Efficacy of Application of Clinical Leadership Competencies Program on Charge Nurses Based on Self Need Assessment

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Abstract

Background: Clinical leadership plays a significant role for emphasizing the responsibility of charge nurses and contribute to developing and empowering their leadership capacity. Competent charge nurse need to be aware of the enablers, opportunities, strategic points and cultures of work environment they were operating. **Objective:** to study Efficacy of application of clinical leadership competencies program on charge nurses based on self-need assessment. **Setting:** Tanta Main University Hospital ICUs. **Subjects:** All (78) charge nurses working at studied ICUs. **Tools:** Three tools were used, Tool I: Self-assessment of charge nurse development need for clinical leadership skills and capabilities. Tool II: Knowledge assessment on clinical leadership competencies. Tool III: Clinical leadership competency level assessment. **Results:** Charge nurses 87.2% had high level of needs and importance regarding clinical leadership skills and capabilities development. Preprogram charge nurses 98.7%, 94.9% respectively showed poor level of knowledge and competency of clinical leadership, changed significantly at $p< 0.001$ post program to be 94.9%, 96.2% respectively. **Conclusion:** Charge nurses at Main University Hospital ICUs knowledge and competency of clinical leadership were at low level, they were lacking knowledge for developing clinical leadership and have great need for program about clinical leadership competencies to improve their leadership role. Immediately after application of successful clinical leadership competency program, they significantly improved their leadership knowledge and competency. **Recommendation:** Charge nurses should contribute to clinical leadership development by attendance of formal education programmes, case-conferences, workshops, distance learning, e-learning and self-directed learning.

Key words: charge nurses, clinical leadership, clinical leadership competencies.

INTRODUCTION

Leadership development for charge nurse is important for decreasing all costs of which are associated with quality of care[1]. Charge nurse act as a leader who plays a pivotal role in ensuring quality patient outcomes and have an abilities to interpret and integrate concepts into specific clinical and managerial performance while also determining and monitoring outcomes. [2] There is need to coordinate and integrate care accessible by nurses and charge nurses collaborations. Registered clinical charge nurses leadership knowledge, skills, and ability to develop targeted care coordination and integration competencies for a more robust skill is important for harmonized imperatives clinical leadership changes. [3] Assessment for charge nurses Clinical leadership competences and developing mechanisms which address their leadership deficits at individual, team, department and organizational levels are necessary.[4,5] Development of charge nurses' clinical leadership concerns quality, safety and effectiveness development.

Assessment of charge nurses competency for shared responsibility within those in leadership positions is important to work together across professional boundaries and to secure the needed recognition influence. [6] Also to assure that their clinical leadership capacity can be harnessed, developed and deployed in the interests of patient care.[7] Such as include flexibility, self-awareness, communication skills, knowledge of administrative tasks and soft skills in working with people. [8,9] Competencies of charge nurse in clinical leadership for delivering high quality services to patients being through vital competent seven core domains of leadership framework namely: personal qualities, working with others, managing services, improving services and setting direction, creating the vision and delivering the strategy[10, 11]

Personal qualities, the first domain, demonstrates as set of behaviours and skills that enable charge nurses to function appropriately in the clinical setting. These includes developing self-awareness by being aware of their own values and principles, managing self by prioritizing and organizing, continuing personal development through experience and feedback. [12] Working with others, the second domain focused on the ability to lead, collaborate with others on work activities by interpersonal relationships which develops linkages by working in partnership with the patient and other healthcare providers. [13] Managing services domain comprising the planning or lay outing phases, managing resources

by knowing what resources are present, managing people, and managing performance by holding the accountability for service outcomes [14].

Improving services domain consisting of ensuring patient safety, and encouraging improvement and innovation. Setting direction domain brings in the knowledge and evidence by gathering information, making decisions, and evaluating impact by evaluating outcomes. Creating the vision is the sixth domain which included in effective clinical leadership through creating a compelling vision for the future, and communicating this within and across organisations. Finally, the seventh is the delivering the strategy domain, involves delivering the strategy by developing and agreeing strategic plans that place patient care at the heart of the service, and ensuring that these are translated into achievable operational plans [12].

Clinical leadership competency skills developed for charge nurse leaders at the bedside can let them to identify work inefficiencies, motivate nurse colleagues to act, and lead change by initiatives to correct problems. [15] They also recognize their responsibility to act to improve the delivery of patient care services, envision better ways to deliver patient care services and engage others in testing innovations. The results of charge nurse leaders' clinical leadership are enhanced patient care, improved patient outcomes and patient satisfaction, and the attainment of a healthy practice environment [16]. Programs for development of clinical leadership enhance self-confidence, improve care, job satisfaction and enhance leadership skills and capabilities in such areas as team effectiveness, communications, change management and management of conflict[17] .

Clinical leadership competency training program for charge nurses might provide strength, inspiration and knowledge to increases understanding about clinical leadership [18] .As well as empower the new charge nurse to become a role model for nursing staff and to be facilitator for nurses improvements in nursing care practice [19] .Therefore present study aims to develop charge nurses' clinical leadership competencies through planning and application of an educational training program and evaluating its efficacy on their knowledge, skills and awareness of clinical leadership qualities which will increase their job satisfaction decision making skills and patient safety.

AIM OF THE STUDY

The aim of this study was to design, apply and evaluate efficacy of educational program for charge nurses to develop their

clinical leadership competencies based on their self-need assessment

Research hypothesis

- Charge nurses are in need for clinical leadership competencies program**.**
- Charge nurses' competencies in clinical leadership expected to be improved after application of the designed program

Subjects and method

Study design: Quasi experimental research design was used to achieve the aim of present study. Such design fits the nature of the problem under investigation[20].

