Through the eyes of the editor: Ethics in research and publication-the case of the University of Botswana journals

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ABSTRACT

The aim of this study was to determine the ethics principles that guide the University of Botswana editors and authors who submit articles to the University of Botswana-based journals, and the ethical challenges encountered by editors in the articles that are submitted to the journals. The study investigated ethical practices related to (a) authorship, (b) conflict of interest, (c) plagiarism, (d) simultaneous submission, (e) research fraud, and (f) salami slicing. The data were collected through a survey where a questionnaire was sent out to the editors via email. The data were analyzed and interpreted following the Aristotelian school of thought of 'moral virtue' as presented in Duffy (2017). The study determined that authorship, conflict of interest, and research fraud were not a serious problem in the submissions made to some of the University of Botswana journals. However, plagiarism, simultaneous submissions and salami slicing were reported to be a problem in some of the journals. The study also determined that some editors did not always practice due diligence, such as requiring authors to declare order of authorship, conflict of interest, and checking manuscripts for plagiarism, research fraud (data falsification and fabrication), and salami slicing. The findings of this study are important as they indicate areas in which editors need to focus on for improved quality of publications. In addition, the article recommends measures that can influence the University's publication policy for UB journals.

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Introduction
The University of Botswana is a young and fast developing institution in the heart of the Southern African Development Community (SADC) region, whose vision is to be a leading centre of academic excellence in Africa and the world (University of Botswana Strategy Document, 2020-2029). Academic excellence can be achieved through intensive research that addresses contemporary social issues and is conducted following best practices. One way in which the University encourages dissemination of research among its staff is by providing publication platforms such as the university-based journals. Thus, the University of Botswana currently hosts twelve journals for staff members and the international academic community to disseminate their research by publishing in these journals. The journals based at the University of Botswana are: (1) *Journal of the Linguistics Association of Southern African Development Community*; (2) *Botswana Journal of Agriculture and Applied Sciences*; (3) *Botswana Journal of Communication Studies and Applied Linguistics*; (4) *Botswana Journal of Technology*, (5) *Mosenodi*, (6) *BOLESWA*, (7) *Botswana Notes and Records*, (8) *Botswana Journal of Business*, (9) *University of Botswana Law Journal*; (10) *Marang: Journal of Language and Literature*; (11) *Lonaka: Journal of Learning and Teaching* and (12) *Pula*: *Botswana Journal of African Studies*. If the University of Botswana's aim is to be a centre of excellence, that excellence ought to be visible in its academic outputs as reflected in the quality of journals it hosts. A journal's excellence is judged not only from the content of its articles, but also from its processes, including adhering to ethical best practices and being indexed in reputable academic databases. It is against this background that this paper seeks answers to the following questions: a) What are the ethics practices that University of Botswana editors and authors adhere to? and b) What are the ethical challenges do editors encounters in the submissions to the university of Botswana-based journals? This is important because for a journal to be indexed in academic databases, it must fulfil minimum standards of publication practices, including being ethical in the production of journal issues.

Definition of terms
The following definitions adopted from the literature were used in the questionnaire to clarify to the editors what the questionnaire required of them. These definitions are used in the interpretation of the findings in this study.

Authorship - According to the Publication Ethics and Publication Malpractice statement of PsychOpen publishing Psychology (2011) and Lund (2012), authorship should be limited to those who have made a significant contribution to the conception, design, execution, or interpretation of the reported study. All those who have made significant contributions should be listed as co-authors.

Conflict of interest - Roberts (2009) defines conflict of interest as actions that are potentially taken to satisfy private interests that may not serve the best interests of the wider community (p. 582). The Firenze University Press Publication *Ethics and Publication Malpractice Statement* (no page number) lists the following as constituting conflict of interest: employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations and grants or other funding.

Plagiarism - Singh (2012) defines plagiarism as "copying of ideas, data, or words without attribution; in other words, using others' data and ideas and publishing them as one's own" (p. 2).

According to the World Association of Medical Editors (WAME), cited in Ballyram & Niernaber, (2019:26) plagiarism is "The use of another person's unpublished or published ideas, words, results, processes or any other intellectual property (including those obtained through confidential review of research proposals and manuscripts) without attribution or permission, and presenting them as your own, new or original''.

Simultaneous submission - Simultaneous submission is defined in Roberts (2009, p. 585) as the action of submitting a manuscript to more than one journal at a time.

Research fraud- According to the Elsevier Factsheet Research Fraud (2019, no page number), "research fraud is publishing data or conclusions that were not generated by experiments or observations, but by invention or data manipulation". The Factsheet goes on further to state that there are two kinds of research fraud, namely fabrication and falsification. Fabrication involves "making up research data and results, reporting them" while falsification involves "manipulating research materials, images, data, equipment, or processes" (no page number). According to Ballyram and Nienaber (2019:26), "Other forms of fabrication and falsification include selective reporting of results; failing to report results or findings that conflict with current reports in the literature".

Salami slicing - The Hindawi Publications ethics paper defines redundant publishing or salami slicing as "the inappropriate division of study outcomes into more than one article" (n.d, p. 2).
The rest of this paper is organized as follows: section 2 reviews the literature on ethics in publication and discusses theoretical constructs adopted in this paper; section 3 discusses the methodology adopted in this study; section 4 provides the findings and discussion; section 5 is the conclusion while section 6 provides recommendations arising consequent to the findings of the study.

Literature review and theoretical constructs
 Current works on ethics in research and publication
The topic of ethics in research and publication has been widely investigated from various perspectives. At the fore of such investigations are the sciences and the medical fields because, according to Zietman (2017), half of the publications in the medical field report irreproducible results. In other words, there is some unethical conduct leading to the irreproducibility of such results.

