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RESEARCH THEMES ON THE QUALITY OF PUBLIC SERVICES EXEMPLIFIED BY HEALTHCARE SERVICES — A BIBLIOMETRIC ANALYSIS

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ABSTRACT

The growing competition for customers requires constant improvement of service quality, continuously raising the importance of this matter and the significance of the entire service sector. Essentially, service quality concerns not only the private but also the public sector. Service quality in the public sector has already been widely discussed in the literature. Among research themes in the frame of public service quality, the healthcare sector attracts particular attention from researchers. Therefore, this study aimed to identify research topics on the public service quality and healthcare quality discussed in the SCOPUS database from 2012 to 2022. A bibliometric technique and the VOSviewer software were used to analyse over 25 000 articles on public service and healthcare service published over ten years. As a result, a total of ten research themes were set up, five in the healthcare sector and five in the public sector, which were linked using keywords and presented on maps. The identified research themes demonstrate the most popular research directions and indicate research gaps related to the subject.

KEY WORDS

quality, public service, healthcare service, bibliometric analysis

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INTRODUCTION

Service quality and customer satisfaction are important and widely discussed topics in the modern world of service. At the same time, they remain the most popular topics examined in the literature (Khud-

hair et al., 2019). The idea is considered extremely abstract and complicated; thus, there is no universal definition of service quality (Abbasi-Moghaddam et al., 2019; Brady & Robertson, 2001). The right service management is known to increase the level of con-

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sumer satisfaction and turn random buyers into loyal clients. This leads to repurchase, the spread of positive reviews and less attention to manipulations of the company's contenders, having a direct positive impact on the company's lower expenses (Juhana et al., 2015) and steady high financial results (Kassim & Abdullah, 2010; Hapsari et al., 2017). At the same time, healthcare service is an essential element in every country (Javed & Nawaz, 2019). Like any other, the healthcare service covers various activities executed by different service providers, such as doctors, nurses and support staff. Having a great impact on the country's economy and the well-being of its inhabitants, the healthcare sector has recently received ample attention (Bahadori et al., 2018). Despite a significant amount of research concerning quality, prolonged studies related to service quality need to be conducted (Li, Ma & Qu, 2017). This paper aimed to identify research themes on public service quality and healthcare quality discussed in the SCOPUS database from 2012 to 2022.

Bibliometric analysis (BA) was selected as the technique for achieving the research aim. BA is based on quantitative literature analysis and helps to construct and visualise database networks (Broadus, 1987). This method uses advanced clustering techniques for presenting the frequency and co-occurrence of keywords related to scientific publications, citations, co-citations, or co-authoring analyses (Montero-Díaz et al., 2018; Siderska & Jadaan, 2018; Cichowicz & Rollnik-Sadowska, 2018; Dias, 2019; Szpilko et al., 2019). Not only the influence of a publication could be analysed but also the subject's expansiveness in the literature, also identifying the latest trends (Uribe-Toril et al., 2018).

1. LITERATURE REVIEW

As it is difficult to fully grasp the nature of service quality, the literature presents various definitions. Parasuraman, Zeithaml, and Berry (1985) characterised service quality as the discrepancy between what consumers expect and what they perceive. Meanwhile, Chien and Tsai (2000) regarded that service quality was based on a harmonious combination of both consumer expectations and perceptions. In both cases, consumer satisfaction is an integral part of service quality. It is suggested that consumer satisfaction amounts to consumer loyalty, which directly depends on the level of satisfaction with the service provided to clients (Khudhair et al., 2019; Al-Tit, 2015). However, lately, customer communication methods and prac-

tices have greatly changed due to online networking modifications (Kumar et al., 2009).

Consumer loyalty is described as a mix of societal and attitudinal measurements, which are rather hard to break down (Hu et al., 2009). It is usually strengthened by consumer satisfaction, which depends on the positive correlation between client desires and a company's presentation (Khudhair et al., 2019). According to Taylor and Baker, service quality and customer satisfaction are two elements crucial for the client's fidelity because they inspire client purchases (Oh & Kim, 2017).

The healthcare sector is continually growing and has become extremely competitive (Islam et al., 2016; Gadowska & Różycka, 2016; Trigo, 2016). The rivalry is also boosted by a variety of private and public healthcare organisations (Kalaja et al., 2016). Therefore, to be accepted and become competitive, a healthcare organisation is required to provide high-quality service.

