

# **KNOWLEDGE OF PUBLIC HEALTH ETHICS AMONG MEDICAL DOCTORS IN NIGERIA**

**A Case Study By Dr. Maclawrence Kolapo Famuyiwa, Nigeria**

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## **ABSTRACT**

This study is about the level of knowledge of medical practitioners in Nigeria on the principles of Public health ethics and the existence of national code of health research ethics in Nigeria. It is a cross-sectional questionnaire-based study in which 158 medical doctors were involved. Data analysis of the study showed that one hundred and forty (140) respondents completely filled and returned the Questionnaires, which represents a response rate of 88.9%. One hundred and twenty seven (127) Respondents (90.7%) claimed to have had medical ethics as part of their medical education. The Median duration of formal education or exposure to public health ethics was 5 hours (range:0-20\ hours). Eighty four (84) respondents representing 60% of the respondents claimed to be aware of the body saddled with supervising of health research ethics in Nigeria, but only forty seven (47) representing 33.8% of the respondent were able to mention the name of the committee responsible for medical ethics in Nigeria as the National Health Research Ethics Committee NHREC). Sixty eight respondents (48.6%) have a good knowledge of public health ethics. Analysis of the identified public health ethics dilemma shows that end of life was the highest mentioned (77.1%) followed by discharge against medical advice (61.4%) and confidentiality by 60% of the respondent. The study thus concluded that there is obvious inadequacies in public health ethics knowledge among Nigerian medical doctors, and a clarion call should be directed at policy makers to overhaul the present medical education curriculum in Nigeria to include public health ethics at both the undergraduate and post graduate levels.

## **KEYWORDS**

Public Health Ethics, Bio ethics, Nigerian Doctors, NHREC, Ethics Committee, Health researches.

## **INTRODUCTION**

According to Childress et al<sup>(1)</sup>, "Public health is primarily concerned with the health of the entire population, rather than the health of individuals. It encompasses emphasis on the promotion of health and disease and disability prevention; the collection and use of epidemiological data, population surveillance, and other forms of empirical quantitative assessment; a recognition of the many dimensional forms of the determinants of health; and a focus on the complex interactions of many factors – biological, behavioral, social, and environmental – in developing effective interventions." Public health activities also include community collaborations and partnerships for health and the identification of priorities for public health action.

Ethics on the other hand can be said to be the science of morality which traverses different human professions like medicine, military, law and even religion, in recent history, globalization has made the concept to encompass all human endeavours, since it is now applied to pedagogy, business, and other walks of life.

The same codes of conduct used in bioethics are what public health ethics discussions follow. Bioethics contribute immensely by proposing an optimal codes of conduct in medical research and practice. It is thus expedient on public health researchers to ensure an impartial distribution of risks and benefits as well as ensuring informed consent, confidentiality in their studies and interventions.

However the codes established by bioethics are inadequate to address all the issues associated with public health, since this area of study far extends beyond medical care and research in humans. This shortcoming have been elucidated on by many researchers but with none suggesting a separate public health ethics to address this, thus leaving a yawning gap of trying to distinguish public health ethics from bioethics.

Globally, many authors in the past have pointed out ethical issues as the core values in the field of public health, they, in the process identified the differences and similarities between public health ethics and bioethics. Public health ethics can be defined as the identification, analysis, and resolution of ethical problem arising in public health practice and research and it is quite distinguishable from medical ethics. Ethics in public health majorly concerns both the acquisition and application of scientific knowledge targeted at restoring and protecting the health of the general public with great regards to individual independence<sup>(2,3)</sup>. Public health ethics protects the welfare of the individual, as in medicine, as well as protecting individual's welfare<sup>(2)</sup>. A broader scope of public health ethics includes ethical and social issues arising in health promotion and disease prevention, epidemiology research, and public health practice<sup>(4,5)</sup>. Other ethical consideration in public health relate to the need to ensure a just distribution of public health resources<sup>(6)</sup>.

It has also been emphasized by many authors the mandatory public health measures authorized by public health law (for example placing people with contagious diseases under quarantine) or embarking on activities that clearly infringe on people's privacy and autonomy when on public health surveillance. Communicating perspectives may sacrifice limiting individual independence on the altar of the common good or public interest (5).

