

**Application of Team Strategies and
Tools to Enhance Performance and
Patient Safety (STEPPS) for Improving
Patient Safety Culture among Nurses**

Thesis

Submitted for Partial Fulfillment of the Requirements of the

Doctorate Degree in

Nursing Science

(Nursing Administration)

By

Azza El Azab Mohammed Khaled

M.SC. Nursing

Faculty of Nursing- Ain Shams University

Faculty of Nursing

Ain Shams University

2018

**Application of Team Strategies and
Tools to Enhance Performance and
Patient Safety (STEPPS) for Improving
Patient Safety Culture among Nurses**

Thesis

Submitted for Partial Fulfillment of the Requirements of the

Doctorate Degree in

Nursing Science

(Nursing Administration)

Under Supervision of

Prof. Dr. Samia Mohammed Adam

Professor of Nursing Administration

Faculty of Nursing - Ain Shams University

Assist. Prof. Dr. Hemat Abd El-Azeem

Assistant Professor of Nursing Administration

Faculty of Nursing - Ain Shams University

**Faculty of Nursing
Ain Shams University**

2018

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم العليم

صدق الله العظيم

سورة البقرة الآية: ٣٢



Acknowledgment

First of all, I thank “Allah” to whom I relate any success in achieving any work in my life.

I would like to express my deep appreciation to Prof. Dr. Samia Mohammed Adam, Professor of Nursing Administration, Faculty of Nursing, Ain Shams University, for providing me a lot of encouragement, valuable advice and moral support throughout the work.

My deepest gratitude and sincere thanks also go to Assist. Prof. Dr. Hemat Abd El-Azeem, Lecturer of Nursing Administration, Faculty of Nursing, Ain Shams University, for her excellent guidance, correction, powerful support, and precious help throughout this work.

Last but not least, I would like also to express my appreciation to all those who directly or indirectly helped me in putting this piece of work together and making it look the way it is now.



Azza El Azab



Contents

Subjects	Page
Introduction	1
Significance of the Study	6
Aim of the Study	7
Review of Literature	8
A. Team STEPPS	8
○ Team STEPPS concepts	8
○ Team STEPPS evolutions	10
○ Team STEPPS goals.....	12
○ Team STEPPS design and phases	13
○ Tips for successfully team STEPPS training.....	15
○ Component of Team STEPPS.....	17
1. Team structure (TS).....	18
2. Communications.....	30
3. Team leadership (TL).....	41
4. Situation monitoring (SM).....	47
5. Mutual support (MS)	55
○ Outcomes of team STEPPS competencies	64
B. Patient Safety Culture	65
○ Patient safety culture and related concept.....	65
○ Key features of safety culture	67
○ Component of patient safety culture dimensions	68
○ Factors affecting patient safety culture	69
○ Errors, adverse event reporting and safety culture	70
○ Nursing role in patient safety culture.....	72



C. Team STEPPS and Patient Safety Culture.....	73
○ Shift to team system approach and culture of safety.....	73
○ Safety culture improvement.....	74
○ Creating and sustaining an improved culture of safety ...	75
D. Training program.....	77
○ Training program concept.....	77
○ Types of training program.....	77
○ Program Planning.....	78
Subjects and Methods	80
Results.....	98
Discussion	151
Conclusion.....	180
Recommendations	181
Summary.....	184
References.....	188
Appendices	228
Arabic Summary	298



List of Tables

Table	Title	Page
	Tables of Review	
1	Dimensions of patient safety culture	68

List of Tables

Table	Title	Page
	Tables of Subject and Methods	
2	Description of nurses in the units study Setting	83
3	Items of team STEPPS knowledge tool	84
4	Scoring system of knowledge questionnaire	85
5	Items of patient safety culture	86
6	Scoring system of patient safety culture	87
7	Items of team STEPPS teamwork attitude tool	88
8	Scoring system of team STEPPS teamwork attitude tool	88
9	Reliability test data collection tools	91

**List of Tables**

Table	Title	Page
	Tables of Results	
10	Demographic characteristics of nurses.	99
11	Nurses' knowledge related to team STEPPS concept.	102
12	Nurses' knowledge related to team structure.	103
13	Nurses' knowledge related to communication.	104
14	Nurses' knowledge related to leadership.	105
15	Nurses' knowledge related to situation monitoring.	106
16	Nurses' knowledge related to mutual support.	107
17	Total nurses' knowledge according to team STEPPS domains before and after the program.	108
18	Nurses' awareness regarding teamwork within units	110
19	Nurses' awareness regarding Organizational Learning Continuous Improvement	112
20	Nurses' awareness regarding non punitive response to errors	114
21	Nurses' awareness regarding Overall Perceptions of Patient Safety	116
22	Nurses' awareness regarding Staffing	118
23	Nurses' awareness regarding Supervisor/Manager Expectations & Actions Promoting Patient Safety	120
24	Nurses' awareness regarding Management Support for Patient Safety	122
25	Nurses' awareness regarding Teamwork Across Units	123



