JHPM Journal of Health Policy and Management (2023), 08(01): 39-47
Masters Program in Public Health, Universitas Sebelas Maret

Meta-Analysis

The Relationship between Hospital Administration and Quality of Services: Meta-Analysis

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ABSTRACT

Background: Quality of service (QoS) is important because enterprises need to provide stable services for employees and customers to use. Maintaining hospital administration is the most important thing to consider in hospital service indicators. This study aimed to analyzed the strength of the relationship between hospital administration with quality of services.
Subjects and Method: This study is a meta-analysis with PICO, population: patients. Intervention: good hospital administration. Comparison: poor hospital administration. Outcome: quality of services. The articles used in this study were obtained from three databases, namely Google Scholar, Pubmed, and Science Direct. Keywords to search for articles are "Hospital Administration" OR "Good Administration" OR "Hospital Services" AND "Quality of Services" OR "Services" AND "Multivariate". Articles included are full-text English from 2009 to 2021. Articles were selected using a PRISMA flow diagram. Articles were analyzed using the Review Manager 5.3 application.
Results: A total of 8 cross-sectional study articles from Asia, Europe, Africa, and North America were reviewed in the meta-analysis. Based on the results of the analysis, hospital management or good hospital administration has the possibility to increase the quality of service in hospital by 2.61 times compared to poor hospital administration (aOR= 2.61; 95% CI= 1.44 to 4.72; p= 0.002) and the results were statistically significant.
Conclusion: Hospital administration are increase the quality of services.

Keywords: hospital, hospital administration, quality of services.

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Cite this as:
Rokhmatun PN, Maesaroh S, Putri IRR, Salmah S, Kurnianingsih SA, Fauziah AN, Zamani A, Atmojo JT, Widiyanto A (2023). The Relationship Between Hospital Administration and Quality of Services: Meta-Analysis. J Health Policy Manage. 08(01): 39-47. https://doi.org/10.26911/thejhpm.2023.08.01.05.

BACKGROUND

Quality has become the most important part of life. People are constantly looking for quality products and services. This desire for quality has led companies and organizations around the world to regard it as an essential component of every service and production process. Quality is a strategic differentiating tool for maintaining a competitive advantage. Improving quality through improved structure and processes leads to reduced waste,

rework, and delays, lower costs, higher market share, and a positive corporate image. As a result, productivity and profitability increase. Therefore, it is very important to define, measure and improve the quality of health services (Alexander et al., 2006).

Healthcare quality is even more difficult to define and measure than in other sectors. Different characteristics of the healthcare industry such as intangibility, heterogeneity, and simultaneity make it difficult to define and measure quality. Healthcare is an intangible product and cannot be physically touched, felt, seen, counted, or measured like manufactured goods.

Producing tangible goods allows quantitative measurement of quality, because the goods can be sampled and tested for quality during the production process and subsequent use. However, the quality of health services depends on the service process and the interaction between the customer and the service provider. Some health service quality attributes such as timeliness, consistency, and accuracy are difficult to measure beyond subjective judgments by customers.

Maintaining the quality of the hospital so that the quality of service is maintained the government has developed service standards and hospital service indicators. The quality of services as the main indicator that can play a role in maintaining the quality of hospital services must prioritize the parties served (client oriented), because patients are the most clients, so there are many benefits that can be obtained by a hospital if prioritizing patient satisfaction (Tambunan, 2016).

The quality of hospital services can be examined from three things, included 1) Inputs (structure, physical facilities, equipment, funds, health workers and non-health, as well as patients); 2) Process (hospital management, technical and nursing services, all of which are reflected in medical and non-medical actions to patients, and hospital administration); 3) Output / Outcome (patient recovery, patient satisfaction) (Machmud, 2008).

The hospital is part of integral part of health care experienced a change in value orientation and thinking. In order to survive and thrive in an environment that fast changing and competitive, hospital have to change the management paradigm hospital to the point of view consumer. Service quality approach and customer satisfaction is one of the important strategies that cannot be ignored (Jannah, 2017).