Different aspects of ethics in research have been investigated in the literature, some of which we consider below. Graf et al. (2014), Borkowski and Welsh (2000), Lund (2012), and Flanigan et al, 1998), concur that violations of ethical behaviour are evidenced by the following forms of academic misconduct: plagiarism, data falsification and fabrication, authorship disputes, and duplicate submissions. Coats (2008), Graf et al. (2014), Bryman and Emma (2007) and Lund (2012) discuss ethical misconduct such as image falsification, salami slicing, and undeclared conflict of interest. Graf et al. (2014) provide a summary of best practices on publishing ethics following the Wiley Publication Ethics Guidelines. They note that fabrication, falsification, or plagiarism constitute research misconduct and that members of journal editorial teams should attempt to detect misconduct relating to data falsification, fabrication, plagiarism, duplicate and redundant publication, unethical research, falsified authorship or undeclared conflicts of interest (p. 371).

Borkowski and Welsh (2000) conducted a study in which they compared the views of authors and editors in terms of ethical practices in publishing. They found that both authors and editors generally agree that ethical practices are upheld in publishing. However, opinions differed in terms of reviewer behavior and frequency of occurrence of questionable authorship. They also found that authors and editors differed over the issue of whether codes of publishing ethics were needed, with authors affirming the need for such while editors were not in support.

Roberts (2009) reviewed key ethical issues that authors should consider before submitting their manuscripts. These, according to Roberts (2009), include issues of authorship, conflict of interest, redundant publication, data access, and biases in data reporting and image manipulation. Quoting Flanagin et al. (1998), Roberts (ibid) noted that "authorship establishes accountability, responsibility, and credit for scientific information … misappropriation of authorship undermines the integrity of the authorship system" (p. 580). Roberts (2009) further observed that within medical journals, the problem of ghostwriting is widespread. This happens when an employee of a medical communications company assumes control over the composition of the findings while the actual researchers appear in the author byline (p. 582). Wager et al. (2009) surveyed 544 editors-in-chief of Wiley-Blackwell science journals on some ethical issues (e.g. inappropriate authorship, plagiarism, undeclared interests, redundant publication, multiple submission, ghostwriting, and data fabrication) concerning their journals. The researchers attempted to determine the editors' confidence in handling such issues and whether the editors were aware of existing ethics guidelines. They found that most of the science journal editors were unconcerned about publication ethics and believed that misconduct in their journals rarely occurred. The authors also found that many of the editors were unfamiliar with available guidelines (p. 348), a point I raise in the current study.

Kotchoubey et al. (2015) discuss a case in which two reviewers copied and pasted their comments from their previous reviews without reviewing the newly assigned manuscripts. In view of such unethical behavior, the authors recommend that guidelines for ethical behavior should also be provided for reviewers as well as for editors, and not just for authors. Lapena Jr. (2014) buttresses this point, noting that editors decide what is published and what is not, including what amendments should be made before publication, but that they should "work within social, legal and ethical frameworks…" (Lapena Jr., 2014, p.1121). Adding to this, Saurin (2016) observed that there is a power imbalance between authors and editors/publishers, and that this is especially so for researchers from the African context since they are underrepresented in international scientific associations and editorial boards (p. 1852).

Most of the literature from the African continent concerns itself with the ethical operations of Research Ethics Review (RER) committees. Such work includes Ikingura and Kithinji (2014), Wasunna and Bukusi (2014), and Boateng, Ndebele and Mwesiga-Kayongo (2014). As pointed out in Ballyram and Nienaber (2019) investigations on research misconduct in the developing world especially in Africa is scarce. In their article, the two authors comprehensively discuss some of the forms that research misconduct takes, highlighting what strategies could be used to combat research misconduct as well as those that could be used to prevent research misconduct. Closer to home, not much has been done on ethics in research and publication. Akakandelwa, Jain and Wamundila (2013) compared the levels of academic dishonesty between the University of Botswana students and those of the University of Zambia. The academic dishonesty investigated

included plagiarism, falsifying data in assignments, copying internet sources without acknowledging them, and making up references in assignments. The results showed plagiarism existed in both institutions with 42.6% reported for the University of Botswana participants indicating that they committed the misconduct of plagiarism and a higher percentage 57.4% reported that they plagiarized. This study is relevant to the current study in that it investigated plagiarism, albeit not in publication. Mazonde, Malete and Sugarman (2007) reported on the challenges and successes encountered by the University of Botswana in implementing a programme to increase awareness of research ethics and to manage allegations of research misconduct through a needs assessment and seminars on the Responsible Conduct of Research (RCR). These researchers reported that their survey indicated that researchers were mainly interested in receiving training on misconduct in research, authorship, and publication. In addition, researchers expressed interest in receiving training on conflict of interest and on maintaining confidentiality. This report is relevant to this study since it illustrates that researchers at the University of Botswana are interested in topics of research misconduct, the topic of the current paper. Thus, from this review, the topic of research misconduct in submissions made to the University of Botswana journals has not been exhaustively explored, hence the need for a study such as this one.

