Nigerian Quarterly Journal of Hospital Medicine

Nigerian Quarterly Journal of Hospital Medicine
(2000-2010): A Bibliometric Study.

[1]Obajemu, AS.,[2]Ekere, FC., [2]Nwachukwu, VN. and [3]Ibegwam, A.
Medical Library, College of Medicine[1]
University of Lagos, Nigeria
[2]Department of Library & Information Science
University of Nigeria, Nsukka.
University Librarian
Michael Okpara University of Agriculture[3]
Umudike, Abia State

*Address correspondence to Obajemu, AS., E-mail:ayobajemu@gmail.com

ABSTRACT

Background: Information are on daily basis generated, packaged in various forms or formats and eventually delivered to the information consumers for the utility sake. To know the trends of the volume of human intellectual activities, its growth, its structure, and the degree of interdisciplinary relationships called for a bibliometric study in Nigerian Quarterly Journal of Hospital Medicine 2000-2010. Therefore this research focused on the direction of publication of articles in Nigerian Quarterly Journal of Hospital Medicine (NQJHM) for a period of time.

Objective: The essence of research work is to determine the quantum volume of research output, yearly and quarterly distributions of articles, distribution of references cited, authorship and geographical distributions and as well as subject distributions.

Methods: Information was transcribed on cataloguing cards for the generation of databank. Subject analysis was done by using Medical Subject Headings (MeSH) 2010 edition and Bradford's mathematical model used to analyse the data collected for this study.

Results: The findings showed that a total number of 450 articles were produced and year 2000 recorded the highest number with 76 (16.8%) articles. The total number of reference cited between 2000-2010 stood at 8409. References cited in 2004 were the highest with 1254 (15%) whilst 2002 recorded the least citations. Furthermore, in the authorship distribution, two authorship collaborations had 117 (26%) representing the highest. 135 subjects were determined in the study and were ranked in decreasing order of productivity. The top thirteen of subjects ranked were: dentistry (41); pharmaceutical sciences (26); malaria (18); materia medica (18); acquired immunodeficiency syndrome/human immune virus(17); animal experimentation (14); biochemistry (11); diabetes Mellitus (11); others include physiotherapy (10); paediatrics (8); nutrition (8); surgery (8); and radiology/radiation (8). The rank order of geographical distribution was displayed and Lagos State pooled 331 (73.5%) of articles and followed by Oyo State with 20 (4.4.%) articles.

Conclusion: Adoption of this type of tool helps in analyzing journal publications for a period of time. It is of course, a good strategy to know the direction of publication of a journal, its strengths and weaknesses and unravels high concentration area and the low concentration areas as well.

INTRODUCTION

Information generation is continuously on daily basis at an increasing progression. Globally speaking, there are several billions of documents generated and librarians who are interfaced with the information world and the Patrons on the other side are saddled with greater responsibilities of making a right choice of acquiring precise materials and a right decision they need to take at a right time. Also, it is just impossible to acquire all the information generated all over the world in the library due to some inadequacies which most libraries face: These are financial constraints, foreign exchange constraints, importation restrictions, and high tariffs, telecommunication difficulties in the developing countries and partial function of libraries' consortia etc.

Despite these teething problems highlighted, librarians must still make available to the door steps of the users the relevant information materials. Achieving this, therefore, a strategy was evolved over the years on how to select the core, and precise information resources for the users. This in essence is to enhance high quality of collection building process in the libraries.

The architect of this research design, bibliometric, was Clement Bradford who introduced a Mathematical/Statistical Model to the scattering of citations from the journals. Bradford who in 1948 published his first paper entitled sources of information on specific subject as cited in Zafrunnisha(2012)[1]. Bradford identified three zones of periodicals in the enumerated periodicals and ranked them all in decreased or diminished order of productivity. Also, bibliometric often determines the intellectual output and its faceted distributions. The citations analysis helps to know the pattern of reference citations from the available information sources. In research and publications, bibliometric equally determines the subject and geographical areas which are heavily researched and those areas which are not so much concentrated by the researchers (Obajemu, 2012)[2].

Therefore, this research work examined the direction of publication, the volume of growth, the structure and the inter-relationships that exist amongst the disciplines in the Nigerian Quartely Journal of Hospital Medicine over a period of time. In other words, the work examines the

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direction of publication, degree of collaborations and the contributions to the body of knowledge in the field of Medical Science and Paramedical Sciences by Nigerian Quarterly Journal of Hospital Medicine (NQJHM) within the period of study.