There are still many examples of voluntary public health activities despite the imperative and mandatory legal public health activities. For instance, public health survey is dependent on the support and informed consent of people. Public health practitioners often cited the explications of moral reasoning methods useful for public health research and practice.

The four principles proposed by Beauchamp and Childress are among the most widely used frameworks and offers a broad consideration of medical ethics issues in general, not only for use in a clinical setting.

The Four Principles are general guides that allow judgment in specific cases.

*RESPECT FOR AUTONOMY*: is about respecting the decision-making capacities of autonomous persons; allowing individuals to make reasoned informed choices.

*BENEFICENCE*: is about the balancing of benefits of treatment against the risks and costs; the action of healthcare professional should be in a way that benefits the patient.

*NON MALEFICENCE*: is about avoidance of the causation of harm; the healthcare professional should not harm the patient. All treatment comes with some harm to the patients, even if minimal, but the harm should not be disproportionate to the benefits of treatment.

*JUSTICE*: Distributing benefits, risks and costs fairly; the notion that patients in similar positions should be treated in a similar manner. Ideally for a medical research and practice to be considered "ethical", it must respect all four of these principles: justice; autonomy; non-maleficence and beneficence.

This review intends to reveal the knowledge of public health ethics among Nigerian doctors in a hospital that offers both secondary and tertiary health care. The study becomes necessary to identify the way to address the problems that Nigerian researchers face on ethical issues in their work as well as examining the issues as it is generally applicable.

## **AIMS AND OBJECTIVES**

1. To assess the knowledge of medical doctors in a hospital offering both secondary and tertiary medical services, in South west Nigeria about public health ethics.
2. To assess their level of education in public health ethics and their satisfaction with the education they have so far received or not in medical ethics in their undergraduate and post graduate education as the case may be.
3. To assess their level of awareness of various ethical dilemmas as they relate to public health research and practice.
4. To assess their knowledge of the existence of health research ethics committees' regulatory body in Nigeria.

## **LITERATURE REVIEW**

Public health ethics unlike bioethics is free of the 'Hippocratic Oath' or any universally accepted code for properly executing an intervention. Public health practice and research is mainly flexible and ingenuous except that it is guided by the evidence-based knowledge. They are based on an multivariable process and environments.(8)

Nigeria is a budding democracy with intriguing epidemiological, social, political, and economical ambience. Religion without any doubt has played an important role in public health practice, research and interventions. The neglect of the public health sector by the government of Nigeria, has left this sector in a despicable state, this is worsened by 'brain drain' of health professionals, and the few that chose to remain behind were faced with poor remuneration, appalling infrastructure and leadership crisis amongst the various health professionals who felt that doctors need not be the boss, since they are all qualified in their own rights, so many strikes and threat of them have further eroded efficiency and effectiveness of the health sector in Nigeria.

This has made it impossible for the country to sustain or build upon the benefits of vertical interventions like Global Polio Eradication Initiatives (GPEI). It has thus been suggested that the diagonal approach must be taken, where both vertical and horizontal are taken alongside the aspect of socialization in these communities. It is therefore necessary to find a resting place for the principle of camaraderie, so as to ensure accountability and reliability throughout all aspects of the health system, and also it is imperative for the government of Nigeria to emphasize and find a way to disentangle religion from governance, encouraging freedom of religion preference. Also there should be political commitments from the community to the national and

international levels, in order to ensure the fruition of the implementation of public health interventions.(8) Ethics is an arm of philosophy that concerns with distinctions between right and wrong – with the moral consequences of human actions. The ethical principles that arise in epidemiologic practice and research include: Confidentiality, informed consent, respect for human rights, and scientific integrity.

It is routine in public health to juxtapose scientific considerations with political and ethical conflicts. The inquiries of autonomy, persons' rights, coercion, justice, community, the common good, the norms of research and multi-cultural values are essentially momentous in public health.

Some medical research misadventures, led to the creation of the Belmont Report and the Institutional Review Board (IRB) for the protection of human subjects that are targeted in research. "IRB" is an acronym used by the United States Food and Drug Administration (FDA) and the United States Department of Health and Human services (HHS) to refer to a group whose duty is to review research to assure the protection of the rights and welfare of the human subjects.

