AN AUDIT OF MASTER’S DISSERTATIONS FOR ETHICAL REPORTING AT A UNIVERSITY IN CENTRAL TANZANIA

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ABSTRACT
An audit of ethical issues reported in master’s dissertations of St John’s University of Tanzania (SJUT) in Dodoma was carried out. There was a total population of 252 dissertations from graduates of all four faculties and all of the year groups who graduated between 2012 and 2015. Seven items concerning ethical issues were chosen from the university research guidelines to represent those that should appear in all dissertations. A systematic random sample of 134 dissertations was searched for the seven items. The presence of an item was scored as one mark, and absence as zero. The data was analyzed quantitatively using one-way analysis of variance. There has been a yearly improvement since 2012, although the level of reporting remains suboptimal. There was no statistically significant difference between faculty groups. There were statistically significant differences between reporting of the seven issues, which require targeted attention. The statistically significant differences between year groups suggest that some of the efforts to improve reporting have had an effect. It appears likely that the introduction of the SJUT research committee has made some contribution to the improvement in ethics reporting, and that the recent introduction of the “light touch” approach has not been detrimental.

KEYWORDS: Ethical reporting, research guidelines, dissertations, audit, Tanzania.

INTRODUCTION
The Bible sets ethical standards for living. It states that ‘whatever is true, whatever is noble, whatever is right, whatever is pure, whatever is lovely, whatever is admirable – if anything is excellent or praiseworthy – think about such things’ (Philippians 4:8). It points out that ‘Better the poor whose walk is blameless than a fool whose lips are perverse’ (Proverbs 19:1). Universities are expected to set high ethical standards and Christian universities should be exemplary since they aim to incorporate Biblical standards that go beyond those of secular institutions.

The overall aim of this study is to audit compliance with standards of reporting ethical issues as part of total quality management in a Christian university setting in Tanzania. There are many interrelated reasons...
for changes in standards of student work in universities. The value of writing dissertations and theses at master’s level continues to be debated in the context of scholarly debate about appropriate content and standards of master’s programmes. However, dissertations currently remain a requirement for many master’s programmes in Tanzania, as specified by the Tanzania Commission for Universities for all Tanzanian students.

International ethical standards for research have been set by many different authorities and include those of the United Nations Education, Scientific, and Cultural Organization (UNESCO) (Universal Declaration on Bioethics and Human Rights), the Council for International Organizations of Medical Sciences (International Ethical Guidelines for Biomedical Research Involving Human Subjects), and the World Health Organization (Standards and Operational Guidance for Ethics Review of Health-related Research with Human Participants).

Internationally, there has been a growth in the number of research ethics committees, for example in the Republic of South Africa this was from 1966 and in Germany from 1997. In Tanzania, an increasing number of universities are having their own research ethics committees, particularly now under the leadership of the Tanzania Commission for Science and Technology (COSTECH). While biomedical and health related research ethics has generally received more research interest, social science experiences also deserve to be studied. Many social science ethics research committees are reported to lack monitoring processes such as post-approval access to research sites and data. This has been the case with the St John’s University of Tanzania (SJUT) research ethics committee.

Previous studies analyzing aspects of African dissertations include a bibliometric analysis of citation patterns in dissertations submitted to the Dar es Salaam library of the Open University of Tanzania, an analysis of subject matter, methods and clinical specialties of Master of Medicine students at the University of Zambia in Lusaka, and an analysis of recommendations relating to the Balme Library at the University of Ghana in Legon.

Analyses of African research articles for ethical issues include studies carried out in Sudan\(^\text{12}\) and Cameroon.\(^\text{13}\) The Sudanese study was a documentary review of 114 original human subjects’ research articles and investigated eight key aspects of ethical reporting: 11% of the reports documented ethical approval by an ethics research committee and 31% reported that informed consent had been obtained. The Cameroonian study examined 219 health research articles published in “PubMed” between 2005 and 2009. In this sample 58% documented ethics approval and 71% reported informed consent.

African studies evaluating the functioning of research ethics committees include those carried out in Nigeria,\(^\text{14}\) Uganda,\(^\text{15}\) South Africa\(^\text{16}\) and Tanzania.\(^\text{17}\) The Nigerian study reported a lack of financial resources and qualified personnel; 97% of the user sample in the Ugandan study rated the particular research ethics committee (REC) under study as average or very good, but the need to limit delays in handling applications was identified. The South African study reported delays in processing applications for ethical clearance for low-risk clinical audits. The Tanzanian study collected data from REC members of six research centers; it found that only half of the members had prior training in ethics review, and that only 15% of REC members were female.

