Analysis and Visualisation of Research Trends in Community Nutrition: A General Review

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Abstract: Community nutrition plays a significant role in the development of community and society as a whole. The role of community medicines in the nutritional balance of society is very important.The bibliometric analysis had been conducted to understand the active authors, organizations, journals, and countries involved in the research domain of "Community nutrition" by using the published articlesfrom "Scopus". The resources were analyzed using the VOS viewer to develop analysis tables and visualization maps. The most active journal in this research domain was identified as the Nutrition Research and Practice; and American Journal of Preventive Medicine.The most active countries were South Korea. The leading organization engaged in the research regarding "Community nutrition" wasthe Ewha Womans University and Seoul National University of South Korea. The most active authorswere Ha A.W., Kim W.K., Kim J., Lee J., and Kim Y.

Keywords: Community nutrition, Bibliometric analysis, VOS viewer, Health

1. INTRODUCTION

The branch of medicine dealing with health care issues of the community as a whole is being called Community medicine, it is often considered preventive and social medicine (PSM). Community medicine is not a new branch of medicine but a new orientation or approach for better communities and better society[1]. This branch of knowledge focuses on families, workplaces, and the community as a whole, other than individual patients. Community medicine is multi-disciplinary in nature and focuses on community health, community nutrition, Community psychiatry, epidemiology, primary health care programs, monitoring and evaluation of health programs, biostatistics, community work-life balance, community-based trials, etc.

Nutrition is the science of food and the relationship between food and health. Community nutrition plays a significant role in the development of community and society as a whole. The role of community medicines in the nutritional balance of society is very important. This study focuses on consolidating literature regarding community nutrition by identifying the leading authors, countries, journals, and organizations engaged in research regarding community nutrition. The first section is the introduction, followed by the discussion of the methodology by which the research was conducted. The third section deals with results. The fourth section deals with the discussion and conclusion.

1.1 Research Objectives

a)   To consolidate the literature regarding the "Community nutrition"
b)   To find out the trends related to research in the "Community nutrition"

The following research questions are framed for conducting bibliometric analysis systematically.

1.2 Research Questions

a)   Whom are the active researchers working on "Community nutrition"?
b)   Which are the main organizations and countries working on "Community nutrition"?
c)   Which are the main journals related to "Community nutrition"?

2. RESEARCH METHODOLOGY

This bibliometric analysis had drawn resources only from the Scopus. For the article selection, the Boolean used was TITLE-ABS (Community nutrition) on 29/12/2020. All the tables in this paper were created by using Microsoft Excel and VOS Viewer. Grammarly was used for spelling and grammar checks. Mendeley was used for article review and citation. This paper had been inspired by bibliometric analysis in its presentation style, analysis, and methodology from the works.[2-6]

