ROLE OF PEER PRESSURE IN RESEARCH MISCONDUCT AMONGST RESEARCHERS IN THE UNIVERSITY OF IBADAN.

By

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MATRIC NO: 167591

Being a dissertation submitted to the Department of Surgery, Faculty of Clinical Sciences, College of Medicine, University of Ibadan, Nigeria, in partial fulfillment of the requirement for the award of Master of Science Degree in Bioethics (M Sc.)

BTH 777

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July, 2017.

Dedication

This work is dedicated to God Almighty who has been my pillar of strength and my wonderful son for the sacrifice I forcefully subjected you to, so that you can be proud of me in the future.

ABSTRACT

The critical and profound roles that research plays demand that research is conducted with great integrity and in conformity with codes of ethical scientific conduct. Various reasons have been highlighted for rampant and gross research misconduct among researchers especially scientific and health researchers. However, the role of peer pressure in research misconduct has not been satisfactorily studied. This study therefore examined the role of peer pressure in research conduct in University of Ibadan, Ibadan, Nigeria.

The research design is exploratory. University of Ibadan was purposively selected as the study location because it is the oldest university in Nigeria. Purposive and snowball sampling were employed to select thirty (30) interviewees including twenty five (25) academic staff (journal editors, senior and junior faculties and members of ethical committee), four (4) PhD students and one non-academic staff that granted In-Depth Interviews (IDIs). They were selected because they are stakeholders in ethical issues in research. Qualitative data was analysed through verbatim quotation, thematic and content analysis. The profile of the interviewees was presented in frequency tables.

The prevalence of research misconduct is difficult to ascertain because there is poor documentation of cases of research misconduct. Cases of research misconduct are also hardly officially reported. The common cases of research misconduct are plagiarism, data falsification, data fabrication, undue authorship, misappropriation of funds and publishing in sub-standard outlets. Majority of the interviewees stated that peer pressure has influence on research misconduct. However, the influence is limited. This is because the influence of peer pressure on research misconduct is greatly aided by un-conducive environment for teaching and research and the institutional pressure to publish. To create awareness about ethical issues in research, the University established disciplinary committee, ethical committee, organized workshops, trainings and seminars to create awareness on research integrity. The report, investigation and management of perpetrators of research misconduct are done at departmental, faculty and the university level. The punishment for students includes withdrawal of certificates, suspension of programme, and

expulsion from the university. For academic staff offenders, punishments include dismissal, suspension of salary, services and promotion. Research misconduct has damaging effects on the perpetrator, university and the society at large. On the staff, it leads to mediocrity of knowledge, laziness to indulge in sound intellectual reasoning and termination of career if caught. On the students, it affects career progress and capacity to reason intellectually. On the university, it affects the reputation of the university when they are blacklisted. On the society, it can lead to adverse health implications which can cause death, faulty formulation and implementation of policies which will deter national growth and development.

To reduce the incidence of research misconduct, the university should organize periodic trainings, seminars and workshops; institutionalize mentoring; establish more ethical committees; encourage collaborative work among researchers; provide institutional framework for punishment for offenders and rewards for honest researchers; reduce the institutional pressure to publish; provide conducive environment for teaching and research; employ the use of plagiarism software and social media.

Key Words: Institutional Pressure, Peer Pressure, Role, Research Misconduct.

Word Count: 491

Acknowledgements

Under the guidance of the West African Bioethics Training Programme, this work was supported by Grant Number D43 TW007091 from the United States National Institutes of Health (NIH), Fogarty International Centre and the National Human Genome Research Institute. Its contents are solely the responsibility of the author and do not necessarily represent the official views of the awarding office of the NIH/Fogarty International Centre.

To my supervisors, Dr. Temidayo Ogundiran and Dr. Omokhoa Adeleye, I express my sincere gratitude for your concern and time taken to guide and encourage me through this

project. I thank you for not giving up on me and for your patience as well. I also thank Prof. A S Jegede for his unflinching support rendered during the course of the project.

I appreciate the Director General of my organization, Prof. Lucy Ogbadu for her motherly support and also the Director/CEO NACGRAB (National Center for Genetic Resources and Biotechnology) and the entire staff of the Molecular Biology unit of the Center for their kindness and warm accommodation. I am indebted to my parents (The Arikawe's and Adefemi's) for their financial and moral support, also to my son. This won't be complete without appreciating my best friend of all times, Tiwa, thank you for always being there.

My profound and ultimate gratitude to God Almighty for the grace, wisdom, understanding from above, the physical, spiritual and financial strength provided during the course of this project.

CERTIFICATION

I certify that this work was carried out by ADEFEMI Oluwabukola Omowumi under my supervision at the Department of Surgery, Faculty of Clinical Sciences, College of Medicine, University of Ibadan, Ibadan, Oyo State, Nigeria.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In recent times, modern scientists are having a hard time to do freeand honest research, present factual and truthfulpublication. Many professional scientists todayare doing research because it affords them somerespectful careers and comfortable living. It is alsoundeniable that many scientists today work forpublication rather than for truth, and when seeking truth for science and seeking money for living are intimately linked together, scientists needs to ask themselves this question: should I do this for the truth in public science or do this for the security of personal career? Most times a decision is easy to reach because the same conduct may bring benefit to both science and career (Shi Liu, 2006).

In the developed countries numerous cases of research misconducts which has led to various degrees of punishments such as retraction of papers, termination of appointments as well as jail terms has been on the increase in recent times. However, in Nigeria it would be quiet difficult to know the prevalence of misconduct in our various institutions and amongst our scientists because most cases are hardly reported but we cannot however deny the existence of research misconduct amongst them. However, studies have been carried out to investigate the knowledge of and training

on research ethics amongst clinicians and scientists, and factors associated with research wrong doing in Nigeria. The outcome of these studies carried out by Adeleye and Adebamowo, indicated a sizeable lack of knowledge on ethical integrity in conducting research amongst our clinicians and scientist. Some 22.0% admitted to at least one of fabrication, falsification, and plagiarism, the predictors of which were knowledge gaps in research ethics and pressure to publish enough papers for promotion. The most frequently admitted among FFP was fabrication, followed by falsification, and plagiarism. Other wrongdoings admitted included the use of inappropriate or inadequate research design, unauthorized use of confidential information, such as the use of data on patients who consented to clinical care but not to research, publishing the same data or results in more than one publication, failing to present data that contradict one's own research, having relationships with research students or research participants that may be interpreted as questionable, and manipulating the methodology or results of a study in response to pressure from a funding source (Adeleye and Adebamowo, 2012).

The critical and profound roles that research plays as it contributes to generalizable knowledge demand that research are conducted with great integrity and in conformity with codes of ethical scientific conduct. The results from scientific research, besides offering solutions to problems facing humanity, they also bring honor, fame and international recognition to the scientist who produced the landmark breakthrough discovery or innovation(Geggie, 2009). Ethical responsibility therefore lies in defining clear boundaries about generally accepted norms of behavior for the public or private good (Shamoo,2000).Researchers are members of a community characterized by curiosity, cooperation, and intellectual rigor. They seek to answer some of the most fundamental questions that humans can ask about nature. Their work can have a direct and immediate impact on the society at large.

However, the rewards of science are not easily achieved in that their work or paper has to go through serious scrutiny and review by experts before it can be accepted by their peers.
Researchers are often subjects to great personal and professional pressures and in their bid to achieve success; they must take difficult decisions about how to design investigations, how to present their results, and how to interact with colleagues (Academies,2009). Their failure to make the right decisions may slow down the advancement of knowledge, or waste time and resources; it even undermines professional and personal trust.

A researcher who violates professional and ethical standards tends to lose the respect of their peers and may even destroy his/her career. As in the case of the renowned researcher, Woo Suk Hwang, then a Biologist at Seoul University, who claimed to have produced a viable cloned human embryo, however his results had been faked: it transpired that his group had unethically obtained egg in misguided and fraudulent experiments(Cyranoski, 2009).
A finding of research misconduct depends on three requirements. First, there must be a significant departure from accepted practices of the relevant research community. Secondly, the misconduct must be committed intentionally or knowingly, or recklessly and thirdly, the allegations must be proved `by factual and quality evidence (Academies, 2009).

Research misconduct and other unacceptable acts in research remain major sources of concern in modern research process. These concerns have grown in recent times as the rewards from research have increased, and significant amounts of research and clinical trials have moved to developing countries where the regulatory environment is less rigorous (Adeleye and Adebamowo, 2012).

Research misconduct is commonly understood to include FFP—falsification (altering research processes, or recording or reporting wrong results), fabrication (inventing and recording or reporting results), and plagiarism (taking the words, ideas, or data of others or self and reporting them without giving due credit). However, recent trends have necessitated a broader definition of the term. The U.S. White House National Science and Technology Council (Office of Science and Technology Policy) define research misconduct as "fabrication, falsification, or plagiarism in proposing, performing or reviewing research, or in reporting research results." Other wrongdoings (e.g., stealing, intimidation, and discrimination) are left to be tackled through other official regulatory mechanisms (Office of Science and Technology Policy, 2000).

Mentors, advisors, peers (colleagues) and supervisors all play a fundamental role in reliable conduct of research. Each of this group also plays a formative role in the ethical development of students and trainees in the manner in which professional values and ethical standards are conveyed, both consciously and unconsciously in writing a good research.

The ability to put together a research without misconduct occurs in the way researchers interact with colleagues, collaborators, coworkers, and other students and trainees, as well as with the individual student him or herself. In addition, there may be written (or articulated) policies of

institutions, agencies, professional societies and other professional individuals or entities that are meant to inform researchers about the standards and values of the research conducts which might seems clear to one than the others. All of these elements contribute to the new, emerging researchers' understanding of the range of acceptable practices, and to their awareness of a consensus within the community regarding unacceptable practices in the research profession.

Research misconduct has no specific definition, it could also mean the deviant behaviour of a researcher, intentional or not, that falls short of good ethical and scientific standards. The definition continues by making it clear that research misconduct does not include honest error or differences of opinion (Academies, 2009). The Nordic countries and Britain have taken a different line from the Americans and opted for broad definitions. The Norwegian Committee on Scientific Dishonesty defines research misconduct as all serious deviation from accepted ethical research practice in proposing, performing, and reporting research (Nylenna, 1993).

However, little is known about the role peer pressure plays in research misconduct in developing countries. Attention was recently drawn to knowledge gaps about the integrity of research conduct in Latin America at a bioethics meeting in the United States (Heitman & Litewka, 2012a). While the United States has experienced eras in research ethics development, including one in the 1980s when policy makers were most concerned with defining and investigating research misconduct (Steneck & Bulger, 2007), developing countries, especially in Africa, have given little attention to this challenge. All this will be the focus of this study.

1.2 Peer pressure as an influence in research misconduct

According to Reproductive Health Outlook (2005) peer pressure is defined as emotional or mental force from people belonging to the same social group (such as same age, grade, or status) to act or behave in a manner similar to themselves. Peer pressure has a great influence on adolescent behavior and reflects young people's desire to fit in and be accepted by others. Peer pressure exists mostly among young people, it is unavoidable, and can be positive.

Institutions, faculty, staffs, and students are expected to conduct research in accordance with the highest ethical standards and all relevant regulations. A good researcher must possess good character and integrity; he/she must not be easily influenced by any circumstances.

Castrogiovanni (2002) stated that at no other stage of development is one's sense of identity so unstable. A peer-labeling process may be contributing to the construction of positive identities for some research conducts but negative identities for others (Downs & Rose, 1991). Unfortunately, members of groups may accept negative labels, incorporate them into their identity, and through the process of secondary deviance, increases the levels of deviant behavior which can sometimes be clearly seen in their research work.

