



EVALUATION OF THE EFFECTIVENESS OF SERVICE QUALITY IN PUBLIC HOSPITALS: A SYSTEMATIC REVIEW OF THE LITERATURE

EVALUACIÓN DE LA EFICACIA DE LA CALIDAD DEL SERVICIO EN HOSPITALES PÚBLICOS: UNA REVISIÓN SISTEMÁTICA DE LA LITERATURA

Linda Carla Flores Roman¹, Marjorie Catherine Nima Olaya²,
Yrene Cecilia Uribe Hernández³, Norma Marlene Cárdenas
Peralta⁴, Miguel Angel Alania Vasquez⁵, Juan Charry-Aysanoa⁶

Article History: Received: 11.02.2023

Revised: 01.04.2023

Accepted: 17.05.2023

Abstract

Through this document, it was possible to analyze the main characteristics of the volume of scientific production regarding the study of the variables Quality of Service and Public Hospitals. A bibliometric analysis was proposed to analyze details such as Year of Publication, Country of Origin of the publication, Area of Knowledge in which the published research is carried out and the Type of Publication most frequently used by the authors of each document published in high-impact journals indexed in the Scopus database during the period between 2017 and 2022. Among the main findings, it was possible to determine that, for the execution of the different research methodologies, the report of 384 scientific documents related to the study Quality in the service of public hospitals in Latin America was achieved. The maximum number of publications made in a year was 72 documents submitted in 2020, the same number of publications in 2021. The country of origin of the institutions that reported the highest number of records in Scopus was Brazil with 229 documents. The area of knowledge with the greatest influence at the time of executing the research projects that resulted in scientific publications was Medicine, which contributed great theoretical material in a total of 280 publications. Finally, the type of publication most frequently used to publicize findings from the analysis of the aforementioned variables was the Article, which represented 85% of the total scientific production.

Keywords: Quality of Service, Public Hospitals.

¹Universidad César Vallejo, Lima, Perú.

<https://orcid.org/0000-0002-9574-4189>

²Universidad César Vallejo, Lima, Perú.

<https://orcid.org/0000-0003-0251-9300>

³Universidad César Vallejo, Lima, Perú.

<https://orcid.org/0000-0001-5893-9262>

⁴Universidad César Vallejo, Lima, Perú.

<https://orcid.org/0000-0001-7816-6180>

⁵Universidad César Vallejo, Lima, Perú.

<https://orcid.org/0000-0003-0368-6063>

⁶Universidad César Vallejo, Lima, Perú.

<https://orcid.org/0000-0003-3728-1291>

Email: ¹lcflores3@ucvvirtual.edu.pe, ²mnima@ucvvirtual.edu.pe, ³yuribeh@ucvvirtual.edu.pe,
⁴ncardenasp@ucvvirtual.edu.pe, ⁵maalaniaa@ucvvirtual.edu.pe, ⁶jmarcianoca@ucvvirtual.edu.pe

DOI: 10.31838/ecb/2023.12.s3.351

1. INTRODUCTION

In recent decades, the quality of services has become the area of greatest interest for research agents, national bodies and managers, due to its impact on the due reduction of marginal costs, customer loyalty and their respective profitability. Health services and public hospitals have not been oblivious to the quality of services since the rise of administrative competitiveness, delivered by the markets of the administration of health services, forces the different local and national providers to compete in the quality of services, price and consumer satisfaction, as a tool to obtain benefits and therefore remain in the market.

The continuous evaluation of the quality and efficiency of a health service is a rather complex task to analyze since, in addition to the complexity involved in the measurement of abstract concepts, the variety of interest that can influence this type of efficiency evaluation cannot be ignored. The public and free health systems are particularly funded by the State and it is the main interest in these services being provided in an efficient and quality way for patients. The lack of monitoring and evaluation of these two characteristics in the health system will ultimately result in a reduced real possibility of providing all social services. While, in health, where basic services are the most valuable human asset, trading quality for efficiency may seem unfair or even undesirable, the natural scarcity of resources should put us in a more realistic position. It reflects the attitude that the highest quality of service should be provided with the least amount of resources, or perhaps better, prefers the most efficient use of available resources with acceptable quality. Therefore, the search for quality must always seek the best balance between quality and efficiency. However, hospital care plays a major role in health care. Hospitals are responsible for

addressing the most serious and delicate health problems, which gives them a high social level; on the other hand, the due specialized and technologically advanced care they must provide makes them the most expensive centers in the health system. The continuous development of the quality and efficiency of hospital care, as well as its social and economic consequences, is fundamental for the health sector. For this reason, this article seeks to describe the main characteristics of the compendium of publications indexed in the Scopus database related to the variables Quality of Service and Public Hospitals, as well. As the description of the position of certain authors affiliated with institutions. during the period from 2017 to 2022.