3. RESULTS

This first round of search produced an outcome of 1131 documents, in nine languages, out of which 1074 documents were in English. The classification of document categories is shown in Figure 1. For improving the quality of the analysis, we had selected only the peer-reviewed articles and all other documents had not been considered. Thus after using filters "Article"and "English" the second round search produced an outcome of 988 English articles (both open access and others) and had been used to conduct bibliometric analysis and visualization using VOS Viewer. The English research articles in this domain since 1947 had been shown in Figure 2.
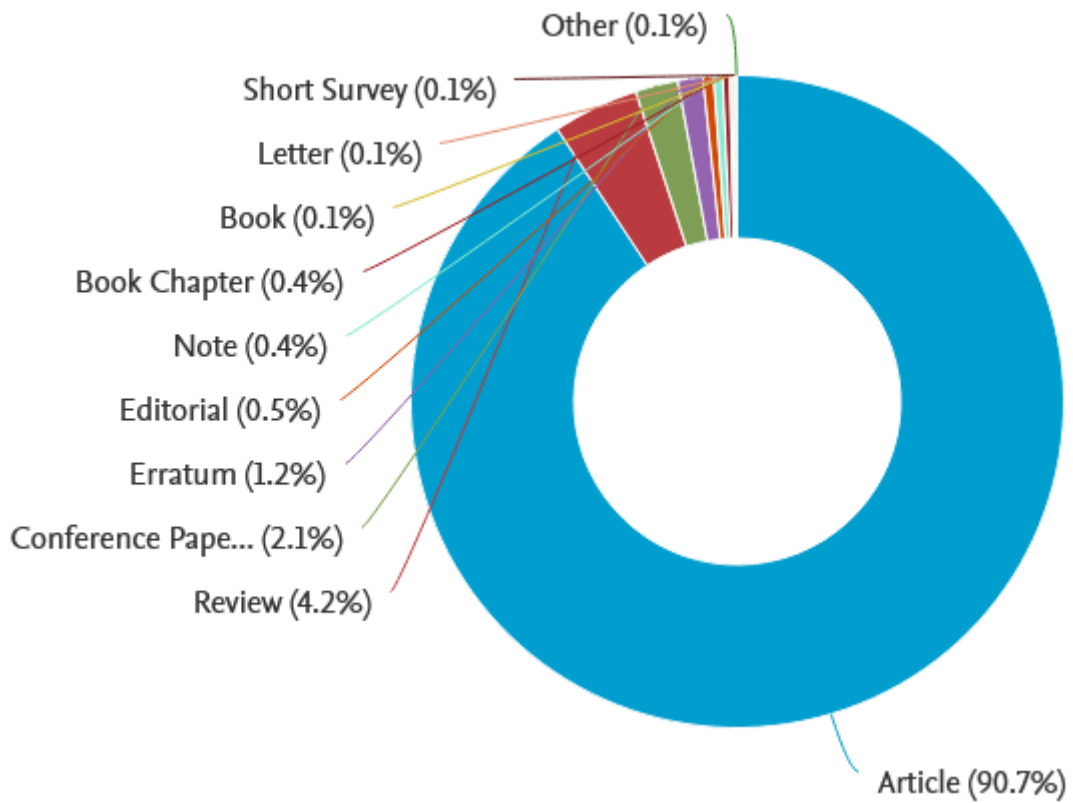
Figure 1: Classification of the documents on "Community nutrition", Source: www.scopus.com
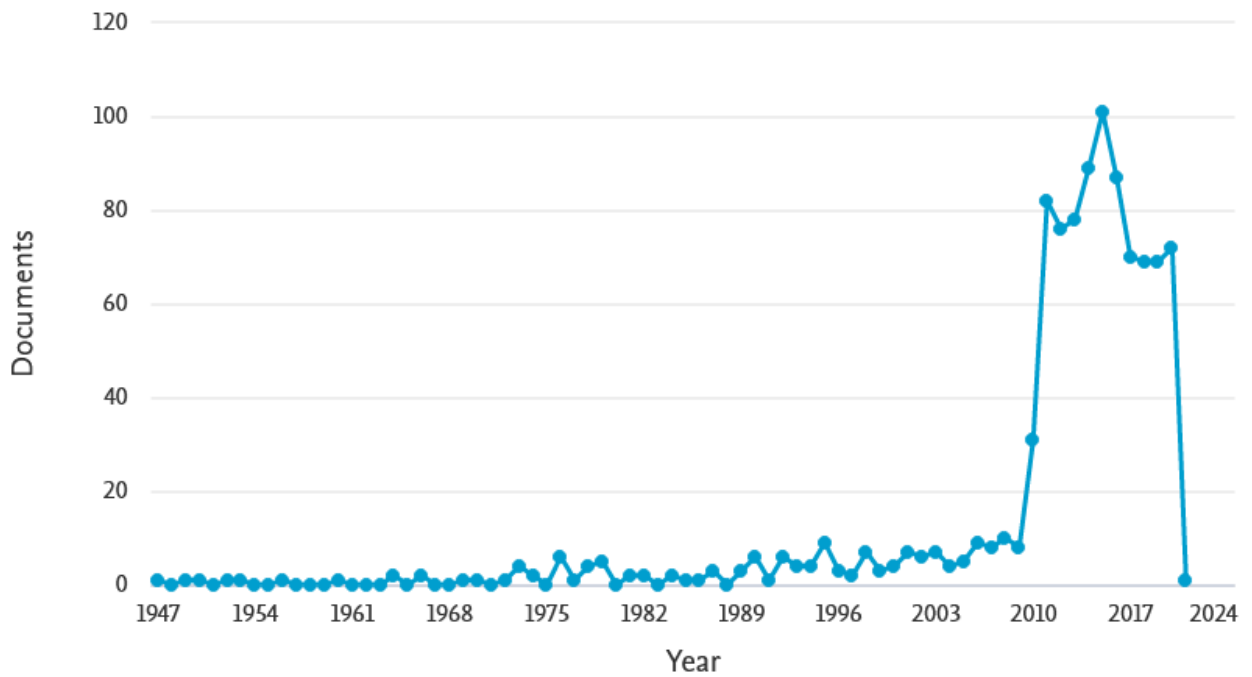