Each institution may use whatever name it desires. Regardless of the name chosen, they are subjected to the Agency's IRB regulations when studies of FDA regulated products are reviewed and approved. Under FDA regulations, an IRB is an appropriately established group that has been formally given the designation to review and supervise biomedical research involving humans as subjects. In accordance with FDA guidelines, and IRB is empowered with the authority to approve, require modifications in (to secure approval), and even to disapprove research. This group review serves an important role in the protection of the rights and welfare of human research subjects.

The purpose of IRB review is the assurance, either in advance or by periodic review, that appropriate measures are in place to protect the rights and welfare of humans participating as subjects in the research. To accomplish this, IRBs employ a group process to review research protocols and related materials (e.g., informed consent documents and investigator brochures) to protect the rights and welfare of human subjects of research.

## **ETHICAL CONTROL OF HEALTH RESEARCHES IN NIGERIA**

In Nigeria, The National Health Research Ethics Committee (NHREC) was inaugurated in October 2005 for the strengthening of a mechanism that will ensure the protection of Nigerians as they participate in researches. The committee was an offshoot of the dormant Health Research Ethics Committee which had been in existence since early 1980's, and had been able to come up with the National Code of Health Research Ethics.

The terms of reference for the committee are to:

- (a) Set norms and standards for conducting research on humans and animals, including clinical trials;
- (b) Adjudicate in grievances arising from the functioning of health research ethics committees and listen to any complaint of discrimination by any of the health research committees against a researcher;
- (c) Register and audit the different activities of health research ethics Committees;
- (d) Refer to the relevant statutory health professional council, matters involving the violation or potential violation of an ethical or professional rule by a health care provider;
- (e) Recommend disciplinary action as may be prescribed by law or permissible by law to the appropriate regulatory, against any person in deterrence or violation of any norms and standards, or guidelines, set for the conduct of research under this Act; and
- (f) Appropriately advise the Federal Ministry of Health and State Ministries Health on any ethical issues concerning research on health.

Prior to the formulation of the National Code of Health Research Ethic in Nigeria, different ethical committees were set up according to institutional and international guidelines, with no uniformity and minimum standards. There was also no coordinating and legally binding enforcement mechanism. Therefore, much undocumented unethical research continues to be conducted in Nigeria as in other developing countries, outside the jurisdiction of ethics committees. In addition, there was no systematic and sustained development of a culture of ethical health research in national institutions.

Where researches were conducted with foreign funds, the only penalty then, when there was non-compliance with ethical standards was to extenuate such funding and extirpate such deterrent researchers from future funding from those same sources but that did not translate to annihilation of funds from other research funds and this coupled with absence of domestic legal regulation of ethical research and non-uniformly successful enforcement of ethical standards through litigation, partly because of weak judicial systems, the absence of enabling laws, and unenforceability of international guidelines such as the Nuremberg Code, Belmont principles, Helsinki Declaration, and Council for International Organization of Medical Sciences (CIOMS) guidelines, the latter have been described as non-legally binding declarative statements that lack the specificity required for legal action,(11) they are therefore not legally enforceable and their contravention in developing countries carries minimal risk to researchers, these aforementioned were then the bane of ethical researches in Nigeria.

## **THE PECULIARITY OF NIGERIAN CODE FOR RESEARCH ETHICS**

The Nigerian Code for Health Research Ethics bears a lot of resemblance to most of the current international health research ethics guidelines, but it veers from them in some important aspects. In order to ensure minimum standards in ethical evaluation of research, the Code mandates all ethics committees in the country to be registered. This registration is renewable biennially and gives the NHREC the opportunity to have an oversight function over institutional ethics committees. Institutions setting up ethics committees are also expected to agree to provide office space, equipment and personnel for these committees, otherwise they risk losing their registration.(12) Ethics committee members and biomedical researchers are also mandated to undergo at least biennial NHREC-approved training in informed consent.(13) The Code requires institutions to appoint HREC administrators, an essential role that has hitherto been largely ignored in many of the efforts to promote health research ethics in developing countries.(14) While HREC members are often rotated, administrators remain the core of sustainable ethics committees by ensuring continuity and providing support. A system of committees' categorization has also been created so that institutions are motivated to support their HREC and improve them in order to maintain their status or attain a higher one. Categories are also linked to the types of research that institutions' committees can approve and, by implication, the types of research that can be conducted in institutions.