Based on this background, a comprehensive study is needed from various primary studies to analyzed the strength of the relationship between hospital administration with quality of services.

SUBJECTS AND METHOD

1. Study Design

This research is a systematic review and meta-analysis. Data collection was obtained from 3 databases, namely: Google Scholar, PubMed, and Science Direct. The analysis of this research was carried out using RevMan 5.3 software. The keywords used were “Hospital Administration” OR “Good Administration” OR “Hospital Services” AND “Quality of Services” OR “Services” AND “Multivariate”.

2. Steps of Meta-Analysis

Meta-analysis is carried out through 5 steps as follows:

1) Formulate research questions in PICO (Population, Intervention, Comparison and Outcome).
2) Searching for primary study articles from various databases including Google Scholar and Science Direct.
3) Perform screening and conduct critical quality primary studies.
4) Perform data extraction and enter the estimated effect of each primary study into the RevMan 5.3 application.

5) Interpret the results and draw conclusions

3. Inclusion Criteria

The inclusion criteria used are full English papers with a cross sectional design, the relationship measure used is the adjusted Odds Ratio (aOR), the research subjects are patients who use health services in hospitals, the outcome of the study is quality of service.

4. Exclusion Criteria

Exclusion criteria in this study were articles published in languages other than English, statistical results reported in the form of bivariate analysis and not include 95% CI also aOR value.

5. Operational Definition of Variables

The search for articles was carried out by considering the eligibility criteria determined using the PICO model.

Hospital Administration is the form of health services aimed at individuals and or groups to develop, maintain and be able to develop the quality and services of hospitals, and assessment of the good and bad of hospital administration is assessed by patients usually using a questionnaire filled by patients or inpatients who used the health care services.

Quality of Services is a set of instruments used to ensure the quality of service in a system or institution and were measured by using a set of questionnaires.

6. Study Instruments

The instrument used in this research is the Critical Appraisal Checklist Center for Evidence Based Management (CEBMa).

The following are indicators in critical assessment:

a. Do the research objectives clearly address the focus/problem of the research?
b. Is the research method (research design) suitable for answering the research question?
c. Is the research subject selection method clearly written?
d. Does the sampling method give rise to bias (selection)?
e. Does the research sample take represent the designated population?
f. Was the sample size based on pre-study considerations?
g. Is the measurement method achievable?
h. Are the research instruments valid and reliable?
i. Was statistical significance assessed?
j. Was a confidence interval given for the main outcome?
k. Are there any confounding factors that have not been taken into account?
l. Are the results applicable to your research?

7. Data Analysis

The collected articles were then processed using the Review Manager (RevMan 5.3). Data processing is done by calculating aOR. Forest plots and funnel plots are used to determine the size of the relationship and the heterogeneity of the data.

RESULTS

Process of searching article was carried out by searching several journal databases PubMed, Google Scholar, and Science Direct it can be seen using the PRISMA FLOW flowchart shown in Figure 1.

The initial search process resulted in a total of 1,512 articles, after deleting the duplicated articles, 964 articles were found, of which 228 articles were eligible for a full text review. A total of 8 articles that meet the criteria according to the quantitative synthesis meta-analysis.

It can be seen in Figure 2 that the research articles come from fourth continents such as Asia, Africa, Europe, and North America.

Table 1 showed about study quality assessment using CEBM, then table 2 showed

the details of the articles provide hospital administration on quality of services.

a. Forest plot the Relationship between Hospital Administration and Quality of Service.

Hospital a management or good hospital administration has the possibility to increase the quality of service in hospital by 2.61 times compared to poor hospital administration (aOR= 2.61; 95% CI= 1.44 to 4.72; p= 0.002), and the results was statistically significant.

b. Funnel plot the Relationship between Hospital Administration and Quality of Service.

This study showed that there is no indication of publication bias among previous primary study that used in meta-analysis.

