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## Studies in Family Planning Journal (2003 To 2009): A Bibliometric Study

Oluremi Adenike Abiolu Dr

ijatuyioa@yahoo.com

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***STUDIES IN FAMILY PLANNING JOURNAL (2003 TO  
2009): A BIBLIOMETRIC STUDY***

**BY**

**ABIOLU, O. A. PhD**

**PRINCIPAL LIBRARIAN**

**UNIVERSITY LIBRARY**

**FEDERAL UNIVERSITY OF TECHNOLOGY**

**AKURE, NIGERIA**

**TEL: +2348034731879**

**Email: [ijatuyioa@yahoo.com](mailto:ijatuyioa@yahoo.com)**

## **Abstract**

*This study investigates a bibliometric analysis of Studies in Family Planning journal from 2004 to 2009. It identified major areas of research focus, research design used, authorship patterns, affiliation of authors, citation patterns, continents of research focus and geographical distribution of authors. Findings revealed that family planning and sexual and reproductive health were key subjects of research. Surveys were mostly used for data collection. Authors tilted towards collaboration. Most authors were affiliated to universities. Also, the most cited information source was journal. Most of the articles were on developing countries and most authors were domiciled in developed countries with USA dominating the field. Increase on the topics on which articles are lean should be encouraged. More authors from developing countries should be encouraged. More articles focusing on developed countries should be welcomed to allow for comparative studies in medical research.*

**Keywords: Authorship patterns, Bibliometrics, Citation patterns, Collaboration, Studies in Family Planning**

Scholarly journals remain the prominent and certified means of sharing recent research finding and asserting new ideas between and among academia (Tomney and Burton, 1998), building scientific communities and supplying a useable indexed archive of thought, communicating information (Campanario, 1996 and Enger, 2009). Academic journals are also the vehicles by which rewards like recognition, salaries, prestige, priority and funding are given, and they also build a collective knowledge base (Campanario, 1996).

In the field of medicine and health, journals are also important to professionals as part of medical literature. This is emphasized by Poletto and Junior (2009) in the following:

“Health care professionals usually base their decisions on professional experience, prevailing clinical practice, standard procedures, training or expertise guidance, peer consultation and knowledge acquired in (medical) school, seminars and continuing education programs. Clinical experience, technical expertise and critical judgment are essential but not sufficient. Due to the complexity of information, scientific support to clinical practice must be sought in medical literature and derived from methodologically validated tools”

Simkhada, Baral and Teijlingen (2010) stress the need for research in finding solutions to human health because of the impact that ill health has on economic development and individual's well-being particularly in poor countries of the world. Harande (2011) emphasizes the reliance of healthy nations on useful, relevant and accessible information for their survival and prosperity. This information is domiciled in information resources and the need for quantitative study of health information in literature cannot be overemphasized as this has a potential of contributing to the well-being of a nation's people.

### **Bibliometrics**

The history of bibliometrics has been traced to Alan Pritchard. He was credited to be the first person to use the word, and gave a mathematical definition as the application of mathematics and statistical methods to books and other media of communication (Pritchard, 1969 in Hertzal, 2003). Harande (2011) simply refers to bibliometrics as the study of information materials using relevant statistical and mathematical methods. In a similar vein, Enger (2009) quoting Baker (1990) defines bibliometrics as the application of quantitative methods to the study of communication media such as books and published articles.

According to Hertzal (2003), bibliometrics can be divided into two areas namely: productivity count (descriptive) and literature usage (evaluative). Under productivity count (descriptive), geographic (countries), time periods (eras) and disciplines (subjects) are analysed. For literature usage (evaluative), references and citations are examined. In shedding more light to this, Hertzal (2003) explains that descriptive bibliometric studies may not be evaluative, however all evaluative bibliometric studies or analyses first get to the phase of descriptive before the data are

taken a step higher to evaluative studies of bibliometrics. This implies that evaluative studies in bibliometrics cannot be done without passing through the stage of being descriptive.

Osareh (1996) notes that the scope of bibliometrics is to bare the processes of written communication, nature and course of development of a discipline as shown in written communication by means of counting and analysing the different facets of the written communication. Simkhada, Baral and Teijlingen (2010) observe from literature that bibliometric research provides an indication of the quantity of research generated on a certain topic, details of the method, country and contributors of such research.

