

# Enhancing Teamwork in the Female Medical Ward: A STEPPS EBP Intervention

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## Abstract

### Introduction and research problem

Teamwork is essential in healthcare settings especially among nurses. Although, it's not that easy and perhaps a challenging task to achieve effective teamwork. Effective teamwork among nurses is crucial for improving patient outcomes and enhancing the quality of care in healthcare settings. In addition, it has positive impacts on staff satisfaction and retention rates. This project aims to implement and evaluate the effectiveness of the Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) program in improving teamwork among nurses in the female medical ward at East Jeddah Hospital in Jeddah, Saudi Arabia.

### Material and Method

TeamSTEPPS is a training program designed to enhance teamwork and collaboration in healthcare, focusing on five key skills: team structure, leadership, situation monitoring, mutual support, and communication. This study used a quasi-experimental design to implement TeamSTEPPS-based team-building activities with 38 nurses and nursing assistants in a female medical ward, aiming to evaluate their impact on teamwork and collaboration.

### Summary of Results

The main result shows that about three quarter of subjects' perception improved from pre to post team structure, about (60%) of subjects perception improved from pre to post leadership, about (70%) of their perception improved from pre to post situation monitoring, more than (65%) of subjects perception improved from pre to post mutual support, more than (70%) of their perception improved from pre to post communication.

### Conclusion and Recommendations

The study shows that a structured teamwork enhancement program improves nursing teams' efficiency, communication, safety culture, and staff well-being. By promoting shared leadership and mutual support, healthcare organizations can reduce errors, empower nurses, and enhance patient safety, aligning with Saudi Vision 2030. Sustained leadership support, continuous learning, and ongoing evaluation are essential to maintaining and expanding these improvements.

**Key Words :** Teamwork, TeamSTEPPS

### Introduction

Teamwork in the nursing field is essential for delivering high quality patient care and optimizing health outcomes. It entails collaboration, communication, coordination, and mutual support across different specialties and levels of experiences. Effective intra-team collaboration enhances efficiency in patient care delivery, promotes knowledge sharing, and facilitates professional growth through mentorship and shared experiences. Research indicates that effective collaboration among nurses improves patient outcomes by reducing medical errors and enhancing patient safety (Kalisch & Lee,

2011). In efforts to enhance patient safety, the WHO (2017) has increased the focus on teamwork among interprofessional healthcare teams. The collaborative approach among nurses fosters a culture of respect, trust and unity, ultimately contributing to improved patient safety and satisfaction within healthcare settings.

Teamwork fosters a cohesive work environment where nurses can share knowledge, skills and resources, thereby enhancing decision-making processes and promoting professional growth. The Institute of medicine (2010) has mentioned that when nurses prioritize teamwork, they can better address the complex and evolving healthcare needs of patients, which leads to an improved quality of care and patient outcomes. Effective nursing teams exhibit a high sense of awareness, which enables them to identify critical areas for intervention, ultimately enhancing patient outcomes. This heightened awareness not only improves efficiency and patient safety but also contributes to a healthier and more satisfying work environment for nurses.

An increased sense of teamwork has a positive effect on job satisfaction, staffing efficiencies, retention and care delivery. This reduces burnout rates among nurses as it leads to a healthier and a happier workplace (Costello, Russell & Coventry, 2021). Furthermore, nurses play a vital role in increasing patient access to safe quality care when they perceive their teamwork to be strong. This resulted in a reduced reporting of missed patient care, fewer patient falls and a higher quality of work life impacting staff recruitment and retention (Kalisch, Lee & Rochman, 2010).

For teams to freely communicate information, the team must preserve a degree of mutual trust. Teamwork thrives on three coordinating mechanisms: a shared understanding of team goals, effective closed-loop communication, and mutual trust among team members. These elements form the foundation for cohesive collaboration and optimal performance within nursing teams. Moreover, teamwork and effective communication are part of a multidimensional framework that determines the safety and quality of care provided. Effective communication and good teamwork relies on mutual respect, problem solving and sharing of ideas (Fuchshuber & Greif, 2022). These authors (2022) found out that without these essential elements, care can not be delivered in a safe and a reliable way. In addition, Tesfaye et. al (2019) mentioned that the third most significant cause of death in the United States is due to medical errors and a lack of communication.

