

Bibliometric analysis of Community pharmacy research activities in Nepal over a period of 1992-2018

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ABSTRACT

Introduction: Community pharmacy services are an integral part of the healthcare system directly involved in providing safe and effective patient care services. Despite the beneficial role of the community pharmacist, limited research focusing on their roles and responsibilities have been conducted. Thus, a bibliometric study was carried out to give a bibliometric overview of publications on community pharmacy in Nepal.

Method: This is a bibliometric review of published literature of articles on community pharmacy in Nepal. The extensive literature search was carried out using PubMed, Google Scholar, NepJol as the sources of data. The community-based articles published from January 1, 1992, up to December 31, 2018, were retrieved. The keywords or medical subject headings (MeSH) terms, such as “Community Pharmacy”, “Community Pharmacist”, “Community Pharmacies”, “Community Pharmaceutical Services”, “Community Pharmaceutical Service”, “Private Pharmacy” and “Retail Pharmacy” were used. Nepal was entered as a country affiliation.

Result: A total of forty-seven articles were retrieved, of which 87.5% (N=47) were based on original research papers. The maximum number of an article published in a single year was 17.02% (The majority [8 (17.02%)] of articles were published in 2016. The average number of authors per article was 4.65 with a standard deviation of 2.33. These articles were published in 38 journals, of which 10 articles were published in the journal without the impact factor or Scimago Journal and Country Rank.

Conclusion: Scientific publications from community pharmacy settings are not sufficient in Nepal. Hence, more analytical research work should be carried out to enhance the community pharmacy services and to promote the quality use of medicines in Nepalese society.

Keywords: Community pharmacist, Community pharmacy, Community pharmacy services, Private pharmacy, Retail pharmacy

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INTRODUCTION

As a healthcare service provider, a pharmacist is dedicated to providing pharmaceutical care services to the patient to ensure safe and effective use of medicines in the community.¹ Community pharmacists are the basic providers of health services and medicines to the local community. In Nepal, community pharmacy as a service is still in its developing phase and most of the sales and distribution of medicines happen through retail pharmacies.² Very few pharmacies are run as a community pharmacy where a pharmacist provides medicines and healthcare services, majority of pharmacies are still run as product or medicines' sales-oriented pharmacy retail outlet. In the common term, these pharmacies are also called "medicine shop". The majority of the patients opt for health services through a nearby community pharmacy. The practice of pharmacy is anticipated to shift towards retailing medicines rather than the healthcare system if pharmacists don't actively act for involving their roles in clinical practice settings.^{3,4}

In the current situation, retail or private pharmacies are present in different communities of urban areas, where they are recognized to be "first point of call" for advice on various health problems. Nevertheless, these pharmacy services are underutilized at a community level.⁵⁻¹⁰ In high-income countries, the role of a community pharmacist is well recognized. Both the professional pharmacy associations and health policymakers work under pressure with other primary care providers such as doctors and nurses to provide support for patients in improving medication adherence to medicines and rational prescribing by doctors.¹¹

On the contrary, in developing countries like Nepal, community pharmacy is run by unqualified personnel or professionals other than a pharmacist such as Community Medicine Assistant (CMA), health assistants, and individuals with 3-month orientation training in pharmacy.¹² It is required that the pharmacist should actively involve in healthcare in the community.¹³ Lack of access to essential

medicines, irrational use of medicines due to poor regulation and shortages of adequately trained health professionals are some of the hindrances in the low and middle-income countries to provide safe and effective healthcare services in the public. Such barriers are even noted in different published articles, yet not taken any initiative. World Health Organization (WHO) has promoted essential medicines and other programs to assist in developing suitable drug selection and procurement policies to achieve access to essential medicines. However, problems still persist in the developing regions in providing effective pharmaceutical care to the patients.^{14, 15}

