

Team Effectiveness Intervention Using TeamSTEPPS in Healthcare: A Literature Review

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ABSTRACT

In healthcare, effective teamwork and communication are essential. Medical errors are prevalent because there is a lack of a patient safety culture. This article's goal is to highlight TeamSTEPPS interventions that improve team effectiveness in the healthcare industry. Using Google Scholar, Science Direct, and PubMed with restrictions for the years 2018 through 2023, a review of published articles was conducted. In order to assess the efficacy of TeamSTEPPS, the six studies under consideration used a variety of instruments, including the Hospital Survey of Patient Safety Culture Questionnaire, the Short Assessment of Patient Satisfaction Scale, the Nursing Culture Assessment Tool, and the Patient's Adverse Events Questionnaire. The TeamSTEPPS program's interprofessional participants demonstrated improved coordination, cooperation, and communication between healthcare professionals. As a result, it is important to make the TeamSTEPPS program sustainable and part of the culture of health services.

Keywords: Communication. Cooperation. TeamSTEPPS. Healthcare

ABSTRAK

Dalam perawatan kesehatan, kerja sama tim dan komunikasi yang efektif sangat penting. Kesalahan medis sering terjadi karena kurangnya budaya keselamatan pasien. Tujuan artikel ini adalah untuk menyoroti intervensi TeamSTEPPS yang meningkatkan efektivitas tim dalam industri perawatan kesehatan. Dengan menggunakan Google Scholar, Science Direct, dan PubMed dengan batasan tahun 2018 hingga 2023, tinjauan terhadap artikel yang diterbitkan dilakukan. Untuk menilai kemampuan TeamSTEPPS, keenam penelitian yang dikaji menggunakan berbagai instrumen, termasuk Survei Rumah Sakit tentang Kuesioner Budaya Keselamatan Pasien, Penilaian Singkat Skala Kepuasan Pasien, Alat Penilaian Budaya Keperawatan, dan Kuesioner Kejadian Tidak Diharapkan Pasien. Para peserta interprofesional program TeamSTEPPS menunjukkan peningkatan koordinasi, kerja sama, dan komunikasi antara para profesional kesehatan. Oleh karena itu, penting untuk menjadikan program TeamSTEPPS berkelanjutan dan menjadi bagian dari budaya pelayanan kesehatan.

Kata kunci: Komunikasi. Kerjasama. TeamSTEPPS. Pelayanan Kesehatan.

INTRODUCTION

Medical error is an error, an unexpected event that will occur, which is not desired in the provision of medical services so that it can cause injury or not cause injury to the patient. (Makary *et al.*, 2016). According to Carver *et al.*, (2020), the rise in medical errors that lead to death is a serious issue for the healthcare system where the most reported cases are adverse drug events, misdiagnosis, patient falls, surgical injury, and patient misidentification where the percentage of these cases often occur in the ICU (intensive care unit), and emergency department often associated with low levels of communication and teamwork.

In an attempt to improve patient safety throughout the healthcare system as a whole, a focus on root causes analysis has emerged. Medical Research Establishment (1999). King *et al.* (2008) performed research showing that even highly trained experts make mistakes when providing services to clients due to human limits and complicated work process systems. Therefore, health services and health policymakers work to lessen the occurrence of medical mistakes via the development of initiatives including fostering open lines of communication and mutual support among members of the health team. As reported by (King *et al.*, 2008).

According to Nur *et al.*, (2018), one training intervention that has proven effective in building and improving healthcare workers' communication skills is Team Steps (Team Strategies and Tools to Enhance Performance and Patient Safety) This is a training programme for teams that was chosen because of has solid empirical foundation. The five pillars of Team Steps—team structure, communication, leadership, situation monitoring, and mutual support—are all interconnected and work together to boost productivity, expand access to high-quality medical care, and strengthen the emphasis on patient safety. (AHRQ, 2017).

