



# Leadership Role In Implementation Of Lean Manajemen In Hospital

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<p><b>Track Record Article</b></p> <p>Accepted: 06 July 2023 Revised: 20 October 2023 Published: 30 December 2023</p> <p><b>How to cite :</b> Nurjanah, Maera, G., &amp; Aini, Q. (2023). Leadership Role In Implementation Of Lean Manajemen In Hospital. <i>Contagion: Scientific Periodical Journal of Public Health and Coastal Health</i>, 5(4), 1499–1511.</p>	<p style="text-align: center;"><b>Abstract</b></p> <p><i>Hospitals in Indonesia are facing the era of JKN (National Health Insurance) with a focus on cost efficiency and service quality, where the implementation of Lean management has been proven to successfully increase patient satisfaction, reduce waiting time, and decrease medical errors. This study aims to synthesize the research findings on the role of leadership in the success of Lean management in hospitals during the period of 2018-2023. The research design used in this article is scoping review. The selection method in this review is guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol. Article search was performed through international journal databases including Google Scholar, PubMed, Scencedirect, and Emerald published between 2018-2022. The result shows a total of 176 articles were obtained from four databases, namely Google Scholar, PubMed, Scencedirect, and Emerald. Selection was performed, and 20 articles were considered eligible and included in the systematic review. Leadership, including lean leadership and management, plays a crucial role in the success of Lean management implementation in hospitals, with transformational leadership style recognized as the most effective, but it requires long-term commitment and faces challenges of resistance to change and lengthy implementation time.</i></p> <p><b>Keywords:</b> <i>Hospital, Implementation, Leadership, Lean Management, Meta-Analysis.</i></p>
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## INTRODUCTION

Hospitals in Indonesia are facing the era of JKN (National Health Insurance) where increasing efficiency is the main issue in facing JKN. The National Health Insurance System is a state program that aims to provide certainty of protection and social welfare for all people. Today, the quality of goods and services is the highest priority in organizations and sectors. Especially in the health sector, compared to other organizations, because of the importance of services related to human life and health, quality improvement and assurance are prioritized (Mousavi Isfahani et al., 2019).

Lean management is based on the philosophy of respect for people and continuous improvement (Coetzee et al., 2019). This effort focuses on customer value and removing waste. The strategic approach of lean management is based on value maximization and waste reduction. Businesses will be better able to react quickly to market changes and client expectations when they are constantly reviewing and improving their processes. By empowering every team member to find and eliminate inefficiencies, this practice fosters a culture of continuous improvement (Goshime et al., 2019).

The concept of lean originally evolved from (Ford Production System) which was conceived around the 1990s by Henry Ford (Yamamoto et al., 2019). He said about flow production which means when a task or activity is completed, the next task or activity must begin. The concept was developed by Kichiro Toyoda as Toyota Production System. This concept led Toyota to become the greatest manufacturing company in the world. Kichiro Toyoda created the Toyota Way which is a form of continuous improvement that aims to eliminate waste that causes losses or does not produce value, so as to create a Lean culture (PANGESTU, 2020). Lean management helps health institutions overcome challenging circumstances in this JKN era. Kruskal et al, 2012, found that the implementation of Lean management successfully led to reduced waiting times, lower postoperative infection rates, fewer errors, and improved patient satisfaction scores.

The health industry has come to understand Lean management's potential as a game-changing strategy in recent years. Several investigations carried out in hospitals across various nations have explored its utilization and consequences. These studies continuously demonstrate how Lean management has a significant impact on improving the quality of patient care and services. Hospitals have been able to optimize workflows and reduce inefficient procedures, which has allowed them to better manage resources and simplify operations. These Lean efforts have produced measurable results, such as shorter wait times, higher patient satisfaction levels, and better overall healthcare outcomes (Wulandari et al., 2022).