The Code permits institutions to have more than one ethics committee but limits the authority of the ethics committees to their geographical location or the research activities of the institution's permanent staff only. This is to prevent "ethics committee shopping" by researchers seeking to avoid rigorous ethical oversight(15). It is without doubt that it is quite expensive to set up ethics committees and to maintain a continuous flow of research proposals which will confer competence and expertise in protocol review, the assumption of the Code is that there may be institutions that may not be able to sustain the establishment and continual functioning of ethics committees. In order for research to be conducted in such institutions, the Code recommended the establishment of cooperative agreements between institutions that have and those that do not have ethics committees so that ethical oversight in the latter institutions will be unhindered.

It has been muted in the research community that central and regional review of protocols can be explored to be a method of providing ethical oversight of multicentre studies in a timely and an efficient manner, with the believe that this will avoid duplication of effort and harmonize outcomes of multiple ethics committees' review of same protocols.(16,17) .

The Code gives opportunities for principal investigators to seek central review of their protocol by the National Ethics Committee at their own prodding or upon referral from their local ethics committees. This recommendation becomes necessary where the research involves many centres or is taking place in institutions or localities where there is no ethics committee. The ethics

committee of an institution may also refer research to the National Committee for review, if, for instance, the research is of such complexity that is beyond what one institution in Nigeria has all the relevant expertise to adequately review and provide oversight function for it.

Individual researchers may also petition the National Committee to review a study where there has been unnecessary delay or conflict with the institutional ethics committee. In such cases, the National Committee may assign the protocol to any institutional committee to review the protocol on its behalf as the “Committee of Record” after which local institutional committees provide continuing ethical oversight if the protocol is approved. Also, the National Committee may inaugurate an ad hoc ethics committee of experts from different institutions within Nigeria or the National Committee can constitute itself into a reviewing ethics committee and exercise all the authorities therein. Institutional ethics committees were preferred to regional ones, though the latter are likely to be more efficient, they carry the risk that ethical review will not be seen as part of the cultural fabric of institutional research programmes and may not adequately support the growth of an ethical research environment within institutions.<sup>(17)</sup>

The code also recommended a Materials Transfer Agreement between researches, monitored by the institutional ethics committee and recorded at the National Committee, so as to easily monitor the transfer of biological materials and safeguard the interests of local researchers in international collaborative research that make use of local bio-diversity and resources. Also other agreements like Clinical Trials Agreements, Community Assent, Community Benefits Agreements or Intellectual Property Rights Agreements, may be a sine qua non for studies approval by the institutional ethics committees. Consultations between ethics committees are encouraged when reviewing multicentre studies and researches and must submit ethics review of protocols from different sites to their institutional Health Research Committee for resolution, particularly when there is no uniform outcome of review. The Code also outlines clear processes for ethics committees to provide continuing ethics oversight of studies, suspend studies, amicably intervenes in concerns and issues arising from ethics oversight and recommend cessation of studies to the National Committee. Investigators have procedures to follow in appealing to the local institutional ethics committees and independently to the National Committee in cases of disputes with the institutional committee.

Without mincing words, the most important cogwheel in the effective functioning of ethical committees in developing countries like Nigeria is funding, and several studies have concurred with this <sup>(18,19)</sup>. Some suggestions have been made to overcome this limitation and this include charging for review of protocols, institutional or government support, external funding, or grant assistance. The NHREC agreed that while ethical review of protocols can be rightly said to be of public good that should be supported by the government, it is not a propitious option for governments still grappling with meeting the provision of basic healthcare. <sup>(20)</sup> Dependence on

external grants alone was not considered a viable long-term option for funding ethics committees. It is permissible for institutional ethics committees to charge fees commensurate with the complexity of the research protocol, source of research funds, and the expected amount of work that would need to be done in order to provide satisfactory ethics oversight. These fees depends on the availability of additional support provided by institutions and other sources to the institutional ethics committees.<sup>(19)</sup> Ethics committees and independent ethicists can organise both ethics consultations and ethics training programmes taking due care to avoid conflicts of interest. For quality assurance purposes, ethics education programmes must submit their curriculum and a list of lecturers or resource persons, and their qualifications to the NHREC for approval to ensure that these meet the minimum requirements for education in research ethics that is compulsory for members of ethics committees and biomedical researchers in the National Code at least once every two years.