The peer group gives this potent feedback by their words and actions, which either encourages or discourages certain behaviors and attitudes. Anxiety can arise when researchers try to predict how peers will react, and this anxiety plays a large role in peer influence. In fact, Burns and Darling (2002) stated that self-conscious worrying about how others will react to future actions is the most common way people are influenced by their peers.

1.3 Statement of the problem

Researchers have shown that peer influence can be a scary phenomenon for all in the academic research conduct. As further eluded to, peers can also provide many positive elements to one's life. It is important, however, to remember that peer influence can potentially have a deadly impact or other various negative effects. It is vital for education-related professionals to understand the complex aspects of peer influence in order to stop these negative effects before they occur or even start to spread.

Furthermore, even the "most supportive peer member" (i.e., theindividual who regularly expresses interest in an individual's progress, provides letters of reference, and provides research support) does not regularly, reliably, or systematically discuss professional standards, teaching techniques, or institutional politics, let alone dual career relationships or balancing one's personal and professional life. Yet all of these are topics about which a budding research professional might value advice from an experienced professional. Nevertheless, supervisors like thesis advisors should be seen as mentors: acting as a good example. As Mentors, issues should be addressed explicitly and in an organized way or else critical research information would fall between the cracks.

The inefficiency in the educational systems as regarding the conduct of research is a great burden on the quality of good research conduct in our society today and also a higher proportion of half-

baked school leavers and graduates of different fields who are not able to carry out a self-successful research have turned peer helper and who, in the actual sense, are unemployable as many of them lack the requisite competencies for economic development and skills to meet employers' demands for human capital needs, has continued to rise and the society pays highly for the situation with increased social vices such as research misconducts and different other forms of criminal activities which are capable of ruining the image and reputation of the nation in the global arena and of important is that they create a higher level of set-back for our economic development.

Increasing the level of awareness for ethical training in research development, cannot be over emphasized. More trainings, campaigns, workshops, conferences and seminars on how to perform or conduct research ethically would go a long way at the institutional, individual and governmental levels. In these regards the economic developments of individual as well as that of the country are guaranteed and of the optimist are the reliable conduct of research in the global world as will be bestowed on the nation.

1.4 Objectives

The study aims to examine the role of peer pressure in research misconduct in the University of Ibadan.

Specifically, the study aims to determine the following objectives in this study:

1. To identify various problem of research misconduct resulting from peer pressure in the area of study.

2. To identify the effect of peer pressure in research misconduct.

3. To find out how research misconduct is committed, reported, investigated and managed when perpetrators are caught.

4. To explore the relationship between peer pressure and research misconduct in the study area.

5. To identify how the problem of research misconduct can be curbed or reduced.

1.5 Justification

Good research practice is important to the scientific community. As researchers, we collectively have an obligation to uphold the values that define good science. There has been rampant and gross research misconduct among researchers especially scientific and health researchers. Some of the reasons for these misconducts have been looked into by prominent researchers in recent times. It has also been observed that despite the knowledge of good scientific ethical conducts most researchers still commit misconduct and the role of peer pressure cannot be undermined. So many research studies have been done; they all concluded that pressure resulting from the surrounding environment is almost always present and inescapable(MiloudBoussouni, et.al, 2005). There has being occasional cases where pressure has been shown to be effective but most times it provides negative impacts on the personalities of the people concerned.

This behavior (i.e. research misconduct) is driven by vanity, peer pressure, financial gain, and misplaced loyalty, and these concerns are not likely to go away anytime soon. Research misconduct occurs at every level of educational pursuits(). However, the influence of peer pressure in ethical research misconduct has not been satisfactorily studied. This study would contribute to fill this gap.The study findings would help proffer mitigation procedures for research misconduct and proper solutions that will potentially reduce the influence of peer pressure in research misconduct.

Investment in quality education is imperative to good-research conduct and continues economic growth, as it will affect the peers of peer. To foster a healthy research conducts, policymakers must make more investments in effective research standards and methods. Moreover, there is increasing evidence that research conducts has strong economic returns and constitutes a major source of development for decision and policy maker.

CHAPTER TWO

LITERATURE REVIEW

2.0 Chapter Two: Literature Review

As a lot of research has been carried out in both peer influences and research misconduct but not a lot done focusing on how they relate, it becomes critically important to understand the individual sections in detail and proceed to building some relationship afterwards in-line with the research objectives.

2.1 Research misconduct

Research misconduct is said to have taken place when research work at any stage is fabricated, falsified, and information from some other research ideas plagiarized (M. Nylenna, et.al, 1999) this can be extended to violation of the researchers and publication houses agreements, and also any deviation from expected research norms(Apa.org, 2015), there is a notion that researchers involved in research misconduct are dishonest and considered to be unprofessional, this may not always be the case as the act itself may not be intentional but it still counts as research misconduct (Magne Nylenna & Simonsen, 2006), for researchers to be classified as dishonest, there has to be sufficient proof that the act was committed intentionally. Figure 1 below illustrates the range of anomaly in research that may account to being intentional or not, Error, misconduct or fraud.

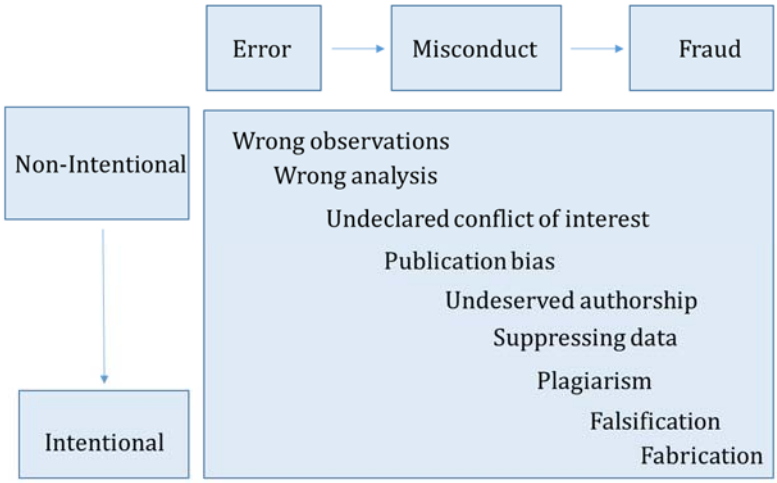

Figure 1 an illustration of research abnormalities modified from Magne Nylenna & Simonsen, (2006)

Research misconduct can be said to be as old as research itself, in recent times especially over the past 50 years, research misconduct has been seen as a key threat to the integrity of the scientific system worldwide, and more actions are continually set up to checkmate this threat. One of the first cases observed in medicine was observed in the work done by the Sloan-Kettering institute on fake skin transplants in white mice in New York in 1974, it was found that there were outrageous values in the data (Magne Nylenna & Simonsen, 2006) subsequently leading to the cancellation of all proceedings from the research work.

The consequences of research misconduct have been explored and seen to range from simple warnings to punishments as grave as termination of contract, disbarment and potentially the end of the researchers career in a given field of study (Xie, 2012). It can also be stated that research misconduct may have its consequences outside of academia as personal relationships and interest may deteriorate between involved parties and other professionals.

Research misconduct as illustrated in figure 1 and provided definitions can be seen to mainly cover fabrication, falsification and plagiarism:

Research Fabricationis making up data or results and recording and reporting them (Fanelli, 2009).

Research Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record(Academy, 2009).

Plagiarismis appropriation of another person's ideas, processes, results, or words without giving appropriate credit(Academy, 2009). Plagiarism involves investigators taking ideas from others' works and including them in their own publications, Students taking material from the internet verbatim, without attribution, during write-ups of research or other scholarly work, faculty taking dissertation material from students and including it in publications without giving due credit.

Although there is no available information about the exact disciplinary actions for the above mentioned types of misconducts, it has been observed that research fabrication and falsification are treated more seriously than plagiarism (Xie, 2012).

2.1.1 Impacts of research misconduct

The society at large look up to researchers for new information and technologies, while viewed as an avenue for solutions, research misconduct can effectively be the cause of several problems of greater magnitude, one of such way may be seen as when other researchers try to develop on the wrong or falsely reported research, this eventually leads to wrong research and un-intentional misconduct. Providers of grants and other sponsorship offers will also lose valuable resources that may have been put to better uses in other aspects. Research misconduct destroys the main core of scientific discovery which is established on honesty and it cast a shadow over researchers that are going about their businesses in the proper and ethical manner(Sabir et al., 2014).

2.1.2 Grey Areas Surrounding Research Misconduct

From the illustration in figure 1, it can be seen that research misconduct can originate from non-intentional errors to intentional misconduct, although there is no clear boundaries exactly between the intentional and non-intentional, actions such as:

- Wrong observations
- Wrong analysis
- Negligence

- Undeclared conflict of interest
- Publication bias
- Undeserved authorship
- Data suppression

Can also be declared as research malpractices or questionable research practices and as such need to be handled as misconducts by reporting and retracting such research reports(Nylenna & Simonsen, 2006). If proper checks are not conducted on these practices they may be damaging to academic methods over time(John, Loewenstein, & Prelec, 2012), the study by John et al., (2012) highlights that research misconduct and malpractices are more common than would be initially thought of. The study was designed to investigate the general thought of scientist on research malpractices, the survey that was sent to 5,964 was designed to make people tell the truth and be more honest about their opinions, 2155 people responded and the results indicated that a large amount of these researchers have at some time been involved in questionable research practices. Almost all of them reported only results favorable to their research, 43.4% seriously considered data suppression where they discovered that the excluded data may not affect the final outcome, 35.3% reported unexpected finding as if it had been expected, and 1.7% admits faking their data. These figures according to the researchers indicate that there needs to be some reform in the scientific process to check these figures and reduce them to a minimum value, possibly applying systems that have been proven to work in medical research methods where research details are provided and registered before individual studies begin(John et al., 2012).

2.2 Case studies of Research Misconduct

Falsification and Fabrication: of data by researchers who feels they know what the end result would be.

On the 22nd of June, 2017, the United States Department of Health and Human Services, of the Office of Research Integrity (ORI) took final action on a case involving Frank Sauer, Ph.D. of the University of California, Riverside (UCR). Based on evidence and investigation conducted by the UCR, the ORI's review of UCR's research misconduct investigation report and other evidences obtained, it was found that Dr. Frank Sauer, former Professor of Biochemistry, UCR, supported by the National Institute of General Medical Sciences and National Institutes of Health (NIH)

grants by falsifying and fabricating some images in his publications.Dr. Frank Sauer was prohibited from serving in any advisory capacity and request was made to PLos for retraction and/or correction of his publications (ori.hhs.gov, 2017)

In March 2005, the Office of Research Integrity (ORI) found that a former professor in the Department of Medicine at the University Of Vermont College Of Medicine, Eric T. Poehlman, Ph.D., was engaged in research misconduct by misleading and deceptive practices in proposing, conducting, and reporting the results of research(Ori.hhs.gov, 2013).

In an NIH grant application, Dr. Poehlman falsified preliminary data purportedly obtained in a longitudinal study of aging. He falsified measurements and altered specific data during the conduct of longitudinal aging research. As a result, Dr. Poehlman voluntarily agreed to exclude himself permanently from serving in any advisory capacity to the Public Health Service and to exclude himself permanently from any contracting or subcontracting with the US Government. He agreed not to petition for reversal or reduction of the scope of the agreements and to send ORI-written letters of retraction for ten published journal articles. On June 28, 2006, Eric Poehlman was sentenced to 366 days in jail(Ori.hhs.gov, 2013).