Soteriades and Falagas (2006) observe in their study that academic community contributes in identifying the best approach to assess the quantity and quality of research production between geographical boundaries, languages and scientific disciplines. Thanuskodi (2011) identifies some bibliographic variables involved in bibliometric research as authors, the place of publication, the associated subject keywords and the citations. Ritz (2013) reports a bibliometric study which assesses ATM research over a period ten years with respect to access to medicine issues in the developing countries. The study aimed at providing a brochure to access medicine issues in the developing countries. It revealed that USA had 174 publications from corresponding authors between a period of 1999 and 2008. This contribution to medicine journals is highest in the study indicating that USA dominated research contribution to medicine.

Asha (2007) in another bibliometric study that focuses on properties of analysis of articles and citations in *Demography India* from 1972 to 2004 finds that 34.8% articles were on fertility and or reproduction. He also finds that authors were inclined towards collaboration.

The advantages of bibliometrics have been identified in the literature. These include ascertaining the volume of research produced on topics, methods used, country of authors and that of research focus (Simkhada *et al*, 2010) and citations (Harande, 2011). Others are selection of materials, study of communication patterns, identification of influential authors and papers and assessment of the quality of materials (Osareh, 1996). In the light of these therefore, this study sets out to examine some of these trends as revealed in the *Studies in Family Planning*.

Variables considered for the study are sex of the authors, areas of research focus, study designs, authorship patterns and affiliation of authors. Others are citation patterns, continents of research focus and geographical distribution of authors.

### ***Studies in Family Planning Journal***

*Studies in Family Planning* is an international journal published by Wiley-Blackwell for the Population Council since 1963 to the present time and it intends to continue to do so. For each volume of *Studies in Family Planning*, there are four issues. Each issue comes out at the end of every three months or quarter of the year of publication. This implies that each issue comes out in March, June, September and December of the year of publication. As it is common to a reputable journal, each article submitted to *Studies in Family Planning*, is peer-reviewed. In each issue, there are articles, commentaries, data from countries and reviews. The journal focuses chiefly on original researches dealing with sexual and reproductive health, fertility regulation, and family planning programs in both developed and developing countries of the world.

## **Methodology**

A bibliometric study of all the 139 articles published in *Studies in Family Planning (SFP)* covering a period of 2004 to 2009 was undertaken. However for the purpose of this study, areas not relevant to it were excluded and these are the preface, editorials, instruction to authors, and data from countries. The researcher was not familiar with many of the names of the authors. Therefore, the sex of authors was determined by their first mentioned names. Some names could not be clearly categorized either as male or female hence they were classified as “unsure”.

## **Results and Discussion**

### **Sex of authors**

The result on the sex of authors shows that 38% were male and 32% were female. Those whose sex could not be ascertained were classed as “unsure” and so carried 30%. This result does not show a significant gap between the two sexes and those whose sex could not be determined.

### **Articles published *Studies in Family Planning (SFP)* Journal between 2004 and 2009**

All the volumes published in *SFP* journal from 2004 and 2009 were six and the distribution of their articles is shown in Table 1. There are 139 published articles in the six volumes of 35 to 40 ranging from 2004 to 2009. These represent the published articles in a continuous nature. The highest output was in 2007 with 27 articles and the lowest output was in 2004 and 2006 with 20 articles each. *Studies in Family Planning* journal has published an average of 28 articles per year between 2004 and 2009.

## **Areas of Research**

The key areas of research focus were explored. It was found that they were diverse but related. Thus, the topics treated by the articles were classified into seven categories according to the degree of their relatedness. Table 2 presents the results. It was found that two major areas of research topped the list namely family planning (28.1%) and sexual and reproductive health (26.6%). Following these are sexual relationships among people (13%), pregnancy and pregnancy issues (11.5%), and HIV/AIDS and sexually transmitted infections or diseases (10.1%). Ranking least among the areas of research are risky behaviours or activities (5%), child health care services (4.3%) and population control (1.4%). This finding is in line with the observation of Sunmola (2001) that family planning concerns are getting heightened due to the increasing risk of HIV infection in the world and the need to find strategies by which this risk could be reduced. That family planning is a dominant key area of research focus in the articles investigated also support the result of Asha (2007) who found that majority of the articles in his study were on fertility and family planning. It is interesting to note that the areas of research in *Studies in Family Planning* in Table 2 are a true reflection of what Richardson and Birn (2011) state to be the composition of the complete sexual and reproductive health services package.

