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ORIGINAL RESEARCH

Knowledge of Research and Publication Ethics in a Nigerian Medical College

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Abstract

Background: In academia, the aphorism 'publish or perish' is commonly used. The pressure to publish academic papers can sometimes lead researchers to engage in unethical practices in the conduct, reporting or publishing of their research works.

Objective: To assess the awareness and practices of ethical issues in the conduct, reporting, and publishing of research among academics.

Methods: The study was a descriptive, cross-sectional survey of the academic staff of a Nigerian medical college. A structured questionnaire was used to collect relevant information about publishing experience and observation of practices considered to be acts of research misconduct.

Results: A total of 94 out of 108 academics responded to the questionnaires giving a response rate of 87%. The commonest act of research misconduct reported by the respondents was plagiarism with an incidence rate of 25%. The incidence rates for awareness of data fabrication and falsification were 22% and 21% respectively. The proportions of respondents who were aware of gift and ghost authorship were 63% and 20% respectively. Only 41% of the respondents could recall all the criteria for authorship of an academic paper while 20% could not recollect any of the criteria.

Conclusion: Research misconduct and unethical publication practices are common observations among the respondents in this survey. It is recommended that researchers should familiarize themselves with the various ethical guidelines and requirements for authorship and agree on the sequence of the names of authors in the by-line of the proposed publication at the start of project work.

Keywords: Academics, Ethics, Misconducts, Publications, Research.

Introduction

Ethics encompasses the principles, standards, norms, and guidelines which regulate practice

and profession in deciding on what is right or wrong. Clinical research has become an integral part of the practice of medicine and this has made the requirements for adherence to ethics to assume more prominence. Research

misconduct is any behaviour by a researcher, intentional or not, that falls short of good ethical and scientific standards. [1]

In academia, the aphorism 'publish or perish' is commonly used. This slang was first credited to Coolidge in 1932. [2,3] The need to publish often put pressure on academics, sometimes even more than the need to do proper research. This is because there are many rewards for successfully publishing. These rewards include attraction of grants to the individual researcher, recognition and fame to institutions, promotion and advancement at work. [2,4, 5] The pressure to make significant contributions to knowledge, break new grounds in research and get published can sometimes lead researchers to engage in unethical practices in the conduct, reporting or publishing of their research works. [2,6]

The authorship of articles in peer-reviewed journals can be contentious and can sometimes lead to unethical publication practices.[1] To qualify as an author in a peer-reviewed journal, all the following criteria must be met: substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data, drafting the article or revising it critically for important intellectual content, final approval of the version of the manuscript to be published and lastly, agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. [1, 7] Acquisition of funding, the collection of data, or general supervision of the research group, by themselves alone, do not justify authorship. [1] Unethical publication practices include gift and ghost authorship. Gift authorship is the listing of a person who does not merit to be listed on the authors' by-line. [1,7] Ghost authorship is the omission of the name of a person who qualifies to be an author from the by-line. [1,7]

Research works from developing countries are often subjected to greater scrutiny, compared to works done in developed countries. This is because of the need to subject them to the integrity test. [8,9] Researchers involved in unethical practices are often discredited and shamed upon discovery. Misconducts in research include plagiarism, data fabrication, and falsifications. [1] There is an urgent need to bring issues bordering on research and publication ethics into focus among researchers in the developing world. A recent systematic review of publications on research integrity in African countries revealed that there is a paucity of publications on the subject.[10] Available studies from Nigeria reported that research misconduct is fairly common in the country with a prevalence of up to 50%. [4,10,11,12]

Therefore, the aim of this study was to increase awareness of ethical issues in research among academics in order to improve compliance with ethical requirements. The study objectives were to assess; research and publication experience of participants, awareness of practices considered as research and publication misconduct, knowledge of ethical issues involved in conduct and publication of scientific research and previous training by participants on any aspect of research ethics.

Methods

This study was conducted at the Lagos State University College of Medicine (LASUCOM), Ikeja, Lagos, Nigeria. The college was established in 1999 by the government of Lagos State, Nigeria. LASUCOM has three Faculties; Clinical Sciences, Basic Medical Sciences, and Dentistry. The College had a total of 120 academic staff at the time of this survey. The survey was conducted from March to May 2016. A total sampling of all faculty members was

employed. All the academics that consented to participate in the survey were eligible for participation and were included in the survey. Acceptance to fill the questionnaires was taken as consent to participate in the survey. Therefore, only academics that refused to participate in the survey were excluded.

