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THE RELATIONSHIP BETWEEN SOCIAL CAPITAL AND HEALTH SERVICE QUALITY: A META-ANALYSIS

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ABSTRACT
The quality of healthcare services has a significant impact on all healthcare efforts, making service quality an essential aspect to consider in every healthcare institution or facility used as a health referral center for patients. Social capital refers to social relationships and connections between individuals, focusing on the interactions among individuals rather than individual attributes. The key concept is that social capital is not a characteristic of an individual or a personality trait, but rather a resource embedded in networks and groups of people. This resource can contribute to health production if properly utilized. To investigate the relationship between elements of social capital that may influence the quality of healthcare services. This study employed a cross-sectional and meta-analysis design, involving an extensive search for relevant articles from electronic databases, including Google Scholar, PubMed, ScienceDirect, BMC, and Publish or Perish. To be included in the study, articles had to meet specific criteria, such as being full observational studies published between 2004 and 2023. The collected articles were analyzed using RevMan 5.3 software. Our findings indicate that high levels of social capital are positively associated with an improvement in the quality of healthcare services, being 1.19 times more likely to result in higher quality compared to low social capital, which is negatively associated with service quality. The results are statistically significant (aOR = 1.19; 95% CI = 1.06 to 1.34; p = 0.006). This study contributes to the literature on positive work environment factors by emphasizing the importance of social capital and good relationships within and especially between hospitals to achieve high-quality services. Therefore, bridging and maintaining social capital should be integrated into theoretical frameworks, hospital strategies, and work environment policies to potentially enhance the quality of healthcare services.

Keywords: health quality; health service; social capital

INTRODUCTION
Health is a fundamental need for every individual in order to live a productive and prosperous life. To fulfill the definition of health, it is essential to provide healthcare services with well-structured and guaranteed cost and quality control. This is a right for every citizen in Indonesia, ensuring equitable treatment in terms of health services. The guarantee of these rights is outlined in Law Number 36 of 2009 on Health, which asserts several points regarding the health rights of every individual (Republic of Indonesia, 2009 in Maranjaya, 2020). Efforts to maintain and improve health can be realized through the provision of healthcare services. Healthcare services are efforts carried out individually or collectively within a group or organization with the aim of maintaining and improving the health of individuals, families, groups, or communities (Sari et al., 2021). In delivering these services, it is crucial to consider healthcare facilities, as these serve as a benchmark for assessing the quality of available healthcare services.

Healthcare services in hospitals generally include administrative and management services, medical services, emergency services, nursing care, medical records, radiology services, laboratory services, operating rooms, pharmacy services, occupational health and safety, high-risk perinatal care, infection control, anesthesia services, medical rehabilitation, nutrition services, intensive care,

facility maintenance, and libraries. Medical services include areas such as surgery, pediatrics, internal medicine, ophthalmology, obstetrics, and gynecology.

The quality of healthcare services has a significant impact on all healthcare delivery efforts, making it an essential aspect to be prioritized in every healthcare institution or referral center for patients. According to Darmini & Gorda (2021), the ability of healthcare service centers—such as hospitals and community health centers—to provide good service must be accompanied by continuous improvement in service quality to achieve optimal health outcomes for the entire population. Quality in healthcare services can be defined as the reflection of consumer evaluations regarding how well the services they receive align with their expectations. If the services received meet expectations, then the service is considered quality and satisfactory (Sihaloho, 2022).

Social capital is a set of values or norms within a community that enables cooperation among its members. It is a resource accessed by individuals and groups within a social structure that facilitates collaboration, collective action, idea mobilization, mutual trust, and mutual benefit for shared progress. Interactions that form networks of togetherness in social capital contain shared norms, values, and understandings that facilitate cooperation within a group (Immanuel et al., 2021). Social capital refers to social relationships and connections among individuals, emphasizing interpersonal relationships rather than individual traits. The key concept is that social capital is not an individual characteristic or personality trait, but rather a resource embedded within networks and groups, which can contribute to health outcomes if utilized. It can be understood as a collection of crucial assets within a community or social organization, arising from social interactions and mutual trust among members, facilitating voluntary cooperation to solve problems based on shared goals (Ramadhan et al., 2020).

