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Clinical Leadership And Digital Technology In Indonesia: A Literature Review

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clinical leadership, digital technology, Indonesian healthcare

ABSTRACT:
Clinical leadership is critical in realizing health services quality. Digital technology in healthcare is growing rapidly, so various service processes have widely used it. Clinical leadership has six attributes: specialist skills, collaborative, transformative, innovative, empowerment, vision, and team building. Furthermore, hospitals in Indonesia still need to catch up to South East Asia (SEA) and worldwide standards regarding quality, and clinical leadership is one of the backbones of realizing it. This literature study examined clinical leadership and digital technology in Indonesia.
The nine influences of digital technology on leadership in health services include transformative, knowledge orientation, innovation and vision, competence oriented, supportive, responsible, strategic oriented, strong and effective, and digital technology oriented. The service quality results approach to clinical leadership adds attributes of clinical leadership behavior that still need to be revised with digital technology oriented. Unfortunately, only a few studies discuss clinical leadership in Indonesia, and it has not yet covered the overall attributes of clinical leadership. Thirty-five articles on healthcare leadership which correspond to 28 articles on clinical leadership, were found. They mostly discuss collaboration attributes in 12 articles, and no team building, visionary and digital technology-oriented aspects were found. Clinical leadership continues to develop according to challenges, and achieving the best service quality must be presented so clinical leadership efforts continue to be developed in Indonesia.

INTRODUCTION

Clinical leadership is at the core of organizational and clinical processes in the healthcare organzation . However, it is not top leadership but intermediate leadership that is the backbone of the healthcare organization. Clinical leadership differs from corporate organizations' administrative or corporate leadership (Currie, 2023). The challenge for hospital leaders is a complex internal and ever-changing external environment. The COVID-19 pandemic added new challenges for healthcare organizations. Adaptation strengthens organizations, and leaders become resilient in facing these challenges. Digital technology has become one of the results of adaptation so that healthcare organizations and leaders become sustainable. The quality of clinical leadership reflects in the healthcare services. Clinical leadership should implement organizational change, service improvement, innovation, and vision achievement processes. Good clinical leadership and stakeholder support will accelerate the expected service quality results (Stanley, 2012).

Digital technology is useful in various industries, so it is growing rapidly and affecting all lines, including healthcare services. Digital technology is used in cyber-physical systems, the Internet of Service, and the Internet of Things. Does this affect leadership in the hospital or clinical leadership? With a trusted approach to the VUCA environment (Petry, 2016), various articles discussed how digital technology influenced leadership, including hospital leadership and how it affected clinical leadership as part of hospital leadership.

In 2022, Indonesian hospitals in web metrics ranked 3858 worldwide and 70 in South East Asia (SEA) (https://hospitals.webometrics.info, 2022). This position is lower than hospitals in other countries. Indonesia has the largest population in SEA, with more than 275 million people, or half of the population. Based on the latest Case Fatality Rate (CFR) COVID-19 data in November 2022, Indonesia was the second last number, 2,6%, the second lowest after Myanmar (3.2%) in the SEA. (Https://ourworldindata.org/, 2022). One of the reasons for this low ranking is the low quality of clinical leadership, although some cases showed that with solid clinical leadership, hospital management could cope

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well (Sanders & Balcom, 2019). Managed care also requires services to be cost-controlled. The success parameter, clinical leadership, is the best service quality that supports hospital performance.

Growth of middle and upper-income foreign workers in Indonesia and the developing tourism industry within the framework of Industry 4.0 increase. There is a demand for hospital services on par with developed countries. Although constrained by the COVID-19 pandemic, the growth of the middle-income population has been 5.6 % annually, according to Gross Domestic Product (GDP), in the last 50 years. Currently, there are around more than 50 million Indonesians with middle income. The foreign workforce is more than 90.000 (Kusnandar, 2022) and. Meanwhile, the trend of tourist visits after the pandemic has increased. More than 3,9 million foreign tourists visited Indonesia in 2022 (https://www.bps.go.id, 2022).

This article is a literature review of the impact of digital technology on clinical leadership and examines current clinical leadership in Indonesia.

RESEARCH METHOD

The research began by searching for "clinical leadership and digital leadership" terms in the Scopus database. Next, the journals that could support this research were sorted out. After discovering clinical leadership and digital leadership concepts, the researchers looked for healthcare leadership and clinical leadership in Indonesia from journals based on Scopus, Google Scholar, and Sinta (data-based scientific journals in Indonesia) from S1-S4. Then, they selected and grouped into various sub-themes of clinical leadership or healthcare leadership. In the final stage, a table was created based on whether clinical leadership or healthcare leadership characteristics are appropriate after being selected and analyzed.

