



Conceptual framework in Public Health Nutrition and Dietetics [PND] Research

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Background

A concept may be seen or defined as an idea, notion, thoughts, perception, or impression about something or anything that draws the attention of anyone. This concept may be about a question, problem, challenge, strength, success, or more. A framework may be seen or defined as an outline, agenda, or background of anything (1) that draws the attention of anyone. So, the concept or framework of a Public Health, Nutrition, and

Dietetics research may be seen as the ideal notion, thoughts, perception, or impression of a research or investigation whereas the framework of the research is the outline, agenda, or background of the Public Health, Nutrition, and Dietetics research. (2)

Therefore, the conceptual framework of a Public Health, Nutrition, and Dietetics research is the outline or agenda of the researcher’s idea, notions, perception, and the research or investigation (3). In other

words, the conceptual framework of a research idea may be seen as the whole, realistic direction of research ideas that form the fundamental intellectual, structures, plans, practices, and implementation of the selected research project. The conceptual framework defines the complete package made of the researcher's thoughts channeled towards the identification and mastery of the Public Health, Nutrition and Dietetics research topic, problem, questions, literature, theories, methodology/the methods, procedures and instruments, the data analysis and interpretation of findings, recommendations and conclusions (4).

According to Miles and Huberman (5), a conceptual framework or concept map pulls together, and make visible, what the research implicit theory is, or clarifies an existing theory. This can allow the researcher to see the implications of the theory, its limitations, and its relevance for a selected particular study. Again, it helps to develop theory and like memos, concept maps are a way of "thinking on paper"; they can help the researcher to see unexpected connections, or to identify holes or contradictions in a defined theory and define ways to resolve these. Public Health, Nutrition and Dietetics research concept maps usually require considerable reworking to get them to the point where they are most helpful (6)

Concept map development

To develop a Public Health, Nutrition and Dietetics research concept map, a set of concepts to work with is needed, knowing that it is all about trying to represent already existent theory the researcher already has about the challenge being studied, and not primarily set out to invent a new theory (7). On the other hand, topic keywords probably represent important concepts in the theory of

research being implemented (8). Some of these concepts can be pulled directly from things already written about Public Health, Nutrition, and Dietetics research topics under investigation. These may serve as a way of broadening the scope and spectrum of coverage of the research area

Existent Public Health, Nutrition, and Dietetics research topic may be used as an example in which already written topics may be used as a template to map out the clearly understood theory in this chosen topic. One key concept, idea, or term may be taken and an effort made to discuss and review extensively on all of the topics themes and subthemes that might be related to this key concept, idea, or term (9). Thereafter, the topics are scaled-down and only those that seem most directly relevant to a Public Health, Nutrition, and Dietetics research study under investigation may be studied.

The selected topic is placed under scrutiny by asking someone to review the topic under investigation to help point out areas of bias about the selected topic. Public Health, Nutrition, and Dietetics research concepts are not to be ignored based on personal experience rather based on the literature as these can be central to a conceptual framework. Strauss (10) and Miles and Huberman (5) provided additional advice on how to develop concept maps for any particular study. Once some concepts to work with are generated, how these are related and what connections exist among them must be confirmed.

Rational

It is debated that many publishers and authors have the right to present their Public Health, Nutrition, and Dietetics research report in one

way or the other. However, one thing stands out that in all researches, a generally good Public Health, Nutrition and Dietetics research paper include the one that has a very clear concept map making it clear for readers to locate the point of argument and what authors have achieved or tried to achieve in the paper (11). The significance of a conceptual map or framework cannot be overemphasized and this applies to all disciplines or events for which reliable answers are needed for critical questions (12).

Objective

In this Public Health, Nutrition and Dietetics research study efforts were made to review in retrospect activities and updates taking place in the research world over the past 3 decades with the ultimate goal of showing the significance of conceptual framework in Public Health, Nutrition, and Dietetics research.

Materials and Methods

In this retrospective cross-sectional study, we downloaded and perused 486 published full-length original papers, published addendum, corrections, editorials, abstracts of meetings, conference proceedings, and review articles, on the general concept of Conceptual framework. This searching and corresponding download of relevant papers were made from a globally recognized research-based data repository that included but not limited to the Web of Science (WoS) (13) core collection database on the ninetens of July 2020 at about 10.25 GMT+2). The database of PubMed, Research Gate, and Google scholars was perused to be sure no new documents relevant and necessary for this study were missed out. However, the web of science formed the major and reference database for this study because our software was more compatible to recovered data

encoded in the web of science database while other databases consulted served to provide other relevant articles, we considered imported but probably missing in the web of science.

Boolean topic search approach

The Boolean topic search approach (14) used included “(Conceptual * AND framework\$) OR (Framework of * AND research concept \$) to encompass all relevant and available documents (15) on the subject of Conceptual framework between 1990 and 2019. At the time of this study, we judged that the Web of Science Core Collection database had enough user-friendly and accessible academic research databases relatively covering enough journals, books, conferences as well as millions of records from clarivate.libguides.com (references). To ensure the inclusion of abbreviated or shorten words, the wildcard * and \$ were added to the end of the search algorithms. Thereafter, all documents that meet the eligibility criteria of the Conceptual framework were retrieved and exported into BibTex file format and the authors, titles, abstracts mined in PDF file format.