The psychosocial work environment is a comprehensive concept that encompasses a range of both positive and negative psychological and social factors and processes experienced by employees in relation to their work. These elements influence employee behavior, workplace well-being, and the sustainability of work life (Clausen et al., 2019). Despite the growing recognition of the importance of quality healthcare services and the legal frameworks that support equitable access to health in Indonesia, there remains a significant gap in understanding how non-clinical factors, particularly social capital, influence the quality of healthcare delivery. While previous studies have explored the role of infrastructure, medical resources, and workforce competence, the potential impact of social relationships, trust, and community networks within and across healthcare institutions has been largely overlooked. This gap is critical, as social capital may serve as a key determinant in enhancing collaboration, communication, and overall service performance in healthcare settings. Moreover, although various individual studies have examined aspects of social capital and health outcomes, their findings are often inconsistent and fragmented, making it difficult to draw generalizable conclusions. A comprehensive synthesis through a meta-analysis is therefore necessary to consolidate the available evidence and provide a more robust understanding of this relationship. Therefore, the purpose of this study was to investigate the relationship between elements of social capital and the quality of healthcare services through a systematic review and meta-analysis.

METHOD

Research Design and Search Strategy

The meta-analysis was designed following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Hutton et al., 2015). A comprehensive electronic search was carried out using databases such as EBSCO, PubMed/Medline, and ScienceDirect, covering literature from inception until August 8, 2023. The search specifically focused on English-language studies, using the search string: “(Social Capital) AND (Healthcare Service Quality) AND (Cross-Sectional) AND (AOR).” Additional relevant studies were identified by manually screening reference lists from previous meta-analyses and review articles.

Study Inclusion Criteria

Primary studies were included based on specific criteria: they examined the relationship between social capital and the quality of healthcare services, used observational study designs (such as case-control, cohort, or cross-sectional), reported outcomes in the form of adjusted odds ratios (AOR), and involved participants aged 60 years and above. The inclusion strategy followed the PECOS framework, which specified the population (healthcare and non-healthcare workers), exposure (high social capital), comparison (low social capital), outcome (quality of healthcare services), and study type (English-language observational studies). Excluded from the review were randomized controlled trials, review articles, editorials, and studies that did not meet the inclusion criteria. The full text articles included in the exclusion criteria are due to the following: 1). The outcome of the study was not in accordance with the PICO criteria or formulation in this study; 2). The population in the article is not a health worker; 3). The article did not include the complete aOR, 95% CI, and p value.

Data Extraction and Quality Assessment

Data extraction and quality assessment were conducted independently by two reviewers. The selected studies were first exported to Mendeley for duplicate removal. Then, both reviewers extracted the necessary data and assessed the quality of each study using the Newcastle-Ottawa Scale (NOS), which evaluates observational studies across three domains: selection, comparability, and outcome/exposure. The NOS scores were converted based on AHRQ standards into three categories: good, fair, and poor quality. Good quality was indicated by high scores across all domains, while poor quality studies lacked sufficient scores in at least one domain. The detailed scoring results are presented in the table 1.

Table 1.
Quality assessment of cross-sectional studies using the NOS

Studies	Selection				Comparability	Outcome		Total Score
	Representa-tiveness of sample	Sample thesize	Ascer-tainment of expo-sure	Non-respon-dents	The subjects in different groups are comparable, based on the study design or analysis. Confounding factors are controlled.	Assess outcome ement	Statistical Test of	
Dehcheshmeh (2020)	1	1	1	1	1	1	1	Good
Ernstmann (2013)	1	1	1	1	1	1	1	Good
Hammer (2013)	1	1	1	1	1	1	1	Good
Lee (2004)	1	1	1	1	1	1	1	Good
Lindstrom & Axen (2004)	1	1	1	1	1	1	1	Good
Mirach (2019)	1	1	1	1	1	1	1	Good
Perdesen (2023)	1	1	1	1	1	1	1	Good
Shin (2016)	1	1	1	1	1	1	1	Good

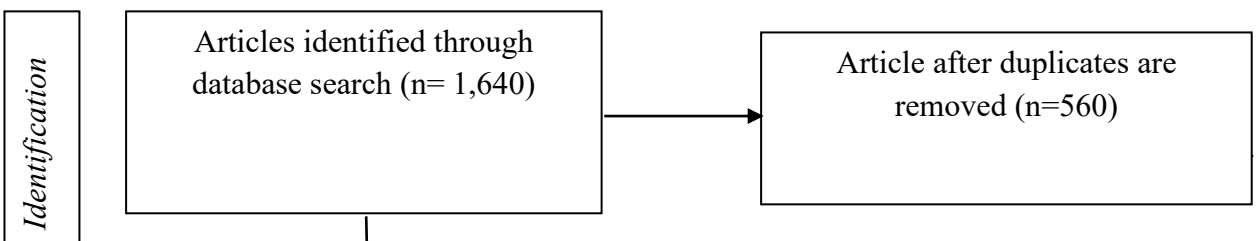

Figure 1. PRISMA flow chart diagram

RESULT

The article search process through journal databases including Google Scholar, PubMed, Science Direct and Springerlink, Elseiver, and BMC with a time span between 2004-2023. The keywords used in the article search process are “social capital” AND “Quality of Health Care” OR “Clinical Quality” AND “Hospital” AND “Cross Sectional” AND “Multivariate analysis”. The article search process can be seen in the prism flowchart in Figure 1.