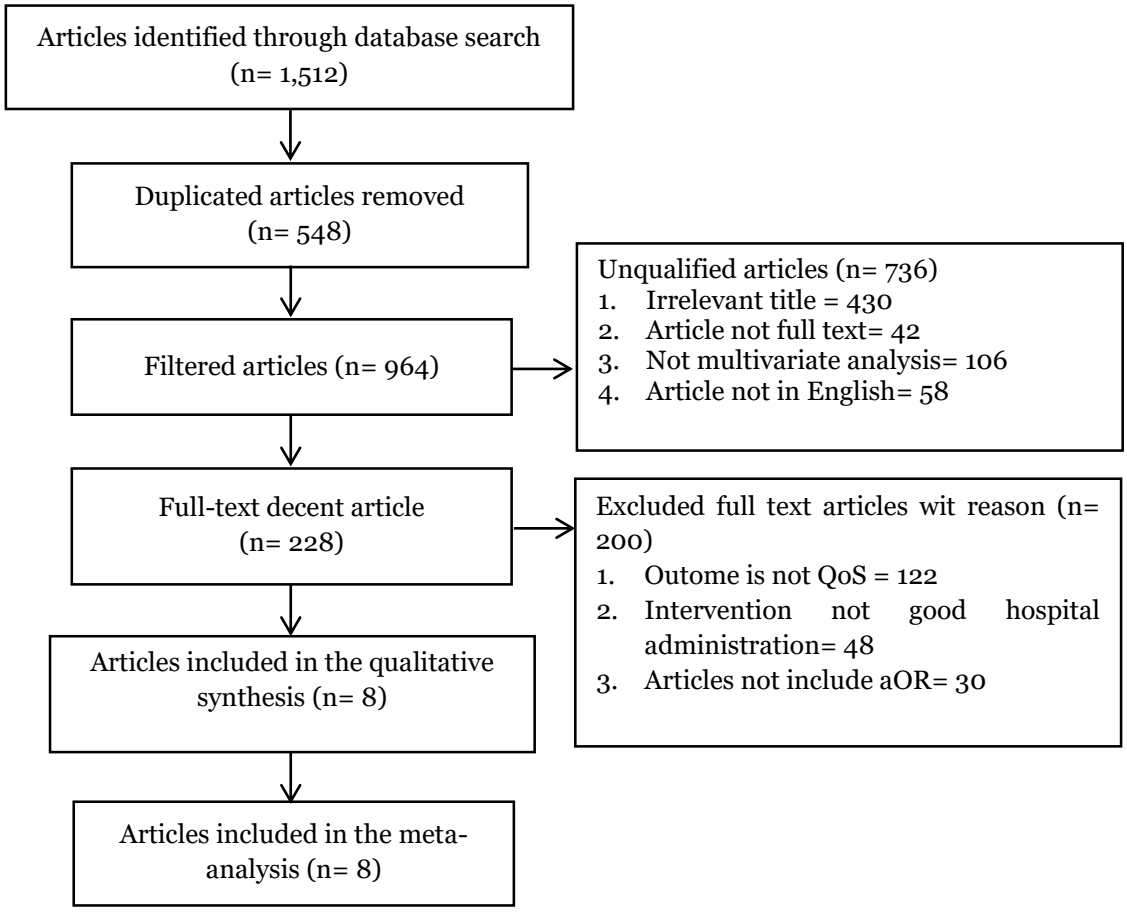

Figure 1. Prisma Flow Diagrams

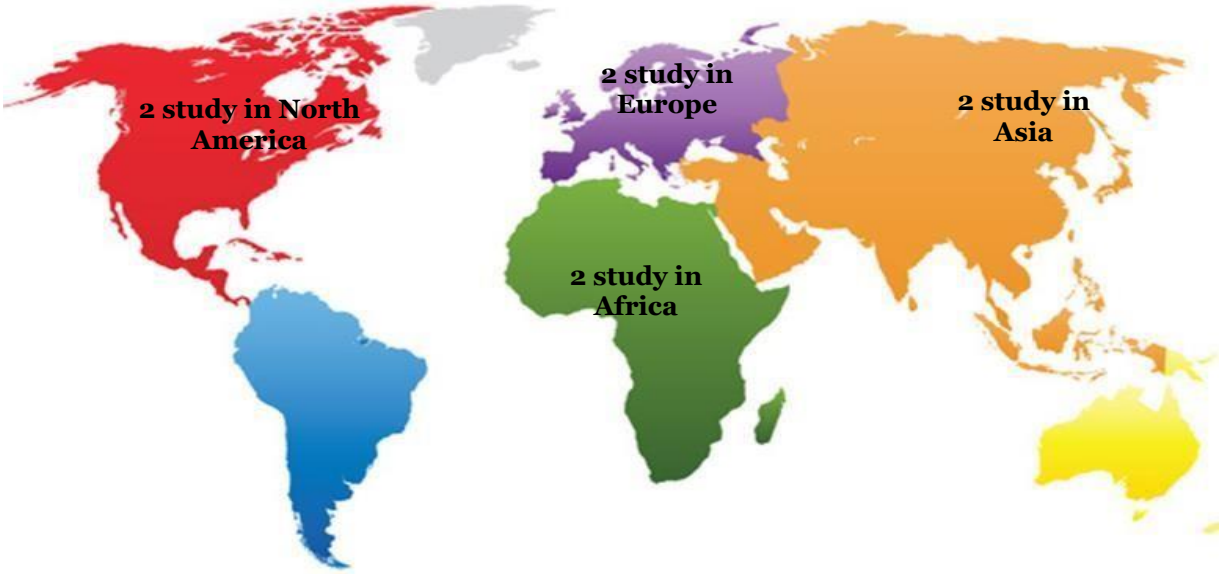

Figure 2. Resarch Distribution Map

Table 1. Critical Appraisal Checklist Center for Evidence Based Management (CEBMa).

Primary Study	Criteria												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
Baxter et al., (2011)	2	2	2	2	2	2	2	2	2	2	2	2	24
Shan et al. (2016)	2	2	2	2	2	2	2	2	2	2	2	2	24
Teklemariam et al. (2013)	2	2	2	2	2	2	2	2	2	2	2	2	24
Moore et al. (2017)	2	2	2	2	2	2	2	2	2	2	2	2	24
Platis et al. (2015)	2	2	2	2	2	2	2	2	2	2	2	2	24
Wendimagegn & Bezuidenhout (2019)	2	2	2	2	2	2	2	2	2	1	2	2	23
Al-Borie & Sheikh Damanhouri (2013)	2	2	0	2	2	2	2	2	2	2	2	2	22
Pini et al. (2014)	2	2	2	2	2	0	2	2	1	2	2	2	20

DISCUSSION

Quality in healthcare is a collaborative production between patients and healthcare providers. The quality of health care depends on both the personal factors of the health care provider and the patient and factors related to the health organization and the wider environment. Differences in internal and external factors such as the availability of resources and collaboration and cooperation between providers affect the quality of service and patient outcomes (Yusof et al., 2008).

The findings suggest that the quality of health services can be improved with supportive leadership, planning, education and training, and effective management of resources, employees and processes. If policy makers and managers are to improve healthcare quality, they must apply techniques and tools to operationalize these quality management constructs. However, there are several obstacles that hinder the successful introduction of a quality management model. Some of the organizational morbidity is described below (Brooks et al., 2007).

Table 2. Summary of Articles Sources of Hospital Administration as Factors Associated with Patient Satisfaction.