Data analysis

All the bibliometric variables were retrieved filtered and normalized for quality control. The results were analyses in the bibliophagy plugin package of the 3.5.1 version of R-studio software, while the codes and commands were adopted from <https://www.bibliometrics.org> to evaluate the bibliometrics indices. Tables and graph were made in Microsoft excel 16 version and network maps were visualized in 1,6 Vox-viewer software

Results

In this study, 409 papers written by 1425 authors over three decades were recovered, perused, and analyzed as shown in table 1. Ninety-nine (99) documents were written by 96 authors while 1329 authors wrote 1230, multi-author documents giving 3.62 collaborative indexes. Authors and co-authors per documents indexes were 3.48 and 3.62 respectively. Two hundred and eighteen (218) documents were full-length articles. Twenty-nine book chapters and 10 proceedings papers were originally presented as articles. Fifty-two (52) proceedings papers, 56 reviews, three of them were originally presented as journal articles while 18 were editorial materials and 18 articles were Editorial documents respectively.

Description	Results
Documents	409
Sources (Journals, Books, etc.)	344
Keywords Plus (ID)	1288
Author's Keywords (DE)	1027
Period	1991 - 2019
Average citations per documents	34.27

Authors	1425
Author Appearances	1482
Authors of single-authored documents	96
Authors of multi-authored documents	1329
Single-authored documents	99
Documents per Author	0.287
Authors per Document	3.48
Co-Authors per Documents	3.62
Collaboration Index	4.29
Document types	
ARTICLE	218
ARTICLE; BOOK CHAPTER	29
ARTICLE; PROCEEDINGS PAPER	10
BOOK	1
BOOK REVIEW	3
CORRECTION	2
EDITORIAL MATERIAL	18
MEETING ABSTRACT	17
NOTE	3
PROCEEDINGS PAPER	52
REVIEW	56

