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Implementation of Learning Organization in Public Health Center: A Systematic Literature Review on Enablers, Barriers, and Organizational Outcomes

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ABSTRACT

Public health services face various complex challenges such as limited human and financial resources, fragmentation of health information systems, and policy dynamics and accreditation requirements. These conditions require adaptive organizational capacity and a focus on continuous learning to maintain consistent service quality. This study aims to analyze (1) implementation characteristics, (2) enablers and barriers to implementation, and (3) the impact on organizational performance and service quality. This study is a descriptive literature review using data from Google Scholar with the keyword "learning organization." The study includes open-access, full-text, English-language articles indexed in Scopus that were filtered using the Rapid Journal Quality Check tool and published between 2021 and 2025 in the field of health. A total of 26 articles meeting these criteria were analyzed using a thematic analysis approach with the SciSpace tool. LO implementation is characterized by continuous learning processes at the individual and team levels, data-based reflection, and knowledge-sharing systems between organizational units. LO implementation is influenced by supporting factors such as transformative leadership, interprofessional collaboration, mentoring systems, and policy support, while obstacles include hierarchical organizational culture, limited resources, and inadequate digital infrastructure. The implementation of LO has proven to strengthen adaptive capacity, improve organizational effectiveness, and support the sustainability of primary health care quality improvement.

INTRODUCTION

Improving the quality and effectiveness of health services at public health centers is one of the global priorities in achieving Universal Health Coverage (UHC). As the frontline of the national health system, Public Health Centers play a crucial role in health promotion, disease prevention, and chronic disease management at the population level (Akman *et al.*, 2022; Fabrega Lacoa, 2024).

However, in practice, public health centers often face multidimensional challenges such as limited human and financial resources, the complexity of the population served, and the

dynamics of policy changes and accreditation requirements (Akbar *et al.*, 2025; Meilianti *et al.*, 2025; Setiaasih *et al.*, 2025). These conditions require organizational adaptive capacity to respond to change and maintain service quality in a sustainable manner.

Various studies show that the ability to learn from real-time experiences is a key factor in maintaining service resilience and accelerating quality improvement (Sarti *et al.*, 2021; Sirkin *et al.*, 2023). Thus, organizational learning becomes a strategic foundation for Public health centers that want to remain relevant, resilient, and innovative amid the complexity of modern health systems.

In this context, the concept of Learning Organization (LO) offers a relevant framework for improving organizational performance through continuous learning. The adaptation of this concept in the health sector has been developed to encourage continuous improvement (Nash *et al.*, 2021, 2022). The implementation of LO principles in primary health care is believed to strengthen reflective mechanisms, accelerate the adoption of evidence-based practices, and foster a culture of innovation within health care teams (Olsen, Peterson and Stevens, 2021; Pusic *et al.*, 2023). However, extant studies on Learning Organizations in the health care sector tend to focus more on the development of the concept and its application in hospital settings or environments with abundant resources, while exploration of how these principles are implemented in primary health care institutions such as Community Health Centers remains limited. This underscores the necessity for a more context-sensitive analysis, particularly in settings characterized by limited resources.

Various empirical evidence shows that the application of LO in Public health centers can improve organizational performance indicators, such as data quality, cross-sector coordination, and inter-unit learning effectiveness (Argaw *et al.*, 2020; Cardenas *et al.*, 2023; Unaka *et al.*, 2025). Conceptually, a Learning Organization is defined as an organization in which individuals collectively develop the capacity to achieve common goals, shape, transfer, and apply new knowledge so that there is continuous organizational behavior change (Soleh, Brahmasari and Brahma Ratih, 2021; Nguyen, 2024).

LO models and practices have evolved to the point of empirical application in various sectors, including health services, so that their relevance to institutions such as Public health centers has received considerable attention (Cataldo, 2022; Udin, 2023). In the context of primary health care, empirical evidence highlights the role of leadership and organizational learning culture. However, further research is needed on the context of implementation in developing countries, including Indonesia, where many public health centers face resource constraints, fragmented information systems, and suboptimal analytical capacity and learning culture (Bloch and Rozmovits, 2023; Kilbourne *et al.*, 2024).

