



Leadership Development Training Program's Impact on Acquisition of Leadership Competencies for Nurses: A Pilot Study

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Abstract Background: Nursing leadership is an essential element in motivating and inspiring nurses to practice at the top of their licensure. Leadership is the process of inspiring and influencing others to mobilize and direct their efforts toward specific goals and attain these goals through them. Nurses' transition into leadership roles requires certain competencies demonstrated to become a strong leader. **Aim:** This study aimed to assess the impact of leadership development training programs on the acquisition of leadership competencies for nurses. **Design:** A quantitative quasi-experimental design was employed where nurses participated in a leadership development training program at King Abdulaziz Medical City participated in this study using a survey method. **Results:** The result revealed significant effects of the leadership development program on the perceptions of nurses on the essential leadership knowledge and the ability to implement these competencies. The result showed a relatively high level of perceived knowledge and ability to implement the statements of the five sub-scales: Technical, Human, Conceptual, Leadership skills, and Financial Management. **Conclusion:** Development training programs in leadership for nurses should focus on knowledge, skills, and the resources they need to accomplish their career objectives and facilitate their transition into becoming skilled nurse leaders.

Key Words leadership, training Program, King Abdulaziz Medical City, knowledge, skills

1. Introduction

Leadership is considered the most influential factor in shaping organizational culture and leads to the effective and efficient performance of organizations. Leadership is defined as the art of persuading and influencing others to achieve collective objectives [1]. According to [2], group process, goal attainment, motivation, communication skills, and influencing others are all essential key components of leadership. Nursing leadership is an essential element in motivating and inspiring nurses to practice at the top of their licensure. Leadership is the process of inspiring and influencing others to mobilize and direct their efforts toward specific goals and attain these goals through them [3].

Effective leadership is vital to the success of any organization; it is part of the foundation that helps an organization align its strategic goals with its mission and vision [4], [5]. In addition, effective nursing leadership improves patient outcomes by increasing patient satisfaction while decreasing morbidity and mortality, medication errors, and complications of care [6].

In today's complex healthcare environment, it is mandated

that nurses have to be a leader and advocate for patient care. The Institute of Medicine [7] in its report, "Future of Nursing" called for nurses to be able to shape the future and lead change to improve the health and well-being of their community. Two of the eight IOM report's recommendations highlighted the need for future nurse leaders to enhance the capacity of nurses to guide and promote collaborative improvement efforts; and prepare and empower nurses to drive change to improve health [7].

Transforming Nurses requires an increase in ability, expertise, and skills and maintaining professionalism in carrying out healthcare tasks to meet the community needs [8]. To achieve these tasks, efficient leaders are needed throughout the continuum of the healthcare system, from the clinical bedside to the executive boardroom, who can function as accountable partners to deliver high-quality nursing care while working collaboratively with leaders from other health professions [7].

Within a progressively competitive and chaotic environment like healthcare, leadership style is more vital than ever [9]. Each leadership style has a fundamental foundation,

and most leaders practice some form of leadership style or a combination of styles during their normal life and work routine, including Autocratic (authoritarian and leaders centered), Democratic (participative and follower-centered), and Laissez-Faire (care-free where leader acts as a consultant) [10].

Nurses' transition into leadership roles requires certain competencies demonstrated to become a strong leader. The American Nurses Association (ANA) has identified three domains of competencies that nursing leaders should demonstrate; leading others, leading the self, and leading the organization [11].

The healthcare service in Saudi Arabia is undergoing major transformations led by the Saudi Arabian Vision 2030, which recommends that the quality of healthcare should improve to meet national needs and international accreditation standards (Kingdom of Saudi Arabia Vision 2030, 2016). Nurses are playing a vital role in achieving the Kingdom Vision 2030 through their participation in shaping healthcare services. Building leaders in nursing manpower is a key to success in achieving the 2030 Vision.

The development of leadership skills and competencies for nurses through training programs and mentorship has positive impacts on nursing leaders' performance and career ladder [12]. Nurses who participate in leadership training programs proved to increase their perceived and actual leadership competencies [13]. This study aims to assess the impact of leadership development training programs on the acquisition of leadership competencies for nurses. The objectives of the study included the assess the perception of nurses on the essential leadership Knowledge and competencies after the clinical leadership development training program in areas that include technical, knowledge of the healthcare environment, human communication, relationship management, leadership skills, and financial Management, Business skills in addition to identify the correlation between the demographic characteristics of the participants of the program and leadership competencies and to identify the highest-ranked competencies that nurses acquired during the course.