Also, prominent Anesthesiologist Scott Reuben, MD pled guilty in early 2010 to falsifying research on the use of analgesics such as Celecoxib (*Celebrex*; Pfizer) and Rofecoxib (*Vioxx*; Merck) for postoperative pain management. After been discovered, he later admitted that he had not enrolled any patients in the trial but instead, had simply made up the findings. *Anesthesia & Analgesia* and other medical journals have retracted more than 20 articles by Dr. Reuben containing fabricated data, according to the publication *Anesthesiology News*. Dr. Reuben was sentenced in June 2010 in a Boston, Massachusetts federal court to 6 months in prison for healthcare fraud (Supino & Borer, 2012).

Two prominent cases in Nigeria are the Pfizer trial and the Dr. Abalaka's story about HIV vaccines.As a result of the epidemics of bacterial meningitis, measles and cholera which broke out among the people in the Northern part of Nigeria in 1996 (precisely Kano), a treatment center was established by Pfizer in this city to treat victims of this epidemic. Rather than using safe and effective bacterial meningitis drugs, Pfizer saw it as an opportunity for research experiments to be

conducted on many children using new, untested and unproven antibiotic, Trovaflozacin Mosylate (Trovan). It was however discovered that this drug was being tested without ethical approval. Also, apart from failing to obtain the consent of these children or their parents, Pfizer deliberately gave inadequate doses of ceftriaxone to some children such that when compared with Trovan, Trovan would look more effective. Pfizer is was taken to court to face trial for the alleged deaths of eleven children, the cause of permanent health problems for many others, failure to obtain proper regulatory approval for the trial conducted and for misleading parents of victims(Bolatito Abass, 2008). They were made to pay millions of naira as compensation to the victims at the end.

Also, Dr. Jeremiah Abalaka is the owner of a private clinic in the federal capital territory, Abuja, Nigeria; he claims to have created a new HIV vaccine from the blood of HIV-positive people. According to him, he has 'HIV prophylactic and therapeutic vaccines for the preventionand treatment of HIV infection. Both are made from the blood of HIV-infected patients'. A general surgeon with training in immunology tested thisvaccine on four thousand Nigerian patients who are HIV-positive in the last six years. He also claimed to have tried the vaccine on himself several times and did not contract the HIV virus. Having used himself as a guinea pig, he tried the vaccine on three hundred HIV-negative people claiming that none of them has become HIV-positive as a result of this vaccine.These vaccines were not certified before being tested on many HIV-positive andHIV-negative Nigerians. After series of investigations, it was concluded that Dr. Abalaka's study fails to meet the internationally recognized Western criteria of a scientific research that is ethical (Scott, 2007).

2.3 Identification of Research Misconduct

Research misconducts are constantly checked by the policies and regulations put in place by professional associations, government parastatals and research institutions(Smith et al., 2011), but most of the culprits have been exposed by "Whistleblowers" these are people that know or suspect about the research misconduct and are willing to come forward with evidence to the appropriate authorities reporting suspected act of the interested researcher(Explorable.com, 2009).

Though government and professional bodies regulate some aspects of research, the research community remains the main source of most of the standards and practices to which researchers

are expected to adhere. Self-regulation ensures that decisions about professional conduct will be made by experienced and qualified peers this can be seen in the regulatory boards of academia which is more often than none made up of seasoned veterans in the particular field of study. However, for self-regulation to work, researchers must be willing to alert others and the institutional review board when they suspect any violation of professional standards or disciplinary practices.

Reporting violation of ethical standards of research is not an easy task. Anonymity is possible, but not always. Reprisals by the accused person and by skeptical colleagues have occurred in the past, although laws prevent institutions and individuals from retaliating against those who report concerns in good faith (Faunce, 2004) but it has been noticed that these whistleblowers are sometimes labeled as traitors and personal relationships destroyed in the process of doing the right thing. Some whistleblowers have lost their jobs as a result of the act as seen in the case of David Lewis who worked for the EPA in the USA for 31 years, David Lewis discovered that pathogens could easily remain undetected in untreated sewage sludge that was used in making fertilizers, he made this knowledge public and was harassed and eventually fired (Explorable.com, 2009), it can therefore be established that identification of irresponsible conducts in research can have serious consequences for all parties concerned.

Despite these potential difficulties, someone who witnesses a colleague engaging in research misconduct has an unmistakable obligation to act. Research misconduct, particularly fabrication, falsification, and plagiarism has the potential to weaken the self-regulation of science, shake public confidence in the integrity of science, and forfeit the potential benefits of research. The scientific community, society, and the personal integrity of individuals all emerge stronger from efforts to uphold the fundamental values on which science is based, Whistleblowers provide the self-regulatory check and balances in the research systems and their actions protect the integrity of the research system(Explorable.com, 2009).

All research institutions that receive federal funds must have policies and procedures in place to investigate and report research misconduct, and anyone who is aware of a potential act of misconduct must follow these policies and procedures.

2.3.1 Investigation and Closure of Research Misconducts

Research misconduct betrays the whole point of science, this has prompted institutions and research bodies to develop policies that will deal with these kinds of acts no matter how trivial they may seem, normally to check these unethical behaviours there has to be supervision of research works at every level to check for anomalies and make sure that standards are maintained and if possible have written guidelines (Nyu.edu, 2007). The whistle-blowers should usually report to direct supervisors or disciplinary committee in good faith about suspected misconducts. In relaying concerns about certain practices observed within a system, if a personal relationship exist between the whistle-blower and suspected researcher, there may be a confidential section that may end the malpractice but if this fails or no personal relationship exists, then a supervisory third party may be included (Nyu.edu, 2007; Web.mit.edu, 2015). Supervisors at the initial level should notify officers in charge of research or the institution's academic officers who in their power can begin the process of investigations and inquiries (Www.mopp.qut.edu.au, 2007).

With investigations and inquiries,come direct or indirect allegations. It is important that this stage be quick, discrete and efficient so as to clarify allegations in a sensitive manner, co-operation of researchers is vital at this stage (Web.mit.edu, 2015). The level of investigations to be carried out largely depends on the amount of useful information uncovered and it is purely based on the investigators discretion, it may not be in all cases that legal actions are carried out but if necessary they should be (Web.mit.edu, 2015).

If inquiries by investigators are not convincing enough, an impartial fact finding committee may be set up to further investigate the research misconduct keeping the administration in the loop at all times. At the end of the investigations, all facts found are usually presented in a report that will be made available to the accused party who may be given a chance to respond and offer some explanations for the investigated actions, the response offered usually becomes a part of the investigation report(Nyu.edu, 2007).

After the conclusions of investigations, disciplinary actions will be carried out by the administrative bodies and further action on how to handle the act expedited as soon as possible, if guilty of said accusations, the perpetrators are handed disciplinary actions that may range from warning, retraction or correction of papers and reports to dismissal of the guilty party.

2.4 Peer groups

Peer groups are understood to be the people around the activities in an individual's life, it may refer to people that share a lot of things in common and belong to the same age group (Investopedia.com, 2015), in the case of researchers it may be specific to the set of academic peers with probably about the same level of qualifications. These are the people that will cause peer pressure. Peer pressure can be established to be actions perceived from peer groups that compels behaviors, actions and attitudes (Ryan, 2000). On the American psychological association website Brett Laursen explains that peer pressure could begin from the point where kids start caring about what other kids think about them through the course of life (Laursen & Hamilton, 2015).

As applied to research misconduct, peer pressure may be viewed in both the positive and negative way but it remains to be acted upon by the victim or victims (those receiving the pressure). The influences may change over the years as peer group members change (Brown, Mounts, Lamborn, & Steinberg, 1993) these may be because of numerous factors, and the group represent the most compatible known associates as at the time.

"Peer pressure is a social influence exerted by others on an individual. The pressure is exerted in order to get someone to act or believe in a similar way. The peer pressure is acted out by a peer group against others, often be in an "everybody's doing it" kind of way." We all form different groups of friends as we get older and we usually try and do what it takes to fit in, after all we choose friends that are most compatible with us.(wisegeek.com)

Peer pressure is seem everywhere in our current society, it affects everybody from adolescents to adults. It has many variations and situations where it is applied. "In this study, we want to take an overview of peer pressure and its influences in research misconduct." Although, peer pressure is easy to give into with good rewards at the time being, it often leads to failure and unhappiness.

Researchers could play a role under the following categories, in influencing a fellow researcher or colleague to conducting research misconduct;

The Peer Influencer: This is the one that influences his/her colleague in carrying out a research either on the field or in the laboratory. This is a major role in research wrongdoings; most researchers fall in this category, this is because they feel it is just a contribution and that when the bubble bursts, they are not going to be directly affected.

The Influenced: This researcher is always the one at the receiving end. He takes the contributions or advices from the influencers and thus decides to yield or not. The influenced solely has a choice to or not to take the advices. But the moment he takes the contributions, then he becomes responsible for every other results that proceeds from his action.

The Abettor: This is one who helps the researcher in research wrongdoings. Sometimes the role of the abettor could be so important that if he decides not to indulge in it, the wrongdoing could be averted or avoided. At other times, the abettor has little or no knowledge of what he's about to get involved in.

The Impeder: This is a peer or colleague that hinders influence of wrongdoings. Mostly, this group is a minority. This is because human beings generally try to mind their own business. This category is also in the minority because at the point the impeder might want to contribute, the major decisions would have been made. More often than not, this role is more effective when the impeder is a senior colleague of the researcher.

It is worthy of note here that peer influence in any of the roles highlighted could be either positive or negative.

Peer pressure as it affects research misconducts is more from the social group than the age group. This study intends to take a look at the probable factors that influences peer pressure activities research misconducts. These may include;

Competition: The Scientific enterprise is characterized by competition for priority, influence, prestige, faculty positions, funding, publications and students. It can't be ruled out that researchers are constantly under the pressure to out-do one another in their quest to be the best. Competition is a fact of life for scientists and it is generally viewed in a positive light. It has been observed amongst scientist, that it contributes to strategic game-playing in science, a decline in free and open sharing of information and methods, sabotage of other's ability to use one's work and careless or questionable research conduct(Melissa et.al,2007).

Researchers engage in competitions in several ways. Most of these competitions go down to hierarchy and ratings of professionalism. Researchers want to publish articles and publications pre-maturely in order to keep getting recognitions. This case was identified as "publish or perish"

by the Department of Health and Human Services (ORI, 2012). These make it quite difficult for researchers to do in depth research, thus engage themselves in falsification of data, fabrication and above all plagiarism. It is worthy of note to say here that these particular influence is common among early career researchers who mostly are eager for promotions and other career achievements.

Distraction: Friends and colleagues tend to come visiting when a researcher is the laboratory; they either want to come in order to learn and monitor the process or to make jest of the researcher and tell him/her about social activities he/she is missing due to his research, thus tend to cause some distractions for the researcher. In cases of repeated data collation and readings, once missed due to distraction, researchers tend to put assumed values (falsification) which is categorized as gross research misconduct.

Lack of research materials or needed assistance: This seem to be a major issue for researchers but this study will relate it to peer pressure. As the saying goes, "no man is an island" researchers need colleagues to carry out their research; this could be in terms of needing laboratories and/or research materials of colleagues. Many at times colleagues may not want to release their materials or support a researcher for the furtherance of his/her research work which may invariably lead to promotion or professional recognition. This type of pressure can lead to manipulation of research materials or processes. For instance, a researcher can alter the graphics of a research location on computer software like Photoshop or CorelDraw in order to match the results with appropriate location.Peer pressure can be observed everywhere and in every circle in our current society, it affects everybody from children to adults. It has many variations and situations where it is applied. "In this study, we want to take an overview of peer pressure and its influences in research misconduct"

2.5 Established relationships

The target participants for this study will be researchers within academia from a post graduate qualification where they have freedom to carry out some level of independent research. It is critical therefore to establish the socio economic position of this sect in the modern society and the importance of this group to research both in the present and future, it will also be important to understand the dynamics within this group.