At St John’s University of Tanzania (SJUT) main campus in Dodoma, there are master’s programmes in education, commerce and business studies, community development and theology. The first cohort of master’s students began studies in 2010 and graduated in 2012. While they were working on their dissertations, there was no REC in place, so the university relied on supervisors to guide students in respect to ethical standards. The Internal Review Committee (IRC) was set up in 2012, so that the second and subsequent master’s cohorts have all had ethical applications considered and clearance certificates issued after processing. Every student of every faculty was required to submit an application for ethical clearance. The system for the groups that graduated in 2013 and 2014 included submission of details of the proposal, data collection tools and informed consent tools (where appropriate). This system was found to be too time consuming to be sustainable, so a “light touch” review system was trialed with the students expecting to graduate in 2015. This allowed for reviewers to request additional documents when required. Students have had access to guidelines (periodically updated) on writing their dissertations, including ethical aspects. SJUT ethics regulations were put in place in 2012. Almost all student dissertations used a survey design involving data collection from human subjects.

It is not clear to what extent the actual practice of research ethics at SJUT corresponds to what is stated in the ethics applications or even in the dissertation report. An analysis of 60 SJUT dissertation reports by a visiting Professor in 2015 notes the use of “stock phrases”\(^\text{18}\); this may reflect some limitations with the

\(^{15}\) BR Ibingira & J. Ochieng, ‘Knowledge about the research and ethics committee at Makerere University, Kampala’, *African Health Sciences*, vol. 13, no. 4, 2013, pp. 1041-1046.
use of the English language (which is the second or third language of the students) or it may reflect more serious issues.

Many variables may impact the quality of ethics reporting in SJUT master’s dissertations; these include factors specific to the university, faculties, Directorate of Postgraduate Studies and students. University resources and processes for identifying master’s students have changed little over the period under consideration. The research methods curriculum, research methods instructors, student numbers and body of supervisors have undergone various degrees of change. The introduction of a REC in 2012 that examines applications from all master’s students is a major change that occurred during the time period under consideration. The SJUT IRC recommended that this audit be carried out in order to monitor the level of compliance with reporting ethical issues over the first three years of its functioning.

METHODS
The study used a quantitative approach and was essentially an audit. Its aim was to evaluate compliance with reporting of ethical issues in master’s dissertations. Seven key issues were chosen to represent ethical issues that would be expected to appear in a dissertation. A checklist was developed based on the SJUT guidelines related to the preparation of dissertations, and with consideration of the literature to ensure content validity. The checklist was pre-tested by two data collectors working independently. The areas where there was lack of congruence between the findings of the two data collectors were revised; the checklist was then retested and findings from two data collectors found to be congruent. This revised checklist is shown in Table 1.

Table 1: Data collection checklist

<table>
<thead>
<tr>
<th>#</th>
<th>Issue</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Letter request from SJUT to research site in appendix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Ethics certificate in appendix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Informed consent appropriate to data collection method: includes purpose of study and time involved for participant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Data recorded and reported without using names of participants in results chapter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Ethics section in text mentions appropriate storage of data by researcher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Ethics section in text mentions risk-benefit analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Ethics section in text explains whether vulnerable subjects included or excluded from the study</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data was sought in appendices, chapters 1 and 3 and where not identified in the expected place, was searched by reference to the table of contents. Scores were derived from the checklist with a score of one for an issue reported in the student dissertation and zero when not reported. Scores were used as a proxy measure for level of compliance with dissertation guidelines. These scores were used to answer the following research questions in relation to what is reported in the dissertations:

What is the level of compliance with guidelines in respect to reporting ethical issues?

Is there a significant difference in scores between faculty groups?
Is there a significant difference in scores between issues?
Is there a significant difference in scores between year groups?

The population under consideration was all the submitted master’s dissertations shelved in the postgraduate office alphabetically by author surname. The sample was identified by systematic random sampling, choosing alternate dissertations as shelved with a randomly determined point of commencement. Systematic random sampling was used to promote sample representativeness. A sample of 10 dissertations per faculty per year was identified as indicated in Table 2; where less than 10 students graduated in a particular faculty and year, all of the dissertations submitted were included in the sample. The sample was over half (53%) of the population. The congruence of answers between the two data collectors and the researcher was repeatedly checked to ensure reliability.

Table 2: Dissertation sample and population size

<table>
<thead>
<tr>
<th>FACULTY</th>
<th>SCHOOL OF THEOLOGY AND RELIGIOUS STUDIES</th>
<th>FACULTY OF COMMERCE AND BUSINESS STUDIES</th>
<th>INSTITUTE OF DEVELOPMENT STUDIES</th>
<th>FACULTY OF HUMANITIES AND EDUCATION</th>
<th>TOTAL SAMPLE (POPULATION)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>0 (0)</td>
<td>10 (14)</td>
<td>8 (8)</td>
<td>10 (18)</td>
<td>28 (40)</td>
</tr>
<tr>
<td>2013</td>
<td>7 (7)</td>
<td>10 (38)</td>
<td>10 (12)</td>
<td>10 (22)</td>
<td>37 (79)</td>
</tr>
<tr>
<td>2014</td>
<td>3 (3)</td>
<td>10 (36)</td>
<td>10 (11)</td>
<td>10 (27)</td>
<td>33 (77)</td>
</tr>
<tr>
<td>2015</td>
<td>6 (6)</td>
<td>10 (22)</td>
<td>10 (12)</td>
<td>10 (16)</td>
<td>36 (56)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>16 (16)</td>
<td>40 (110)</td>
<td>38 (43)</td>
<td>40 (83)</td>
<td>134 (252)</td>
</tr>
</tbody>
</table>