## **Study Designs applied in *Studies in Family Planning***

The study designs used in all the articles were cross-checked. It was found that a combination of designs was used in some articles. The distribution displayed in Table 3 shows that the most used study design in the articles is survey (54.8%), this is widely followed by desk study (10.7%). All



other study designs were not so pronounced. For example, literature review (9%) was used in some of the articles. Focus Group Discussion and opinion papers carried 5.6% each of the articles. Other designs were used in much fewer articles. This study supports an earlier finding of Simkhada *et al* establishing that an overwhelming majority of articles in their reported the use of survey and small percentages of the articles reported the use of other designs. Case study was only used in just 0.53% of the articles which is in contrast to the findings of Poletto and Junior (2010) that case study is known to be popularly used in medicine and health conditions.

### **Authorship patterns of articles in *Studies in Family Planning (STP)***

Authorship patterns of articles in *SFP* were critically examined. As revealed by the findings of the distribution of the authorship patterns in Table 4, 25.9% of the articles were written by single authors and 25.2% of the articles were produced by the collaboration of two authors. About 15.8% and 15.1% were jointly produced by three and four authors respectively. Smaller percentages were produced by higher number of collaboration among authors. In other words collaboration among two or more authors was a common phenomenon in the study. This is in harmony with Okere (2011) who confirmed that scientific research is going beyond single authorship to collaboration among two or more authors. Borrowing from Isiakpona (2012) in calculating the degree of collaboration, the following formula was used:

$$C = NM / NM+NS$$

Where C = the degree of collaboration,

NM = the number of joint-authored articles and

NS = the number of single-authored articles.

Substituting the from Table 3 gives

NM = 103, NS = 36.

Therefore,

$C = 103 / 103+36$

$C = 103 / 139$

$C = .741$

From the result above, the degree of collaboration is approximately 0.74. This shows that more articles emanated from a collaboration of two or more authors than those from single authors though the latter carry a marginal majority than the two-authorship collaboration category.

### **Affiliation of Authors**

The affiliation of authors according to their organisations was looked into. The results as presented in Table 5 shows that most of the articles (51.22%) were generated from university researchers as at the time they wrote the papers. This position is followed by organisations classed as “other kinds” which produced 19.02%. These are organisations that do not clearly belong to defined classes as purposively categorized in this study but are mostly, international. Examples of these include Klein Management Services Systems, Population Services International, RAND Corporation, Belden Russonello and Steward, RESPOND Project, and WHO among others. 12.0% of the articles emerged from authors in research institutes and centres. It is interesting to note that a few authors (10%) also emerged from Population Council the publisher for *Studies in Family Planning*. Smaller percentages were from organisations such as associations, hospital and so on, as displayed in the Table 5. Most of the publications being produced from universities indicate that authors from such institutions were more research-oriented. This may be due to the fact of “publish or perish” syndrome in universities. Other reasons that can be adduced for this are included in paragraph one under introduction as given by

(Campanario, 1996). However, this result coincides with those of Thanuskodi (2011) and Isiakpona (2012) whose study indicated that university lecturers are more prolific in research endeavours.

### **Citation patterns of Information Sources used in *Studies in Family Planning***

The citation patterns of the publications consulted by the authors are presented in Table 6. The most cited source of information is the journal (56.3%), followed by monographs (25.6%). Other sources were cited to lesser percentages. The finding reveals that journals are predominant in the citation and this agrees with Aina and Mabawonku (1996) and Harter (1998). These noted that scholarly journals occupy a pre-eminent position in extending the frontiers of knowledge and stand as the major medium for disseminating new knowledge. It is becoming obvious that the use of monographs as a first vehicle of communication in medicine is declining. The trend in Table 6 was also reported by Okere (2011) whereby journals are first used by scholars and then monographs whereas the use of e-journals or e-books rank significantly low in spite of the importance of web resources in scientific research. This is an unusual finding.