The researchers used a Google search to see how clinical leadership and digital technology are practiced in Indonesia, especially through the Ministry of Health and other related ministries and stockholders, what progress will be achieved in health, leadership, and digitalization, and what challenges will there be with what has been implemented and what will be implemented in the future.

RESULT AND DISCUSSION

History and Concept of Clinical Leadership

In the past, clinical leadership was the authority of doctors. At that time, it was called the clinician's autonomous rights, which later developed into clinicians' freedom. Each profession has its leadership, such as nurse leadership, doctor leadership, health service leader and others. After evidence-based medicine ended clinical freedom, it became clinical leadership (Dwiprahasto, 2004; Hamptom, 1986). Initially, clinical leadership was natural when several professions were tasked with carrying out patient services. Doctors often lead how to treat and treat patients.

Furthermore, clinical leadership involves clinical professionals, doctors, nurses, midwives, pharmacists, physiotherapists, and others, including pure managers involved in direct treatment services. Clinical leadership is a leadership ability in clinics and management that aims to produce service performance, especially in better service quality and patient safety. It contrasts with clinicians who work as full-time managers (Wright et al., 2001). So that clinical leadership is expected to achieve its goals effectively.

Clinical leadership is multi-disciplinary and multi-professional leadership. Various disciplines and various clinical professions will treat patients. A medic generally leads clinical leadership but does not rule out other professions, such as paramedics. Multi-disciplinary and multi-professional leadership is teamwork that encourages motivation and continuous improvement to improve service quality. The dynamics of clinical leadership are based on the desire to improve service quality (Wright et al., 2001).

Clinical leadership begins with discussing clinical staff management at the Johns Hopkins Hospital in Baltimore, USA. Furthermore, the UK began with an introduction to a resource management program (Wright et al., 2001). In Indonesia, it was introduced starting in the 1990s by applying an evidence base medicine approach or evidence base practice. Berwick (1994) defined a leader in a clinic as "the expert in the field, and we should use our expertise and knowledge to drive (lead) reform". Harper (1995) said, "Leadership concept is communication and organization skill, team building and empowerment." Dean and Barr(Dean & Barr, 1998) mentioned that clinical Leadership "is about making choices and exercising judgment. It is about taking responsibility for describing what is happening to our clients in words that are meaningful to them. It is about actively participating in a redesign and transformation care we deliver so that clients receive the services they need within the realities of today's healthcare environment."

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The nursing, medical and pharmaceutical literature defines clinical leadership based on a professional literature approach(Mianda & Voce, 2018). Nursing experts who introduced clinical leadership are managers who work in clinical services (Malby, 1998) and skilled clinicians who get leadership positions (Harper, 1995; Malby, 1998). The manager who leads the clinic does not work as a full-time manager. Clinical leaders are often mentioned in practice and training areas. Completely clinical leaders in nursing work in clinical expert positions in practice and use interpersonal skills with paramedics and other professionals to provide quality patient services. Thus, it requires motivation, communication, cooperation and appropriate decision-making skills. Service innovation is also needed to improve patient care quality (Harper, 1995).

Innovation is the cornerstone of improving care, service and quality (Stanley, 2012). Rocchiccioli & Tilbury (Husebø & Olsen, 2016) stated that clinical leadership maintains excellent service with a process approach by encouraging staff to realize future missions. Other experts also provided opinions on the approach to supervision and handling emergencies. In this situation, leaders can effectively build work teams and have confidence and mutual respect, including vision, empowerment, and communication by Cook and Holt(Cooc & Holt, 2000).

Medical experts believe that clinical leadership is leadership in clinical practice that provides improved results, is easy to implement, has low costs and fulfills social justice (Berwick, 1994). Clinical leadership is vital in health care and is related to service quality and cost-effectiveness. Clinical professionals carry out clinical leadership from setting directions to implementing changes. Multi-disciplinary professionals must also carry out clinical leadership at every team level, from the lowest to the highest (Jonas et al., 2011), and not at the policy or strategic level, but how leaders and members handle cases best.

In the development process, defining clinical leadership emphasizes value-based leadership theory by seeking significant values to realize effective clinical leadership or achieve clinical leadership goals, namely quality service. Value-based leadership theory began to be called by Copeland (2014) when ethical leadership fails to meet these leadership deficiencies.