General objective

Analyze from a bibliometric approach, the characteristics in the volume of scientific production related to the Quality of Service and Public Hospitals, registered in Scopus during the period 2017-2022 by Latin American institutions.

2. METHODOLOGY

This article is carried out through a mixed orientation research that combines the quantitative and qualitative method.

On the one hand, a quantitative analysis of the information selected in Scopus is carried out under a bibliometric approach of the scientific production corresponding to the study of the Quality of Service in Latin American Public Hospitals.

On the other hand, examples of some research works published in the area of study indicated above are analyzed from a qualitative perspective, starting from a bibliographic approach that allows describing the position of different authors against the proposed topic.

It is important to note that the entire research was carried out through Scopus, managing to establish the parameters referenced in *Figure 1*.

3. METHODOLOGICAL DESIGN



Figure 1. Methodological design

Source: Authors.

3.1.1 Phase 1: Data collection

Data collection was executed from the Search tool on the Scopus website, where 384 publications were obtained from the choice of the following filters:

- TITLE-ABS-KEY (quality AND of AND service, AND public AND hospitals) AND (LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017)) AND (LIMIT-TO (AFFILCOUNTRY , "Brazil") OR LIMIT-TO (AFFILCOUNTRY , "Mexico") OR LIMIT-TO (AFFILCOUNTRY , "Chile") OR LIMIT-TO (AFFILCOUNTRY , "Colombia") OR LIMIT-TO (AFFILCOUNTRY , "Argentina") OR LIMIT-TO (AFFILCOUNTRY , "Ecuador") OR LIMIT-TO (AFFILCOUNTRY , "Peru") OR LIMIT-TO (AFFILCOUNTRY , "Cuba") OR LIMIT-TO (AFFILCOUNTRY , "Dominican Republic") OR LIMIT-TO (AFFILCOUNTRY , "Venezuela") OR LIMIT-TO (AFFILCOUNTRY , "Guatemala") OR LIMIT-TO (AFFILCOUNTRY , "Puerto Rico") OR LIMIT-TO (AFFILCOUNTRY , "Uruguay") OR LIMIT-TO (

AFFILCOUNTRY , "Paraguay") OR LIMIT-TO (AFFILCOUNTRY , "Bolivia") OR LIMIT-TO (AFFILCOUNTRY , "Costa Rica") OR LIMIT-TO (AFFILCOUNTRY , "El Salvador"))

- Published documents whose study variables are related to the study of Service Quality and Public Hospitals.
- Works published in journals indexed in Scopus during the period 2017-2022.
- Limited to Latin American countries.
- Without distinction in areas of knowledge.
- Regardless of type of publication.

3.1.2 Phase 2: Construction of analysis material

The information collected in Scopus during the previous phase is organized and subsequently classified by graphs, figures and tables as follows:

- Co-occurrence of Words.
- Year of publication.
- Country of origin of the publication.
- Area of knowledge.
- Type of Publication.

3.1.3 Phase 3: Drafting of conclusions and outcome document

In this phase, we proceed with the analysis of the results previously yielded resulting in the determination of conclusions and,

consequently, the obtaining of the final document.

4. RESULTADOS

4.1 Co-occurrence of words

Figure 2 shows the co-occurrence of keywords found in the publications identified in the Scopus database.