Limitations of this study are that only documentary review was feasible; there was no follow-up of the authors of the dissertations or observation of actual practice in the field. This means that the results can only represent what was reported, which may not entirely equate with practice. The study was carried out in one university only, and may not be representative of other tertiary institutions in Tanzania. The accuracy of reporting may have been affected by various factors, including the need to write in a second or third language.

No student names are reported here to maintain confidentiality. Ethical clearance was obtained from the University Internal Review Committee (IRC) before collecting data. There was a potential conflict of interest in that the researcher and one of the data collectors are directly involved in the administration of the postgraduate programmes. However, all of the data is re-auditable (hard and soft copy dissertations are available). The second data collector was not involved in the postgraduate administration and had no potential conflict of interest.

DATA ANALYSIS
The overall average percentage of checklist items found in dissertations across all faculties and year group was 34%, with a variety of average values across faculties (Figure 1), checklist items (Figure 2) and year groups (Figure 3). Checklist item 3 about reporting of informed consent scored an overall average of 21%
(range 0-30%). This is a lower rate of reporting informed consent than was found in studies from Sudan\textsuperscript{19} and Cameroon\textsuperscript{20} that showed a 31% and 71% reporting rate respectively.

The faculty range of checklist items found was from 29% (Business Studies) to 43% (Theology). The theology student numbers were much smaller (16) than other faculties, and average class sizes were largest in Business Studies. The Business Studies classes were all held in the evening to allow most of their students to continue with paid employment full-time. Those employed full time potentially had less time to spend on their studies than the full-time students. A one-way analysis of variance showed that the differences between average percentage of checklist items found in dissertations per faculty was not statistically significant, $F(3,11) = 0.594029$, $p > 0.05$.

Figure 1: Average percentage of checklist items found in dissertations per faculty

When examining the percentages in different groups per question, a broad range was found. For example, zero percentages were noted in all 2012 groups for items 5 (relating to data storage) and 7 (relating to vulnerable subjects), while there were 100 percentages in all groups for item 4 (names of participants kept confidential in report) (Figure 2). A one-way analysis of variance showed that the differences between average percentage of checklist items found in dissertations per question number was statistically significant $F(2,21) = 11.25916$, $p < 0.01$.

\textsuperscript{19} Elsayad & Elamin, \textit{Journal of Bioethics and Law}, pp. 32-34.
\textsuperscript{20} Munung, \textit{et al.}, \textit{Human Research Ethics}, pp. 93-97.
There was an overall rise in average percentage of items identified in dissertations from 17% in 2012 to 50% in 2015 (Figure 3). A one-way analysis of variance showed that the differences between average percentage of checklist items found in dissertations per year group was statistically significant, $F(3,11) = 7.454619, p < 0.01$.

Figure 3: Average percentage of checklist items found in dissertations per faculty and year group
CONCLUSIONS

The overall level of ethics reporting in the dissertations sampled suggests the need for improved reporting. Failure to report is likely to reflect the need for a better understanding of ethics fundamentals including respect and justice. The Bible provides instructions to respect vulnerable members of society such as children (Mark 10:13-16) and the elderly (Leviticus 19:32) and indeed all members of society (1 Peter 2:17, Matthew 7:12). Justice is a recurring theme in the Bible (Isaiah 61:8, Psalm 106:3). Such respect and justice are put into practice in research writing when ethical codes are followed that include consideration of informed consent, confidentiality and consideration of vulnerable subjects.

While there were some differences between the faculties when measured by average percentages of checklist items identified in dissertations, these were not statistically significant. However, statistically significant differences were noted in relation to particular checklist items. Participant names were not used in any of the research reports sampled (checklist item 4), which suggests that students understood this aspect of confidentiality. However, few students mentioned appropriate data storage (checklist item 5), risk-benefit analysis (checklist item 6) or whether vulnerable subjects were included or excluded (checklist item 7). It appears that students consistently understood some issues better than others. The findings can help to guide lecturers and supervisors to give targeted attention to particular ethical issues such as data storage, risk-benefit analysis and vulnerable subject issues. The statistically significant differences seen between year groups, with a marked improvement every year between 2012 and 2015, is encouraging for the research ethics committee. Their work is likely to have been a contributing factor in the apparent increased awareness of ethical issues in the St John’s University of Tanzania master’s students. It appears that the introduction of the “light touch” approach has not been detrimental. Continuous improvement of teaching, library resources, supervision and audit of actual practice (in addition to repeated and more comprehensive audits of reported practice) are amongst the measures that may help to improve ethical practice in research at this university.

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