Figure 2: Period wise publication of English articles, Source: WWW.scopus.com

3.1 Who are the leading authors on "Community nutrition"?

Co-authorship analysis, publication volume,and citation analysis had been used to spot out the leading authors on Community nutrition. The results of co-authorship analysis and citation analysis using VoS viewer are shown in figure 3 and figure 4 respectively.Leading authors based on publication volume are shown in Figure 5.For a better presentation of the analysis, the parameters used were the minimum number of documents of an author as 10and the minimum number of citations of authors as one. This combination plotted the map of 35 authors, in seven clusters.
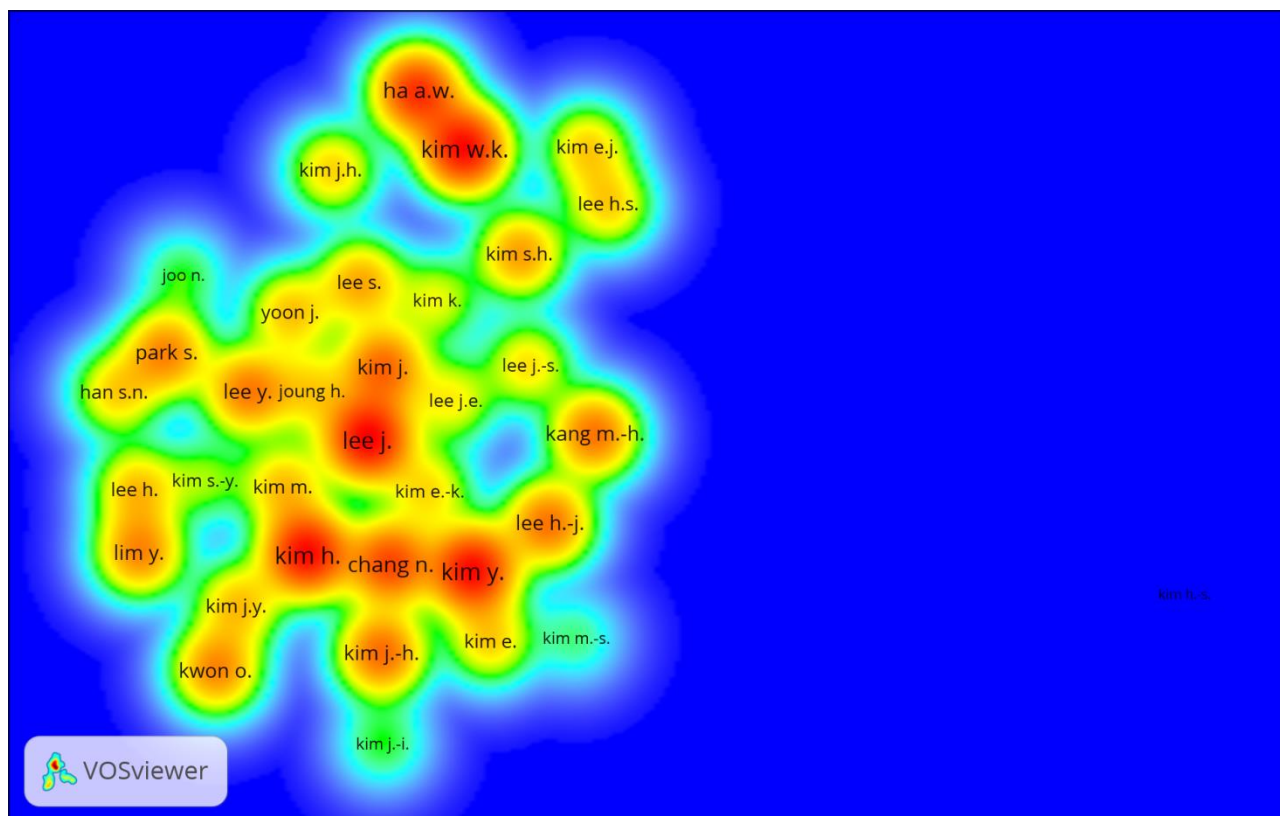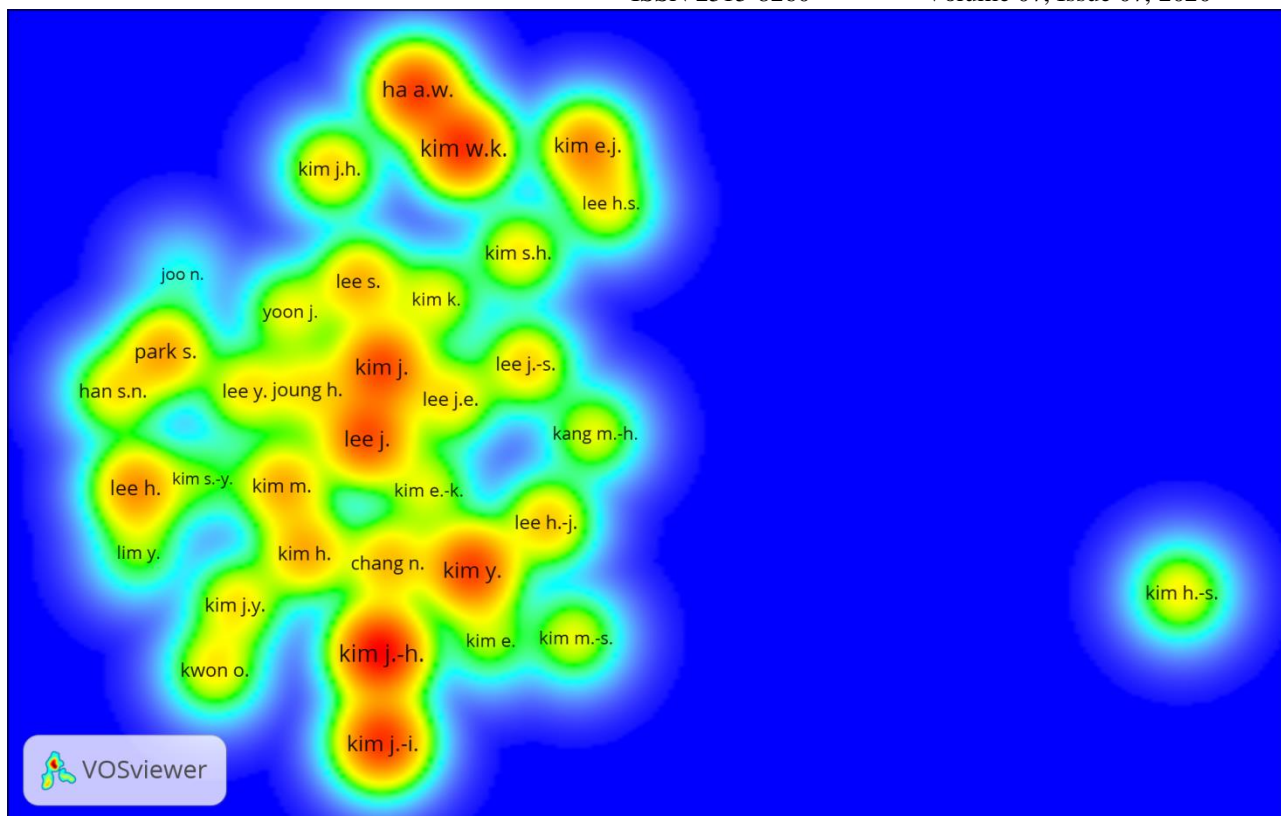

