

# Barriers and Strategies in Promoting and Improving Patient Safety Culture among Indonesian Nurses: A Systematic Review

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## Abstract

**Introduction:** Patient Safety Culture (PSC) is one of the indicators in the quality of care and services. The nurse has an important role to promote and improve PSC in the hospital. As a developing country, Indonesia still struggles to improve quality health care by increasing PSC among health professional including nurses. This systematic review aims to identify Indonesian nurses' barriers and strategies to promote and improve PSC in hospitals.

**Method:** This systematic review study used the PRISMA protocol to select appropriate resources. Nine journal databases of CINAHL, DOAJ, GARUDA, Google Scholar, MDPI, Medline, Proquest, PUBMED, and Science Direct were searched in this regard.

**Results:** The barriers that nurses faced in PSC promotion and improvement in the Indonesian hospital settings were nursing capabilities, regulation, organizational culture, equality, equally and supports, and natural resources. While the strategies are incorporating patient safety topics into the nursing curriculum, leaders' supervision, integrative team, and regular training and workshop.

**Conclusion:** This review finding both the barriers and strategies in PSC promotion and improvement differ among Indonesian nurses. The major barrier was predominantly related to nurses' capabilities and competences. Hence, the strategies were related to improving nurses' capabilities and competences in patient safety both through improvement nursing curriculum, and continuing nursing education programs.

**Keywords:** Organizational Culture, Patients Safety, Patient Satisfaction, Safety Management, Quality of Health Care

## Introduction

Patient safety is an essential aspect within the health care system all over the world, and is considered as an indicator to improve the quality of patients' care.<sup>1</sup> The patient safety evolves prevention of the adverse events related to health care services due to human and technical errors. Adverse events could unexpectedly occur in health care services and as a result, patients may be placed in vulnerable conditions.<sup>2</sup> The incidences related to patient safety issues due to unsafe health care services are 20 times higher in low-income countries compared to middle and high income countries.<sup>3</sup> One out of 10 patients who are admitted to hospitals are at risk to suffer from harm. These harmful conditions may be either severe or lethal.<sup>4</sup>

Nowadays, healthcare organizations are more alerted to increase and improve patient safety and create a safety culture by evolving nurses.<sup>5</sup> Patient safety culture in the Indonesian context has already been investigated in some studies. However, the majority of these studies have only focused on a particular aspect of patient safety-related issues. Since, no study has been carried out to comprehensively identify both barriers and strategies in promoting and improving PSC in hospital settings, this systematic review aims to identify the barriers and strategies of Indonesian nurses in promoting and improving patient safety culture in

the Indonesian context.

## Methods

This systematic review used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol to select appropriate resources to determine barriers and strategies in promoting and improving patient safety culture among Indonesian nurses. The research strategy was to find relevant articles related to barriers and strategies in promoting patient safety culture among Indonesian nurses. The searched keywords, included "patient safety," "patient safety culture," "patient safety climate," "nursing role," "nurse leaders," "clinical nurse leader," "barriers," "strategies," while the Indonesian keywords were "keselamatan pasien," "budaya keselamatan pasien," "iklim keselamatan pasien," "tantangan," "hambatan," "strategi," "perawat." Available titles and abstracts of articles were reviewed systematically to obtain relevant articles.

Nine journal databases were used in this study such as CINAHL, DOAJ, GARUDA, Google Scholar, MDPI, Medline, Proquest, PUBMED, and Science Direct. In order to review Indonesian language-literature on the promotion and improvement of patient safety culture among Indonesian nurses both in regards to barriers and strategies, Indonesian electronic databases were searched including

Google Scholar and GARUDA.

All types of original studies and reports were considered. The quantitative studies including cross-sectional studies, survey, mixed-method and qualitative studies were examined in this review. Investigation of the relevant articles were done by applying some criteria such as articles published in English and/or Indonesian version, published from 2010 to May 2019, original paper, report, available in full-text, and peer-reviewed articles.