2. Materials and Methods

A. Study Design:

A quantitative quasi-experimental design was employed in this study. Nurses participated in a leadership development training program that was conducted for 16 weeks at King Abdulaziz Medical City, Jeddah. Ministry of the National Guard Health Affairs. A survey method was used to collect data for this study before the training program as baseline data and after the end of the training program when the participants returned to work at their units.

B. Intervention: Leadership Development Training Program

A competency-based leadership development training program was conducted. Participants of this program were nurses nominated by their managers based on specific cri-

teria and their interest in participating in the program. The training program is based on the American Nurses Association Leadership Competencies Model, which identified that nursing leaders should demonstrate competence in three defined areas: leading others, leading themselves, and leading the organization [11]. The program was run for 16 16-week periods and accredited by the Saudi Commission for Health Specialty as 29 CME Hours.

C. Program Objectives and Program instructional strategies

Upon completion of the program, participants will be able to demonstrate understanding of the essential concepts of nursing leadership, develop the capacity to actively participate in leadership activities in healthcare systems through team building, conflict resolution, and intra- and inter-professional collaboration, actively engage in inter-professional leadership collaboration activities, demonstrate ability to develop, plan, and implement change strategies to achieve professional nursing practices and finally acquire effective management skills using communication, team building, delegation, supervision, problem-solving and decision-making, interprofessional coordination, and cooperation, to deliver safe, quality care in addition to acquire the language of digital health and the use of information technology to develop health outcomes and demonstrate knowledge of ethical concerns and healthcare policy decision-making for all aspects of nursing practice in healthcare organizational systems. Program instructional strategies include interactive lectures, face-to-face or virtual, discussion and forum sessions, clinical exposure via hospital rounds, simulation, and standardized patient sessions, peer review /peer mentorship, role plays and modeling, case scenarios and project assignments

D. Administrative and Leadership Mentoring

Practical leadership training conducted through the mentorship program. Mentorship has been described as a relationship between two people, with the mentor being the more senior person interested in developing the skills of the mentee [14]. Mentoring in nursing leadership and management is described as leaders developing leaders where experienced nurse leaders share their tacit knowledge, to support the new nurse leader [15]. Support for the new nurse leader assists in attracting other nurse leaders to assume management roles. so, mentoring is useful in developing the skill set of the mentees as the mentor recognizes the potential of the mentee and guides and supports his/her development from experience [15]. The goals of the Mentoring include the following, Facilitate networking and connections among members in the nursing services, provide a mentor for new nurse leaders who would like a mentor, leverage the expertise and experience of nurses at the nursing services, support succession planning of leadership roles, facilitate transmission of candidates' knowledge into practice and develop the next generation of Nurse Leaders.

The Mentorship Process includes identifying a suitable mentor who is willing to work closely with the candidate in

the same specialty, providing the mentor with all information needed on the program and the candidate and clarify expectations, roles, and logistics, connect the mentor with the candidate to develop a relationship, develop a plan and strategy for the mentoring program for each mentee according to the area of specialty and support and encourage strategy through providing periodic feedback and encourage the mentee to break out of their comfort zone.

E. Evaluation and Assessment

Formatives include feedback from the mentor on the daily/ weekly /monthly leadership skills and behaviors progress through the mentor-mentee template, peer assessment, reflective Writing on selected issues, and evaluations to include mentees' feedback on mentors' and facilitators' performance. The summative includes case scenarios for problem-solving and decision-making processes, screening interviews with senior leaders on exit interview experience, a list of competencies to be completed by the end of each module or rotation, and a group quality improvement project that was presented in a poster.

F. Study Setting

The Leadership Training Program and the current research study were conducted at King Abdulaziz Medical City in Jeddah, Ministry of the National Guard Health Affairs. The hospital is a tertiary, JCI-accredited hospital with a 700- bed capacity. The nursing manpower comprises multicultural nurses from several countries.

G. Study Subjects

A purposeful sampling was used in this study which included 32 participants who joined the Clinical Leadership Development Training Program. All 32 participants of the program were invited to participate in this study, and 25 (76%) agreed voluntarily to participate in the study.

H. Data Collection methods

Two instruments were utilized in this pilot research, first, demographic data including participants' age, gender, education, years of experience in their current role, and years of management experience while the second, the Nurse Manager Competency Instrument (NMCI), which Chase, [16] developed, and revised in (2010) and adopted and revised by Hughes, Meadows, & Begley [17] in the American Organization for Nursing Leadership.