Leadership plays an important role in the successful implementation of Lean in healthcare organizations. Leadership in the manufacturing industry has been extensively studied and proven to be essential to realizing successful Lean implementation in manufacturing organizations (Alefari et al., 2020). However, hospitals have characteristics and operate in a different environment from manufacturing companies. Most manufacturing companies make money directly from customers, whereas hospitals earn revenue mostly through third-party payments or insurance. Manufacturing companies have a standard process for making standardized products. In contrast to health organizations, the resulting "product" is restoring health to the sick person, resulting in complex processes and wide variations in the procedures required (Tortorella et al., 2022).

The preparation of this literature review was made to collect various scientific evidence from previous literature related to the role of leadership in lean management in hospitals. With the review of various previous literature, it is expected to provide an overview of the role of leadership so that it can provide input for leaders in behaving and realizing the success of effective lean management implementation in hospitals.

The purpose of this study is to determine the role of leadership in the successful implementation of lean management in hospitals. This research attempts to clarify how certain leadership characteristics can help or hinder the successful implementation of lean methodology by conducting a detailed investigation of a variety of leadership styles, tactics, and practices. Regardless of the primary objective, this research seeks to investigate optimal methodologies and pragmatic perspectives that enable healthcare administrators to foster a culture conducive to lean thinking and continuous improvement. The benefit of this research is to provide hospital managers with unique knowledge about the qualities of good leadership within a lean framework, as well as to offer specific suggestions for leadership development and training programs that will help implement lean management practices.

## **METHODS**

The research design used in this article is scoping review. Search international journal sources using keywords with questions, leadership, implementation, lean management and hospital. From these specific keywords, synonyms of each of these words are searched. Each of these keywords is used in database searches. The search for articles in English and published in English and the year of publication is limited to the last 5 years (2018-2023). Database search strategy using Google Scholar, Pubmed, Scienedirect, and Emerald. Identification of article selection using Preferred Reporting Systematic Reviews and Meta-analysis (PRISMA). Article identification found 176 articles through four databases namely Google Scholar, Emerald, PubMed and Scienedirect. From 176 articles, 20 articles were selected and 20 articles were obtained in this review.

The inclusion criteria in this literature review are, 1) quantitative and qualitative research articles that discuss the role of leadership in the implementation of lean management in health care facilities, especially hospitals, 2) articles in English, 3) original research, 4) full articles, 5) free access, and 6) articles published in the last 5 years (2018-2023). While the exclusion criteria are articles using systematic review methods, scoping reviews, literature reviews, reviews and articles are not full.

As a result of the initial search of the database, 176 potentially relevant articles were obtained. Duplications (n=5) were excluded. A total of 176 articles were screened, 176 articles were based on title and abstract assessment. A total of 171 articles were subjected to full text reading and quality assessment. A total of 133 articles were excluded from the full-text reading consisting of; 133 articles were excluded because the title was not relevant, 7 articles were excluded because they were not in English, 3 articles were not full-text. 20 articles met the criteria from the assessment of titles, abstracts, inclusion criteria.

The selection method in this review is guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol. From the search of each database, the articles will be selected and organized using bibliographic software, Zotero. Relevant articles will be reviewed for article quality. This assessment process uses critical appraisal tools from The Joanna Briggs Institute.

## RESULTS

Critical appraisal tools dari JBI digunakan dalam proses pengkajian review artikel. Skor >70 % critical appraisal tools dari JBI menjadi kriteria penilaian review artikel (Aromataris et al., 2020).

