Perceptions of Nigerian medical specialists on research

Abdulraheem O. Mahmoud,[1]
Abdulkabir A. Ayanniyi,[2]
Abdul Lawal,[3] Charles O. Omolase,[4]
Yinka Ologunsua,[5] Elsie Samaila[6]

[1]Department of Ophthalmology, University of Ilorin Teaching Hospital, Ilorin, Nigeria
[2]Department of Ophthalmology, University of Abuja, Abuja, Nigeria
[3]Department of Ophthalmology, Aminu Kano Teaching Hospital, Kano, Nigeria
[4]Department of Ophthalmology, Federal Medical Center, Owo, Nigeria
[5]Eye Unit, St Mary's Catholic Hospital, Ago Iwoye, Nigeria
[6]Department of Ophthalmology, Ahmadu Bello University Teaching Hospital, Shika-Zaria, Nigeria

Abstract

The current research aimed at collating the views of medical specialists on disease priorities, class and outcomes of health research in Nigeria, and draw appropriate policy implications. Structured questionnaires were distributed to consent 90 randomly selected medical specialists practising in six Nigerian tertiary health institutions. Participants' background information, relative disease priority, research types and class, type and class of publication media, frequency of publications, challenges faced in publishing research, impact of their research on health practice or policy, and inventions made were probed.

Fifty-one out of the 90 questionnaires distributed were returned giving a response rate of 63.3%. Sixty-four point six percent indicated that the highest priority should be given to non communicable diseases while still recognizing that considerations should be giving to the others. They were largely "always" involved in simple low budget retrospective studies or cross-sectional and medical education studies (67.8%) and over a third (37.5%) had never been involved in clinical trials. They largely preferred to "always" publish in PubMed indexed journals that are foreign-based (65.0%). They also indicated that their research works very rarely resulted in inventions (4%) and change (4%) in clinical practice or health policy.

Our study respondents indicated that they were largely involved in simple low budget research works that rarely had significant impacts and outcomes. We recommend that
adequate resources and research infrastructures particularly funding be made available to medical specialists in Nigeria. Both undergraduate and postgraduate medical education in Nigeria should emphasize research training in their curricula.

Introduction

Medical specialists constitute the top echelon of health staff and administrators in Nigerian tertiary health facilities and their multi-facetted roles include provision of health service, teaching and conducting health research. They are however overwhelmed with their health provider role as the hospital beds in many poor countries such as Nigeria are full and overflowing and staff are unable to keep up with the seemingly endless flow of patients near death.[1]

Nigeria is the most populous country in Africa with an estimated population of 140 million[2] which also makes it the ninth most populous country in the world.[3] The persistent crippling burden of disease in the African region as a whole can be attributed to many causes that include: weak national and district health systems; human resources for health crisis which has been exacerbated by internal and external brain drain; 47% of the population in the Region having no access to health services, and about 50% have no access to essential drugs;[4] about 59% of pregnant women delivering babies without the assistance of skilled health personnel;[5] 64% of the population lacking sustainable access to improved sanitation facilities and 42% lacking sustainable access to an improved water source;[6] out-of-pocket expenditures constituting 51% to 90% of the private health expenditure in 14 countries and 91% to 100% in 24 countries;[5] 38.2% of the people in sub-Saharan Africa living below the international income poverty line of US$1 per day;[7] low investment in health development; and poor governance.[8] Those challenges are compounded by weak national health research systems, which hinder the generation of new information and knowledge for diagnosing and providing solutions; monitoring of health system performance; development and production of new technologies and health products for tackling priority diseases and health conditions; and innovating ways of accessing and putting into effective nationwide use the existing cost effective promotive, preventive, curative, rehabilitative and care interventions.[9] The World Health Organisation reviewed the current state of global health research in 2004 in its World Report on Knowledge for Better Health – Strengthening Health Systems.[10] One of its conclusions was that health research

must be managed more effectively if it is to help strengthen health systems and build public confidence in science.

Though the volume of research publications emanating from Nigerian hospitals in Nigeria has undoubtedly increased astronomically over the years,[11,12] there have not been published works on the general perceptions of the individual researchers in these institutions on the various challenges that they face in conducting research works. Such studies on perceptions of researchers in both the developing world settings[13,14] and developed ones[15,17] have proved very illuminating to shaping health research in those areas. We are therefore aiming in this study to collate the views of medical specialists on disease priorities, class and outcomes of health research in Nigeria, and draw appropriate policy implications.