There were 53 individual competency statements in the tool, and each one scored for knowledge and understanding; and the ability to implement and use. The statements were grouped into five subscales: technical (knowledge of the healthcare environment), human (Communication and relationship management), conceptual (Professional), leadership, and financial management (Business skills and principles) subscale. Likert-scale rating on 1 to 4 was used to indicate the level of significance of each competency. The validity

of the instrument was established by face and content validity. Reliability was determined by the test-test process. In [16] study, the Cronbach alpha results for technical, human, conceptual, leadership, and financial management sub-scales were 0.80, 0.85, 0.84, 0.91, and 0.92 respectively. The results were similar to her 2010 study results. The five subscales are: Technical - knowledge of the healthcare environment (Statements 1-11), Human - Communication and relationship management (Statements 12-24), Conceptual - Professional (Statements 25-32), Leadership skills (Statements 33-46) and Financial Management -Business skills and principles (Statement 47-53).

I. Data Analysis

Descriptive statistics was conducted where frequency and percentages were calculated for categorical variables and Mean Scores and Standard Deviation (SD) for continuous variables were conducted. Correlational analysis was also performed to examine the strengths and directions of relationships between variables. P value of 0.05 or less is considered significant Linear regression analysis was conducted to determine the predictors of knowledge and understanding of leadership competencies and the predictors of Ability to implement leadership competencies.

J. Ethical Considerations

This proposal was approved by the Human Subject Board (IRB) of King Abdulla International Medical Research Center (KAIMRC). Participants of this study were invited and received an informed consent form with the invitation letter. The invitation letter clearly explained that the participation is voluntary. The letter contains the purpose of the study, and research procedure, and guaranteed to maintain anonymity and confidentiality of participants' information. No names were disclosed in any questionnaire. Collected data was kept in a secured safe. Only the PI has access to it.

3. Results

The demographic characteristics indicated that the participants' age Mean is 34.1 ± 7.7 and 88% of them are females. 92% have a BSN with a Median nursing experience of 10 years and the normal range is years. The experience in Saudi Arabia ranges from 8 years. Data is shown in Table 1.

The results of the Nurse Manager Competency survey revealed the highest and lowest perceived knowledge and ability to implement the statements of the five sub-scales: Technical (knowledge of healthcare environment), Human (Communication and relationship management), Conceptual (Professional), Leadership skills, and Financial Management (Business skills and principles).

The mean and standard deviation for each competency statement were presented for perceived competencies identified by nurses as needed for effective leadership for the two phases of data collection, and then the variance between the perceived nurse manager competencies between the two

Variable	Mean \pm SD
Age1	34.1 \pm 7.7
Gender	
Male	3 (12.0%)
Female	22 (88.0%)
Educational level	
BSN	23 (92.0%)
MSN	2 (8.0%)
Marital status	
Single	12 (48.0%)
Married	13 (52.0%)
Position in Nursing	
RN	9 (36.0%)
Clinical	12 (48.0%)
Manager	4 (16.0%)
Total nursing experience2	10.0
Total leadership experience2	5.0

Table 1: Characteristics of participants (N=25)

phases was identified using the P-value of ≤ 0.05 as significant differences.

The results of the Technical Knowledge (knowledge of healthcare environment) revealed that the three highest perceived essential competency scores in phase I were nursing practice standards, nursing care delivery systems, and infection control practices all with a Mean = 3.92. In contrast, the highest perceived essential competency scores in phase II were nursing practice standards, nursing care delivery systems, and clinical skills all with Mean = 4.0. The highest percentage of change in technical knowledge between Phase I and Phase II were knowledge of research and evidence-based practice (10.39%) and knowledge of new technology (8.05%)

The highest perceived Mean scores for the ability to implement the technical competency in Phase I were nursing practice standards Mean = 3.83, Clinical skills Mean = 3.68, and nursing care planning and Infection control practices both Mean= 3.64, while in Phase II, the highest Mean scores were the same competencies as in phase I; nursing practice standards Mean = 3.92, Clinical skills Mean = 3.96, and nursing care planning Mean= 3.84. The highest percentage of change of ability of implementation of technical knowledge between Phase I and Phase II were also knowledge of research and evidence-based practice (28.0%) and knowledge of new technology (12.33%). Data revealed that there was a significant difference between the perceived knowledge about the essential competencies between phases I and II in Research and evidence-based practice, new technology, and case management (P-value of ≤ 0.05). Also, there were significant differences between the perceived ability in implementation of the competencies between phase I and phase II in all the statements P-Value of ≤ 0.05 , except nursing practice standards and Information systems and computers. Table 2 shows all the results of technical or healthcare environment knowledge.