Theoretical constructs

What is 'ethics'? There are different theories of ethics which cannot all be reviewed here. One theory of ethics is a local theory of *Ubuntu* proffered by several scholars including Metz and Gaie (2010), Dube (2009) and Chilisa (2009). According to Metz and Gaie (2010, p.275) *Ubuntu*, a sub-Saharan concept of ethics, connotes "metaphysical ideas about the interdependence of all beings in the universe" for many Africans. Adding to this, Chilisa (2009, p.413) explained that "our understanding of humanness or reality in Botswana, for example, is influenced by our connectedness to the earth". According to Gbadegesin 1991, p. 65 cited in Metz and Gaie (2010), "Every member is expected to consider him/herself an integral part of the whole and to play an appropriate role towards achieving the good of all". The authors further cite Gyeke (2004, p.16) who says 'The fundamental meaning of community is the sharing of an overall way of life, inspired by the notion of the common good. Citing Goduka (2000, p.71), Chilisa pointed out that the concept of *Ubuntu* translates into 'I am we; I am because we are; we are because I am'. This means that according to *Ubuntu*, no person exists in isolation; we are interconnected, not just to each other but to the world in which we live. *Ubuntu*, like the Aristotelian theory of moral virtue is about goodness of individuals, but perhaps *Ubuntu* emphasizes goodness not just for the sake of the individual but for the benefit of the universe. It is this connection between the theory of *Ubuntu* and the Aristotelian school of thought that led to my interest in exploring the theory of ethics from Aristotle's viewpoint presented in Duffy (2017). According to Duffy (2017), in the Aristotelian school of thought, ethics is considered from many perspectives encompassing 'intellectual virtue' and 'moral virtue'. The latter, 'moral virtue', is of relevance to this paper. Moral virtue, according to Duffy (2017), is "practical wisdom, which enables us to choose the *right* course of action in a specific set of circumstances" (p. 234). Since this paper does not look at the good conduct of editors and authors in relation to consequences on the universe, but their conduct as responsible citizens with a moral duty towards scholarship, the paper finds the Aristotelian definition of ethics more suitable for this paper than the *Ubuntu* theory of ethics. Other scholars, for example Singh (2012), define ethics as encompassing "concepts and principles of right conduct" (p. 2). According to Ellis and Becker (1982), ethics is when individuals do not commit deeds that deliberately harm others

(in other words, ethical behaviour displays a concern for the wellbeing of human beings). From these definitions which themselves follow the Aristotelian school of thought of 'moral virtue', and aspects of *Ubuntu,* we can surmise that ethics is the practice of following a set of principles which are deemed morally good for the sake of others.

Research design
Research approach and instrument
This study adopted a survey research design. Davids (2006) defines a *survey* as a process by which researchers translate a research problem into questionnaires and then administer these to respondents to create data. The questionnaire was adopted for several reasons. First, questionnaires are cheap and easy to administer. Secondly, the investigator can send them to relevant respondents who are knowledgeable on the issues investigated. This enables the investigator to collect specific data which addresses the issues investigated. In addition, the questionnaire method was found to be the most suitable method of data collection as it enabled the respondents to respond to the questionnaire in their own natural environment without any external pressure. A questionnaire was designed to determine the ethics-related practices and challenges that the editors of University of Botswana journal editors practice and encounter in submissions to their journals. The questionnaire covered the following six areas: 1) authorship, 2) conflict of interest, 3) plagiarism, 4) research fraud, 5) simultaneous submission, and 6) salami slicing. These terms were explained in the questionnaire to enable participants to have the same understanding of what they mean. The questionnaire was made up of twenty YES/NO questions distributed as follows: five questions under the authorship topic, three under the conflict-of-interest topic, three under plagiarism, four under simultaneous submission, two under research fraud, and one under salami slicing. These sub-topics were decided upon based on guidelines provided by Elsevier publishing house at ethics.elsevier.com. Respondents were given three response options: a) YES, b) NO, and c) I don't know. For each question, space was provided for the respondents to write any additional comments. The questionnaires were emailed to the editors in February 2019 and the last response was received in March 2020.

Scope
Ethics in research and publication is a very broad topic. Therefore, no single study can cover all the areas under this topic. Because of that, this paper focuses only on the following topics: authorship, conflict of interest, plagiarism, simultaneous submission, research fraud, and salami slicing. This is because these topics seem to be the most frequently recurring, suggesting that they are key topics in ethics research. Due to limited space, this study does not cover reviewers (which will be the subject of another paper).

Validity, reliability and confidentiality
For purposes of ensuring reliability and validity of the data collected, the researcher administered a pilot study questionnaire to determine the relevance and clarity of the questions asked. The pilot study was also meant to determine whether the instrument measured what it was intended to measure. This pilot study was administered to three colleagues who are former editors of three of the journals at the University of Botswana. Any ambiguous questions were then clarified, and the comments section was added because of feedback from the pilot test. To ensure confidentiality, the editors were asked not to indicate their names on the questionnaire, but just the area that the journal they edit covers.

Sampling and population

Bryman & Bell (2007) state that a study sample is the segment of the population that is selected for investigation. In this study, purposive sampling was adopted since it involves the careful selection of a participant due to the qualities the participant possesses. In this case, the researcher decides what needs to be known and sets out to find participants who can and are willing and available to provide the information informed by skill, knowledge, or experience. This involves the identification and selection of research participants that are proficient and conversant with the phenomenon being investigated.

The population of a study refers to a group of people that share one or more characteristics from which data can be gathered and analyzed (Meke, 2011). Since there are only twelve journals hosted by the University of Botswana, the twelve editors of these journals constitute the population of this study. To avoid any bias in sample selection, since twelve is such a small number, the questionnaire was administered to all available editors. However, no questionnaire was sent out to the *Botswana Journal of Communication Studies and Applied Linguistics* since the journal seems to be dormant; the last published issue was in 2010 and so currently the journal has no editor. This means that the actual population of the study is eleven journal editors. In addition, four other journal editors did not return the questionnaire although it was sent out to them. That means the responses that are analyzed in this paper are from only seven journal editors, which is still a good number given that this constitutes 63.6% of the total population.

Findings and discussion

The questionnaire used to collect data for this study constituted two types of questions: questions that required objective answers – Yes, No, or I don't know; and a comment section for each of the topics. As pointed out above, the questionnaire covered six topics: authorship, competing interest, plagiarism, simultaneous submission, research fraud, and salami slicing. Each of these topics is discussed in turn below, beginning with authorship.

