocol approved by your institution's Animal Care and Use Committee or Institutional Review Board for Human Subjects Research without telling the committee or the board
- Not reporting an adverse event in a human research experiment
- Wasting animals in research

Other Deviations.....

- Exposing students and staff to biological risks in violation of your institution's biosafety rules
- Sabotaging someone's work
- Stealing supplies, books, or data
- Rigging an experiment so you know how it will turn out
- Making unauthorized copies of data, papers, or computer programs
- Owning over \$10,000 in stock in a company that sponsors your research and not disclosing this financial interest
- Deliberately overestimating the clinical significance of a new drug in order to obtain economic benefits

Parting Words

- **Research Ethics** is an integral part of graduate research.
- **STATEMENTS, FIGURES AND TABLES** Reproduced in a Report, Presentation and/or Paper require proper citation.
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End of Presentation

**Thank You for
Listening**