Formerly, the role of the pharmacist had not been practiced in community settings. However, we can now see the presence of a few pharmacists in the community pharmacies, who have been contributing to provide quality services for better patient care. According to the drug act 1978, pharmacists, assistant pharmacists or "professionals" can run a community pharmacy after registering the pharmacy with the Department of Drug Administration (DDA).¹⁶ The role of a community pharmacist is now understood but has not been well recognized in the field of community. Thus, a lot of effort has to be made to tackle such issues in the near future.¹⁷

Also, the study of community pharmacy and interests of community pharmacists' research might be affected due to the involvement of unqualified personnel in pharmacy. Thus, one of the studies that can be done to know whether the published research articles are highly impactful or not is a bibliometric study. The bibliometric study helps with the qualitative and quantitative analysis of the published research articles and may bring extreme interests to the researcher to study further in the studied area.¹⁸ Globally, a limited number of such studies have been conducted in the field of community pharmacy so far.¹⁹⁻²¹ Therefore, the main objective of the current study was to assess the scientific activity in community pharmacy in Nepal through a bibliometric analysis of 26 years.

MATERIALS AND METHODS

This research is a bibliometric review of research conducted at community pharmacies in Nepal. An intensive literature search on the community-based research articles was carried out to fulfill the objectives of the study. Databases such as PubMed, Google Scholar, Nepjol, and Scopus were used for search strategies. The keywords or MeSH terms such as “Community Pharmacy”, “Community Pharmacist”, “Community Pharmacies”, “Community Pharmaceutical Services”, “Community Pharmaceutical Service”, “Private Pharmacy” and “Retail Pharmacy” were incorporated as title, keywords, and abstract and Nepal was entered as a country affiliation.

Inclusion and Exclusion Criteria

All the original research papers and review articles published in the field of community pharmacy settings were included whereas the articles like drug bulletin, short communications, projects such as thesis/dissertations or those articles not involving any of the community pharmacy studies were excluded.

Statistical Analysis

The articles published from January 1, 1992, till December 31, 2018, were retrieved and the information obtained was recorded, then analysed using Microsoft Excel. The variables such as main author, number of authors, year of publications, journal type, number of authors per publication, the impact factor of all the journals in which articles were published were recorded and analyzed.

RESULTS

A total of forty-seven articles on community pharmacy were reviewed and analyzed.

It was recorded that the majority [8 (17.02%)] of papers were published in 2016. From 1992 -2004, there was no change in the rank of publications. Figure 1 shows an annual number of community pharmacy publications in Nepal published between Jan 1991 and Dec 2018.

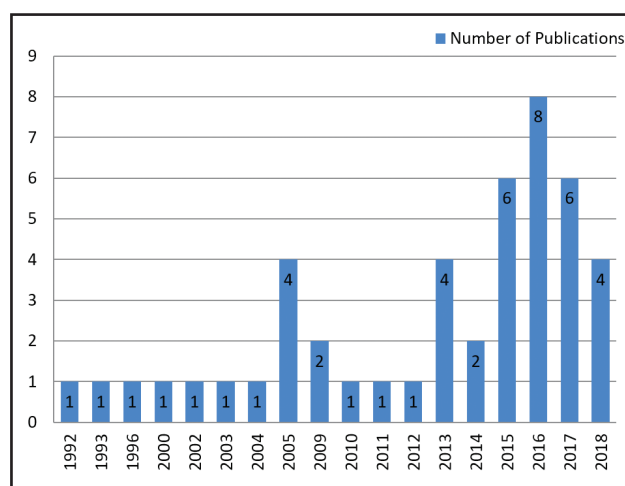


Figure 1: Annual number of community pharmacy publications in Nepal

Likewise, a total of 49 authors were accounted for. Out of which one paper was published with 13 authors whereas a single author was recorded in three articles. The average number of authors per article was found to be 4.65 with the S.D. of 2.338. Table 1 shows the frequency of articles stratified by the number of authors.