Many researchers have conducted studies on the healthcare sector. The popularity of the topics can be explained by the importance of data for policymakers and the necessity to reduce health disparities (Muir et al., 2010). Client satisfaction also plays a significant role as satisfied patients are more likely to track their healthcare outcomes, adhere to their treatments and are less often admitted to hospitals (Bleich et al., 2009).

At the same time, the variety of used approaches makes it rather complicated to compare studies written on this subject. For example, while some surveys are based on the assessment of the idea of "service quality" in healthcare (Abbasi-Moghaddam et al., 2019; Ampah et al., 2019; Fatima et al., 2018; Fauziah et al., 2019), other studies concentrate on various elements of "service quality" (Chang et al., 2019; Gupta & Singh, 2017; Ibrahim & Ahmed, 2019; Jebraeily et al., 2018). Also, some authors focus on either patient satisfaction (Amankwah et al., 2019; Javed & Nawaz, 2019; Kwateng et al., 2017; Meesala & Paul, 2018; Mohammadi-Sardo & Salehi, 2019; Ng & Luk, 2018) or patient loyalty (Meesala & Paul, 2018) while ignoring other notions.

The same problem is observed with consumer satisfaction. It is also difficult to measure due to the lack of a unique definition and different approaches to measurement (Crow et al., 2002; Hudak & Wright, 2000; Sofaer & Firminger, 2005). While some researchers concentrate on how the type and quality of healthcare service influence patient satisfaction (Jackson et al., 2001; Nguyen et al., 2002), other scholars show the impact of healthcare service quality on

the health system generally (Blendon et al., 2003; European Commission, 2002). As a result, consumer satisfaction has started to be measured by focusing on some elements of patient experience, such as relations with healthcare providers, material values of healthcare organisations, waiting time, etc. (Sar et al., 2009; Chakraborty & Dobrzykowski, 2014). Also, the WHO proposed to add the healthcare system's "responsiveness" to this list, which is likely to pressure hospital providers to increase patient safety and decrease costs (Valentine et al., 2003). At the same time, it is highly important for the management of healthcare organisations and providers to focus on the constant improvement of the customer satisfaction level (Zendehtala et al., 2020) because of its positive effect on higher satisfaction of employees and patients, which directly leads to increased patient loyalty and encourages positive recommendations (Ramli, 2019; Oluma & Abadiga, 2019). All of this results in minimising costs, stabilising structure and increasing the efficiency of healthcare organisations (Shepperd et al., 2016, p. 2).

2. RESEARCH METHODOLOGY

In an era of the increasing number of publications, identifying research themes and research gaps is challenging (Szum, 2021; Winkowska et al., 2019). This has led to a growing interest in quantitative methods of scientific publications' assessment, such as bibliometric analysis (BA). Earlier, BA was defined as a statistical literature analysis for describing quali-

tative and quantitative changes in an assumed scientific research theme (De Bakker et al., 2005). In the wide sense, bibliometrics means "infometrics" (Wolfram, 2003), whereas, in the narrow sense, it is referred to as "scientometrics" (Bar-Ilan, 2010). Nevertheless, the word "webometrics" precisely shows the nature of this technique as it is totally computerised and closely connected to the web.

Therefore, considering a significant number of papers, which have been published online, this technique is very popular for conducting a literature analysis. BA focuses on a plethora of aspects, including geographical and institutional (Lin, 2012; Zhuang et al., 2013), with some elements related to the performance of publications, like development over periods (Huffman et al., 2013), subject domains or disciplines (Liu et al., 2012; Zibareva et al., 2014). Besides, there are many subject areas where this technique can be applied, e.g., tourism and hospitality (Koc & Boz, 2014; Köseoglu et al., 2016; Park, 2019), environmental aspects (Zhang et al., 2019; Liu et al., 2019; Sarkodie & Strezov, 2019) and management (Kumar et al., 2019; Fernández & Berbegal-Mirabent, 2019).

Within the conducted bibliometric analysis, publications from the Scopus database for the last ten years (2012–2022) with keywords "service quality", "public service", and "healthcare service" were used to collect bibliographic data. As a result, two research theme maps were prepared.

