

# Knowledge and Practice of Responsible Research Ethics among Doctoral Students and Alumni: A Case Study of Kibabii University, Kenya

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## Abstract

*Adherence to principles of responsible conduct in research is at the heart of doctoral supervision, and lack of it severely affects the quality and credibility of such study outcomes. Very few studies have investigated the level of knowledge and practice of responsible research ethics in institutions of higher learning in Kenya, a gap this study sought to address. The objective of this study was to investigate the knowledge and practice of responsible research ethics among doctoral students and Alumni at Kibabii University, Kenya. To realize its objective, the study conducted a cross sectional survey using a structured questionnaire to gather relevant information from 25 doctoral students and Alumni of the University. Data obtained was analyzed descriptively. Results indicate 48% of respondents were not knowledgeable about University's Research Ethics Committee. The majority (54.2%) of the respondents lacked prior training in responsible conduct in research. The study recommends the need for the University to regularly sensitize doctoral students on the existence and roles of the various established institutions in the research process. Training for doctoral students in all areas of responsible conduct in research is critically necessary.*

**Keywords:** Knowledge, Practice, Responsible Research Ethics

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## I. Introduction

Doctoral students in Kenya as in many parts of the world often conduct research with human subjects as part of their studies. For many ethics review process is often their first experience with research ethics (DePauw, 2009).

Consideration of ethics is a key focus in conducting research involving humans, and students must learn research ethics principles and apply them throughout the research process. A number of factors affect doctoral students' knowledge and practice of ethical research. However, novice researchers need support as they strive to incorporate ethical principles in their research.

According to Wendy, P. et al., (2016), knowledge and practice of responsible conduct in research is affected by graduate study programme content, teaching approaches, relationship between graduate student and supervisors, policy and regulatory framework, and the learning environment of any research institution. The study sought to examine the level of knowledge and practice of ethical research among doctoral students at Kibabii University, Kenya

## Research Objectives

- i. To determine the level of knowledge of existence of research ethics policy and committee among doctoral students at Kibabii University, Kenya
- ii. To examine the level and factors affecting knowledge and practice of responsible research ethics among doctoral students at Kibabii University, Kenya
- iii. To explore the responsible research ethics training needs among doctoral students at Kibabii University, Kenya

## **II. Literature Review**

A look at literature on the subject of responsible conduct in research in institutions of higher learning reveal very interesting results. This review focused on knowledge about responsible conduct in research and how that translates into responsible ethical behavior among doctoral students in institutions of higher education institutions (HEIs).

One of the factors influencing knowledge and practice of responsible conduct in research is curriculum content (Wendy, P. et al., 2016), and effective teaching approaches that leave lasting imprints in best ethical research practices among emerging scholars. As would be expected, graduate curricula vary widely in content and how they address issues of research ethics principles and responsible conduct in research across institutions, a situation that is made worse when doctoral candidates have a dysfunctional working relationship with their mentor supervisors (Wendy, P. et al., 2016). Much attention has not been paid to research ethics issues in graduate programmes despite the availability of abundant peer-reviewed content by the scholarly community (McDonald et al., 2011).

Scientific integrity of scholarly publications depends how the doctoral students and novice researchers in general are tooled in critical reading and writing. A well designed curriculum for graduate students should necessarily therefore include instruction on the ethical dissemination of research outputs. According to Arda (2012), graduate students are often deeply concerned with ethical issues regarding undeserved authorship, deception and plagiarism. However, very few studies have focused on tracing experiences of students in handling such critical ethical issues.

Promotion and maintenance of expected ethical research standards and practices require proactive policy and regulatory frameworks. In Kenya, the Science, Technology and Innovation Act, 2014 established the National Commission for Science, Technology and Innovation (NACOSTI) and the National Biosafety Committee (NBC) to among other things deal with registration of Institutional Research Ethics Committees (IRECs) and spearhead regulatory issues related to research misconduct in all research institutions. IRECs are key in sharing knowledge on ethical research and negotiating the ethics review process. However, some research institutions lack credible and functional IRECs, and though robust legal and regulatory frameworks exist at the national level, the Commission identifies lack of standardized policies and guidelines for research misconduct at institutional level (<https://irec.or.ke/wp-content/uploads/2019/03/NACOSTI-Presentation-to-Research-Misconduct-Workshop.pdf>). Similar challenges have been experienced elsewhere (Panel on Research Ethics, 2014) in Canada, and Plemmons, et al., (2013) where instructors held diverse views regarding what ought to be taught in responsible conduct in research courses.