Authorship

Using the definition of authorship provided above, six questions were presented to the respondents on authorship on the following sub-topics: (a) ghost authorship, (b) guest authors, (c) gift authors (i.e., when an author gives up their claim to authorship of the work to somebody who has not written the work), and (d) authors listed without their permission, and e) whether editors ensured that all authors were properly acknowledged for their contributions in papers submitted. Figure 1 below presents the findings of the study on the five authorship questions.
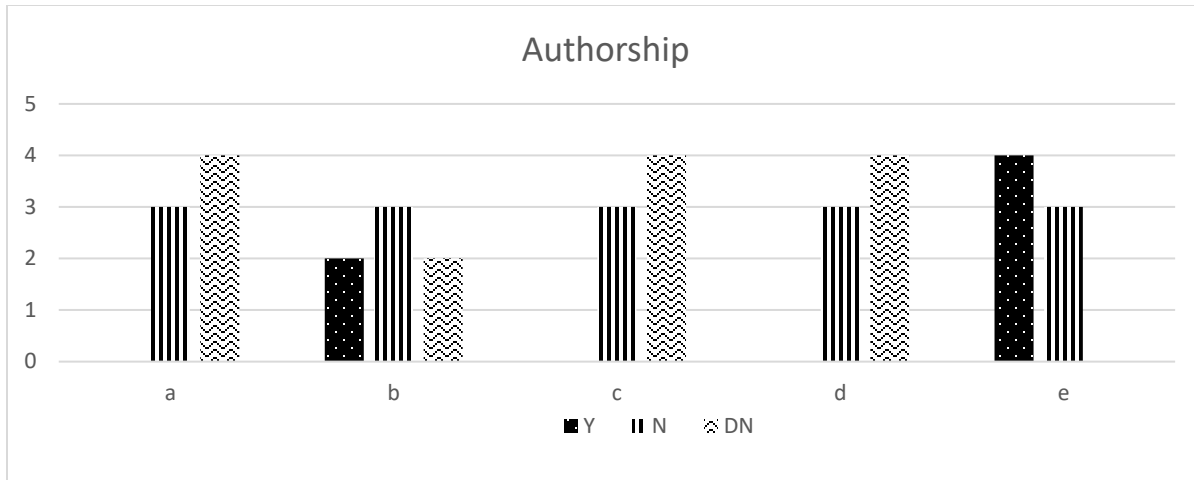
Figure 1: **Responses to the questions on authorship**

Respondents were asked if their journals had ever experienced the problem of ghost authors, that is, authors who contribute substantially to the paper but are not acknowledged. Ballyram and Nienaber (2019) and Roberts (2009) suggest that the practice of ghost authorship is most prevalent in the medical industry where medical researchers/writers are paid large sums of money to write articles and present results of clinical drug trials that favour these companies without these authors receiving any credit for the authorship of such reports. In response to the question on ghost authorship, three out of seven of the editors indicated that they had never experienced this problem while four said they did not know if this had ever happened or not. It is possible that this misconduct was not found in this study because none of the journals covers the medical field.

The second question to do with authorship required the editors to indicate if they had experienced cases of guest authors, that is, authors who make no discernible contribution to the paper but are listed anyway to increase the chances of publication. Two editors indicated that this had happened in their journals, but they did not elaborate on the issue in the comments section. Flanagin et al. (1998) observed that between 11% to 29% of those in the author-line do not deserve to be included in the authorship. Another question on authorship was about whether the editors had experienced cases where an author claimed that their name had been added to a paper without their permission. A study by Sherrell et. al (1989) indicated that respondents felt that attributing authorship to colleagues who did not contribute to the research was one of the most unethical practices in academia. Four of the editors responded affirmatively to this question while three said they had never experienced this. Most of the responses to the questions on authorship (15/33) indicated that most authorship misconduct had not been experienced by the editors. This is a good indication that at least most of the authors who submit papers to these journals do not engage in unethical behaviour with regards to ghost authorship.

Having said that, however, many responses (14/33) to the question on authorship were 'I don't know' responses. This outcome is consonant with Singh's (2012) and Lund's (2012) observation that it is difficult for the editor to detect dishonest conduct once a paper has been submitted. In fact, this is corroborated in some of the comments in response to the questions on authorship which state:

Editor 1: '*Unless communicated/revealed, questions (a –d) may be difficult for an editor to establish*'

Editor 2: '*These questions pertain to information that is more likely to be known to the authors rather than the editors.*

One of the editors observed that there is an issue of authorship regarding graduate students' supervisors who insist on being lead authors when publishing with their supervisees. Such conduct, in the Aristotelian school of thought of ethics would be regarded as lacking in virtue (as the more senior scholar would be usurping the work of a younger, less experienced scholar, thus taking advantage of them), and therefore such behaviour is unethical. On the question of authors claiming that their names had been added without their permission, none of the editors indicated that they had ever experienced that. On the question of whether editors asked authors to ensure that all authors were properly acknowledged, only four editors said they did while three said they did not. It may be the case that editors do not follow up on issues of authorship because, as observed in Wager et al. (2009, p.348), most academic editors fit their editing duties around other responsibilities, often full-time teaching and research commitments and few editors, if any, receive any training in publication ethics.