Based on several published systematic reviews from Weaver *et al.*, (2010), McCulloch *et al.*, (2011), and Marlow *et al.*, (2017), there are significant benefits of training interventions in improving teamwork among health workers and communication in patient safety culture in emergency departments.

This study aims to narratively summarize the literature on interventions on team effectiveness using TeamSteps (Team Strategies and Tools to Enhance Performance and Patient Safety) in healthcare.

METHOD

Using the Prisma-LvR Research Diagram as a guide, it was decided which articles could be used for this literature review by going through each stage in turn. Various journals from several academic databases, including PubMed, Science Direct, and Google Scholar, were used for database collection. By using several elimination criteria, including the publication year of the article, which was limited to the last five years, the full text's accessibility for the related article, and the representation of the title, abstract, and desired keyword matches. After going through the elimination process, 6 journals were selected to be the references for this literature review.

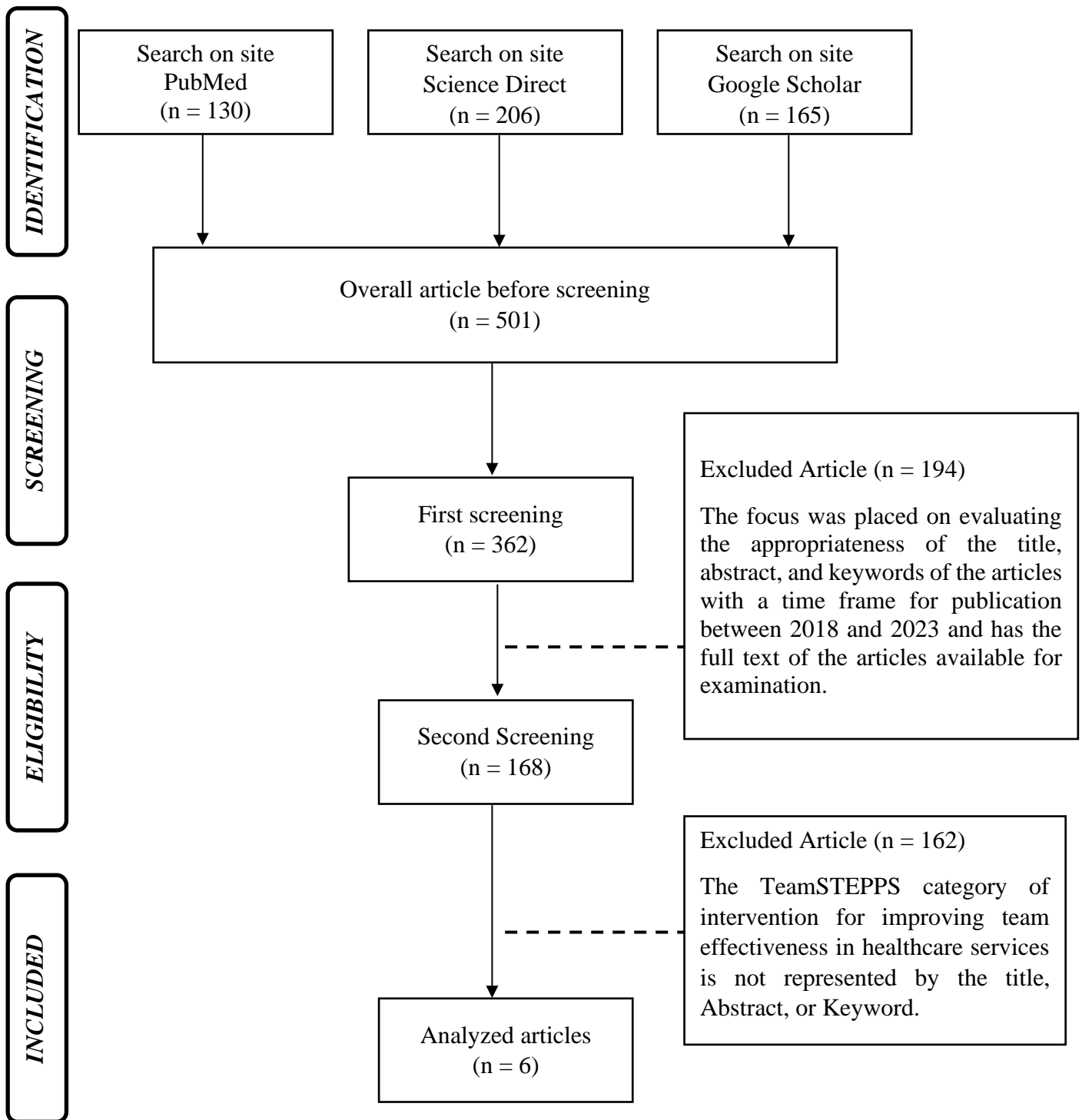


Figure 1. PRISMA-LvR Research Diagram

Table 1
Research Result Literature Review

| Nu. | Author (Year) | Research Objectives | Design, Respondent | Variables Studied | Instrument | Research Result |
|-----|----------------------------------|---|---|---|--|--|
| 1 | Obenrader <i>et al.</i> , (2018) | “Improve the perception of communication among ED team members before and after implementation of the TeamSTEPPS program and tools” | Before and After Observational study 57 employees, including nurse, mid-level provider and non-licensed individual from Emergency Departement | Perception of communication The TeamStepps program and tools | 1. The