Nigerian Quarterly Journal of Hospital Medicine, publication of the Lagos University Medical Society in Nigeria had its first publication in 1982 with Oladapo A. Ashiru as the first editor, 28 members of editorial board, 4 editorial consultants: 2 from United States and one each from Europe and Ireland. The editorial committee were 4 and publication committee made up of 3 people. The maiden edition had 6 scholarly published articles and 31 pages in all.

Today, this journal is published quarterly (4 issues) in a year and indexed in the Index Medicus in United States of America and abstracted in Pub Med.

This research work, Nigerian Quarterly Journal of Hospital Medicine: a bibliometric study covers a period of eleven years from 2000 to 2010.

Objectives of the study
i. To determine the intellectual output of research publications in NQJHM
i. To discover the degree of collaborative of authorships published in NQJHM
i. To study the geographical distribution of articles published
i. To determine the quantum volume of references
i. To determine the distributions of references cited

Research questions
i. What is the quantum volume of the intellectual output of the Nigerian Quarterly Journal of Hospital Medicine?
i. What is the degree of collaboration of authorship?
i. What is the geographical distribution of the published articles?
i. What is the quantum volume of references cited?
i. What is the distribution of references cited per article?

Review of Literature
There are several scholarly contributions in the area of bibliometrics. The foundation which was laid in 1934 by Samuel Clement Bradford, created much attractions and admirations in academic circles all over the world. Fennwald (March 2008) carried out a research work using bibliometric methodology. His findings showed that librarians at the Pennsylvania State University were consistently among the most published in academic library journals and explored factors which were responsible to high research productivity among a cross section of Penn State librarians to personal motivation, intellectual curiosity and education[3]. Also, Cathy (2010) saw bibliometric as a tradition; method of assessing research impact; a tool for gauging the extent of a publication's influence in the literature and for tracking the advancement of knowledge with the inherent assumption that significant publication will demonstrate a high citation[4].

Jena (2012) was of the view that research publications are "the embodiments of the intellectual thought contents expressed in published literature whose key objective is to transmit innovative ideas or information..." [5]. In the bibliometric study which was carried out, the findings were; average citation per article was 16; average number of

pages per articles was 8; Journal citation predominant was 57.4% followed by books 16.5%; two-authored papers found to be the highest followed by single author.

Obajemu (1998) determined the most productive serial titles on librarianship between 1910 -1985 in Nigeria. The core serials identified were Nigerian Libraries (308), Library Scientist (203), Nigerbiblios (121) and Lagos Librarian (106)[6]. Also, Obajemu and Bolarinwa (2004) examined the intellectual output of students of the department of physiotherapy, College of Medicine of the University of Lagos between 1980 to 2000 A.D. Total number of 301 dissertations produced were analyzed and the subjects determined were 116 with the hemiplegia ranked highest (25) and followed by Osteoarthritis (17)[7].

Sandra (2005) determined the impact of online journals on the citation patterns of medical faculty. Results showed that journals cited per year continued to increase from 1993-2002. However, the result did not indicate that researchers were more likely to cite online journal or were less likely to cite journals only in print[8]. Similar to this also, Sandra (2010) determined how online journal collections were impacting on the citation patterns of researchers in dentistry, nursing and pharmacy. The results showed that the number of journal articles cited per year continued to increase in all of the disciplines. Pharmacy increased from 21.32% in 1996 to 33.1%, in 2008 nursing increased from 20.9% in 1996 to 25.0% and dentistry from 20.5% to 24.6% in 2008. These findings were similar to the earlier work carried out by the researcher[9].

Stacey (2008) carried out a citation analysis of papers written by undergraduate students. The analysis included the types of materials cited, number of citation per paper, publication year, and online availability and referred status of materials. The findings showed that number of citations in each paper increased over the first three papers. There was also a positive correlation between, the number of citations in the paper and the word count of the paper[10].