Setting

The present study conducted at Tanta Main University Hospital five ICUs namely: neonatal, medical, coronary, neurology and chest.

Subjects

The study subjects consisted of all (n=78) charge nurses working at studied ICUs. Charge nurses at neonatal (n=26), medical (n=23), coronary (n=160), neurology (n=10) and chest (n=3).

Tools

The data of the study collected using three tools:

Tool (I): Self-assessment of charge nurse development need for clinical leadership skills and capabilities. This tool was developed by **Fealy, et al (2010)** [21]. It contains 3 parts as follows:-

Part (a) Characteristics of subjects' such as age, marital status, education level, years of experience, gender and previous in-services education courses.

Part (b) Self-need assessment scale which include a list of clinical leadership skills and capabilities that charge nurse demonstrate to develop their clinical practice.

Part (c) Scale self-assessment for importance which includes list of (61) charge nurse perceived for each statement at part (b) list of clinical leadership skills and capabilities that charge nurses demonstrated to develop their clinical practice needed for their effective performance as clinical leader.

Each of part (b) and (c) included statements under the following items:

1- Improving the environment for care delivery.

3- Skills for clinical leadership.

2- Personal and professional development.

Scoring system

Responses of charge nurses' self-assessment scale were measured in 5 points likert scale ranging from (1-5) for parts b and c as follows:-

- Score of part (b)

1 = I have no need, 2 = I have low need, 3 = I have moderate need, 4 = I have high need and 5 = I have very high need

The need score represented varying levels as following:

- High need level > 75%
- Moderate need level 60 % -75%
- Low need level < 60%

- Score of part (c)

1 = Not Important, 2 = Little Important, 3 = Moderately Important, 4 = Important and 5 = Very Important

The importance score represented varying levels as following:

- High importance level >75%
- Moderate importance level 60%-75%
- Low importance level <60%

Tool (II): Knowledge assessment on clinical leadership competencies

This tool was developed by researcher according to relevant recent literature to collect data from charge nurses about clinical leadership competencies. It included 10 questions in form true and false for each of the following competencies:-

- Clinical leadership concept and role of charge nurse
- Personal quality competency
- Working with other competency
- Managing service competency
- Improving service competency
- Setting direction competency
- Creating vision competency
- Delivering the strategy

Scoring system

Responses of charge nurses for each item of knowledge questionnaire scored by one for correct answer and zero for wrong answer.

Charge nurses' knowledge level was computed as follows:

- Level of good knowledge > 75 %
- Level fair knowledge 60 % < 75 %
- Level of poor knowledge < 60 %

Tool (III): Clinical leadership competency level assessment

This tool developed by researcher include situations about each of the seven clinical leadership competencies including personal quality competency, working with other competency, managing service competency, improving service competency, setting direction competency, creating vision competency and delivering the strategy.

Scoring system

Each situation took 10 scores and each question scored one for correct answer and zero for wrong answer.

Charge nurses' level of competency was computed as follows:-

- High level competency > 75 % score equal 8 - 10
- Fair level competency 75 % - 60 % score equal 6 - 7.5
- Poor level competency < 60 % score equal 0 - 5

Method

An official letters from Faculty of Nursing Tanta university authorities were generated to manager of the main university hospital, and the chive of ICU understudy to obtain their permission to conduct the study.

Ethical consideration

1- The aim of the study was explained and made clear to the charge nurses of the selected ICU units to gain their cooperation and get informed consent. Confidentiality and privacy of charge nurses' relevant information will be ascertained and the right of withdrawal from the study will be reserved

2- After reviewing of related literature and different studies in this field, the study tools (II), (III) were developed by the researcher and use of relevant literature reviews.

3- Tools of data collection were presented to a jury of nine experts in the area of nursing administration to check the content validity and use of relevancy of items. The nine experts were one professor, assistant professor and lecturer from Alexandria Faculty of Nursing, Tanta Faculty of Nursing and Beni Suef Faculty of Nursing respectively.

4- The experts' responses were represented in four points rating score ranging from (4 to 1). 4 = strongly relevant, 3 = relevant, 2 = little relevant, and 1 = not relevant. Necessary modifications were done including: clarification, omission of certain questions and adding others and simplifying work related words. The face validity was 92.36% and the content validity was 91.9% for self-assessment of charge nurse development need for clinical leadership skills and capabilities nursing and for tool (III) was 86.68%.

5- Reliability of tools (I) were tested using Cronbach Alpha coefficient test. Its values tool (I) was 0.945, tool (II) was 0.734, tool (III) was 0.792 respectively.

6- A pilot study was conducted on 10 of charge nurses randomly selected to test tools clarity and applicability, then needed correction were done. Those nurses not included in the study subjects. Pilot study served to estimate the time required for filling questionnaire sheet. The estimated time needed to complete the questionnaire items were approximately 20 minutes for need assessment tool (I) and 50 minutes for knowledge test tool (II).

Data collection phase

7- Self-assessment of charge nurse development need for clinical leadership skills and capabilities tool (I) was used before implementing the program

8- Knowledge assessment of charge nurses clinical leadership competencies tool (II) was used before implementation of program.

9- Levels of charge nurses' clinical leadership competencies assessment tool (III) was used before implementation of program.

10- The charge nurses were divided into ten groups. The program contains eight sessions, each session 2 hours, each group took 16 hours. The program was conducted at their units for duration of 4 months.