The ethics guidelines presently in use have been critiqued as to be birthed partly or wholly in response to research ethics crises. For example, the Nuremberg Code came to being as a result of the trial of doctors and scientists that conducted unethical research during the World War II. They are also believed to be biased in that they accord much relevance to the principle of autonomy but neglect current challenges in research ethics such as community interests, placebo use, conflicts about standard of care, resource availability when research is completed, and quality of an adequate informed consent process.<sup>(21-23)</sup> The Nigerian Code considers these new paradigms in ethics guidelines and includes explicit information about protecting communities and their interests as well as the application of the ICH-GCP guidelines in clinical trials.<sup>(22-24)</sup>

The National Committee presupposes that biomedical researchers and ethics committees' adherence to the code and other guidelines will depend on the provision of educational programmes as well as enforcement of compliance by the National Committee, and the re-orientation of ethics committee members from the guidelines and processes with which they are already familiar with. Quite a number of ethics committees members are devoid of basic knowledge in modern research ethics and this may elucidate on the common complaints about the quality of ethics review, the natures of issues that ethics committee members raise, and their emphasis on minuscule of the informed consent form to the neglect of other prospects of research protocols. The National Committee therefore encourage continuous education of ethics committees' members in Nigeria.

## **BACKGROUND TO THE STUDY**

Ethics in public health research and practice became very important following the actions of some researchers, of note is the Tuskegee Syphilis Study or, to give it its full nomenclature, the

Tuskegee Study of Untreated Syphilis in the Negro Male, was notorious clinical study that is now known as a synonym for racist and unethical medical experimentation. It was conducted from 1932 to 1972 and nearly 400 impoverished and poorly educated African-American men diagnosed with latent syphilis were involved. For 40 years they were never informed they had syphilis and were never offered treatment for it, even when penicillin became a standard cure in 1947. They were simply told they had 'bad blood', which had become an epidemic in the country then.

Also during the World War 2, human experimentations were a series of medical experiments on large numbers of prisoners, largely Jews (including Jewish children) from across Europe, but also in some cases Romanians, ethnic Poles, Soviet prisoners of wars and disabled non-Jewish Germans, by Nazi Germany in its concentration camps mainly in the early 1940s, during World War II and the Holocaust. Prisoners were forced into participating; they did not willingly volunteer and there was never informed consent. The experiments resulted in death, disfigurement or permanent disability.

There is also the experiment by Milgram in 1961 on the conflict between obedience to authority and one's personal conviction. The researcher examined the justification for acts of genocide by those who were accused at the post-world war II Nuremberg trials who claimed that they acted under orders from their superiors. (25)

Thirdly, a group of children with mental retardation who lived at Willowbrook State Hospital in Staten Island, New York were coerced to be part of the "Willowbrook Study" between 1963 and 1966. These innocent children or subjects were fed with extracts of stools from infected individuals and later injected with more purified virus preparations. The children were callously infected with the hepatitis virus. However, the researchers claimed in defense of their investigation that the vast majority of them would have in any case acquired the infection while at Willowbrook, so to these researchers, it was better for them to deliberately be infected under carefully controlled research conditions.(26,27)

Humphreys, a sociologist, conducted a research tagged "Tearoom Sex" study in the mid- 1960s. He hypothesised that the public and the law enforcement agents and agencies held stereotypical perceptions of men who engaged in impersonal sexual acts with one another in public restrooms. "Tearoom sex", as cunnilingus in public restrooms, has a large chunk of homosexual arrests in the US. Humphreys argued that it was important for society to have a better understanding of the identity of the men as well as what motivated them to seek quick impersonal sexual gratification. He tried to answer this question by the methods of participant or observation and structured interviews. Humphreys stationed himself in "tearooms" and offered to serve as a "watchqueen". The "watchqueen" had the duty to be on the lookout for law enforcement officers or deliberately cough if strangers were approaching the area.

During the study, he observed hundreds of acts of “tea-room sex” and gained the confidence of some of the men he observed. He later revealed his role as a scientist and persuaded them to tell him about their personal lives and drives. To avoid bias, Humphreys surreptitiously tailed some of the men and recorded the license numbers on their vehicles. A year later, Humphreys showed up at their private homes and claimed to be a health service interviewer. He asked them questions about their marital status, job, race and other personal questions.(28)

Humphreys’ findings destroyed many stereotypes. He found that 54 per cent of the men were married and 38 per cent were neither bisexual nor homosexual. Most of them were successful, well educated, financially stable, and highly praised in the community. Only 14 per cent of the men that he observed were homosexuals and part of the gay community. The Humphrey’s research was done in the 1960’s prior to the establishment of the IRB in the United States of America, and other such ethical control bodies all over the world.