The Attribute of Clinical Leadership

The core or heart of leadership is an attribute that is expected to effectively achieve the expected hospital organizational leadership results for managers, stakeholders and customers. Berwick (1994) defined leadership as containing several attributes that continue to develop based on the value-based goals of clinical leadership. Berwick (1994) mentioned 2 attribute components in clinical leadership, namely specialist skills and interpersonal skills, as well as Harper (1995). Substantially Interpersonal skills are the same as collaborative. However, they are more appropriate than collaborative because most collaboration is between individuals, not at other team levels. Dean and Barr (1998) referred to clinical leadership as innovative and transformative.

Rocchiccіolli & Tylburry (Rocchiccioli & Tilbury, 1998) added empowerment, specialist and collaborative skills, and Cooc and Holt (2000) added team building. Then, Lett (Lett, 2002) added the vision and value attributes. So clinical leadership had six attributes: specialist skills, collaborative, transformative, innovative, empowerment, vision and team building. In the following years, experts added attributes of improvement (Storey & Holti, 2013) and effective communication (Mannix et al., 2013), and other experts said attributes existed in subsequent studies (Jeon et al., 2015; Stanley, 2018; Stanley et al., 2023; Swanwick & McKimm, 2017). Are these attributes sufficient in the current environment where computers and internet technology are rapidly changing? Hence, communication, data transfer and analysis are fast in health services, including hospitals.

Impact of Digital Technology on Clinical Leadership

Digital technology has made the industrial world enter the computer- and internet-based industry 4.0 era. The health service sector is greatly assisted by this technology, especially in three ways: cyber-physical systems, the Internet of Service and the Internet of Things (Chanchaichujit et al., 2019) . Digital technology will speed up, make the right decisions and better methods of providing health services. This integrated clinical leadership will greatly assist hospital organizations in continuously improving service quality. The term to be used is digitalized clinical leadership, which means not only leadership that uses digital technology assistance but includes being able to know and operate it. The last clinical leadership attributes did not contain elements of digitalization, even though they might be included in the attributes of innovation, but these innovations were interpreted broadly. Thus digitalization would be worthy of being included as one of the attributes of clinical leadership.

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Regarding digital technology, there is a similar terminology called e-leadership and virtual leadership. E-leadership provides social influence with AIT (Advance Information Technology), both personal and organizational (Avolio et al., 2010). Meanwhile, virtual leadership is leadership in a team through virtual interpersonal relationships. Digital leadership is more complex and is the impact of applying digital technology to a wide range of industries, requiring real leadership in the three aspects above. Digital leadership has a character so that it becomes a good dreamer and can achieve organizational goals. Based on the digital technology environment approach, there are four characteristics: VUCA (Volatility, Uncertainty, Complexity and Ambiguity). According to Petry(2018), there are several basic characteristics based on a trust-based leadership approach: network, agility, openness and participation.

Digital leadership in health care has been studied by Laukka et al. (2022), discussing digital leadership health services, which also contain elements of clinical leadership. There are three components: leadership behavior, rules, and leadership quality. Leadership behavior consists of transformative, knowledge orientation, innovation and vision, competence-oriented, supportive, responsible, strategic oriented, strong and effective, and digital technology oriented. Thus what is following this article focuses more on leadership behavior. Even though there are several different characters, they have at least 6 of the same or similar characters. Two characteristics are strong and effective digital technology orientation.

According to Toduk in Cizmezi, digital leadership has characteristics; entrepreneur, innovative, participative and visionary and able to work in a team. Meanwhile, according to Zulu & Khosrowshahi (2021), the digital leadership positive character construction industry consists of proactive, supportive, forward-thinking, and cautious. In contrast, the negative characters are uncoordinated, resistant, visionless, and undriven leaders. There are negative characteristics of this digital leadership that must be directed to positive characteristics to provide more effective leadership. The digital leadership characteristics discussed in general by Toduk are felt to be more in line with clinical leadership.

Healthcare Leadership (Clinical Leadership) Research in Indonesia

Quality service indicates the success of hospital leadership or clinical leadership. In various recent studies in Indonesia, the issue of hospital leadership in Indonesia is interesting to see how urgent it is for hospital leadership, including clinical leadership. A summary of hospital leadership issues can be seen in Table 3. The Scopus-indexed journal has 35 articles with the search keyword “healthcare leadership in Indonesia”(www.scopus.com, 2023). Twenty articles were set in primary health services and hospitals, and the remaining 15 articles were excluded from the analysis. Leadership in health services is mostly clinical leadership because the core of health services is clinical service controlled by clinical leadership. These articles show how the attributes correspond to clinical leadership. The leadership selected in this article was conducted in primary or secondary care organizations (hospitals) where leadership factors played a significant role.