Results of the Human Knowledge (Communication and relationship management) revealed that the three highest perceived essential competency scores in Phase I were Effective communication Mean =4.00, Constructive performance

evaluation Mean = 3.76, and Team-building strategies Mean = 3.73, while the highest perceived essential competency scores in Phase II were Effective communication Mean =4.00, Staff development strategies Mean = 3.96, and Interviewing techniques Mean = 3.96. The highest percentage of change in Human Knowledge between Phase I and Phase II are knowledge recruitment strategies 10.47 and knowledge of Interviewing techniques (10%).

The highest perceived Mean scores for the ability to implement Human Knowledge in phase I were Effective communication Mean = 3.84, Effective staffing strategies Mean = 3.40, and Constructive performance evaluation Mean= 3.20, while in phase II, the highest Mean scores were the same competencies as in phase I; Effective communication Mean = 3.92, Effective staffing strategies Mean = 3.68, and Group process Mean = 3.68. The highest percentage of change of ability of implementation of Human knowledge between Phase I and Phase II were Group process (21.05 %) and staff development strategies (20%).

Data revealed that there was a significant difference in the perceived Human knowledge between phase I and phase II in all statements P-Value of ≤ 0.05 , except some statements as effective communication, and constructive performance evaluation. Also, there were significant differences between the perceived ability in implementation of the Human competencies between phase I and phase II in all the statements P-Value of ≤ 0.05 , except effective communication, and Optimism. Table 3 shows all the results of Human knowledge or communication and relationship management.

Table 4 shows the results of the Conceptual or Professional domain of competency. The three highest perceived essential competency scores in Phase I were Quality/process improvement Mean = 3.92, Ethical principles Mean = 3.84, and Political process and advocacy Mean = 3.80. In contrast, the highest perceived essential competency scores in phase II were ethical principles Mean = 3.96, Quality/process improvement Mean = 3.92, and Strategic planning/goal development Mean = 3.88. The highest percentage of change in technical knowledge between Phase I and Phase II are knowledge of Teaching/learning theories (5.81%) and knowledge of Legal issues (5.56%).

The ability to implement the technical competency in phase I The highest perceived Mean scores were Strategic planning/goal development Mean = 3.88, Teaching/learning theories Mean = 3.80, and Ethical principles Mean= 3.68, while in phase II, the highest Mean scores were Ethical principles Mean = 3.88, Strategic planning/goal development Mean = 4.86 and Quality/process improvement both Mean = 3.84. The highest percentage of change of ability to implement of technical knowledge between Phase I and Phase II were Legal issues (15.28%) and administrative/organizational theories (14.10%).

Data revealed that there was a significant difference between the perceived knowledge about the essential competencies between phase I and phase II in Administrative/organizational theories and Strategic planning/goal de-

Item	Phase I Mean Knowledge	Phase II Mean Knowledge	% Change	P-value	Phase I Mean Ability to implement	Phase II Mean Ability to implement	% Change	P-value
Nursing practice standards	3.96	4.00	1.01	0.327	3.80	3.92	3.16	0.083
Nursing care delivery systems	3.92	4.00	2.04	0.161	3.56	3.80	6.74	0.011
Nursing care planning	3.84	3.96	3.13	0.083	3.64	3.84	5.49	0.022
Clinical skills	3.88	4.00	3.09	0.083	3.68	3.96	7.61	0.016
Patient acuity systems	3.88	3.96	2.06	0.161	3.36	3.64	8.33	0.050
Infection control practices	3.92	3.96	1.02	0.327	3.64	4.00	9.89	0.017
Research and evidence-based practice	3.08	3.40	10.39	0.018	2.28	2.92	28.07	0.001
New technology	3.48	3.76	8.05	0.050	2.92	3.28	12.33	0.004
Case management	3.48	3.68	5.75	0.057	2.96	3.24	9.46	0.016
Information systems and computers	3.68	3.84	4.35	0.043	3.16	3.28	3.80	0.083
Regulatory agency standards	3.76	3.84	2.13	0.161	3.16	3.40	7.59	0.011
Overall	3.71	3.85	3.77	0.004	3.28	3.57	8.84	0.001

