The Impact Of The Open Access Movement On Medical Based Scholarly Publishing In Nigeria.
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ABSTRACT

Medical Scholarly publishing which can be measured through the quality and quantity of published journals is an important contributor to the socio-economic development and health status of any community or country especially as it reflects the degree of research output in that country. The level of research activity and scholarly publishing is acknowledged to be low in Nigeria and other developing countries as a result of various factors which have created an imbalance in the output and flow of scientific information between the developed and developing countries. This situation has led to dependence by developing countries on scholarly information form the developed world with resultant poor visibility and low access to scholarly information from the developing world.

In order to address this situation, it is important to create a balanced knowledge pool and an even transfer of global scholarly information among all scholars in the world. The open access movement and its initiatives which advocate a shift from predominant print based publication to electronic and internet sources is expected to improve the global distribution of scholarly publication and impact positively on the current state of scholarly publication in the developing world. This review will examine the current state of medical journal publication in Nigeria as well as assess the impact of the open access movement and its initiatives on medical based scholarly publishing in Nigeria.

Before the advent of open access, medical journals in Nigeria were in danger of extinction as these journals were poorly subscribed for within and outside Nigeria with only a few of them indexed on the medline/pubmed. Most of the journals did not have websites and did not rely on internet resources for their operations. These factors in addition to problems with financial sustainability amongst others gave these journals low impact and visibility within and outside Nigeria.

The Open access movement has impacted significantly and positively on medical based scholarly publishing in Nigeria with the AJOL and the AIM projects being the most significant influence. The prospects for further development of medical scholarly publishing in Nigeria using open access initiatives are enormous. However in spite of the gains made, the potentials of open access to medical scholarly publishing in Nigeria are yet to be maximized. Medical scholars in Nigeria need to develop a coordinated plan to overcome the current obstacles which have been identified. Finally it is evident that open access will provide enormous opportunity and benefits to medical scholars in Nigeria. This opportunity needs to be exploited and developed.

Keywords: Open Access; Medical Scholarly Publishing; Nigeria.
Outline

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The function and status of Scholarly publishing in Developing countries:

Scholarly publishing is recognized as an important and practical means of developing the knowledge and skills required in any country to accelerate its growth process and socio-economic development (1). Due to this important role of scholarly publication in nation and community socio-economic development; the generation, distribution and assimilation of scholarly publication in various disciplines is thus indispensable in any nation.

It is therefore important for every country to have the resources through which it can assess the degree of scholarly publication done in it. In quest of this the quality and quantity of published journals can be used as an index for measuring the extent of scholarly activity in any given country or community (2).

The contribution of research and scholarly publication to the socioeconomic development of Nigeria and other developing countries is acknowledged to be low (3). This is attributed to the poor level of research funding, weak research capacity and infrastructure (3). These factors lead to a state of low output of scholarly publication and a dependence on the developing world for scientific information thus creating an imbalance in the output and flow of scientific information between the developed and developing countries.

The current imbalance in the output and flow of scientific information between the developed and the developing countries is buttressed by data which show that majority of the worlds cited scientific publications originate from developed countries while the developing countries account for less than 2.5% of the worlds cited publication with only 2% of the 3000 journals cited on Medline from the developing world (4, 5). Correspondingly only 10% of the world’s health research is done in the developing world in addition to low levels of journal subscription and access (6).

It is therefore evident that for developing countries to attain the desired development goals which have been articulated in charters like the mill
The Open access movement and its initiatives currently provide a realizable medium to achieve these objectives.

**The current situation and requirements of Medical based scholarly publishing in Nigeria:**

Though scholarly publication may be presented in conventional print form, electronic modes or a combination of both; conventional printing in the form of textbooks or journals still remains the major mode of Scholarly publishing in Nigeria (1,8). While Nigeria has witnessed a relative proliferation of medical journals there is a gross shortage of university or institution based medical book publication (8, 9), consequently medical journals are the predominant modality of medical based scholarly publishing in Nigeria. These medical journals provide a quick and regular medium through which scholars can exchange information and acquire continuing medical education (1). Scholarly publications in Nigeria’s Medical journals also serve as basis for assessment of scholarly work done among academics used in promotion exercises in tertiary institutions.

In spite of medical journals being the major mode of medical scholarly publication in Nigeria the impact of these publications internationally is lowly rated due to the poor visibility of these publications beyond Nigeria (1, 10). While Nigerian medical journals have low international visibility resulting in low impact factors abroad these publications have made considerable impact in a different context within Nigeria as they provide a major and an efficient source of continuing medical education(1). Medical journals in Nigeria have also been serving the Information needs of the population by providing a reliable source of up-to-date vital information for medical professionals in both urban and rural areas. This service provided by Nigerian medical journals is believed to contribute immensely towards maintaining the health of the local population (1).