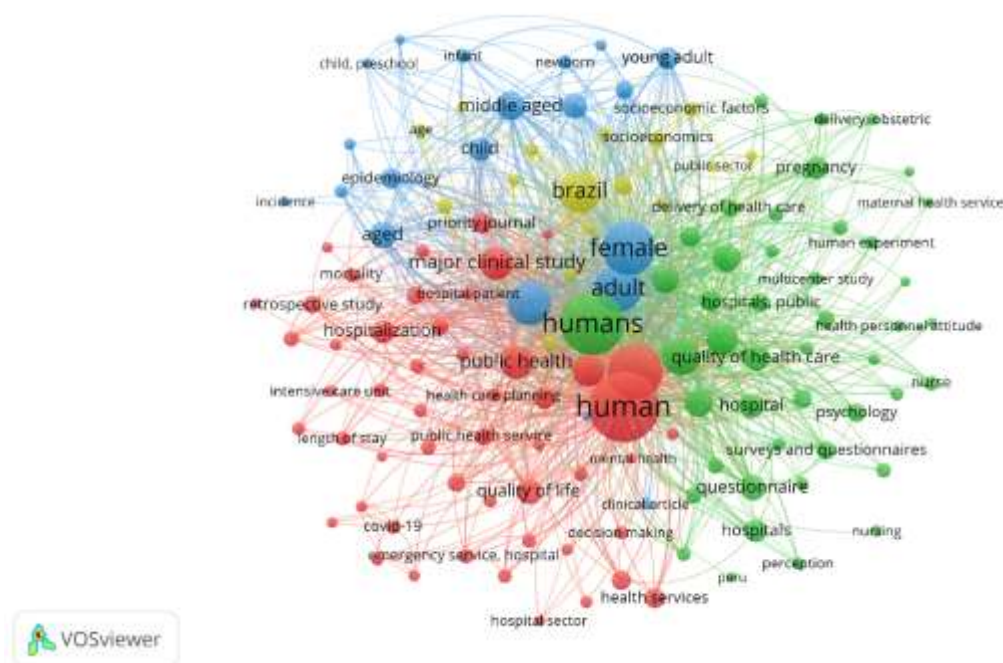


Figure 2. Co-occurrence of words

Source: Own elaboration (2023); based on data exported from Scopus.

Hospital was the most frequently used keyword within the studies identified through the execution of Phase 1 of the Methodological Design proposed for the development of this article. Hospital Sector is also within the variables Quality of Service and Public Hospitals used most frequently, associated with variables Accounting Analysis and Business Competitiveness. From the above, it is noteworthy that structural quality indicators or structural indicators measure the inherent quality of the service delivery framework and the state of the resources that provide them, process quality indicators or process indicators directly or indirectly measure the quality of activities performed during patient care, and outcome-based indicators or outcome measures measure the degree of

success achieved by the patient, i.e. whether the desired outcomes of actions taken in the course of care were achieved. However, the search for the best balance between quality and efficiency in the health sector must go through the improvement and use of the indicated of both components with this it would be possible to improve the quality of the services of public hospitals, an effective delivery with adequate care, improve the experience between patient and doctors and finally improve the results of the health system.

4.2 Distribution of scientific production by year of publication

Figure 3 shows how scientific production is distributed according to the year of publication.

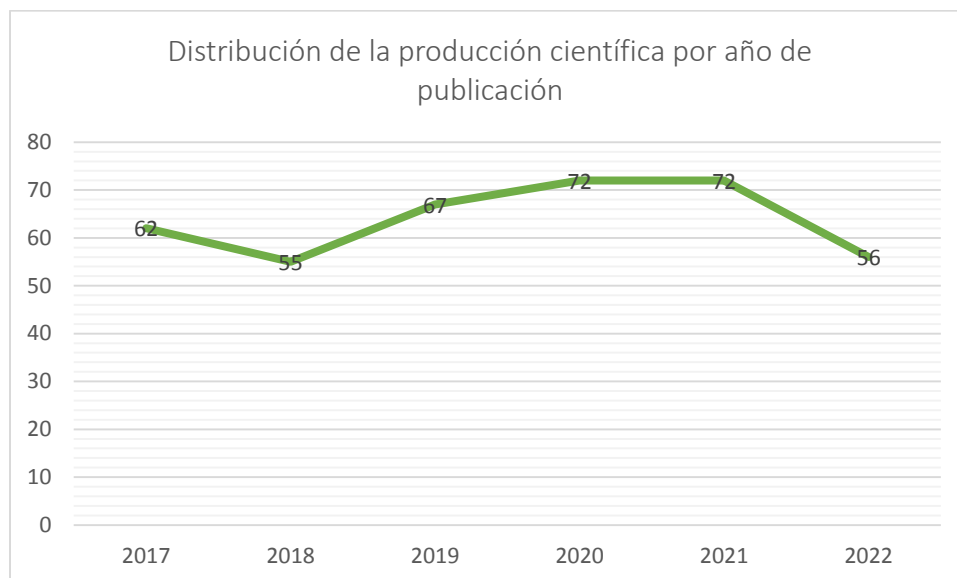


Figure 3. Distribution of scientific production by year of publication.

Source: Own elaboration (2023); based on data exported from Scopus

Among the main characteristics evidenced by the distribution of scientific production by year of publication, the number of publications registered in Scopus in the years 2020, 2021 is notorious, reaching a total of 72 documents published in journals indexed in said platform. This can be explained thanks to articles such as the one entitled "Choroidal melanoma tumor profile and treatment pattern for newly diagnosed patients in a public reference hospital in Sao Paulo, Brazil" The purpose of the present study was to analyze the tumor profile of newly diagnosed (Fernandes, 2022) cases of choroidal melanoma in a reference center in São Paulo, Brazil, and investigate the frequency of eyes treated by enucleation that could have been treated with brachytherapy if it were available in hospital. Service. Methods: We analyzed the medical records of patients referred to our service with initial diagnostic hypothesis of choroidal melanoma from July 2014 to June 2020 on demographics, confirmation of diagnosis, tumor