Construction of educational program

The first step of educational program was the statement of instructional objectives. The objectives were derived from the self-need assessment data from tool (I) and literature review.

General instructional objectives

The main objective of the program implementation was to develop charge nurses' clinical leadership knowledge and competencies.

Specific objectives

At the end of the program the charge nurses should have develop clinical leadership knowledge and competencies through:

- Identify clinical leadership concept and charge nurse role
- Specify personal quality development competency
- Explain working with other competency
- Explain managing service competency
- Discuss service competency development
- Identify setting direction competency
- Specify creating vision competency
- Identify delivering strategy competency and practice solving situations about clinical leadership competencies.

Program contents

The content was designed, method of teaching and evaluation was identified. The content was selected after carful assessment of subject needs. Simple and scientific language was used. The clinical leadership competency program.

Eight sessions (knowledge and situations) under eight topics as follows:

Session 1. Clinical leadership concept and charge nurse role

Session 2. Personal quality development competency

Session 3. Development of working with other competency

Session 4. Development managing service competency

Session 5. Improving service competency development

Session 6. Development setting direction competency

Session 7. Developing of creating vision competency

Session 8. Development of the delivering the strategy competency

Selection of teaching method

The selection of teaching method was carried out according to subject needs and content of clinical leadership competency program. The methods used were lectures, group discussion, example from life, and situations.

Teaching aids

The teaching aids used for attainment of program objectives were data show, handout, flow sheets, pens and paper.

Implementation of program

- The study was carried out on 78 charge nurses, divided into ten groups. The program time was 16 hours for each group. One session every day for 8 days, every session was 2 hours. Program was conducted for charge nurses at their working units. They preferred to start sessions at 11am to 1 pm as it was the most suitable time for them. The charge nurses were informed about objectives of the program. The researcher built good relationship and motivated them to participate and share in program activities.
- The program was implemented in the charge nurses' units at main university hospital the following flow sheet used to illustrate the session activities carried out.

Statistical analysis: Statistical presentation and analysis of the present study was conducted, using the mean, standard Deviation, paired student t-test, chi-square and Linear Correlation Coefficient [r]tests by SPSS V20.

RESULTS

Table (1) charge nurses characteristics showed that 62.8% have age ranged from 20-29 years while 3.8% aged over forty. Three quarter of charge nurses' were married, 94.9% have bachelor degree and 5.1% have master degree. About third of charge nurses either have < 5, 5-10, > 10 or more than ten years of experience and more than half of charge nurses have less than five years and 20.5% have ten years' experience in their units. One third of charge nurses were from neonatal intensive care unit, and about one quarter from medical. The rest were from coronary, neurology and chest intensive care units. High percent 87.2% of charge nurses were female and 53.8% attained in-

service education and training related to clinical leadership role.

Figure (1) shows overall levels of charge nurses needs and importance for clinical leadership skills and capabilities development. Majority of charge nurses had high level of needs and importance regarding clinical leadership skills and capabilities development.

Figure (2): shows levels of charge nurses' need for items of clinical leadership skills and capabilities development. Majority of charge nurses reported high need for improving environment for care delivery, followed by skills of clinical leadership development and personal and professional development.

Figure (3): shows levels of charge nurses' importance for items of clinical leadership skills and capabilities development. The majority of charge nurses appointed high importance for improving environment for care delivery, followed by skills of clinical leadership personal, professional development.

Table (2) Ranking mean score of charge nurses' needs and importance for items of improve environment for care delivery revealed that the high need is distribute duties of team members according to experience, with mean score 4.09 ± 1.23 and most important is identifies priorities with service of emergency and improvement, with mean score 4.24 ± 1.16. While the lowest (28) need ranking was for mean score 2.67 ± 1.50 and for important mean score 2.82 ± 1.52 were both for the item of involves patients and their families in their treatment care plans. The mean need score ranged from 4.09 ± 1.23 to 2.67 ± 1.50 and importance mean score ranged from 4.22 ±1.10 to 2.82 ± 1.62. There was statistical significance difference between charge nurses mean score of needs and importance of coordinates, makes patients aware of their rights and unit polices, participates in multidisciplinary decision making and considers social and cultural backgrounds when interacting with others.

Table (3) illustrates ranking mean score of charge nurses' needs and importance of clinical leadership skills development items. The ranking of items revealed that the high need was for items of motivates nursing team to provide optimal patient care with mean score 3.91 ±1.19 and high important was for items of makes decision based on best available information with mean score 3.96 ± 1.24. While the lowest rank for need and important both were for item of be accountable for the resource implications of nursing staff practice with mean score 3.40 ± 1.46. There was statistical significance difference between charge nurses mean score of needs and

importance for items creates alternative solutions to address problems.

Table (4) represents mean score of charge nurses' needs and importance related to items of personal and professional clinical leadership development. The ranking of items revealed that the high need and importance was for item of participates in continuing professional development education with mean need score 3.71 ± 1.29 with mean importance score 3.67 ± 1.36. While the lowest need ranking (14) have mean score 3.14 ± 1.54 and lowest importance mean score 3.10 ± 1.55 were for the same item offers constructive criticism to nursing staff. The items cope effectively with work pressure and acts as a mentor to nursing staff constitute the second need with both equal means (3.67) =2, 3 rank of importance respectively.

Figure (4) shows levels of charge nurses' overall knowledge about clinical leadership pre and post-test program. Majority of charge nurses were at poor level of knowledge of clinical leadership pre-program changed post program to be majority had good level of clinical leadership knowledge.