Figure 3: Co-authorship analysis on basis of authors
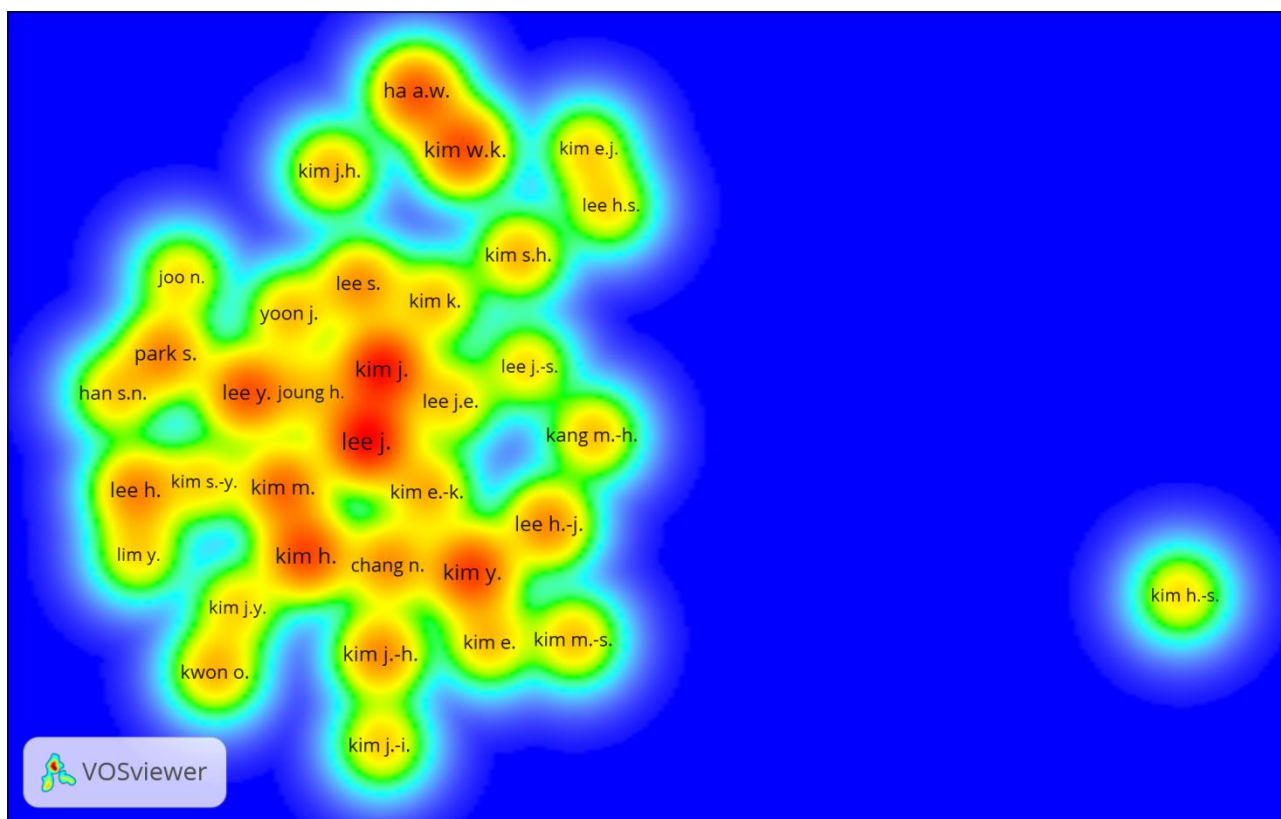
Figure 4: Citation analysis based on authors.

Figure 5: Leading authors based onthe publication of documents

In Co-occurrence analysis, we had used all keyword analyses, by keeping the minimum number of occurrences of a keyword as30. This combination plotted the map of 34thresholds, in fiveclusters. The overlay visualization of co-occurrence analysis of keywords has been shown in Figure 6.
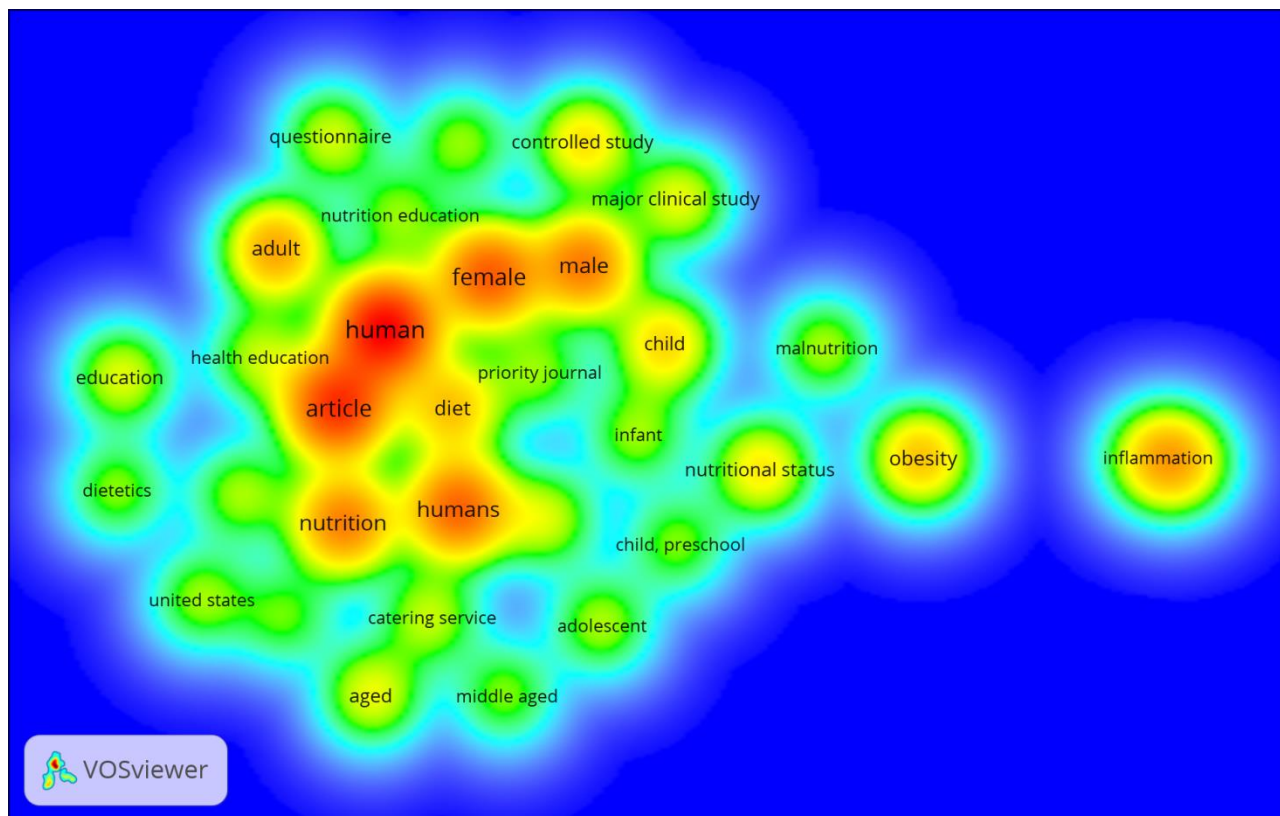