While Nigerian Medical journals provide enormous service to the Medical community it is acknowledged that the potential benefits of medical based scholarly publication to the practice of medicine and other facets of science have not been optimized (11). This situation is due to a variety of constraints associated with journal publication in Nigeria and Africa as a whole; these obstacles for producing scholarly journals vary considerably in from country to country in Africa due to the diverse and complex conditions within different African countries(2). Some of these impediments include poor institutional and state funding for medical scholarly publication, high production and distribution costs, low subscription an
developed countries, with the goal of providing equal access to scholarly publication to people all over the world.

The advancement of Information and Communications Technologies (ICTs) has provided opportunity for more equitable distribution of scientific knowledge, therefore the ideal of a global knowledge commons is no longer seen as an unattainable goal(3). This has led to a paradigm shift from the conventional print publication to the use of electronic sources and the internet media. The transformation to electronic based publication has been shown to hold a lot of benefits in improving access to scholarly publication all over the world, with expectations of immense benefit to the developing world (3, 13). The advent of electronic publishing over the Internet has provided an opportunity to improve distribution and access to research to and from developing countries (1,3). This is the one of the major roles of the open access concept in improving the current state scholarly publication in the developing world (3).

Objectives of this review:

In view of the above described background. This paper will attempt provide an insight into the current state of medical journal publication in Nigeria as well as review the effect, challenges and opportunities provided by the open access movement and its initiatives to the growth of medical journals in Nigeria. It will also examine obstacles to the attainment of the objective of open access and in addition advance recommendations which could be useful in optimizing the benefits derivable from open access to medical scholarly publishing in Nigeria.

The state of Medical scholarly publishing in Nigeria before the advent of Open Access:

Before the advent of open access, medical journal publication in Nigeria was in danger of extinction. An assessment of the state of medical journals in Nigeria was done by Eke and Nkanginieme 2002 (11) in which twenty eight medical journals published in Nigeria were surveyed. The results of that survey exposed the following problems.

The subscription of these journals by medical institution libraries in Nigeria was abysmally low, as only one institution Ahmadu Bello University Teaching Hospital (ABUTH) Zaria, had 21 of 28 local journals on its library shelf, even at that there were many missed issues and inconsistency in subscription. None of them were displayed on the libraries of University College Hospital (UCH) Ibadan and University of Nigeria Teaching Hospital (UNTH) Enugu two of the foremost medical colleges in Nigeria. In addition very few of the medical libraries had a proper subscription list of local medical journals; however it was common to find sporadic issues of various foreign journals in the medical libraries.

Very few medical journals were indexed on the pubmed/medline. Some of the indexed journals were the Nigerian Postgraduate Medical Journal (NPMJ), African Journal of Medical Science (AJMSc), and the Nigerian Journal of Medicine (NJM). Irregularity in publication and poor internet awareness was identified as the reasons for journals not been indexed or for already indexed journals to loose their listing or indexing.

Most of the journals did not have functional websites or email facilities consequently the communication process was limited to surface mail and courier. Online submission of articles was a rare occurrence. This led to a slow and inefficient system of paper peer review and a prolonged duration from paper submission to publication. The absence of online communication between journal editors, authors and editorial advisers also contributed to an increase in operation and running cost for these journals.
While Nigerian Medical journals had low impact factors internationally, there was no mechanism to determine the impact factor of these journals within Nigeria; as a result there was no objective assessment of the quality of medical journals and rating of medical publication was difficult. The absence of online access to journals and lack of organized publication archives at institutional and other levels were major impediments in this regard.

In addition to the above, problems of production quality, content quality and financial sustainability were prevalent.

The impact of open access on Medical Scholarly publication in Nigeria:

The advent of open access movement has made a significant impact on the medical journals published in Nigeria. From my experience as an editor of a medical journal the most significant influence on medical scholarly publication in Nigeria are the African Journals online project (AJOL) and the African Index Medicus (AIM).

The African Journal Online (AJOL) initiative operated by International Network for the Advancement of Scientific Publication (INASP) was designed to increase the visibility of African journals by making their abstracts globally available through the INASP Web site and delivering full-text material on request, free to participating countries and at cost to others (14). The AIM was established in order to give access to information published in or related to Africa therefore encouraging local publishing. The AIM which is an index of African health literature was set up by the world health organisation (WHO) in collaboration with the Association for Health information and libraries in Africa (AHILA). This index promotes African publishing by encouraging writers to publish in their country or regional journals the result of this initiative is the promotion of south-south and south-north communication which will complement the usual north-south flow of scholarly communication therefore providing alternative access for scholarly expression for scientists and researchers in developing countries who are competing for publication space in the inaccessable world-wide "prestigious" journals (15.).