Author (Year)	Country	Study Design	Sample	Population	Intervention	Comparison	Outcome	aOR (CI 95%)
Baxter et al., (2011)	Canada (North America)	Cross-sectional	14,064	Patients in Ontario Cancer Registry at 2000-2005.	Good hospital administration	Poor hospital administration	QoS and patient satisfaction	0.73)0.54 to 0.97)
Shan et al. (2016)	China (Asia)	Cross-sectional	626	Hospital inpatient care in China	Good hospital administration	Poor services on administration	QoS, level of trust.	3.15 (1.93 to 5.15)
Teklemariam et al. (2013)	Ethiopia (Afrika)	Cross-sectional	245	All inpatient in Hospital Ethiopia	Good hospital administration	Poor hospital administration	Ward environment, QoS	2.36 (1.63 to 3.42)
Moore et al. (2017)	US (North America)	Cross-sectional	708	all-payer in US hospital	Good hospital administration	Poor hospital administration	Service attitudes, QoS	14.99 (6.82 to 32.95)
Platis et al. (2015)	Yunani (Europe)	Cross-sectional	246	Patients in Yunani	Good hospital administration	Poor services on administration	Insurance status, patient satisfaction, QoS	5.73 (3.30 to 9.95)
Wendimagegn & Bezuidenhout (2019)	Ethiophia (Afrika)	Cross-sectional	413	Women aged 21 years and over	Good hospital administration	Poor services on administration	Patient satisfaction, QoS	2.02 (1.25 to 3.25)
Al-Borie & Sheikh Damanhouri (2013)	Saudi Arabia (Asia)	Cross-sectional	1,000	Patient in five Saudi Arabian public and five private hospitals	Good hospital administration	Poor hospital administration	QoS	1.82 (1.16 to 2.86)
Pini et al. (2014)	Yunani (Europe)	Cross-sectional	100	Outpatients' Departments of a Greek Anti-Cancer Hospital	Good hospital administration	Poor hospital administration	Ward environment, QoS, patient satisfaction	1.58 (0.68 to 3.67)

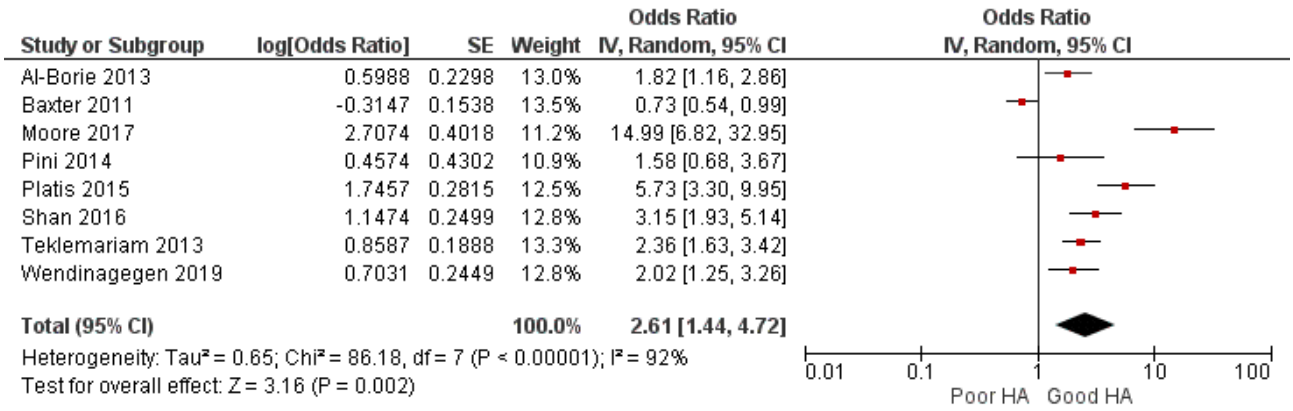

Figure 3. Forest Plot the Relationship between Hospital Administration and Quality of Service