TeamSTEPPS Teamwork Perceptions Questionnaires (TTPQ) 2. The TeamSTEPPS Teamwork Attitudes Questionnaires (TTAQ) 3. The Nursing Culture Assessment Tool (NCAT). | TeamSTEPPS can provide improvements in communication between the whole group members based on results from TTAQ, TTPQ, and NCAT at 30 days post-training. |
| 2 | Matzke <i>et al.</i> , (2021) | “Evaluate the effect of TeamSTEPPS training on staff perception of teamwork and communication in an academic Level I Emergency and Trauma Center” | Before and After Observational study There are a total of 35 clinical staff members, including RNs and PCTs, who were brought in from a university-affiliated Level I Emergency and Trauma Centre. | Perception of communication Perception of teamwork The TeamSTEPPS program | The TeamSTEPPS Teamwork Perceptions Questionnaires (TTPQ) | a. TTPQ scores ranged from 121.4 before training to 128.2 after training. The paired t-test revealed that overall pre-intervention (mean = 3.52, SD = 0.5) and post-intervention (mean = 3.78, SD = 0.4) scores improved significantly (-0.29 to 0.13, p 0.001). There is a significant change in TTPQ and paired t-test scores based on TeamSTEPPS TTPQ. b. TeamSTEPPS can provide improvements to the perception of teamwork and communication in the emergency department. |
| 3 | Mohsen <i>et al.</i> , (2021) | “Examine the effect of application of team strategies and tools to enhance | Quasi Experimental Study Two Groups: 1) Six primary care units at | Perception of teamwork The TeamSTEPPS program | 1. The Hospital Survey on Patient Safety Culture (HSPSC) 2. Perception of Teamwork Questionnaire | A highly significant decrease in the frequency of patient-reported adverse events was demonstrated in comparison to a significant increase in patient satisfaction level (p 0.001). Improved teamwork among healthcare provider groups, increased patient |