Furthermore, the interaction between organizational factors such as leadership, learning culture, resource constraints, fragmented information systems, and limited analytical capacity has not yet been extensively explored; consequently, this gap is particularly relevant in the context of Community Health Centers in developing countries, where these constraints continue to affect organizational performance.

Therefore, this study aims to address these gaps by providing a systematic and integrative review of the application of the Learning Organization concept in Public Health Centers. Specifically, this review seeks to: (1) identify and synthesize the key characteristics of

LO implementation in primary health care settings, (2) analyze the enabling and inhibiting factors influencing its adoption, and (3) evaluate its impact on organizational performance and service quality.

METHODS

Study Design

This study employs a systematic literature review approach in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. This approach was chosen to ensure that the processes of literature identification, selection, and synthesis are conducted in a systematic and transparent.

Literature Search Strategy

The literature search was conducted using Google Scholar as the initial search engine to obtain a broader range of publications from various publishers and academic disciplines. Google Scholar was chosen based on its ability to index various scientific sources across platforms. However, to maintain the quality and credibility of the sources, the indexing status verification process was conducted using Rapid Journal Quality Check to efficiently identify the journal's indexing status, ensuring that only Scopus-indexed articles were included.

The use of the Rapid Journal Quality Check tool in this study served to support the identification and verification process, while the final decision regarding article inclusion criteria was made manually based on the established criteria. The search strategy uses the following combination of keywords:

1. Learning Organization (LO) or Learning Health System (LHS)
2. Primary or community health care
3. Organizational performance, capacity building, or service quality.

Inclusion and Exclusion Criteria

Inclusion Criteria

Articles included in this study meet the following criteria:

1. Published between 2021 and 2025
2. Indexed in Scopus
3. Written in English
4. Available in full text and open access.

Exclusion Criteria

Articles were excluded if:

1. Not indexed in Scopus
2. Not available in full text or not open access
3. They are duplicates
4. They are not relevant to the health sector
5. They are editorials, comments, or opinions without an empirical basis.

Article Selection

The article selection process was conducted in accordance with the stages outlined in the PRISMA framework, namely: identification, screening, eligibility, and inclusion. The article selection process is illustrated in the flowchart in Figure 1 as follows:

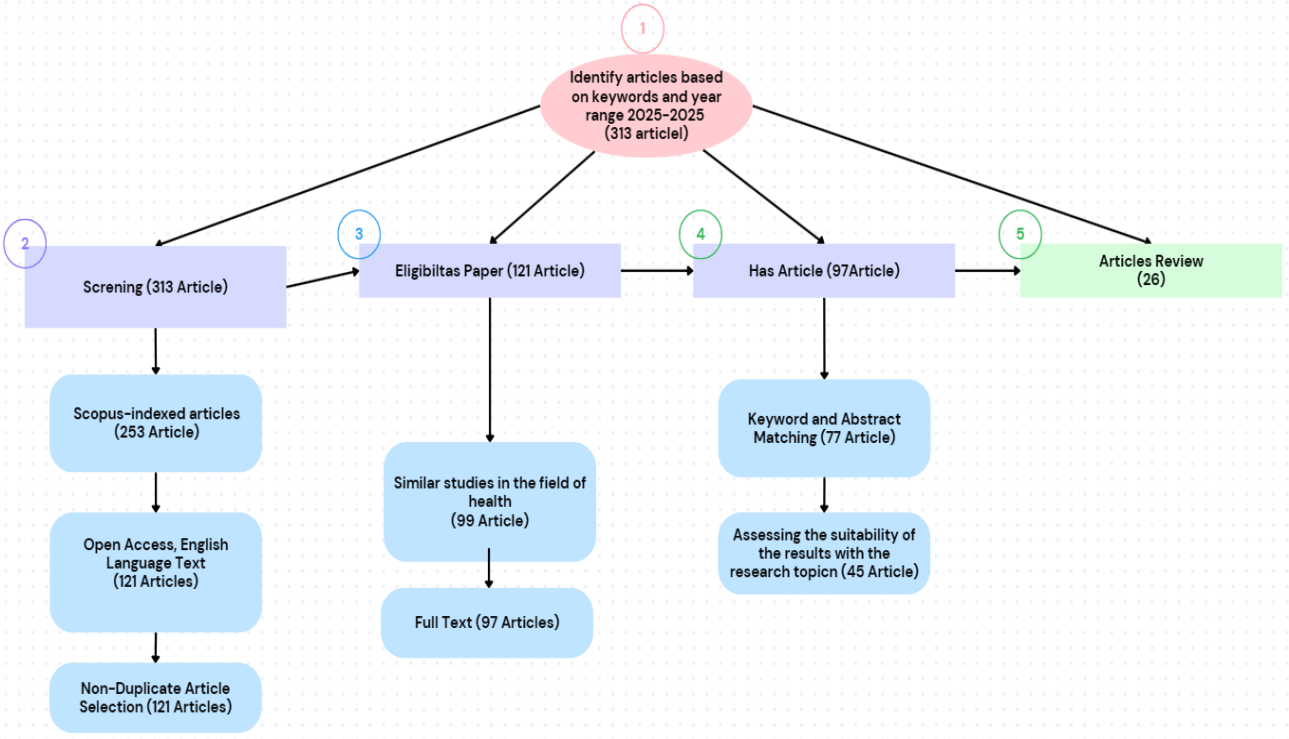

Figure 1. Article selection process

Data analysis was conducted using a thematic analysis approach, identifying key patterns and themes emerging from the studies analyzed. The data were then classified into several main categories, namely:

1. Characteristics of Learning Organization implementation
2. Supporting and inhibiting factors
3. Impact on organizational performance and service quality.

The results of the analysis were subsequently synthesized using a narrative synthesis approach, which integrates findings from various studies to produce a comprehensive and contextual understanding.

RESULTS

The literature search process yielded a total of 313 articles identified through a keyword search for "learning organization" in the Google Scholar database for the period 2021–2025. After screening and applying inclusion-exclusion criteria, 26 articles met the criteria for further analysis, as shown in the following table:

Table 1. Article Review

No	Titel	Author and Years	Key Findings
1.	Comparison of Methods for Estimating Temporal Topic Models From Primary Care Clinical Text Data:	Meaney et al. (2022)	Temporal topic models (such as LDA and BERTopic) successfully identify patterns and dynamics in primary health care from unstructured clinical data. Such tools enable organizations to "learn" from their own data, monitor