In Nigeria, as well as in most parts of Africa, until the inauguration of the National Health Research Ethics Committee in 2005, the mechanism for the effective mechanism for reviewing and implementing research projects on human or animal is practical inchoate, this thus make it arduous for researchers in Africa to get approval for their works from international ethical review boards due to inability to address ethical issues in their protocols.

## **MATERIALS AND METHODS**

The study was cross-sectional and questionnaire-based, carried out among medical doctors in a health care facility offering both secondary and tertiary care in South-west Nigeria. All categories of medical doctors-house officers (interns), medical officers, resident doctors (registrars and senior registrars), and consultants. Medical officers are post-internship doctors who are yet to commence residency training were included in the study. Ethical approval was obtained prior to the commencement of the study from the Hospital Research Ethics Committee.

## **DATA ANALYSIS**

Data were analyzed for bio-data, response regarding undergraduate and postgraduate training in medical ethics, respondents' attitude to medical ethics training, knowledge about the principles of biomedical ethics and the ethical dilemmas encountered in daily medical practice IBM SPSS version 19. Descriptive statistics was used to obtain the general characteristics of the study participants. The Chi-square test was used to determine the level of significance of groups of categorical variables. P values <0.05 were considered significant.

## RESULTS

**TABLE 1: Age Distributions**

Age Range	No of respondents	Percentage
25-34	72	51.4
35-44	53	37.9
45-54	15	10.7
	<b>140</b>	<b>100.0</b>

Table 1 shows that 51.4% of the respondents were within the 25-34 age range, 37.9% within the age range of 35-44 and 10.7% within the age range 45-54. The median age was 34.7 years, the mode was 32.9 years and the mean was 35.4 years.

**Table 2: Distribution of respondents by gender and positions**

Gender	House Officer	Med Officer	Registrar	Snr Registrar	Consultant
Male	36	13	21	10	5
Female	22	7	18	5	3
<b>Total (%)</b>	<b>58 (41.4)</b>	<b>20 (14.3)</b>	<b>39 (27.8)</b>	<b>15 (10.7)</b>	<b>8 (5.7)</b>

*Table 2 shows the distribution of respondents by gender and position.*

Out of the one hundred and fifty-eight (158) questionnaires handed out to respondents, only one hundred and forty (140) of them were returned completely filled, this accounted for about 89% response rate. The Male accounted for about 61% of the respondents while female respondents accounted for the remaining 39%. Also 41.4% of the respondents were medical house officers, 14.3% were medical officers, 27.8% were registrars, 10.7% were senior registrars, and 5.7% were consultants.

The distribution of the resident doctors and consultants among the respondents by area of specialties shows that 19 (30.7%) were from Community Health, 14 (22.6%) were from Surgery, 11 (17.7%) were from Internal Medicine, 10 (16.1%) were from Paediatrics and 8 (12.9%) were

from Obstetrics and gynaecology. House officers were deliberately left unclassified into medical specialties, since their programme involve a mandatory rotation through the various medical specialties' departments of medicine, surgery, obstetrics and gynaecology as well as paediatrics.

*Table 3: Knowledge of principles of public health ethics by different categories of medical doctors*

Principles	Autonomy		Beneficence		Non-maleficence		Justice	
	Yes	No	Yes	No	Yes	No	Yes	No
<b>House Officers</b>	32(55)	26(45)	49(85)	9 (16)	30(52)	28 (48)	30(52)	28(48)
<b>Medical Officers</b>	9 (45)	11(55)	3 (15)	17(85)	13(65)	7 (35)	6 (28)	14(70)
<b>Junior Registrars</b>	14(36)	25(64)	18(46)	21(54)	24(62)	15 (39)	19(49)	20(51)
<b>Senior Registrars</b>	12(80)	3(20)	12(80)	3 (20)	15(100)	0 (0)	11(73)	4 (27)
<b>Consultants</b>	7(88)	1 (12)	8(100)	0(0)	8(100)	0 (0)	8(100)	0 (0)

Table 3 showed the breakdown of the four individual principles (respect for individual's autonomy, beneficence, non-maleficence, and justice), there is a significant difference in the knowledge base of more junior doctors (house officers, medical officers and junior registrars in comparism with more senior ones (senior registrars and consultants), the chi square values for the four core ethical principles are: autonomy 13.410 (P value of 0.009), beneficence is 43.107 (P value 0.000), non-maleficence is 16.897 (P value 0.002) and justice is (14.15) (P value 0.007) respectively, and these values are of great statistical significance.