Table (5) Shows levels of charge nurses' knowledge of items of clinical leadership competencies pre and post program. The table reveled that charge nurses' overall knowledge of all items of leadership competencies were improved statistically significant post than pre-program at $p \leq 0.05$. Charge nurses 98.7%, 96.2%, 79.5%, 65.4%, 47.4% and 44.9% showed poor level of knowledge for items of developing and creating vision, delivering the strategy, development of setting direction, personal quality development, development of working with others and development of managing services of clinical leadership preprogram respectively. Equal percent (80.8%) of charge nurses showed poor knowledge about clinical leadership concept and role of charge nurses and improving services development. But post program range (97.4 - 94.9) showed good level of clinical leadership knowledge.

Figure (5) shows overall level**s** of charge nurses' clinical leadership competency pre and post program. Majority of charge nurses had poor level overall clinical leadership competency preprogram, changed to be majority of charge nurses' had high level of overall competency post program.

Table (6) shows charge nurses' clinical leadership competency level pre and post program. There is statistical significance difference between charge nurses' clinical leadership competency level pre and post-program at $p \leq 0.05$. Preprogram all charge nurses showed poor competency level for development of delivery strategy

competency. While range (88.5%-80.8%) showed poor competency about personal quality development, developing of creating vision and development of working with other. Charge nurses 73.1%, 62.8%, 20.5% also showed poor competency level of improving service development, development setting direction, and development managing service competency. But post program range (96.2% - 97.4%) of charge nurses showed high level knowledge in all items of clinical leadership competencies.

Figure (6) Shows Correlation between charge nurses' knowledge and competency for clinical leadership at pre-program. There was positive significance correlation between charge nurses' knowledge and competency for clinical leadership at pre-program.

Figure (7) Shows Correlation between charge nurses' knowledge and competency for clinical leadership at post-program. There was positive significance correlation between charge nurses' knowledge and competency for clinical leadership at post-program.

Table (1): Distribution of the studied nurses according to characteristics of subjects (n=78)

Subjects' characteristics	No.	%
Age		
20 – 29	**49**	**62.8**
30 – 39	**26**	**33.3**
≥40	**3**	**3.8**
Min. – Max.	**23.0 – 45.0**	
Mean ± SD.	**29.54 ± 4.49**	
Marital status		
- Married	**59**	**75.6**
- Single	**19**	**24.4**
Educational level		
- Bachelor's degree	**74**	**94.1**
- Master's degree	**4**	**5.1**
Your experience since graduation		
<5	**28**	**35.9**
5 – 10	**25**	**32.1**
≥10	**25**	**32.1**
Min. – Max	**20.0 – 0.0**	
Mean ± SD.	**7.18 ± 4.41**	
Units		
- Neonatal	**26**	**33.3**
- Medical	**23**	**29.5**
- chest	**3**	**3.8**
- Neurology	**10**	**12.8**
- Coronary	**16**	**20.5**
Experience in your working unit		
<5	**40**	**51.3**
5 – 10	**22**	**28.2**
≥10	**16**	**20.5**
Min. – Max.	**14.0 – 0.0**	
Mean ± SD.	**5.40 ± 4.01**	
Gender		
- Female	**68**	**87.2**
- Male	**10**	**12.8**
Attendance of in-service education training in clinical leadership role		
- Yes	**42**	**53.8**
- No	**36**	**46.2**

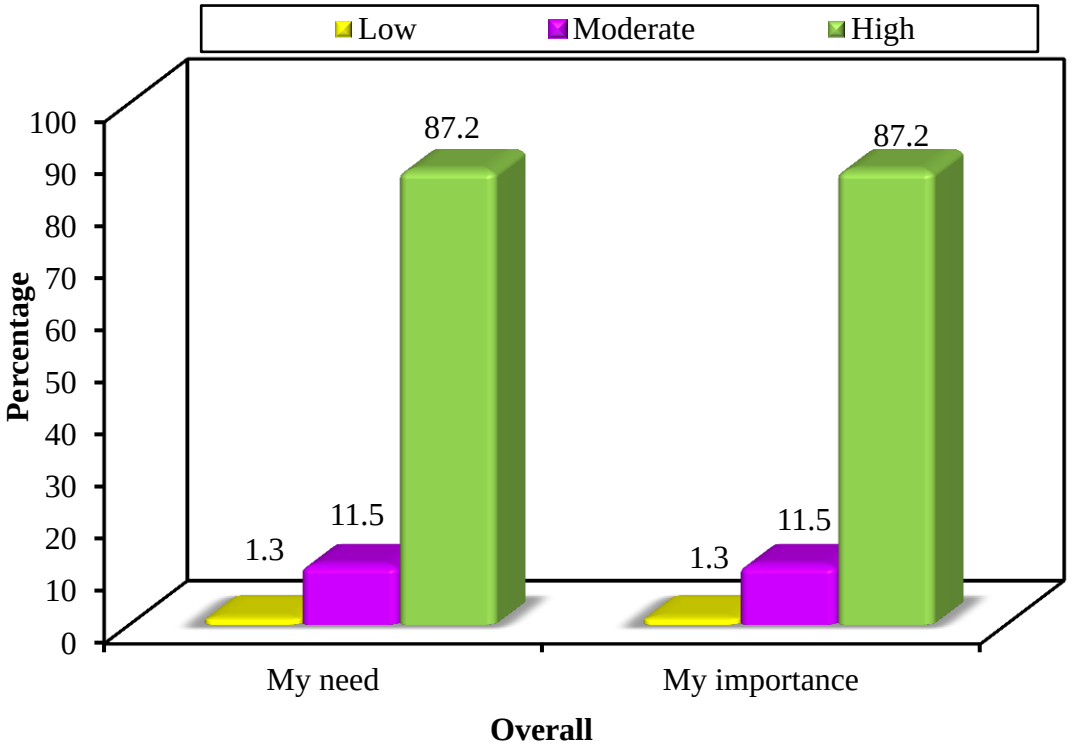


Figure (1): Levels of charge nurses' overall need and importance for clinical leadership skills and capabilities development preprogram