Both authors reviewed the articles by using the following stages: Inclusion and exclusion criteria were assessed both in reading the titles and abstracts of the search. Then, all full-texts of the selected articles were found and the exclusion criteria were also applied to the full-texts. Results were

categorized from studies on sources of promotion and improvement of patient safety culture using the framework of barriers and strategies related to patient safety culture among Indonesian nurses. Replicated articles were removed to retrieve the proper articles of relevant abstracts. Data extraction was initiated by reviewing articles for their eligibility based on their title and abstract. Then, the extraction of the specific study characteristic included patient safety in Indonesian hospitals, barriers, and strategies in promoting and improving the patient safety culture. All selected articles were re-read by the authors in order to carefully identify barriers and strategies, and were then listed and classified based on the theme. All articles were extracted by applying the PRISMA protocol (see figure-1).

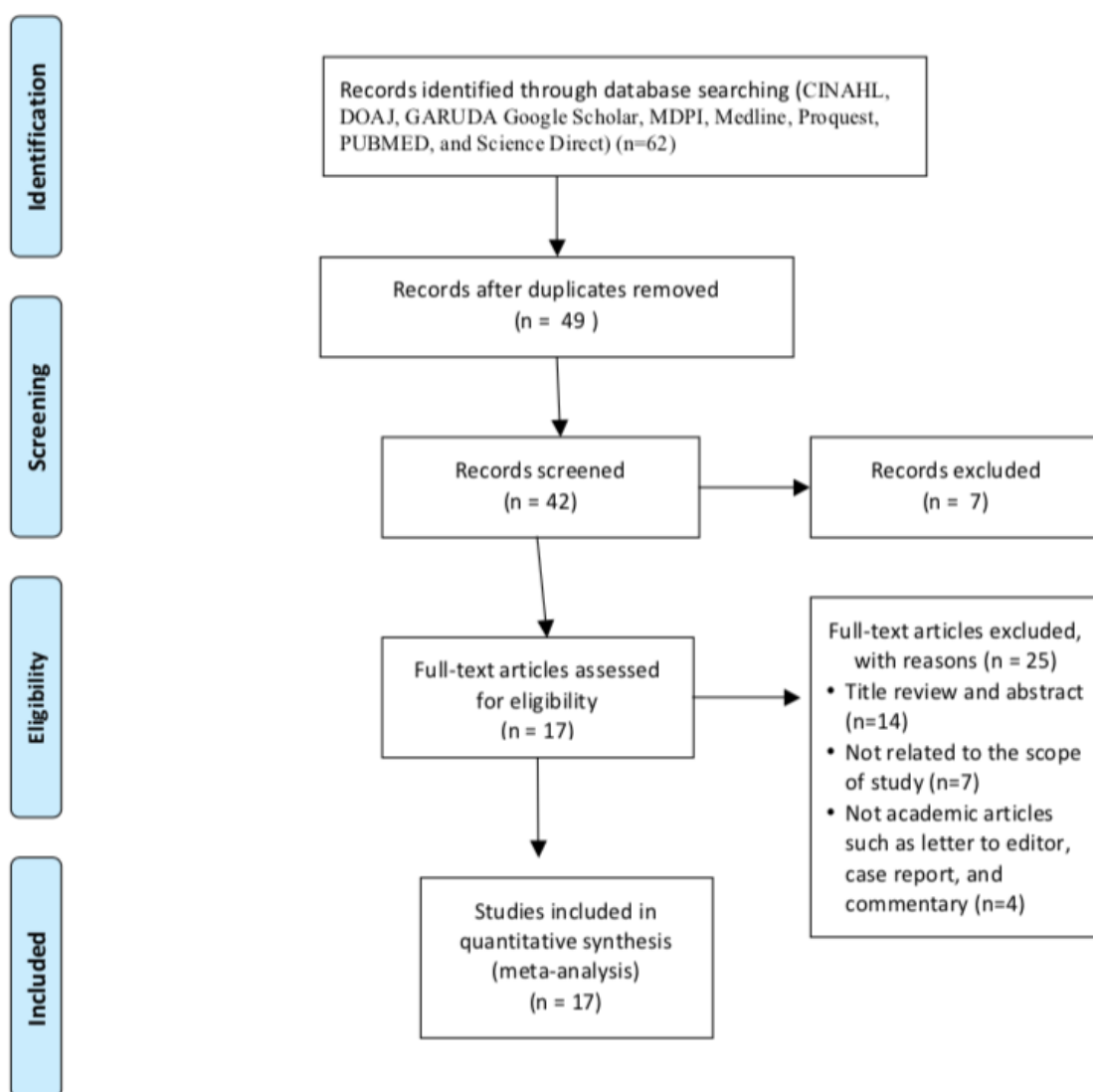


Figure 1. PRISMA Protocol

**Results**

Based on the above criteria, 17 articles were selected. Among them, 8 studies had focused on the barriers of patient