Bowater, et al., (2012) are of the opinion that need for a learning and research setting that permits for a safe space for active engagement with ethical issues in research. Learners' perceptions of the institutional climate often impact the ethical decisions they make with regard to research (Langlais et al., 2013). There is need for University Faculty to commit to integrate research ethics topics into academic activities; however, some academic leaders become complacent assuming that principles of responsible research are well known and need not be taught (Adams, 2012). On the contrary, a number of students find it difficult tackling their first ethics application without considerable instruction and guidance. University academic programs need to inculcate in learners, a culture of ethical research that reinforces scientific integrity as regulatory compliance alone is may not be adequate to preserve public trust (Minifie et al., 2011).

The student-academic supervisor relationship is also very essential in ensuring that a student grows his/her positive self-confidence in research ethics. Fisher et al., (2009a) argue that academic supervisors not only influence supervisee's knowledge but also perceptions of responsible conduct of research. Indeed academic supervisors help socialize their students into a research community that take issues of research integrity very seriously.

In conclusion, knowledge and practice of responsible research ethics among doctoral students is largely affected by graduate study programme content, teaching approaches, relationship between graduate student and supervisors, policy and regulatory framework, and the learning environment of any research institution. Lack of knowledge in responsible conduct in research may affect attitude towards and practice of research ethics in the scholarly community.

## **III. Methodology**

The primary purpose of this study was to explore ethical research knowledge and practice among doctoral students and Alumni who graduated with doctoral degree in the last five years at Kibabii University. To describe the level of knowledge and practice with respect to research ethics, descriptive survey design was adopted by the study.

Doctoral students and Alumni who graduated with doctoral degrees in the last five years at Kibabii University were purposefully sampled for this study. This was because they had recent research ethics experience to draw on and were able to provide rich data specific to the research question.

A representative sample of 25 participants, which is about 10 per cent of the 250 doctoral students and 10 doctoral alumni across all the academic departments in the University was determined to be adequate and appropriate for this descriptive study. The sampling strategy should be adequate to achieve a sufficient level of depth, and appropriately represent the individuals addressed in the research question (Guetterman, 2015). Self-administrated questionnaire with closed questions was used to collect the data. Due to time constraints, piloting was not done in this study a fact that may have compromised the study response and findings. Data generated was analyzed descriptively by use of SPSS computer software and results presented in charts, tables and figures.

#### IV. Results and Discussions

##### Bio-data of Respondents

##### i. Year of Study

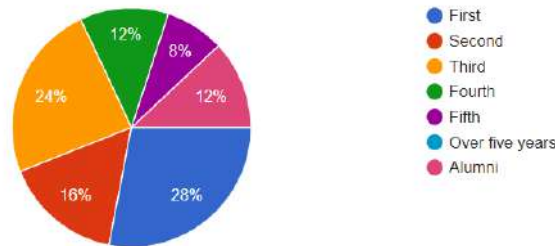


Figure 1. Respondents' year of study

The year were quite spread out with 7(28%), 6(24%) and 4(16%) being in first, third and second year respectively. It is interesting to note that a good number of students 5(20%) were reportedly in their fourth and fifth years of study in what is ordinarily a three- year programme, suggesting an over stay. A good number 6(12%) reported to be Alumni of the University having graduated in the last five years.

##### ii. Age

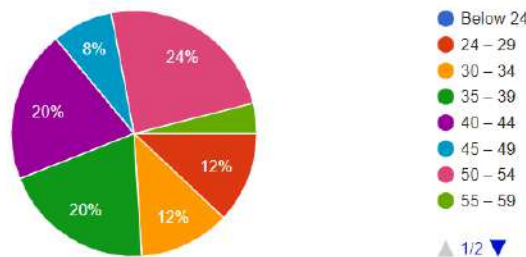


Figure 2: Respondents' age Bracket

Majority 19(70%) of the respondents were reportedly in in the middle ages of 35 – 59 years, implying that most of the doctoral students were advancing their careers in employment.

