Review Articles

Patient safety culture in studies of Iran and a sample of Arab, European and Latin American countries: Secondary analysis of systematic review data

Amin Dalili[1], Hamid Zamani Moghadam[2], Fatemeh Maleki[3], Farhad Bagherian[4], Seyed Reza Habibzadeh[5], Behrang Rezvani Kakhki[6], Roohie Farzaneh[7*]

1. Assistant Professor of General Surgery, Fellowship of Minimally Invasive and Bariatric Surgery, Surgical Oncology Research Center, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran. Orcid: 0000-0001-6695-8551

2. Associate Professor, Department of Emergency Medicine, Faculty of Medicine, Mashhad University of Medical sciences, Mashhad, Iran. Orcid: 0000-0002-7506-7782

3. Department of Emergency Medicine, School of Medicine, Birjand University of Medical Sciences, Birjand, Iran. Orcid: 0000-0002-6823-5151

4. Department of Emergency Medicine, Babol University of Medical Sciences, Babol, Iran. Orcid: 0000-0001-9760-2611

5. Assistant Professor, Department of Emergency Medicine, Faculty of Medicine, Mashhad University of Medical sciences, Mashhad, Iran. Orcid: 0000-0003-4569-1776

6. Associate Professor, Department of Emergency Medicine, Faculty of Medicine, Mashhad University of Medical sciences, Mashhad, Iran. Orcid: 0000-0003-3715-6618

7. Assistant Professor, Department of Emergency Medicine, Faculty of Medicine, Mashhad University of Medical sciences, Mashhad, Iran. Orcid: 0000-0002-0892-1555.

Corresponding Author: Dr Roohie Farzaneh. Assistant Professor, Department of Emergency Medicine, Faculty of Medicine, Mashhad University of Medical sciences, Mashhad, Iran. **Email:** farzanehr@mums.ac.ir

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Abstract:

Background: Patient safety culture is the result of individual and group values, attitudes, perceptions, competencies and behavior patterns that express the commitment, methods and skills of an organization in terms of safety management. Due to its importance, vital role in patient safety, reduction of injuries and improvement of quality in hospitals, this topic has been noticed by researchers and policy makers of the health system. The aim of the present study is the secondary analysis of patient safety culture review data in Iranian studies and a sample of Arab, European and Latin American countries.

Method: The current research was conducted with the secondary analysis method and is based on the analysis and integration of information obtained from previous research. In this method, information obtained from previous review researches without statistical analysis has been used by combining, combining and comparing the findings in order to evaluate the state of patient safety culture and its dimensions in the countries under secondary analysis.

Results: In this research, 55 review studies were included that examined a total of 102 articles between the years 2000-2021. The state of patient safety culture in the studied countries has been reported as moderate and downward, which requires efforts to improve. Among the twelve dimensions of teamwork in the units, they had received the most positive response and non-punitive response to error the least response in the evaluations.

Conclusion: The findings showed that the comprehensive improvement of patient safety culture in hospitals is a challenging issue and requires a long-term strategy and operational plan. Also, the culture of patient safety can reach a stable state, and it is necessary for the policy makers of the health system to provide the reporting of adverse events with a justice-oriented approach and regularly evaluate the effectiveness of patient safety programs and interventions.

Keywords: Patient Safety, Safety Culture, Secondary Analysis, Review Studies.

Submitted: 15 May 2023, Revised: 11 June 2023, Accepted: 19 June 2023

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Introduction

Patient safety culture is a set of organized actions that create values, beliefs and behaviors that shape the way the health care environment operates and prioritizes patient safety to reduce the occurrence and impact of avoidable harm (1-2). Different definitions of safety culture. The patient is presented. Safety culture is the result of individual and group values, attitudes, perceptions, competencies and behavior patterns that express the commitment, methods and skills of an organization in terms of safety management (3). The main factors in safety management are: planning safety; organization of safety and its activities; directing safety programs; control of functions and results (4). Patient safety culture involves the way healthcare organizations embrace safety beliefs, values, and attitudes, turning them into everyday healthcare practices (5-7). It also entails a dedication to upholding error-free healthcare settings. Factors like workload, staffing, and resources can impact how this safety culture is upheld. Assessing patient safety culture is vital for pinpointing areas that need enhancement and for crafting strategies to bolster it, ensuring that healthcare organizations deliver safe and effective care to patients (8-12).