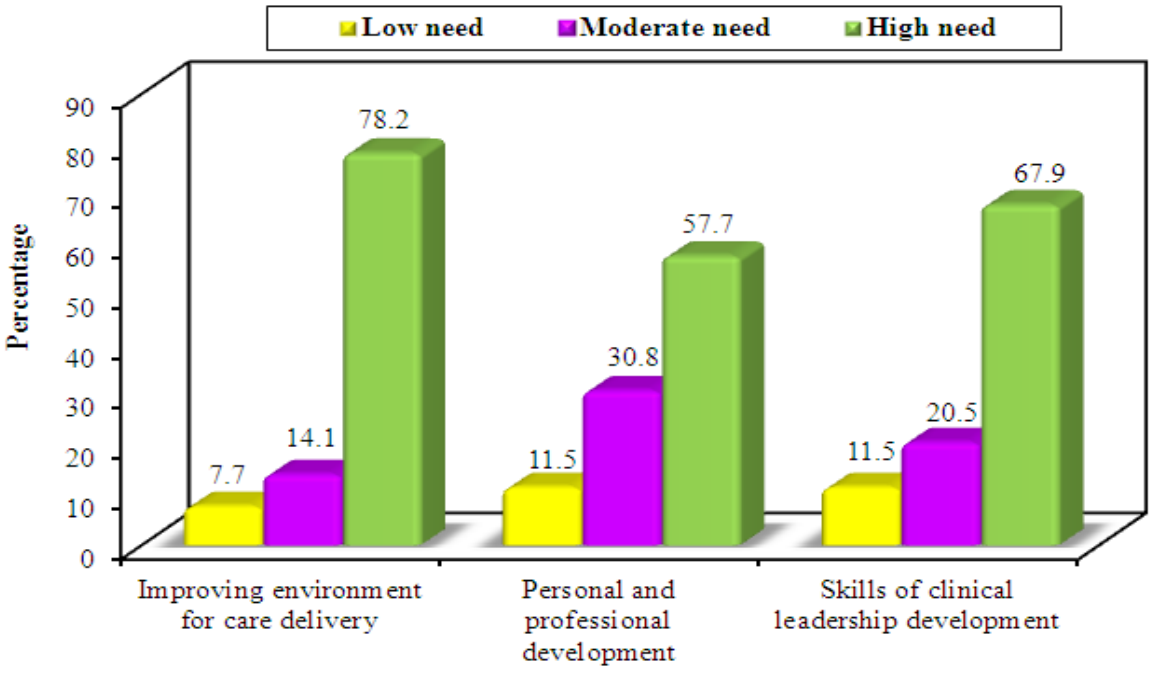


Figure (2): Levels of charge nurses' need for items of clinical leadership skills and capabilities development (n = 78).

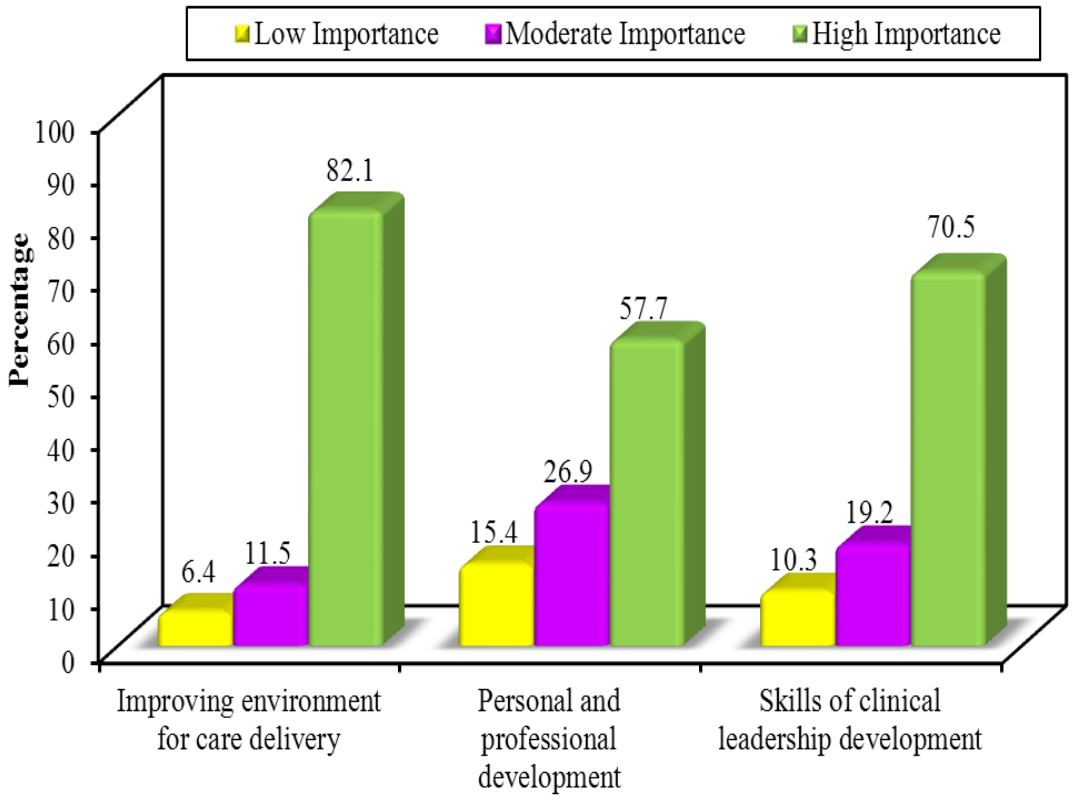


Figure (3): Levels of charge nurses, importance for items of development clinical leadership skills and capabilities (n = 78)