No	Author/Year	Research Title	Shoes JBI	Assessment status
1.	(P. E. Martinussen et al., 2020)	Should I stay or should I go? The role of leadership and organisational context for hospital physicians' intention to leave their current job	6	75% of total score
2.	(P. E. Martinussen & Davidsen, 2021)	'Professional-supportive' versus 'economic operational' management: the relationship between leadership style and hospital physicians' organisational climate	6	75% of total score
3.	(Boer et al., 2022)	Collaboration between general dental practitioners and dental hygienists: a qualitative study	6	75% of total score
4.	(Szilvassy & Širok, 2022)	Importance of work engagement in primary healthcare	6	75% of total score
5.	(Chen et al., 2022)	Managing Hospital Employees' Burnout through Transformational Leadership: The Role of Resilience, Role Clarity, and Intrinsic Motivation	6	75% of total score
6.	(Belrhiti et al., 2020b)	Unravelling the role of leadership in motivation of health workers in a Moroccan public hospital: a realist evaluation	6	75% of total score
7.	(Sabbah et al., 2020)	The association of leadership styles and nurses well-being: a cross-sectional study in healthcare settings	6	75% of total score
8.	(Stoller, 2021)	Leadership Essentials for CHEST Medicine Professionals	6	75% of total score
9.	(van Assen, 2018)	Exploring the impact of higher management's leadership styles on Lean management	6	75% of total score
10.	(Nair & Thomas, 2020)	Relationship Between Leadership Support and Operational Excellence in a Health Care Sector: A Study of Indian Health Care Managers	6	75% of total score
11.	(Belrhiti et al., 2020a)	The effect of leadership on public service motivation: a multiple embedded case study in Morocco	6	75% of total score

12.	(Žibert & Starc, 2018)	Healthcare organizations and decision-making: leadership style for growth and development	6	75% of total score
13.	(Heijkoop, 2018)	The influence of leadership behavior on the implementation process of a lean program	6	75% of total score
14.	(Haile, 2020)	Strategies To Improve Effectiveness Of Hospital Leadership In Addis Ababa	6	75% of total score
15.	(Hilt-Lash, 2020)	Transformational Leadership Factors And Hospital Quality	6	75% of total score
16.	(Poksinska et al., 2013)	The daily work of Lean leaders – lessons from manufacturing and healthcare	6	75% of total score
17.	(L. Van Rossum et al., 2016)	Lean healthcare from a change management perspective ; The role of leadership and workforce flexibility in an operating theatre	6	75% of total score
18.	(Shortell et al., 2021)	Lean Management and Hospital Performance: Adoption Vs Implementation	6	75% of total score
19.	(Bijl et al., 2019)	Role of lean leadership in the lean maturity—second-order problemsolving relationship: a mixed methods study	6	75% of total score
20.	(Trisbiantara & Meliala, 2018)	The Role of Leadership in the Successful Implementation of Lean Management at Pelni Hospital	6	75% of total score
Description: Articles are inserted when the score is >70% of the total score				

The results of the article review show the relationship of leadership style to the success of lean management. There are various leadership styles described in the literature, and from 20 articles that will be analyzed states that transformational leadership styles are very effective because they are supportive, productive, and innovative and strongly support the possibility of lean management success in hospitals. Based on the results of research from (Žibert & Starc, 2018) in Slovenia conducted on four health institutions in the Slovenian region with a sample of 112 samples and conducted quantitative analysis with the SPSS application which states that the success of change management (lean management) introduced is statistically positively correlated with transformational, transactional leadership ( $p < 0.05$ ), and negatively correlated with laissez-faire Leadership ( $p < 0.05$ ). As well as judging from the effectiveness of the leadership styles assessed, and satisfaction with the changes introduced, strong relationships are observed in transformational leadership. Changes are introduced and based on the right management style, which has a direct impact on the work environment and these results are also aligned with research conducted by (Belrhiti et al., 2020b) which states effective leaders adopt the right blend of transactional, transformational and distributed leadership styles that match the mission, goals, organizational culture and nature of organizational tasks and individual characteristics of personnel when organizational culture is conducive.