Table 2: Technical Knowledge (health care environment knowledge)

Item	Phase I Mean Knowledge	Phase II Mean Knowledge	% Change	P-value	Phase I Mean Ability	Phase II Mean Ability	% Change	P-value
Effective communication	4.00	4.00	0.00	-	3.84	3.92	2.08	0.161
Effective staffing strategies	3.72	3.92	5.38	0.022	3.40	3.68	8.24	0.016
Recruitment strategies	3.44	3.80	10.47	0.001	3.00	3.48	16.00	0.001
Retention strategies	3.52	3.84	9.09	0.003	2.96	3.48	17.57	0.001
Effective discipline	3.56	3.80	6.74	0.031	3.08	3.48	12.99	0.001
Effective counseling strategies	3.52	3.80	7.95	0.016	2.96	3.32	12.16	0.001
Constructive performance evaluation	3.76	3.84	2.13	0.161	3.20	3.52	10.00	0.003
Staff development strategies	3.72	3.96	6.45	0.011	3.00	3.60	20.00	0.001
Group process	3.68	3.92	6.52	0.011	3.04	3.68	21.05	0.001
Interviewing techniques	3.60	3.96	10.00	0.004	2.92	3.36	15.07	0.002
Team-building strategies	3.73	3.92	5.38	0.022	3.16	3.56	12.66	0.005
Humor	3.28	3.40	3.66	0.376	2.44	2.76	13.11	0.008
Optimism	3.64	3.76	3.30	0.083	2.88	3.08	6.94	0.203
Overall	3.62	3.84	6.08	0.001	3.06	3.45	12.75	0.001

Table 3: Communication and relationship management

velopment P-value of ≤ 0.05 . Also, there were significant differences between the perceived ability in implementation of the professional competencies between phase I and phase II in all the statement P-Value of ≤ 0.05 , except Strategic planning/goal development.

Regarding the leadership domain of the competencies, the results indicated that the three highest perceived essential leadership competency scores in phase I were Problem-solving Mean = 4.00, Organization of the unit of work and workflow process Mean = 3.97, and Decision-making Mean = 3.96, while the highest perceived essential leadership competency scores in phase II were Problem-solving, Decision making, Conflict resolution, and Delegation four of them Mean = 4.00. The was a very minimal percentage change in the leadership knowledge between Phase I and Phase II except for the Research process (12.00%).

The highest Mean scores of perceived abilities to implement the leadership competency in Phase I were Decision making Mean 3.64, Organization of the unit of work and workflow process, and Time management both Mean = 3.60, while in Phase II, the highest Mean scores were Decision making; and Policies and procedures both Mean = 3.88 and Organization of the unit of work and workflow process Mean = 3.80. The highest percentage of change of ability of implementation of Leadership competency between Phase I and Phase II were Research process (29.79%) and Conflict resolution (14.29%). Data is presented in Table 5.

The results revealed that there was a significant difference between the perceived knowledge about leadership competency between phase I and phase II in only the research process P-Value of ≤ 0.05 . However, there was a significant difference between the perceived ability in implementation leadership competencies between phase I and phase II in all the statements P-Value of ≤ 0.05 , except Power and

empowerment.

The last sub-scale of nursing competency is Business skills and principles or Financial Management. Table 6 shows that the three highest three perceived competencies in Phase I and Phase II were Cost containment and cost avoidance practices, and Productivity measurements both Mean = 2.92, and 2.08 respectively. The were very minimal percentage changes in the financial knowledge between phase I and phase II in Unit budget control measures (8.82%) and Cost-benefit analysis (.71%).

The highest Mean scores of perceived abilities to implement financial competency in Phase I and Phase II were Cost containment and cost avoidance practices and Productivity measurements both Mean = 2.08, and 2.08 respectively. The highest percentage of change of ability of implementation of financial competency between phase I and phase II financial resource monitoring (14.29%) and Operational and capital budget forecasting and generation (10.42%).

The results revealed that there was a significant difference between the perceived knowledge about the financial competency between phase I and phase II in on all statements P-Value of ≤ 0.05 , except financial resource monitoring. However, there was no significant difference between the perceived ability in implementation of financial competencies between phase I and phase, except for financial resource monitoring II P-Value of ≤ 0.05 . Data is presented in Table 6.