The advent of the AJOL and AIM has helped to solve some problems hitherto experienced by medical journals in Nigeria; consequently most medical journals now have internet visibility via AJOL and AIM; as a result there are 43 Nigerian medical based journals listed on the AJOL out of total number of 256 listed journals in various academic areas (14) and 37 Nigerian medical based journals on the AIM out of a total of 104 listed or indexed journals (15).

In order to achieve this most journals now have functional websites and have improved their use of internet resource in the day to day running of their journals.

This increased online visibility has made it easier for medical scholars within and outside Nigeria to source for Nigerian Medical publication in contrast to what obtained in the past.

These resources especially the AJOL also provide a platform for revenue for these journals.

From my experience in the Nigerian Journal of medicine (NJM) there has been an increase in the request for previous publications in the NJM and submission of new articles for assessment and publication form scholars around the world. The journal also recently appointed two new editorial advisers from India and Congo Brazzaville (Table I).
The increased interaction between authors within Africa and other continents will promote the much needed South-South cooperation in scientific information gathering as well as improve the South-North flow.

The advent of the open access movement has been beneficial to individual medical scientist and scholars who have published in the NJM and hopefully other Nigerian medical journals. This is a result of the increased volume of direct correspondence with scientist and Medical scholars in other parts of the world with similar research interest identified through online access to the NJM.

**Obstacles to the growth of Open access in Nigeria and recommendations:**

While the benefits of open access to medical journals in Nigeria listed above are impressive, the trend should be viewed with cautious optimism as there are many obstacles which need to be addressed for these gains to be sustained and increased. It will be appropriate for a reliable time frame and a proper sequence of developmental events to be outlined in the course of propagating open access in Nigeria and other developing countries in order to avoid the usual scenario associated with the transfer of new technology from the developed to developing nations which can be likened with a child trying to run before learning to crawl.

The obstacles to optimizing and strengthening open access in Nigeria are the following.

There is a poor level of awareness of open access among medical scholars in Nigeria and other parts of the developing world (1). To address this situation there is need for awareness and sensitization programmes to spread the message of open access and it benefits among scholars in Nigeria. This increase in awareness will strengthen advocacy for the spread of open access.

In my opinion it is still too early to advocate for primary electronic medical journals in Nigeria journals (e-journals) in Nigeria as the capacity, infrastructure and funding required for this are not widely available. It is advised that the approach of dual journal pattern ie journal in print form and electronic archives modes or sources should be adopted to strengthen current status of publication and gradually enhance or promote the electronic capacity of medical scholarly publication.

Institutional based collaboration to develop institutional internet based archives of scholarly work is lacking in Nigeria as there is no record of any registered Open access initiative (OAI) compliant archive. The awareness of such archives and their development in Nigeria will go a long way in providing a data base of reliable medical scholarly information from Nigeria online. This can be achieved by encouraging medical institutions to develop Open access archives (OAA) in line with recommendations of the Budapest open access initiative (BOAI), especially as OAA is believed to more reliable means of promoting immediate benefits of open access to people in developing countries (3,).

Presently there no is no coordinated initiative either public or private to promote open access in Nigeria. It is important for a comprehensive national policy on open access to be formulated in Nigeria. This policy would be expected to make an assessment of the current situation, assess the developmental needs of open access and outline realizable objectives and goals within a reasonable time frame. This policy should also serve as a guide for local open access initiatives at institutional and regional levels.

The support of Government and its agencies to research and scholarly publication in Nigeria is poor. It is important for Government and its organs in Nigeria to be encouraged to promote and
support open access initiatives through funding, legislation and support through the provision of the needed political will for the sustenance and success of open access in Nigeria.

The peer review and scholarly assessment method among medical scholars in Nigeria needs to be reformed in order to create an environment that will support the open access initiative. To achieve this peer assessment method that inhibits collaboration among medical scholars should be discarded while objective rating and quality assessment criteria for medical scholarly publication should be developed.

The apprehension of exploitation of their intellectual property without adequate financial compensation and the risk of local journal publishers loosing revenue acquired through subscription for their journals is another impediment to the development of open access in Nigeria and other developing countries (16). It is therefore important for Nigerian and indeed other scholars in the developing world to be sensitized on the enormous benefits of open access which outweighs the anticipated losses.

**Conclusion:**

The Open access movement has impacted significantly and positively on medical based scholarly publishing in Nigeria with the AJOL and the AIM projects being the most significant influence. The prospects for further development of medical scholarly publishing using open access initiatives are enormous. However in spite of the gains made, the potentials of open access to medical scholarly publishing are yet to be maximized. Medical scholars in Nigeria need to develop a coordinated plan to overcome the current obstacles which have been identified. Finally it is evident that the open access movement will provide enormous opportunity and benefits to the medical scholars in Nigeria. This opportunity needs to be exploited and developed.