Table	Title	Page
26	Nurses' awareness regarding Hospital handoffs & transitions	125
27	Nurses' awareness regarding Communication Openness	127
28	Nurses' awareness regarding Feedback & Communication About Error	129
29	Nurses' awareness regarding Frequency of Events Reported	131
30	Nurses' awareness regarding Patient Safety Grade	133
31	Number of Events Reported Nurses' awareness regarding	134
32	Total nurses awareness of patient safety culture before and after the program.	135
33	Nurses' attitude related to team structure.	138
34	Nurses' attitude related to leadership.	140
35	Nurses' attitude related to situation monitoring.	142
36	Nurses' attitude related to mutual support.	144
37	Nurses' attitude related to communication.	146
38	Total nurses' attitude before and after team STEPPS program	148
39	Correlations between total nurse's knowledge, attitude related to team STEPPS and awareness of patient safety culture before and after the program.	150



List of Tables in Appendix

	Title	Page
40	Comparison between nurses' knowledge dimensions percent score regarding to team STEPPS in the intervention phases	267
41	Comparison between nurses' awareness dimensions percent score regarding to patient safety culture in the intervention phases	268
42	Comparison between nurses' attitude dimensions percent score regarding to team STEPPS in the intervention phases	269



List of Figures

	Title	Page
	Figures of Results	
1	Percentage distribution of the studied sample according to their work department.	101
2	Percentage distribution of the studied sample according to their total knowledge levels related to team STEPPS.	109
3	Percentage distribution of the studied sample according to their total awareness related to patient safety culture.	137
4	Percentage distribution of the studied sample according to their total attitude related to team STEPPS.	149



List of Appendices

	Title	Page
	Figures of Appendices	
(I)	Knowledge questionnaire Sheet for team STEPPS and model answer	228
(II)	Patient safety culture questionnaire sheet	239
(III)	Team STEPPS teamwork attitudes questionnaire sheet	243
(IV)	Jury group name and position	246
(V)	Team STEPPS training program	247
(VI)	Additional result tables	267



List of Abbreviations

STEPPS	Strategies and tools to enhance performance and patient safety.
IOM	The institute of medicine
WHO	World health organization.
AHRQ	Agency for healthcare research and quality.
HSOPSC	Hospital survey on patient safety culture
DoD	Department of Defense.
QIO	Quality improvement organization.
MTS	Multi team system.
SBAR	Situation, background, assessment and recommendation.
I PASS the BATON	Introduction, patient, assessment, situation and safety. Background, action, timing, ownership and next
STEP	Status of patient, team members, environment and progress toward goal
I'M SAFE checklist	Illness and medication, Stress at work, alcohol drug used, fatigue and eating and elimination needs to concentrate.
CUS	(I am concerned, I am uncomfortable and is a safety issue).
DESC script	Describe the specific situation, express your concerns about the action, and suggest other alternatives and consequences should be stated



Application of Team Strategies and Tools to Enhance Performance and Patient safety (STEPPS) for Improving Patient Safety Culture among Nurses

Abstract

Background: Many health care organizations now embrace the idea of teams' approaches as a better way to use employee talent and building teams as the core part in several organizations using team STEPPS. This study **aims** at designing and implementing a training program related to team strategies and tools to enhance performance and patient safety (STEPPS) for improving patient safety culture among nurses. **Research design:** One group pretest-posttest design. **Setting:** This study was conducted in nine Units in the cardiovascular hospital, which affiliated to Ain Shams University Hospitals. **Subject:** 54 nurses. **Tools** of the study used team STEPPS knowledge questionnaire, Patient safety culture questionnaire and team STEPPS teamwork attitudes questionnaire **Results:** There was a positive significant correlation between total nurses' knowledge related to team STEPPS, attitude related to team STEPPS and awareness of patient safety culture dimensions. **Conclusion:** The current study concluded that the training program was effective in improving the nurse's knowledge related to team STEPPS, attitude related to team STEPPS and awareness of patient safety culture. **Recommendations:** Further studies should be conducted to determine the effect of team STEPPS implementation on the quality of patient care in different hospital settings, and investigate the impact of health care team awareness' of team STEPPS on their actual performance.

Keywords: Team STEPPS. Teamwork. Patient safety culture.



Introduction

In our society, with all the focus on individuals we still need persons to work together in groups to accomplish goals and keep the patient safe (*Yoder-Wise, 2015*). Physicians, nurses, and other health care professionals perform interdependent tasks while functioning in specific roles and sharing the common goals of quality and safety in care. Therefore, health care workers must coordinate their activities to make patient care safer, efficient and also increasing movement toward the teamwork culture (*DuFrene and Lehman, 2011*).

Also, many health care organizations now embrace the idea of teams' approaches as a better way to use employee talent and building teams as the core part in several organizations using team STEPPS (*Robertson et al., 2009; Hobgood, Sherwood and Frush, 2010*). Effective teamwork often vital and critical to patient safety and outcomes. It is not a given, but a goal that requires training and cultivation. Yet it is sustained by a commitment to a shared set of team knowledge, skills and attitudes, rather than permanent assignments that carry over from day to day (*Edmondson, Nemhard and Valentine, 2011*).

The department of defense's patient safety program (DOD) in collaboration with the agency for healthcare research and