Safety culture is the product of values, tendencies, perceptions, qualifications and individual and group behavior patterns of employees, by which the level of compliance of employees with the style and method of managing the safety and health of the organization is determined. Today, three views are expressed about the safety culture:

1. Hardware view: Until a few decades ago, scientists believed that in order to control losses and reduce the number of accidents, more barriers and protections should be built for devices or safer tools and machines. But still the number of industrial accidents did not decrease.

2. Software perspective: In this perspective, to control incidents, reduce waste, and train. The preparation of procedures and policies, codified planning was taken into consideration, but it did not have a significant effect in reducing the number of incidents.

3. Biological perspective: In this perspective, human being as the main and influencing factor on accidents was the attention of researchers. Researchers worked on new safety systems, processes, and safety management to reduce the likelihood and severity of accidents. Due to the fact that man is a complex being psychologically and behaviorally, there are still many ambiguous points that make it difficult to judge the effectiveness of this method (13-14). The need to address the issue of patient safety culture is because unsafe medical procedures have been identified as the main source of morbidity and mortality worldwide (15). Of course, the scale of the problem is different; Injuring patients can lead to extended hospital stays and increased healthcare expenses while also damaging the hospital's reputation and that of healthcare professionals and the healthcare system as a whole (16). Globally, millions of hospitalizations occur annually, with a substantial number of adverse events, mainly in low- and middle-income countries, making unsafe healthcare one of the leading causes of death and disability worldwide (17,18). This underscores the critical importance of patient safety and the broader concept of patient safety culture in improving healthcare quality and inspiring various projects and initiatives (19-22).

In Iran, the issue of patient safety has received attention in recent years. It can be mentioned, among others, the patient safety pilot project in some medical training centers in the country and the emphasis on patient safety in the educational accreditation of health care institutions. With the experiences of other countries, it can help the planners of the health system and the management of medical services in order to design programs that promote the culture of patient safety; With regard to the mentioned necessities, the present article aims at secondary analysis of the review data of patient safety culture in studies of Iran and a sample of Arab, European and Latin American countries; It has become a field of writing.

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Methods

The current research was conducted with the secondary analysis method and relies on the analysis and integration of information obtained from previous research. In this method, the information obtained from different researches is not subjected to statistical analysis. Instead, combining, combining and comparing the findings will be used to answer the research questions. The study of secondary analysis of primary data occurs when researchers obtain the data they need through data that has already been collected by others in quantitative and qualitative studies and analyze it. Data-driven. In the first approach, there is already a hypothesis or a question in mind. Then, the data set is examined to answer the question. In the second approach, first the existing data set is checked to determine what question this data answers (24).

Considering the many studies that have been conducted around the world in the field of patient safety culture and the systematic reviews that exist in relation to these studies; Therefore, the basis of gathering information in this article is a series of systematic studies in the field of patient safety culture in the hospital, which are currently the source of primary data for this article; Secondary analysis of previous researches can clarify appropriate information related to patient safety culture and comparing its status in different geographical locations. Therefore, it is not possible to analyze this issue, except by examining the paths taken and the tested information, in a secondary way from the available sources. On the other hand, this method can save time, money and manpower.

In this research, systematic review articles on patient safety culture in the hospital have been considered as primary data; The search was done with the keywords of patient and hospital safety culture and systematic review in Farsi and English languages to be used in the selected geographical areas if other studies have been done. The criteria for including articles in this study was systematic reviews in the period from 2010 to 2023. Collecting information from articles in Persian language databases; SID, Iranmedex, Magiran and English language databases; Science Direct, PubMed, ProQuest, Cochrane Library, Embase, Scopus and Google Scholar search engine were performed. Since in this study we were looking for systematic review articles from the beginning, therefore, due to the limited initial findings, we omitted the presentation of the search strategy table and the statistics chart of the articles.