Materials and Methods

As a part of a wider study on various facets of research undertaking by medical specialists in Nigeria, this particular study concentrated on collatting the views of medical specialists on disease priorities, class and outcomes of health research in Nigeria.

Despatch and collation of the questionnaires was performed between September 2009 and March 2010. Ethical approval for the study was obtained from the Aminu Kano Teaching Hospital, Kano, Nigeria.

The primary approach used to collect data of the study reported in this paper was a structured questionnaire. Copies of the study questionnaire were distributed to 90 consenting randomly selected medical specialists practising in 6 Nigerian tertiary health institutions located in Abuja, Birni Kebbi, Ilorin, Lokoja, Owo and Sokoto. The self-administered and anonymous questionnaire was distributed after full confidentiality of the data collected was ensured to all the study participants and their representing hospitals. They were also assured that the results of this study would not be presented either at an individual study participant or hospital level. Pretesting was done prior to the definitive study, where the questionnaire was administered to a sample of medical specialists to assess comprehension and feasibility. In total, 14 questions were included in the study questionnaire. The first four were on the study participants' background information; the remaining ones were on relative disease priority for health, types and class of health research, type and class of publication media and the frequency of publication and challenges faced in getting research work published, and whether any of their research works had resulted in change to health practice or policy or led to inventions with registered patents. The format of the responses was generally on a scale of 0-3, with 0 representing none/never/lowest/least and 3 representing most/highest/greatest/always/strongest depending on the specific context of the question posed with the respondents' choosing appropriate responses among the already supplied options. All analyses and statistical tests were conducted using SPSS version 15.0 (SPSS Inc, Chicago, Il, USA). Simple descriptive statistics was used to generate frequencies, percentages, and proportions. Where necessary, χ^2-test was used to determine any significant difference and a $P<0.05$ was considered as significant.

Results

Fifty-one out of the 90 questionnaires distributed were filled and returned giving a response rate of 63.3%.

Background data

The age range of the respondents was from 29 to 63 years with a mean of 45.3 and SD of 7.23. Forty respondents were males and 11 were females (M:F=3.6:1). Among the 49 who stated their specialties/sub-specialties, 23 were surgical (general and sub-specialties including ophthalmology and ENT), 19 physicians (Internists of various sub-specialties, psychiatrists, and public health), and 7 were laboratory-based (histo- and chemical-pathologists, haematologists, microbiologists). Out of the 50 respondents who indicated their years of post-specialist qualifications, 13 (26%) were less than 5 years, 19 (38%) 5-9 years, 11 (22%) 10-15 years, and 7 (14%) over 15 years.

Disease priority

The two diseases that were accorded the highest priority for health research by respondents were non-communicable diseases (64.6%) and maternal and child health (54.0%). Cancers were accorded the least rating in the highest category (11.0%) and in fact cancers were rated in the no priority category by the largest proportion of the respondents (12.0%). Table 1 gives a detailed illustration of the respondents view on this issue.

Types and class of health research

Significant proportions of the respondents had never been involved in either a clinical trial study (37.5%) or health system research (26.0%) and were also only occasionally involved in such research works (25.0% and 38.0% of the respondents respectively). Table 2 illustrates the details of their involvement with various research types. The research type with the highest degree of involvement by the respondents was educational type (48%) which involves studies in undergraduate and postgraduate medical curricula and related studies. Table 3 gives the details of the involvement of the respondents with the different classes of research works. While 34% and 12% of the respondents had never been involved in either a prospective case control randomised study and a prospective non randomised study respectively, 38.3% and 36.0% respectively had also been involved in such studies only occasionally. However 44.9% and 22.9% of the respondents had "always" been involved in retrospective and cross-sectional studies respectively.

Publication issues

The journal was the overwhelming favourite

Table 1. Rating of the priority for some diseases for health research by Nigerian medical specialists.

Disease	Number of respondents	None (%)	High (%)	Higher (%)	Highest (%)	Total (%)
Non-communicable diseases	49	0 (0)	13 (6.5)	23 (46.9)	13 (26.5)	49 (100)
Maternal and child health	48	1 (2.1)	1 (2.1)	15 (31.3)	31 (64.6)	48 (100)
Infectious pandemics	50	0 (0)	5 (10.0)	18 (36.0)	27 (54)	50 (100)
Cancers	50	6 (12)	15 (30)	18 (36)	11 (22)	50 (100)

Table 2. Rating of the frequency of involvement in different types of health research by Nigerian medical specialists.