measurement by ultrasonography and established treatment. Data on clinical and demographic characteristics such as age, sex, affected eye, ultrasound parameters and management of treatment of patients with clinically diagnosed choroidal melanoma were evaluated. Among patients undergoing enucleation, we investigated how many might have been selected for brachytherapy. Results: Of the 102 patients referred with the diagnostic hypothesis of choroidal melanoma, 70 (68.62%) were confirmed. The mean measurements of tumors in millimeters were: 9.19 ± 3.69 at height and 12.97 ± 3.09 by 13.30 ± 3.30 at baseline. A total of 48 cases (68.57%) were enucleated, 8 (11.43%) were treated with brachytherapy in another service and 14 patients (20.00%) returned for enucleation at their original referral center.

4.3 Distribution of scientific production by country of origin.

Figure 4 shows how scientific production is distributed according to the nationality of the authors.



Figure 4. Distribution of scientific production by country of origin.

Source: Own elaboration (2023); based on data provided by Scopus.

Within the distribution of scientific production by country of origin, records from institutions were taken into account, establishing Brazil, as the country of that community, with the highest number of publications indexed in Scopus during the period 2017-2022, with a total of 229 publications in total. In second place, Mexico with 49 scientific documents, and Chile with 42. Colombia ranked fourth presenting to the scientific community, a total of 36 documents among which is the article entitled "Price elasticity of demand for voluntary health insurance in Colombia" this article aims to estimate the price elasticity of demand (Casabianca, 2022) for the HPV market in Colombia. Methods: We used data from the 2016-2017 National Consumer Expenditure Survey and applied a Heckman selection model to address the selection problem in private insurance purchases. Using the estimation results to further estimate the semi-elasticity of price for HPV, we then calculated the price elasticity for household health expenditure and IPVV acquisition.

Results: Our main findings indicate that a 1% increase in the price of HPV reduces the proportion of households affiliated to a HPV in the country by between 2.32% and 4.66%, with robust results across all restrictions in the sample. There are relevant differences between age groups, with younger heads of household responding less to changes in HPV prices. Conclusions: We conclude that the demand for HPV in Colombia is remarkably elastic and, therefore, changes in tax policy can have a significant impact on public health insurance expenditures. The government should estimate the optimal purchase of VPHI to reduce any welfare losses that the current arrangement may be generating.

4.4 Distribution of scientific production by area of knowledge

Figure 5 shows the distribution of the elaboration of scientific publications from the area of knowledge through which the different research methodologies are implemented.