The WHO reports that nurses account for around 50 % of the healthcare workforce.

Therefore, investing in nurses and maximizing contribution to the health workforce is essential, as the care provided by them is vital to strong health outcomes. There is a strong belief that effectiveness of healthcare teams can be improved by teamwork interventions, by using the Team strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS).

## **Methodology**

TeamSTEPPS is a training program that improves teamwork and collaboration among medical teams. This program was first announced by the Department of defense and the US Healthcare research and quality agency in November 2006. There are five essential teamwork abilities that TeamSTEPPS identifies: team structure, leadership, situation monitoring, mutual support and communication. This framework reflects the connection between these four domains and how they contribute to the knowledge, attitudes, and sustained high performance needed to achieve highly reliable, safe, and effective care for every patient (AHRQ, 2023).

## **Study Design:**

This study employed a quasi-experimental design, focusing on the implementation of team- building activities aligned with the TeamSTEPPS (Team Strategies and Tools to Enhance Performance and Patient Safety) framework. The study aimed to evaluate the impact of these activities on teamwork and collaboration among nurses in a female medical ward setting.

## **Participants:**

The participants consisted of 38 registered nurses (RNs) and patient care technicians/nursing assistants working in the female medical ward.

## **Setting:**

The study was conducted at East Jeddah Hospital in the female medical ward, which primarily

provides care for patients with chronic and acute medical conditions. The team building activities were held in a classroom inside the hospital.

### **Intervention: Two- Part TeamSTEPPS - Based Approach**

The intervention consisted of two key components. The first part was a series of team-building activities and the second part entails the changes that will be done inside the department around the five core domains of the TeamSTEPPS framework.

#### **Part 1: Team-Building Activities:**

The first part of the intervention involved a series of structured team-building activities designed to enhance collaboration and teamwork among the nursing staff. These were conducted over three sessions (each session entailed a different group of participants), each lasting approximately three hours. Each session was facilitated by 5 instructors, and the activities were followed by reflective debriefing sessions to discuss lessons learned and areas for improvement.

These team-building activities were aligned with the five core domains of the TeamSTEPPS framework: Leadership, Situation Monitoring, Mutual Support, Communication, and Team Structure.

**Team Structure:** Activities were designed to reinforce the understanding of the different roles within the nursing team and how these roles contribute to the overall functioning of the department.

In this domain, there were 2 activities that took place. Role clarification:

- Handouts were given to each participant
- Each participant documented their own role and responsibilities, as well as the roles and responsibilities of other positions. Additionally, noting down what they think other people's perspective on the mentioned role.
- Discuss the results as a group, clarifying any misconceptions and ensuring everyone understands each other's roles

Sneak a Peak:

- The participants were divided into 2 groups.
- Give them each enough blocks to allow them to create a replica of the structure.
- Each group was appointed a leader.
- The leader was shown a picture of a structure built with blocks where their team can't see it. Keep it hidden.
- Give the selected leader 30 seconds to view the structure.
- The leader returns to their team and direct them on how to build a replica.
- Have selected leaders return to their group and direct them on how to build a replica.
- Give each team 2 minutes.
- After the 2 minutes, look at the recreated structure, and discuss together what was the communication strategy that leader used and how could it have been enhanced next time.

**Communication:** Structured communication methods were incorporated into exercises to improve the clarity and effectiveness of communication during handovers and patient care coordination.

Paper chains: The activity was done over 2 parts.

- The participants were divided into 2 groups.
- Each group was given enough colored construction paper, 2 pairs of scissors and tape.
- In the first part, they were told to build paper chains and the group with the longest paper chain wins.
- The instructor demonstrated the paper chain construction to all participants.
- Each group was given 2 minutes.
- After the 2 minutes, both teams discussed what strategies have been used and how could they communicate efficiency better as a group.
- In the second part, each team appointed a leader.
- The leader was taken out the room to be given instructions for how the next part would take place.

The instructions were as follow:

- Only the dominant hand to be used.
- No talking during the activity.
- The leader will be given 30 seconds to explain the activity to their group.
- The leader then went back to their teams and gave them the instructions.
- Each team was given 2 minutes to create the longest paper chain.
- After the 2 minutes, both leaders were given a chance to reflect on their communication strategy. In addition, the other team members also discussed about the points they learned and how they could implement this communication strategy into their relationship with their colleagues and their patients.