Researchers are the most likely people to practice research misconduct; they occupy a position in the society where most innovations and bright ideas that could eventually lead to the development of the modernization comes from. Researchers hold the responsibility to develop communities they are in, the group of professionals are meant to educate the general public on issues that will improve general quality of life from the micro to the broader view(Academy, 2009). They are at an important position in the society as they are mostly seen as individuals who are specialist in their respective fields and are most likely to lead in the development of the field and also contributing to generalizable knowledge. Often times when Government Institutions, Educational bodies and private groups or individuals and even some professional bodies seeks advice on policy making, they usually turn to them.

Most researchers spend a lot of time in their work areas and can spend long periods of time around each other if they work in teams. It can be observed in many academic settings that post graduate students will most likely handle projects in collaboration with their supervisors and probably other students with the same supervisor(Ryan, 2000), this eventually classifies them as peers with similar life styles that could eventually rub off on each other to a certain degree(Kumpulainen & Mutanen, 1999). The pattern of knowledge management in educational settings involves participating and sharing in learning processes shared by all members of the group lead principally by more competent peer group members in most cases the supervisor, this eventually could lead this individual to a position of influencing the activities of other group members and position peer group members in a way that they all become some part of this influence. This puts them in different capacities to act as peer group members, and as established earlier peers result in peer pressure, pressure that could eventually lead to research malpractices. Naturally as the educational system is built to function, students or lower level researchers are meant to go by the instructions and guidance of supervisors, and most likely to practice what the supervisor sees as acceptable, this implies that if misconduct is practiced by the supervisors and it is observed by the supervised, it may most likely be condoned by the supervisors, this may cause some sort of ripple effect of misconduct within the group.

Situations like the ripple effect can cause members of the group to collaborate in the research misconduct because it is the expected norm within the group(Ryan, 2000) or the actions appear to be in line with the proper practices of research conduct. The dynamics of a peer group practicing

misconduct could be such that whistle-blowers will most likely come initially within the group to question certain research practices, in these cases they act in a private manner initially and are most likely to be successful at stopping the act if they have the proper amount of influence that the supervisor or most qualified person in the group has(Web.mit.edu, 2015).

Some researchers at different levels in the group may be aware of misconduct going on around them; this may be the first step of peer pressure to join the act of research misconduct as they may not want to be seen as potential whistle blowers.

Initial similarities between peers could be observed in the setting which they find themselves (Cohen, 1983) but this could also be translated into specific industries or across industries in the sense that peer influence could come from an external source and not solely based in influences impacted by spatial location, this can be illustrated by observing researchers in similar fields but different organization because of this similarity they could be expressed as peers (Investopedia.com, 2015), this pressure may come as a result of sectorial position through publications in the field and may potentially lead to the influenced being affected by the actions of the influencer.

Researchers are in the best position to understand the effects of their actions; misconduct can often result from peer pressure as established earlier. Research misconduct may go unnoticed because the system largely operates on trust (Sabir et al., 2014).

2.6 Expected results and the way forward

The influences of peer pressure cannot be underestimated, Brett Laursen has established that everyone with social contact feels the pressure of peers and the pressure usually goes on throughout one's life time regardless of the change in the peer groups. Researchers can be classified somewhat as peers, therefore it will be expected that from this study peer influences will have a massive role in research misconduct, it becomes the responsibility of some other members of the peer group or supervisors to act as whistle-blowers and institutions to regularly check research practices. If guilty parties are discovered they should be strictly dealt with to discourage future actions.

Some important steps highlighted by Sabir et al., (2014) for controlling misconduct are;

- Publishers and journals should implement regulations that try to define the classification of authors, levels of work should be defined and clear conditions met in research works in order to classify a researcher as an author, if this can be properly implemented, the amount of token authors will be greatly reduced.
- Authors, academic institutions, journals and publishing houses should use development in software to check for plagiarism before proceeding to the next stages of publication
- Editors should ensure that recent works of authors are viewed and checked for issues that may arise from dividing larger pieces of research into unproductive smaller pieces(Luther, 2010)
- Co-authors should fully understand processes involved in the studies and should not hesitate in pointing out malpractices (Sabir et al., 2014)
- Sponsors and institutions should make sure that what they pay for is what they get and not some manufactured product (Luther, 2010)
- Professional associations should provide guidance's that ensures the clarity of research processes, assuring transparency, cutting corners should not be encouraged and must be avoided at all cost (Luther, 2010).
- Whistle-blowers should be protected at all cost to encourage more people to have faith in the system(Sabir et al., 2014)
- Research parameters should be defined before the start of the studies and reasons should be given if they change at any stage of the study.
- Publishing of original raw data should be encouraged, this will enable peers and readers to be able to see how results and analysis evolve into the final work (Sabir et al., 2014).
- Reproducibility certificates for research can be introduced as suggested by Science exchange and journal PLOS ONE, this will involve the researchers submitting research parameters that will be used in replicating methodologies at a price and if the reproduction is successful a certificate will be awarded as an assurance that proper scientific process was duly followed.
- Everyone in research has to be able to easily reach the relevant authorities and inform them of wrong doings, research misconduct cannot be left to just journals and publication houses to handle (Luther, 2010; Sabir et al., 2014)

Most of the reviewed literature has little to offer in terms of the effect of academic research groups acting as influencers, this study hopes to develop on this.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Study design

The methodology employed in this study is a qualitative data method. This involves the obtaining and use of non-numerical data, using constructive and interpretative methods to analyze the obtained raw information (Earl et al, 2012). The data obtained in this type of study is mainly

primarily obtained through interviews, discussions and participant observations, making the researcher directly involved with the data obtaining process (Karami, 2010).

This study involved the use of Key Informant Interviews (KIIs) and In-depth Interview (IDI). As a result of the sensitive nature of the study, it is idea to identify with participants who can provide deepest possible information and understanding of the topic being studied. The issues to be discussed were brought up in a loosely structured manner. Notes and recordings of the discussions was taken and later extracted into data after the interview.

The collection of the qualitative data from the study population was done using a purposive Sampling and snowball sampling method for the qualitative survey. Purposive sampling is also known as judgemental sampling it is a technique used in qualitative research for the selection of key resources (Palinkas et al., 2013; Tongco, 2007) in this method individuals or sample points are selected based on the judgment of the researcher using a non-probability eliminating the generalized finding of sampling methods based on probability (Palinkas et al., 2013) with this method of sampling key individuals can be found that may provide useful information about the research topic.

Snowball sampling as the name implies is designed such that the total number of samples increase with time just like a snowball as it rolls down hill (Atkinson & Flint, 2004), it is usually used when the desired population is to be uniquely selected and can go on up until the researcher decides that the samples for the studies have been sufficiently covered, it is also known as referral sampling or chain sampling because the initial subject usually refers other subjects with similar traits that can offer more insight into the case studied. It is a very effective way of obtaining data without much planning but highly affected by sampling bias (Explorable.com; 2009a). This is the point where the combination of the purposive and snowball sampling methods become very effective in reducing the sampling bias.

3.2 Study Setting and Location

The purpose of this research "The Role of Peer Pressure in Research Misconduct" is to investigate peer pressure on researchers in their academic environment which is most likely to be at the Universities and their corresponding teaching hospitals, this study will be focusing primarily on academics beyond the first degree level. Thus, it will be done in an academic environment with

active research participants and amongst them will be both physical and clinical researchers in the universities and their teaching hospitals.

The study location has been strategically selected; the study will take place in a leading University in Nigeria. This institution is highly rated for her physical and clinical sciences departments both in Africa and the worldalso have rich history and have witnessed the careers of many great scholars. The Institution is,

- The University of Ibadan, Oyo State

The above listed University has formidable teaching hospital and most especially great research laboratories. This study focused on both lecturers and students from faculties in the university.

3.3 Study population

The key informants for this study are the Ethics Committee members, Research Institute/ University administrators and all Stakeholders in research most especially senior university lecturers, Ph.D. students and scientific researchers who have carried out or assisted in one research or the other in their respective institutions. This study population consists of the ones that have probably at one time or the other lead or assisted in researches in times past. The Key Informants were employed to provide raw information on peer pressure in research misconduct.

3.4 Sample size determination

The sample size was determined by the quality of the informants, the nature of the inquiry and also the quality of the data. The sampling of informants stopped at the saturation point, that is, when there was no new information from each new participant. Iinterviewed 30 participants in all.

3.5 Data Collection

Data was collected through interview guidewhich has been critically designed to tackle specific and direct concerns of the study.

The types of questions that wereasked are such that dealt directly with the study. Although some questions will be asked to understand the background of the respondents, these questions will be grouped under the bio-data and demographics section of the guide.

3.5.1 Data Analysis

Sampling was completed within nine (9) months of commencement. Thereafter, the data was analyzed both manually using modified thematic analysis, and electronically using Atlas.ti software.

3.6 Dissemination of Results

The outcome of this study will be presented to the University of Ibadan project defence committee before it is finally submitted in partial fulfillment of the requirements for the MSc degree. I will prepare a small handbook containing all the findings of the research and distribute this to the sample population. Although this would have being mentioned earlier to the participants in order to know their opinion on how best to get back the findings to them and also publish the findings in a reputable Journal.

3.7 Anticipated study limitations

This study is construed to address the role of peer pressure in research misconducts among scientific researchers in a selected University in Nigeria. The findings of this study though expectedly typical of what would be obtained in other Universities in Nigeria may not entirely represent the situation in all Universities or research institutions around the world due to behavioural differences, and socio economical settings.

ETHICAL CONSIDERATIONS

An application for ethical approval of this study was made to Ethics Review Committee from the University College Hospital, Ibadan and the University of Ibadan. This study was conducted in accordance with the stipulation of the Nigerian National Code for Health Research Ethics, and other relevant international guidelines. Although, the study is a minimal risk, the integrity of the

participants is the uttermost priority. No personal identifiers was used; informed verbal and written consent was obtained from the study participants before conducting the interviews and discussions. Interviews were conducted in settings that ensure participants' privacy, thus ensuring the anonymity of participants and information given.

Confidentiality of Data: This was a minimal risk study and no personal identifier information was used. Each participant were assured of confidentiality of information and to ensure that, all information or data obtained were securely stored in a computer system as well as the interview equipments in this case, the tape recorder and notebooks. I also ensured that interviews were conducted in a conducive and private setting for the participants.

Voluntariness and Informed Consent: Informed verbal and written consent was obtained. The willingness of the participants to participate in the interviews meant that they have consented to be part of the research. The participant were not in any way compelled or coerced to participate in this study.

Beneficence and Non-maleficence: the outcome of this study would be prepared in a handbook and distributed to the participants and also published in a Journal, these I hope will also help in some institutional decision-making policies on how to ameliorate research misconducts in our institutions. As mentioned earlier, it is a minimal risk study, should incase of any harm, the researcher would take full responsibility of any flaws.

CHAPTER FOUR

RESULTS

4.0 PREAMBLE

This chapter presents detailed findings on the roles of peer pressure in research misconduct in University of Ibadan, Ibadan, Nigeria. The findings are presented in themes that address the specific objectives of the study. The objectives of the study to: identify the various problems of research misconduct; explore the role of peer pressure in research misconduct; find out how

research misconduct is committed, reported, investigated and managed when perpetrators are caught; identify the effect of peer pressure in research misconduct and identify how the problem of research misconduct can be handled.