Criteria for selecting and evaluating the quality of articles

we compiled a catalog containing the titles and abstracts of all articles accessible through the specified databases. In the initial phase, we filtered out studies that were either too similar or irrelevant. Subsequently, we conducted a quality assessment of each individual study using the established standard for evaluating primary research articles. To ensure impartiality, two authors independently conducted the extraction and evaluation of article quality. In instances where there was a discrepancy in their assessments, a third party was involved to review the article in question.

Exclusion criteria:

1- Studies that did not have the desired relationship with the purpose of the study.

2- Studies that looked at other dimensions of patient safety or that focused on an environment other than a hospital.

3- Old studies that were done before 2010.

4- Ethnographic articles, narrative reviews, short articles, conference articles and letters to the editor, cross-sectional descriptive articles, and qualitative studies.

5- Studies where it was not possible to access the full text of the articles.

For each of the chosen final articles, we documented essential information, such as the lead author's name, publication year, research location, research type, sample size, questionnaire tool, mediating components, and demographic variables. This comprehensive record-keeping was organized in an Excel software file of version

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2013. To identify suitable articles and ensure reproducibility, a thorough examination of article titles and abstracts was conducted, with full-text scrutiny when necessary. The extraction of data was carried out independently by two researchers or research associates using a standardized form, and any disagreements were resolved through discussion. The data elements encompassed the selection method and quality assessment of the final articles, the objectives of the reviewed studies, the types of measurement tools employed, and the identified factors influencing patient safety culture, all of which were subsequently subjected to secondary analysis.

The main questions considered in the secondary analysis are:

1- What tools and methods have been used to measure the quality of articles included in the final review?

2- What tools have been used to measure patient safety culture?

3- What is the state of patient safety culture in the countries under secondary analysis?

Results

Based on the search, finally after limiting the search of articles in search engines and databases based on entry and exit criteria and removing duplicate and unrelated items, after qualitative evaluation of the articles, we found 5 studies whose full text was available. And we could do the secondary study on the primary data of those articles. These studies were conducted in Iran and a sample of Arab, European and Latin American countries, which can be seen in Table 1.

In these five review studies, two of the studies in Iran and three other articles from Arab countries, Norway and Latin America have been selected; a total of 102 articles between 2000 and 2021 have been reviewed. This number of articles can be categorized into three groups: descriptive studies, interventional studies, and validity and reliability evaluations. The tools for final assessment of the quality of the articles, the patient safety culture measurement scale and the patient safety culture report in these five studies are shown in Table 2. The table shows that although the criteria for evaluating the articles for inclusion in the study were different, all the studies were based on the patient safety culture measurement scale (HSOPSC AHRQ questionnaire), the target population (a collection of hospital personnel, both clinical and non-clinical staff) and the measurement environment. (Hospital) are common; this provides the possibility of secondary analysis and gives it more credibility. Table 2 provides a comprehensive response to the central inquiries of the secondary analysis. It illustrates both the tool employed for assessing the quality of articles and the scale used to measure patient safety culture.

The HSOPSC patient safety culture measurement scale consists of 12 dimensions:

1) Feedback and communication about mistakes
2) Organizational learning and continuous improvement
3) Team work in departments
4) Communication and transparency
5) Staff
6) Lack of Punishment for mistakes
7) Manager's immediate emphasis on safety
8) Delivery and transfer in the hospital
9) Cooperation between departments
10) Support of hospital management for patient safety
11) Incident reporting
12) Understanding of safety.

Dimensions 1 to 7 are department-specific statements, while dimensions 8 to 10 are more general hospital-wide statements. (36) Although several instruments have been developed to measure patient safety culture. However, this instrument covers the most central dimensions that are often referred to under the umbrella of safety culture (37), and previous studies have also shown that the HSOPSC meets conventional validity criteria (38-39). One study has shown that this instrument meets psychometric validity criteria to a greater extent than other instruments that measure safety culture in the health care system (37).