Sample Characteristics

There are 8 observational case-control studies used as sources for the meta-analysis on the relationship between social capital and the quality of healthcare services. Based on Table 2, the overview of the primary studies analyzed in the meta-analysis includes 8 articles conducted in various locations—namely Iran, Germany, Europe, the United States, Europe (again), Colombia, Denmark, and South Korea—with a total sample size of 9,315 participants. A commonality found among these studies is the use of a cross-sectional design, with hospital staff as the research subjects. The intervention group had high social capital, the comparison group had low social capital, and the outcome measured was the quality of healthcare services.

Table 2.
Description of primary social capital studies included in the meta-analysis

Author (Year)	Country	Sample	Population	Intervention	Comparison	Outcome
Dehcheshmeh (2020)	Cyprus	120	Hospital Staff	High social capital	Low social capital	Quality of Healthcare Services
Ernstmann (2013)	Canada	959	Hospital Staff	High social capital	Low social capital	Quality of Healthcare Services
Hammer (2013)	Canada	686	Hospital Staff	High social capital	Low social capital	Quality of Healthcare Services
Lee (2004)	Belgium	1,383	Hospital Staff	High social capital	Low social capital	Quality of Healthcare Services
Lindstrom & Axen (2004)	Belgium	3,456	Hospital Staff	High social capital	Low social capital	Quality of Healthcare Services
Mirach (2019)	Germany	690	Hospital Staff	High social capital	Low social capital	Quality of Healthcare Services
Pedersen (2023)	Netherlands	1,589	Hospital Staff	High social capital	Low social capital	Quality of Healthcare Services
Shin (2016)	Germany	432	Hospital Staff	High social capital	Low social capital	Quality of Healthcare Services

Review Analysis

The studies also varied in sample size, with the smallest sample consisting of 120 participants and the largest comprising 3,456 participants. The forest plot in Figure 2 shows that high social capital is positively associated with a 1.19 times greater improvement in healthcare service quality compared to the negative impact observed with low social capital. This finding is statistically significant (Aor = 1.86; 95% CI = 1.06 to 1.34; p = 0.006). The heterogeneity of the data is indicated by an I^2 value of 65%, suggesting a heterogeneous distribution of data (random effects model). The funnel plot in Figure 3 displays a balanced distribution of effect size estimates across studies—3 plots on the left, 3 on the right, and 2 in the center along the vertical average estimate line—indicating no publication bias.