	Retrospective Closed Cohort Study		trends, and characterize disease burden, which is the foundation for LHS.
2.	The effect of a mobile-learning curriculum on improving compliance to quality management guidelines for HIV rapid testing services in rural primary healthcare clinics, KwaZulu-Natal, South Africa: a quasi-experimental study	Chamane et al. (2022)	The m-Learning intervention did not show statistically significant effects, but it identified critical implementation barriers such as device limitations and connectivity. These findings highlight that technology alone is not enough; the organizational environment and infrastructure must be supportive to enable effective learning and improvement.
3.	What makes community health worker models for tuberculosis active case finding work? A cross-sectional study of TB REACH projects to identify success factors for increasing case notifications	Dam et al. (2022)	The Community Health Worker (CHW) model is most successful when equipped with comprehensive training (including e-learning), ongoing supervision, fair compensation, and integration into the primary health care system. These factors are key enablers for building a community workforce that is capable of learning and adapting.
4.	Analysis of the nature and contributory factors of medication safety incidents following hospital discharge using National Reporting and Learning System (NRLS) from England and Wales: a multi-method study	Alqenae et al. (2023)	Analysis of medication safety incidents reveals that organizational factors (82%), particularly lack of coordination and information sharing, are the dominant causes. This study recommends electronic interventions and the role of clinical pharmacists, which are essentially mechanisms to enable the healthcare system to "learn" from mistakes and improve care transitions.
5.	Crisis leadership behaviors in healthcare: survey validation and influence on staff outcomes in primary care clinics during the COVID-19 pandemic	Yang et al. (2024)	Developing and validating a questionnaire (CLSO) that shows that task- and people-oriented leadership (including empathy, encouraging learning, and psychological safety) positively influences staff outcomes (such as innovation and commitment to change). This leadership style is essential for fostering a learning organization culture, especially during crises.
6.	What are the experiences of medical students and their trainers regarding undergraduate training in primary health care at four South African medical schools? A qualitative study	Mabuza & Moshabela (2024)	Identifying barriers to effective PHC learning, such as implicit curricula and hospital-centered training. Recommendations for more distributed training and specialist outreach programs aim to create a learning environment closer to the actual community context, strengthening the capacity of the health system.
7.	Learning from national implementation of the Veterans Affairs Clinical Resource Hub (CRH) program for improving access to care: protocol for a six year evaluation	Rubenstein et al. (2023)	This evaluation protocol was designed in a research-operations partnership, using mixed methods to assess a national program that provides virtual staff to fill gaps in primary care and mental health. It is an example of the systematic steps taken by an LHS to evaluate, learn from, and improve a large-scale initiative.
8.	Evaluating the Implementation of the Connect for Health Pediatric Weight Management Program	Simione et al. (2024)	Implementation in three organizations using six strategies (such as virtual learning communities and metric alignment) successfully supported the screening of 18,333 children and increased the use of clinical decision support tools. This study demonstrates how planned implementation strategies can drive adoption, fidelity, and sustainability of programs in primary care, which is a hallmark of learning organizations.
9.	International and national frameworks, guidelines, recommendations and strategies for maternal tobacco prevention and cessation: A scoping review protocol	Nagdeo et al. (2023)	This scoping review protocol aims to facilitate cross-country learning by analyzing and synthesizing existing frameworks and guidelines. A systematic process for identifying and sharing global best practices is a fundamental activity that supports evidence-based decision-making at all levels of the health system.
10.	A Learning Health System Approach to Cancer Survivorship Care Among LGBTQ+ Communities	Dunne et al. (2023)	This qualitative study explicitly evaluates the Learning Health System approach, using patient data and feedback for ongoing analysis and improvement of care coordination processes. It demonstrates the potential of LHS to identify and address care gaps for underserved populations.
11.	Mentors Supporting Nurses Transitioning to Primary Healthcare Roles: A Practice Improvement Initiative	Rossiter et al. (2024)	Embedded mentoring models which combine skill acquisition, identity formation, and support increase mentor satisfaction and mentee growth. Sustained mentoring programs are key enablers for developing an adaptive and reflective workforce, which is the backbone of LO.