##### iii. Sex

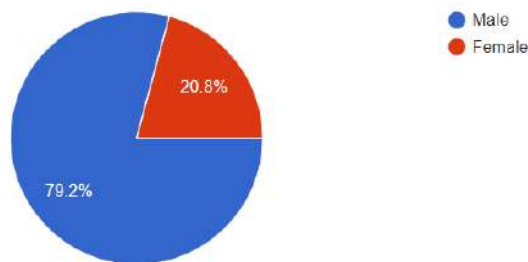


Figure 3: Sex of respondents

The majority 79.2% of the respondents were male, while women accounted for 20.8%. This gender composition is consistent with most trends of doctoral education in most developing countries.

**iv. Faculty/School of registration**

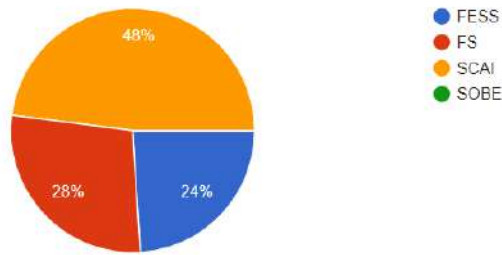


Figure 4: Respondents' Faculty/School of registration

The majority 12(48%) of respondents reportedly belonged to the School of Computing and Informatics (SCAI) followed by Faculty of Science (FS)7(28%), and Faculty of Education and Social Sciences (FESS) 6(24%). The School of Business and Economics (SOBE) are yet to start doctoral programmes.

**v. Designation**

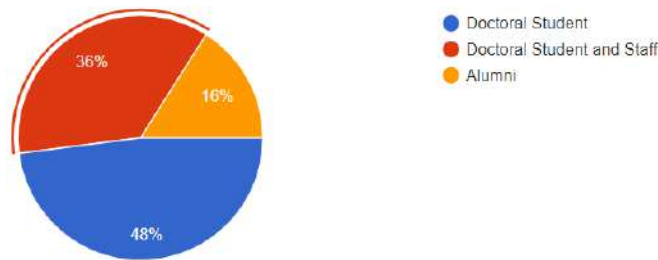


Figure 5: Designation at the University

Twelve (48%) of the respondents considered themselves as just doctoral students without any other attachments to the University, while 9(36%) were staff undertaking doctoral studies at the University. Only 4(18%) were reportedly doctoral Alumni.

**Level of knowledge of existence of research ethics policy and committee among doctoral students and Alumni at Kibabii University**

**i. Knowledge of Existence of Research Ethics Policy**

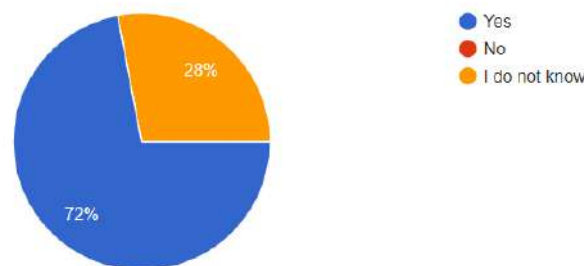


Figure 6: Respondents awareness of existence of Research Ethics Policy

An overwhelming majority 18(72%) of respondents were reportedly knowledgeable about the existence of research ethics policy at the University. This was not correct. The University does not have a policy of research ethics. Only 7(28%) of respondents correctly expressed lack of awareness about the existence of such a policy in the University as illustrated in Figure 6. McDonald et al., (2011) argues that most institutions do not invest enough in research ethics.

ii. Knowledge of Existence of Research Ethics Committee

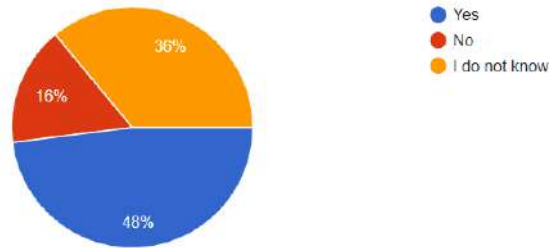


Figure 7: Respondents awareness of existence of Research Ethics Committee

A sizeable number 12(48%) of respondents rightly reported being knowledgeable about the existence of research ethics committee at the University. It was however interesting to note that a good number 13(52%) either out-rightly reported that the Committee is non-existent or were not aware of the existence of such a critical organ of the University. The Committee exists at the University and is almost completing the process of accreditation by the National Commission for Science, Technology and Innovation (NACOSTI). Ethics boards (committees), according to Wendy et al., (2016) play a critical regulatory role but also in shaping novice into dependable researchers.