safety culture promotion and improvement (see table-1), 7 studies had focused on the strategies of promoting and improving patient safety culture (see table-2), while 2 studies had focused on both these issues.

**Table-1.** Barriers in promoting and improving PSC

Author, Year	Aims of study	Methods	Participants	Barriers
Damanti, Leggat & Barraclough, 2019	Study focuses on how the Indonesian government has been undertaking its role in patient safety at provincial and city/district levels, including incident reporting according to the National Guideline for Hospital Patient Safety.	A qualitative approach	16 participants were nurse manager, hospital manager, and leader of patient safety team.	Lack of commitment to and priority of patient safety, the complexity of the bureaucratic structure, and a lack of systematic partnership and collaboration are problems that need to be addressed by systematic improvement.
Iskandar, Maksum & Nafisah, 2014	To identify, analyze and find solution on unreported of incidence related patient safety	Qualitative with focus group discussion	26 head nurses	The lack of monitoring and evaluation by patient safety committee.
Mandriani, Hardisman, & Yetti, 2019	To analyze the description of patient safety culture at dr. Rasidin Hospital	Mixed method,	250 health workers	Attitudes, mostly of respondents show that they do not rehearse and implement patient safety procedure on daily basis working. The lack of support from hospital management to provide standardized of patient safety facilities.
Marjadi & Mclaws, 2010	To explore hand hygiene barriers in rural Indonesian healthcare facilities to develop a resource-appropriate adoption of international guidelines.	Mixed method	169 nurses, nurse aides (56%) or nursing high school graduates (31%).	Natural environment and community norms. The lack of hand washing was placed into perspective by the locals who used water for life-sustaining priorities The impact of formal healthcare education on community normative behaviour had not been sufficient to change practice, a minimum theoretical knowledge on hand hygiene during classes and clinical placements at hospitals and clinics A high patient load. In the outpatient setting, up to 200 patients were seen by two HCWs (doctors and/or nurses) between 09:00 and 14:00, averaging 3 min per patient.
Nugraheni, Widjasena, Kurniawan & Ekawati, 2017	To analyze related factors related to fall prevention in a public hospital	Cross-sectional study	40 nurses, 67.5% out of diploma qualification	The lack of support and facilities for patient safety
Rahmawati, Satria, & Purnaningsih, 2018	To analyze patient safety culture among groups of units of the hospital and to analyze leadership, education, and communication channel related to patient safety culture.	Survey method	100 nurses were recruited, 45% % diploma, 54% bachelor and 1% postgraduate qualification	Leadership and education/training are the influencing factors on the patient safety culture of the nurses in X Hospital. While the role of the communication is still questionable on the patient safety culture.
Setyowaty, Allenidekania, & Sabri, 2014	To identify the correlation of effective leadership among nurse head and patient safety culture implementation.	Cross-sectional study	206 nurses in a national referral hospital	The lack of knowledge among head nurses There is no hospital policy in patient safety culture promotion and improvement.
Tukatman & Purwaningsih, 2015	To analysis factors affect health and safety work among nurses in general and public hospital.	Cross-sectional study	100 nurses were recruited in a public hospital	Predisposing factor such as knowledge, attitude, belief, and value were dominant factor that affect patient safety culture in BG Hospital.
Vellyana & Rahmawati, 2016	To analyze the implementation of patient safety culture type C hospital	Mixed method, cross-sectional and case study design	76 nurses and midwives	Inadequate support from hospital management Long work hours, and heavy workload
Yasmi & Thabrani, 2015	To identify patient safety culture and factors related to PSC	Explanatory sequential	115 nurses	The lack of feedback on incidence patient safety report. Blaming culture The willingness to learn and update knowledge