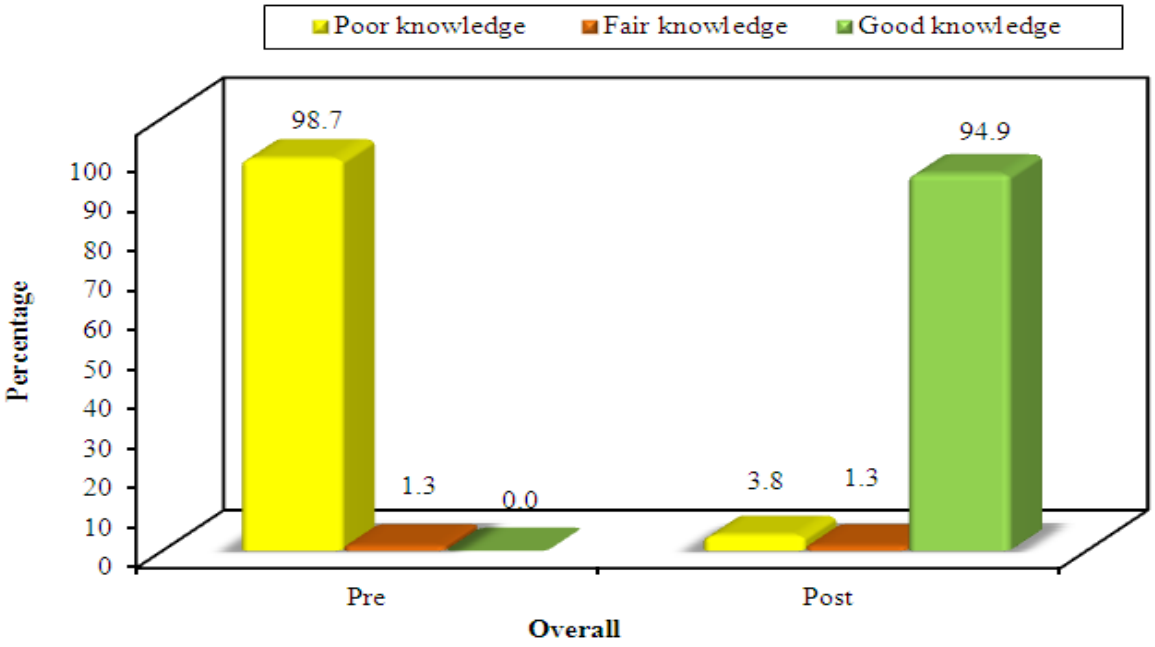


Figure (4): Levels of charge nurses' overall knowledge about clinical leadership pre and post program

Table (2): Ranking mean score of charge nurses' needs and importance for improve environment for care delivery items (n = 78)