The proposed methodology included three stages. First, the occurrence was established for keywords "quality" and "public service" for the first map

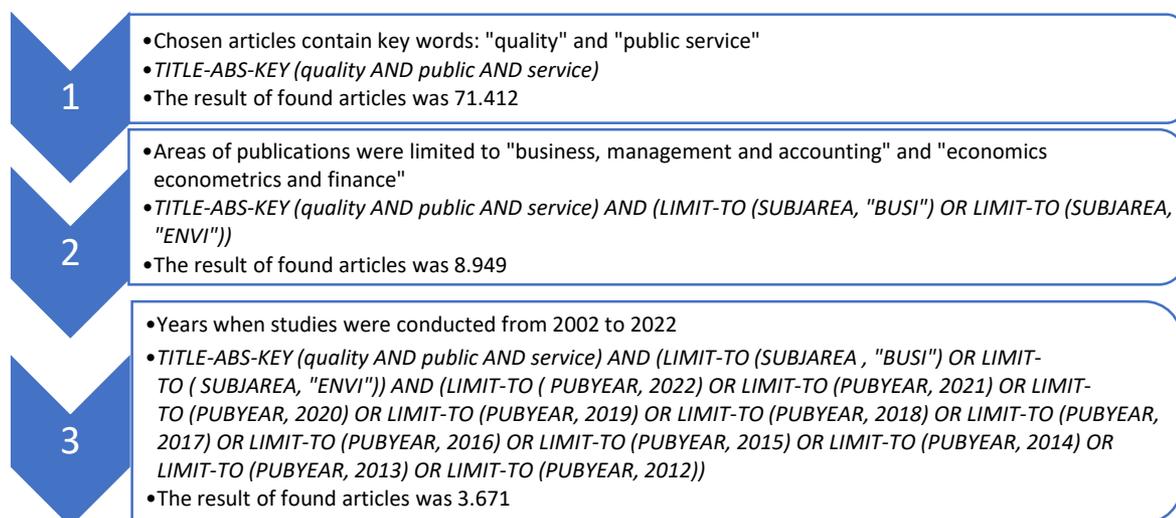


Fig. 1. Flowchart for gathering data on publications for the central theme and sub-themes in relation to public service

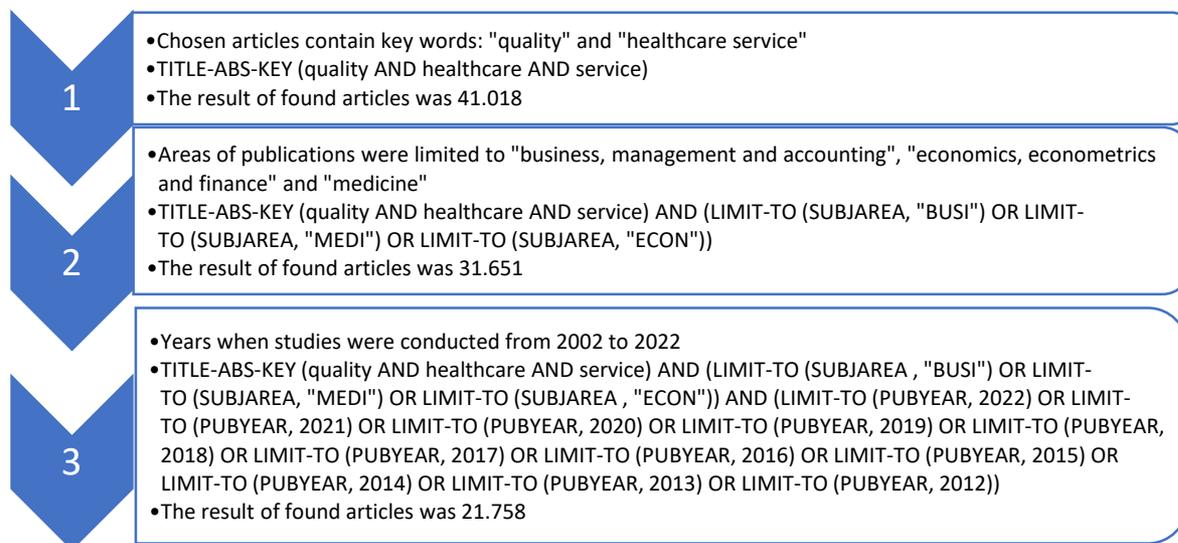


Fig. 2. Flowchart for gathering data on publications for the central theme and sub-themes in relation to healthcare service

Tab. 1. Ranking of the most productive countries

PUBLIC SERVICE QUALITY			HEALTHCARE SERVICE QUALITY	
RANK	COUNTRY	NUMBER OF PUBLICATIONS	COUNTRY	NUMBER OF PUBLICATIONS
1	United States	580	United States	6782
2	United Kingdom	332	United Kingdom	4087
3	India	231	Australia	1830
4	Italy	191	Canada	1740
5	China	185	Germany	891
6	Indonesia	156	Netherlands	886
7	Spain	154	Italy	872
8	Australia	153	India	748
9	Russian Federation	153	Spain	690
10	Malaysia	141	China	684