**Leadership:** Nurses participated in decision-making exercises where team leaders were designated, and roles were clearly defined to enhance leadership skills in a clinical setting. Just 99 seconds: Can you make the decision?

Each member was given a paper with a scenario representing a leadership crisis. The player has 99 seconds:

- Decide: What's their immediate action plan
- Prioritize: What's most critical to address first
- Communicate: Clearly explain their decision and reasoning

**Situation Monitoring:** Scenarios were created to help nurses practice monitoring patient situations and sharing critical information with the team.

The Healthcare Escape Room:

- The participants were divided into two teams.
- Both will try to exit this escape room.
- There are a series of medical puzzles and challenges that require participants to use their situation monitoring skills.
- In order for them to exit, they must first solve each scenario, and when told that they have unlocked that stage, they can then move onto the other stage.
- Teams begin solving puzzles and challenges. They must work together to gather information, analyze clues, and make decisions based on their situation monitoring skills.
- The first team that exits the escape room, wins.
- A group discussion was made after this session, where all the challenges were discussed.

**Mutual Support:** Activities were designed to encourage nurses to provide assistance and anticipate the needs of their colleagues in high-stress scenarios.

## **Part 2: Departmental Changes:**

The second part of the intervention focused on making structural and procedural changes within the nursing team of the female medical department, grounded in the five TeamSTEPPS domains. These changes were designed to sustain the improvements in teamwork and communication observed during the team-building sessions.

**Team Structure:** A review of the existing team structure was conducted, and adjustments were made to optimize the distribution of workloads and responsibilities among nursing staff, ensuring better alignment with TeamSTEPPS principles.

**Leadership:** A clear leadership structure was implemented, ensuring that roles and responsibilities were well defined during shifts.

Leader of the Week:

- Rotate the leadership role among team members on a weekly basis.
- The designated leader is responsible for coordinating team activities, leading meetings, and making key decisions for the shift.
- After each rotation, hold a debriefing session where the leader shares their experiences, and the team provides feedback.

**Communication:** Standardized communication protocols, including the use of the SBAR framework, were formalized across the department to improve patient safety and reduce communication errors.

Regular Huddles:

- Hold ad hoc, “touch-base” meetings to regain situation awareness
- Discuss critical issues and emerging events

Regular Debriefings: Debriefs should be conducted for the following reasons:

- Teams collectively learn from actual situations
- Teams can improve performance
- Valuable time to reinforce and recognize good teamwork behavior
- What went well? What didn’t go so well? What can we do better next time?

**Situation Monitoring:** Regular briefings and debriefings were introduced to help nurses share updates on patient care and changes in clinical conditions.

Environmental Scan:

- Once a month, divide the team into small groups and assign each group a specific area of the workplace to monitor.
- Each group performs a thorough scan of their area, noting any potential safety hazards or issues that could affect patient care.
- Groups gather to share their findings and discuss potential solutions.

**Mutual Support:** A buddy system was implemented, pairing nurses together during shifts to foster mutual support and teamwork.

Buddy System:

- Pair team members into "buddies" who are responsible for supporting each other throughout their shifts.
- Buddies check in with each other regularly, offering assistance, feedback, and encouragement
- Rotate pairs periodically to ensure everyone works with different team members and builds stronger team cohesion.

This two-part intervention aimed to not only improve immediate teamwork skills through activities but also to create long-lasting departmental changes that reinforce the core principles of effective teamwork and communication in the nursing unit.

Module	Theme	Objectives	Exercise	Content
Module 1	Introduction about TeamSTEPPS.	TeamSTEPPS provides tools and strategies to improve communication and teamwork among healthcare professionals.	Introductory Lecture.	Overview about TeamSTEPPS. Outcomes of team competencies. Characteristics of high performing teams.
Module 2	Team Structure.	Enhance understanding of team roles and responsibilities.	Role Clarification.	Each team member writes down their role and responsibilities. Members then write down what they believe are the roles and responsibilities of their teammates. Discuss the results as a group, clarifying any misconception and ensuring everyone understands each other’s roles.