Conflict of interest

On the issue of conflict of interest, four questions were presented to the respondents on sub-topics related to conflict of interest; namely, (a) failure to disclose relationship with an affected organization, (b) failure to disclose study sponsor, (c) reporting deceptive research outcomes, and (d) failure to declare interested parties or sponsors. The findings on the four questions are presented in Figure 2.
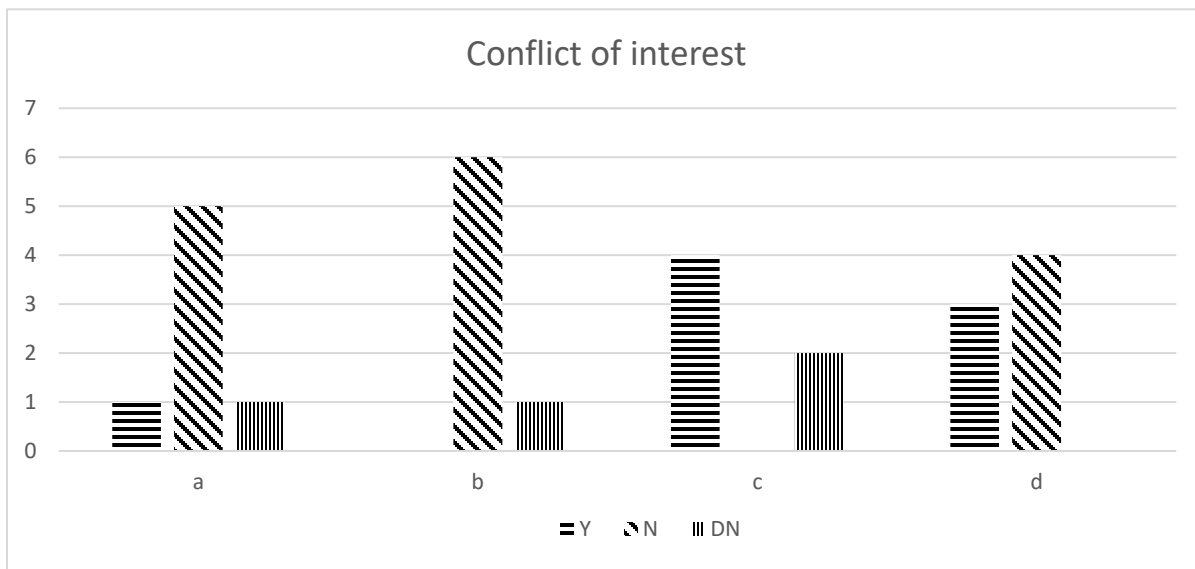

Figure 2: Findings on Conflict of Interest

As Figure 2 above shows, only one editor received a submission where the author had neglected to disclose having a relationship with a person or organisation which could have compromised the author's objectivity in interpreting the results. For example, if the author is an employee of an organization affected by the outcome of a study, there is a very high likelihood

that they would report their findings in a way that favours the company or organization that employ they them. The fact that this misconduct is not observed in the submissions suggests that either the authors disclose their relationships with parties whose interest might jeopardize the reporting of research findings or that the editors do not require the authors to disclose such information. Similarly, none of the editors indicated that they had experienced a situation where an author had failed to disclose a research sponsor; only one editor indicated that they did not know whether this scenario was ever the case.

On the question of whether the editors ever received submissions with findings that are deceptive or misleading, four of the editors, which is most of them, provided an affirmative response to this question. This suggests that authors who submit to the University of Botswana journals sometimes engage in unethical conduct in reporting their findings. On the final question under conflict of interest, editors were asked to indicate whether they ever ask authors to declare interested parties or research sponsors. Only three editors indicated that they required authors to declare interested parties or sponsors while four editors (the majority) said they did not require editors to make such a declaration. Wager et al. (2009) reported that in their study, 19% of the editors in their study indicated that they were unsure of the frequency of undeclared conflict of interest. The findings here suggest that editors either downplay the importance of declaring sponsors/interested parties or they are simply not aware of the importance of this factor in terms of ethical practice in research and publication. This contrasts with the Committee on Publication Ethics' (COPE) recommendation that editors have a prime responsibility to maintain the integrity of the scientific record. However, Wager et al. (2009) concedes that editors of academic journals have many other duties and responsibilities, and that very few editors receive training in editorial work. The finding above therefore suggests that editors themselves require training/guidelines on ethical issues in journal publishing. This suggestion finds favour in the comments of one of the editors who said:

> *'We will have to start asking authors to do this* (i.e., ask authors to declare conflict of interest)*. It just never occurred to us to do that'.*

Plagiarism

Four questions on plagiarism were posed to the editors on (a) reproduction of others' work without permission, (b) paraphrasing without acknowledgement, (c) text recycling, and (d) whether the editors check submitted work for plagiarism. Figure 3 below presents the findings on the four questions:
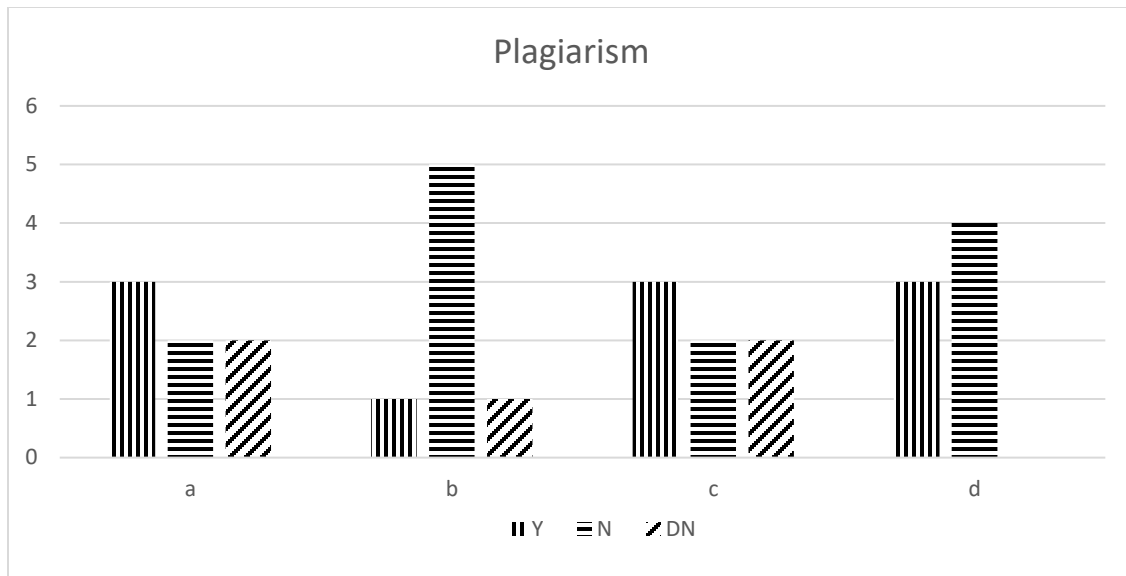
Figure 3: **Responses to questions on plagiarism**