One hundred and twenty seven (127) that represent about 91% of the respondents claimed they have had a reasonable medical ethics education as part of their undergraduate medical education curriculum. The median duration of formal education in medical ethics education was 5 hours, the range was 0-20 hours. Majority of the respondents (87%) believed this education was grossly

inadequate, the general belief among the participants was that basic medical education should incorporate more of training in medical ethics.

About 61% updated their knowledge of medical ethics after their graduation from medical schools by reading materials on the internet and medical journals (42.3% and 28% respectively), and continuous medical education (17.1%). One hundred and seven (107) representing 76.4% of the respondents believed that medical ethics is very important while remainder of the respondents felt it may just be important. Eighty four 84 (60%) have read the code of medical ethics of the Medical and Dental Council at least once, and sixty eight 68 (48.6%) have some basic knowledge of the principles of public health ethics.

*Table 4: Ethical dilemma encountered by the medical doctors*

	Informed Consent		Confidentiality		Resource Allocation		Conflicting Interest		DAMA*		Religion & Culture		End of Life	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
<b>House Officer</b>	32 (55)	26 (45)	14 (24)	44 (76)	30 (52)	28 (48)	12 (21)	46 (79)	45 (78)	13 (22)	26 (45)	32 (55)	47 (81)	11 (19)
<b>Medical Officer</b>	9 (45)	11 (55)	12 (60)	8 (40)	14 (70)	6 (30)	11 (55)	9 (45)	16 (80)	4 (20)	2 (10)	18 (90)	16 (80)	4 (20)
<b>Registrar</b>	19 (49)	20 (51)	12 (31)	27 (69)	31 (79)	8 (21)	14 (36)	25 (64)	15 (38)	24 (62)	32 (82)	7 (18)	26 (67)	13 (33)
<b>Senior Registrar</b>	7 (47)	8 (53)	10 (67)	5 (33)	6 (40)	9 (60)	14 (93)	1 (7)	4 (27)	11 (73)	12 (80)	3 (20)	12 (80)	3 (20)
<b>Consultant</b>	4 (50)	4 (50)	6 (75)	2 (25)	3 (38)	5 (62)	8 (100)	0 (0)	6 (75)	2 (2475)	5 (62)	3 (38)	7 (88)	1 (12)

**DAMA= Discharge Against Medical Advice**

Table 4 shows the analysis of the identified public health ethical dilemma and reveals that end of life was the most identified by the 77.1% of the respondents, followed by discharge against medical advice (61.4%), confidentiality was indicated by 60%, religion and culture (55%), informed consent (50.7%), conflict of interest (42.1) and just resource allocation (37.9%). The respondents showed a fairly good knowledge of issues bordering on end of life matters, discharge against medical advice, confidentiality, religion and culture and informed consent while they exhibited a poor knowledge on just resource allocation and conflict of interest.

Ethical dilemmas in daily practice were identified by 68.2% of house officers, 75.6% of medical officers, 67.7% of junior registrars, 95.3% of senior registrars and 100% of the consultants.

## **DISCUSSION**

The junior doctors (house officers, junior registrars) and the people in the age range of 25-34 years in this study were in the majority, this is not a departure from what is applicable in all tertiary facilities, where there is post graduate residency training of medical doctors all over the world. The male doctors are in the majority forming about 60.7% of the respondents; this may be due to the possibility that more males desire medical education in Nigeria, where it is perceived erroneously as a profession for men, though this perception is being gradually eroded.

The department of community health (31.5%) had the majority of the participants in the study among the resident doctors (junior registrars and senior registrars) and when the consultants are included in this classification, they constitute 30.7% of the participants this was probably because they were the ones most interested in the subject of the study.