Research type	Number of respondents	Never (%)	Occasionally (%)	Sometimes (%)	Always (%)	Total (%)
Clinical trials	48	18 (37.5)	12 (25)	13 (27.1)	5 (10.4)	48 (100)
Basic science	50	7 (14)	19 (38)	16 (32)	8 (16)	50 (100)
Health system research	50	13 (26)	5 (10)	19 (38)	11 (22)	10 (20)
Educational*		10 (20)	8 (16)	24 (48)	50 (100)	50 (100)

*Various aspects of undergraduate and postgraduate medical education.

Table 3. Rating of the frequency of involvement in different classes of health research by Nigerian medical specialists.

Research class	Number of respondents	Never (%)	Occasionally (%)	Sometimes (%)	Always (%)	Total (%)
Prospective, randomised case control	47	16 (34.0)	18 (38.3)	9 (19.1)	4 (8.5)	47 (100)
Prospective, not case controlled	50	6 (12)	18 (36)	15 (30)	11 (22)	50 (100)
Prospective, not case controlled	50	6 (12)	18 (36)	15 (30)	11 (22)	50 (100)
Cross-sectional study	48	5 (10.4)	18 (37.5)	14 (29.2)	11 (22.9)	48 (100)
Retrospective	49	2 (3.9)	9 (18.4)	16 (32.7)	22 (44.9)	49 (100)

by 79.5% of the study respondents to publish their research works *always* or *sometimes* (Table 4). In fact more than a fifth of the respondents each indicated that they had never published in any other type of media such as a monograph, books, technical report or internet-based.

Sixty-five percent indicated that they *always* published in foreign-based PubMed-indexed media but close to a quarter (22.0%) had never published in such media. Twenty-six percent indicated that they had never published in their local institutional or departmental journals (Table 5).

The overwhelming challenge faced by the study respondents in getting their research works published is the lengthy publication processes (Table 6). This challenge was rated "somewhat" challenging by 47.1% and *very* challenging by 41.2% of the respondents.

On the question on how often 51 respondents published on the average, 12 (23.5%) published quarterly, 21 (41.2%) bi-annually, 7 (13.7%) annually, and 11 (21.6%) at an average greater than one year. On the issue of whether the 51 respondents had experienced the issue of a serious conflict of interest being raised when trying to publish their research works, 41 (80.4%) had never had such experience, while 10 (19.6%) had.

Inventions and policy change outcomes

Only 4 out of 51 respondents (7.8%) had ever made inventions with registered patents while majority (92.2%) had never done so. On the question on how often the findings from their research work had resulted in a change in health policy or practice, 4 out of the 50 (8.0%) who responded indicated *never*, 22 (44%) *rarely*, 12 (24%) *sometimes*, 9 (18%) *often*, and 3 (6%) *very often*.

Discussion

The demographic data of the respondents as a whole closely mirror what obtain generally among medical specialists in Nigeria.

In a study that compared time patterns with the distribution of disability-adjusted-life-years (DALYS) for diseases and health conditions in developing countries estimated for 2005 and for 2030, the comparisons suggested relatively overemphasis on HIV/AIDS and under-emphasis on non communicable diseases.[18] This would probably explain why majority (64.6%) of our study respondents indicated that highest priority should be accorded to non communicable diseases while still recognizing that considerations should be giving to the others as well.

Table 4. Rating of the frequency of publications in different types of media by Nigerian medical specialists.

Media type	Number of respondents	Never (%)	Occasionally (%)	Sometimes (%)	Always (%)	Total (%)
Journal	49	1 (2)	4 (8.2)	12 (24.5)	32 (65)	49 (100)
Monograph	48	22 (46.8)	16 (34)	6 (12.8)	3 (6.4)	48 (100)
Technical report	47	22 (46.8)	16 (34)	6 (12.8)	3 (6.4)	47 (100)
Book	48	24 (50)	15 (31.3)	8 (16.7)	1 (2.1)	48 (100)
Internet-based	46	20 (43.5)	12 (26.1)	7 (15.2)	7 (15.2)	46 (100)

Table 5. Rating of the frequency of publications in different classes of media by Nigerian medical specialists.

Class of media	Number of respondents	Never (%)	Occasionally (%)	Sometimes (%)	Always (%)	Total (%)
Foreign-based and indexed*	49	11 (22.4)	17 (34.7)	4 (8.2)	32 (65)	49 (100)
Foreign-based, not indexed*	43	17 (39.5)	12 (27.9)	11 (25.6)	3 (7)	48 (100)
Nigerian-based and indexed*	50	3 (6)	11 (22)	23 (46)	13 (26)	47 (100)
Nigerian-based, not indexed*	48	3 (6.3)	10 (20.8)	23 (47.9)	12 (25)	48 (100)
Local institution/ departmental	50	13 (26)	13 (26)	12 (24)	12 (24)	50 (100)

*Publication media indexed in PubMed.