The results of this study are also supported by research conducted by (Alrowwad et al., 2020) which explains that the combination of transformational and transactional leadership is becoming increasingly visible in middle and lower leaders. The most prominent dimension of transactional leadership from leaders is to encourage staff to continue to issue kaizen ideas where these kaizen ideas are an obligation that staff must fulfill because it will affect the remuneration they receive. The process of employee empowerment as well as exchange occurs here. The commitment formed from the staff is due to the reward. (Cho et al., 2019) describes the augmentation effect as the degree to which transformational leadership is built from a transactional basis in contributing to extra effort and follower performance. The dimension of transactional leadership related to transformational leadership is primarily the contingent reward dimension. This condition is clearly illustrated in the hospital. Through encouragement and demands to continue to provide ideas that simultaneously affect IKI/KIPI, on the one hand, a continuous improvement environment is formed in the hospital.

Chen et al (2022) also state a hospital manager, as a transformational leader, motivates and inspires employees, on the one hand, to exert their best efforts to achieve organizational goals; He also emphasized the development of employees by improving their abilities and acknowledging their efforts on the other hand. A manager as a transformational leader helps employees to deal with fewer burnout situations by supporting, motivating, encouraging, and providing them with the necessary assistance to avoid depletion of employee resources. (Chen et al., 2022) also suggests hospital management organize different training sessions, especially for managers, with a particular focus on highlighting the important benefits that a transformational leader can bring to the field, providing clear guidance on roles, responsibilities, and duties due to employees with a clear perception of roles.

The relationship between leadership style and the success of lean management in hospitals statistically is also supported by research conducted by (T. Martinussen et al., 2020) in Norway which states that professional leadership style has a positive influence on performance related to hospital organization and management. The results of the multivariate analysis showed that respondents who considered their leaders to have a supportive professional (transformational) style so had a much lower likelihood of turnover / action out of work, OR=0.32 (CI=0.25-0.41). Another study conducted by (T. Martinussen et al., 2020) also states that there is a clear relationship between leadership style and how organizational climate is assessed: leadership styles that are considered to promote professional standards and quality in patient care are associated with better evaluation of the social climate, climate of innovation, and engagement in the workplace., while an emphasis on economic management and budget control is associated

with a worse social climate. The study shows that leadership does matter: leadership styles that emphasize professional traits – in addition to being supportive – are associated with a better social climate, climate of innovation, and involvement in hospitals, whereas economic-operational leadership styles are associated with a worse social climate.

Research conducted by (Haile, 2020) in African countries also shows that the leadership styles of government and private hospital leaders have minimal difference values. Private hospital leaders were slightly more transformational ( $M=3.04$ ,  $SD=0.35$ ) and transactional ( $M=2.88$ ,  $SD=0.45$ ) than their counterparts in public hospitals ( $M=2.88$ ,  $SD=0.49$  and  $M=2.8$ ,  $SD=0.45$ , respectively). Passive leadership styles were slightly more pronounced in public hospital leaders than in private hospitals ( $M=1.44$ ,  $SD=0.88$  vs.  $M=1.40$ ,  $SD=0.87$ ). The difference shows no statistical significance at a P-value of 0.05. Leadership results are also measured. The focus is on the perceptions of leaders where they assess their effectiveness, how much extra effort they put into their work and their satisfaction. All of these measures showed that leaders from private hospitals perceived themselves as more satisfied ( $M=3.28$ ,  $SD=0.65$ ), more effective ( $M=3.15$ ,  $D=0.5$ ) and put in more effort ( $M=3.1$ ,  $D=0.53$ ) than their public hospital counterparts ( $M=3.15$ ,  $D=0.59$ ;  $M=2.99$ ,  $D=0.57$ ; and  $M=3.01$ ,  $D=0.66$ , respectively). However, the difference did not reach statistical significance at a P-value of 0.05.

Multivariate analysis conducted by (Bijl et al., 2019) shows that lean leadership helps nurses to get familiar with lean management programs. Lean leaders also develop self-managing teams. They encourage nurses to actively lead, for example by giving ownership to nurses to improve certain processes through PW tools. A very significant positive relationship was found between lean maturity and second-order problem solving:  $\beta=0.68$ ,  $R^2=0.46$ ,  $p<0.001$ . Furthermore, the results show the effect of strengthening lean leadership potential on this relationship.