Qualitative data was sourced from staff and students of University of Ibadan. In-depth Interviews (IDIs) were conducted with twenty five (25) academic staff (including junior and senior faculties, editors of journals and members of ethical committees), one (1) non-academic staff (registry unit) and four (4) PhD students

In-depth interview guide were used to obtain information on the socio-demographic characteristics of the interviewees and informants. Information were also obtained about the prevalence of research misconduct, common cases of research misconduct, relationship between peer pressure and research misconduct, activities of the university in addressing research misconduct and recommendations on how to address the problem of research misconduct

4.1 THE PROFILE OF INTERVIEWEES

This section presents the profile of respondents. This section analyses the variables such as department, academic status and designation. The result is presented in the frequency distribution table on the next page

Table 1: The Profile of Interviewees

Variables	Frequency (n=30)	Percentage
Academic		
Agriculture and Forestry	2	6.7
Arts	3	10
Basic Medical Sciences	1	3.3
Clinical sciences	8	26.7
Public health	4	13.3
Sciences	4	13.3
Social sciences	3	10
Non-Academic		
Registry/Establishments	1	3.3

Students		
Agriculture and Forestry	2	6.7
Science	2	6.7
Departments		
Philosophy	2	6.7
Microbiology	2	6.7
Epidemiology and medical statistics	1	3.3
Crop production and environmental biology	2	6.7
Physiology	1	3.3
Ophthalmology	1	3.3
Psychology	1	3.3
Administration	1	3.3
Internal medicine	1	3.3
Chemical pathology	1	3.3
Medicine	1	3.3
Obstetrics and gynaecology	3	10
Theatre and performing arts	1	3.3
Sociology	1	3.3
Health promotion	1	3.3
Psychiatry	1	3.3
Chemistry	2	6.7
Botany	1	3.3
Nutrition	1	3.3
Psychology	1	3.3
Agronomy	2	6.7.
Health policy and management	2	6.7
Designation		
Editors of Journals	4	13.3
PhD students	4	13.3
Professors	12	40
Senior lecturer	6	20
Lecturer 1	3	10
Administrator	1	3.4
Campus Outlets		
Main Campus	16	53.3
College of Medicine Campus	14	46.7

Source: Field Work (2017)

Table 1 revealed the profile of the respondents. It showed that majority of the interviewees are academic staff. This is because academic staff members were more receptive to when approached on questions on research misconduct. This can be linked to them being major stakeholders in issues relating to research misconduct. The table also revealed that substantial percentage (40%) of the interviewees consists of professors. This can be traced to the boldness and authoritative air that professors possess when talking about academic –related issues. They have reached the peak of their careers with large network of social relationship who can act as buffer even when they grant interviews on sensitive issues like research misconduct in the university system

4.2 VARIOUS PROBLEMS OF RESEARH MISCONDUCT

This section analyses responses on prevalence of research misconduct and common cases of research misconduct in the study area.

On common cases of research misconduct, all the interviewees opined that plagiarism is a common example of misconduct in research. According to one of the interviewees:

> *The most reported case of misconduct is usually in form of plagiarism. You will see cases of copy and paste of people's work without citing the original author of the content of the work. We have seen cases of students just copying the entire project of a student and just changing the back cover to reflect their own names instead of the author's name. This is common among lazy staffs and students* **(Academic staff/Senior Lecturer/ Main Campus)**

Other cases of research misconduct include data falsification, data fabrication, misappropriation of research funds, publishing in predatory journals, undue authorship. Though data falsification and data fabrication can be referred to data manipulation, they have a striking difference. While data falsification involves the researcher trying to fine tune the research findings from the field to suit his or her supervisor's or the sponsor's expectation(s), data fabrication involves the researcher not going to the field but cooking up data to present as research findings. On data manipulation, one of the interviewees articulated that:

> *On cases of research misconduct, we have out right generation of data that are not there or do not exist. We have also have panel beating research findings to fit in the pre-conceived research findings. Most people in this part of the world do not know that having a negative outcome, contrary to the popular belief, is also a research finding. It can lead to another dimension to the phenomenon of study* ***(Academic staff/Senior Lecturer/Main Campus)***

The interviews conducted also reveal that prevalence of these cases of research misconduct varies across the academic stakeholders. While publishing in predatory journal, data manipulation and plagiarism cut across both academic staff and students of any category, undue-authorship is common among lecturers. Misappropriation of funds can be found among researchers that have funded projects. On undue- authorship, one of the interviewees stated that:

> *We have cases where authors fail to put names of others colleagues that were involved in the research. This is greediness on the part of the research leader. There are also*

cases/research involving students, where some lectures insist on being the first author in a student publication when he or she ought to be the second (2nd) author because though the input of the lecturer may be much, the students does the bulk of the work. That is why they deserve the first authorship status ***(Graduate Students/PhD student/ Main Campus)***

Predatory journals are fake or substandard journals. The articles are not usually peer reviewed and when review is done, it is not rigorously done. Hence, publishing in such outlets is research misconduct because it promotes intellectual laziness and mediocrity. According to one of the editors that were interviewed:

*There are cases where researchers just want their papers to be published in a journal that is willing to without proper peer – review. These kinds of journals are only after the publication processing fee. They are not interested in intellectual contributions to existing knowledge****(Academic staff/Editor/College of Medicine Campus)***

Mismanagement of research funds is also an example of research misconduct. This is obtainable among researchers that have sponsors for researching on their ideas. Some private investigators under-pay their research assistants, other members of the research teams and manipulate receipts to claim expenditures. This is quite destructive as articulated by one of the interviews that:

*There was a case of a fellow that got grants and kept a large sum of money for his personal use. He made up receipts to claim this money as expenditures. He ended up messing up the research work****(Academic staff/Ethical Committee Member/ Main Campus)***

Furthermore, from the interviews conducted, majority of the interviewees opined that research misconduct is prevalent in the study area. According to one of the interviewees:

Research misconduct is prevalent among members of academic staff that are into research. They indulge in it carelessly at every slight opportunity **(Academic staff/ Senior Lecturer/Main Campus).**

However, one of them said that ascertaining the prevalence rate is very difficult in situations where research misconducts are rarely reported and poorly documented. She opined that:

*Research misconduct is quite prevalent, even though most cases are rarely reported. Even if they are reported, there is no documentation to back it up and this makes it difficult to ascertain its prevalence practically. It is common because we hear or see cases of research misconduct but they are not documented like that because of factors such as man-know-man, bureaucratic bottlenecks etc.***(Academic staff /Senior Lecturer/Main Campus)**

4.3: ROLE OF PEER PRESSURE IN RESEARCH MISCONDUCT

This section focused on the analysis of the responses relating to role of pressure in research misconduct. Questions were asked on if peer pressure is an influence on research misconduct and how it plays out.

Majority of the interviewees attested to the influence of peer pressure on research misconducts. They argued that the occurrence of peer pressure is rooted in the context of the influence of pressure from peers in the academia. As argued by one of the interviewees:

> *Of course, the group or fellows, a researcher follows will have an influence on the individual, as the saying goes, "birds of the same feathers flock* together**(Non-Academic staff/Administrator /Main campus)**

Another interviewee noted that:

> *One scores high on peer pressure, from a psychologist perspectives, there is a tendency of likelihood of such a person caving in under that pressure to look for inordinate/alternative means to meet group standards or norms and one of the manifestation could be in form of research misconduct***(Academic staff/Professor /Main campus).**

The excerpts above show that the interaction between friends in the academia can be a bad influence on perpetrating research misconduct. Similarly, another interviewee spoke from another perspective to the influence of peer pressure on research misconduct. He explained that:

> *Peer pressure could be an influence on research misconduct when you see people around you in the academia colleagues cutting corners and getting away with it. They are publishing papers, getting promotions and one feels left behind, in that sense, it may be an influence***(Academic staff/Senior Lecturer/ College of Medicine Campus)**

This means that the effects of the role of peer pressure in research misconduct is not only directly by friends who a researcher plays or have one on one interaction with. Influence to partake in research misconduct might also be from researchers who the actor do not have personal or direct interaction with.

Peer pressure influences research misconduct due to several factors. One factor is through interaction with fellow researcher. According to one of the interviewees:

> *Research by nature involve people interacting with other people especially their peers and it is possible they discuss ways in which to conduct research, some of these ways may not be honest* (**Academic staff/Lecturer 1/ College of Medicine Campus)**

Another way is through sole-authorship of an academic work such as article. Corroborating this, one of the interviewees argued that:

> *Sole authorship enables/encourages/enhances people that want to commit research misconduct. When it is one person that is managing a fund for research, he or she can easily misappropriate fund without being checked. When only one person is the one that conduct research, he or she can easily manipulate. When it is only one person that writes a journal article, he or she can easily indulge in plagiarism* (**Academic staff/Senior Lecturer/ College of Medicine Campus)**.

The promotion of colleagues can also influence the quest to indulge in research misconduct. In a bid to meet up with colleague's achievements, the researcher might have to cut corners. According to one of the interviewees:

> *The pressure to wants to meet up with other colleagues may be an influence and make researchers to cut corners. They see colleagues being promoted and also crave to be promoted too* (**Graduate student/PhD Student/ Main Campus)**.

While majority of the interviewees argued that peer pressure influences research misconduct, minority argued that peer pressure cannot influence research misconduct. They argued that research misconduct is mostly rooted in Un-conducive Academic Environment and Institutional Pressure. According to one of the interviewees:

> *Peer pressure does not influence research misconduct. It is all about the environment of the researcher, be it academic staff or student works. If the right facilities are provided, there is no need to indulge in research misconduct. If the pressure is not put on number of publications to get promoted, there will not be need to cut corners* (**Academic staff/Senior Lecturer/ College of Medicine Campus)**.

It is noteworthy to say that all the interviewees that argued that peer pressure influences research misconduct also aligned with the assertion that un-conducive environment and Institutional pressure causes research misconduct. They maintained that the influence of peer pressure on research misconduct is fuelled by un-conducive academic environment and institutional pressure. Corroborating this, one of the academic staffs argued that:

> *Peer pressure is an influence, but in Nigeria to start with, do we really have a conducive working environment? In an environment where everything i.e. facilities is available and conducive for research work, peer pressure would have limited influence on the researcher. But in a situation where a researcher is not working in a conducive*

environment, where basic facilities are lacking, he/she will be influenced by the peers (**Academic staff/Professor/ College of Medicine Campus)**.

It was also argued that institutional pressure, publish or perish syndrome also influences research misconduct. When the institutional policies stipulate that a number of publications is needed to get promoted to a certain cadre, researchers might be forced to cut corners to be able to get the requirements by all means. One of the senior faculties argued that:

> *It's possible that peer pressure influences researchers, in an environment such as UCH, where your promotion is based on research work, publishing papers, etc. the pressure to want to publish has led some researchers to plagiarize and commit all other related offences* (**Academic staff/Senior Lecturer/ College of Medicine Campus)**.

Corroborating this, another interviewee articulated that:

> *Institutional pressure is the main cause. This is because the institution places much premium on publications before you get promoted. It is okay but laying too much emphasis on publishing papers for promotion pressurizes the researchers/lecturers into misconduct* (**Academic staff/Professor/ Main Campus)**.

Questions were also asked if socio- economic characteristics of the researchers could be a contributing factor to peer pressure influence. All the interviewed argued that socio-economic background of researchers could also contribute to the peer pressure influence on research activities. According to one of the interviewees:

> *The younger you are, the more susceptible to peer pressure. There is this frenzy among younger faculties to get promoted and this might push them to cut corners* (**Academic staff/Professor/ Main Campus)**.