Obajemu (2001) stated that bibliometric studies are imperative in view of the information explosion in the field of medicine and Para-medical disciplines and it is expedient to carry out productivity studies in medicine so as to determine the core information materials that should be acquired and those ones that should be conveniently left out. His study was therefore focused primarily on the productivity of newspapers reports on communicable diseases between January to December 1996. The four selected newspapers were the National Concord, The Guardian, Daily Times and Vanguard all in Nigeria. The findings showed that the total number of articles was 404. National Concord ranked the highest with 312 articles. Acquired Immunodeficiency Syndrome ranked first in terms of subject distribution with 85 articles, followed by Meningitis 81 and Cholera 28. 36 subjects were determined and 92 authors identified and 194 articles published anonymously[11].

Other literature reviewed were: Reba (2005) in his citation checking of undergraduate dissertations[12], David (2010) who examined the characteristics of scholars communication with particular emphasis on the usage of the monograph in the fields of Spanish and Latin-American Literature over a 30- year period[13] and Susan (2008) analyzed usage of a major biomedical library's pre-1993 print journal collection[14]. Others included Jean-Francois (2008) who assessed the accuracy of references specifically citing manuscripts concerning occupational and environmental medicine[15].

Bagnell's (2009) questions regarding an analysis of bibliometric indicator at National Institute of Health Funding[16]; Xavier's (2009) Scientific Literature dealing with addition to the internet, video games and cell phones[17] and Chukwuemeka (2003) who examined the practice of publishing in Nigerian based library and information Science research by Nigerian researchers in foreign titles[18].

MATERIALS AND METHODS

The data for this study were sourced from the databank generated by the researchers. Information was transcribed from all the issues of the journal published between 2000 to

2010 on cards. The transcription was done on Cataloguing cards with the following parameters: title of the research work's number of authors; subject; geographical coverage, number of references cited and the year of publication.

The authors used medical subject Headings 2010 published by National Library of Medicine to determine the subject of each entry. Bradford statistical method was used to analyze the data generated for the study. The findings were however represented in tables, charts and graphs.

RESULT

The result of the study are presented in Tables 1,2,3,4,5&6, and in Figures 1-3, as follows

RESEARCH RESULTS

Table 1

Quarterly Distribution of the Article Published Between 2000 to 2010.

Year	no of articles in each issue				Total	% of Articles	Cumulative Total of Articles	Cumulative % of Articles
	Mar	Jun	Sept	Dec				
2000	22	21	17	16	76	16.8	76	16.8
2001	NP	NP	NP	19	19	4.2	95	21
2002	NP	NP	NP	17	17	3.7	112	24.7
2003	NP	NP	NP	20	20	4.4	132	29.1
2004	26	20	NP	22	68	15.1	200	44.2
2005	10	13	9	8	40	8.8	240	53
2006	7	10	7	7	31	6.8	271	59.8
2007	10	10	7	10	37	8.2	308	68
2008	11	18	12	12	53	11.7	361	79.7
2009	13	9	11	10	43	9.5	404	89.2
2010	11	10	10	15	46	10.8	450	100
TOTAL	110	111	73	156	450	100	450	100

Where:
NP = Not published. This implied that they were the periods that NQJHM did not publish.
The table above shows the quarterly distribution of the articles published between 2000 to 2010. The result showed that much articles were published in 2000 with 76 (16.8%) and the least was 17 (3.7%) in 2002.

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Table 2
Distribution of References Cited

Year	No of Articles in each issue						% of Articles	Cumulative Total of Articles	Cumulative % of Articles
	Mar	Jun	Sept	Dec	Total				
2000	295	388	260	232	1175		13.9	1175	13.9
2001	NP	NP	NP	215	215		2.6	1390	16.5
2002	NP	NP	NP	266	266		3.2	1656	19.7
2003	NP	NP	NP	347	347		4.1	2003	23.8
2004	487	346	NP	421	1254		15	3257	38.8
2005	224	238	173	172	807		9.5	4064	48.3
2006	185	179	150	111	625		7.4	4689	55.7
2007	268	193	119	286	866		10.3	5555	66
2008	234	263	218	259	974		11.6	6529	77.6
2009	325	192	184	179	880		10.5	7409	88.1
2010	221	251	228	300	1000		11.9	8409	100
TOTAL	2239	2050	1332	2788	8409		100	8409	100

Table 2 above shows the distributions of references cited in the study. The total number of references cited was 8409 between 2000-2010. References cited in 2004 were the highest with 1254 whilst 2002 recorded the least citations.