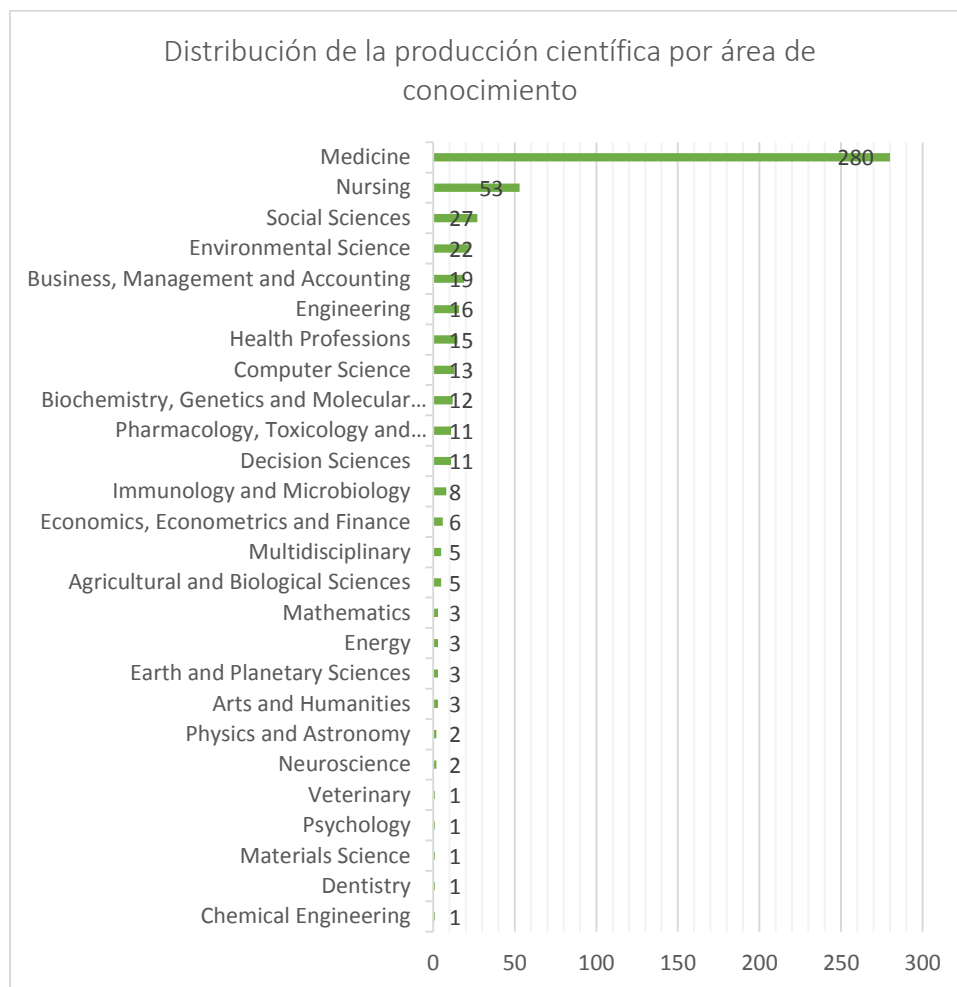


Figure 5. Distribution of scientific production by area of knowledge.

Source: Own elaboration (2023); based on data provided by Scopus.

Medicines was the area of knowledge with the highest number of publications registered in Scopus with a total of 280 documents that have based their methodologies Accounting Analysis and Business Competitiveness. In second place, Nursing with 53 articles and Social Sciences in third place with 27. The above can be explained thanks to the contribution and study of different branches, the article with the greatest impact was registered by the Medicines area entitled "Costs of pediatric hydrocephalus treatment for the Brazilian public health system in the Northeast of Brazil" (Soriano, 2022) whose scope of study To estimate the costs of surgical treatment of pediatric hydrocephalus, specifically ventriculoperitoneal shunt (VPS) and third

endoscopic ventriculostomy (TVUS), for the Brazilian public health system (SUS). Methods: Retrospective cohort study of medical records of patients aged < 14 years diagnosed with hydrocephalus who underwent SVV or VTE between September 2009 and June 2016, followed periodically for 24 months. Results: 76 medical records were included. The groups of children who underwent VPS and TVUS consisted of 60 and 16 patients, respectively. Complications were identified during 2 years of follow-up in 56% of children undergoing SVV and 18% of those undergoing VTE ($p = 0.0103$). The initial cost of VPS was lower than that of TVUS until approximately 1 year of postoperative follow-up. Subsequently, VPS generated higher expenses for the SUS due to higher

rates of late postsurgical complications and repeated readmissions. Conclusion: Higher public expenditures were observed in the group of children undergoing VPS due to higher rates of infectious and mechanical complications requiring repeated hospitalizations and prosthesis replacements. Public policies must be adapted to provide the best treatment for

children with hydrocephalus and make judicious use of public resources without compromising the quality of treatment.

4.5 Type of publication

In the following graph, you will observe the distribution of the bibliographic finding according to the type of publication made by each of the authors found in Scopus.

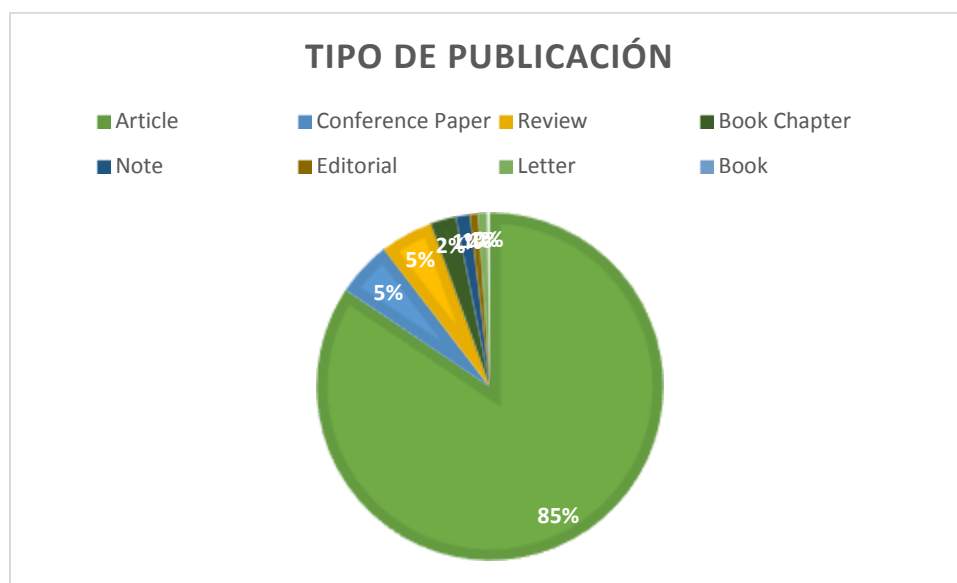


Figure 6. Type of publication.