Module 3	Communication.	Encourage continuous improvement and team reflection.	Team Huddles and Debriefings.	Hold regular team huddles before and after shifts to discuss goals, plans, and any issues encountered. During debriefings, encourage team members to share their experiences, provide constructive feedback, and discuss ways to improve teamwork and patient safety.
Module 4	Leadership	Develop leadership skills among all team members.	Leader of the day.	Rotate the leadership role among team members. The designated leader is responsible for coordinating team activities, leading meetings, and making key decisions for the day. After each rotation, hold a debriefing session where the leader shares their experiences and the team provides feedback.
Module 5	Situation Monitoring.	Improve situational awareness and environmental monitoring.	Environmental Scan.	Divide the team into small groups and assign each group a specific area of the workplace to monitor. Each group performs a thorough scan of their area, noting any potential safety hazards or issues that could affect patient care. Groups reconvene to share their findings and discuss potential solutions.
Module 6	Mutual Support.	Foster a culture of mutual support and backup behavior.	Buddy System.	Pair team members into “buddies” who are responsible for supporting each other throughout their shifts. Buddies check in with each other regularly, offering assistance, feedback, and encouragement. Rotate pairs periodically to ensure everyone works with different team members and builds stronger team cohesion.

## Results

The teamwork assessment was conducted before and after the implementation of the TeamSTEPPS interventions in study. The assessment measured performance across five domains: Team Structure, Leadership, Situation Monitoring, Mutual Support, and Communication. Overall, the post-intervention results demonstrated noticeable improvement across all four domains compared to the pre-intervention phase.

**Team Structure:** 75% of participants showed a clear enhancement in their understanding of team roles and responsibilities. Post-scores indicated stronger role clarity, accountability, and appreciation of each member’s contribution. This implies that staff developed a clearer understanding of team dynamics and responsibilities, which is critical for maintaining coordinated care.

**Leadership:** Leadership scores improved significantly, reflecting enhanced guidance, coordination, and empowerment within teams. 60% of participants demonstrated a higher ability to facilitate teamwork, resolve conflicts, and ensure task distribution. The marked increase in Leadership reflects

the program's success in promoting shared leadership principles; empowering team members to take initiative, provide direction, and model effective behavior.

**Situation Monitoring:** This domain showed marked improvement following the intervention. 70% of staff demonstrated enhanced situational awareness, including the ability to identify potential risks, recognize early warning signs, and anticipate team needs. Nurses became more proactive in monitoring both the environment and patient status, leading to more timely interventions and prevention of adverse events. Improved situation monitoring indicates a heightened culture of safety and proactive care. By observing and anticipating team and patient needs, staff were able to prevent incidents such as patient falls and delays in care, reflecting a shift from reactive to preventive teamwork behavior.

**Mutual Support:** This domain recorded one of the most notable improvements. 65% of team members exhibited better cooperation, situational awareness, and willingness to assist one another, suggesting a more cohesive and supportive work environment. The strong improvement in Mutual Support indicates progress toward a culture of psychological safety, where individuals feel comfortable offering help and addressing workload imbalances; which is an essential element for resilient healthcare teams.

**Communication:** Communication scores increased post-intervention, highlighting better information sharing, active listening, and feedback practices. 70% staff reported fewer misunderstandings and improved collaboration during patient care. This proves that enhanced communication underscores the role of structured communication tools and techniques in reducing errors and improving patient outcomes.

In addition to the direct teamwork assessment outcomes, indirect performance indicators also reflected substantial organizational improvements following the intervention:

- There was a 75% reduction in the fall incidence rate between 2024 and the first two quarters of 2025.
- The absenteeism rate decreased by 77% during the same period.

These improvements indirectly support the positive effect of the teamwork program on staff engagement, safety culture, and the overall quality of patient care.

