Bibliometric Acumen into Healthcare Service Quality: A Review of Co-authorship and Co-occurrence Analyses

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Abstract

The importance of healthcare service quality has been a subject of increasing interest in the research literature. A bibliometric analysis of the literature on service quality in healthcare services was conducted to gain insights into the trends and patterns in this area. Data was collected from the PubMed database and analyzed 646 research papers. VOSviewer software evaluated the papers and identified publication trends from 2005 to 2020. The study focused on identifying co-authorship analysis and co-occurrence of author keywords. The results indicate that keywords such as Service Quality, patient satisfaction, and healthcare were the most prominent in the literature. The bibliometric analysis helped to identify the increasing publication trend in this area, and the review identified Malaysia had most of the studies over the years. Additionally, the co-authorship and co-occurrence analyses provided insights into the leading countries and keywords used in the literature. In conclusion, the review provided valuable insights into the trends in service quality in the healthcare sector.

Keywords: Healthcare service quality, Bibliometric analysis, publication trends, co-authorship, Nigeria.
JEL Classification: I 10, I 12 I 18,

Contribution to/Originality Knowledge
This study is among the few studies that uses bibliometric analysis in service quality, especially in healthcare. Accordingly, the paper identified trends in publication, co-authorship and co-occurrence of author keywords for better understanding of the current state of knowledge in healthcare service quality between 2005 and 2020.

1.0 Introduction

To increase a better understanding of the current state of knowledge and discipline in any scientific field of study, it is important to analyze the contributions of scholars over time. One tool that can help with this is bibliometric analysis, which is a quantitative approach used to identify and analyze data related to keywords, relationships between articles, the number of publications, and their citations. Bibliometric analysis has been used in various contexts and disciplines, including tourism and hospitality, management, and environmental concerns. (Viana-Lora & Nel-lo-Andreu, 2022). This study focuses specifically on the bibliometric analysis of the concept of "Service Quality" in healthcare. Healthcare services are complex and involve a variety of activities. As consumers of these services, patients expect the desired results from the healthcare providers, such as doctors, nurses, and support staff. (Manzoor et al.,2019). Healthcare sector has recently received significant attention due to its importance in

reducing health disparities and providing valuable data and information to policymakers (Commonwealth Fund 2021). Additionally, competition has increased in the industry, both in private and public healthcare streams, which has forced healthcare organizations to increase their quality and to overcome their deficiencies (Rivers, & Glover 2008).

Healthcare services are essential industries that impact many fields and values of a country, such as business, politics, social, financial, and moral (Flessa, S., & Huebner, C. 2021). Healthcare sector is also one of the growing and highly competitive industries across the globe, which has led to an emphasis on delivering high service quality as compared to competitors. However, service quality is a complicated and elusive concept with no universal definition, however certain scholars have provided definitions upon which most studies are based. For example,(Ali *et al.*, 2021; Zeithaml, Berry and Parasuraman, 1996; Parasuraman, Zeithaml and Berry, 1988; Jain and Gupta, 2004) defined service quality as the difference between consumers' expectations and their perceptions. Malik, (2012) service quality is the compatibility between the expectations and perceptions of consumers towards service providers.

Because of the importance of healthcare services and service quality, there has been a significant attention paid to this area by researchers, scholars, and practitioners (Materla, Cudney and Hopen, 2019; Chen, Jin and Yan, 2021; Meng *et al.*, 2018; Zhang *et al.*, 2020). While there have been various studies on service quality, including reviews and analyses (Onwujekwe *et al.*, 2020; Aregbeshola, 2019; Adeyi, 2016; Abdel-All *et al.*, 2017; Saunders, 2019; O. D. Safi and S. Alagha, 2020; Liu, 2019; Baines *et al.*, 2018; Burgess *et al.*, 2020; Wong, Mavondo and Fisher, 2020; Onwujekwe *et al.*, 2020). few studies on bibliometric analysis of service quality in healthcare have been conducted. Therefore, the current research aims to fill this gap by conducting a bibliometric analysis of service quality in healthcare from 2005 to 2020. The study intends to identify trends in publication, contributors to healthcare service quality, co-authorship and the co-occurrence of author keywords.