Apart from the academic staff status, grant and personal financial status is another socio-economic characteristic of culprits of research misconduct. This was corroborated by one of the lecturers that were interviewed:

> *Yes, social economic factors could be a contributing factor. Lack of grants and support influences research misconduct especially in an environment where research is done out of pocket, i.e with limited resources. Research is an investment that has to count, when resources are limited, one may be susceptible to committing research misconduct. Lack of fund exposes people to lots of influences***(Academic staff/Professor/ College of Medicine Campus)**.

The interviews also touched the institutional efforts in addressing research misconduct in the academics. Some of the interviewees argued that the university is doing enough. According to one of the senior faculties:

> *More awareness is highly recorded by institutions on ethical issues. No researchers can claim ignorance*(**Academic staff/Senior Lecturer/ Main Campus)**.

On how the institution is creating awareness, several strategies were identified by the interviewees. One of them articulated that:

> *Yes. They are doing something. For example, you have to get approval from the ethics committee before you can do your research. You have to do online courses*(**Academic staff/Senior Lecturer/ Main Campus)**

Corroborating this assertion, one of the interviewees added that seminars, trainings, workshops are avenue for creating awareness about research misconduct. He argued that:

> *There are been several seminars on research integrity and responsible conduct of research, which is geared towards creating awareness.Anytime a new lecturer is employed, they always introduce them to such seminars. There are policies on plagiarism*(**Graduate Student/PhD Student/ Main Campus)**.

The research also noted that the Faculty of Public Health in College of Medicine has made commendable efforts in creating awareness about ethical issues in research. This was articulated by one of the interviewees:

> *On this side of the campus, they have reasonably done a good job. There is a course for all post graduate student of this faculty of public health on research ethics. It is compulsory for them to enroll for the course. Other faculties from the main campus are encouraged to take up such initiative as well* (**Academic staff/Professor/ College of Medicine Campus)**.

Minority also argued that while the university had taken some steps, those steps are not enough due to the challenges being faced by the University, Lecturers and Students. This made some to indulge in research misconduct despite the awareness being created by the university. According to one of the lecturers:

> *Despite the high awareness, there is no enabling environment. It is tempting to indulge in research misconduct, especially when the environment is poor: no water, no light, no financial assistance, pressure to publish for promotion. It is possible to still indulge in research misconduct even after being aware of it* (**Student /PhD Student/ Main Campus)**.

Some of the interviewees also mentioned the challenge of inadequate funding for ethical committees, to organize seminars, trainings and workshops. According to one of the interviewees:

> *There is the problem of inadequate funding. There is no structure for it and even some that has structures are not properly funded, how then do they function properly? There is also lack of resources to encourage or organize seminars* (**Academic staff/Ethical Committee Member/ College of Medicine Campus)**.

There is also the challenge of inadequate knowledge about what constitutes ethics as articulated by one of the interviewees. He opined that:

> *Research ethics in Nigeria is just starting. It is just being developed. Most management of the institutions in Nigeria have not yet keyed into it properly. Most universities don't have research ethics committee. Some don't even know what research ethicsis, it is not fully studied, just passive teachings in most institution. Ethical committees are mostly in university teaching hospital of the different institutions. It has become an internally generated revenue at the Ministry of health, whereby one has to seek approval from them before any chemical/health research con be done* (**Academic staff/Ethical Committee Member/ Main Campus)**.

When punishments are not meted out or properly meted out to offenders, people are likely to still indulge in research misconduct because they are aware of the laxity of the law to punish offenders. According to one of the interviewees:

> *People already know, whether rightly or wrongly done, on one is being rewarded or punished. So why delay yourself with trying to do it right.Some feels others are doing it and yet getting promoted, hence they commit such crime* (**Academic staff/Lecturer 1/ Main Campus)**.

Standard and high impact journals are known to take time in reviewing papers before they are published. The impatience to wait for such journals when promotion is knocking on the door influences people to cut corners even though they are aware of research misconduct. One of the interviewees supported this by stating that:

> *Researchers advise one another as to publishing papers in anyhow journals than waiting for/or going through all the difficult protocols form reputable journals like Lancet. Publishing in standard outfits is very rigorous and time consuming and most are impatient for such journals especially when they need papers for promotion* (**Academic staff/Senior Lecture/ College of Medicine Campus)**.

On if institutions are creating enough awareness; two of the interviewees had a contrary opinion that the University is not doing enough. One of them argued that:

> *Enough is not being done to create awareness about research misconduct or addressing ethical issues in research***(Academic Staff/ Editor/ College of Medicine Campus)**.

Backing up his assertion that the University is not doing enough in creating awareness about research ethics and research misconduct, he argued that:

> *Information is not adequately circulated or disseminated, especially the new faculty. No systematic, well organized methods, within the University of detecting people who have*

*been involved in the research misconduct. What we have most times is somebody coming to report a fellow of misconduct because they have a fall-out***(Academic Staff/ Editor / College of Medicine Campus)**.

The other interviewee also argued that:

*No, enough is not being done yet mainly because the university does not have a very active role in preventing such. Yes, they have the power to expel anyone that has been caught, and waiting till people are caught means they do not have preventive measures in place. You can develop better than your resources***(Academic Staff/ Lecturer 1 / College of Medicine Campus)**.

There is the need for institutions to ensure that they are active in the creation of awareness about research misconduct of all categories. This knowledge should be disseminated across all the categories of staff and students.

4.4: HOW RESEARCH MISCONDUCT IS REPORTED, INVESTIGATED AND MANAGED WHEN PERPETRATORS ARE CAUGHT

This section analyzed findings on the report, investigation and management of research misconduct when perpetrators are caught. Responses in the section are likened to what is called correctional practices after the deed has been done

The interviews conducted revealed that report of research misconduct is usually made by individuals who feel cheated by the misconduct of others. According to one of the interviewees:

*…What we have most times is somebody coming to report a fellow of misconduct because they have a fall-out or when he or she feels cheated. You hardly see departments or faculties bringing reports of research misconducts of lecturers and students***(Academic Staff/ Editor / College of Medicine Campus)**.

The escapade of research misconduct is also reported by using software that checks academic publications for originality and plagiarism. This was asserted by one of the interviews:

The PG school has also invited post graduate students and lecturers on plagiarism software called "Turn-it-in". It is software that subjects your paper to scrutiny. It will reveal the originality and plagiarism content. It will reveal owner of the contents that is plagiarized **(Graduate Student/ PhD student/ Main Campus)**.

Investigations of cases of research misconduct are conducted at departmental, faculty and senate level. According to one of the interviewees:

> *When cases of research misconduct is detected or reported, investigation starts from the departmental level. The culprit will face disciplinary committee at the departmental level. After this, the case will move to the faculty and finally to the university disciplinary committee***(Non-academic staff/ Registry/ Main Campus)**.

Penalty for research misconduct depends on the severity of the offence(s) committed. It also depends on the status of the offenders. For lectures, penalty for indulging in research misconduct include paper retraction, suspension of service, withdrawal of service, demotion, suspension of promotion and suspension of salary. According to one of the interviewees:

> *We have heard of cases of lectures being demoted, suspended and withdrawn from service because they are found guilty of one case of research misconduct or the other* **(Academic staff/ Professor/ Main Campus)**.

Another interviewee added that:

> *Penalty of lecturers for indulging in research misconduct include suspension of promotion. There are also cases where the salaries of culprits are put on hold for some months***(Academic staff/ Professor/ College of Medicine Campus)**.

Whatever the penalty doled out to a lecturer for partaking in research misconduct, it is obvious that his or her image will be tarnished and academic career might suffer a serious setback in the academic ladder.

Students who are found guilty of indulging in research misconduct face penalty such as retraction of papers, withdrawal of certificates, suspension of programmes and expulsion from the University. This was corroborated by an interviewee who stated that:

> *Students who defaulted in research face several punishments such as withdrawal of certificates, suspension of programmes, expulsion and paper retraction* **(Academic staff/ Professor/ Main Campus)**.

The punishments for students who are found guilty of research misconduct damage their careers. It blocked their future paths and puts them off academic prowess and excellence.

4.5: THE EFFECTS OF RESEARCH MISCONDUCT

This section analyzed data on the effects of research misconduct. It focused on the effects of research misconduct on the perpetrator, academia and the society at large.

On the perpetrator, be it student or staff, research misconduct negatively affects their lives. According to one of the interviewees:

> *Lecturers who indulge in research misconduct are liable to mediocre. They find it difficult to partake in sound intellectual interrogation. Their careers can be terminated or soiled when caught***(Disciplinary Committee Member/ Professor/ Main Campus)**.

Supporting the effect of research misconduct on the perpetrator, one of the interviewees also added that:

> *Students are also liable to career damage and poor capacity to reason intellectually etc. They find it difficult to be original especially when they have spent years in research misconduct***(Ethical Committee Member/ Professor/ College of Medicine Campus)**.

Research misconduct also affects the university. According to one of the lecturers that were interviewed:

> *The university can be blacklisted and lose its integrity in the academic world. Grant and scholarship bodies will be pessimistic of investing in research in such universities***(Academic Staff/ Lecturer 1/ Main Campus)**.

Research misconduct also has effects on the society. One of the interviewees stated that:

> *The society also feels the impact of research misconducts. It can lead to food poisoning when inaccurate data are used to produce food and drugs for people's consumption***(Graduate Student/ PhD Student/ Main Campus)**.

Another interviewee asserted that:

> *Misconduct in research produces inaccurate data. When inaccurate data is used for policy formulation, there will definitely be problem with implementation and the effectiveness of such policies. This affects the national growth and development***(Academic Staff/ Lecturer 1/ Main Campus)**.

The effects of research misconduct on the perpetrators, university and the society at large is quite devastating. Thus, it should be heavily frowned at.

4.6 RECOMMENDATIONS TO HANDLE RESEARCH MISCONDUCT

This section focused on responses on how to reduce to the barest minimum or end the occurrences of research misconduct.

All the interviewees agreed that there should be periodic organization of workshops, trainings and seminar. As articulated by one of the interviewees:

> *My suggestion/opinion is that most people including professors are not yet fully educated on what bioethics entails. Proper orientation should be given to researcher cutting across all levels. The dos and don'ts should be clearly spelled out. This can be done in workshops, training and seminars. Awareness should be raised to let people know the implication not only to their career but the society at large* **(Academic Staff/ Lecturer 1/ Main Campus)**.

However, some noted that it should be quarterly or frequently organized because it will lose its flavour. There were also calls for entry trainings for lecturer and students. One of the interviewees stated that:

> *The trainings, seminars and workshop should not be too much as lecturers and staff might get tired of attending the events. There should also be special ones like entry training, workshop and seminars to be organised for new lecturers and staffs. This will make them to be familiar with ethical issues in research***(Academic Staff/ Senior Lecturer/ Main Campus)**.

The environment in which one works affects the output of one's efforts. Majority of the interviewees called for provision of encouraging environment for both teachers and students to do teaching and research. According to one of the interviewees:

> *The university community and the government should ensure that facilities such as internet facilities, grants and scholarships, constant power supply etc. are adequately provided for lecturers and students alike. This will help to have a grasp of what they are doing and make research more interesting* **(Academic Staff/ Professor/ College of Medicine Campus)**.