### **Continents of Research Focus**

The study looked at the distribution of publications by continents that the articles focused on. The results are presented in Figure 1. Concerning the continent that received the greatest research focus, the study revealed that Africa (43.7%) received the greatest focus followed by Asia (29.6%) and South America (16.3%). 6.7% of the articles focused on N. America, 3%

focused on Europe while Mid East attracted less than 1%. From this result, it is shown that developing countries were more researched on with respect to the journal *Studies in Family Planning* than any other continent. This is not surprising in that one of the factors that may be responsible for this is that two thirds of world's HIV infected population live in Africa and 60% in developing countries especially sub-Saharan (Scheechy, 2010). Also population explosion is more associated with developing countries than developed countries. However this result does not support previous finding that health and health care studies conducted in developing countries are under-represented in the international literature (Simkhada et al, 2010).

### **Geographical Distribution of Authors.**

The distribution of authors of articles according to the part of the world in which they were domiciled at the time of writing their paper was investigated. Results are presented in Figure 2 and Table 7. From the data in Figure 2, the contributors were from Africa (11.92%), Asia (13.15%), Australia (1.46%), Central America (4.39%), Europe (12.41%), North America (54.88%), and South America (1.95%). This result shows that majority of the authors were from North America contributing about 55% of the total number of articles generated within the period under investigation. Out of the 55% from North America, 52.2% of the researchers were from United States of America (Table 7). The USA emerged as the predominant country of origin of the authors. In a similar dimension, Sun (2012) found in his work on the trends of current health services research that majority of the authors were domiciled in the USA. The result from this study clearly shows that researchers from the USA have, and also maintain a leadership position in the area of medicine and health. This study is in line with Soteriades and

Falagas (2006) who observed that most of the researches published in scientific journals are carried out in the developed countries and that USA emerged as the strongest leader in the field of medicine. The reasons produced by these two researchers for this observation such as the long tradition of international organizations, agencies and institutions in USA that help to support research efforts and implement population-based health programmes are noteworthy. This leaves a significant gap between USA the countries of the world on one hand, and North America and the continents of the world in the fields investigated in this study on the other hand, still buttressing the observations of Soteriades and Falagas (2006).

### **Conclusion and Recommendations**

This research investigated the bibliometric study of the journal titled *Studies in Family Planning* between 2004 and 2009. The variables examined are the sex of the authors, subjects of research, study designs, authorship patterns and affiliation of authors. Others are citation patterns, predominant continent(s) of research focus and the geographical distribution of authors. The result on the sex of authors shows that 37.9% were male and 32% were female but the sex of others could not be ascertained. Research topics show that family planning and sexual and reproductive health ranked as the topmost subjects of research in the journal. Most of the authors used mostly survey with desk study following with a wide margin as study designs. The authorship patterns show that more articles emanated from a collaboration of two or more authors with a degree of collaboration of 0.74. Research publication is highest in universities with 51% of the articles emerging from them. Looking at the citation patterns, journal (56.3%) and monograph (25.6%) are the highest used information sources in the study. With respect to

continents of research focus, Africa (43.7%) attracted more articles than others with Asia having (29.6%). The geographic distribution of authors also revealed that about 55% of the authors were resident in the North America as at the period of writing their paper and that USA is the leading country with respect to research in family planning and sexual and reproduction.

Research production in *Studies in Family Planning* tends to be lean in the area of pregnancy issues, risky behaviours, child health care and services, and population control. These must be revisited by soliciting for papers on them to be published in the journal. Disparity however exists between researchers and research production from developed and developing countries. Dearth of publications from authors in developing countries has to be addressed. More articles that centre on developed countries should be welcomed and more authors should be encouraged from developing countries. This would allow for comparative studies in medical research and possibly improvement in family and sexual health.