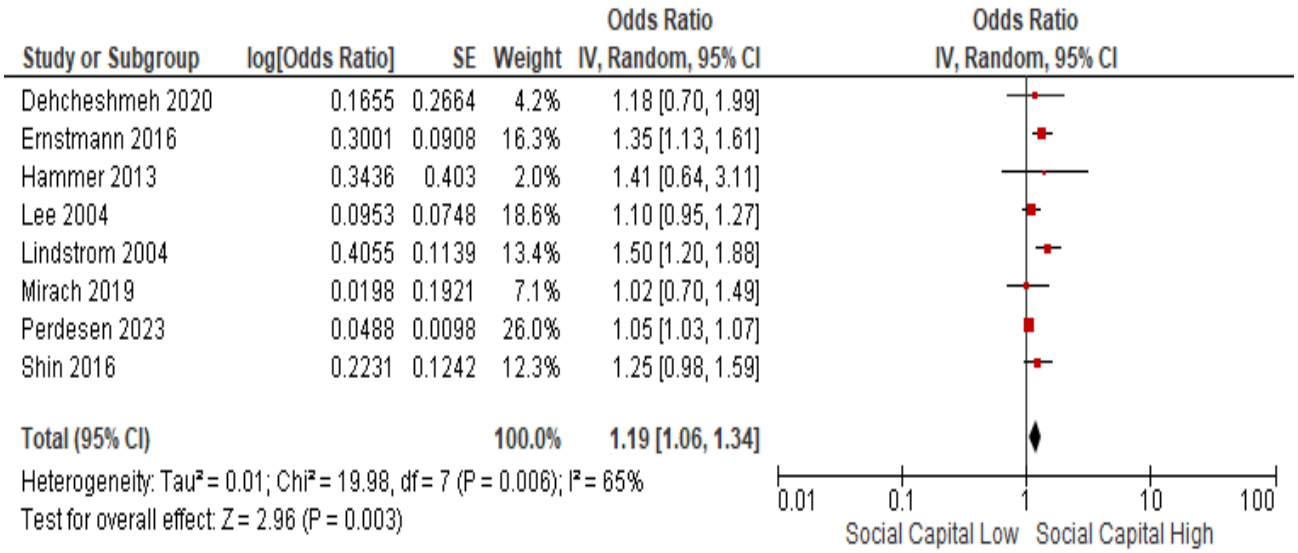

Figure 2. Forest plot of the relationship between social capital and health service quality

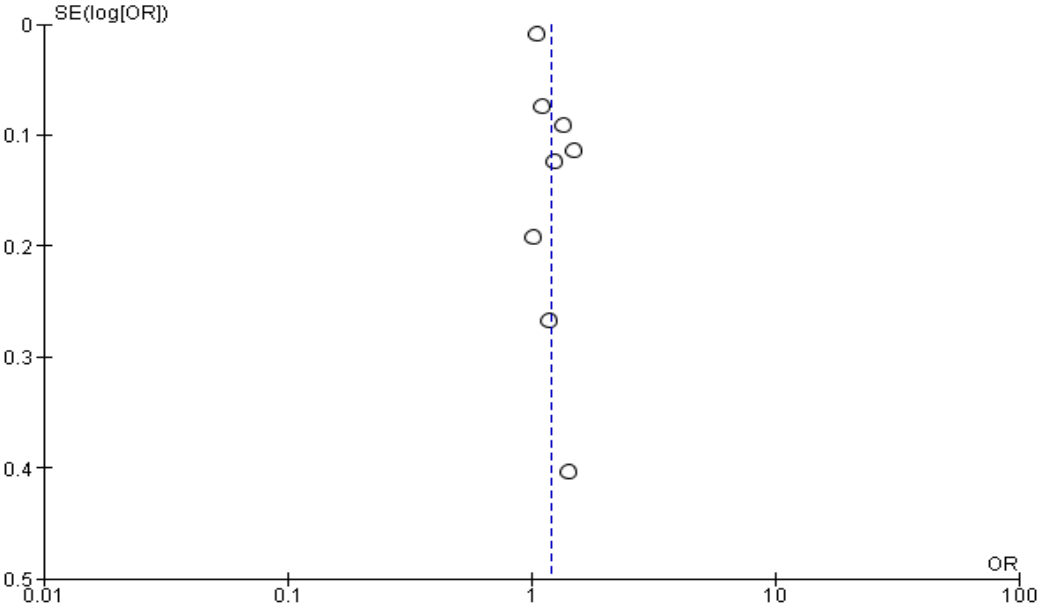

Figure 3. Funnel plot of the relationship between social capital and health service quality

DISCUSSION

Social capital is referred to as a public asset and resource that can be accessed through social relationships and community engagement to cooperate in achieving common goals within various groups and organizations. The theory of social capital focuses on collective resources within networks—among employees within work units, across departments, and between staff and hospital managers. This study includes employees from all categories of hospital staff, emphasizing social capital as one of the most important organizational resources. Additionally, the role of work teams in fostering a supportive work environment is underscored (Pedersen et al., 2023).

Healthcare service quality is highly complex and requires systematic measurement (Teoh et al., 2019). The concept of healthcare quality is commonly divided into three categories: clinical quality, patient engagement quality, and overall professional quality. Public health services across many countries are increasingly challenged by cost-effectiveness demands, a growing proportion of elderly and/or chronically ill patients requiring intensive care, the adoption of new technologies, and rising treatment costs over time (Stewart, 2020). In the hospital environment, relational coordination has been shown to mediate the relationship between high-performance work practices and outcomes in terms of quality and efficiency (Gittell et al., 2010). Hospital leaders and members of the organization are encouraged to share information, technology, and systems by initiating cross-sectoral projects, improving hospital performance and patient satisfaction (Midtjylland, 2020).