Source: Own elaboration (2023); based on data provided by Scopus.

The type of publication most frequently used by the researchers referenced in the body of this document was the Journal Article with 85% of the total production identified for analysis, followed by Conference Articles with 5%. Book Chapters are part of this classification, representing 5% of the research papers published in journals indexed in Scopus. In this last category, the one entitled "Cost-effectiveness of home care services versus hospital care for pediatric patients worldwide: a protocol for systematic review and meta-analysis" stands out. (Lopes-Junior, 2022) Methods: a systematic review and meta-analysis protocol guided by preferred reporting elements for systematic reviews and meta-analysis protocols. Ten databases will be searched: MEDLINE/PubMed, Cochrane Library, Excerpta Medica database,

Cumulative Index of Nursing and Related Health Literature (CINAHL), Web of Science, SCOPUS, Science Direct, PsycINFO, Latin American and Caribbean Health Sciences Literature, and Chinese national publications. Knowledge infrastructure without restrictions on publication date or languages. A checklist shall be applied to assess the quality of the reports of the economic evaluation studies. To assess the methodological quality of observational research evidence on comparative effectiveness, we will use the Good Research Checklist for Comparative Effectiveness v5.0. Heterogeneity between studies will be assessed using the I² statistical test. Based on the results of this test, we will check whether a meta-analysis is feasible. If feasibility is confirmed, a random-effects model analysis shall be performed. For data analysis, the

calculation of pooled effect estimates will consider a 95% CI and alpha will be set to 0.05 using R statistical software, v.4.0.4. In addition, we will rate the certainty of the evidence based on Grading of Recommendations Assessment, Development and Evaluation.

5. CONCLUSIONS

Through the bibliometric analysis carried out in the present research work, it was established that Brazil was the country with the highest number of records published with regard to the variables Quality of Service and Public Hospitals with a total of 229 publications in the Scopus database. In the same way, it was established that the application of theories framed in the area of Medicines, were the most frequently used in the impact of efficiency and quality in the provision of services in public hospitals, allowing these indicators to perform quickly, easily and concisely information on how public hospitals have performed. The implementation of these indicators is useful for the administrators of hospitals, health centers, and all those who are part of the Ministry of Health that in one way or another are linked to the improvement of the health sector and to hospitals in particular. One of the most important practical issues arising from the use of hospital indicators is the need to use several of them at the same time to have a comprehensive understanding of the quality and efficiency of services provided in a structural unit or department, as this has not been implemented so far. A unified approach to combining hospital performance into a single indicator. The right balance between all the information that an indicator can provide and the generally required overview can only be achieved using common sense, experience and management knowledge. After reviewing the literature on this topic, we can conclude that the most accepted by

managers and researchers in the world is the marketing approach, which connects consumer perspectives with the definition and functioning of service quality. This is a great challenge for managers of health organizations, because although the patient's perspective is important, the technical, medical and scientific perspective should not be excluded from the definition and quality strategy, since the complementarity of these approaches will significantly improve the quality of health care. In Latin American countries.

6. REFERENCES

1. Casabianca, M. S.-L. (2022). *Price elasticity of demand for voluntary health insurance in Colombia*. Bogota.
2. Fernandes, A. G. (2022). *Choroidal melanoma tumor profile and treatment pattern for newly diagnosed patients at a public referral hospital in Sao Paulo, Brazil*. Sao Paulo .
3. Lopes-Júnior, L. C. (2022). *Cost-effectiveness of home versus inpatient care services for paediatric patients worldwide: a protocol for systematic review and meta-analysis*. Brazil.
4. Soriano, L. G. (2022). *Pediatric hydrocephalus treatment costs for the Brazilian public health system in the Northeast of Brazil*. Salvador de Habia, Brazil .
5. Amariles, P., Ceballos, M., & González-Giraldo, C. (2020). Primary health care policy and vision for community pharmacy and pharmacists in colombia. *Pharmacy Practice*, 18(4), 1-7. doi:10.18549/PharmPract.2020.4.2159
6. Andrade, L. S. S., Santos, T. T. M., de Oliveira, M. E. C., Gomes, K. A. L., Soares, A. R. A. P., de Oliveira, T. A., & Weller, M. (2021). Shorter delay to treatment by integrated diagnostic