12.	Developing and implementing a novel program to prepare nursing home-based geriatric nurse practitioners in primary palliative care	Carpenter & Ersek (2021)	The three-phase program (online, face-to-face, virtual) improves nurses' knowledge and skills. The multi-modal and continuous structure of the program demonstrates a comprehensive approach to continuous learning and workforce capacity building in complex fields.
13.	Enhancing access to specialist appointments in tertiary healthcare in Shanghai China: a structured reservation pathway using digital health technologies	Chen et al. (2024)	The development and implementation of precision reservation pathways (PRPs) integrated with digital systems has the potential to optimize resource allocation and strengthen hierarchical medical systems. Such digital innovations enable healthcare systems to "learn" from demand patterns and improve efficiency.
14.	The impact of audit and feedback to support change behaviour in healthcare organisations - a cross-sectional qualitative study of primary care centre managers	Glenngård & Anell (2021)	This study found that external Audit & Feedback (A&F) is often perceived as top-down and only encourages compliance, not complex change. To support LO, the A&F model needs to be developed together with professionals to make it more legitimate and support bottom-up improvement initiatives.
15.	Study protocol: assessment of the usefulness and practicability of a psychoeducational intervention to prevent the negative psychological impact of the COVID-19 pandemic on primary care health workers	Aragonès et al. (2023)	This protocol evaluates a psychoeducation program for the well-being of primary health care workers. Investigating interventions to support the mental health of health care workers is a critical component of LO, as a healthy workforce is a prerequisite for an organization that is capable of learning and adapting.
16.	Transforming community-based primary health care delivery through comprehensive performance measurement and reporting: examining the influence of context	Wong et al. (2024)	This study explores the role of comprehensive performance measurement and reporting in transforming CBPHC, which is a key component of LHS. Data feedback to clinicians and decision makers facilitates reflection and collaboration for continuous improvement.
17.	Improving surgical safety checklist utilisation at 23 public health facilities in Ethiopia: a collaborative quality improvement project	Bete et al. (2023)	The implementation of an improvement model with training, monthly clinical mentorship, and a cluster learning platform increased SSC usage from 50.4% to 90.3%. The largest increase occurred in primary care facilities, demonstrating that collaborative learning and onsite capacity building are powerful enablers.
18.	Mailed fecal testing and patient navigation versus usual care to improve rates of colorectal cancer screening and follow-up colonoscopy in rural Medicaid enrollees: a cluster-randomized controlled trial	Coronado et al. (2022)	This pilot tests the implementation of a multi-component CRC screening program supported by training and practice facilitation. Phase II is planned to include scale-up activities such as webinars and collaborative learning activities, which describe a systematic approach to disseminating and embedding best practices.
19.	Developing an interprofessional learning and working culture to improve person-centred care in nursing homes: a realist action research protocol	Verbeek et al. (2022)	This protocol uses realistic action research to develop a culture of interprofessional learning and working in nursing homes. Creating such a culture, where different professions collaborate and share knowledge, is the foundation for achieving person-centered care and is the core objective of LO.
20.	Improving age-friendly advance care planning in primary care: Outcomes from a Pacific Northwest learning collaborative	Johnson et al. (2024)	A 9-month virtual learning collaboration improved providers' knowledge of Advance Care Planning (ACP) and EHR documentation in most practices. Learning collaborations are a proven strategy for facilitating knowledge sharing and driving practice change in primary care.
21.	Blue Circle Health: A Novel Patient-Centered Model of Health Care Delivery for Low-Income Patients With Type 1 Diabetes	Bruggeman et al. (2023)	This new care model is built on a "continuous learning and improvement" approach to create equitable, accessible, and effective services. It embodies the spirit of LHS by iteratively designing and improving the care model based on data and direct feedback from patients.
22.	Quality improvement initiative: implementing and redefining video review of real-time neonatal procedures using action research	Heesters et al. (2024)	This initiative successfully implemented video review (VR) in the NICU by identifying and addressing prerequisites such as establishing a safe learning environment and ensuring that session findings were used for quality improvement. This is an example of how systematic team reflection (VR) can be incorporated into the organizational improvement cycle.
23.	Detecting transthyretin amyloid cardiomyopathy (ATTR-CM) using machine learning: an evaluation of the	Tsang et al. (2023)	ML algorithms developed in the US perform well on UK data, demonstrating the potential for scalable decision support tools to identify patients with underdiagnosed diseases. The