Improving environment for care delivery items	Need		Importance		t	p
	Mean ± SD.	Rank	Mean ± SD.	Rank		
1. Coordinates care in work setting	3.82 ± 1.37	**16**	4.22 ± 1.10	**2**	2.876*	0.005*
2. Assesses the capacity of nursing staff work	3.99 ± 1.19	**7**	4.13 ± 1.07	**3**	1.008	0.316
3. Ensures that adequate resources are available	4.01 ± 1.24	**4**	4.03 ± 1.32	**8**	0.093	0.926
4. Identifies priorities with service of emergency and improvement	4.04 ± 1.33	**2**	4.24 ± 1.16	**1**	1.304	0.196
5. Distribute duties of team members according to experience	4.09 ± 1.23	**1**	4.13 ± 1.20	**3**	0.240	0.811
6. Ensures that team members carry out duties appropriately	3.96 ± 1.27	**9**	4.03 ± 1.25	**8**	0.405	0.687
7. Protects the dignity, privacy and confidentiality of patients	3.91 ± 1.39	**10**	4.00 ± 1.27	**10**	0.854	0.396
8. Involves patients and their families in their treatment care plans	2.67 ± 1.50	**28**	2.82 ± 1.52	**28**	0.973	0.334
9. Treats team members with compassion, tact, sensitivity and respect to their needs	3.88 ± 1.16	**11**	3.92 ± 1.21	**12**	0.303	0.763
10. Creates a culture of trust and ethical behavior	3.85 ± 1.25	**14**	3.90 ± 1.21	**14**	0.379	0.706
11. Monitors patient satisfaction with standards of care	3.85± 1.21	**14**	3.76 ± 1.31	**18**	0.596	0.553
12. Orients new nursing staff to the work place	3.87 ± 1.31	**13**	4.04 ± 1.12	**7**	1.250	0.215
13. Orients nursing students to the work place	3.82 ± 1.18	**16**	3.92 ± 1.05	**12**	0.905	0.368
14. Encourages nursing staff to communicate concerns about standards of care.	4.0 ± 1.04	**6**	3.88 ± 1.17	**16**	0.894	0.374
15. Creates a non-blame climate in which staff can report errors.	3.77 ± 0.95	**20**	3.65 ± 1.11	**24**	0.932	0.354
16. Reports critical incidents to line manager	3.58±1.34	**25**	3.63 ± 1.30	**25**	0.383	0.703
17. contributes to development of clinical nursing practice guidelines	3.82 ± 1.07	**16**	3.73 ± 1.14	**20**	0.841	0.403
18. Ensures that outcomes of care and nursing interventions are documented	4.04± 1.21	**2**	4.12 ± 1.09	**6**	0.559	0.577
19. Ensures patient care is based on current evidence-based best practice	3.88 ± 1.08	**11**	3.69 ± 1.28	**21**	1.433	0.156
20. Work within my own scope of nursing practice standards	3.62 ± 1.25	**24**	3.69 ± 1.11	**21**	0.604	0.548
21. Makes patients aware of their rights and unit polices	3.69± 1.37	**22**	3.32 ± 1.56	**27**	2.650*	0.010*
22. Acts to uphold patients' rights	3.69 ± 1.25	**22**	3.54 ± 1.36	**26**	1.126	0.264
23. Stimulates nursing staff to insure patient safety.	4.01 ± 1.18	**4**	4.13 ± 1.06	**3**	0.932	0.354
24. Participates in multidisciplinary decision making as risk management.	3.41 ± 1.24	**27**	3.69 ± 1.07	**21**	2.360*	0.021*
25. Provides clear and concise instructions to nursing team according to situation	3.99 ± 1.03	**7**	3.90 ± 1.15	**14**	0.740	0.462
26. Represents nursing perspective at discussions and unit meetings	3.79 ± 1.14	**19**	3.76 ± 1.21	**18**	0.309	0.758
27. Prepares concise and accurate written documents and reports using appropriate professional language	3.77± 1.21	**20**	3.97 ± 1.06	**11**	1.600	0.114
28. Considers social and cultural backgrounds when interacting with others	3.56 ± 1.32	**26**	3.85 ± 1.12	**17**	2.257*	0.027*

p: p value for **Paired t-test** for comparing between my need and my importance
*: Statistically significant at $p \leq 0.05$

Table (3): Ranking mean score of charge nurses needs and importance related to skills clinical leadership development items (n = 78)

Skills of clinical leadership development items	Need		Importance		t	p
	Mean± SD.	Rank	Mean± SD.	Rank		
1. Develops effective working relationships with the interdisciplinary team	3.78 ± 1.16	**4**	3.73 ± 1.28	**9**	0.463	0.645
2. Motivates nursing team to provide optimal patient care	3.91 ±1.19	**1**	3.83 ± 1.28	**6**	0.736	0.464
3. Fosters the development of a shared vision within the nursing team	3.63 ± 1.19	**12**	3.54 ± 1.23	**15**	0.776	0.440
4. Builds integrated interdisciplinary teams to ensure optimal care.	3.63 ±1.14	**12**	3.56 ± 1.25	**14**	0.560	0.577
5. Manages and resolving conflicts effectively	3.78 ± 1.22	**4**	3.86 ± 1.20	**5**	0.660	0.511
6. Accepts accountabilities for own actions	3.59 ± 1.41	**14**	3.68 ± 1.25	**12**	0.895	0.374
7. Empower team members to be responsible and accountable for their actions	3.85 ± 1.17	**2**	3.88 ± 1.21	**4**	0.327	0.744
8. Acts appropriately when professional standards are compromised	3.67 ± 1.21	**11**	3.81 ± 1.14	**7**	1.311	0.194
9. Recognizes the roles of other health care provider in the work setting	3.69 ±1.33	**9**	3.69 ± 1.33	**11**	0.000	1.000
10. Realize the financial aspects of healthcare delivery	3.41 ± 1.52	**18**	3.45 ± 1.47	**18**	0.344	0.731
11. Be accountable for the resource implications (e.g. costs) of nursing staff practice	3.31 ± 1.49	**19**	3.40 ± 1.46	**19**	0.776	0.440
12. Initiates change to optimal care goals.	3.58 ±1.26	**16**	3.51 ± 1.30	**16**	0.534	0.595
13. Responds effectively to changes in the work place environment (e.g. your unit)	3.59 ± 1.34	**14**	3.73 ± 1.31	**9**	1.107	0.272
14. Identifies and addressing the underlying causes of problems	3.76 ± 1.26	**7**	3.92 ± 1.08	**3**	1.812	0.074
15. Contributes to resolution of nursing staff and organizational nursing team problems	3.73 ± 1.20	**8**	3.78 ± 1.20	**8**	0.542	0.589
16. Anticipates unexpected obstacles to problem resolution	3.44 ± 1.37	**17**	3.50 ± 1.36	**17**	0.672	0.504
17. Knows when to seek advice and support to deal with problems	3.69 ± 1.11	**9**	3.67 ± 1.20	**13**	0.231	0.818
18. Creates alternative solutions to address problems	3.77 ± 1.31	**6**	3.95 ± 1.17	**2**	2.019*	0.047*
19. Makes decision based on best available information	3.82 ± 1.31	**3**	3.96 ± 1.24	**1**	1.468	0.146

p: p value for **Paired t-test** for comparing between my need and my importance

*: Statistically significant at $p \leq 0.05$

Table (4): Ranking mean score of charge nurses needs and importance related to personal and professional development items (n = 78)