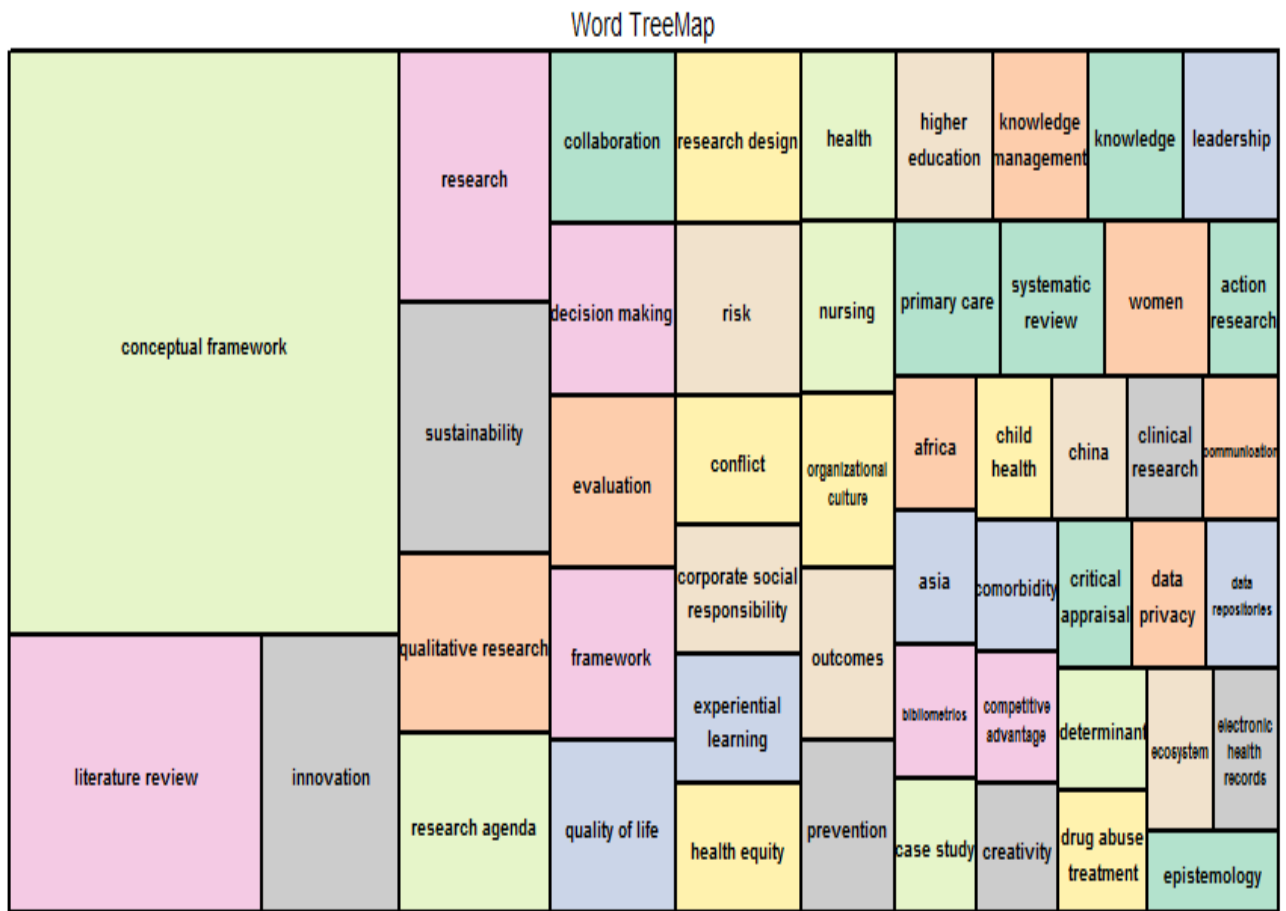


Figure 1: Word treemap with a conceptual framework in Public Health, Nutrition, and Dietetics research

From the figure1, the **conceptual framework** received the biggest category allotment followed by research agenda, health, nursing, case study, and determination. **A literature review** was the next biggest category allotment and the associated variables included research, decision making, framework, bibliometrics, and competitive advantage. The next category is **innovation** and associated variables included, including sustainability, prevention, creativity, clinical research, and electronic health records. The next category was **qualitative research** and the corresponding variables included evaluation, Africa, knowledge management, women, data privacy, and communication. **Collaboration** and **quality of life** had equal category size allotment with variables of collaboration including primary care, systematic review, critical appraisal, knowledge, action research, and epistemology whereas experiential learning, Asia, comorbidity, leadership, and data repositories as the associated variables. **Risk** is the next category and associated variables included cooperate social responsibility, outcomes, higher education, China, and ecosystems respectively

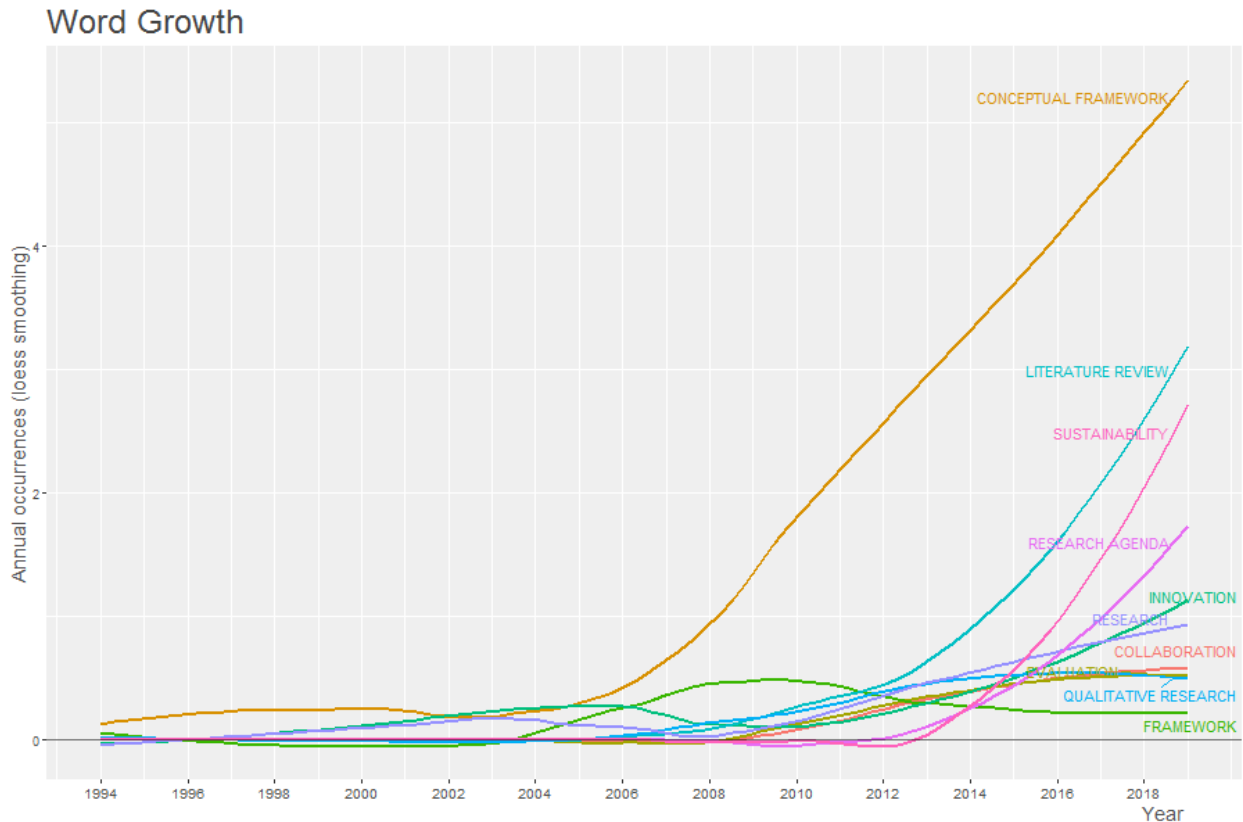


Figure 2: Word growth trend with a conceptual framework in Public Health, Nutrition and Dietetics research