On the question of whether the editors had ever encountered submissions where the work of another author was reproduced verbatim or in part without acknowledgement of the original source, three of the editors acknowledged encountering this type of plagiarism. Two editors said they had never encountered this and two said they did not know. This finding shows that some submissions received by editors of University of Botswana journals engage in the misconduct of plagiarism. On the question of whether the editors have encountered paraphrasing of other people's ideas without due acknowledgement of the original source, only one editor confirmed having encountered this while five indicated that they had never encountered this, with one editor indicating that they did not know. It is not surprising that only one editor indicated that they had encountered the misconduct of paraphrasing without proper acknowledgement because for an editor to detect this, they would have to have read the original work that is being paraphrased. It is not possible for editors to read all works referred to by authors. The finding in relation to paraphrasing therefore suggests that there is less of the paraphrasing without acknowledgement misconduct (a finding which we state with caution) than the reproduction of texts without permission. On the question of text recycling, that is, where an author reproduces a portion of their own work and submits it elsewhere as if it is new, three of the editors admitted having encountered this misconduct; two indicated that they had not encountered this while the other two said they did not know. This finding suggests that submissions made to journals at the University of Botswana show evidence of the misconduct of text recycling.

The finding of the final question which required the editors to indicate whether they ever checked submissions for plagiarism is quite disturbing. Four out of seven of the editors (i.e., most of the editors) said they do not check submissions for plagiarism. In fact, this finding can be used to interpret some of the 'I don't know' responses on the previous questions because it means that the editors do not check submissions for plagiarism of any sort. A study reported in Borkowski, and Welsh (2000) found that most respondents considered plagiarism unethical. A study by Wager et al. (2008) reported that editors of journals were asked to list the top three issues that cause them most concern and 69% of the editors listed plagiarism as the second topmost concern. This finding resonates somewhat with the findings on the University of Botswana journal submissions. While

it is reported in the literature that in the sciences, particularly in the field of medicine, the most rampant misconduct is that of irreproducible results (research fraud), Zietman (2017) reported that plagiarism is not the most common form of misconduct in the *International Journal of Radiation Oncology*. This picture is quite different for submissions made to University of Botswana journals where editors indicated encountering reproduction of texts without permission and text recycling. One of the editors commented that since their journal targets teachers as contributors, most of them are not conversant with ethics in research and publication. This can be resolved if journals have a page on which they guide their contributors on ethical issues. Sample comments from one of the editors are stated below:

> *'Some of these things may be difficult to detect. We rely on reviewers to see through these things, but they may be difficult to detect'.*

However, one of the editors indicated that they use SafeAssign, PlagScan, and Google, and that these portals have assisted them in detecting plagiarism.

Simultaneous submission
Four questions were presented to the editors on the following sub-topics: (a) simultaneous submission to the journal they edit and other journals, (b) submission of a topic submitted elsewhere but taking a different angle without acknowledging the original paper, (c) submission of a paper which was submitted in a different language to another journal without due acknowledgement of the original paper, d) whether editors ask authors to make declarations to the effect that their work had not been submitted elsewhere. The findings of the five questions on simultaneous submission discussed above are presented in Figure 4.
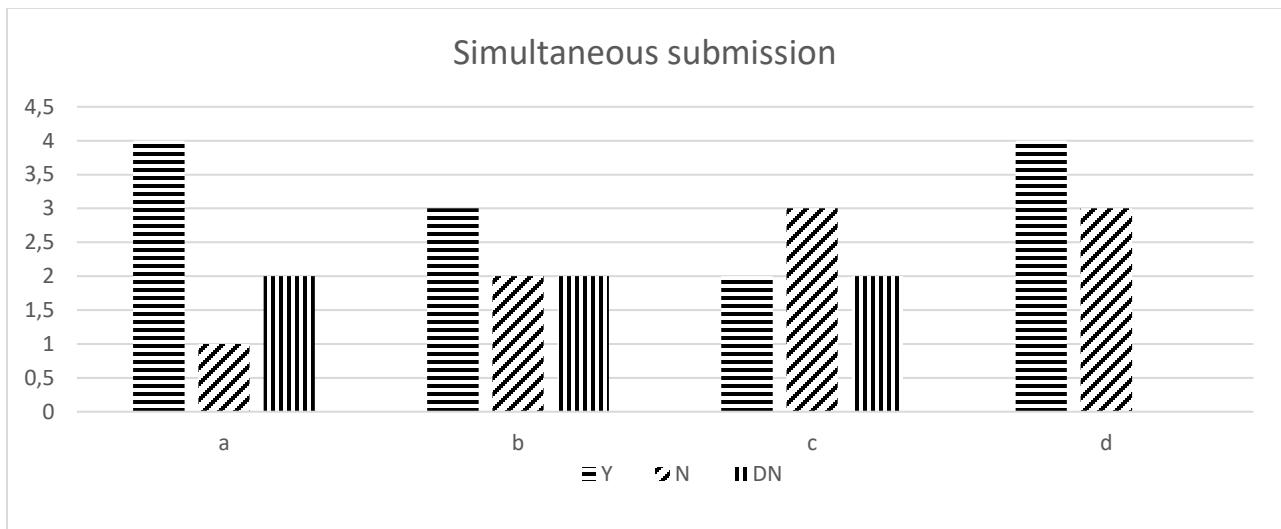