Based on clinical leadership dimensions, there are 8 types of issues. If related to the dimensions of clinical leadership, then 5 types of clinical leadership dimensions are related. Based on clinical leadership dimensions, there are 8 types of issues. If related to the dimensions of clinical leadership, then the 5 types of clinical leadership dimensions are related. Two attributes are missing in these 28 articles: having a vision and building a team. The 5 appropriate attributes are empowerment, collaboration, transformation, innovation, and skill specialist, with details in Table 1. Three issues are inconsistent with clinical leadership: leadership style, culture organizations and customer care. Most of these articles discuss collaborative then transformative. Hence, clinical leadership in Indonesia is a crucial collaboration. Two articles discuss 2 issues at once related to clinical leadership. There has been no research on digital technology use in a review of leadership healthcare (clinical leadership) in Indonesia in the Scopus index.

Table 1. Recent research on hospital leadership in Indonesia on the Scopus article index

No.	Healthcare (Clinical) Leadership Issues	Sum of Issue	Compatibility with clinical leadership attributes
1	Empowerment	3	Fit
2	Collaborative	12	Fit

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3	Transformative	6	Fit
4	Innovative	2	Fit
5	Skill specialist	3	Fit
6	Style of Leadership	2	Not fit
7	Cultural organization and leadership	1	Not fit
8	Customer Care Center	1	Not fit

Implementation of Clinical Leadership in the Digital Era in Indonesia

With the rapid development of the internet and information technology since 2010, information technology in hospitals can help with medical records, research, finance and management. Starting in 2023, all hospitals must use electronic medical records in Indonesia. Clinical leadership in the digital era should have a head of clinical information office/Chief Clinical Information Officer (KKIK/CCIO). KKIK will dominate the leadership role of the digital era clinic. Clinical leadership in the digital era requires using information technology for various purposes. With technology-based data, information on errors or deficiencies in the past can be corrected (Sood et al., 2017). Chanchaichujit et al. (2019) called the healthcare industry 4.0, with the main characters being CPS, IoT, and IoS.

In the United States (US), since 2009, many doctors who have taken information technology courses in the health sector have experienced an increase in their abilities in health information technology. Among these, doctors have held senior leadership positions in this field. In the last decade, the UK has allowed clinicians to learn about information technology and can have the opportunity to have multiple careers (Sood et al., 2017).

In 2023, the Ministry of Health of the Republic of Indonesia requires all hospitals to use electronic medical records and build a data center for hospital services. This opportunity is a door for developing digital technology in hospitals to simplify, speed up and improve services. Hospital clinical leadership can use the data and technology. Of course, clinical leadership must be able to use digital technology to assist clinical leadership effectively.

Clinical leadership can adapt to health service leadership in general. It is possible to add attributes to digital technology-oriented leadership (Laukka et al., 2022). This opinion can be tested in empirical research on how the influence of digital technology orientation has a role in clinical leadership in hospitals that have implemented digital technology. This study is certainly difficult to do in hospitals that do not yet use digital technology. Therefore, Indonesian government hospitals have not implemented digital technology. Likewise, leadership practices that add digital technology-oriented attributes can only be practiced in hospitals that already use digital technology.

CONCLUSION

Clinical leadership will improve healthcare services' quality. Even though clinical leadership is in healthcare's middle or low leadership, it is the core leadership in realizing quality healthcare services. In the future, developing countries must increase the quality of clinical leadership as well as developed countries. Community demands, especially people with middle and upper-income classes, foreign workers, foreign tourist visits and many Indonesians seeking treatment abroad, make clinical leadership urgent. Clinical leadership attributes include expert and interpersonal skills, from now on referred to as collaborative, informative, transformative, empowerment, team building, and vision. Oriented digital technology can be an additional attribute of clinical leadership. Clinical leadership and clinical hospital strategy are urgent to realize service quality to catch up with developed countries. Thirty-five articles on healthcare leadership correspond to 28 articles on clinical leadership. Most of the discussion was about collaboration attributes in 12 articles, and no team building, visionary and digital technology-oriented aspects were found. The low quality of clinical leadership and hospital services in Indonesia provides wider research opportunities to assess its quality and development. Furthermore, it is also open to conducting training for clinical leadership for clinical leaders, whose number is still small, to increase and encourage healthcare services so they can compete with developed countries. Further empirical studies need to discuss how clinical leadership influences the service quality of hospitals in various places in Indonesia by adding digital technology-oriented attributes in hospitals that have used digital technology.

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