| Nu. | Author (Year) | Research Objectives | Design, Respondent | Variables Studied | Instrument | Research Result |
|-----|-------------------------------|--|---|--|--|---|
| | | performance and patient safety at primary healthcare units on patients' safety and outcomes” | Menoufia Governorate in Egypt, all healthcare provider were included 114: unit managers, physicians, nurses and ancilliary healthcare providers. 2) Convenience sample of 108 respondents | | 3. The Short Assessment of Patient Satisfaction Scale 4. Patient's Adverse Events Questionnaire | satisfaction levels and reduced patient-reported adverse events. |
| 4 | Louise <i>et al.</i> , (2020) | “Examine the reliability and construct validity of the Swedish version of the TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ)” | Cross sectional study We got 1,176 responses. Those who provide direct patient care in Sweden's healthcare system, including doctors, RNs, NPs, CNAs, and allied health professionals in four hospitals (Hospitals A, B, C, and D) in three different areas. | The Swedish version of the T-TPQ Perception of teamwork The TeamSTEPPS program | Teamwork Perceptions Questionnaire (T-TPQ) | a. Cronbach's alpha coefficient was 0.94 for the total T-TPQ, and Cronbach's alpha coefficients for the dimensions ranged from 0.79 to 0.92. The coefficients of intercorrelation ranged from 0.27 to 0.74 b. The data shows that the T-TPQ can be used to measure healthcare professionals' perceptions of group teamwork with adequate reliability and validity. |

| Nu. | Author (Year) | Research Objectives | Design, Respondent | Variables Studied | Instrument | Research Result |
|-----|-------------------------------|---|--|---|---|--|
| 5 | Aaberg <i>et al.</i> , (2021) | “Evaluate the professional and organizational outcomes of a team training intervention among healthcare professionals in a surgical ward after 6 and 12 months” | Observational research with a before and after period 43 respondents included frontline healthcare professionals (12 physicians, 24 registered nurses, and 7 nursing assistants) hospital in Norway | Healthcare professionals’ perceptions of teamwork Organizational outcome The TeamSTEPPS program | 1. the Hospital Survey of Patient Safety Culture Questionnaire (HSOPS) 2. the TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ) 3. the Collaboration and Satisfaction about Care Decisions in Teams (CSACD-T) | Based on the results of the T-TPQ, CSAD-T, and HSOPS, there were significant changes after 6 to 12 months on various dimensions in the relevant groups. |
| 6 | Ahsan <i>et al.</i> , (2019) | “Analyze the effect of modified TeamSTEPPS training on the communication of nurses in hospitals” | Pre- and post-test control group quasi-experiment The University of Muhammadiyah Malang Hospital and the Universitas Brawijaya Hospital, two large hospitals in East Java, Indonesia, each received 28 nurses. | Perception of Team communication The TeamStepps program and tools | 1. The TeamSTEPPS Teamwork Perceptions Questionnaires (TTPQ) 2. The TeamSTEPPS Teamwork Attitudes Questionnaires (TTAQ) | a. Communication perception obtained a p-value greater than α (0.980>0.050). Communication attitudes the p-value was greater than α (0.517>0.050). b. The implementation of this training in the hospital for nurses' team communication had no significant effect. |

RESULTS AND DISCUSSION

The implementation of interventions on team effectiveness using the TeamSTEPPS method in health services was discussed in all articles reviewed related to prior research using data extraction tables. After applying the inclusion criteria to the 501 articles found through the initial search, a total of 6 articles were chosen.

These studies aimed to do three main things: (1) describe the implementation of the TeamSTEPPS programme to improve health workers' perceptions of inter-team communication (2 articles); (2) evaluate the impact of TeamSTEPPS programme training on health services (2 articles); and (3) measure the impact of TeamSTEPPS programme training on health services (2 articles). All studies were carried out in healthcare facilities that included a variety of installation units, including hospitals, operating rooms, primary care facilities (puskesmas), and emergency rooms. Including a range of respondents from the health sector, including physicians, nurses, midwives, managers, and leaders of service divisions.

The two most prevalent health professions, medicine and nursing, as well as a number of other professionals, were successfully using TeamSTEPPS, according to a scoping review conducted by Chen *et al.* (2019). Because of the use of strategies and tools to enhance communication, collaboration, and perceptions of teamwork, there is now more teamwork among health professionals as a result of training in the TeamSTEPPS program. (Mohsen *et al.*, 2021).

Despite the fact that interprofessional teams frequently deliver care together, members of these teams hardly ever receive training collectively because they frequently hail from various academic fields or scientific specialties. (O'Connor *et al.*, 2016). There must be coordination between health professionals in order to provide patients with the care they need and protect them from the risk of medical errors, which frequently occur. (Ward *et al.*, 2017).