Source: Elaborated by the author based on the VOSviewer software.

and “quality” and “healthcare service” for the second map. Then, the research area was limited to the fields “business, management and accounting” and “economics, econometrics and finance” for the first map. An additional field, “medicine”, was used for the subject of healthcare service quality. Ultimately, both research areas were limited to the period from 2012 to 2022, resulting in 3671 articles for the public sector study and 21758 articles for the healthcare sector study. All research stages for the public and healthcare service research are presented in Figs. 1 and 2, respectively.

The data was processed using the VOSviewer software, which is useful for working out a sheer volume of data (Gudanowska, 2017). The program

was used to identify existing relationships between keywords characterising the articles from the scientific databases. The visualisation is presented using clustering techniques and advanced layouts (Magruk & Rollnik-Sadowska, 2021), such as the higher frequency of elements, the bigger and darker the label in the analysed set. The frequency of the elements’ co-occurrence can be judged based on their proximity: central elements correspond to a larger and more diverse group of elements, whereas elements on the edges of the map usually belong to isolated fields; otherwise, distant elements either do not appear together or do it very rarely. Besides, different colours stand for different clusters formed by the most common elements (Rollnik-Sadowska, 2019).

Table 1 illustrates the ranking of the most productive countries with the largest share of publications on public and healthcare service quality. Although the total number of studies on the healthcare service far outstripped the public sector, it is clear that the United States is the most popular country in both cases, with the output of 25 % and 35 % of publications on the public and healthcare service, respectively. The second place in both cases is occupied by UK authors who have published 15 % of articles with the keyword “public service” and 21 % of articles with the keyword “healthcare service”. At the same time, 231 publications about the public service were announced by authors affiliated with India. Their share of articles makes up 10 % of the total amount and puts it in third place, whereas in healthcare service, the third place is taken by Australia with 1830 publications (9.5 %).

3. RESEARCH RESULTS

To create a map with the keywords “public service” and “quality” in the VOSviewer program, a minimum of five keyword occurrences were selected, and as a result, 275 items were determined. In the case of the keywords “healthcare service” and “quality”, the occurrences of keywords were the same, but the number of selected words was 255. Five main clusters were identified in areas of public service quality and healthcare service quality, and five research themes were established on the basis of these clusters in both fields. The cluster keywords and identified themes are presented in Table 2.

Analysing the identified research themes in the areas of public service quality and healthcare service quality, which have already been developed and com-

Tab. 2. Research themes in the areas of public service quality and healthcare quality in the SCOPUS database in 2012–2022

PUBLIC SERVICE QUALITY		
CLUSTER NUMBER	THE MAIN KEYWORDS	RESEARCH THEME
1	Service quality, customer satisfaction, public service, accessibility, Internet, industrial, public administration, SERVQUAL, urban, social, hospitals	Customer satisfaction and methods of assessment
2	Budget, cost, economics, funding, public health, health care, quality of life, control	Influence of cost on service delivery and quality of life
3	Communication, hospital, administration, organisation and management	Organisational structure and culture
4	Adult, aged, demography, female, health, status, socioeconomics, factors, age, patient satisfaction	Demography and patient satisfaction
5	Child, poverty, politics, human experience, social behaviour, social welfare, financial, responsibility	The policy of inclusive access to public services
HEALTHCARE SERVICE QUALITY		
CLUSTER NUMBER	THE MAIN KEYWORDS	RESEARCH THEME
1	Well-being, quality of life, body mass, chronic disease, diabetes, health behaviour, health programme, recourses, hospitals, patients, treatment, risks	People’s well-being and quality of life with the support of health programmes
2	Communication, cooperative behaviour, attitude to health, education, expectation, human, patient, participation, safety, perception, satisfaction	Patient perception of the healthcare service
3	Female, demography, child, global health, health equity, reform, maternal health, pregnancy, public health, availability of care, residents of a rural area	Availability of care for vulnerable groups
4	Cancer, family, community, neoplasm, psychology, health needs, terminal care, health care needs and demand	Healthcare needs and demands in the life cycle
5	Adult, mental disorder, mental health service	Mental health service

rate, daily life activity and avoiding such stressors as depression and anxiety are associated with an improved quality of life, which contributes to the well-being of the population.