Social capital is at least as vital as known risk factors for high work demands in hospital settings. The theory of social capital highlights positive aspects of the work environment. It is categorized into three subtypes: bonding, bridging, and linking social capital. It emphasizes the role of trust and cooperation in facilitating team coordination, ultimately improving intra-individual alignment toward organizational goals. Trust represents understanding within relationships, including between individuals, between individuals and organizations, and even between individuals and events. It is seen not only as a key element of interpersonal communication but also as the core mechanism that enables communication itself (Moradian, 2012). Mutual trust drives both managers and staff toward achieving shared goals. Moreover, effective communication and interpersonal skills significantly influence healthcare quality and are central to clinical activities (Farhangi, 2010). Given the importance of interaction among healthcare managers—which directly impacts public health and wellbeing—it is crucial to train managers in developing and promoting employee skills (Rouzbahani, 2012).

This meta-analysis included 8 observational case-control studies investigating the relationship between social capital and healthcare service quality. The analysis revealed that high social capital is associated with a 1.19 times greater likelihood of improved healthcare service quality compared to low social capital, which showed a negative association with service quality (aOR = 1.19; 95% CI = 1.06–1.34; p = 0.006). The heterogeneity of the data was moderate (I^2 = 65%), thus a random-effects model was applied. Social capital has been linked to job commitment and professional satisfaction in healthcare settings. Furthermore, all dimensions of measured social capital are positively associated with clinical patient safety and service quality. Within healthcare organizations, social capital can be a critical factor in the clinical improvement commitment necessary to elevate service standards. As social capital and quality are shaped by global trends and technological advancements, understanding patients' perceptions of service quality is essential for identifying influential areas and improving resource allocation. A positive work environment that emphasizes strong interpersonal relationships within and between hospital units is key to delivering high-quality care (Kister, 2015).

Higher social capital is also associated with a stronger emphasis on quality. It is a key predictor of quality prioritization. Shared values and trust among team members enhance awareness of service quality. More experienced nurses tend to have a heightened sensitivity to quality management, possibly due to their leadership responsibilities or accumulated knowledge. Improving social capital in hospitals requires strategic efforts to foster a culture of trust and collaboration. Organizational management should aim to create a positive work atmosphere where mutual support and shared values are promoted. Nursing leaders can take tangible steps such as initiating inter-team networks to facilitate access to resources and promote collaboration. Clear participation timelines and shared governance must be carefully managed to enhance staff autonomy in healthcare services.

Social capital also influences access to social support and fosters a sense of safety and belonging. Awareness of public issues is the first factor affecting social relationships. If social justice is well established and information is properly distributed in a society, social capital will naturally follow. Health planners and managers can use social capital to identify healthcare needs in each region and improve healthcare services through appropriate planning (Bogaert, 2013). Several studies have focused on improving hospital service quality through social capital by training leaders to build trust within teams, promote openness and honesty in communication, and facilitate appropriate information sharing. Pedersen (2023) found that for each one-point increase in bonding or bridging social capital, the predicted probability of high clinical quality rose by 0.5 percentage points. Specifically, the probability of high clinical quality rose from 10% to 54% when bridging social capital increased from the lowest to the highest levels. These findings show a significant positive association between bonding/bridging social capital and all types of service quality, as well as a negative relationship between workload and service quality (OR = 1.25; 95% CI = 0.98–1.59; p < 0.0001) (Shin et al., 2016).

Language bias may be present, as this study included only articles published in English, potentially excluding relevant studies in other languages. Search bias occurred due to the use of only three databases (PubMed, Google Scholar, and Scopus), possibly overlooking studies from other sources. This meta-analysis was conducted using 8 articles from diverse locations including Iran, Germany, Europe, the United States, Colombia, Denmark, and South Korea, with a total sample size of 9,315. All studies used a cross-sectional design, with hospital staff as subjects and interventions based on high and low levels of social capital. Sample sizes varied from 120 to 3,456 participants. The findings suggest that higher social capital is positively associated with improved healthcare service quality by a factor of 1.19 compared to lower social capital, with statistically significant results (aOR = 1.19; 95% CI = 1.06–1.34; p = 0.006). The heterogeneity level (I^2 = 65%) indicated moderate data variation, thus a random-effects model was used. These findings support the theory that social capital enhances healthcare service quality. This study can serve as a reference for future meta-analyses and guide research on the relationship between social capital and healthcare quality.

CONCLUSION

This study contributes to the literature on positive work environment factors by emphasizing the importance of social capital and good relationships within and especially between hospitals to achieve high-quality services. Therefore, bridging and maintaining social capital should be integrated into theoretical frameworks, hospital strategies, and work environment policies to potentially enhance the quality of healthcare services.

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