**Table 2.** Strategies for promoting and improving Patient Safety Culture

Author, Year	Aims	Methods	Participants	Interventions	Results
Fatimah & Rosa, 2014	To explore the effectiveness of patient safety training	One group pretests-posttest design	32 nurses	Training patient safety by using SBAR methods	Communication by using SBAR methods has potential benefit on reducing erroneous during providing medication on patients.
Mandriani, Hardisman, & Yetti, 2019	To analyze the description of patient safety culture at dr. Rasidin Hospital	Mixed method,	250 health workers	Survey and case study report	Supervision shows significant impact on patient safety culture improvement.
Martyastuti, 2016	To determine the relationship between the individual, organizational factors and nurses' performance on the patient safety implementation in the inpatient wards of Public Hospital of Bendan	Cross-sectional study	100 nurses were recruited	No intervention	Providing reward to stimulate and increase nurses' motivation on patient safety culture program.  Creating and developing of monitoring and evaluation structured of patient safety culture implementation program.
Noviyanti, Handiyani & Gayatri, 2018	To identify the effect of quality circles on improving the safety of patients of nursing students.	A quasi-experimental research design with pre-test and post-test non-equivalent control groups.	68 nursing students,	The quality circle (QC) intervention	The application of QCs for clinical nursing instructors significantly improved the patient safety implementation of nursing students, especially skills.
Nurmalia & Nivalinda, 2016	To analyze the effectiveness of mentoring on patient safety culture improvement	Correlational and retrospective study	32 nurses		Controlling and mentoring have significant impact on patient safety culture improvement.
Putriningrum & Afandi, 2014	To identify the relationship between nursing leadership model and patient safety culture implementation	Cross-sectional study	30 nurses	No intervention	Training and workshop on nursing leadership skills
Santosaningih et al, 2017	To evaluate the effect of three different educational programs on improving hand hygiene compliance, knowledge, and perception among healthcare workers in a tertiary care hospital in Indonesia.	Cluster randomized controlled trial	196 participants in the pre-intervention and 88 in the post-intervention period	A combination of role model training and active presentation, The interventions consisted of three different educational programs: (1) active presentations; (2) role model training; (3) a combination of active presentations and role model training.	The educational programs improved the hand hygiene compliance and knowledge among healthcare workers in two out of three intervention departments in a limited-resource hospital in Indonesia.
Setyowaty, Allenidekani, & Sabri, 2014	To identify the correlation of effective leadership among nurse head and patient safety culture implementation.	Cross-sectional study.	206 nurses in a national referral hospital	Continuing nursing education, training and workshop.	Recommendation
Yulia, Hamid, & Mustikasari, 2012	To identify and analysis the effect of patient safety training on nurses' understanding on PSC.	Pretest-posttest with control group design	83 nurses from xx hospital (intervention group) and 83 nurses from xy hospital (control group)	Training and workshop about patient safety culture	There is no data about nurses' qualification.  Increased nurses' understanding on patient safety culture during training and after. There is correlation between individual characteristic and nurses' knowledge about PSC improvement.

### Barriers in Promoting and Improving Patient Safety Culture

Some barriers were identified with promoting and improving patient safety culture in health care facilities in Indonesia. These barriers included nursing capabilities,

regulation, organizational culture, equality and equity supports, natural environment and resource issues.

#### *Nursing Capabilities*

The majority of nurses in Indonesia who deliver nursing care have Diploma III qualifications, which is equivalent to

the enrolled nurse or a licensed practical nurse in Australia. Around 88% of all nurses who work in Government Hospitals in Indonesia are enrolled nurses. While, in private hospitals there is no valid data related to the number or percentage of nurses qualification due to the majority of private hospitals in which carrying out academic research is prohibited. Even senior nurse managers may just hold an enrolled nurse qualification. Some studies found that the majority of these nurses had a diploma level of study, which counted for 56%, 67.5%, and 45%, respectively.<sup>6,7,8</sup> This situation impacts the way nurses work because the majority of them do not have the adequate clinical knowledge to provide high-quality contemporary care and therefore they tend to provide routine care based on ritual and common practice. Another study found that the lack of knowledge among head nurses brings them being ineffective leaders to promote and improve patient safety culture in hospitals.<sup>9</sup> Another scholar also found that knowledge is a dominant predisposing factor on patient safety culture in public hospitals where nurses have diploma qualifications.<sup>10</sup> Providing care based on evidence-based practice is a challenging task. Due to the Diploma III qualification, most nurses are unfamiliar with evidence-based practice particularly related to patient safety issues. Nurses rarely do critical thinking-related case interventions because they tend to practice patient care based on doctors' regimens or orders.<sup>11</sup> Individual competence is a pivotal key to improve organizational performance.<sup>12</sup>