2.0   Literature Review

Healthcare industry has been the subject of numerous studies on service quality. These studies have covered various aspects, such as the evaluation of the concept of service quality (Ghotbabadi, Feiz and Baharun, 2015; Almomani, Al-Ghdabi and Hamdan, 2020; Ali *et al.*, 2021; Berger, Saut and Berssaneti, 2020; Onwujekwe *et al.*, 2020; Aregbeshola, 2019; Adeyi, 2016; Abdel-All *et al.*, 2017; Saunders, 2019; O. D. Safi and S. Alagha, 2020; Liu, 2019; Baines *et al.*, 2018; Burgess *et al.*, 2020; Wong, Mavondo and Fisher, 2020; Onwujekwe *et al.*, 2020; Oleribe *et al.*, 2015; Adeyi, 2016; Khrestianto *et al.*, 2020; Ehigiegba *et al.*, 2014; Kitapci, Akdogan and Dortyol, 2014; Oyatoye, Amole and Adebiyi, 2014; Oluwatayo, 2015; Jerry and Sunday, 2016; Alshrbaji, Mohammed and Shamayleh, 2022; Chuke *et al.*, 2023; Naidu, 2009; Sandelands, 1994; Ampaw *et al.*, 2020; Trivedi and Jagani, 2018; Liu, Liao and Jou, 2020; Singh and Dixit, 2022; Abuosi and Braimah, 2019; Siddiq, Baloch and Takrim, 2016; Mahmoud *et al.*, 2019; Susanti, 2015; Dubey and Sahu, 2019; Al Azmi *et al.*, 2012; Yuksel, 2008; Zarei *et al.*, 2014; Ojekalu *et al.*, 2019; Liu *et al.*, 2019; Akdere, Top and Tekingündüz, 2020; Singh, 2018; Singh and Prasher, 2019; Kamra, Sethi and Sharma, 2019;

Pinna, Del Chiappa and Atzeni, 2018; Materla, Cudney and Hopen, 2019; Chen, Jin and Yan, 2021; Meng *et al.*, 2018; Zhang *et al.*, 2020).

To assess these aspects of the study, a bibliometric analysis was conducted, which applies mathematical and statistical techniques to bibliographic material. This technique helps to analyze the body of knowledge available in a particular field, including its citations, keywords, and concepts, and to graphically structure scientific research and its evolution in different spheres of literature. The current study sheds light on the streams and their strength linked to the concepts of patient satisfaction, service quality, and measurement models, which are linked to service quality.

3.0   Methodology

The current study is based on the PubMed database, which is considered one of the largest citation and abstract databases of peer-reviewed literature that covers a wide range of subjects. Thus, the PubMed database was chosen to cover more topics that may not be available in MedLine databases, (Md Khudzari et al., 2018). The search was conducted in the PubMed database between March 05, 2023, and April 01, 2023, with a focus on service quality in healthcare. The search was limited to articles in journals written in English from 2005 to 2020. The publication year 2021 and above were excluded from the search, and review papers were also excluded. After applying the search strategy, 1680 documents were found. The search string included keywords such as quality of service, healthcare quality, expectations and patient satisfaction, which were merged into the keyword "SQ" for analysis. The documents were exported in one file for analysis.

4.0   Analysis and Results

Over 15 years, a total of 1,680 papers were published on service quality in healthcare. The trend witnessed a low number of documents in 2020 because of the covid-19. However, the number of publications increased significantly after a non-SERVQUAL model that was developed by (Swain & Kar, 2017) which is widely accepted as a measurement model for service quality. However, the years 2018 and 2019 saw over 300 publications each, indicating a growing interest and importance of service quality in healthcare.

4.1   Co-authorship

Co-authorship analysis was conducted using VOSviewer to identify the connections among the authors. Out of 1,680 authors, 646 met the criteria of a minimum of five documents and zero citations. The study revealed that in terms of co-authorship among countries, most documents were published in Turkey, Malaysia, Italy and Korea. Malaysia published 1,300 documents and had the most co-authorship links with Turkey, with link strengths of 50. Authors from Korea also contributed significantly, with 270 publications, and co-authored most papers with authors from other countries. Malaysia and Italy also made a significant contribution to the field, publishing 60 and 45 documents, with most co-authorship links with Spain.