Figure 6: Co-occurrence analysis on basis of all keywords

3.2 Which are the top organizations and countries researching "Community nutrition"?

The most leadingorganizations engaged in research on "Community nutrition" had been found out by the citation analysisand basis of publication.The result of the above analysis is shown in table 1.

Table 1: Highlights of the most active organization

Organizations	Country	Documents	Citations	Average Citations per document
Ewha Woman's University	South Korea	51	506	9.9
Seoul National University	South Korea	51	472	9.3

Co-authorship analysis and citation analysis of the countries engaged in the research on "Community nutrition" had been shown in Figure 7 and Figure 8. Volume analysis is shown in figure 9. For a better presentation of the analysis, the parameters used were the minimum

number of documents of an author as two and the minimum number of citations of authors as one.This combination plotted the map of 43 countries,13clusters.
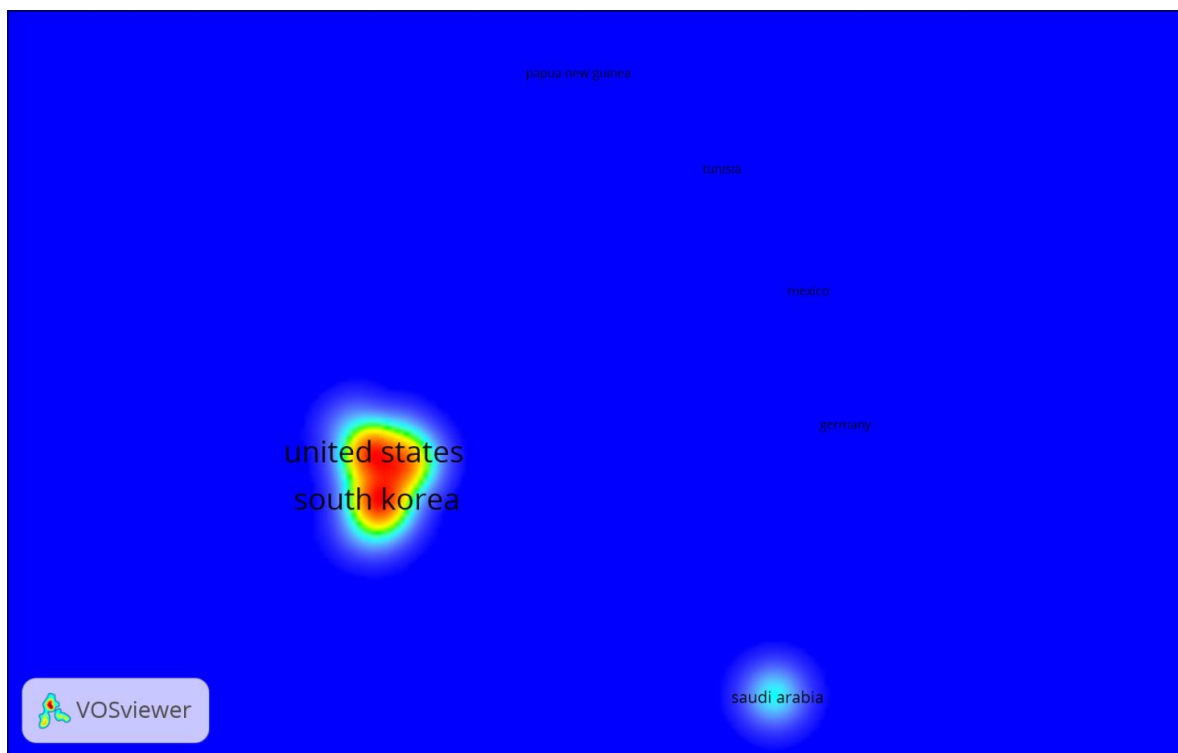