### **Regulation**

A study on nurse manager, hospital manager, and the leader of patient safety team shows that there is lack of commitment to and priority of patient safety, the complexity of the bureaucratic structure, and lack of systematic partnership and collaboration. These are problems that need to be addressed by systematic improvement since nurses do not rehearse and implement patient safety procedures in daily work.<sup>13</sup> That situation occurs due to the lack of support from hospital management to provide standardized patient safety facilities.<sup>14</sup> Another study identified that in a referral hospital where 206 nurses participated in that study and found there is no hospital policy in patient safety culture promotion and improvement,<sup>9</sup> regular monitoring and evaluation from patient safety committee,<sup>15</sup> that occur as a result of the lack of support from hospital management.<sup>16</sup>

### **Organizational Culture**

In the Indonesian health care's culture, nurses are not involved in sharing knowledge or making the decision with regards to improving health care quality. Also, there is no respect from other health care professionals such as doctors. Also the relationship between nurses and doctors does not foster collegiality and a patient-safety culture.<sup>17</sup> Indonesia has a patriarchal culture and gender inequality. This culture is

reflected in governmental hospitals. Junior nurses are not allowed to speak up or know more than senior nurses. The hierarchical culture is intense, and it has a direct connection with adverse and unexpected events.<sup>18</sup> Blaming is another major issue in PSC which affects patient safety-related incidences which are sometimes unreported. Nurses try to avoid blaming as a consequence of erroneous during delivering treatment to patients.<sup>19</sup>

### **Equality and Equity Supports**

Hospital structure has also been a concern in improving nurses and allied health professionals' engagement in innovation. Most of the director positions in government hospitals are chaired by doctors, even the nurse manager position. Incorporating nurses in decision-making relating to hospital goals rarely occurs. This is due to the low-level qualifications and the hierarchical work culture. Actually in reality, doctors are more predominate than other health professionals including nurses. This situation affects Indonesian nurses who work under extreme difficulties in their status and the organizational culture.<sup>20</sup>

### **Natural Environment and Resources Issue**

Natural resources have been also found as another main barrier in promoting and implementing patient safety culture. Due to the lack of water resources, health professionals who work in an area where water supply is extremely limited, tend to ignore hand wash. Water is only used for life-sustaining priorities.<sup>6</sup>

### **Strategies in Promoting and Improving Patient Safety Culture**

Some strategies were identified which may be helpful to increase nurses' capability on patient safety culture promotion and improvement. The strategies are: Incorporation of Patient Safety Content into Nursing Curricula, Mentorship and Supervision, Multidisciplinary Collaboration, Leadership Initiatives, and Continuing Education.

#### ***Incorporation of Patient Safety Content into Nursing Curricula***

Incorporating patient safety topics into the nursing curriculum is required to provide and improve nurses' knowledge in leadership and patient safety both in the clinical and educational settings. Furthermore, a patient safety curriculum should collectively enhance health professionals and stimulate students' interest in the field.<sup>21</sup> Since routine assessment of patient safety as part of daily practice is not included in nursing education, nurses are not adequately prepared to provide the highest level of safety and quality.<sup>22</sup> This is while the conceptualization of patient safety within curricula requires further study.<sup>23</sup> However, a study found that patient safety program improved patient safety culture, trainees' teamwork, and communication skills.<sup>24</sup> Thus, improving patient safety culture requires better

understanding and skills.<sup>25</sup> From this phenomenon, the Association of Institution of Nursing Education Collegium approves patient safety management as an important topic for bachelor nursing students.<sup>26</sup>