- services and NGO-provided support among breast cancer patients in two brazilian referral centres. *Journal of Public Health Research*, 10(3) doi:10.4081/jphr.2021.1880
7. Aquino, E. M. L., Reichenheim, M., Menezes, G. M. S., de Araújo, T. V. B., e Alves, M. T. S. S. B., Alves, S. V., & da-Conceição C. Almeida, M. (2020). Quality assessment of abortion care from the users' perspective: Dimensional structure of the QualiAborto-pt questionnaire. *Cadernos De Saude Publica*, 36 doi:10.1590/0102-311X00197718
 8. Araujo, M. L. V., Miranda, J. G. V., Vasconcelos, R. N., Cambui, E. C. B., Rosário, R. S., Macedo, M. C. F., . . . Saba, H. (2022). A critical analysis of the COVID-19 hospitalization network in countries with limited resources. *International Journal of Environmental Research and Public Health*, 19(7) doi:10.3390/ijerph19073872
 9. Armijos, J. C., & Mondaca, A. N. (2020). Assessing the performance of public hospitals using key indicators: A case study in chile and ecuador. [Management indicators to evaluate the performance of public hospitals: A case study in Chile and Ecuador] *Revista Medica de Chile*, 148(5), 626-643. doi:10.4067/S0034-98872020000500626
 10. Asalde, C. A. B., de Bonilla, O. R. L., Lozada, I. C. R., Carrasco, V. B., Pizarro, D. N. B., Huamani, L. C., & Kian, J. H. (2020). Barriers to accessing quality health coverage and their association with medication adherence in patients with type 2 diabetes mellitus at a hospital in peru. *Pakistan Journal of Medical and Health Sciences*, 14(2), 853-859. Retrieved from www.scopus.com
 11. Baashar, Y., Alhussian, H., Patel, A., Alkaws, G., Alzahrani, A. I., Alfarraj, O., & Hayder, G. (2020). Customer relationship management systems (CRMS) in the healthcare environment: A systematic literature review. *Computer Standards and Interfaces*, 71 doi:10.1016/j.csi.2020.103442
 12. Badillo-Rivera, E., Esteves, A. J. F., Alata-López, F. E., Virú-Vásquez, P. H., & Acuña, S. M. M. (2021). Analysis of environmental and social variables as risk factors in the spread of the new coronavirus (SARS-CoV-2): A case study in peru. [Analysis of the behavior of environmental and social variables as risk factors in the spread of the New Coronavirus (SARS-CoV-2): Case study in Peru] *Geographic Investigations*, (104) doi:10.14350/RIG.60187
 13. Barahona-Urbina, P., Barahona-Droguett, M., & López-Labarca, C. (2021). Medical personnel as factors associated with hospital efficiency in chile. [Medical personnel as factors associated with hospital efficiency in Chile] *Revista De Salud Publica*, 23(3) doi:10.15446/rsap.v23n3.92525
 14. Barata, F., Fidalgo, P., Figueiredo, S., Tonin, F. S., & Duarte-Ramos, F. (2021). Limitations and perceived delays for diagnosis and staging of lung cancer in portugal: A nationwide survey analysis. *PLoS ONE*, 16(6 June) doi:10.1371/journal.pone.0252529
 15. Barrios-Ipenza, F., Calvo-Mora, A., Criado-García, F., & Curioso, W. H. (2021). Quality evaluation of health services using the kano model in two hospitals in peru. *International Journal of Environmental Research and Public Health*, 18(11) doi:10.3390/ijerph18116159
 16. Barrios-Ipenza, F., Calvo-Mora, A., Velicia-Martín, F., Criado-García, F., & Leal-Millán, A. (2020). Patient satisfaction in the peruvian health