The Total Scores of Knowledge Leadership Competency were ranked from higher to lower mean scores. The ranking was similar in Phase I and Phase II. Leadership came first as the most essential knowledge for nurses and the least was Financial Management (Business skills and principles). Table 7 shows the results.

The Total Scores of the perceived ability to implement

Item	Phase I Mean Knowledge	Phase II Mean Knowledge	% Change	P-value	Phase I Mean Ability	Phase II Mean Ability	% Change	P-value
Nursing theories	3.68	3.80	3.26	0.083	3.28	3.52	7.32	0.011
Administrative/organizational theories	3.64	3.80	4.40	0.043	3.12	3.56	14.10	0.001
Strategic planning/goal development	3.72	3.88	4.30	0.043	3.86	3.86	0.00	0.518
Ethical principles	3.84	3.96	3.13	0.185	3.68	3.88	5.43	0.022
Teaching/learning theories	3.44	3.64	5.81	0.057	3.80	3.82	6.79	0.002
Political process and advocacy	3.80	3.84	1.05	0.327	3.20	3.48	8.75	0.016
Quality/process improvement	3.92	3.92	0.00	-	3.56	3.84	7.87	0.005
Legal issues	3.60	3.80	5.56	0.057	2.88	3.32	15.28	0.001
Overall	3.70	3.83	3.51	0.020	3.37	3.55	5.34	0.267

Table 4: Conceptual / Professional

Item	Phase I Mean Knowledge	Phase II Mean Knowledge	% Change	P-value	Phase I Mean Ability	Phase II Mean Ability	% Change	P-value
Decision making	3.96	4.00	1.01	0.327	3.64	3.88	6.59	0.011
Power and empowerment	3.92	3.96	1.02	0.327	3.24	3.48	7.41	0.056
Delegation	3.92	4.00	2.04	0.161	3.24	3.68	13.58	0.009
Change process	3.88	3.92	1.03	0.327	3.04	3.44	13.16	0.009
Conflict resolution	3.92	4.00	2.04	0.161	3.08	3.52	14.29	0.001
Problem solving	4.00	4.00	0.00	-	3.56	3.76	5.62	0.057
Stress management	3.88	3.92	1.03	0.327	3.04	3.36	10.53	0.003
Research process	3.00	3.36	12.00	0.017	1.88	2.44	29.79	0.001
Motivational strategies	3.92	3.96	1.02	0.327	3.16	3.52	11.39	0.001
Organization of unit of work and workflow process	3.97	3.97	0.00	-	3.60	3.80	5.56	0.022
Policies and procedures	3.92	3.92	0.00	-	3.72	3.88	4.30	0.043
Staff education	3.76	3.76	0.00	-	3.24	3.44	6.17	0.022
Time management	3.96	3.96	0.00	-	3.60	3.76	4.44	0.043
Interdisciplinary care coordination	3.92	3.96	1.02	0.327	3.56	3.76	5.62	0.022
Overall	3.85	3.90	1.30	0.004	3.25	3.55	9.23	0.001

Table 5: Leadership

Item	Phase I Mean Knowledge	Phase II Mean Knowledge	% Change	P-value	Phase I Mean Ability	Phase II Mean Ability	% Change	P-value
Cost containment and cost avoidance practices	2.92	3.08	5.48	0.043	2.08	2.20	5.77	0.265
Productivity measurements	2.92	3.08	5.48	0.043	2.08	2.28	9.62	0.096
Operational and capital budget forecasting and generation	2.76	3.00	8.70	0.031	1.92	2.12	10.42	0.057
Cost benefit analysis	2.76	3.00	8.71	0.031	1.96	2.08	6.12	0.083
Unit budget control measures	2.72	2.96	8.82	0.031	1.92	2.04	6.25	0.185
Financial resource procurement	2.88	3.04	5.56	0.043	2.00	2.16	8.00	0.103
Financial resource monitoring	2.84	3.03	7.04	0.057	1.96	2.24	14.29	0.032
Overall	2.82	3.02	7.09	0.023	1.98	2.16	9.09	0.054

Table 6: Business skills and principles

Leadership Competency	Knowledge and understanding			
	Mean Phase I	Mean Phase 2	% Change	P-Value
Leadership	3.85	3.90	1.30	0.004
Technical Knowledge (Knowledge of health care environment)	3.71	3.85	3.77	0.004
Conceptual (Professional)	3.70	3.83	3.51	0.020
Human (Communication and relationship management)	3.62	3.84	6.08	0.001
Financial Management (Business skills and principles)	2.82	3.02	7.09	0.023

Table 7: Total Scores of Knowledge Leadership Competency

leadership competency were also ranked from higher to lower mean scores. It’s also noted that the ranking was similar in Phase I and Phase II. The ability for the implementation of Conceptual (Professional) came first and the least ability to implement was Financial Management (Business skills and principles). Table 8 shows the results.