The level and factors affecting knowledge and practice of responsible research ethics among doctoral students and Alumni at Kibabii University

i. Doctoral Research Ethics Approval

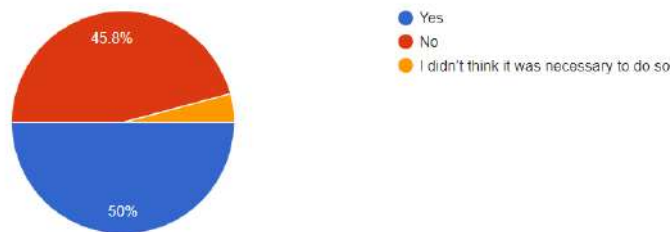


Figure 8: Application for Doctoral Research Ethics Approval

Half (50%) of the respondents reported having applied for ethical approval, while a similar proportion of respondents had not applied for ethical approval for their PhD research study as shown in Figure 8. Indeed one student reported that s/he did not think it was necessary to do so. Asked which body they had applied to, an overwhelming majority (84.6%) reportedly had made their application to the National Commission for Science, Technology and Innovation (NACOSTI). Among those who had applied, 15.4% reportedly applied for approval from the Dean, School of Graduate School at the University. Unfortunately, the Dean, only writes an introduction letter for graduate students seeking research permit from the Commission. This points to lack of awareness about the roles of these key institutions and apparent lack of adherence to the set code of conduct by doctoral student researchers at the University. According to the legal framework for research misconduct by NACOSTI, though the overall responsibility of ensuring adherence to research ethics in Kenya lies with it, research institutions including universities bear the primary responsibility of detecting and preventing research misconduct since this is where research takes place ([www.nacosti.go.ke](http://www.nacosti.go.ke)).

ii. Application for Research ethics approval

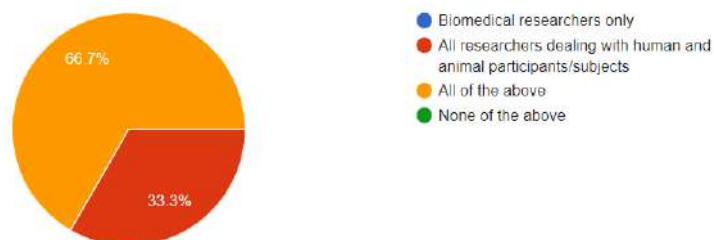


Figure 9: Who should apply for ethical approval in research

Knowledge level on who should apply for research ethics was high. All respondents rightly cited that all researchers dealing with human and animal participants/subjects including biomedical researchers need ethical approval before conducting research as shown in Figure 9.

**iii. Statements representing responsible conduct in research**



Figure 10: Statements representing responsible conduct in research

Asked about which of the following statements represent responsible conduct in research (in a multiple response question), the most known statement was adherence to regulations at 22 responses followed by the need to acknowledge in publications, those who made significant contributions and recognize and consider ethical obligations to society at 19 responses each. It was interesting to note that responding to irresponsible research practices and limiting ones professional comments to his/her recognized expertise area were least common statements among respondents recording only 5 responses. The rest were in between. But according to Botha J. et al., (2019), all these areas in Figure 10 are critical. The huge discrepancies in response depicted in Figure 10 could be an indication of lack adequate formation on these areas by doctoral students and Alumni of the University.

**iv. Factors in Responsible Conduct in Research**

Factors	Response Category		
	Not at All	Some Extent	Great Extent
Graduate study programme content	1 (4.3%)	13 (56.5%)	9 (39.1%)
Teaching approaches by faculty staff	1 (4.3%)	15 (65.2%)	7 (30.4%)
Relationship between student and supervisors	0 (0.0%)	14 (58.3%)	10 (41.7%)
Institutional policy and regulatory framework	0 (0.0%)	12 (50.0%)	12 (50.0%)
Learning environment of the Institution	0 (0.0%)	14 (60.9%)	9 (39.1%)

**Table 1:** Contributing Factor to Responsible Conduct in Research

Institutional policy and regulatory framework (50%), relationship between doctoral students and their supervisors (41.7%) were identified as the most effective way of equipping doctoral students with necessary knowledge in and practice of responsible conduct in research. Other factors include; graduate study programme content and institutional learning environment both at 39.1%, and faculty staff teaching approaches (30.4%) as illustrated in Table 1. The findings concur with those of Wendy et al., (2016) in a study done in Canada.