Furthermore, majority of the interviewees said that the University needs more ethical bodies that will be properly funded. According to one of the interviewees:

> *There is the need for more ethical committees. Apart from this, the ethics review committee should be well supported and funded so they can work actively, by providing guidelines and framework for good ethical research. There should be a handbook, preferably an e-book containing guidelines or rules on research integrity, and this should be given to all academic staffs at all levels***(Ethical Committee Member/ Professor/ Main Campus)**

Apart from the provision of guidelines and framework for good ethical research, the ethical committee also has the responsibility of reviewing researchers' protocol to ensure that they

conform to both national and international ethical standards. Supporting this assertion, one of the members of ethical committee insisted that:

> *Research works should/must be submitted for ethical review to the appropriate ethical committee. All research works including PhD thesis, M.Sc. project, undergraduate projects, grants projects should be submitted for ethical approval***(Ethical Committee Member/ Professor/ Main Campus)**

In addition to establishments of more ethical committees and organization of trainings, seminars and workshops, majority of the respondents identified mentoring as a way of reducing the incidence of peer pressure on research misconduct. One of the academic staff that was interviewed opined that:

> *Mentoring is also important i.e. having people that have experience on proper ways of conducting research ethically mentors or supervises students & other young scholars and teaching them how to do it rightly. Those researchers, who have the knowledge and have been trained in the area of research ethics, have a duty and obligations to help others***(Editor/ Professor/ Main Campus)**

Another interviewee added that supervisors can act as mentors for their students by putting them on the right path of doing research. He stated that:

> *Supervisors should be encouraged to go through their student work thoroughly and carefully with a view to identifying issues relating to plagiarism, falsification of data and get them correctly by putting the student through***(Academic Staff/ Senior Lecturer/ Main Campus)**

It is acceptable that grooming at a tender age helps in growing up and the activities become part and parcel of the person that is being groomed. Mentoring in academics is best done when mentors reach out to lecturers and students when they are still new in the system. This was supported by one of the PhD students that were interviewed. He argued that:

> *Mentoring is very important for young faculty, because most young faculty look up to role model. It is what they see their models do, that they intend to do as well. The challenge is that mentoring is not formalized in the institution. Researchers should be mentored on how to do proper referencing. Junior faculty, new students should be mentored early so that it can become a part of them***(Graduate Student/ PhD student/ Main Campus)**

One of the recommendations also includes the provision of institutional framework for punishment for offenders and rewards for honest researchers. Supporting this, one of the interviewees stated that:

> *Knowledge and good attitudes should be enforced. There should be creation of the mechanics to make it work for people to know that when you cut corners, you get penalized. There should be penalty and enforcement of it on the perpetrators***(Academic Staff/ Professor/ College of Medicine Campus).**

Research misconduct is a serious crime with untold damages on the society, University at large; hence it should be severely punished. This was supported by one of the interviewees. She said that:

> *Considering the tremendous effects of research misconduct to the society at large, it should be considered a very serious crime and everything that can be done should be done to bring it to a minimum. The school system, the social network, government policies, legislation should be generated, to create more awareness. Penalizing the culprits should serve as deterrent to others e.g. sentencing to imprisonment if possible***(Disciplinary Committee/ Professor/ Main Campus)**

Furthermore, majority of the respondents recommended that there should be reduction in the institutional pressure to publish. According to one of the PhD students:

> *On promotion, they should find a way of reducing the pressure to publish papers for promotion on the lecturers***(Graduate Student/ PhD Student/ Main Campus)**

The reduction of institutional pressures on researchers can be done through various strategies. One of the strategies is to put less emphasis on numbers of publications. This was corroborated by one of the interviewees:

> *There should be reduction in the emphasis of number of publications over quality of publications. Less emphasis should be placed on publishing multiple papers for promotion. Emphasis should not be on quantity rather emphasis should be on quality of papers***(Editor/ Professor/ Main Campus)**

Apart from emphasis on quality rather than quantity of papers, criteria such as courses taught, students supervised should also be used as yardsticks for promotion

Majority of the interviewees also stated that collaborative or multi-disciplinary research should be encouraged. According to one of the interviewees:

> *The positive side of the influence of peer pressure relates to the facts that peers can collaborate, and when they do, the risk of misconduct is limited***(Academic Staff/ Professor/ College of Medicine Campus)**.

This can be possible because there will likely be an aversion to research misconduct if raised. According to one of the interviewees:

> *They all have to cooperate and agree and if anyone suggests otherwise, their different religious background and moral values will make it difficult to agree to an act of research misconduct. In this sense, the pressure may be for good. The more researchers collaborate in conducting research, the less the risk of misconduct***(Academic staff/ Senior lecturer/ Main Campus)**

Another interviewee added that:

> *Misconduct is easier when you are alone, you can easily manipulate, but in a team work the risk of misconduct is less. Multi – Authorship encourages research integrity, because they would have to research a lot of agreement***(Academic Staff/ Lecturer 1/ Main Campus)**

However, one of the interviewees raised a challenge to the institution on collaborative research or publication in University. He argued that:

> *It is an unfortunate thing that the promotion policies in University of Ibadan discourages multi-authorship because of the way points are being allocated between authors* **(Academic Staff/ Lecturer 1/ Main Campus)**

Social media is also recommended for the reduction of research misconduct. One of the interviewees stated that:

> *The social media can be used for more updates. For example emails can also be employed as gentle reminders; because most people are quiet busy with other things and might not have the time to attend seminars* **(Academic Staff/ Lecturer 1/ Main Campus)**

The vast population accessing social media such as University web's page, twitter handle and personal email address will enhance rapid and large knowledge dissemination

Lastly, there were also calls for the University, Faculties and Departments to invest in using software package to screen publications. According to one of the supporters:

> *Those that are due for promotion should have their publications subjected to plagiarism tests. Thesis and projects done by students should be checked for originality using plagiarism software. Punishment and sanctions, should be meted on those found wanting***(Disciplinary Committee/ Professor/ Main Campus)**

The punishment of those who are found guilty will serve as deterrents to others not to indulge in research misconduct, whether in the present or in the future.

CHAPTER FIVE

DISCUSSION

5.0: PREAMBLE

This chapter focused on the discussion of the findings on the role of peer pressure in research misconduct in University of Ibadan, Ibadan, Nigeria. It will be done in line with the specific objectives of the study.

5.1 Interviewees Profile

The interviewees are purposively selected from administration department and seven faculties including Agriculture and Forestry; Arts; Basic Medical Sciences; Clinical sciences; Public health; Sciences and Social sciences.The interviewees includesfour (4) editors of journals, four (4) PhD students, twelve (12) professors, six (6) senior lecturers, three (3) younger faculties in lecturer 1 cadre and a non-academic staff in the registry department. Majority of the interviewees are academic staff and students. In the university system, they are the major stakeholders in ethical issues in research and they are more susceptible to be embroiled in cases relating to research misconduct. In addition, academic staff members were more receptive to when approached on questions on research misconduct.

A substantial percentage of the interviewees consist of professors. They are at the peak of their career and it is believed that they are experienced in issues relating to ethics in research. Hence, they are expected to give robust and in-depth information on research misconduct, role of peer

pressure in research misconduct and the implications of research misconduct on the university, society and the perpetrators.

5.2 Various problems of research misconduct

This study revealed that the common cases of research misconduct are plagiarism, data fabrication and data falsification. This is consistent with the findings of Nylenna, et.al, (1999) that research misconduct is said to have occurred when researcher at any stage of research indulge in plagiarism, data fabrication and data falsification. In this case, the researcher is defined as being dishonest and unprofessional. However, the intentionality of the acts must be sufficiently proved before it is termed research misconduct, dishonest and un-professional.

The commonly reported case of research misconduct in this study is plagiarism. This includes the copying and pasting of people's work without citing the original author of the content of the work. This is consistent with what Academy (2009) said that plagiarism is appropriation of another person's ideas, processes, results, or words without giving appropriate credit. It includes researchers taking ideas from others' works and including them in their own publications. It also covers students taking material from the internet verbatim, without attribution, during write-ups of research or other scholarly work.

The study showed that data falsification involves the researcher trying to fine tune the research findings from the field to suit his or supervisor's or sponsor's expectation(s) while data fabrication involves the researcher not going to the field but cooking up data to present as if they are real figures from the field. These findings are consistent with the finding of Fanelli, (2009) that is data fabrication involves making up data or results, recording and reporting them as research findings. The findings are also consistent with the findings of Academy (2009) that research falsification is the manipulation of research processes, or changing or omitting data or results such that the research is not accurately represented in the research record but represent the researcher's interests.

Other cases of research misconduct identified in this study are publishing in predatory journals, misappropriation of fund and un-due authorship. Due to the power gap between the lecturer and the students, lecturers most times publish students' work and claim complete authorship. Some put the student's name as the second author whereas the student did most of the project work.

5.3 The role of peer pressure in research misconduct

The study findings revealed that peer pressure has an influence on the participation in research misconduct. Peers include lecturers and students depending on the status of the researcher. They are the ones that are close to him. Many researchers indulge in research misconduct because they are directly or indirectly influenced by their peers. Direct influence involves peer advising the researcher to cut corners in order to move up the academic ladder. Indirect influence occurs when the researcher is threatened by the success of his or colleagues who are being promoted. This finding confirms the assertion of Ryan, (2000) that peer pressure can be established to be actions perceived from peer groups that compels behaviors, actions and attitudes. It is also consistent with the findings of Melissa et.al, (2007) that the scientific enterprise is characterized by competition for positions, funding, publications and promotion. This can influence a researcher to indulge in research misconduct in order to be able to meet up the criteria required to attain some positions, get funds, get promoted and published.

The study also observed that Institutional pressure to publish enhances the researcher to succumb to the pressure from peers to indulge in research misconduct. This has been reported elsewhere in by Department of Health and Human Services (ORI, 2012) that researchers want to publish articles and publications pre-maturely in order to keep getting recognitions, a case identified as “publish or perish”. This carve to publish at all cost make it quite difficult for researchers to do in depth research, thus engage themselves in falsification of data, fabrication and above all plagiarism. Apart from the institutional pressure to publish, the study revealed that un-conducive teaching and research environment makes scholars to be susceptible to research misconduct in order to meet up with their colleagues from other countries who are endowed with encouraging and satisfying environment

The socio-economic characteristics of researchers can make them to indulge in research misconduct. The study showed that younger faculties in the craze to get more papers may cave in to the pressure from peers to cut corners. This confirms the assertion of ORI (2012) that peer pressure influence to cut corners common among early career researchers who mostly are eager for promotions and other career achievements. Other socio-economic characteristics identified by the study include grant and personal financial status. A financially deprived researcher might indulge in research misconduct to get data for publications.

5.4 How cases of research misconduct is reported and managed

The study revealed that structures are put in place to address the report and management of cases of research misconduct. Disciplinary committees are established at the unit, departmental, faculty and the university level to address ethical issues in research conduct. There are policies that are instituted to address ethical issues in research. This has been reported elsewhere by Smith et al., (2011) that research misconducts are constantly checked by the policies and regulations put in place by professional associations, government parastatals and research institutions.

The study also revealed that cases of research misconduct that are reported are exposed by people who knew about the misdeeds of the culprits. This also confirmed what has been reported by Explorable (2009) that but most of the culprits have been exposed by "Whistleblowers" who know or suspect about the research misconduct and are willing to come forward with evidence to the appropriate authorities reporting suspected act of the interested researcher.

The management of research misconduct includes the punishment meted out to offenders when caught. The study revealed that punishment strategies for students who are found to be guilty of research misconduct depends on the severity of the offences committed. Punishments for student perpetrators include paper retraction, withdrawal of certificates, suspension of programme, and expulsion from the university. For academic staff offenders, punishments include suspension of salary, paper retraction, suspension of services, suspension of promotion and dismissal. These findings have been reported by Xie (2012) that the punishment for research misconduct include simple warnings, termination of contract, disbarment and potentially the end of the researchers career in a given field of study. He further argued that research misconduct may have its consequences outside of academia as personal relationships and interest may deteriorate between involved parties and other professionals.