	performance of an algorithm in a UK setting		ability to adapt and validate data-driven tools in different settings is a valuable asset for LHS..
24.	Adapting Elements of Cleft Care Protocols in Low- and Middle-income Countries During and After COVID-19: A Process-driven Review With Recommendations	Fell et al. (2022)	A global consortium uses a multi-stage process to develop consensus recommendations on adapting care protocols during/after COVID-19. This type of international and interdisciplinary collaboration facilitates rapid learning and knowledge sharing across health systems, enabling a more resilient response to shocks.
25.	Strategies to implement evidence-informed decision making at the organizational level: a rapid systematic review	Clark et al. (2024)	This systematic review synthesizes strategies for implementing EIDM and maps enablers/barriers to the COM-B model. This knowledge empowers leaders to tailor strategies to create the capabilities, opportunities, and motivation necessary for their organizations to become evidence-based learners and decision makers.
26.	Comparative Analysis of the Impact of Training through Simulation Using the Crisis Resource Management Tool for Primary Care Professionals	Bernardino et al. (2024)	CRM simulation training was highly valued by primary care physicians. After one year, participants reported changes in workplace behavior (such as improved procedures and team organization) and some reported improvements in patient care, demonstrating the sustained impact of experiential learning on individual and organizational practice.

DISCUSSION

Thematic analysis of the 26 articles yielded five main themes that describe the dynamics and practices of applying the Learning Organization principle in the health sector, namely;

Characteristics of Learning Organization Implementation

The application of LO in primary health care is characterized by three main components, namely: (1) continuous learning at the individual and team levels, (2) knowledge sharing systems between organizational units, and (3) the use of data and systematic reflection for continuous improvement. Learning networks and communities of practice are effective mechanisms for strengthening interprofessional collaboration and improving service performance (Nash *et al.*, 2021; Spanos *et al.*, 2024).

At the individual and team levels, continuous learning is not merely routine training, but leads to the establishment of a learning culture embedded in daily work practices such as quality improvement practices that have become the standard for strengthening the capacity of healthcare workers and leadership support for controlled experimentation and learning from mistakes(Lalani, Bussu and Marshall, 2020; Harrison and Shortell, 2021; Easterling *et al.*, 2022). However, many studies indicate that learning at the frontlines often remains single-loop (reactive to immediate problems) and has not consistently evolved into double-loop learning that dares to test existing assumptions, workflows, and service models (Lalani, Bussu and Marshall, 2020; Nuño-Solinís, 2025) The second component, cross-unit knowledge-sharing systems, shifts LO from merely accumulating local knowledge to broader learning networks, for example through communities of practice, inter-organizational collaboration, and academic-service partnerships, which have been shown to accelerate the dissemination of innovations, the standardization of effective practices, and the co-design of solutions with stakeholders (Moss *et al.*, 2021; Pereira *et al.*, 2025).

The main challenge is to establish incentives, governance structures, and a culture of trust that enable two-way, sustainable knowledge exchange, rather than merely formal reporting (Austin *et al.*, 2021; Pereira *et al.*, 2025). The third component, the use of data and systematic reflection, is at the core of the LHS cycle: transforming practice into data, data into

knowledge, and then reintegrating that knowledge back into practice (Easterling *et al.*, 2022; Somerville *et al.*, 2023; Giroux *et al.*, 2025).

Enablers and Barriers to Implementation

The main factors supporting the successful implementation of LO include leadership, learning infrastructure, interprofessional collaboration, and policy support. Some of the main obstacles to implementing LO in primary care include limited human resources, fragmented information systems, and a hierarchical organizational culture. One study confirms that learning technology will not be effective without infrastructure support and organizational readiness (Chamane, Ebenezer Ogunsakin and Mashamba-Thompson, 2022). In addition, top-down audit and feedback models can actually hinder true learning because they create insecurity and a lack of ownership of change (Glenngård and Anell, 2021).