**Training needs for responsible research ethics among doctoral students and alumni at Kibabii University**

**i. Training in Responsible Conduct in Research**

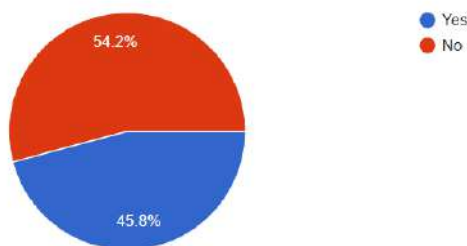


Figure 11: Training in Responsible Conduct in Research

The majority (54.2%) of the respondents reported to have had no training in responsible conduct in research. Oberlander S. E. (2006) argues that lack of training among graduate teaching assistants may compromise their ethical behavior. Mwaka E. S. (2017) in a study conducted in Uganda blames lack of training in research misconduct on uncoordinated effort both at national and institutional level to deal with the challenge in third world countries.

**ii. Training Needs in Responsible Conduct in Research**

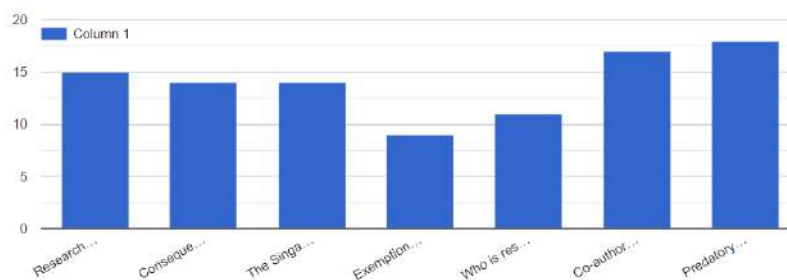


Figure 12: Training Need Areas

In a multiple question, when asked to identify their training needs in responsible conduct in research, respondents pointed out the key areas as predatory publishing (18 responses) followed by supervisors and doctoral candidates' co-authorship (17 responses). Other popular areas were research and science misconduct, consequences of research misconduct and the Singapore statement on research integrity. The least preferred training areas were; exemptions from ethics review (9 responses) and responsibility in adherence to responsible conduct in research (11 responses) as shown in Figure 12. The critical issue of predatory publishing has also been highlighted in a study carried out in South Africa by Mouton J. and Valentine A. (2017) that revealed that about 3.4% of publications were judged to have been done in predatory journals between 2005 and 2014.

**V. Conclusions**

A good number (48%) of respondents were not knowledgeable about the existence of the University's Research Ethics Committee despite the committee having being in existence for the last four years at the University. The University also lacks a policy on research ethics.

Though the knowledge level on who should apply for research ethics was very high, only half (50%) of the respondents reported having applied for ethical approval. It was clear that most students did not have a clear idea to which body they ought to have made their application. This mix-up perhaps explains the low level of awareness of key institutions that handle research and their mandates. Low level of awareness about the key advisory and regulatory institutions in the research process and lack of a clear policy on research ethics may bear heavily on practice of research ethics by students and faculty in the University.

On factors in responsible conduct in research, institutional policy and regulatory framework (50%), and relationship between doctoral students and their supervisors (41.7%) were identified as the most effective way of equipping doctoral students with necessary knowledge in and practice of responsible conduct in research.

The majority (54.2%) of the respondents reported to have had no prior training in responsible conduct in research at all. Those identified many training area needs but the most outstanding ones were; predatory publishing, and issues around supervisors and doctoral candidates' co-authorship.

## **VI. Recommendations**

- i. There is need for the University through the School of Graduate Studies to regularly sensitize of doctoral students about the existence and role research ethics committee.
- ii. There is need for the University to come up with a research ethics policy.
- iii. The University needs to ensure that doctoral students are sensitized on the roles and mandates of the various organs/institutions involved in research process.
- iv. There is need for all researchers dealing with human and animal participants/subjects to obtain ethical approval before embarking on fieldwork.
- v. There is need for training for doctoral students in all areas of responsible conduct in research, particularly in predatory publishing and issues around supervisors and doctoral candidates' co-authorship.

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