Figure 2: The word growth graph shows word usage in the studied period as relates to conceptual framework and research. While the frequency of words used remained relatively stable from 1994 to 2004, the use of the conceptual framework experienced a hype as seen in a steep rise from 2008 till 2018. All other words used remained relatively stable and low in occurrence from 2004 till 2014, thereafter literature review, sustainability, research agenda, and innovation as shown in the fig above.

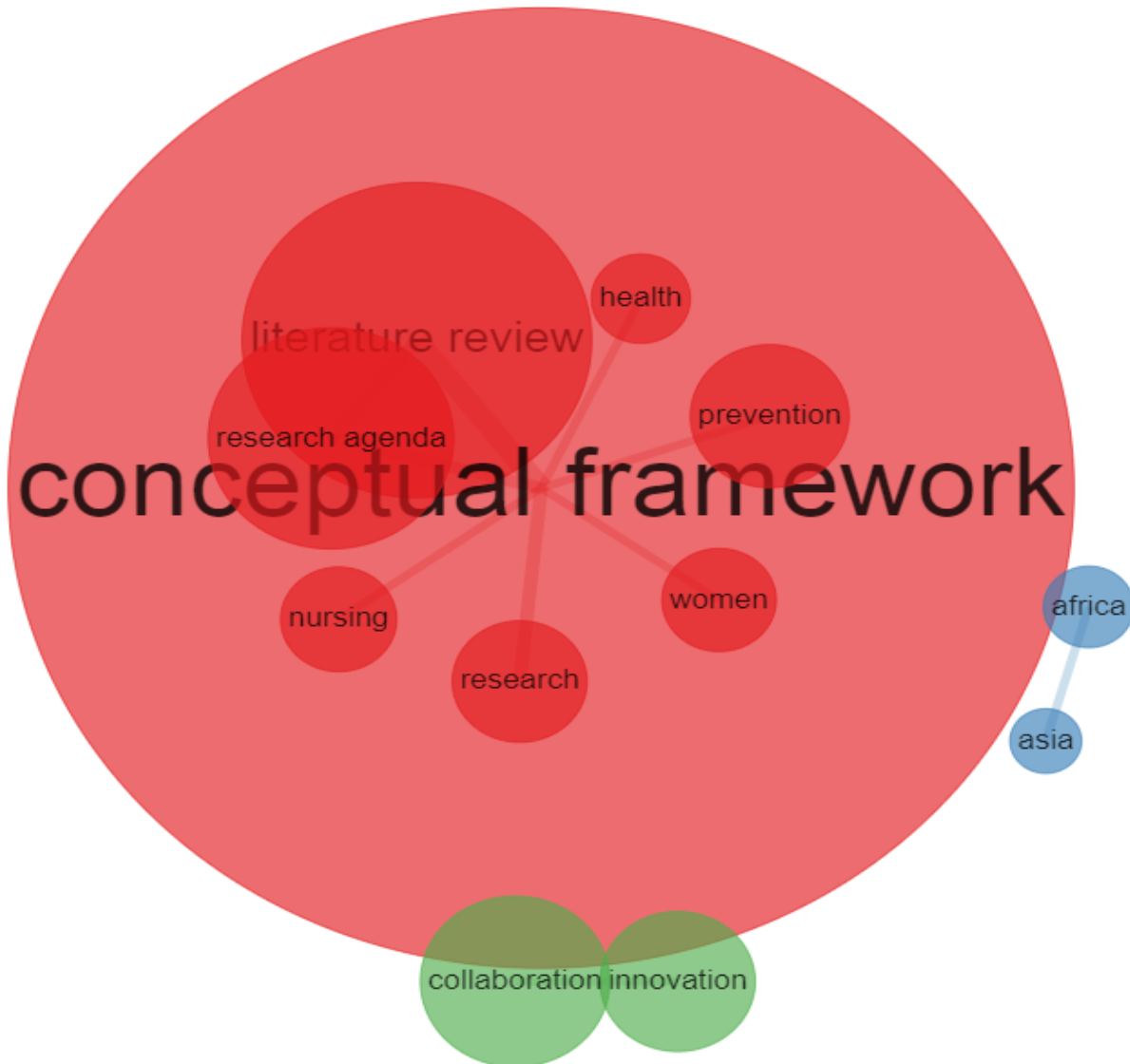


Figure 4. Co-occurrence of author keywords network with a conceptual framework in Public Health, Nutrition, and Dietetics research

The conceptual framework cooccurred with literature review, research agenda, prevention, research, nursing, women, and health. Among the conceptual framework variables, literature review had the strongest relationship with research while nursing, prevention, women, health, and research agenda had a similar relationship with literature review.