The success or failure of implementing a Learning Organization (LO) in primary care must be understood as the result of a dynamic interaction between enabling and inhibiting factors within a single system, rather than merely a list of separate elements. Leadership, learning infrastructure, interprofessional collaboration, and policy support constitute the primary enabling conditions for the occurrence of a continuous learning cycle, as depicted in the Learning Health System framework, which emphasizes the roles of leadership, governance, data, and partnerships as key domains of organizational readiness (Leon and Xu, 2023; Al-Omary *et al.*, 2024; Grant *et al.*, 2024). Interprofessional collaboration and interprofessional education, when supported by team structures and co-location, strengthen cross-professional knowledge transfer and the team's capacity for collaborative problem-solving (Rawlinson *et al.*, 2021; Bogossian *et al.*, 2023; Lee *et al.*, 2025).

However, these enabling factors often come up against structural and cultural barriers. Limited human resources, heavy workloads, and a lack of time for learning undermine healthcare workers' ability to take advantage of LO and CPD opportunities, even when training programs are available (Al-Omary *et al.*, 2024; Ominyi *et al.*, 2025). Fragmented information systems and poor interoperability undermine the effectiveness of the learning infrastructure: data is difficult to access and integrate, and ultimately fails to serve as a basis for decision-making and quality improvement (Aggarwal *et al.*, 2023; Leon and Xu, 2023; Giroux *et al.*, 2025). A hierarchical organizational culture and power dynamics across disciplines hinder interprofessional collaboration, foster fears of losing "professional territory," and limit opportunities for frontline staff to contribute to learning and innovation (Rawlinson *et al.*, 2021; Grant *et al.*, 2024). From the perspective of both the CFIR and the IPC framework, what is identified as a strength (e.g., participatory leadership, a collaborative culture, integrated information systems) can, on the other hand, emerge as a barrier when its negative counterpart dominates (weak or top-down leadership, a hierarchical culture, fragmented data infrastructure) (Busca *et al.*, 2021; Rawlinson *et al.*, 2021; Leon and Xu, 2023).

The interplay between these enablers and barriers indicates that the readiness of LO/LHS in primary care is a matter of multilevel alignment: between external policies and incentives, internal structures and culture, human resource capacity, data infrastructure, and the quality of leadership and team collaboration (Rawlinson *et al.*, 2021; Leon and Xu, 2023; Al-Omary *et al.*, 2024; Giroux *et al.*, 2025).

Impact on Organizational Performance and Service Quality

The application of LO principles has been proven to contribute positively to improving service quality and organizational performance. Collaborative learning approaches and capacity building in the workplace are considered capable of improving compliance with safety standards and teamwork effectiveness. Improving service quality and organizational performance through LO aligns with the learning health system framework and studies on learning and improvement capabilities, which emphasize structured learning, data utilization, and continuous improvement as part of routine operations rather than additional activities. Organizations that systematically embed the data-knowledge-performance cycle and quality improvement practices tend to demonstrate better service quality and efficiency, Attributes such as leadership commitment, an open culture, opportunities for team development, and a strategic focus on clients/patients form the primary foundation for ensuring that LO principles are truly realized in performance (Easterling *et al.*, 2022; Chitha *et al.*, 2025; Torok *et al.*, 2025).

Collaborative learning approaches and workplace capacity building—such as practice development, interprofessional education, simulations, and interprofessional collaboration—have been shown to improve teamwork, communication, and safety culture. Principle-based team training, joint exercises, and shared reflection mechanisms strengthen trust, coordination, and the team's ability to adhere to safety standards and learn from incidents (Easterling *et al.*, 2022; Sultan *et al.*, 2023; Nobrega and Zhang, 2024). This can therefore be interpreted as a reinforcement of collaborative learning and system resilience, where adaptation, coordination, and quality improvement arise from daily interactions among professionals (Kilbourne *et al.*, 2024). Thus, the findings regarding the positive impact of LO and collaborative learning can be situated within the literature on organizational learning, team effectiveness, and resilience as evidence that investing in collective learning capacity is a key pathway to improving the quality and safety of health care services.

