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Importance of Ethics in Safeguarding and Ensuring High Quality Research

By

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Abstract
The purpose of this article is to demonstrate the important of ethics in safeguarding and ensuring high quality research. Ethics are norms or standards of behavior that guide moral choices about individual behavior and their relationship with others. Ethics has also been defined as norms of conduct that distinguish between acceptable and unacceptable behavior. Research Ethics is defined as a code of guidelines on how to conduct scientific research in a morally acceptable way. The importance of Ethics in Research cannot be under estimated. Researchers world over face ethical dilemmas due to lack of adherence to ethical guidelines. Ethical lapses in research can significantly harm human and animal subjects, students, participants, researchers, institutions and the public. For example, a researcher who fabricates data in a clinical trial may harm or even kill patients. Responsible conduct of research is therefore important for safety of all involved in carrying out research. Further, prohibitions against fabricating, falsifying, or misrepresenting research data can promote the truth and minimize error. There is need for Research integrity in areas of falsification, fabrication and plagiarism. The goal of ethics in research is to ensure that no one is harmed or suffers adverse consequences from research activities. Researchers have carried out studies on importance of ethics in research. This is a desk top research study to sensitize researchers on the important of upholding high ethical standards when carrying out research. The study recommends that in order to ensure accuracy of scientific knowledge, ethics should be followed rigorously. The study recommends the need to sensitize researchers on the benefits of ethical research and that every researcher should be aware of the ethical considerations that need to be taken into account while undertaking research.

Key words: Research Ethics, Research Misconduct, Importance of Research Ethics

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1.0 Introduction

1.1 Background

Ethics is the cornerstone for conducting effective and meaningful research and as such, the ethical behavior of researchers is under unprecedented scrutiny (Best & Kahn, 2006; Field & Behrman, 2004; Trimble & Fisher, 2006). According to Fanelli (2009), the frequency with which scientists fabricate and falsify data or commit other forms of scientific misconduct is a matter of controversy. Few countries have a comprehensive response to misconduct, including countries such as the United Kingdom, which, having a long history of research and which have been debating research misconduct for years, have not found an adequate response (Fanelli, 2009). According to Joseph, et al. (2013); Steneck (2006), questionable research practices include: inaccuracy; tergiversation and bias in research publication among others.

Ethics are of significance in research and are considered as a key component. It is therefore a researchers responsibility to ensure that his or her aim is to provide original information, truth and avoid any errors (Shamoo & Resnik, 2015). Further, being ethical enables authors to adopt a collaborative approach for their research with due support from their mentors, guides and peers (Pont, 2008). As such, researchers need to have values such as fairness, trust and mutual respect among all those involved in their research. Further, researchers need to be ethical by being accountable to the general public by safeguarding animal or human subjects who will be a part of the research (Sieber, 2004).

The contention of this article is that research ethics is not just a formality, needed by academic journal editors, but it is a significant part of research, which is influenced by both the general trust in scientists, data protection, anonymity, and confidentiality, and the ability to build trust-based relationship with the respondents and retain it (Fanelli, 2009). Research ethics is not just requirements written in a digest or code of ethics, but also the researcher's philosophical and value position, as well as the discussion continuing for many decades and learning from painful mistakes (Jeanes, 2016).

1.2 Statement of the Problem

There is evidence of increasing global research misconduct and unseriousness (Fanelli, 2009). Joseph, et al. (2013), argue that codes of ethics have failed to control research misconduct, since the practical definition of an ineffective code is that it has failed to prevent illegal or unethical behavior that was prohibited by the code (Schwartz, 2004).

Worldwide, there are many ethical standards, definitions of codes of ethics, codes of conduct and their functions (Bateman, 2012). These can be described as formal documents that seek to send a message to the professional community as to their behavior, conduct and what is expected of them in the process of carrying out research.