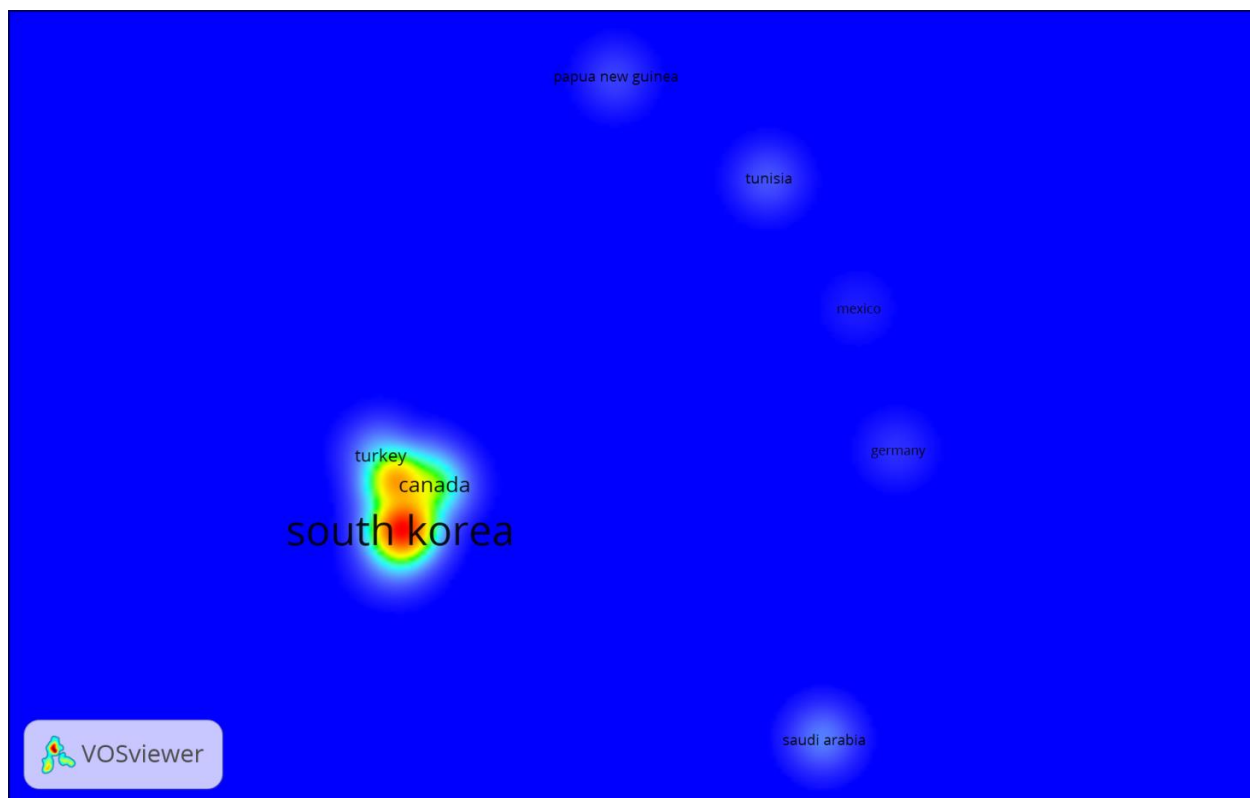Figure 7: Co-authorship analysis on basis of countries

Figure 8: Citation analysis on basis of countries
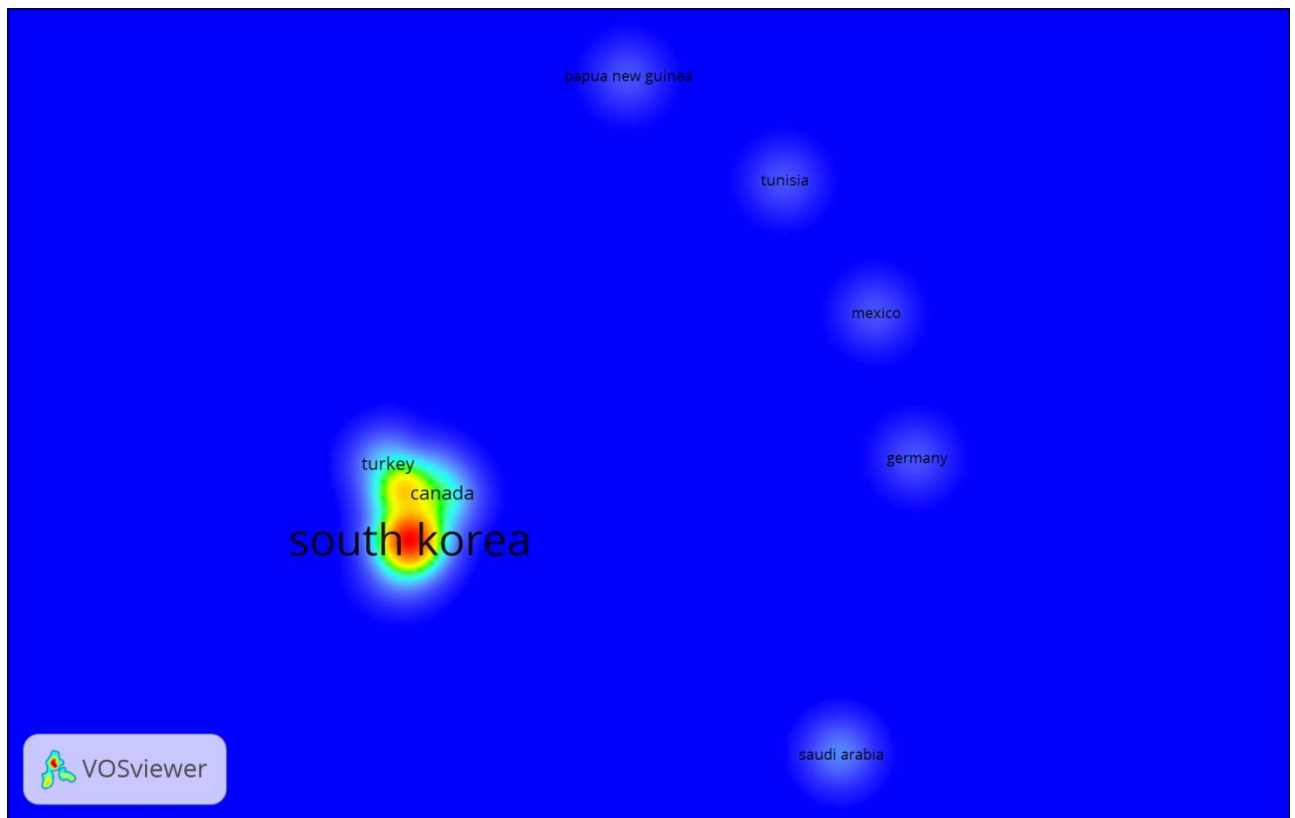
Figure 9: Leading countries in the publication of documents