5.5 The effect of research misconduct

Research misconduct, though look promising and prove less-burdening in the first instance, it has damaging consequences. Research misconduct has damaging effects not only on the perpetrator (lecturer or student), but the University and the society at large. The study findings revealed that it has a damaging effect on the university's reputation. The university can be blacklisted and lose

its integrity in the academic world. The study also revealed that it has health implications on the members of the society.

The society at large look up to researchers for new information and technologies, while viewed as an avenue for solutions, research misconduct can effectively be the cause of several problems of greater magnitudes (Sabir et al., 2014). It has health implications on the society as drugs and food companies employ the research findings from reputable institutions and individuals for production. If production of food and drug is based on fabricated or falsified data, what will be produced can at best be described as poison. The study also revealed that when inaccurate data is used for policy formulation, the implementation and the effectiveness of such policies will be challenging because the foundation is faulty.

On the perpetrator (including lecturer and students), it leads to mediocrity of knowledge, laziness to indulge in sound intellectual reasoning, career damage, termination of career if caught. Their papers are retracted from circulation and their professional achievements are truncated. This damaging effects have been exemplified in the research misconduct case involving the prominent Anesthesiologist Scott Reuben, MD who pled guilty in early 2010 to falsifying research on the use of analgesics such as Celecoxib (*Celebrex*; Pfizer) and Rofecoxib (*Vioxx*; Merck) for postoperative pain management. After being found guilty of research misconduct, the *Anesthesia & Analgesia* and other medical journals have retracted more than 20 articles by Dr. Reuben containing fabricated data (Supino and Borer, 2012).

The study further revealed that research misconduct also spoils the reputations of researchers. A more recent case is that of Dr. Frank Sauer. Based on evidence and investigation conducted by the University of California (UCR), the Office of Research Integrity (ORI's) review of UCR's research misconduct investigation report and other evidences obtained, it was found that Dr. Frank Sauer, former Professor of Biochemistry, UCR, committed research misconduct in research supported by the National Institute of General Medical Sciences and National Institutes of Health (NIH) grants by falsifying and fabricating some images in his publications.
Dr. Frank Sauer was prohibited from serving in any advisory capacity and request was made to PLos for retraction and/or correction of his publications (ori.hhs.gov, 2017)

This confirms the assertion of Sabir et al., (2014) that research misconduct destroys the main core of scientific discovery which is established on honesty and it cast a shadow over researchers that are going about their businesses in the proper and ethical manner.

CHAPTER SIX

CONCLUSION AND RECOMMENDATION

6.0 PREAMBLE

This chapter is on the conclusion and recommendation of this study. The chapter is divided into two (2) sections. The first section is on the conclusion derived from the study while the second section provides a logical recommendation of the study. It also gives recommendations for further research studies.

6.1. CONCLUSION

This research shows that in determining the prevalence of research misconduct in University of Ibadan as at now is difficult because there is poor documentation and cases of research misconduct are hardly officially reported. The common cases of research misconduct is plagiarism, data falsification, data fabrication, undue authorship, misappropriation of funds and publishing in sub-standard outlets, for example, predatory journals.

Peer pressure has influence on research misconduct. However, the influence is limited. This is because the influence of peer pressure on research misconduct is greatly aided by un-conducive environment for teaching and research and the pressure from the Institution on Researchers to either publish or perish. The socio-economic characteristics of researchers could be a contributing factor to indulging in research misconduct. Younger faculties are prone to research misconduct than the senior faculties because the former needs more papers to rise in the academic ladder. Researchers that lack either personal or organizational funds for their research are susceptible to indulge in research misconduct as they can cut corners in the area of field work which consumes more money.

The University established disciplinary committee, ethical committee, organized workshops, trainings and seminars to create awareness on ethics and address ethical issues within the University community. The Faculty of Public Health in the College Of Medicine campus also introduced compulsory ethical courses for her students so that they will be grounded in ethical issues in research. However, poor Institutional framework or structures to either detect and punish offenders or lack of reward of honest researchers; inadequate resources to fund ethical committees, seminars, trainings and workshops and people's passive attitude towards ethical issues are pegs in the wheel of progress towards reduction or curtailment of research misconduct in the University
The report, investigation and management of perpetrators of research misconduct are done at departmental, faculty and the university level. The punishment strategies for students who are found to be guilty of research misconduct include withdrawal of certificates, suspension of programme, and expulsion from the university. For academic staff offenders, punishments include suspension of salary, suspension of services, suspension of promotion and dismissal. The punishment depends on the weight of the offences.

Research misconduct has damaging effects on the perpetrator (lecturer or student), university and the society at large. On the staff, it leads to mediocrity of knowledge, laziness to indulge in sound intellectual reasoning, termination of career if caught. On the students, it also leads to career damage, poor capacity to reason intellectually etc. It affects the reputation of the university. The university can be blacklisted and lose its integrity in the academic world. It has health implications on the society as drugs and food companies may produce what is tantamount to poison if they base their manufacturing on faulty data, also they may lose hope in research findings. When inaccurate data is used for policy formulation, the implementation and the effectiveness of such policies will be challenging because the foundation is faulty.

6.2. RECOMMENDATION

Based on the findings of the study, the following are recommended:

1. There should be establishment of more ethical committees in the department and they should be adequately funded: This will aid the easy access to ethical approval for researches and unnecessary delays and glitches being faced when protocols are being reviewed will be reduced or ended.

2. Provision of a conducive environment for teaching and research: Standard facilities such as internet facilities, grants and scholarships, constant power supply, equipment, adequate materials, etc. should be provided to ease the researcher of the challenges of conducting research.
3. Organisation of workshops, trainings and seminars: This should be a periodic event. However, it should not be too much as lecturers and staff might get tired of attending the events. Entry training, workshop and seminars should be organised for new lecturers and staffs to get them familiar with ethical issues in research
4. Mentoring: Adequate mentoring should be provided by senior faculties to junior faculties; from lecturers to students; from old students to new students.
5. Provision of institutional framework for punishment for offenders and rewards for honest researchers: The punishment and reward system should be effective. This will deter people from indulging in research conduct and make them interested in conducting ethically rooted researches.
6. Reduction in the institutional pressure to publish: Pressure on publications for promotion exercise should reduce. Criteria such as courses taught, students supervised should also be used as yardsticks for promotion
7. Collaborative or multi-disciplinary research: This should be encouraged as it will foster knowledge transfer and solidification. It will also serve as a checkmate for people interested in cutting corners.
8. The use of social media to create awareness: The popularity of the social media can also be harnessed. Publications on ethical issues can be posted on the University web's page. They can also be sent into email addresses of staffs and students. This will enhance rapid and vast knowledge dissemination

6.2.2 Recommendation for further studies

There is the need for a study on the prevalence of research misconduct in the university community. Studies also need to shed more light on the micro and macro effects of peer pressure on the offender, the university and the society at large

6.3 Limitation of study

In this study, the prevalence of research misconduct could not be ascertained because there is poor documentation and poor report of cases of research misconduct. Also, the result obtained cannot be generalized for all universities.

6.4 Contributions to Knowledge

Despite this limitation, it is remarkable to note that this study provided important contributions to knowledge:

Previous study on the role of peer pressure on research misconduct is purely quantitative. This study contributes to the methodological discourse on peer pressure and research misconduct as it was a qualitative study. It provided an in-depth examination of role of peer pressure in research misconduct.

The study also revealed that despite the fact that peer pressure has a role in research misconduct, its efficiency is largely tied to Institutional Pressure to publish and un-conducive academic environment.

APPENDIX 1- Interview Guide

The Role of Peer Pressure in Research misconduct.

Good day and welcome to our session. Thanks for taking the time to talk with me about the role of peer pressure in research misconduct. My name is OluwabukolaAdefemi. I am a postgraduate student of the University of Ibadan, and I want to find out how peer pressure influences our researchers to commit misconduct and also find out best possible way out of this prevailing culture of research misconduct in our institutions today.

You were invited to this session because you indicated an interest when contacted.

There are no wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said. Keep in mind that we are just as interested in negative comments as positive comments and at times the negative comments are the most helpful.

You have probably noticed the recorder (It is most likely this instrument would be used in collecting data). I am tape recording the session because I don't want to miss any of your comments. People often say very helpful things in these discussions and I cannot write fast enough to get them all down. You can be best assured of complete confidentiality. No names would be identified in our reports.

The reports will go to the university of Ibadan defence committee to help them plan on how to mitigate the prevalence of research misconduct amongst our researchers.

Well, let us begin. May I know you more by telling your names and your designation?

1. How prevalent is research misconduct amongst researchers in our institutions?

2. Do you think peer pressure could be an influence in research misconduct?

Probe: if yes, how notable is the role of peer pressure in research misconduct?

3. What are the effects of the role of peer pressure in research misconduct?

4. Can it be said that the socio- economic characteristics of the researchers could be a contributing factor to peer pressure influence?

5. Do you think our educators are not doing enough to create awareness on ethical integrity in research?

Probe: some studies have shown that despite some researchers having knowledge about ethical integrity, they still commit one form of research misconduct, could this be attributed to pressure from peers or other factors?

6. What is your opinion on the relationship between peer pressure and research misconduct?

7. Can you tell us how the university manages cases of research misconducts?

Probe: are there any such cases, how are they reported and then investigated?

8. Do you think/subscribe to the organisation of quarterly training, seminars, workshops or campaigning on how to conduct research ethically amongst our researchers by the institution?

9. What do you think can be done to ensure that research misconduct is brought to a minimum amongst our researchers?

10. Do you have any further comments or suggestions?

Thank you for your time.

APPENDIX 2- Interview Guide (PhD. Students)

The Role of Peer Pressure in Research misconduct.

Good day and welcome to our session. Thanks for taking the time to talk with me about the role of peer pressure in research misconduct. My name is OluwabukolaAdefemi. I am a postgraduate student of the University of Ibadan, and I want to find out how peer pressure influences our researchers to commit misconduct and also find out best possible way out of this prevailing culture of research misconduct in our institutions today.

You were invited to this session because you indicated an interest when contacted.

There are no wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said. Keep in mind that we are just as interested in negative comments as positive comments and at times the negative comments are the most helpful.

You have probably noticed the recorder (It is most likely this instrument would be used in collecting data). I am tape recording the session because I don't want to miss any of your comments. People often say very helpful things in these discussions and I cannot write fast enough to get them all down. You can be best assured of complete confidentiality. No names would be identified in our reports.

The reports will go to the university of Ibadan defense committee to help them plan on how to mitigate the prevalence of research misconduct amongst our researchers.

Well, let us begin. May I know you more by telling your names and your designation?

1. How prevalent is research misconduct amongst researchers in our institutions?

2. Do you think peer pressure could be an influence in research misconduct?

Probe: if yes, how notable is the role of peer pressure in research misconduct?

3. What are the effects of the role of peer pressure in research misconduct?

4. Can it be said that the socio- economic characteristics of the researchers could be a contributing factor to peer pressure influence?

5. Do you think our educators are not doing enough to create awareness on ethical integrity in research?

Probe: some studies have shown that despite some researchers having knowledge about ethical integrity, they still commit one form of research misconduct, could this be attributed to pressure from peers or other factors?

6. What is your opinion on the relationship between peer pressure and research misconduct?

7. Do you subscribe to the organization of quarterly training, seminars, workshops or campaigning on how to conduct research ethically amongst our researchers by the institution?

8. What do you think can be done to ensure that research misconduct is brought to a minimum amongst our researchers?

Thank you for your time.

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