Table 3
Authorship Pattern of Distribution of Articles

No of Author(s)	No of Articles	% Articles	Cumulative Article	Cumulative %
One	60	13.33	60	13.33
Two	117	26	177	39.33
Three	108	24	285	63.33
Four	92	20.44	377	83.77
Five	41	9.11	418	92.88
Six	25	5.56	443	98.44
Seven	4	0.89	447	99.33
Eight	1	0.22	448	99.65
Nine	2	0.44	450	100
TOTAL	450	100	450	100

Table 3 above shows the pattern of distributions of articles by authors. In other words, it indicated the degree of collaborations of research works published by NQJHM within the period of study. Two-authorship collaboration recorded 117 articles 26% and the least was the eight person's collaboration with only one frequency or one article (0.22%). The distributions of the authorship patterns are highlighted in figure 1:
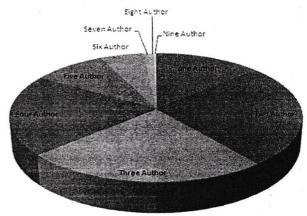

Fig. 1 Authorship patterns of distribution of articles

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Table 4

Ranked Order of Productivity of Subjects Distribution of Articles Produced Between 2000 – 2010

Subject	No of Articles	Subject	No of Articles	Subject	No of Articles
Dentistry	41	Pathology	4	Fertility	2
Pharmacy/Pharmaceutic	26	Tuberculosis	4	Psychiatry	2
Malaria	18	Primary Health Care	4	Otitis Media	2
Materia Medica	18	Anaesthesia	4	Leprosy	2
Acquired Immuno Deficiency syndrome/HIV	17	Alcohol Drinking	4	Immunization	2
Animals Experimentation	14	Alternative Medicine	3	Haemorrhage	2
Biochemistry	11	Libraries, Medical	3	Water purification	2
Diabetes, Mellitus	11	Low back Pain	3	Injury Severity Score	2
Physiotherapy	10	Keloids	3	Tetanus	2
Paediatrics	8	Microbiology	3	Schistosomiasis	2
Nutrition	8	Oesophagos Tomiasis	3	Prostate Neoplasm	2
Surgery	8	Kidney Diseases	3	Research	2
Radiology/Radiation	8	Respiration	3	Testis	2
Eye Diseases	7	Thyroid Diseases	3	Urinary Tract Infection	2
Contraception	6	Toxicology	3	Epilepsy	2
Gynaecology	6	Adolescent	2	Environment	2
Hepatitis B and C	6	Asthma	2	Clinical Medicine	2
Herbals	6	Anaemia	2	Others with one frequency (61)	1
Hypertension	6	Liver Cirrhosis	2		
Cardiovascular Disorders	6	Ocular Hypertension	2		
Delivery	6	Obstetrics	2		
Anaemia, Sicke cell	5	Onchocersias	2		
Occupational Health	5	Ovarian Diseases	2		
Obesity	5	Cerebro-Vascular Disorder	2		
Breast Neoplasm	4	Breast feeding	2		
Cervix Uteri	4	Dermatology	2		
Neoplasms	4	Blood Transfusion	2		
Orthopaedics	4	Diarrhoea	2		

The table 4 above shows the distribution of subjects analyzed in the study. Dentistry pooled the highest number of articles published in NQJHM between the period of study. The distribution indicates that dentistry produced 41

articles and followed by Pharmacy/Pharmaceutical science with 26 articles. The subjects were arranged in decreasing order of productivity. Table 4 was used to produce table 5 below:

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Table 6
Ranked Order of Geographical Distribution of Published Articles in HQJHM Within and Outside Nigeria
Between 2000-2010.