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The articles in the tables of this study are arranged in the order of the time of publication, but the time periods considered as criteria for the inclusion of articles in the study are not continuous due to the geographical difference of the articles and some years overlap in all the studies. Two review articles conducted in Iran (26 and 30) have examined the articles of two decades from 2000 to 2020. The oldest study is Olsen's article, which measured the perceptions of Norwegian health workers about patient safety culture. (36) Following the answers to the central questions of the secondary analysis, we present a report on the state of patient safety culture in the studied countries, where all five studies reported an average and downward state that requires efforts to improve.

Among the dimensions of understanding patient safety culture that had the most and least positive responses, we can mention the items in Table 3.

Discussion

Comparing Iran's hospitals with Arab countries, examples of European countries (Norway) and Latin American countries, taking into account the limitations of each research separately, the state of patient safety culture in Iran can be considered similar to other countries and in an average state. Which needs to be improved, some Arab countries have recorded higher scores in responding to the patient safety culture questionnaire (26-30). These differences can be considered as a result of the difference in the organizational culture governing different countries and the hospitals under study or attributed to other influential environmental factors (30). This issue is also true regarding the strengths and weaknesses and the assessment of patient safety culture dimensions, as can be seen in the studies of Arab countries, the support of hospital management for patient safety is a strong point, while in the studies of Norway, this dimension has received a lower score.

The initial review, conducted in Iran and encompassing 11 articles, revealed that the concept of patient safety culture had been relatively novel and overlooked within Iranian hospitals. This concept began to gain traction in Iran around 2010, initially emerging in 10 hospitals and subsequently expanding through the Ministry of Health, Treatment, and Medical Education's clinical governance and accreditation initiatives (26). However, the second study, published in 2022, examined 23 articles, with only one overlapping from the previous study. Despite the substantial volume of reviewed literature, the absence of a meta-analysis approach resulted in a lack of sufficient quantitative precision in the systematic review's findings (30).

In the initial Iranian study, the dimension of teamwork within hospital units exhibited the most positive response, while the non-punitive response to errors received the least positive feedback. This observation signifies the stability of patient safety culture within the organization. Research indicates that improving safety culture dimensions within hospital settings can be challenging, as these cultures tend to remain relatively constant over time (40). Given the predominately positive evaluations of the teamwork dimension in most studies, its significance becomes evident. However, it's essential to note that effective teamwork efforts often depend on open communication within the healthcare team. Research has highlighted that the Accreditation Council for Graduate Medical Education in the United States incorporated "interpersonal and communication skills" into its core competencies in 1999. This underscores the potential for safety culture enhancement through training programs addressing teamwork and communication skills for all staff members (41).

Conversely, the non-punitive response to events, as indicated by numerous studies, has not demonstrated a favorable status and can be considered one of the primary weaknesses in patient safety culture. This dimension plays a pivotal role in error detection and the promotion of error reporting (42). A non-punitive environment fosters an atmosphere in which healthcare providers can document and report errors without apprehension of punitive measures

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or reprimands. Studies have consistently revealed that fear of punitive action is a significant factor hindering error reporting (43-45). The punitive response system tends to discourage adverse event reporting in healthcare settings (26). Therefore, the establishment of a non-punitive approach to handling errors is imperative to cultivate a just culture and enhance interpersonal, professional, and institutional capacities. Such measures not only facilitate robust incident reporting but also enable the disclosure of errors, ultimately contributing to an elevation in patient safety (46-48).

The comprehensive examination of studies has revealed that dimensions related to communication openness, organizational management's support for patient safety, and the clinical personnel aspect are generally assessed unfavorably. The comprehension of patient safety appears to be intricately linked to the availability of an adequate healthcare workforce (49). Substantial evidence indicates that any endeavor aimed at fortifying a culture of patient safety necessitates a deeper understanding of the working conditions of healthcare professionals, particularly nurses (50-51). To ensure the safety and efficiency of medical teams in their work, interactive human factors such as communication, supervision, and team structure are imperative (52-53). Conversely, a lack of coordinated care or disruptions in teamwork and communication can result in adverse patient outcomes (54). Hospital management holds the potential to create an environment wherein nurses actively participate in identifying and prioritizing patient safety-related issues, as well as resolving operational challenges that could pose risks to patient safety (55-56).