The study design was a descriptive, cross-sectional survey with the use of self-administered structured questionnaires. The study protocol was approved by the Lagos State University Teaching Hospital Health Research Ethics Committee. The information collected from the participants included demographic profiles, information on research and publication experiences, information about knowledge of ethical issues in research and publishing and information about previous training on any aspect of publication or good clinical practices. The questionnaires were distributed to the faculties during departmental or faculty meetings. The study instruments were filled and returned immediately after completion. This was to prevent participants' responses from being influenced by external sources of information.

Data were transferred from the filled questionnaire to a database, using SPSS version 18 software. Continuous data were summarized as mean \pm standard deviation and qualitative data were summarized as percentages.

Results

A total of 108 questionnaires were distributed to potential participants during this survey but 94 were returned, giving a response rate of 87%. More than half (57%) of the respondents were

from the Faculty of Clinical Sciences. The highest academic qualification of almost three-quarters (74%) of the respondents was Fellowship of the various Postgraduate Medical Colleges. A little over half (52%) of the respondents had less than 10 years' experience in academia with 15% of the respondents in the professorial cadre (Table I).

Review of publication experience of the respondents showed that less than a third had over 30 publications; the individual with the highest publication, however, had more than 70 academic papers published works in peer-reviewed journals. The type of research engaged in was observational studies by 70% of the respondents; 21% have had previous experience in clinical trials and 21% were involved in bench work research studies. The details of the research experience of the respondents are shown in Table II.

More than two-thirds (77%) of the respondents expected that the hospital's Ethics Committee, in the review of research protocols submitted for processing, should only focus on the assessment of risk/benefit of their research. Less than half (44%) of the respondents expected the Ethics Committee to dwell on the details of the scientific background of their studies. The assessment of knowledge of ethical issues in authorship revealed that 95% of respondents could not correctly explain what ghost authorship is about. The sequence of the names of research participants on the by-line of authors was identified as the commonest cause of disagreement by 22% of the respondents. A little over a third (36%) of the respondents admitted being aware of the inclusion of names of persons who did not take part in a project as an author in their previous publications (Table III).

Table I: Demographic characteristics of the respondents and their research experience

| Characteristics | Frequency | Percentage |
|---|------------|------------|
| Gender | | |
| Males | 59 | 62.7 |
| Females | 35 | 37.3 |
| Age | | |
| Mean ± SD (Range) | 49 (33-71) | |
| Faculty | | |
| Clinical Sciences | 54 | 57.4 |
| Basic Medical Sciences | 27 | 28.7 |
| Dentistry | 13 | 13.8 |
| Academic rank | | |
| Professor | 14 | 14.8 |
| Senior Lecturer | 40 | 42.6 |
| Lecturer | 40 | 42.6 |
| Highest Qualification | | |
| Fellowship of Postgraduate Medical Colleges | 74 | 78.7 |
| Doctorate of Philosophy (Ph.D.) | 13 | 13.8 |
| Master's Degree | 7 | 7.4 |
| Number of years in academics | | |
| Less than 5 | 22 (23.4) | 23.4 |
| 5 to less than 10 | 33 (35.1) | 35.1 |
| 10 to less than 15 | 20 (21.3) | 21.3 |
| 15 years and above | 9 (9.6) | 9.6 |

Table II: Publication and research experience

| Variables | Frequency | Percentage |
|---|-----------|------------|
| Number of publications | | |
| 10 or less | 30 | 31.9 |
| 11 - 20 | 25 | 26.6 |
| 21 - 30 | 10 | 10.6 |
| More than 30 | 28 | 29.8 |
| Mean number of publications (Range) | 21 (0-70) | |
| Experience as a reviewer | 54 | 57.4 |
| Membership of editorial board | 22 | 23.4 |
| Types of research work | | |
| Clinical trials | 26 | 27.7 |
| Benchwork | 20 | 21.3 |
| Observational studies | 66 | 70.2 |
| Review of records | 54 | 57.4 |
| Knowledge of criteria for authorship | | |
| Does not know any | 19 | 20.2 |
| Aware of 1 of 4 | 8 | 8.5 |
| Aware of 2 of 4 | 23 | 24.5 |
| Aware of 3 of 4 | 39 | 41.5 |