Figure 5: Multiple comparison Analysis of the Conceptual structure map in Public Health, Nutrition, and Dietetics research

In figure 5 above, there are 3 main clusters, the blue, green, and red clusters.

The green cluster located in the North-East quadrant of the multiple comparison analysis of the conceptual structure map MCA/CSM which represents a positive conceptual framework that is strongly related to the associated variables such as performance, competitive advantage, governance, perspective, context, management, and information technology, all clustered in a distance considered most discriminatory to the conceptual framework and research.

To further interpret the observed category and variable relationship nested within the northeast quadrant, the distance from the central category to the variables depicts the strength of relationships with the closest having a stronger relationship than the distant variables. Therefore, in the green words cluster: the conceptual framework map is strongly related to knowledge and weakly related to the resource-based view, networks, organizations, and technology

The green cluster in the southeastern quadrant depicts the presence of inclusion and diversity weekly related to perspective, identity, business, construction, and firm performance.

Finally, the red cluster lies between the southwest and the northwest quadrant depicting no inclusion and diversity and the associated variables are relatively normally (neither strong nor weak) associated with the listed variables. However, within the red cluster, nested within the southwest and northwest quadrant: faculty, women, medicine, care, cultural competence, improving diversity, African Americans, climate, workplace, and leadership are all distantly discriminated against inclusion and diversity compared to closely related experience education, science, gay, discrimination, schools, a minority in figure 7

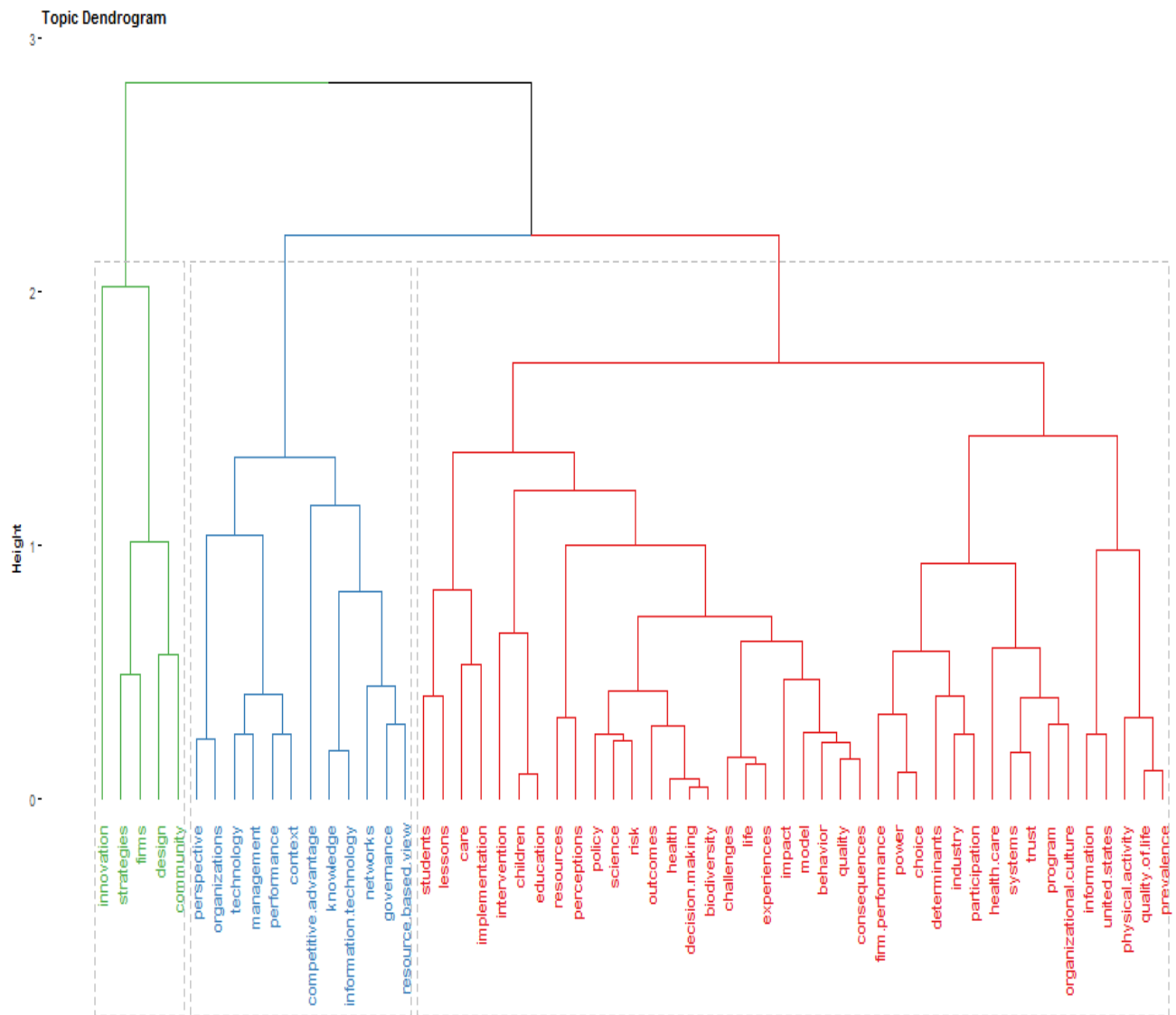


Figure 6: Topic dendrogram with a conceptual framework in Public Health, Nutrition and Dietetics research