Other crucial keywords were covered in the second cluster (Cluster 2), counting 84 elements. It mainly concentrates on the human factor to be considered while organising and managing the system of quality in healthcare services. To provide patients with high-quality medical service, certain standards should be introduced with constant quality improvement. According to the combination of links among elements, interpersonal communication is an important factor for patient safety, tightly connected with total quality management. Consultations, information processing, education, and community care are the most frequent items that are closely associated with the human factor.

The third classified cluster (Cluster 3) involves topics that concern one of the most tightly connected and the most common elements in the network, i.e., the gender factor, mainly female, and counting 63 elements. Cluster 3 deals with global health on the governmental level. This group covers such issues as the disparity in health service accessibility, socioeconomic factors affecting healthcare service accessibility and how health policy is provided. One of the key aims of the Sustainable Development Goals (SDGs) is achieving universal health coverage (UHC), which enables all citizens, including vulnerable groups (women, residents of rural areas, citizens of developing countries, and children) to have access to high-quality healthcare services (Universal Health Coverage, 2019). It is time to introduce a healthcare reform on the availability of equal care. Sets of goals were defined by the World Bank, SDG3, and the World Health Organization (WHO) to be obtained by 2030. One of them requires 80 % of essential healthcare services to be provided to the entire population irrespective of gender, place of residence or economic status (Boerma et al., 2014). In order to ensure sufficient maternal and child health care, women's access to care facilities must be improved. Maternal healthcare helps in reducing maternal and child mortality (Lassi & Bhutta, 2015), explaining the reasons why pregnancy and prenatal care issues are presented in this cluster.

The following cluster (Cluster 4) contains 18 items and is the most dispersed group: its elements are scattered on the whole area of the map. Cluster 4 concerns health care needs and demands; therefore, cluster nodes are connected with ageing (cancer,

neoplasm, terminal care) because people over 80 years mainly encounter such diseases. The cluster also covers the topics connected with the human factor (community care and psychology). To create a healthy (psychologically and physically) population, people need to be supported by specialists. The social support issue from this cluster covers community care and links women and the ageing group.

The final cluster (Cluster 5) was comprised of mental health care and had only four keywords which are observed in the analysed map. The mental health service appearing in the context of analyses connects with mental disorders and relates to older people (aged 80 and over). Various stressors linked with older age, such as restricted mobility, an onset of a disease, reduced income having to do with retirement, and social isolation, are believed to predispose mental health issues (National Institute for Health and Care Excellence, 2016). All of these factors may negatively affect people's mental well-being and lead to depression or psychological distress due to their capacity to affect people's feelings, thoughts and activity (Nair et al., 2020; Frost et al., 2019). Therefore, as older age is a vulnerability, it needs to be observed, and mental well-being needs to be promoted.

As in the case of the analysis of the public service quality map, these identified themes of healthcare service quality were based on papers indexed in the scientific database. Every cluster presents a particular field connected with its own layer of the population. Depending on the popularity of one certain area and an increasing trend, i.e., ageing, the higher interest in this area could be noted.

4. DISCUSSION OF THE RESULTS

Consumer satisfaction in public service has received great interest. This popularity is associated with the advantage for organisations increasing their profit from loyal consumers who are satisfied clients. Because of the direct influence of service quality on the level of patient satisfaction, scholars pay significant attention to the definition of service quality and the reasons which lead to its improvement.

Out of all public services, the healthcare service attracts the most significant interest from researchers. Its impact on different spheres on a large scale makes the healthcare sector increasingly more influential on the people's quality of life. According to the bibliometric analysis, researchers studying the quality of public service mostly focus on the healthcare service.

Not only consumers of the healthcare service require well-functioning management and communication. The conducted bibliometric analysis suggested that consumer satisfaction with the total public service depends on maintaining these parameters at a high level. Besides, demography and age also play a significant role in either public service or narrower healthcare service. The quality of life depends on the service received from healthcare providers, and this crucially affects the people's perception of other public services. All people's needs and demands, which relate to social and mental well-being, are a significant part of their life and should not be ignored either by public service or by healthcare service providers. On this account, healthcare service is seen to be closely bonded with public service and vice versa. Therefore, an increased level of consumer satisfaction in the healthcare service significantly contributes to improving the total level of consumer satisfaction.