### ***Mentorship and Supervision***

Increasing supervisory time on practice has a positive impact and improves the quality of patient care and safety, and compliance with audits and clinical documentation.<sup>27</sup> Furthermore, supervisory time has a significant impact on patient safety culture improvement.<sup>14</sup> Other studies identified that creating and developing monitoring and evaluation structured of PSC implementation program has potential benefits on the promotion and improvement of PSC.<sup>28,29</sup>

### ***Multidisciplinary Collaboration***

Applying integrative approaches, which involve and participate, health professionals, leaders, and policy-makers, are pivotal components to improve patient safety culture in health care facilities.<sup>30</sup> The involvement of multidisciplinary or inter-professionals teams can help increase the use of evidence-based practice, and increase commitment to translating patient safety evidence into the effective policy.<sup>31</sup> Inter-professional teams will benefit to advance culture within the organization. Actually, improvements teams have the power to change a culture by creating, engaging and empowering all health workers to make changes in order to support safer care.<sup>32</sup>

### ***Leadership Initiatives***

Leaders can establish a reliable team at the micro-system level to influence the organization's culture through communication and behavior.<sup>33</sup> Introducing leader communication approaches into patient safety report is useful to improve the safety culture. Leadership communication, safety priority communication and feedback seem to have significantly influenced patient safety-related reports.<sup>34</sup> Furthermore, communication failures as part of the human factors have repeatedly shown to be at the core of errors in health care systems.<sup>35</sup> Communication among nurses by using SBAR methods during hand over has a potential benefit on reducing erroneous during providing medication on patients.<sup>36</sup>

### ***Continuing Education***

Training and workshops, as a part of the continuing education program, were identified as positive impacts on promoting and improving PSC in hospital settings. Results of studies have found that the application of Quality Circle (QCs) for clinical nursing instructors significantly improved the patient safety implementation among nursing students.<sup>37</sup> Furthermore, the educational programs improved the hand hygiene compliance and knowledge among healthcare workers in two out of three intervention departments in a limited-resource hospital in Indonesia.<sup>38,39,40</sup>

## **Discussion**

Even though many studies in the patient safety field have been conducted for many years both in developed and developing countries,<sup>41</sup> however, the reports from the Southeast Asia region are inadequate.<sup>42</sup> Further, Indonesia as a Southeast Asian country has been identified as a country with limited studies in the field of patient safety.<sup>43</sup>

Nursing capabilities among Indonesian nurses has been predominantly affected by the level of qualification. The majority of the selected articles in this study found that most participants had a diploma qualification and nursing aides. In one study, around 54% of participants had a bachelor qualification,<sup>8</sup> however, the majority of them had graduated before 2017. This means that they had not studied the topic of patient safety management during their university studies, due to the fact that this topic was formally introduced and implemented in 2016 under AIPNI curricula.<sup>26</sup> In that curriculum, patient safety was merged with occupational health as one single topic in which occupational health took a larger proportion compared to the patient safety issue, in which only 1 out of 6 learning outcomes was related to patient safety. Furthermore, diploma qualification was classified as a vocational education program under the Indonesian qualification framework. As a vocational education program, its goals were prepared to be a skilled nurse particularly in delivering basic needs care to patients without required critical thinking and evidence-based practice. Investigations on patient safety curriculum implementation in low-income and middle countries which evolved around 44 countries from 4 WHO regions (Southeast Asia, Western Pacific, Eastern Mediterranean, and Americas), found that only 9% or 4 out of 44 countries were embedding patient safety curriculum throughout their health professional education process.<sup>44</sup> In the above mentioned investigation, three main barriers were identified for the implementation of patient safety. These barriers included, barriers to the patient safety curriculum itself, barriers related to the context for implementation, and barriers related to the implementation process of patient safety curriculum.<sup>44</sup> Interestingly, the nursing students who had participated throughout interprofessional projects on patient safety and quality improvement education reported that they felt well-prepared and were excited to apply their knowledge on their nursing carriers.<sup>45</sup>