Similar results are also stated by (T. R. van Rossum et al., 2018) who state that transformational leadership style facilitates changes in lean management. By defining specific needs for change, creating new visions and mobilizing commitment to those visions, a transformational leader is able to transform organizations (Usman, 2020). In contrast, transactional leadership consists of a pure exchange between leader and follower. It is characterized by the leader's performance criteria clarifying, stating expectations and determining what followers receive in return. A transactional leader reaches his followers to do exactly as expected, whereas a transformational leader inspires his followers to do more than what was previously expected (Passakonjaras & Hartijasti, 2020). And in statistical analysis, (T. R. van Rossum et al., 2018) also stated that correlation and regression analysis showed a positive

relationship between transformational leadership and team leadership style and the implementation of lean services in the field of health facilities. Results also show a strong link between workforce flexibility and lean healthcare implementation.

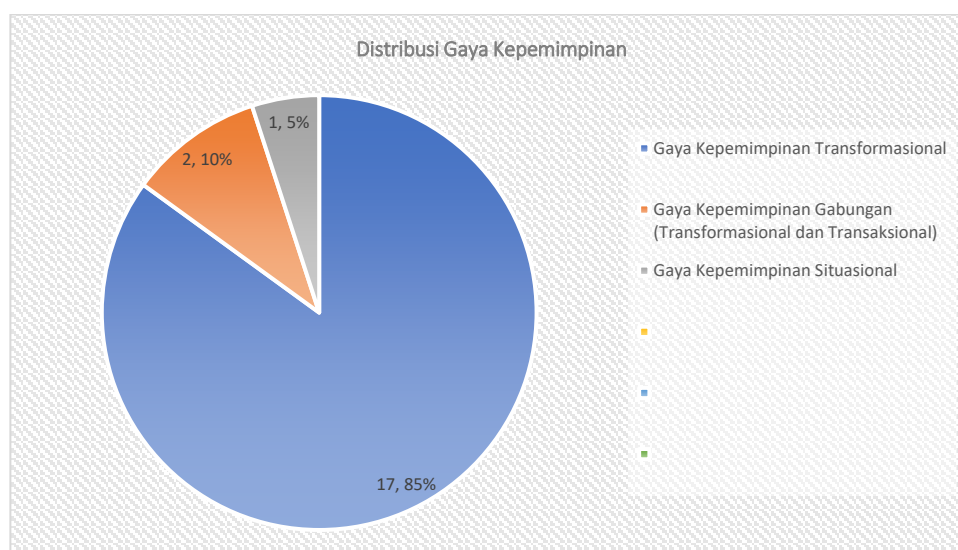
Not only do statistical results show that there is a relationship between leadership style and the success of lean management, but qualitative analysis also shows that transformational leadership is necessary for successful and sustainable implementation of lean in health care. Idealized influence, inspirational motivation, intellectual stimulation and individual consideration are some of the characteristics of transformational leaders appropriate for a leader during lean implementation (Passakonjaras & Hartijasti, 2020). The results of research from (Heijkoop, 2018) state that leaders with a transformational style inspire their employees to do more than previously expected and in transformational leadership there is an emotional attachment between the leader and employees. The research of (Seidel et al., 2019) also recognizes that transformational leadership and servant leadership are very similar and that is why both can be attributed to success in lean management. In line with research conducted by (Sabbah et al., 2020) which states that there are gender differences in the perception of leadership behavior. Male nurses perceive their managers as having a transformational leadership style more than female nurses. As reported by (Kuiper et al., 2021) male leaders are also more likely than women to report that their supervisors pay attention to fulfilling contractual obligations that include goal setting, monitoring, and control results.