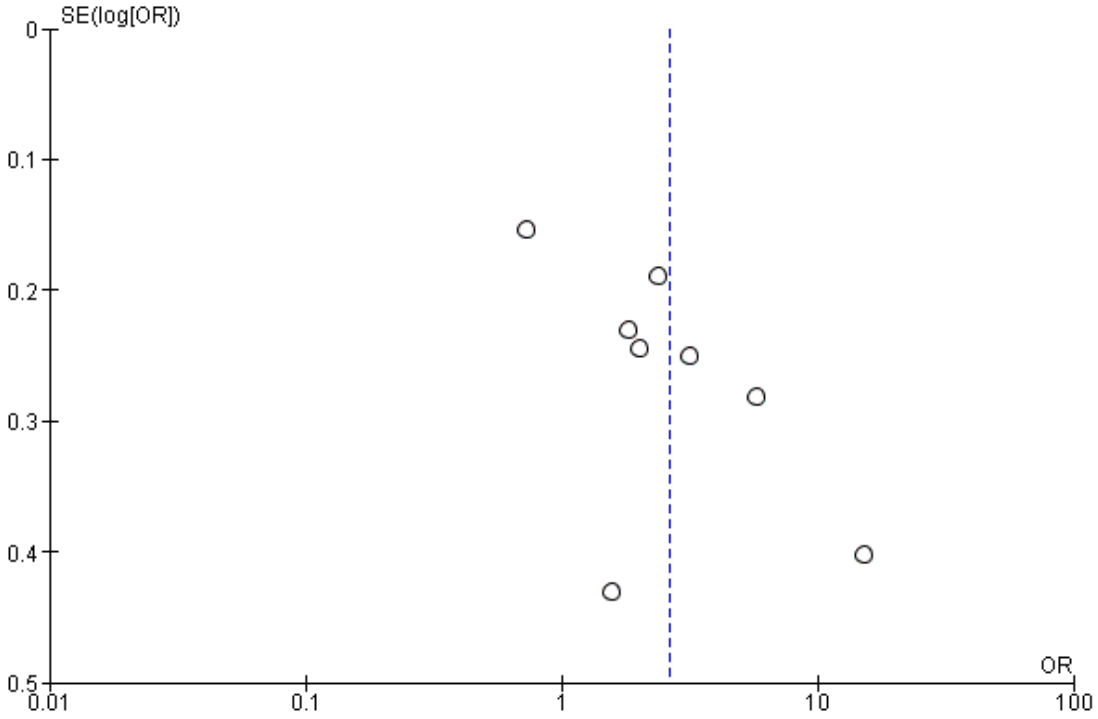

Figure 4. Funnel Plot the Relationship between Hospital Administration and Quality of Service

Physical capital refers to any non-human asset used in the production of products and services. Quality is not free. High-quality resources are needed to provide high-quality services. Healthcare organizations should provide their staff with the resources and support they need to deliver high-quality services (Mosadeghrad, 2013).

The health care industry in densely populated developing countries, is in its growth stage as evident from the very large number of hospital construction projects currently under construction. Patient satisfaction and loyalty are two strategic constructs that must be monitored and kept on a higher pedestal so that success can be maintained throughout

the year. Hospitals must understand the relationship between specific dimensions of health service quality, namely patient satisfaction, and loyalty (Pini et al., 2014).

Quality is a strategic differentiating tool for maintaining a competitive advantage. Improving quality through improved structure and processes leads to reduced waste, rework, and delays, lower costs, higher market share, and a positive corporate image. As a result, productivity and profitability increase. Therefore, it is very important to define, measure and improve the quality of health services (Alexander et al., 2006).

The most important aspects that hospital managers need to focus on, based on our research findings, are: (1) timely service, (2) employee attention, (3) billing accuracy, (4) proper communication about service delivery time, (5) service timeliness, and (6) willingness staff to help patients.

AUTHOR CONTRIBUTION

All the authors contributed selects the topic, searching for article, data analysis, and also script writing.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

FUNDING AND SPONSORSHIP

This study is self-funded.

ACKNOWLEDGEMENT

We are grateful to the database providers Google Scholar, PubMed, and Science Direct. Our deepest gratitude goes to all the publishers of the articles whose articles we used for this research.

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