Patient safety competence among nurses has a significantly positive relation to patient safety culture. Furthermore, continuing education in a university level is essential to improve and enhance patient safety competence.<sup>46</sup> A Korean study found that nearly 82% of the respondents were nurses with bachelor's and above qualifications, and these nurses who have high competence in patient-centered care will encourage patient participation in safety by building a

partnership with patients.<sup>47</sup> Additionally, Iranian scholars have pointed out that the institutionalization of patient safety culture has been challenged by some health professional related factors such as lack of creativity, lack of ability in clinical decision-making, lack of knowledge and ability in health care management, and lack of effort for improving professional competences.<sup>48</sup> To improve patient safety culture and climate, building nurses' competency through nursing education is highly needed by putting patient safety as a fundamental topic within health care curricular.<sup>49</sup> Interestingly, an innovative education program which involved nurses and supervisors throughout an empowerment educational program on patient safety culture showed that this program improved patient safety culture.<sup>50</sup> The improvement of PSC was indicated by the increased of nursing capabilities and authority these include a critical thinking and speaking patient safety up.

Since 2011, the Indonesian government under the Ministry of Health issued a regulation, and nationally introduced and promoted patient safety as one of the indicators of health care services quality. All aspects related to patient safety were assessed when hospital management applied for accreditation.<sup>43,51</sup> However, promoting and improving patient safety culture, particularly in the hospital setting, among Indonesian nurses is still far from national goals.<sup>52,53</sup>

Another barrier to PSC is organizational culture. Creating a culture where individuals feel free to self-report errors without the threat of punishment is particularly important for improving patient safety.<sup>54</sup> The ability to create PSC is highly dependent on the shared values and beliefs and lines of communication among nurses within the organization. Team tasks, team composition, and organizational support have been considered as input factors on developing patient safety within organizations.<sup>55</sup> Additionally, leadership, team objectives, and reflexivity were crucial factors to achieve positive outcomes of teamwork. Teamwork and hospital management support have been identified as distal factors that have great potential to positively influence patient safety from blunt end. Similar findings by Danish scholars have revealed that leadership engagement has concrete improvement in teamwork and patient safety.<sup>56</sup> Leadership on the middle level of organizations has an important role and most effectively influences patient safety change within organizations.<sup>57</sup> This finding has been supported by an Australian study. In the Australian study it has been proven that supervisor support positively associates with PSC, and that result suggests that supportive supervising may be an effective strategy to improve PSC.<sup>58</sup> Also, a Turkish empirical study reported that hospital management plays an important role in patient safety culture. Therefore nurses could give their full effort on patient safety only when the management supports them.<sup>59</sup>

Health care infrastructure such as building also have essential contribution on providing safety and preventing harm for patients and health workers from hospital-acquired infections, medication errors, falls and suicide incidences.<sup>60</sup> Study participants highlighted that safe physical infrastructure and a safe environment which is characterized as a strong building with adequate space, a good navigation system, a ventilation system, and natural lighting were important in patient safety.<sup>61</sup> Even safety in the healthcare facilities is a complex problem. Identifying and eliminating patient safety-related problems during the planning, designing, and constructing of the healthcare facilities are highly recommended to achieve patient safety goals. In a study conducted in 26 Low and Middle-Income Countries (LMIC) it was found that resources (facilities, human resources) and supports are predominant barriers to patient safety implementation through the education system.<sup>44</sup> All barriers and strategies identified in this study could be considered as key priorities and key elements when developing a national strategy for patient safety improvement.<sup>62</sup>

#### Limitations

According to the findings of this review, barriers and strategies in patient safety culture promotion and improvement differ based on the researcher's interest and concern. Also, in most reviews the number of participants were small. Actually, these studies have found various barriers and strategies for improving quality of care throughout patient safety culture implementation. It seems that there is still many challenges for implementing patient safety culture within organizations. All these potential barriers should be considered in future studies.

#### Conclusion

Patient safety is an essential element in health care service facilities. In order to improve quality of health care services and patient outcomes, implementing patient safety culture was necessarily in hospitals organization. This review identified that barriers in promoting and improving PSC in Indonesian hospital predominantly related to nursing capabilities. While, the strategies were mostly related to improving nursing capabilities and competencies in patient safety through improvement nursing curriculum, and continuing nursing education programs. Investigating the barriers and strategies of PSC from nurses and patients perspectives in near future is necessary in order to improve and maintain patient safety outcomes.

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## Conflict of Interests

The authors declare that they have no conflicts of interest.

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