From figure 6 of the topic dendrogram above, community and design are related to each other while strategies and firms are related to each other. However, community/design is different from strategies/ firms. Information technology and knowledge are similar but not similar to complete advantage. Context and performance are a similar bit different from management and technology. On the other hand, risk and sciences are similar but different from policy. Consequences and quality are similar but different from behavior. Organizational culture and program are similar but different from trust and systems Experience are similar to life but different from challenges.

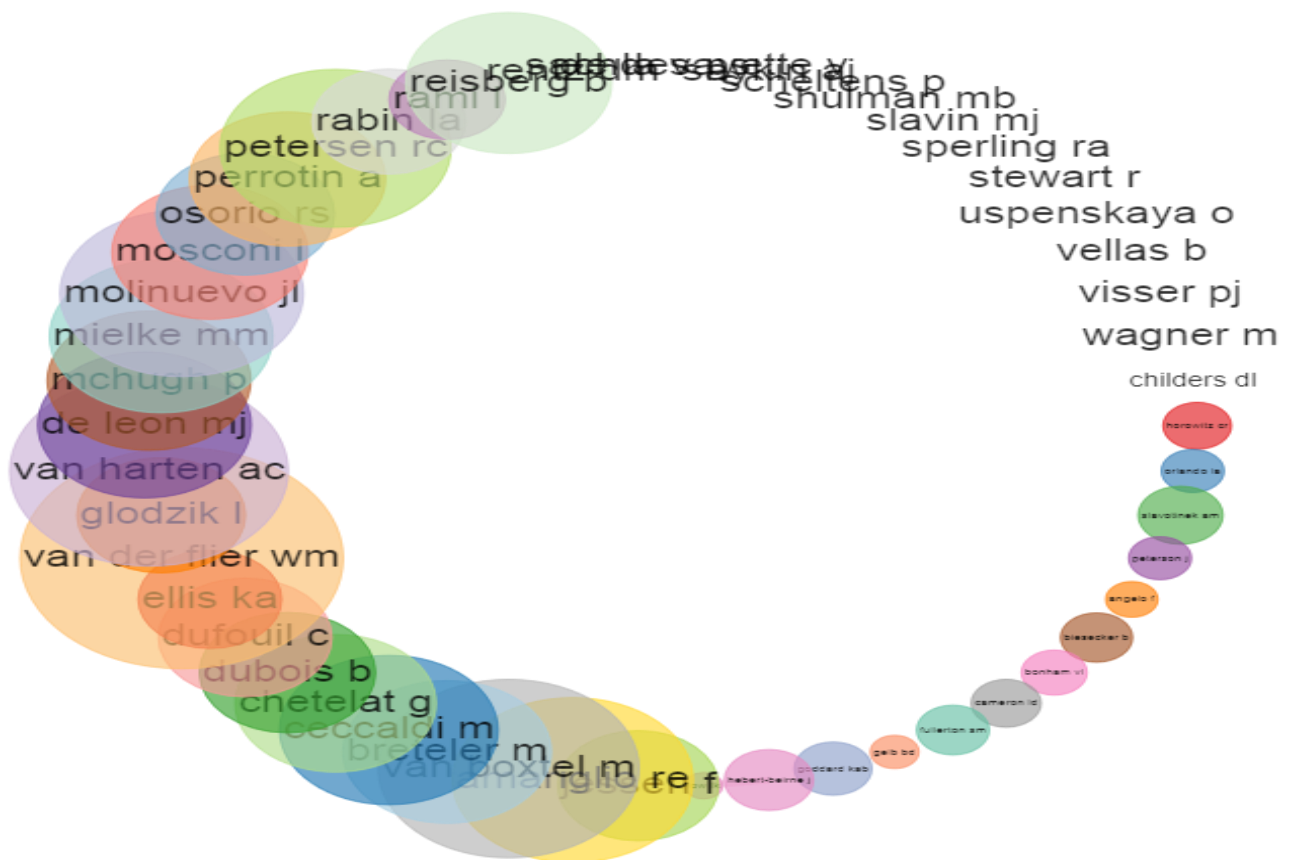


Figure 7: Author collaboration network with a conceptual framework in Public Health, Nutrition, and Dietetics research

The bubbles represent authors, the size of the bubbles represents the magnitude or number of publications. The line between authors represent coauthorship links, the line between two authors or bubbles shows that those authors have coauthored one or more articles, authors that have coauthored articles tend to be located close to each other. Colors indicate clusters of authors that