Table 6. Challenges faced by Nigerian medical specialists in getting their research works published.

Challenge	Number of respondents	Never challenging (%)	Occasionally challenging (%)	Sometimes challenging (%)	Always challenging (%)	Total (%)
Identifying suitable medium	51	3 (5.9)	20 (39.2)	23 (45.1)	5 (9.8)	51 (100)
Lengthy publication processes	51	0 (0)	6 (11.8)	24 (47.1)	21 (41.2)	51 (100)
Publication fees	51	3 (5.9)	31 (60.8)	12 (23.5)	5 (9.8)	51 (100)
Editorial/ publishers bias	51	4 (7.8)	18 (35.3)	17 (33.3)	12 (12.5)	51 (100)

It is noteworthy that both types and classes of research in which significant proportions of the respondents were involved, were generally simple low budget ones such as retrospective studies or cross-sectional ones on medical education. This is most probably a reflection of poor access to sources of research funding, an aspect being probed in a different segment of our larger study. It could also be due to lack of familiarity with the more complex research works as indicated by the fact that 37.5% of the respondents had never been involved in a clinical trial study which more often than not originates from research savvy Western countries. But very worrying is the poor involvement of the respondents with health system research, a research type that is relatively not so technologically nor capital intensive but the type that is crucially needed to help achieve the health related Millenium Development Goals.[19]

Factors potentially enhancing utilisation can be identified by exploration of: priority setting; activities of the health research system at the interface between research and policy-making; andthe role of the recipients, or 'receptors', of health research. An interfaces and receptors model provides a framework for analysis.[19]

Finding and retaining adequate financial and human resources to conduct health research is a major problem, especially in low- and middle-income countries where the need is often greatest.[19] Innovative research training modules such as the one that enabled learners in Ghana-another West African country like Nigeria- to be able to design and undertake a novel course that developed individual and institutional research capacity that met international standards[20] should be readily made available to third-world researchers. Apart from being mentored on how to conduct

good research, a young researcher, particularly from developing countries equally needs to learn how to write rewardingly for research grants.

While some observers view publications more as a measure of productivity rather than research impact[21-23] or outcome, publications are practically the only demonstrable outcome that Nigerian researchers could boast of from their research undertakings.[11]

Despite the cited challenges such as lengthy publication processes, payment of publication fees, publishers'/editorial biases, the respondents still managed to be publishing regularly on the average and in PubMed indexed journals that are foreign-based. Their seemingly preference for foreign-based journals could be explained by the finding that at the level of research and postgraduate training, there are only a few medical journals published in Africa, some of which are published irregularly and are *probably* of low quality.[24]

It has been observed that patenting of research discoveries and the creation of new businesses as potential research outcomes tended to be more important to researchers based in independent medical research institutes and less important to public health and health service researchers.[15] This might explain why only 4 out of the 51 respondents in our study (all were government-employed physicians) had ever had inventions with registered patents on them. The frustrating indication that research findings made little or no impact on either clinical practice or health policy in this study and elsewhere in another study within Nigeria[11] could be due to poor research undertakings lacking relevance and poor dissemination methods of research findings. Researchers generally need to first look inwards and employ standardized instruments such as the Research Impact Framework[25] which provide prompts and descriptive categories that would help researchers systematically identify a range of specific and verifiable impacts related to their work (compared to ad hoc approaches they had previously used). The identified four broad areas of impact are: research-related impacts; policy impacts; service impacts: health and intersectoral and societal impacts.[25] The framework could also help researchers think through implementation strategies and identify unintended or harmful effects. The small sample size and the selection bias associated with obtaining information from only those who agreed to participate in a research study represent limitations in this study.

In conclusion, our study respondents indicated that the highest priority should be given to non communicable diseases while still recognizing that considerations should be giving to the others as well. They were largely involved in simple low budget retrospective studies or cross-sectional and medical education studies and over a third had never been involved in a clinical trial. Despite the cited challenges such as lengthy publication processes, payment of publication fees, publishers'/editorial biases, the respondents still preferred to publish regularly in PubMed indexed journals that are foreign-based. They also indicated that their research works very rarely resulted in inventions and change in clinical practice or health policy. We recommend that adequate resources and research infrastructures particularly research funding and be provided for medical specialists in Nigeria. Both undergraduate and postgraduate medical education in Nigeria should emphasize research training in their curricula.

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