3.3 Which are the leading journals on "Community nutrition"?

Link analysis and citation analysis were used to identify the most active journal in this research domain. We have also used publication volume to identify the leading journals in this research domain. We have taken the parameters of the minimum number of documents of a journal as two and the minimum number of citations of a journal as one for the link analysis and citation analysis. The citation analysis of top journals relating to "Community nutrition" had been shown in Figure 10. Link analysis is shown in Figure 11 and the analysis of journals based on publication volume in Figure12.
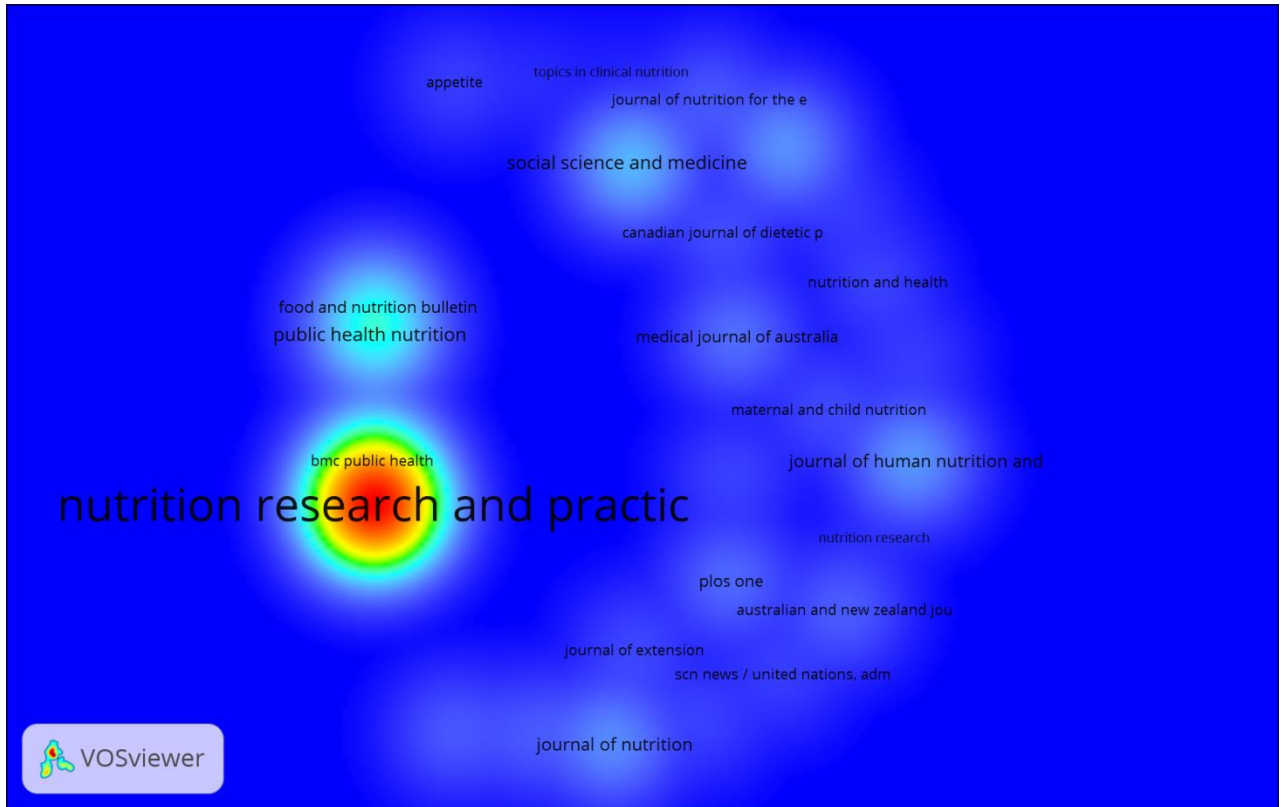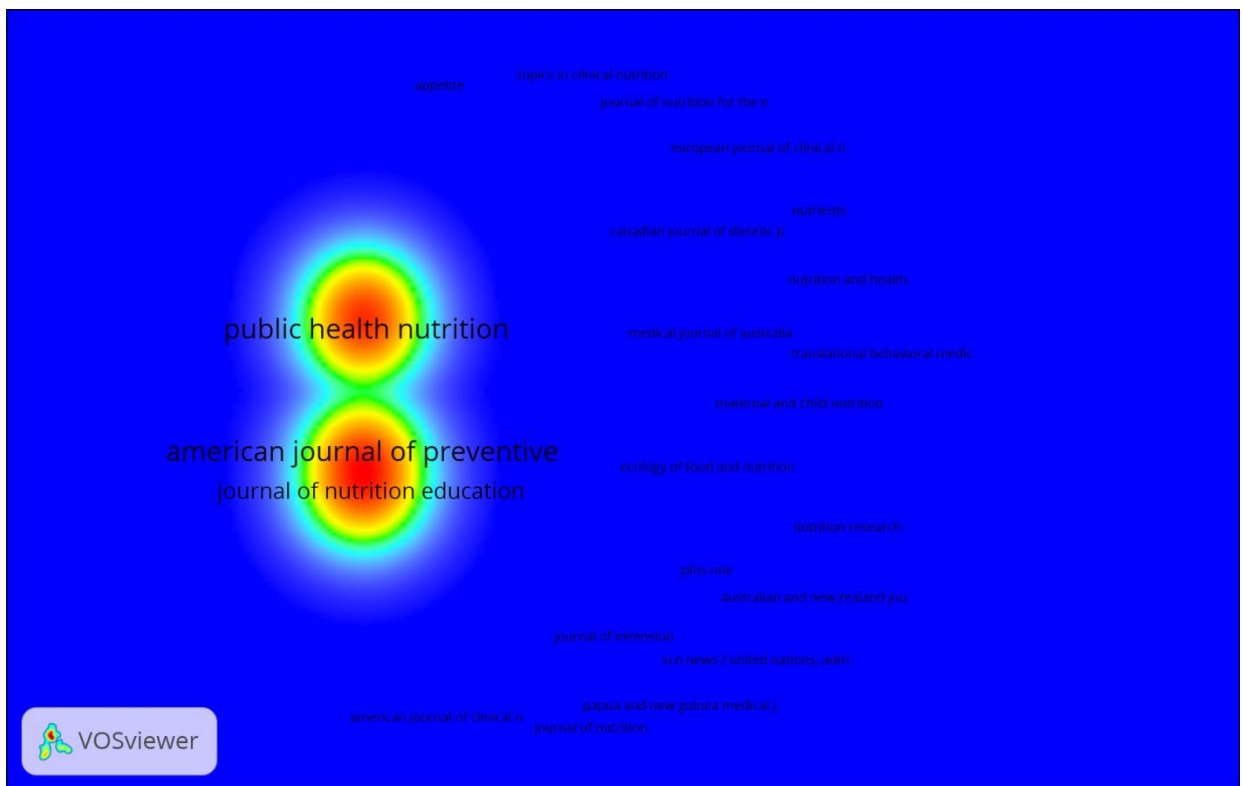
Figure 10: Leading journals based on citation
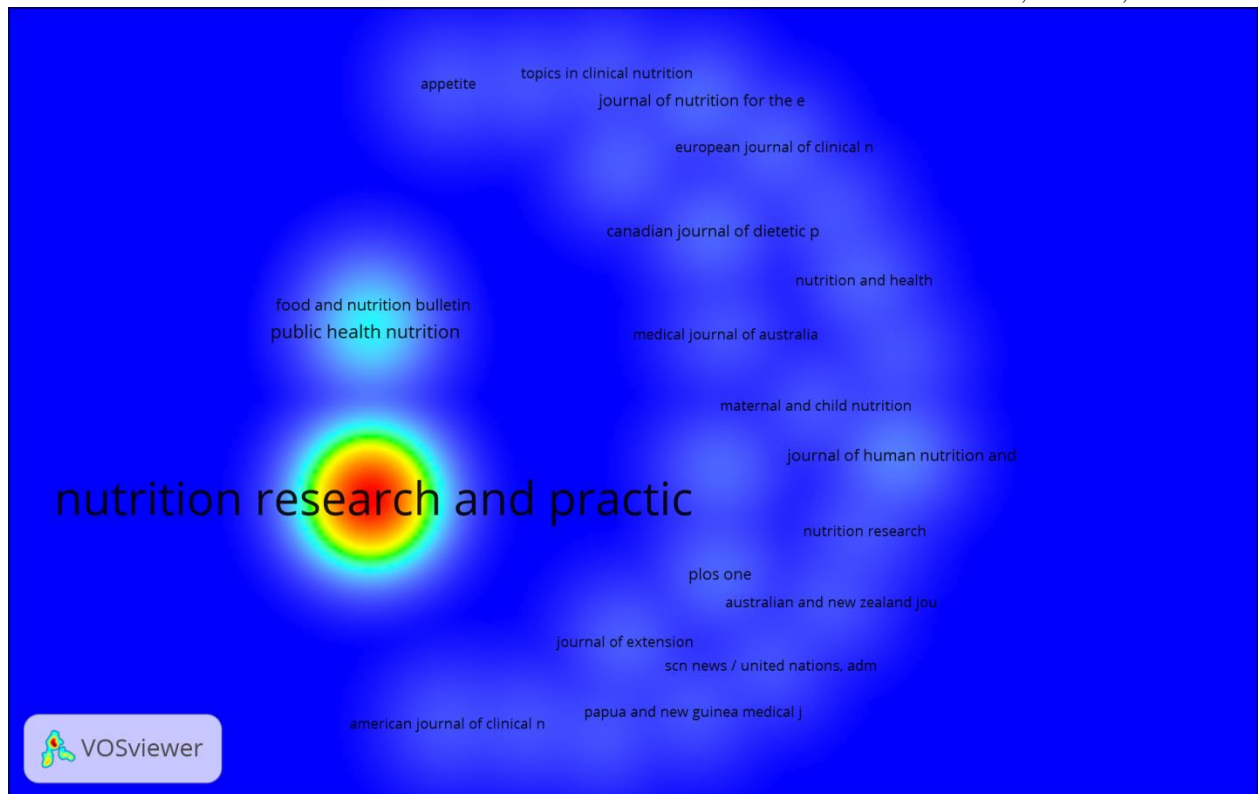

Figure 11: Leading journals based on co-authorship links

Figure 12: Leading journals based on publication volume

4.   Discussion and Conclusion

Communitynutritionis an interesting research domain and the most active journalwasthe Nutrition Research and Practice; and American Journal of Preventive Medicine.The most activecountry of the research domain wasSouth Koreawith the leading position inthe citation, publication volume, and co-authorship links.The leading organizations engaged in the research regarding "Community nutrition" wereEwha Woman's University and Seoul National University of South Korea. The most active authors who had made valuable contributions related to "Community nutrition" were Ha A.W., Kim W.K., Kim J., Lee J., and Kim Ywith the leadership in publications, citations,and co-authorship links.This research domain offers a new avenue for researchersregarding future research.From the above discussion regarding the bibliometric patterns in the research regarding the "Community nutrition",this research had observed a gradual increase in research interest regarding the "Community nutrition" from the starting of the millennium and the momentum is going on positively.Thispoints out the relevance and potential of this research domain (Refer to Figure 2).

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