State/coutries	No of Articles	% of Articles	Cumulation Total of Articles	Cumulation % of Articles
LAGOS	331	73.5	331	73.5
OYO	20	4.4	351	77.9
EDO	18	4	369	81.9
OGUN	14	3.1	383	85
KWARA	13	3	396	88
OSUN	6	1.3	402	89.3
BAYELSA	4	1	406	90.3
UNITED KINGDOM	4	1	410	91.3
RIVERS STATE	3	0.7	413	92
KANO	3	0.7	416	92.7
AKWA IBOM	3	0.7	419	93.9
ENUGU	3	0.7	422	94.1
DELTA	3	0.7	425	94.8
U.S.A	3	0.7	428	95.5
SOUTH AFRICA	3	0.7	431	96.2
ABUJA	2	0.4	433	96.6
KADUNA	2	0.4	435	97
GHANA	2	0.4	437	97.4
ANAMBRA	2	0.4	439	97.6
BORNO	2	0.4	441	98.2
NIGER STATTE	2	0.4	443	98.6
SOUTH WEST OF NIGERIA	2	0.4	445	99
PLATEAU	1	0.2	446	99.2
SOKOTO	1	0.2	447	99.4
NEW GUINEA	1	0.2	448	99.6
WEST AFRICA	1	0.2	449	99.8
CAMEROUN	1	0.2	450	100
TOTAL	450	100		

Table six above shows the ranked order of geographical distribution of articles in NQHJM. Findings show that Lagos State pooled the highest number of articles with 331 (73.5%) and the states/regions/countries with least articles were: Plateau, Sokoto, New Guinea, West Africa and Cameroun.

DISCUSSION

This study had examined the intellectual influence which NQJHM exerted in the field of medicine and Para-medical disciplines as well. The study which covered these years 2000-2010 focused on the following parameters: yearly and quarterly distributions of the published articles with cumulative and percentage distributions of the articles; citation analysis based on the issues and years; the degree of collaborations of authorship which were highlighted in pie chart and bar chart ; the ranking order of subject distributions of articles which produced the statistical table 5, which eventually used to plot the graph in figure 2 and the ranking order of geographical distributions within and

outside Nigeria.

The results showed that in the early years of 2001, 2002, 2003 and second to the last quarter of 2004, articles were not published as indicated by NP. In 2002, articles were published only once in the month of December and this might explained why the year recorded the least numbers of atircles. Of all the quarterly publications by NQJHM, the January-March of 2004 recorded the highest number of articles with 26, whilst the least was 7. In other words, December issues has 156 of articles and followed by June issues with 111 articles published. Also march issues recorded 110 of articles while the least was September issues which produced only 73 published articles within the period of study. In the yearly distribution, 2000 recorded the highest with 76 (16.8%) produced articles. The least produced year was 2002 with only 17 (3.7%) articles. Furthermore, the study discovered that a total numbers of references cited in the articles published in NOJHM between 2000 to 2010 was 8409. However, the quarterly distributions showed that January to March 2004 recorded the highest with 487 references and followed in the last quarter of the same year 2004 with 421 citations. The least year was 2001 which had 215 citation references.

The researchers discovered further examined the authorship distributions of articles published. To produce high quality of research works in sciences and medicine, collaborative work is highly encouraged especially in inter-disciplinary studies. However, the two-authorship produced the highest number of articles with 117 (26%) and slightly followed by three-authorship which pooled 108. This finding is corroborated with the work carried out by Kamal's (2012) in his Annals of Library and information studies, 2002-2010 published in library philosophy and practice 2012.

The analyzed subject distributions showed the first nine subjects in their order of productivity:

Dentistry (41), Pharmacy/Pharmaceutical Sciences (26), Malaria (18), Materia Medica (18), Acquired Immuno-deficiency Syndrome (17), Animals Experimentation (14), Biochemistry (11); Diabetes, Melliutus (11) and Physiotherapy (10). In the ranked order of geographical distribution, the results showed that Lagos State being the Commercial capital city of Nigeria and a place where the NQJHM is situated pooled the highest number of articles 331 (73.5%) followed by Oyo 20 (4.4%), Edo 18 (4%), Ogun 14 (3.1%) and Kwara with 13 (3%) etc. The least States/Regions/Countries were Plateau, Sokoto States, West Africa (Region), New Guinea and Cameroun with only one articles each representing 0.2%.

CONCLUSION

This research work has critically examined the intellectual contributions of Nigerian Quarterly Journal of Hospital Medicine which covers the field of medicine and its ally disciplines. The study covered a period of eleven years. A total of 450 articles were added to the body of knowledge in the aforementioned fields. 8409 were the references cited within the period and 135 subjects were analyzed in the study and ranked them in their order of productivity. Therefore, bibliometric/Scientometric helps in great measure. The study showed the structure, the relationship among disciplines, heavily and unheavily researched areas, citation patterns, and the geographical distributions.

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