Figure 4: **Responses to questions on simultaneous submissions**

In response to question (a), four of the editors affirmed that they had encountered instances of simultaneous submission while one said they had not and two said they did not know. On the issue of submitting a paper or portions of it that have been published in other journals, three editors indicated that they had experienced this while three others said they had not encountered this, and one said they did not know. When asked whether they had encountered submissions where authors

had submitted manuscripts from the same topic but presented from different perspectives without due acknowledgement, three editors indicated having encountered this while two said they had not and two did not know. The findings suggest that simultaneous submission is a problem in submissions made to the University of Botswana journals.

On the question of whether authors submitted to other journals articles written in a different language without acknowledgement, two editors said they had encountered this, three said they had not and two said they did not know. On the last question which required the editors to indicate if they asked the authors to make a statement to the effect that their work had not been submitted elsewhere, four of the editors indicated that they did while three did not. From the results presented on the topic of simultaneous submission, it is evident that this malpractice does occur in in some of the manuscripts submitted to the University of Botswana journals. In fact, one of the editors commented:

> *In a number of cases, a paper already published would be submitted with a different title (but the same content and language).*

Three of the journal editors reported that they do not ask authors to specify whether their work has been submitted elsewhere or not as these journal editors may not consider this a serious malpractice. In a study reported by Borkowski and Welsh (2000) in which both editors and authors were required to indicate their opinions on multiple submission of the same manuscript, editors considered this practice to be unethical conduct and noted that this was a fairly common practice. The latter part of this statement is consonant with the findings reported here as evident from the editors' responses to the question on simultaneous submission. Roberts (2009) pointed out that there should be a policy requiring authors to declare whether their manuscripts are under consideration elsewhere. He further pointed out that without such a policy, it is difficult for editors to know whether such submissions ought to be treated as unethical conduct or 'bad manners'. One of the editors indicated that their journal requires that articles submitted to their journal should not be under consideration for publication elsewhere. Another said:

> *We just indicate that the work should not be considered for publication elsewhere, but we do not ask them to make a statement to that effect. We should start making this request to authors.*

Comments such as these speak to the fact that journal editors require training on publication ethics.

Research fraud
The editors in the current study were required to respond to three questions on research fraud on the topics of (a) fabrication, (b) falsification as well as (c) whether they checked submissions for fabrication and falsification. Figure 5 below presents the findings of these three questions on research fraud.

Figure 5: **Responses to the question on research fraud**

On the issue of whether the University of Botswana journal editors had encountered submissions with fabricated data, three editors indicated that they had not while four said they did not know. In a study reported in Borkowski and Welsh (2000), both authors and editors indicated that data falsification (together with plagiarism) was one of the most unethical practices in publishing. On the question of whether the editors had encountered falsification, only one editor indicated that they had encountered a submission with data falsification; two editors had not while four said they did not know. On the final question which required editors to indicate whether they checked submissions for data fabrication and falsification, four of the editors affirmed that they did while three indicated that they did not. The findings described here indicate that the problem of research fraud in submissions made to University of Botswana journals is minor. This is consistent with research findings of Wager et al. (2009) reported that in a survey asking about research misconduct among scientists, respondents indicated that the rate of data falsification was only 14.12%. and Singh (2012) reported a similar finding. Also consonant with the findings of the study reported here are the findings of Borkowski and Welsh (2000) who reported that data fabrication happened only sometimes. Although research fraud is not observed at a large scale in the University of Botswana journals, one of the editors nevertheless made the following comment:

> *I have come across a few submissions where the reported results are inconsistent with the data and its analysis.*

It is however concerning that some of the editors do not check submissions for data fabrication and falsification. Worth noting though, is that some of the editors commented that it is difficult to detect research fraud and that they relied on reviewers to identify this problem. This implies that such editors do not themselves check submissions for fabrication or falsification, possibly because they do not know how to go about this due to lack of proper training in being a journal editor. Another editor said:

> *We will have to start doing that* (that is, checking tables and images for manipulation or modification) *and incorporating this within the guidelines sent to reviewers for them to check as well.*

This statement speaks to the fact that there is a need for journals to have ethical guidelines not just for authors but for reviewers as well.