Thus, it can be interpreted that in the context of public health centers, this approach enables the improvement of adaptive, participatory, and evidence-based service quality. Based on these results, the conceptual model synthesized here illustrates the relationship between enablers, organizational learning processes, barriers, and outcomes in the context of primary health care. This model positions the Learning Organization as a dynamic system that works through a knowledge-to-action cycle and double-loop learning to produce continuous improvement, as shown in the following figure;

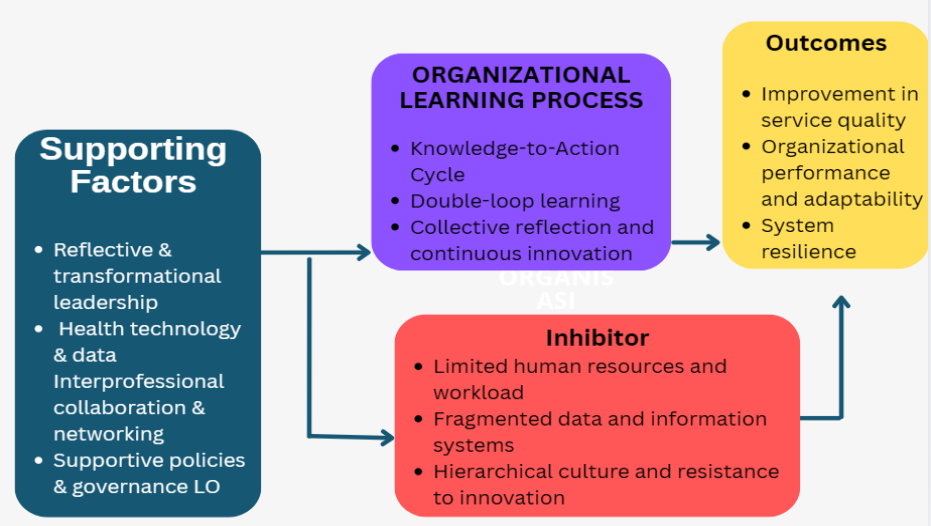

Figure 2. Conceptual Model of Learning Organization Implementation in Health Centers

This model emphasizes that the success of LO in Public health center does not depend on a single factor, but is the result of systemic interactions between leadership, structure, culture, and learning mechanisms that reinforce each other. Organizational attributes such as leadership commitment, open culture, space for team development, change initiatives, and strategic focus on clients are key factors that interact with each other in building learning capacity and improving health service organizations (De Kok *et al.*, 2023; Udin, 2023). Furthermore, supportive and collaborative leadership creates a safe psychological environment, encourages sensemaking, and strengthens team learning processes (Nellen, Gijselaers and Grohnert, 2020; Cullen *et al.*, 2023).

CONCLUSION

Overall, the results of this literature confirm that establishing a health system capable of continuous learning requires not only technology and data, but also leadership that supports learning, a reflective workforce, and a collaborative and adaptive organizational structure. Cross-theme analysis shows that the principles of Learning Organization and Learning Health System work synergistically through the knowledge-to-action cycle, experience sharing, and data-based reflection, making healthcare organizations not only places of work but also learning ecosystems. There are limitations to this study, including: This study uses publications from 2021–2025, thus possibly overlooking relevant literature prior to that period; the use of a single database (Google Scholar) may limit the scope; the heterogeneity of contexts between countries means that generalizing the results to the context of Public health centers in Indonesia must be done with caution; and the synthesis approach is qualitative-descriptive, so it does not empirically measure the strength of the relationship between variables.

Further research is recommended to adopt a more comprehensive and empirical approach in examining the implementation of the Learning Organization in primary health care, by expanding the literature review through multiple databases and across different time periods, as well as using quantitative or mixed-methods designs to measure the relationships between variables more objectively. Additionally, contextual studies should be conducted to test the relevance of the resulting model, accompanied by a longitudinal approach to

understand the dynamics of continuous organizational learning. Furthermore, studies exploring the role of leadership, information system integration, and incentive mechanisms in fostering collaboration and knowledge sharing can be conducted, thereby providing stronger theoretical and practical contributions.

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