Table 1: Frequency of articles stratified by number of authors

N*	1	2	3	4	5	6	7	8	13
F*	3	6	9	6	5	9	7	2	1

*N = Number of Authors per article, F = Frequency

Different types of articles were published in different journals (Table 2). Out of 47 papers, 42 (87.5%) articles were based on an original research paper. A Brief report, Case report, Letter to the editor, and review articles were also retrieved.

Table 2: Types of a paper published in the journals

Types of paper	Frequency (%)
Brief Report	1 (2.1)
Case Report	1 (2.1)
Letter to editor	1 (2.1)
Original Research Article	42 (87.5)
Review article	3 (6.3)
Total	47 (100.0)

The distribution of different journals, in which the papers were reviewed and analyzed with the journal issue number (ISSN) and Impact Factor (IF) were delineated (Table 3). The majority [5 (10.4%)] of the articles were published in the Journal of Nepal Health Research Council whereas 10 articles were published in a journal without official IF or Scimago Journal and Country Rank (SJR).

Table 3: List of published journals

Journals	Frequency (%)	Journal ISSN	Journal SJR/ IF
Journal of Educational Evaluation for Health Professions	2 (4.2)	19755937	Q3 0.31 (2018)
Archives of Pharmacy Practice	1 (2.1)	2045-080X	Q3 0.19 (2018)
Australasian Medical Journal	2 (4.2)	1836-1935	Q4 0.14 (2018)
Banking journal	1 (2.1)	2091-0606, 2091-0614	NA
BMC Health Services Research	1 (2.1)	14726963	Q1 1.06 (2018)
BMC Public Health	1 (2.1)	1471-2458	Q1 1.38 (2018)
BMC Research Notes	1 (2.1)	1756-0500	Q2 0.66 (2018)
BMJ Journals Sexually Transmitted Infections	1 (2.1)	1472-3263, 1368-4973	3.365 (2018) IF
Canadian Journal of Hospital Pharmacy	1 (2.1)	84123	Q2 0.36 (2018)
Emerging Infectious Diseases	1 (2.1)	10806040, 10806059	Q1 3.14 (2018)
European Journal Tropical Medicine and International	2 (4.2)	1365-3156, 1360-2276	Q1 1.51 (2018)
Global Health Research and Policy	1 (2.1)	2397-0642	NA
Health Services Research and Managerial Epidemiology	1 (2.1)	2333-3928	NA
Indian Journal of Pharmacy Practice	1 (2.1)	0974-8326	0.06 IF 2018
International Journal for Quality in Health Care	1 (2.1)	13534505, 14643677	Q1 1 (2018)
International Journal of Gynecology & Obstetrics	1 (2.1)	1879-3479	2.17 (2016) IF
International Journal of Pharmaceutical Research & Development	1 (2.1)	0974 – 9446	NA
International Journal of Pharmacy Teaching & Practices	1 (2.1)	1986-8111	NA
International Journal Of Scientific Reports	1 (2.1)	2454-2156, 2454-2164	NA
International Journal of Tuberculosis and Lung Disease	1 (2.1)	1027-3719, 1815-7920	2 (2018) IF
International Perspectives on Sexual and Reproductive Health	1 (2.1)	1944-0391, 1944-0405	2.14 (2017) IF
International Quarterly of Community Health Education	1 (2.1)	0272684X, 15413519	Q2 0.37 (2018)
Journal of Clinical and Diagnostic Research	2 (4.2)	0973709X	Q3 0.35 (2018)
Journal of College of Medical Sciences-Nepal	1 (2.1)	2091-0657, 2091-0673	NA