Observations and feedback collected from nursing staff revealed profound cultural and emotional impacts:

- Nursing staff reported feeling empowered, re-energized, and deeply connected to one another following the team-building activities. Many described the experience as a “turning point” that restored their trust in the team.
- Nurses expressed that they felt “seen, supported, and heard” for the first time in months, particularly through structured activities that acknowledged their contributions and gave them a voice.
- The “Leader of the Month” initiative boosted confidence among junior nurses, allowing them to practice leadership, decision-making, and accountability in a supportive environment.
- The buddy system fostered a strong sense of peer support and psychological safety. Nurses reported feeling less isolated and more comfortable asking for help or feedback.
- Staff morale and peer support improved markedly. Following the TeamSTEPPS workshops, interpersonal conflicts decreased, and participants noted a significant reduction in tension and miscommunication within the unit.

## Discussion

The findings of this study demonstrate that the implementation of the intervention at study according program to the TeamSTEPPS framework, resulted in significant improvements across all five

domains; Team Structure, Leadership, Situation Monitoring, Mutual Support, and Communication; as well as indirect positive outcomes related to patient safety and staff well-being.

The increased post-intervention scores indicate that the program effectively translated teamwork principles into clinical practice. Enhanced Team Structure reflected better role clarity and accountability, which are essential for maintaining coordinated care delivery (Agency for Healthcare Research and Quality [AHRQ], 2019). Similarly, improvements in Leadership supported by initiatives such as the Leader of the Month program, suggest that shared and situational leadership approaches fostered empowerment, decision-making, and confidence among staff. This finding aligns with evidence that effective nursing leadership promotes collaboration, psychological safety, and team resilience (Cummings et al., 2018; Wong et al., 2013).

The improvement in Situation Monitoring represents one of the most impactful outcomes of this intervention. Staff demonstrated stronger situational awareness, including the ability to recognize early warning signs, identify potential safety hazards, and anticipate team needs. This heightened vigilance led to faster response times and prevented incidents before they occurred. These results align with the literature emphasizing that situation monitoring; an essential component of TeamSTEPPS, enables teams to adapt dynamically to changing conditions and sustain a high level of patient safety (Salas et al., 2008; Manser, 2009).

The observed enhancement in Mutual Support and Communication underscores the critical role of interpersonal trust and structured communication tools in minimizing errors and promoting a culture of safety (AHRQ, 2019; Leonard et al., 2004). The buddy system and the structured communication tools (eg: SBAR and daily huddles) promoted trust, transparency, and consistency in information exchange; which are behaviors that are consistent with high-reliability team functioning (Salas et al., 2008).

Beyond the teamwork domains, indirect indicators provide strong evidence of the intervention's organizational impact. A 75% reduction in patient fall incidence and a 77% decrease in absenteeism between 2024 and the first two quarters of 2025 underscore the broader organizational benefits of improved teamwork. Prior studies confirm that enhanced teamwork and communication are linked to lower adverse event rates, better patient outcomes, and higher job satisfaction (Manser, 2009; O'Leary et al., 2012).

Qualitative observations add emotional and cultural depth to these results. Nurses reported feeling empowered, supported, and connected, describing the intervention as a "turning point" that rebuilt trust and re-energized the workplace. These reflections highlight the human dimension of teamwork interventions; when staff feel valued and heard, collaboration strengthens and turnover intentions decline (Laschinger et al., 2014). The reduction in interpersonal conflict and miscommunication following the TeamSTEPPS workshops further suggests sustained behavioral change and improved team climate.

Overall, this study's results emphasize that teamwork initiatives are not merely educational exercises but powerful drivers of nursing empowerment, psychological safety, and organizational transformation. The findings resonate with Saudi Arabia's Vision 2030 health transformation agenda, which prioritizes safety culture, workforce engagement, and quality improvement through leadership and innovation in care delivery (Ministry of Health, 2020).

### **Implications for Practice**

The positive outcomes observed in this study highlight the importance of integrating structured teamwork and communication training as part of continuous professional development. Regular reinforcement through team-building activities, recognition programs, and peer-support systems can sustain behavioral gains and prevent regression. Furthermore, giving nurses a meaningful voice in decision-making and acknowledging their contributions enhances engagement, morale, and retention—critical factors in maintaining high-quality, patient-centered care (Cummings et al., 2018).

### Limitations and Future Directions

While the results are promising, the study was limited to a single institution, and some teamwork measures relied on self-report, which may introduce bias. Future research should include multi-site comparisons and longitudinal assessments to evaluate the sustainability of outcomes.