However, despite institutions having some form of code of conduct, many researchers still involve themselves in research malpractice/ misconduct. In recent years, the international

scientific community has been rocked by a number of serious cases of research misconduct. Woo Suk Hwang, a Korean stem cell researcher published two articles on research with ground-breaking results in Science in 2004 and 2005 (Bornmann, Nast, & Daniel, 2008). Both articles were later revealed to be fakes (Cyranoski, 2006).

Cases of research misconduct have also been reported in Germany. Examples are those of the cancer researchers Friedhelm Herrmann and Marion Brach, the physicist Jan Hendrik Schön (Zankl, Fälscher, Schwindler & Scharlatane, 2003), the anesthesiologist Joachim Boldt (Antonelli,&Sandroni, 2013; Shafer, 2011) and the psychologist Diederik Stapel (Callaway,2011). In all the above cases, research results were massaged, images in scientific papers faked and research proposals from colleagues recommended for rejection and subsequently submitted as the wrongdoer's own. These and similar cases waste the time and research funds by other scientists. The greater the extent of the fraud and deception, the less likely it seemed that science would be able to operate in an atmosphere of trust (Cyranoski, 2006).

Local researchers have not been spared either. Studies have shown a high prevalence of research misconduct in Nigeria, with a study reporting that 68.9% of a group of researchers in Nigeria admitted to having committed at least one of eight listed forms of scientific misconduct (Okonta & Rossouw, 2012). The eight acts of research misconduct were plagiarism; falsifying data; intentional protocol violations related to subject enrolment; intentional protocol violations related to procedures; selective dropping of data from 'outlier' cases; falsification of biosketch, resume, or reference list; disagreements about authorship; and pressure from a study sponsor (e.g. pharmaceutical company or Device Company) to engage in unethical practices (Okonta & Rossouw 2012).

In Kenya, unethical practices have been witnesses in research. According to Githongo (2015), e-learning has particularly opened an avenue where institutions are relying heavily on plagiarized materials, instead of encouraging their elite to create original ones. This impinges on the rights of the copyright owners, denying them the right of pride of their work and the earnings that may accrue to their usage. This paper sought to establish the importance of ethics in academic and scientific research, and to raise awareness on the benefits of ethical research.

1.2 Objective of the study

The study sought to determine the importance of ethics in research.

1.3 Significance of the study

This study contributes to knowledge in explaining the importance of ethics in research. The study further will help authors to appreciate the benefits of ethical research. Most studies have focused on research misconduct without giving way forward to remedy the misconduct. It is envisaged that the recommendations of this paper will help promote research integrity and nurture a culture of ethical conduct in research.

Literature Review

2.0 Ethics and Research

2.1. A General Perspective of Ethics in Research

Researchers have defined ethics variously. As a branch of philosophy, ethics deals with the dynamics of decision making concerning what is right and wrong. Ethics as a discipline deals with the broader value system of our society that encompasses the consensual agreement on what is right and wrong. It is a discipline dealing with what is proper course of action for man (Aristotle, *cit in* Mckeon, 1941). Also known as moral philosophy, ethics involves, systematising, defending, and recommending concepts of right and wrong behaviour (IEP, 2024).

Research ethics are a way of conducting the research enterprise such that the three fundamental principles of research (respect, beneficence and justice) are upheld and thus ethical research must conform to the national and international accords and prescripts (Azenabor, 2008). Jeanes (2016) argues that research ethics is a unique part of professional ethics, as high-quality science requires its ethical practice. Resnik (2011) states that, the existence of ethical standards contributes to achieving the aims in scientific research knowledge, honesty, and error avoidance. For example, prohibition to falsify or misinterpret research data promotes fairness and helps to avoid mistakes. Basic definitions describing misconduct in science are fabrication, falsification, and plagiarism. William (2006) outlines some basic concepts of research ethics namely; autonomy, voluntary participation, free and informed consent (awareness, volunteerism and understanding), honesty, respect for vulnerable people, privacy and confidentiality, justice and inclusion and harm and benefit.