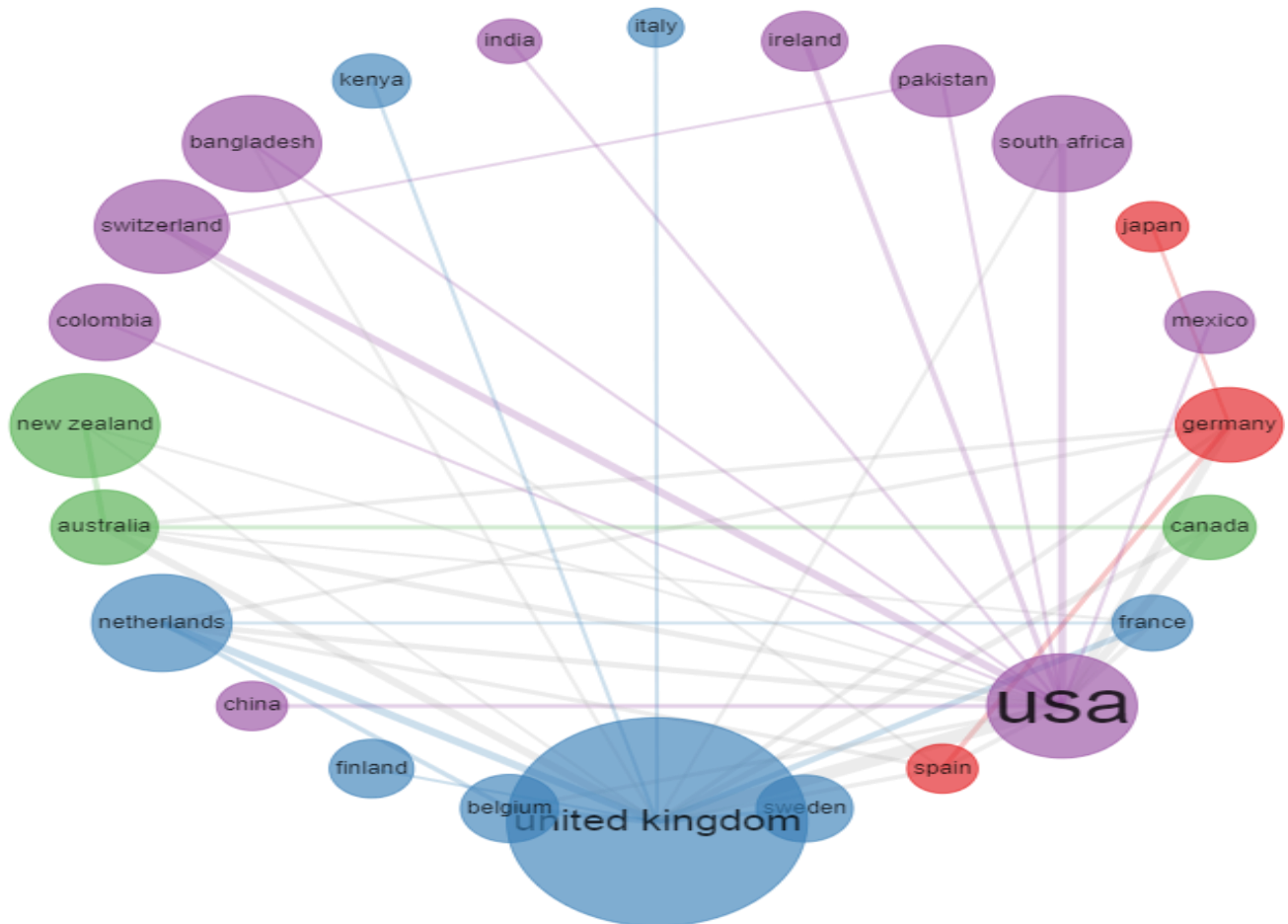


Figure 9, Country collaboration network with a conceptual framework in Public Health, Nutrition, and Dietetics research

The figure above shows there was a collaboration between countries. United Kingdom collaborated more with other countries followed by the USA. Other countries were all connected to either USA or UK but rarely to each other. Three main clusters can be seen the blue, purple, and red. The United Kingdom worked more with Netherlands, and France, then followed by Kenya and Italy, and Belgium, Sweden, and Finland. The USA worked more with Switzerland, Ireland, and South Africa followed by Bangladesh, Pakistan, Columbia Mexico, India, and China. The red cluster is

between Germany Japan and Spain. And the green cluster is between New Zealand Australia and Canada

Discussion

The emergence of complex health epidemics and pandemics (16) continue to emphasize the need for research alertness if humans are to continue living on the planet earth (17). Treatment failure poses great a challenge to successful disease interventions, especially during epidemics. There is ample literature

widely confirming that resistance to treatment agent, compliance to treatment directives and prescription, holds the key to effective intervention (18). Treatment failures and management complications (19) continue to stress the need for treatment alternatives to imported drugs (20) and thereby underscoring the need for Public Health, Nutrition and Dietetics research (21). The need for a good conceptual framework that will help a carefully designed researched to achieve its set objective cannot be overemphasized. Therefore, a description of a good concept is necessary.