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**Table 1: Distribution of articles in *Studies in Family Planning***

<b>Year of Publication</b>	<b>Volume</b>	<b>Number of Articles</b>
2004	35	20
2005	36	24
2006	37	20
2007	38	27
2008	39	26
2009	40	22
<b>Total</b>		<b>139</b>

**Table 2: Key Areas of Research Focus in *Studies in Family Planning***

Subject	Frequency	Percentage
Family planning	39	28.1
Sexual and reproductive health	37	26.6
Sexual relationships among people	18	13.0
HIV/AIDs and STIs	16	11.5
Pregnancy and pregnancy issues	14	10.1
Risky behaviours	7	5.0
Child health care and services	6	4.3
Population control	2	1.4
<b>Total</b>	<b>139</b>	<b>100</b>

**Table 3: Distribution of Study Designs used in *Studies in Family Planning***

<b>Study Design</b>	<b>Frequency</b>	<b>Percentage</b>
Survey	92	54.8
Desk study	19	10.7
Literature review	16	9.0
Focus Group Discussion	10	5.7
Opinion of Expert	10	5.7
Observation	7	3.9
Quasi experiment	5	3.4
Modeling	2	1.1
Mathematical methods	2	1.1
Experiment	1	0.53
Case study	1	0.53
Dynamic panel	1	0.53
Medical test	1	0.53
Computer search	1	0.53
Indirect estimation method	1	0.53
Masking technique	1	0.53
Database	1	0.53
Masking technique	1	0.53
Conversation	1	0.53
<b>Total</b>	<b>177</b>	<b>100</b>

**Table 4: Distribution of Authorship patterns in *Studies in Family Planning***

<b>Authorship patterns</b>	<b>Frequency of articles</b>	<b>Percentage</b>
Single-authorship	36	25.9
Two-authorship collaboration	35	25.2
Three-authorship collaboration	22	15.8
Four-authorship collaboration	21	15.1
Five-authorship collaboration	9	6.5
Six-authorship collaboration	8	5.8
Seven-authorship collaboration	5	3.6
Eight-authorship collaboration	2	1.4
Ten-authorship collaboration	1	0.7
<b>Total</b>	<b>139</b>	<b>100</b>

**Table 5: Affiliation of Authors**

<b>Organisations</b>	<b>Frequency</b>	<b>Percentage</b>
Universities	210	51.22
Research Institutes and Centres	49	12.0
Ministries	9	2.2
Associations	6	1.46
Schools and Academies	5	1.22
Population Council	41	10.00
Departments	2	0.49
Group	4	0.98
Hospital	1	0.24
Other kinds of Organisations	78	19.02
Individual Researchers/Consultants	5	1.22
<b>Total</b>	<b>410</b>	<b>100</b>

**Table 6: Citation patterns of Information Sources used in *Studies in Family Planning***

<b>Cited information sources</b>	<b>Frequency</b>	<b>Percentage</b>
Journal	3599	56.3
Monograph	1636	25.6
Internet	390	6.1
Technical report	310	4.85
Conference proceeding	182	2.85
Supplement	145	2.3
Dissertation / thesis	51	.80
Unpublished source	43	.67
Newspaper	25	.39
Interview	6	.094
Database	6	.094
Personal communication	3	.047
<b>Total</b>	<b>6396</b>	<b>100</b>