According to Wekesa, (2015), Kenya has an elaborate research system comprising of regulatory and executing institutions. The research system comprises the National Council for Science and Technology (NACOSTI); the Ministry of Education, Science and Technology; public research institutes; commodity-based research institutes, institutions of higher learning; and semi- private non-governmental organization. NACOSTI through its National Bioethics Committee (NBC) is the body tasked to provide national ethics oversight for all researches involving humans in Kenya, a feat achieved through delegation to its accredited Research Ethics Committees (RECs) (Wekesa, 2015).A key role of NBC is to ensure that RECs have the capacity to uphold ethical conduct of research within their respective jurisdictions. The milestones NBC aims is to achieve are to establish systems to enable it to provide the necessary research ethics oversight and to efficiently review research proposals for better protection of research participants in Kenya (Wekesa, 2015).

Selected Cases of Research Misconduct

Marten Meile Gerrit "Mart" Bax is a Dutch emeritus endowed professor in political anthropology at the Vrije Universiteit, Amsterdam, the Netherlands. After his retirement, he came into prominence to the wider public in 2012 due to suspicions of scientific misconduct. He was accused to have faked 61 papers; plagiarism i.e. he cited non-existent work/incorrect works; writing misrepresentation and uploaded non-existent research (Mart Bax, 2024)

Further, three researchers at the prestigious Columbia University Medical Center were thrown in the lime light because of what was referred to as the columbia university 'miracle' study. KwangYul Cha- Director of the Cha Columbia Infertility Medical Center, Prof. Rogerio

Lobo- Lead authour, Chairman of the department of obstetrics and Gynaecology Columbia university and Daniel Wirth claimed that distant prayer by anonymous prayer groups increased the success rate of IVF by an astounding 100 percent.The study failed to substantiate their claims with scientific evidence. It was also established that there was lack of informed consent in the Columbia study. Columbia University subsequently acknowledged non-compliance with its Multiple Project Assurance (MPA) and its own policies and procedures as Dr. Lobo never presented the above research to the Institutional Review Board (Nagourney,2001; Cha et al, 2001; Skeptical Inquirer September/October 2004).

Research has also shown that some of the top academicians cite themselves heavily. The case of Vaidyanathan, a computer scientist at the Vel Tech R&D Institute of Technology,is an extreme example: Upto 2017, he had received 94% of his citations from himself or his coauthors. In 2017, a study showed that scientists in Italy began citing themselves more heavily after a controversial 2010 policy was introduced that required academics to meet productivity thresholds to be eligible for promotion (Noorden, 2019 ; Seeber et al 2019).

From the fore going, it is evident that researchers are still engaging in misconduct. As such, researchers should be encouraged to adhere to the code of conduct in their institutions and declare adherence in the ethical considerations part of the dissertation and research as a whole.

3.0. Methodology

This was a desk top study based on secondary sources of data. The study focused on extensive literature review on previous research that has been done in the area of ethics in research. Both empirical literature and theoretical literature was reviewed. Document analysis of journal articles and review of case studies on research misconduct was done.

4.0. Presentation and Discussion of Findings

Ethical issues that affect research conduct

The following are some of the issues in research misconduct.

Informed Consent

This includes the procedure by which an individual may opt whether or not to be involved in the proposed study by the investigator. The task of the researcher is to make certain that participants have a complete understanding of the purpose and methods to be used in the study, the risk involved, and the demands placed upon them as a participants (Best & Khan,2006; Jones & Kottler, 2006).) The participant must also understand that he or she has the right to withdraw from the study at any time. The two forms of consent are direct and substitute. Direct consent is the most preferred because agreement is obtained directly from the person to be involved in the study. Substitute consent, or third-party consent, is given by someone other than the person to be involved in the study. Substitute consent may be obtained when it is determined that the person does not have the capacity to make the decision or is dependent on others for his or her welfare, such as children under the age of 18 or people with cognitive or emotional disabilities (Nagy, 2005a; Roberts, Geppert, Coverdale, Louie, & Edenharder, 2005). Researchers should ensure that both direct and substitute consent must meet the requirements for informed consent.