Table III: Knowledge of ethical issues involved with publication and research conduct

| Variables | Frequency | Percentage |
|--|-----------|------------|
| Expectation from the review process of the EC | | |
| Review of the consent document | 69 | 73.4 |
| Protection of vulnerable participants | 69 | 73.4 |
| Review of study methodology | 62 | 65.9 |
| Assessment of risk/benefit | 72 | 76.6 |
| Review of the science of study | 41 | 43.6 |
| Review sample size | 39 | 41.5 |
| Identified research misconducts | | |
| Plagiarism | 45 | 47.9 |
| Data falsification | 35 | 37.2 |
| Data fabrication | 17 | 18.1 |
| Knowledge of ethical issues in authorship | | |
| Gift authorship | 59 | 62.8 |
| Ghost authorship | 4 | 4.3 |
| Disagreement on the sequence of names on the list of authors | 21 | 22.3 |
| Exclusion from authorship list | 19 | 20.2 |
| Observed research misconducts | | |
| Plagiarism | 24 | 25.5 |
| Data falsification | 21 | 22.3 |
| Data fabrication | 20 | 21.3 |
| Willingness to report misconducts | | |
| Who to report to | | |
| Authority | 15 | 16.0 |
| Ethics committee | 35 | 37.2 |
| Editor/Publisher | 12 | 12.8 |
| Does not know who to report to | 10 | 10.6 |

The assessment of training and knowledge of the respondents about aspects of protocol writing and research publication showed that about half (49%) of the respondents have had

previous training on research methodology and 17% were aware of STROBE statements (Strengthening the Reporting of Observational Studies in Epidemiology) as shown in Table IV.

Table IV: Training and knowledge of publication experience

| Variables | Frequency | Percentage |
|----------------------------------|-----------|------------|
| Manuscript Writing | 31 | 32.9 |
| Training on research methodology | 46 | 48.9 |
| Good Clinical Practice Training | 15 | 15.9 |
| Knowledge about STROBE | 16 | 17.0 |
| Knowledge about CONSORT | 17 | 18.1 |

STROBE: Strengthening the Reporting of Observational Studies in Epidemiology
 CONSORT: Consolidated Standards of Reporting Trials

Discussion

Plagiarism was the commonest form of research misconduct observed by the respondents in this study. The assessment of the acts of research misconduct was indirect. The respondents were asked if they had ever observed or heard about any form of research misconduct among colleagues. They were then asked to mention the type of misconduct that was observed. Assessing for such behaviour directly may not give a true reflection of how common the practice is as most people may not admit to involvement in such an infamous act. In a similar survey among researchers attending a scientific conference, half of the respondents (50.4%) were aware of a colleague who had committed research misconduct. [11] The definition of misconduct in that study was broader and included, "non-adherence to rules, regulations, guidelines, and commonly accepted professional codes or norms. [11]

Most of the respondents were willing to report research misconduct but were faced with the dilemma of the lack of a clear reporting line and protocol for reporting. Some respondents were aware they could report observed misconduct to the Ethics Committee of the hospital. This may be because the committee is the only formal body that deals with some aspects of the regulation of research activities in the institution that they were aware of. In places where there is a culture of reporting research misconduct, such institutions usually have an office of research integrity. [11,13,14] Regular training in research ethics and responsible conduct of research is also regularly done in such institutions. In Nigeria, the National Health Research and Ethics Committee (NHREC) is saddled with the responsibility of regulating responsible conduct of research. [20] However, most Ethics committees in institutions across the country may not be playing that role.