Total citations = 6396

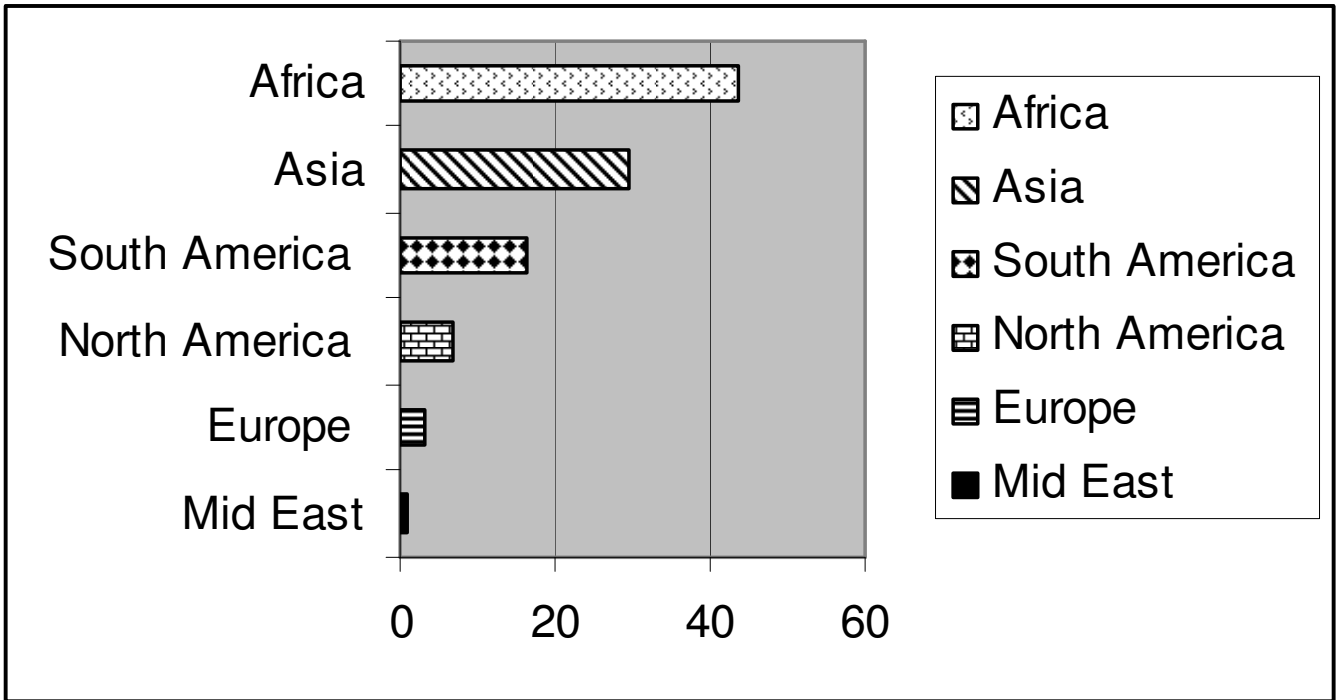
Total articles = 139

Average citation = 46

**Table 7: Geographical distribution of authors**

AFRICA			ASIA			AUSTRALIA			CENTRAL AMERICA			EUROPE			NORTH AMERICA			SOUTH AMERICA		
Countries	Freq	Per.	Countries	Freq	Per.	Countries	Freq	Per	Countries	Freq	Per.	Countries	Freq	Per.	Countries	Freq	Per.	Countries	Freq	Per.
South Africa	12	2.92	Bangladesh	12	2.92	Australia	5	1.22	Mexico	13	3.17	UK	30	7.31	USA	214	52.2	Guatemala	4	0.98
Ghana	10	2.43	Jordan	6	1.46	New Zealand	1	0.24	El Salvador	2	0.49	Netherlands	5	1.22	Canada	11	2.68	Paraguay	1	0.24
Tanzania	7	1.7	China	5	1.22				Coasta			Switzerland	5	1.22						
Kenya	3	0.73	Pakistan	3	0.73				Rica	2	0.49	France	4	0.98						
Mali	3	0.73	India	3	0.73						0.24	Denmark	1	0.24				Haiti	2	0.49
Nigeria	3	0.73	Oman	3	0.73				Honduras	1	0.24	Sweden	1	0.24				Peru	1	0.24
Ethiopia	2	0.49	Indonesia	2	0.49							Belgium	1	0.24						
Egypt	2	0.49	Taiwan	2	0.49							Russia	3	0.73						
Senegal	2	0.49	Iran	2	0.49															
Zimbabwe	2	0.49	Vietnam	2	0.49															
Congo			Turkey	5	1.22															
Kinshasa	1	0.24	Israel	1	0.24															
Botswana	1	0.24	Afghanistan	3	0.73															
Uganda	1	0.24	Thailand	1	0.24															
			Cambodia	1	0.24															
			Saudi Arabia	1	0.24															
			Beirut	2	0.49															
<b>Total</b>	<b>49</b>	<b>11.92</b>		<b>54</b>	<b>13.2</b>		<b>6</b>	<b>1.46</b>		<b>18</b>	<b>4.39</b>		<b>50</b>	<b>12.2</b>		<b>225</b>	<b>54.9</b>		<b>8</b>	<b>1.95</b>

**Figure 1: Distribution of Publications by Continents of Research Focus**





**Figure 2: Geographical Distribution of Authors**