The research of (Szilvassy & Širok, 2022) shows that it is important for healthcare management at the primary level to unlock work engagement by 'managing' factors that stimulate work engagement. This is influenced by other factors such as leadership style, communication and organizational climate, which are also cheaper to manage than other aspects of the work environment so as to improve the quality of the hospital. Similar research on the relationship between lean leadership and lean management is very complete explained by research by (Kahm & Ingelsson, 2019) in Sweden that the relationship between Lean leadership and transformational leadership. Basically, the primary role of the transformational leader is to develop motivation and lead employees not with positional power, but with personal influence and concern for individual needs and development (Mi et al., 2019). Lean leadership components such as empowering employees, participation in goal achievement, and a focus on learning and personal responsibility are important aspects of transformational leadership. Case organization is an example of continuous implementation of Lean, where much attention is paid to employees. Management actions focus on providing conditions for the development, growth and empowerment of employees (Piwovar-Sulej, 2021). Third, Lean leadership has a relationship



with the concept of self-managed teams. Team leadership is essential for Lean production, where work is organized in teams. The use of transformational leadership styles has been shown to encourage team self-management (Pieterse et al., 2019). Research from (Shortell et al., 2021) and (Hilt-Lash, 2020) also mentions that Lean is a sociotechnical performance improvement system throughout the organization. Based on these findings, it is more likely to be associated with positive hospital performance such as patient satisfaction, managerial leadership and also patient experience. And transformational leadership showed statistically significant association with VBP scores on regression analysis. Research conducted by (Nair & Thomas, 2020) in India also states that in the health service sector, leader support greatly affects the quality of operational management in these health services. (Cornwell & Kwon, 2020) research also highlighted the results that sponsorship and increased stimulation by higher management are indeed positively associated with Lean management, although increased stimulation is primarily associated with continuous quality improvement. Leadership that empowers its members is positively related to lean management, which is a transformational leadership style.

The results of different studies conducted by (Stoller, 2021) also mention that effective leaders can also show different leadership styles situationally, depending on the context in which they lead and the characteristics of the people they lead. The idea that leaders should adapt their leadership style to the context in which they lead is also developed in a model called "situational leadership" that is not only transformational but increases responsibility for fostering growth and for assessing success, which gives rise to opportunities for continuous quality..



**Figure 1.** Distribution of Leadership Styles to Lean management

Based on the results of the analysis, it can be seen that from 20 relevant studies and qualitatively analyzed, 2 articles mention that leadership and transactional styles if combined are better, 1 situational leadership style and the remaining 17 articles mention better transformational style and support the success of lean management, especially in hospitals.

Based on the results of research by Ariyani et al, 2016 stated that there is a positive and significant influence between employee loyalty on the performance of employees of Hidayatullah Islamic Hospital Yogyakarta. This is due to a good leadership style so that employee loyalty and will have a positive and significant impact on the performance of employees of Hidayatullah Islamic Hospital Yogyakarta. Other research has also shown that leadership style followed by good manager/leader motivation and commitment affects job satisfaction and organizational culture. Motivation has been shown to exert the strongest influence on manager performance, commitment, and leadership skills. Commitment, leadership, and motivation, job satisfaction and organizational culture, and competence affect manager performance. This improvement is evident in top-level managers who have competent management skills (Likert scale 3.00-3.99). However, lower-level managers still lack or basic management ability (Likert scale  $\geq 2.00$ -2.99) (Komala & Dekawati, 2021).

## CONCLUSIONS

Based on the literature review above, it was concluded that leadership factors that can help the success of lean management are lean leadership and management, namely policy implementation, leader standard work, promotion of continuous improvement promotion, self-development, coaching, decision making, empowerment. The main challenges in lean implementation are change resistance and long enough time to implement lean management to get the desired results, this requires leaders to be committed to long-term lean implementation. Suggestions for future research involve further study of how leaders can integrate lean leadership into practice, exploration of effective strategies to maintain leader and organizational commitment, as well as research on external factors that support lean implementation such as funding, facilities, and training.

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