- services: Validation and application of the HEALTHQUAL scale. *International Journal of Environmental Research and Public Health*, 17(14), 1-15. doi:10.3390/ijerph17145111
17. Barros, O. (2020). A process architecture pattern and its application to designing health services: Emergency case. *Business Process Management Journal*, 26(2), 513-527. doi:10.1108/BPMJ-08-2018-0210
 18. Basso, F., Frez, J., Martínez, L., Pezoa, R., & Varas, M. (2020). Accessibility to opportunities based on public transport gps-monitored data: The case of santiago, chile. *Travel Behaviour and Society*, 21, 140-153. doi:10.1016/j.tbs.2020.06.004
 19. Batista, A., Vera, J., & Pozo, D. (2020). Multi-objective admission planning problem: A two-stage stochastic approach. *Health Care Management Science*, 23(1), 51-65. doi:10.1007/s10729-018-9464-4
 20. Bedoya-Pacheco, S. J., Emygdio, R. F., Sena do Nascimento, J. A., Bravo, J. A. M., & Bozza, F. A. (2020). Intensive care inequity in rio de janeiro: The effect of spatial distribution of health services on severe acute respiratory infection. [Inequalities in intensive care in Rio de Janeiro: Effects of the spatial distribution of health services on severe acute respiratory infection] *Brazilian Journal of Intensive Care*, 32(1), 72-80. doi:10.5935/0103-507X.20200012
 21. Belizan, M., Maradiaga, E., Roberti, J., Casco-Aguilar, M., Ortez, A. F., Avila-Flores, J. C., . . . Ali, M. (2020). Contraception and post abortion services: Qualitative analysis of users' perspectives and experiences following zika epidemic in honduras. *BMC Women's Health*, 20(1) doi:10.1186/s12905-020-01066-7
 22. Bernardino, E., Nascimento, J. D. D., Raboni, S. M., & Sousa, S. M. (2021). Care management in coping with COVID-19 at a teaching hospital. *Revista Brasileira De Enfermagem*, 74, e20200970. doi:10.1590/0034-7167-2020-0970
 23. Bispo Pereira, E. H., Camilo-Júnior, D. J., D'ávilla, S. C. G. P., Mattar, N. J., & Xavier-Júnior, J. C. C. (2022). Comparison of cervical cancer screening results among public and private services in brazil. *International Journal of Gynecology and Obstetrics*, 158(2), 289-294. doi:10.1002/ijgo.13985
 24. Blass, A. P., Gouvea da Costa, S. E., Pinheiro de Lima, E., Tortato, U., & Borges, L. A. (2020). Environmental performance measurement in hospitals: A bibliometric review of literature (1987–2017) doi:10.1007/978-3-030-30306-8_8 Retrieved from www.scopus.com
 25. Bonilla-Hernández, A. L., & Martínez-Gutiérrez, R. (2021). Innovation in value chain in the medical tourism industry in tijuana, baja california doi:10.1007/978-3-030-80713-9_65 Retrieved from www.scopus.com
 26. Borges, G. A., Tortorella, G. L., Martínez, F., & Thurer, M. (2020). Simulation-based analysis of lean practices implementation on the supply chain of a public hospital. *Production*, 30, 1-16. doi:10.1590/0103-6513.20190131
 27. Botega, L. A., Andrade, M. V., & Guedes, G. R. (2020). Profile of general hospitals in the unified health system. *Revista De Saude Publica*, 54, 82. doi:10.11606/s1518-8787.2020054001982
 28. Caetano, C. R., Matheus, F. C., & Diehl, E. E. (2021). Organization of

- public entities to attend to the judicialization of access to medications in the state of Santa Catarina, Brazil. [Organização dos entes públicos para atender a judicialização do acesso a medicamentos no estado de Santa Catarina, Brasil] *Ciencia e Saude Coletiva*, 26(11), 5561-5575. doi:10.1590/1413-812320212611.32092020
29. Caicedo-Martinez, M., Li, B., Gonzalez-Motta, A., Gamboa, O., Bobadilla, I., Wiesner, C., & Murillo, R. (2021). Radiation oncology in Colombia: An opportunity for improvement in the postconflict era. *International Journal of Radiation Oncology Biology Physics*, 109(5), 1142-1150. doi:10.1016/j.ijrobp.2020.12.006
30. Calice-Silva, V., Cabral, A. S., Buchares, S., Moura-Neto, J. A., Figueiredo, A. E., Franco, R. P., . . . Nascimento, M. M. D. (2020). Good practices recommendations from the Brazilian Society of Nephrology to peritoneal dialysis services related to the new coronavirus (COVID-19) epidemic. *Jornal Brasileiro De Nefrologia : 'Orgao Oficial De Sociedades Brasileira e Latino-Americana De Nefrologia*, 42(2), 18-21. doi:10.1590/2175-8239-JBN-2020-S106
31. Calvo, R., Amigo, C., Billi, M., Fleischmann, M., Urquiza, A., Álamos, N., & Navea, J. (2021). Territorial energy vulnerability assessment to enhance just energy transition of cities. *Frontiers in Sustainable Cities*, 3 doi:10.3389/frsc.2021.635976
32. Campus, G., Diaz-Betancourt, M., Cagetti, M. G., Carvalho, J. C., Carvalho, T. S., Cortés-Martínicorena, J. F., . . . Wolf, T. G. (2020). Study protocol for an online questionnaire survey on symptoms/signs, protective measures, level of awareness and perception regarding COVID-19 outbreak among dentists. A global survey. *International Journal of Environmental Research and Public Health*, 17(15), 1-8. doi:10.3390/ijerph17155598
33. Cangussú, L. R., de Barros, I. R. P., de Lima Botelho Filho, C. A., Sampaio Filho, J. D. R., & Lopes, M. R. (2020). COVID-19 and health literacy: The yell of a silent epidemic amidst the pandemic. *Revista Da Associação Médica Brasileira*, 66, 31-33. doi:10.1590/1806-9282.66.S2.31