Expanding the outcome measures to include patient satisfaction, medication safety, or near-miss reporting would also provide a broader evaluation of the program's long-term effectiveness.

### Recommendations

Based on the findings of this study, several key recommendations are proposed to sustain and expand the positive outcomes achieved through the teamwork enhancement program. These recommendations focus on institutionalizing teamwork principles, supporting leadership development, and fostering a culture of safety and collaboration.

- **Institutionalize TeamSTEPPS as a Continuous Learning Program:** TeamSTEPPS should be embedded as a permanent component of the hospital's professional development and orientation programs. Continuous training—rather than one-time workshops—ensures reinforcement of communication tools, leadership skills, and mutual support behaviors. Refresher sessions, simulations, and scenario-based learning should be conducted regularly to maintain the momentum of behavioral change.
- **Integrate Teamwork Metrics into Performance Evaluation:** Hospitals should incorporate teamwork-related indicators (e.g., communication, collaboration, peer support) into performance appraisals and quality dashboards. Linking teamwork performance to evaluation systems reinforces accountability, encourages sustained engagement, and aligns individual behavior with organizational goals of patient safety and excellence.
- **Strengthen Leadership and Empowerment Structures:** The Leader of the Month initiative demonstrated the effectiveness of empowering junior nurses and recognizing leadership at all levels. Expanding this program to include Peer Leadership Circles or Emerging Nurse Leader Tracks can create a structured pathway for developing leadership competencies. Mentorship programs pairing senior and junior nurses would further strengthen confidence and succession planning.
- **Maintain and Expand Peer Support Systems:** The buddy system and mutual support mechanisms should be maintained and scaled to other units. These systems not only enhance teamwork but also promote psychological safety and well-being. Encouraging peer check-ins, shared reflection sessions, and “debrief circles” after critical incidents can foster continuous learning and emotional resilience.
- **Enhance Recognition and Communication Practices:** Recognition plays a critical role in sustaining motivation and engagement. Regular acknowledgment of teamwork excellence—through awards, storytelling sessions, or internal newsletters—reinforces positive behavior and validates staff contributions. Additionally, structured communication tools (e.g., SBAR, huddles, check-backs) should be standardized across all units to ensure consistency and reliability in patient care delivery.
- **Strengthen Data Monitoring and Evaluation:** Continuous monitoring of key indicators such as fall rates, absenteeism, and incident reporting should be maintained to track the long-term impact of teamwork initiatives. Integrating these metrics into digital dashboards can facilitate data-driven decision-making and rapid feedback for team improvement.
- **Foster a Culture of Shared Governance and Engagement:** Nurses reported feeling “seen, supported, and heard” when given a platform to express their ideas. Sustaining this environment requires institutional commitment to shared governance, where frontline staff participate in decision-making, policy development, and quality improvement initiatives. This participatory approach promotes ownership, accountability, and innovation within nursing teams.
- **Expand the Program to Other Units and Hospitals:** Given the significant reduction in fall and absenteeism rates and the observed cultural transformation, it is recommended that the teamwork enhancement program be scaled to other departments and hospitals within the region.

Standardized implementation across institutions can ensure consistent quality and strengthen the national culture of safety.

- Align with Saudi Vision 2030 and National Transformation Goals: The outcomes of this program directly contribute to Saudi Vision 2030's healthcare transformation pillars, particularly in enhancing workforce satisfaction, improving patient safety, and achieving operational excellence. It is therefore recommended that teamwork and leadership initiatives be integrated into national healthcare accreditation standards and hospital excellence frameworks.

Implementing these recommendations will help sustain the teamwork culture achieved through this intervention, ensuring that the benefits—improved communication, reduced errors, empowered staff, and enhanced patient safety—become embedded in everyday nursing practice. Ongoing leadership commitment, continuous learning, and data-driven evaluation will be critical to preserving and expanding these gains.

### Conclusion

This study demonstrates that implementing a structured teamwork enhancement program can significantly improve both the operational efficiency and psychosocial well-being of nursing teams. By fostering shared leadership, mutual support, and open communication, healthcare organizations can achieve measurable gains in safety culture and staff satisfaction, ultimately advancing the goals of Saudi Vision 2030 for excellence in healthcare quality and patient outcomes.

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