Unfortunately, due to the absence of a universal definition and different subjects of study in healthcare service, it seems to be difficult to precisely describe all components affecting patient satisfaction in the healthcare field. Nevertheless, it would be useful to know the relevant research themes in service quality to propose a systematic view. Studies conducted on service quality and consumer satisfaction can help to understand the contribution of different elements to the definition of service quality as well as identification of more effective ways to research the topic. Therefore, to organise the information connected to one subject, the quantitative method would be useful. In the era of technology, an enormous amount of information is saved on the Internet. So, it is not surprising that a computerised bibliometric analysis is one of the most common and helpful methods using data mining (Wallin, 2005).

There have already been some bibliometric studies carried out on the topic of service quality; however, they were conducted in different analysis periods and did not provide a comparison. Harith et al. (2020), for example, focused on the service quality in general and did not divide it into some elements as in the case of this study, i.e., public and healthcare sectors. Although Harith et al. also investigated the topic with the VOSviewer program, the analysis concerned a different period, i.e., from 2009 to 2019, with a co-authorship and co-occurrence analysis. It was established that in 2009–2019, the US and China took the lead, compared to US and UK in 2012–2022, respectively. It means that the UK started focusing more on quality, whereas in previous studies, it was not even

among the first 15 countries that published most articles in the area of service quality. Harith et al. did not identify the main research perspectives and their contribution to the subject as it has been done in this study.

As the interest in the healthcare service is growing every year, Javed et al. (2021) conducted a bibliometric analysis in this field in 2021, which included publications from 1969 to 2019. Authors limited their search to a document type, i.e., articles, the source type, i.e., journals, and language, i.e., English only. They also used VOSviewer and worked with the Scopus database. A similar analysis was made on co-authorship and co-occurrence. They also analysed the number of publications per year and identified the most influential authors, but the research perspectives have not been identified.

CONCLUSIONS

Topics of public service quality and healthcare service quality are widely recognised in the literature in the fields of business, management and accounting and economics, econometrics and finance. More than 25000 articles were analysed in total for the period between 2012 and 2022. A bibliometric analysis was used as a research technique, and the Scopus database was verified. The investigation was made in the field of public (21758 articles) and healthcare (3671 articles) service, where research themes were identified.

Following the inquiry, five research themes were established in both sectors. However, these issues are different in each area. To begin with the public service, customer satisfaction and methods of its estimation was the main research perspective that related to widely spreading service culture and the rivalry of an organisation aiming to attract as many clients as possible. The SERVQUAL method was among the main methods to measure service quality, clearly seen in the second cluster of the public service. The other identified perspective has to do with financial issues, which are necessary for providing high-quality service (including health service) to make people satisfied. As a result, it is certain that there should be an optimal structure and culture in the organisation; consequently, the next research theme relates to this organisational process and includes communication as a necessary way of receiving information and sharing it with all process participants. The final two research themes were linked but were separated into two groups. Both of them reflect the government's

approach to assuring the delivery of high-quality service to people. The first theme relates to demographic factors influencing the public service and determinants for providing this service to clients of different ages and genders. The second theme is related to vulnerable groups, such as children and poverty-stricken people.

When it comes to the quality of healthcare services, five research themes were identified, and some of them were similar to the ones identified for the public service. Nevertheless, compared with the public service, where customer satisfaction was investigated to satisfy clients in different areas of their life, themes in the healthcare sector mainly related to people's health. Therefore, the key issue for the healthcare service quality is in the area of people's well-being, i.e., determinants for the improvement of quality and the longevity of patients, and support to preventive programmes decrease risk factors of chronic diseases. The next research theme identified in this review was the patient perception of healthcare service.

Many literature sources provide investigations into determinants of people's perception, including education and means of communication impacting their attitude towards the healthcare service. Another research theme identified in this study was the availability of care services for vulnerable groups. As in the case of public services, the problem of service access to females or children is also relevant in the healthcare area. Children's mortality and ageing populations necessitate studies on the access to high-quality health service for these groups. The same reasons led to the last two themes. Ageing populations and a wide spread of some specific disorders encourage scientists to analyse the demands and needs of people during their lifecycle, including mental health services, to improve the quality of life for people with mental disorders, which are more likely to occur at an older age.

This study demonstrated an extreme increase in publications in public and in healthcare areas over the last ten years, and this number is expected to grow further. The USA and UK remain the main distributors of these scientific efforts. Some research themes, such as vulnerability, despair, and access to high-quality service, were clusters showing the lowest popularity. However, these topics deserve more attention. It should also be noted that the main methods for measuring the quality of service were SERVQUAL and benchmarking, as clearly presented in the maps of this study.

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