Salami slicing

Only two items were discussed under this topic, namely whether the editors have ever encountered salami slicing in the submissions, and if they do ask the authors to indicate whether their submissions are part of a bigger project or not. The results of the findings on the question of salami slicing are presented in Figure 6 below.
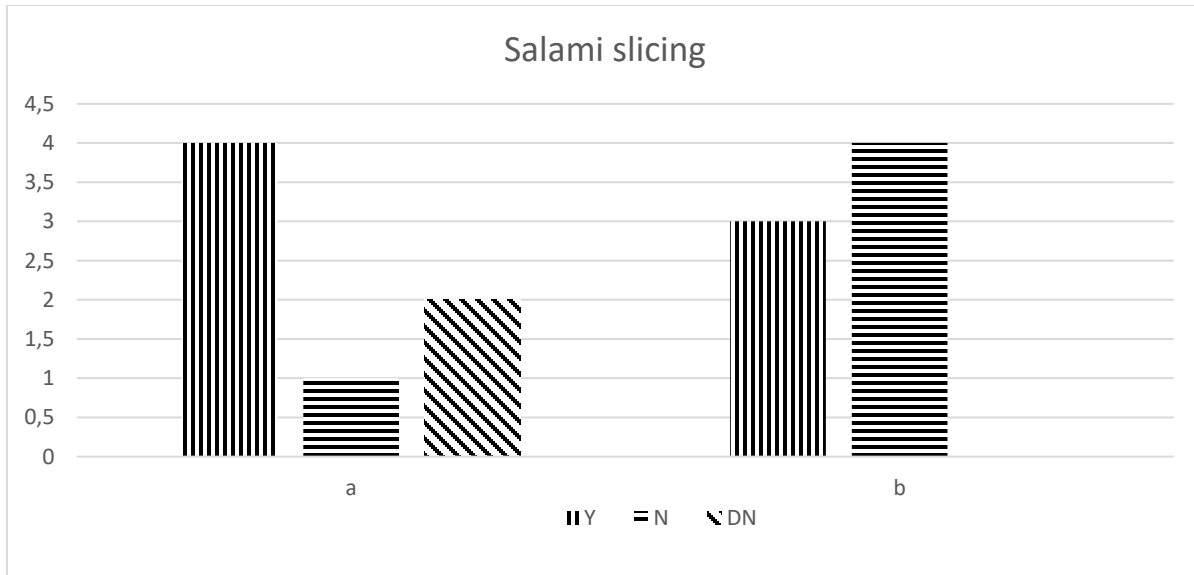

Figure 6 responses to the question on salami slicing

Figure 6 shows that four of the editors indicated that they had encountered salami slicing in the submissions. One said they had not and two said they did not know. Asked whether they require authors to indicate whether their submissions were part of another project, three editors indicated that they did while four (the majority) said they did not. These findings suggest that the malpractice of salami slicing does exist in the submissions made to the University of Botswana journals. This finding is consistent with a finding reported in Wager et al. (2009, p. 352) who reported that redundant publication was identified as the greatest concern and most frequent unethical practice in submitted manuscripts. In another survey reported in Borkowski and Welsh (2000, p. 21), both editors and authors indicated that they did not feel that it was unethical to repackage or to use a single data set to generate more than one paper. Roberts (2009, p. 584) reported that redundant publication is reported in many studies as a prevalent occurrence, noting that this malpractice is encouraged by the 'publish or perish' motto of most institutions. From the finding reported in this paper, one cannot be quite sure to what extent salami slicing is a problem within University of Botswana journals given that more than half of the editors do not require the authors to indicate whether their submissions are part of other projects or not. Only one editor commented on salami slicing suggesting that editors need to develop awareness of the issue.

In this section, I have discussed the topics of authorship, conflict of interest, plagiarism, simultaneous submission, research fraud and salami slicing from the Aristotelian ethical

perspective of moral virtue showing how some authors and editors of University of Botswana journals fail to adhere to publication ethics relating to these topics.

Conclusion
This study set out to a) determine the ethics practices that University of Botswana editors and authors adhere to and b) to determine whether the ethical challenges encountered in the submissions the editors received. The study investigated ethical practices on six topics namely (a) authorship, (b) conflict of interest, (c) plagiarism, (d) simultaneous submission, (e) research fraud, and (f) salami slicing. On the question of authorship, the only problem reported as having been experienced is that of guest authorship; otherwise, authorship does not seem to be much of a problem in submissions made to the University of Botswana journals. The question of conflict of interest does not seem to pose many ethical challenges in submissions made to the University of Botswana journals. However, some of the editors reported having detected deception or reporting of misleading findings by authors. The findings of the study also show that plagiarism is more of a problem than authorship and conflicting interests. The study also found out that some editors (four out of seven) do not check submissions for plagiarism. Similarly, editors of University of Botswana journals indicated that they had encountered the problem of simultaneous submissions involving submissions which had been published in other journals; repackaging of a topic without due acknowledgement, as well as submissions which had been published in other journals in a different language (without due acknowledgement). Very few problems were reported on research fraud, with no editor reporting having encountered data fabrication and only one indicating they had encountered data falsification. The issue of salami slicing was reported by some of the editors, and others indicated that they did not ask authors to indicate whether their work was part of another project. Following the findings of this study, some recommendations are suggested for editors to ensure ethical conduct by authors, reviewers and editors.

Recommendations
As is evident from the findings of this study, editors need training on publication ethics, and that guidelines on the same are needed to ensure that authors, reviewers, and editors adhere to the highest standards of ethical practice in research and publication. To achieve this, journals need to have a page with submission, review, and publication guidelines which cover the following topics:
1) Authorship: journals should provide a form through which authors declare whether all rightful authors have been acknowledged, whether they are sole authors, and that there are no guest or ghost authors involved in their manuscripts.
2) Conflict of interest: journals should require authors to declare interested parties in their work such as sponsors or any party or organization with some form of financial interest in the project reported.
3) Plagiarism: journals should provide a statement outlining the consequences of plagiarism in all its forms – paragraph reproduction, text recycling, and using other authors' work without due acknowledgement. In addition, the review process should also involve plagiarism check using appropriate software.
4) Simultaneous submissions: journals should also require that authors declare that their work has not been simultaneously submitted elsewhere; also, whether the submission has been published by another journal in a different language
5) Research fraud: journals should ask authors to declare that their work has no data falsification and data fabrication.

6) Salami slicing: Journals should make statements indicating that inappropriate divisions of study outcomes into numerous publications is unethical.

7) Journals should require editors to assign reviewers objectively and avoid a) accepting lower quality submissions just because they are from friends; b) steering papers to reviewers who are hostile or sympathetic to a particular theory or methodology or author.

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