Practices classified as misconduct in research include plagiarism, fabrication or falsification. [15, 16] Any of these could occur at any time during a research cycle, such as during the process of conceptualization, conducting, reviewing or reporting research results. The fact that less than half of the respondents in the present study mentioned correctly, plagiarism as a form of research misconduct, may suggest that they do not understand the concept of research misconduct. The terms plagiarism, falsification, and fabrication are understood in their ordinary usage by most respondents. What most respondents did not understand is the fact that these acts constituted misconduct in research. In academics, trust and honesty are important for mutual acceptance of scientific works. [15]

Less than half of the respondents recalled all the criteria for authorship and this suggested that many of the respondents did not consider requirements for authorship before the inclusion of names of authors in the byline of their previous publications. This may be responsible for the disagreement some respondents reported about authorship, such as being left out as an author, inclusion of non-participants as authors and position on the authors' byline. The authorship of a research work serves to give credit to those who worked on the project and also serves the purpose of accountability for incorrect reporting of the work. [12] It is usually helpful to define the roles to be played by each member in a group project. The sequence of names of authors should be done possibly at the protocol drafting stage of a project. [1] The position of names of authors on the byline sometimes serves as an indicator of the importance of the role played on a research project. [7,17] It is, therefore, important for the position of authors' names to be an adequate reflection of this role. All the persons that meet the criteria for authorship should be included and contributors who do not, should be

acknowledged. Some journals now require authors to state their specific contributions at the end of the paper. This is to clearly show what each individual listed as authors contributed to the work. [15] The guidelines of the International Committee of Medical Journal Editors (ICMJE) stipulate that the order of authorship should be a joint decision of the co-authors. [1] The authors should be prepared to explain the order in which the authors are listed on the publication.

The present study revealed that gift and ghost authorship is still a common practice in academic publishing. Authorship is sometimes gifted to give credibility to a work. Names of well-known researchers in the area of study who did not actually participate in the study are thus included. This may also be for the purpose of receiving favour from a senior colleague. Sometimes, a ghost author is the person who helped to write the paper but otherwise did not contribute to the research. [1] Contributors to research projects may be omitted from the authorship of a publication because they are students or junior in the hierarchy.

Less than half of the respondents in the present study expected that the role of the Ethics Committee should be the review of the scientific aspects of their research protocol. This agrees with the report in a similar study which was conducted among resident doctors. [18] It is important for researchers to know that there is no conflict between science and ethics. [19] This explains why Ethics Committees consider different aspects of the study protocols. Valid science is an ethical requirement in research. [8] Studies that do not generate reliable and valid data, as well as those that do not have social values, are not ethically acceptable. [18,20-22] The code of the Nigerian National Health Research Ethics Committee, the WHO guidelines, and other national ethical guidelines require the review of the scientific background of research

protocols in addition to the review of technical and ethical considerations. [20-22]

Less than half of the respondents in the present study had previously received pieces of training on research methodology. This is in keeping with previous findings that few researchers in Africa receive appropriate training for performing clinical research. [5] To appraise a research work accurately, readers of the publication need complete, clear, and transparent information on its methodology and findings and interpretation. [23,24] It is sometimes difficult to assess or critique published works adequately because most authors do not provide lucid and complete descriptions of necessary critical information. [23,24] To provide for a uniform reporting of research works for ease of their review, the committee of journal editors have provided various guidelines for reporting. The Consolidated Standards of Reporting Trials (CONSORT) statement is a 25-item checklist that provides guidelines for reporting randomized clinical trials. For observational studies, Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement uses a 22-item checklist that provides guidance for its reporting and design.

Compliance with Good Clinical Practices (GCP) guidelines provides public assurance that the rights, safety, and well-being of trial subjects are protected, that the research is consistent with the principles that have their origin in the Declaration of Helsinki, and that the clinical trial data are credible. [25] Less than 20% of the respondents in this survey were not aware of any of the resource documents such as the CONSORT statement, STROBE statement, and the GCP document. These are some of the important resources that help researchers with proper designing, reporting, and conduct of studies.

Conclusion

Research misconduct was reported to be fairly common among the respondents in the present study. Disputes about the position of the names of research participants on the authors' by-line, is a common issue among researchers. Many of the respondents are not aware of the various ethical guidelines applicable to the conduct and reporting of research. It is recommended that researchers should undergo regular training on different aspects of ethics in research. To reduce disagreement and unethical practices concerning authorship, it is recommended that researchers familiarize themselves with the requirements for authorship and to agree on the sequence of the names of authors in the by-line at the start of project work. Regular updates on manuscript writing and other aspects of publication will also help to improve authorship skills.

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