Harm

According to American Psychological Association (APA), (2002) researchers should take reasonable steps to avoid harming their clients/ patients, students, supervisees, research participants, organizational clients, and others with whom they work, and to minimize harm where it is foreseeable and unavoidable. When psychologists become aware that research procedures have harmed a participant, they should take reasonable steps to minimize the harm. (APA, 2002). The most basic concern in all research is that no individual is harmed by serving as a participant, as suggested above by the APA code of ethics. In the context of research ethics, harm may be broadly defined to include extreme physical pain or death, but also involves such factors as psychological stress, personal embarrassment or humiliation, or myriad influences that may adversely affect the participants in a significant way.

According to Drew & Hardman, (2007); Quadagno, (2005), highly vulnerable populations should not be taken advantage of in the name of science. Researchers investigating topics involving these individuals must exercise extreme care. Very young children, the elderly, or people with disabilities may be easily convinced that most activities are important, are of little harm, and should be engaged in for the benefit of society (Drew & Hardman, 2007; Quadagno, 2005).

Privacy

Privacy has become a more valued right in research. Seeking privacy is an act of isolation or confidentiality removed from public view or knowledge. Hill (2005) identifies three imperative elements to confidentiality in research with participants namely Public confidentiality- not identifying research participants in study reports: Social network confidentiality- not passing on information to family members, friends or other known to the participants, and lastly, third party breach of privacy- where a group or household members reveals something personal about another (Hill, 2005). Privacy considerations in research include both the need to have a safe, private physical location in which the research is conducted, and making sure that participants' privacy through anonymity and confidentiality.

Deception

Deception has become a very prominent issue for investigators concerned with the ethics of conducting research and is receiving widespread attention in educational and social science research with increasing concerns regarding its use on the Internet (Keller & Lee, 2003; Lichtenberg, Heresco-Levy, & Nitzan, 2004; Mishara & Weisstub, 2005; Nagy, 2005c; Pittenger, 2003). This occurs when the researcher provides misleading or withholding information from participants about the project. Deception is permissible when the benefits outweigh the costs. This happens when the investigators present their research as something other than what it is. Dishonesty should be minimized and when necessary, the degree and effects must be mitigated as much as possible.

Unethical Research Conduct

The Office of Research Integrity in the United States of America (USA) defines research misconduct as fabrication, falsification or plagiarism in proposing, performing, reviewing research or reporting research results (Martyn, 2003). Credibility of research depends on

upholding the highest ethical standards which inhibit deviations that culminate in transgressions (Shahnazarian, Rose, Hagemann and Aburto, 2017). The following are some of research misconducts committed by researchers.

Fabrication and falsification of data are most frequently associated with research misconduct (Gilbert & Denison, 2003). Fabrication means that data is simply invented. Falsification means that existing data is 'pruned' to take on the required form or 'massaged' to give the desired result (Merton, 1985). Pruning and massaging' can be undertaken through the use of inappropriate methods of data analysis (Parliamentary Office of Science and Technology, 2002), the (tacit) exclusion of outliers in data analysis (Gilbert & Denison, 2003) or the unpermitted manipulation of graphics (with software, such as Photoshop) (Balaram, 2005). As the manipulation of graphics is a relatively frequent problem in journal manuscripts, some editors already employ specialists to examine graphics forum permitted (or still permitted) manipulation (Rossner, 2006).

Plagiarism as a form of misconduct is acquiring great significance. This is passing off someone else's intellectual property (including information or ideas) as one's own achievement without giving the actual source (e.g. in research papers) (Hames, 2007). In the present era of the Internet, there is now an enormous amount of information available via the Internet; text is very easy to copy and paste, and ideas can be gleaned from a multitude of sources (Hames, 2007). While some authors consider 10 copied words in a text to be plagiarism, others require at least 30 (Gilbert & Denison, 2003). Unlike inventing and falsifying data, plagiarism does not undermine the credibility of scientific statements (Mayntz, 1999).