The regression analysis of change in knowledge and understanding of leadership essential competencies as the dependent variable was presented in Table 9. The overall model was significant ($P < 0.05$), change in professional knowledge and change in business skills knowledge between phase I and phase II were found to be significant predictors of progress in knowledge and understanding of leadership controlling for two confounding variables: experience as a nurse and experience in leadership.

Table 10 reported the regression model analysis of predictors of improvement in ability to implement leadership competencies. The dependent variable was the change in ability to implement leadership. The overall model was significant ($P < 0.05$), the variable of change in communication

skill was a significant predictor of progress in ability to implement of leadership controlling for two confounding variables: experience as a nurse and experience in leadership.

4. Discussions

The main objectives of this study were to explore how training impacts the perception of nurses on the essential competencies needed for leadership practice and their perceptions of the ability to implement these competencies. Descriptive and inferential statistical analysis was employed to condense data regarding the training and development leadership program.

The role of education and training of nurses in the development of leadership skills and competencies is critical to the long-term development of healthcare organizations. The results demonstrate clear differences between the perception of knowledge of the essential leadership competencies and the ability to implement these competencies in Phase I and Phase II. Younes, [18], found a markedly significant difference in the overall leadership knowledge of nurse managers before

Leadership Competency	Ability to Implement			P-Value
	Mean Phase I	Mean Phase II	% Change	
Conceptual (Professional)	3.37	3.55	5.34	0.267
Technical Knowledge (Knowledge of health care environment)	3.28	3.57	8.84	0.001
Leadership	3.25	3.55	9.23	0.001
Human (Communication and relationship management)	3.06	3.45	12.75	0.001
Financial Management (Business skills and principles)	1.98	2.16	9.09	0.054

Table 8: Total scores of abilities to implement leadership competency

Independent variable	β	S.E	P-value
Health care knowledge	.024	.054	.658
Communication knowledge	.046	.052	.388
Professional knowledge	.197	.050	.001
Business skills knowledge	.074	.030	.023
Nursing experience	-.003	.003	.356
Leadership experience	.001	.003	.878

Table 9: Predictors of knowledge and understanding of leadership competencies

Independent variable	β	S.E	P-value
Health care ability	-.216	.159	.192
Communication ability	.645	.140	.000
Professional ability	.044	.062	.489
Business skills ability	.231	.113	.056
Nursing experience	.019	.013	.162
Leadership experience	-.017	.016	.308

Table 10: Predictors of Ability to implement of leadership competencies

and right after the training leadership program that was implemented. Additionally, they found a significant difference in their knowledge before the program and three months following its implementation. Participating in organized nursing leadership development training programs improves nurses’ perceptions of their management and leadership knowledge, skills as well as their professional talents [19]. The results indicated that the leadership development program has a great impact on several aspects and competencies of leadership. Same results were similar to the results of current results on how training and professional development in leadership competency produce a positive impact on nurses’ leadership skills and practice [8], [18], [20], [21].

Nurses’ perception of the essential knowledge and ability to perform technical and healthcare environment competencies were improved with training. Herd, et al. [22] indicated that in the ever-evolving constantly changing world of healthcare, leaders must adjust to diminishing resources, increased expectations, a lack of skilled personnel, and the demands of the overall work environment. The synthesis of literature by [23] indicates that establishing and maintaining a Healthy Work Environment (HWE) in healthcare necessitates nurse leaders to have specific competencies, involve embracing a positive leadership style, dedicating efforts to relational engagement, developing supportive frameworks, and acknowledging the significance of contextual elements. Anderson, [24], found that knowledge of the work environment was one of the top 10 perceived competencies needed for effective leadership and the first of the top 10 Competencies that have

the ability to implement and use. The result of the current study is similar to the study of Aboshaiqah & Alharbi [25], who assessed the hospital nurse managers’ competencies in Saudi Arabia using the same tool; as Seabold, et al [26].