Elements of the concept map

Public Health, Nutrition, and Dietetics research conceptual map (22) has 4 unique elements, namely: concept, lines/arrows, linking words, and proposals. A concept is a word that is used to identify facts, processes, objects, or situations that share the same characteristics, and differentiate them from those that are different from them (23). Lines and arrows are used, within a conceptual map, to represent the connection between one concept and another (24). Linking words are short descriptions that are located between one concept and another, next to the lines that connect them, with which how concepts are related. Concept maps are time schemes containing preselection, presentation of information in segments that are later integrated. Public Health, Nutrition, and Dietetics research concept map answers questions that help build knowledge (25). When new knowledge is gained, stakeholders appreciate elaborate approaches to things and strive to implement them, leading to the negotiation of meaning and self-esteem

There are so many Public Health, Nutrition and Dietetics research ideas that come in and goes out in researchers mind but it should be noted that not all these ideas are researchable.

The decision on which thoughts or ideas should be studied are based on many premises but the most outstanding are challenges too: advancement, wellbeing, existence, supremacy, and more. Advancement is a broad term that may include but is not limited to knowledge, technology, economy, and many other interests. Well-being covers health, social, economic, and environmental. Existence challenge deals with survival from extinction while supremacy challenge deals with fame, power, respect, and more. Care and caution are needed when sieving through information to know what to study or investigate to confirm a concept.

Information quality for concept map development

Quality of research information considered when designing a good concept include, relevance, faithful representation, Neutral, comparable, verifiable, concise, timely, Relevant ideas keep the research in focus to the objective and prevent frivolities and waste of resources and increase the feasibility of the study. Correct representation gives the true picture of the idea in real terms with no fabrication, falsification, or extrapolation. The neutral idea is not swayed to the left or right and mostly remains in the center but subsequently impacts both left, right, and center. Nature and quality of ideas are defined by their comparable, verifiable, concise, and timely characteristics. These are the basis for which a good concept map or framework is made.

Figure 1, shows the word treemap of certain terminologies used to show the relevance of this study to Public Health, Nutrition, and Dietetics research. Such terminologies include but are not limited to: health, health equity, drug abuse treatment, qualitative research, primary care, action research,

collaboration, quality of life, Africa and Asia, China, and others. These are terms that can come to mind when conceptualizing a research study in Public Health, Nutrition, and Dietetics. In Figure 2, management, model and impact were on top of the most trending topics. Many of the Public Health, Nutrition, and Dietetics research are tested on experimental models, and the outcome of the experiments has impacts on disease management in the long or short term.

In decreasing order of magnitude, the conceptual framework cooccurred with literature review, research agenda, prevention, research, and more fig 4. In Public Health, Nutrition, and Dietetics research, the first step is to conceptualize the research, look for literature to determine its relevance in the research world stage, develop an agenda of the research and implement the research in such a way as to achieve the ultimate goal of disease prevention. Among the conceptual framework variables, literature review had the strongest relationship with research depicting the strength and influence of literature review in Public Health, Nutrition, and Dietetics research both of which remain strong variables to the conceptual framework.

There were few or no authors and institutional collaboration figures 7 and 8. Probably depicting the challenges and roadblocks militating against Public Health, Nutrition, and Dietetics research. However, collaboration was noticed at the country level with the United Kingdom and the United States playing a major role in synchronizing global Public Health, Nutrition, and Dietetics research agenda especially in the context of Public Health, Nutrition, and Dietetics research.

As a master plan, which a conceptual framework is, some questions are necessary for the context of Public Health, Nutrition, and Dietetics research, and needs answers for a good concept to be produced. The questions include but not limited to the following: what the researcher wants to do in the context of Public Health, Nutrition, and Dietetics research? (26) Why does he or she want to do it concerning importance, target, objective, and spectrum of coverage in Public Health, Nutrition, and Dietetics research? How does the researcher want to achieve its objective concerning methods, participants, sampling and data analysis, interpretation of data, the worldview of data concerning positive or interpretative, critical, or pragmatic paradigm in the context of Public Health, Nutrition, and Dietetics research? How will the report or publication of the findings be concerning: a research paper, seminar paper, a conference paper, a book chapter, a book or thesis in the context of Public Health, Nutrition, and Dietetics research? (27)

Conclusion

Public Health, Nutrition, and Dietetics research are some of the key drivers of Mother and child health and wellbeing which in turn ultimately impacts the sustainability of societal development (28). The Conceptual framework is important in Public Health, Nutrition, and Dietetics research as it offers quality that determines good outcomes influences the provision of the fundamental principle for setting up a gold standard for scientific research. It will also impact the enhancement of consistency and comparability of research results as well as ensures that generally accepted criteria and principles governing science disciplines are ascertained. While the objective identifies the goals and purpose, the fundamental

provides how to achieve the Public Health, Nutrition, and Dietetics research objectives.

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