According to Mayntz, (1999) inventions and discoveries are a scientist's most valuable capital. Researchers do not make products, but ideas. When you still someones words, you steal their authorship and when you steal an idea, you have stolen the identity of a scientist (LaFollette, 2004). There is evidence that word plagiarism can be rather innocent. According to Cameron, et al. (2012) the fact that "the majority of the scientists publishing in English-language journals are not native English speakers has important implications for training concerning ethics and enforcement of publication standards, particularly with respect to plagiarism" (Cameron, et al. (2012).

According to Mayntz, (1999), other forms of research misconduct include redundant, multiple or broadly overlapping publishing, the publication of research results in very small units – known as 'salami slicing' and dual or multiple submission of manuscripts('shot-gunning'). Further, listing authors on a publication who have not made a substantial contribution ('gift authorship'), not listing authors who have made a substantial contribution ('ghost authorship') and listing co-authors against their will (Stegemann-Boehl,1993) are also forms of research misconduct.

Ethical Principles

According to Shamoo & Resnik (2015), most ethical codes cover the following areas:

Honesty

Researchers must strive for honesty in all scientific communications. They should honestly report data, results, methods and procedures, and publication status. Researchers should not

fabricate, falsify, or misrepresent data and neither should they deceive colleagues, research sponsors, or the public (Shamoo & Resnik ,2015).

Objectivity

Researchers should 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. Further, they should avoid or minimize bias or self-deception and disclose personal or financial interests that may affect research (Shamoo &Resnik, 2015).

Integrity and Carefulness

Integrity involves keeping promises and agreements; acting with sincerity and striving for consistency of thought and action. On the other hand, carefulness seeks to avoid careless errors and negligence and argue researchers to carefully and critically examine their work and that of their peers. Further,in order to uphold ethical standards, researchers should keep good records of research activities, such as data collection, research design, and correspondence with agencies or journals (Resnik,2020; Shamoo & Resnik ,2015).

Openness, Transparency and Accountability

According to Shamoo & Resnik ,(2015), openness includes sharing data, results, ideas, tools, resources. Researchers should be open to criticism and new ideas. On the other hand, transparency means disclosing methods, materials, assumptions, analyses, and other information needed to evaluate your research. As regards accountability researchers should take responsibility for their part in research and be prepared to give an account (i.e. an explanation or justification) of what they did on a research project and why.

Intellectual Property

According to Shamoo & Resnik ,(2015), Intellectual property includes honoring patents, copyrights, and other forms of intellectual property. Researchers should not use unpublished data, methods, or results without permission and should give proper acknowledgement or credit for all contributions to research. Researchers are warned against plagiarism.

Confidentiality and Responsible Publication

This includes protection of confidential communications, such as papers or grants submitted for publication, personnel records, trade or military secrets, and patient records. Researchers should publish in order to advance research and scholarship and not to advance their own career. They should also avoid wasteful and duplicative publication (Resnik,2020; Shamoo & Resnik ,2015).

Responsible Mentoring and Respect for Colleagues

Researchers should help to educate, mentor, and advise students. They should promote their welfare and allow them to make their own decisions. Colleagues should be respected and treated fairly (Resnik ,2020). Teamwork is of importance because it ignites creativity and brings together diverse skills which lead to high quality research.

Social Responsibility and Non-Discrimination
Researchers should strive to promote social good and prevent or mitigate social harms through research, public education, and advocacy. Further researchers should avoid discrimination against colleagues or students on the basis of sex, race, ethnicity, or other factors not related to scientific competence and integrity (Resnik,2020; Shamoo & Resnik ,2015).

Competence: Researchers should maintain and improve their own professional competence and expertise through lifelong education and learning and take steps to promote competence in science as a whole (Resnik,2020).

Human Subjects protection
When conducting research on human subjects, researchers should 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 (Shamoo &Resnik, 2015).