The TeamSTEPPS training program, which was used in some of these studies, involved intervening from the five TeamSTEPSS program elements of team structure, communication, leadership, situation monitoring, and mutual support in order to assess the effectiveness of the team (Sheppard *et al.*, 2013). With the help of this training program, professionals can improve the culture surrounding patient safety while strengthening teamwork and achieving shared objectives. TeamSTEPPS interventions have a significant impact and last a long time in team orientation. (Siddons *et al.*, 2016).

The study's findings after completing the TeamSTEPPS training program and assessing the outcomes revealed that there was an improvement in the quality of performance in health services. Teamwork and communication are crucial in interprofessional health work. As an illustration, consider the installation unit for an emergency room, where professionals are required to work both independently and in teams, creating a very different environment from other installations. (Alsabri *et al.*, 2020). As a result of this TeamSTEPPS program, communication and teamwork gaps will be lessened among emergency room staff members who will be more aware of one another. (Louise *et al.*, 2020).

The TeamSTEPPS program's implementation in the healthcare industry was hindered by a number of factors, including the staff's lack of concentration during training, insufficient guidance from TeamSTEPPS, and altered simulation procedures. Doctors lack the leadership skills they would have acquired through their previous formal education and this lack of training results in a rigid and highly procedural attitude in how they exercise control over the team. (Clapper *et al.*, 2013).

Because the team leader will typically be the main decision-maker in practice, the tools available for formal team training can also train interprofessional leadership development. Patient safety depends heavily on teamwork, so leadership training can explore ways to enhance team dynamics with careful discussion and guidance. (Vertino, 2014). Given that healthcare teamwork is known to lack regulated leadership standards, TeamSTEPPS training can lay a foundation for perceived communication that will improve staff performance even before the training. The TeamSTEPPS training program is therefore very helpful for reinforcing situational awareness that may not have been previously formed. (Chen *et al.* 2019).

LIMITATION OF THE STUDY

Despite employing rigorous search strategies and inclusion criteria, the number of identified articles may have been relatively small, restricting the breadth and depth of the literature review. The scarcity of studies could stem from various factors. Firstly, the focus on specific databases (Google Scholar, PubMed, and Science Direct) may have inadvertently excluded relevant studies available in other databases or published in other sources. Therefore, the review's findings may not encompass the entirety of the literature on team effectiveness in healthcare service improvement using TeamSTEPPS. Despite these limitations, the review aims to provide a comprehensive analysis of the available literature within the selected databases and highlights the need for further research to address the gaps and limitations identified. By acknowledging the limited availability of relevant studies, the literature review emphasizes the current state of knowledge on team effectiveness in healthcare service improvement using TeamSTEPPS and provides valuable insights into the existing evidence base.

CONCLUSIONS AND SUGGESTIONS

This literature review article leads to the conclusion that training interventions using the TeamSTEPPS program can improve team effectiveness in healthcare. Several instruments, including the TeamSTEPPS Teamwork Perceptions and Attitudes Questionnaires, the Collaboration and Satisfaction about Care Decisions in Teams Questionnaire, and the Hospital Survey of Patient Safety Culture Questionnaire, can be used to evaluate the TeamSTEPPS programme before and after it has been implemented, the Short Assessment of Patient Satisfaction Scale, the Nursing Culture Assessment Tool and the Patient's Adverse Events Questionnaire. The outcomes of the TeamSTEPPS intervention demonstrated an improvement in teamwork in coordination, communication, and leadership development in decision-making. The author, therefore, hopes that this literature review will make policymakers in the health services more aware of the need for TeamSTEPPS training in the installation unit, particularly in the emergency department and operating room, as there is still a lack of coordination and cooperation between health workers who usually work in their respective fields.

ETHICAL CONSIDERATIONS

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Conflict of Interest Statement

The authors of this article have stated that they have no conflicts of interest to disclose in relation to its writing and publication.

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