Journals	Frequency (%)	Journal ISSN	Journal SJR/ IF
Journal of Diabetes and Metabolic Disorders	1 (2.1)	2251 - 6581	Q2 0.67 (2018)
Journal of Nepal Health Research Council	5 (10.4)	19996217	Q3 0.25 (2018)
Journal of Nepal Medical Association	1 (2.1)	282715	Q4 0.13 (2018)
Journal of Nobel Medical College	1 (2.1)	2091-2331, 2091-234X	NA
Journal of Pharmaceutical Health Services Research	1 (2.1)	17598893, 17598885	Q3 0.29 (2018)
Nepal Medical College Journal : NMCJ	1 (2.1)	2676-1319, 2676-1424	NA
Ophthalmic Epidemiology	1 (2.1)	09286586	Q1 1.26 (2018)
Pharmacy Practice	1 (2.1)	1885642X, 18863655	Q1 0.52 (2018)
PLoS ONE	1 (2.1)	1932 - 6203	Q1 1.1 (2018)
SAGE Open Medicine	2 (4.2)	20503121	NA
Saudi Pharmaceutical Journal	1 (2.1)	13190164	Q1 0.67 (2018)
Sexual and Reproductive Health Matters	1 (2.1)	2642 - 3170	2.119 (2018) IF
Social Science and Medicine	2 (4.2)	0277-9536	Q1 2.03 (2018)
Southeast Asian Journal of Tropical Medicine and Public Health	1 (2.1)	1251562	Q3 0.32 (2018)

*N/A: Not available

Analysis of Keywords Using the Word Cloud Generator

The image generated based on the keywords that were extracted from the articles using Word Cloud generator can be seen in Figure 2. The keywords like pharmacy, Nepal, community, and pharmacist seem more common than other words demonstrating that they have been frequently mentioned in the articles.



Figure 2: Analysis of keywords using the Word Cloud generator

DISCUSSION

The present study used bibliometric indicators to assess scientific activity about community pharmacy during the period between 1991 and 2018, i.e. 26 years. This article aimed to analyze the bibliometric of community pharmacy research activities in Nepal. Globally, a limited number of bibliometric studies have been conducted in community pharmacy so far.¹⁹⁻²¹

A total of 47 papers were recorded, which represented a low volume of publications in the field of community pharmacy. This could be due to the presence of few pharmacy practice journals in Nepal. Similarly, low rate of publications was observed in studies conducted in India and Middle Eastern countries.^{19,21} Furthermore, our study showed a higher number of publications in the year 2016. However, it seemed that the number of publications in the related field has decreased. This may be due to the lack of interest of pharmacist researchers in the community or may be due to the unavailability of funds or due to the lack of supportive pharmacy practice research environment in Nepal. On the contrary, in a study conducted in

Spain, the number of publications in the community pharmacy was found to be increased due to the availability of specialized journals in Spain.²⁰

Further, the research papers based on community pharmacies are more of a descriptive type. There are no studies with experimental study designs such as randomized controlled trials or cohort/case-control studies.¹⁹⁻²¹ This shows that the pharmacy researchers in Nepal are not conducting interventional and other applied experimental research in Nepal. Some of the articles were published in the journals having no impact factor or Scimago Journal and Country Rank. This could prevent wide citation of the work or as well as impact the overall quality of the work done.

To the best of our knowledge, this is the first community-pharmacy based bibliometric study carried out in Nepal. The community pharmacy practice sector is lagging behind in both practice and research terms and is dominated by sales-driven retail pharmacy mind-sets. One can see a similar trend in the neighboring country India.²¹ Community pharmacies need to evolve as healthcare providers that can provide both pharmaceutical care services and sale/dispense medicines. Such a community pharmacy practice environment can develop through evidence-based practice that is guided by community pharmacy-based research. Thus, there is an urgent need to carry out more community focused studies with sound research design to promote quality community pharmacy service.

Limitations of this study

The number of publications analyzed in this study may not represent all the community pharmacy-based research articles.

CONCLUSION

We conclude that limited numbers of papers are published in the field of community pharmacy in Nepal. Thus, there is an urgent need for the researchers to focus on this area and contribute to developing more research papers in community pharmacy settings.

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