Importance of Ethics in Research
According to Shamoo & ResniK (2015), research ethics are important for a number of reasons. Research ethics promote the aims of research, such as expanding knowledge. Further, they support the values required for collaborative work, such as mutual respect and fairness. This is essential because scientific research depends on collaboration between researchers and groups. Ethics in research ensure that researchers are held accountable for their actions. Many researchers are supported by public money, and regulations on conflicts of interest, misconduct, and research involving humans or animals are necessary to ensure that money is spent appropriately (Shamoo & Resnick, 2015).

Ethics are important as they ensure that the public can trust research. For people to support and fund research, they have to be confident in it. Further, ethics supports important social and moral values, such as the principle of doing no harm to others. It is important to adhere to ethical principles in order to protect the dignity, rights and welfare of research participants, Researchers can be held accountable and answerable for their actions (Resnick, 2015).

Ethics promote social and moral values, Promotes the ambitions of research, such as understanding, veracity, and dodging of error. Ethical standards uphold the values that are vital to cooperative work, such as belief, answerability, mutual respect, and impartiality. People are more likely to trust a research project if they can trust the worth and reliability of research (Shamoo & Resnick,2015). Not being ethical in research undermines public trust in scientific research and can lead to the perpetuation of harmful misinformation in the society.

Conclusion
Misconduct in research tarnishes the reputation, credibility and integrity of research institutions and has the potential to diminish the credibility and integrity of research in general. Research institutions should step into their role of fostering a responsible research ethic and discouraging misconduct (Okonta & Rossouw, 2012). Given the expansion of the academic competitive environment and with the increase in research misconduct, the role of any regulatory sector,

including universities, journals/publishers, government, etc. in preventing this research misconduct must be fully focused and fundamental alternation should be implemented in this regard.

The ethics committee's role is to consider what researchers are doing is appropriate and proportionate to the research aims. Most universities have an ethics committee whose mandate is to scrutinise all research proposals, to ensure that they do not have any ethical issues. Universities should have a standard form for ethical approval, which should cover who will be involved, how they will recruit participants, and what steps they will take to ensure that they have provided informed consent.

According to Pubrica Academy (2019) researchers should maintain a precise record of all their research activities and should report data as cautiously and objectively as possible. During research on animals and trees, they should treat them with respect, care and empathy. Further, researchers should respect all the intellectual property used in research and give them their due credit in their research for their contributions. Researchers should endeavour to maintain confidentiality wherever necessary during the research (Pubrica Academy, 2019).

Recommendations

Institutions should ensure regular and continuous training for students and faculty in research and specifically in ethics. Researchers should be educated on the process of research and approval/ clearance sought before research is conducted. This will go a long way in reducing cases of misconduct.

Further, there should be proper peer review before papers are published in peer reviewed journals. Academicians should lay less emphasis on publish or perish. This will ensure that researchers don't just publish to beat promotion requirements. Instead, institutions should emphasize on quality and encourage collaboration with other scientists and institutions. When many researchers publish together, the issues of research malpractice will reduce. Further, institutions who provide grants should make the procedure less tedious.

There should be a cordial relationship between the supervisor and supervisee and students must be strictly supervised. This will ensure that the supervisee finishes their various degrees in good time and have time to publish with no rush. This will enhance quality of research papers. Further, the students name should be listed as the first name in the publication list. This will ensure honesty as some supervisors are known to put their names first. Moreover, Ethics committees should provide ethical clearance before publishing to ensure quality of research papers and adherence to ethics.

Furthermore, there should be more rigorous and transparent peer review standards in scientific publishing. Statements like publish or perish should be done away with as they encourage researchers to carry out research without following ethics just for purposes of promotion among others. There should be standardized scientific rigor and integrity in scientific research so as to maintain public trust and ensure that research findings truly advance human knowledge and well-being. Finally, there is need for transparency, ethical conduct, and adherence to scientific principles in all studies published in peer-reviewed journals.

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