About 60% of the study population said they have read at least once the code of medical ethics, a finding very close to that of Fadare et al., where 69% of Nigerian medical doctors in a study conducted in the same geographical location with this study have read the Medical and Dental Council of Nigeria's code of medical ethics (45), though only forty seven (47) representing 33.8% of this present study was not oblivious of the National Health Research Ethics Committee (NHREC) as the body mandated by law to monitor different research ethics committees in Nigeria. The study also revealed that medical ethics is well taught in the Nigerian medical schools at the undergraduate level since 90.7% of the respondents have some levels of education on medical ethics as a subject with a media duration of 5 hours (range 0-20 hours).

In a study done in India, 76.5% of the participating doctors had some form of formal education in medical ethics while it was only 10% in another study done in Pakistan, that had any form of medical undergraduate teaching in medical ethics. (30,31) (87%) of the respondents considered the undergraduate medical ethics curriculum to be very inadequate, this is similar cited study by

Fadare et al., where 86% of the respondents sharing the same opinion. The common agreement amongst the respondent was that medical ethics programme should be broader based and better structured and should be inculcated into both the undergraduate and postgraduate medical training curriculum. The clamour for better structured and culturally friendly medical ethics education to encourage medical doctors to comprehend and adapt to the continual changes in the nature of the public health ethical dilemmas they face in their daily practice.(32,33,34)

This study reveals that 61% of the respondents have taken the pain to personally upgraded their knowledge base in public health and medical ethics by mainly getting the materials through the internet and reading from journals, though none mentioned extra efforts of taking extra courses on this important branch of medicine. It is gratifying that there are now available on the internet, courses on public health ethics, which medical doctors can avail themselves of, for their flexibility and content richness.(35)

About 58.6% of the respondents know about the principles of medical ethics, but this knowledge is significantly varying. Both the principle of beneficence and justice were rightly recognized by 64.3% of the respondents respectively while both respect for persons (autonomy) and non-maleficence were known by 52.9% of the respondents respectively while this level of knowledge is not as pathetic as that found out in the study by Fadare et al, done in similar geographical location with this study, since in their own study the knowledge 66.8% of the respondents were aware of the principles of biomedical ethics but only 55.6%, 48.7%, 40.2% and 31.7% of the respondents in their study knew about the principle of respect for persons (autonomy), beneficence, non-maleficence and justice respectively.

This level of knowledge is still very low considering the fact that these four principles of medical ethics is the bed rock of public health practice and researches in particular and medicine in general.

The level of knowledge of ethical dilemma they faced in their daily practice is about average, since only 55.9% of the respondents were able to know about these public health dilemmas, with 77.1% knowing that end of life is one of these dilemma, 61.4% agreed that discharge against medical advice is one of them as well, while resource allocation were chosen by 60% of the respondents, while the other public health dilemma of religious and culture (55%), informed consent (50.7%), conflicting interest (42.1%) and confidentiality (50.7%) were the other ethical dilemma identified by the respondents. This level of knowledge at best is still on the average, since the identification of obvious cases of public health dilemma will escape the scrutiny eyes of the doctors in the way cases are managed, which means this will have a serious implications on patients' management outcome, doctor-patient relationship and the social interactions that goes along with this.

## **CONCLUSION**

*THE FOLLOWING CONCLUSIONS WERE MADE BASED ON THE FINDINGS OF THIS STUDY:*

There is a poor knowledge of public health ethics as part of the medical ethics by the respondents, only 48.6% of the respondents exhibited a good knowledge of public health ethics.

Majority of the respondents are unaware of the National Code of Health Research Ethics and the existence of a committee, the National Health Research Ethics Committee, as a supervising body of all ethical issues in Nigeria. Only 33.8% were able to mention the name of the committee, though 60% of the respondents claimed to be aware of the existence of the committee.

Majority (87%) of the respondents believed the present medical curriculum at both the undergraduate and postgraduate levels are grossly inadequate and would want an overhaul of the curriculum to accommodate more of public health ethics as part of medical ethics as a subject.

## **RECOMMENDATIONS**

The medical education in Nigeria is ripe for a review to inculcate the teaching of medical ethics as part of both the undergraduate and postgraduate medical education in Nigeria.

Continue medical education in medical ethics should be given more prominence in post qualification training of medical doctors.

It won't be out of place if certificate courses or higher degrees in medical ethics can be available for medical doctors to pursue.

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