4.2   Co-occurrence (author keywords)

To determine the keywords used by authors in their studies on healthcare service quality, we conducted a co-occurrence analysis. The analysis identified 6,524 keywords used in papers related to healthcare service quality, with a minimum threshold of 4 keyword occurrences. To simplify the analysis, keywords such as service quality, healthcare service quality, expectation and patient satisfaction were replaced with the abbreviation "SQ", while similar keywords such as satisfaction, healthcare, perception, expectation, and performance were merged into common keywords. The top five most frequently occurring keywords were patient satisfaction, SQ, and Healthcare services with 3,317, 2,036, 1,171, and 146 occurrences respectively. A majority of the keywords were connected in a large set of 798 items out of 800 items, with 30 clusters identified and a total link strength of 9,030. SQ was the most prominent keyword with 569 links to other keywords and a total link strength of 2012. It was found to have strong links with healthcare, patient satisfaction, and SQ.

In addition to co-occurrence analysis, we explored the use of the 6-Q Model in healthcare service quality research. The 6-Q Model was introduced by Swain and Kar (2018) and was used to address the diversity in measuring healthcare service quality. The 6-Q Model was introduced by Swain and Kar (2018) to give a holistic view of patients in healthcare service quality and behavioural intention. The model keyword had seven occurrences with six links and a total link strength of 14, of which five were linked to SQ.

5.0   Conclusion and Further Research

A bibliometric analysis of healthcare service quality was conducted by examining 1,680 documents from the PubMad database spanning from 2005 to 2020 and 646 met the criteria for the analysis. The trend witnessed a low number of documents in 2020 because of the covid-19. However, the number of publications increased significantly after the non-SERVQUAL model was developed by (Swain & Kar, 2017) and is widely accepted as a measurement model for service quality. The years 2018 and 2019 saw over 300 publications each, indicating a growing interest and importance of service quality in healthcare.

The analysis revealed an increasing trend in publications related to service quality research in healthcare. The study conducted a co-authorship analysis to examine the links between authors and countries. A co-occurrence analysis of author keywords was also performed to identify and analyze the keywords used in healthcare service quality research. However, the analysis also revealed the growing use of models such as the 6-QModel in healthcare service quality research, which could be utilized to measure service quality in healthcare settings. However, most healthcare service quality studies were linked to saturated outcomes like patient satisfaction and behavioural intention. Thus, new outcome variables related to healthcare service quality need to be explored. The relationship between service quality and the nurses in healthcare also needs to be studied, as few keyword streams were found linking service quality and nurses.

Conversely, the study had certain limitations. It only focused on healthcare, while service quality research in other contexts like transportation, education, hospitality, superstores, and other services remain unexplored. Additionally, the study only employed Co-authorship and Co-occurrence analysis using VOSviewer, whereas further tools like Co-Citation and Bibliographic Coupling could also be utilized using the same software.

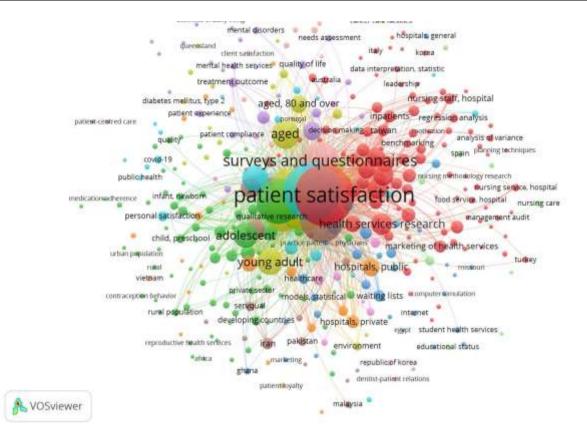Figure 1. Publications per year. Source: VOSviewer

Figure 2. Co-authorship and Keywords. Source: VOSviewer

The search string used:

The query string used to search the central theme was: (TITLE-ABS-KEY ("service quality") OR TITLE-ABS-KEY ("patient satisfaction") AND TITLE-ABSKEY (healthcare*) AND NOT TITLE-ABS-KEY (review*) AND (LIMITTO (DOCTYPE, "ar") AND (EXCLUDE (PUBYEAR, 2021) AND (LIMITTO (LANGUAGE, "English").

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