Nevertheless, this study underscores that patient safety remains a global concern impacting both developed and developing countries. Healthcare institutions and providers must continually assess their safety culture and pinpoint areas for enhancement.

Conclusion: for nearly two decades, the evaluation of patient safety culture has been a focal point within healthcare systems. This study has undertaken a cross-border comparative analysis through secondary reviews conducted in Iran, Norway, Arab countries, and Latin America to shed light on health and treatment workers' perceptions of patient safety culture. Moreover, research indicates that the comprehensive enhancement of patient safety culture within hospitals is a complex endeavor necessitating a long-term strategic plan. Policymakers, with an emphasis on fairness, must create an environment that encourages employees to report adverse events, errors, incidents, or near-misses, free from the fear of punishment or blame, thus enabling valuable learning opportunities (49). Additionally, the safety culture should undergo regular evaluations to gauge the effectiveness of patient safety programs and interventions, potentially retaining its prominence as a pivotal aspect of hospital accreditation processes.

Suggestions:

It is suggested that researchers focus more on the positive and negative aspects of patient safety culture in their future studies and provide operational solutions to improve and strengthen them; Also, since some of the studies in the field of patient safety culture have been conducted in an interventional way, it is suggested to conduct a systematic review on this category of studies to identify the factors affecting the promotion of patient safety culture.

Limitations:

The current study has limitations such as lack of access to some databases, lack of access to the text of all 102 articles included in the studies; The difference in the type of studies, one part of which is a cross-sectional descriptive study, the other part is an interventional study, and the other part is an evaluation of the validity and reliability of the scale. Since this study is in a comparative position, not taking into account the differences in health systems in the countries under study and the cultural contexts of each country; Also, the high heterogeneity of studies is another limitation of this research. The authors tried to overcome these

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challenges by adopting a holistic approach. Another limitation of this study was the selection of the secondary analysis method, in which the information obtained from different researches is not subjected to statistical analysis. Instead, combining, combining and comparing the findings will be used to answer the research questions. Therefore, the difference in the sampling method, the sample size, the statistical population, the conditions of data collection, and the type of questions make it difficult to unify the research findings. In fact, in the process of integrating the findings, the uniqueness of each research is ignored. In addition, there are always a number of valid and valuable researches that have not been published and are out of reach of the researcher. (57) In this context, the authors of the present study, acknowledging such limitations, tried to interpret the available information with utmost caution.

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Table & Figure:

Table 1: Attributes of the reviewed studies

The number of reviewed articles	Article specifications	Title	Authors	Article code
11 articles Literature review was limited to study publish between: 2000-2014 Study geography: Iran	Publication year: 2015 Country: Iran	Patient safety culture in Iranian hospitals: a systematic review and meta-analysis	Azami-Aghdash (26)	IRN1
The patient safety culture score, as determined by the random model, was 50.1%. Within the components evaluated, "teamwork in hospital units" received the highest patient safety culture score, while "non-punitive response to errors" obtained the lowest score. These findings indicate that Iranian hospitals demonstrated a subpar performance in terms of patient safety culture.			Important findings	
11 articles Literature review was limited to study publish between: 2005-2015 Study geography: A collection of Arab countries	Publication year: 2017 Country: England	Status of patient safety culture in Arab countries: a systematic review	Elmontsri (27)	ARABIA
This review highlights a significant concern regarding the non-punitive response to errors, which necessitates substantial improvement. Healthcare professionals in Arab countries often perceive the presence of a "blame culture" that hinders incident reporting. Across all the studies reviewed, there was a general consistency in the reported composite scores for the teamwork aspect, with teamwork within units generally surpassing teamwork at the hospital level. Additionally, all the studies indicated that organizational learning and continuous improvement were relatively satisfactory, resulting in an average score of 73.2% for this dimension across all studies.			Important findings	
20 articles Literature review was limited to study publish between: 2006-2021 Study geography: A collection of Arab countries	Publication year: 2021 Country: Norway	A hospital survey of patient safety culture in Norwegian hospitals: a systematic review	Olsen (28)	NORWAY
The initial study carried out in Norway underscored the imperative for enhancing patient safety culture. Remarkably, only a solitary intervention study managed to significantly enhance patient safety culture. While most studies lend support to the validity of HSOPSC (Hospital Survey on Patient Safety Culture), it's worth noting that one study exhibited deficiencies in terms of test validity criteria. Although this review specifically focuses on the healthcare context in Norway, its implications extend beyond, contributing valuable insights to the broader research landscape.			Important findings	
30 articles Literature review was limited to study publish between: 2011-2021 Study geography: Latin American countries collection	Publication year: 2022 Country: USA	Patient safety culture in Latin American hospitals: a systematic review with meta-analysis	Camacho-Rodríguez (29)	Latin-America
The best dimensions for patient safety culture were "organizational learning: continuous improvement" and "team work in units", while the lowest dimensions of patient safety culture were "non-punitive response to errors" and "staff".			Important findings	

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23 articles Literature review was limited to study publish between: 2010-2020 Study geography: Iran	Publication year: 2023 Country: Iran	The status of patient safety culture in Iranian hospitals: a systematic review	Yousefian (30)	IRN2
Across the majority of hospitals, the patient safety culture scores were predominantly classified as either low or medium. Notably, the highest scores were attributed to aspects such as managerial commitment to patient safety, seamless transfer of vital patient information across departments and shifts, effective teamwork within departments, and the presence of a culture of organizational learning. Conversely, the lowest scores were observed in relation to the dimensions of a non-punitive response to events and the accessibility of open communication channels.			Important findings	

Table 2: Quality measurement tools of articles, patient safety culture measurement scale and status report

Patient safety culture status report	Total number of participants	Patient safety culture measurement scale	A tool for measuring the quality of articles	Article code
The average response rate for the 12 Patient Safety Culture (PSC) dimensions assessed through the HSOPSC questionnaire in Iranian hospitals stood at 50.5%.	2972 staff	The HSOPSC questionnaire by AHRQ has 3 parts, 12 dimensions, 44 questions and 2 single questions on a 5-point Likert scale (32, 33).	Checklist STROBE (31)	IRN1
Most of the selected studies had a response rate above 60%, except for 4 articles that responded with rates of 59.2, 57, 55.5 and 47.7%.	17541 health professionals, clinical and non-clinical staff	questionnaire HSOPSC AHRQ	Newcastle-Ottawa scale (34)	ARABIA
The average scores of patient safety culture were almost at an acceptable level and were significantly lower than the maximum score of 5.	7769 nurses and clinical staff	questionnaire HSOPSC AHRQ	PRISMA (35)	NORWAY
The meta-analysis resulted in an overall estimate of 48.07, indicating an overall perception of patient safety culture that needs improvement.	10915 including nurses, doctors and assistants and administrative staff	questionnaire HSOPSC AHRQ	PRISMA	Latin-America
In most hospitals, the overall scores of patient safety culture were reported as low and medium.	6187 nurses and clinical staff	questionnaire HSOPSC AHRQ	STROBE	IRN2

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The least positive answer	Most positive answers	Article code
Non-punitive response to error	Team work in hospital units	IRN1
Non-punitive response to employee error Open communication	Organizational learning/continuous improvement Team work in units Hospital management support for patient safety	ARABIA
Organization management support for patient safety	Team work in units Supervisor/manager expectations and safety-enhancing measures	NORWAY
Non-punitive response to employee error	Team work in units	Latin-America
Non-punitive response to events Open communication channels	Manager's expectations and measures for patient safety Moving important patient information between departments and work shifts team work Organizational Learning	IRN2

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