The result of this study indicated that nursing perceived human, communication, and relationship competencies as essential for leadership practice. González-García, et al. [27], Communication competency was also found to be the most-cited competency in a scoping review for nurse managers competencies conducted by [22]. It was highlighted by several studies that communication skills and the ability to carry out their job successfully [28]–[30]. The communication ability of the nurse manager is expected to incorporate the ability to convey critical thinking and generate reflection in nurse teams. In the same way, it should facilitate conflict resolution and shared decision-making, as well as creation, participation, and team management [28].

Nurses in this study indicated that context/professional competency is essential for leadership. In their study, Lehtonen [31] found that the best-assessed areas of general competence were professional competence and credibility. The result of this study is similar to Aboshaiqah, and Alharbi, [25], where statements that indicated conceptual/ professional competency scored high. González-García, et al. [22], found that professionalism is an essential one in the core competencies to be developed by the nurse manager in the Spanish health system. The factor analysis results of Wang, [30] reveal that professional attributes and professional abilities are one of the four leadership competency dimensions.

The leadership competencies sub-scale was found to have the highest scores in this study. The statements of this sub-scale are considered the main core leadership competencies. The study’s results suggest that managers need to showcase a wide variety of leadership skills to effectively address the demands of healthcare organizations. Those managers who have mainly received training as clinical specialists may not be adequately prepared to tackle upcoming challenges. [32], study’s results suggests that managers need to showcase a wide variety of leadership skills to effectively address the demands of healthcare organizations including all the statements incorporated in the tool used in this study as, decision-making, power, and empowerment, delegation, change process, conflict resolution, problem-solving, staff education, time management, and more. Wang, [30], factor analysis findings indicated 22 competency elements that were categorized into four dimensions: leadership and management capability, personal characteristics, professional

excellence, and professional aptitude. To gain a deeper understanding of the leadership abilities that nurse managers at both military and civilian hospitals perceive, Anderson [24] found minimal distinctions in essential competencies as perceived by nurse managers in the military and civilian health centres. Both groups of managers selected effective communication, decision-making, problem-solving, nursing practice standards, time management, and staffing plans as their top talents.

Nurse managers are often involved in designing, implementing, and monitoring the budget for their department. Knowledge and ability to implement financial and business competency in this study were found low scores as well as other studies [25], [33]. Nurses with leadership responsibilities should develop their financial skills through formal training, both academic and continuing education to enhance their ability to contribute, comprehend, and manage emerging financial challenges [34]. A qualitative study conducted to explore the financial management roles of Nurse Managers and the financial management development required for the practice, revealed eight main themes; financial planning; financial monitoring; financial decision-making; financial control; lack of financial management skills; lack of training in financial management; lack of educational preparation in nursing programs; lack of guidance and training in a financial management role; and need to develop financial management skills [35], [36].

Results of regression analysis indicated that the overall model was significant and change in professional knowledge and change in business skills knowledge were significant predictors of progress in knowledge and understanding of leadership, also communication skill was a significant predictor of progress in the ability to implement leadership competencies. There is a significant relationship between the communication of Nurse Managers and the job satisfaction of the nurses and also communication competencies are significant predictors of nursing performance [37], [38].

This study aimed to assess the impact of leadership development training programs on the acquisition of leadership competencies for nurses. The results identified significant differences between Phase I and Phase II leadership competency assessment. The training improves the perception of nurses and their ability to implement the competencies.

5. Conclusions

The study's results add significantly to our understanding of the benefits of training on leadership competencies for nurses. Having a clear understanding of the competencies expected of nurse managers can help plan to develop competent managers in complex current and future healthcare organizations. This study showed a significant correlation between training and perceptions of nurses' essential leadership competence and ability to implement these competencies. Development training programs in leadership for nurses should focus on knowledge, skills, and the resources they need to accomplish their career objectives and

facilitate their transition into becoming skilled nurse leaders. It is the ethical duty of healthcare organizations to give them the tools and instruction they need to accomplish this.

6. Recommendations

The results of this study recommend developing training programs to enhance the knowledge and skills of nurses and nurse managers regarding different leadership competencies and encourage and support nurses to participate in ongoing education programs. Future research in managerial competency should be considered in terms of all competencies needed for comprehensive nursing care, informatics, and financial management.

7. Limitations

Despite the robustness of this study, there are some limitations such as convenience sampling that may limit the applicability of the findings. The small sample size recruited in this study may also impact the representativeness of the participants. There is a risk of response bias, as respondents in this study based their responses on self-reported leadership skills and competencies, so they may have overstated their leadership skills.

Conflict of interest

The author declares no conflict of interest. The author read and approved the final version of the paper.

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