Personal and professional development items	Need		Importance		t	P
	Mean ±SD.	Rank	Mean ± SD.	Rank		
1. Demonstrates commitment to continuous lifelong learning	3.64 ± 1.14	**6**	3.46 ± 1.30	**8**	1.645	0.104
2. Participates in continuing professional development education	3.71 ± 1.29	**1**	3.67± 1.36	**1**	0.327	0.744
3. Constructive in receiving criticism and suggestions from supervisors and team of work	3.65 ± 1.14	**4**	3.54 ± 1.27	**5**	0.877	0.383
4. Recognizes own strengths and weaknesses	3.53 ± 1.33	**7**	3.67 ± 1.26	**1**	1.131	0.262
5. Copes effectively with work pressure	3.67 ± 1.30	**2**	3.65 ± 1.41	**3**	0.087	0.931
6. Contributes to the professional development of nursing work team	3.65 ± 1.19	**4**	3.44 ± 1.33	**9**	1.521	0.132
7. Recognizes and acknowledging the contributions of nursing team	3.44 ± 1.18	**11**	3.36 ± 1.29	**12**	0.736	0.464
8. Acts as a mentor to nursing staff	3.67 ± 1.19	**2**	3.54 ± 1.34	**5**	1.010	0.316
9. Offers constructive criticism to nursing staff	3.14 ± 1.54	**14**	3.10 ± 1.55	**14**	0.349	0.728
10. Participates in professional nursing conferences	3.33 ± 1.29	**12**	3.49 ± 1.21	**7**	1.466	0.147
11. Consider effect of current issues, trends and policies on nursing profession.	3.50 ± 1.28	**8**	3.44 ± 1.34	**9**	0.500	0.618
12. Networking across organizational and professional boundaries	3.26 ± 1.37	**13**	3.18 ± 1.41	**13**	0.705	0.483
13. Understands the impact of internal organizational politics on the work of the nursing profession	3.45 ± 1.30	**10**	3.38 ± 1.39	**11**	0.560	0.577
14. Represents the interest of the nursing profession at the national policy-maker level.	3.46 ± 1.23	**9**	3.55 ± 1.19	**4**	0.748	0.457

p: p value for **Paired t-test** for comparing between need and importance

*: Statistically significant at $p \leq 0.05$

Table (5): Levels of charge nurses' knowledge of items of clinical leadership competencies pre and post program. (n=78)

Clinical leadership competency items	Pre						Post						^{MH}p
	Poor knowledge < 60 %		Fair knowledge >60<75%		Good knowledge >75%		Poor knowledge < 60 %		Fair knowledge >60< 75%		Good knowledge >75%		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Clinical leadership concept and role of charge nurse	63	80.8	11	14.1	4	5.1	4	5.1	0	0.0	74	94.9	<0.001*
Personal quality development competency	51	65.4	21	26.9	6	7.7	2	2.6	1	1.3	75	96.2	<0.001*
Development of working with others competency	37	47.4	31	39.7	10	12.8	2	2.6	0	0.0	76	97.4	<0.001*
Development managing services competency	35	44.9	35	44.9	8	10.3	3	3.8	0	0.0	75	96.2	<0.001*
Improving services competency development	63	80.8	11	14.1	4	5.1	2	2.6	1	1.3	75	96.2	<0.001*
Development of setting direction competency	62	79.5	16	20.5	0	0.0	1	1.3	2	2.6	75	96.2	<0.001*
Development of creating the vision competency	77	98.7	0	0.0	1	1.3	3	3.8	1	1.3	74	94.9	<0.001*
Delivering the strategy competency	75	96.2	3	3.8	0	0.0	4	5.1	0	0.0	74	94.9	<0.001*

MH: **Marginal Homogeneity Test**

p: p value for comparing between pre and post

*: Statistically significant at $p \leq 0.05$

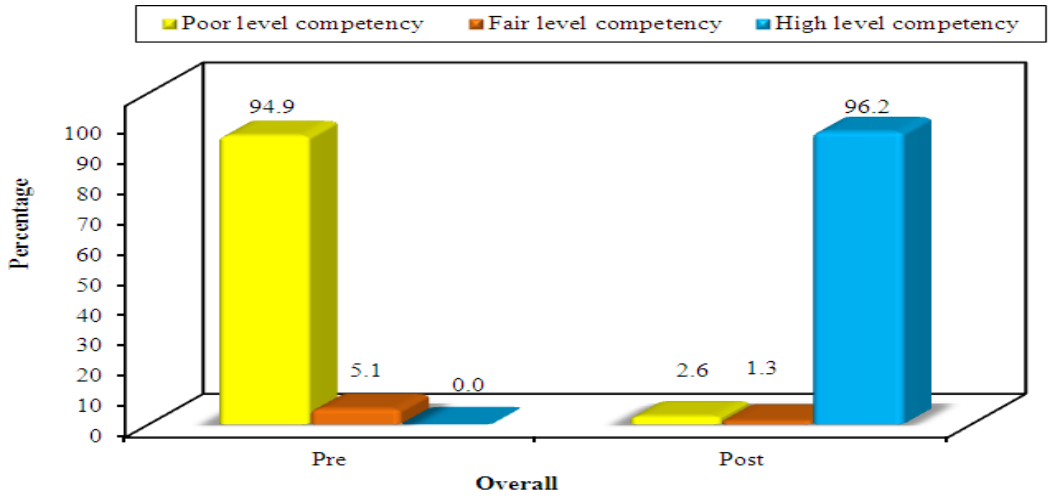


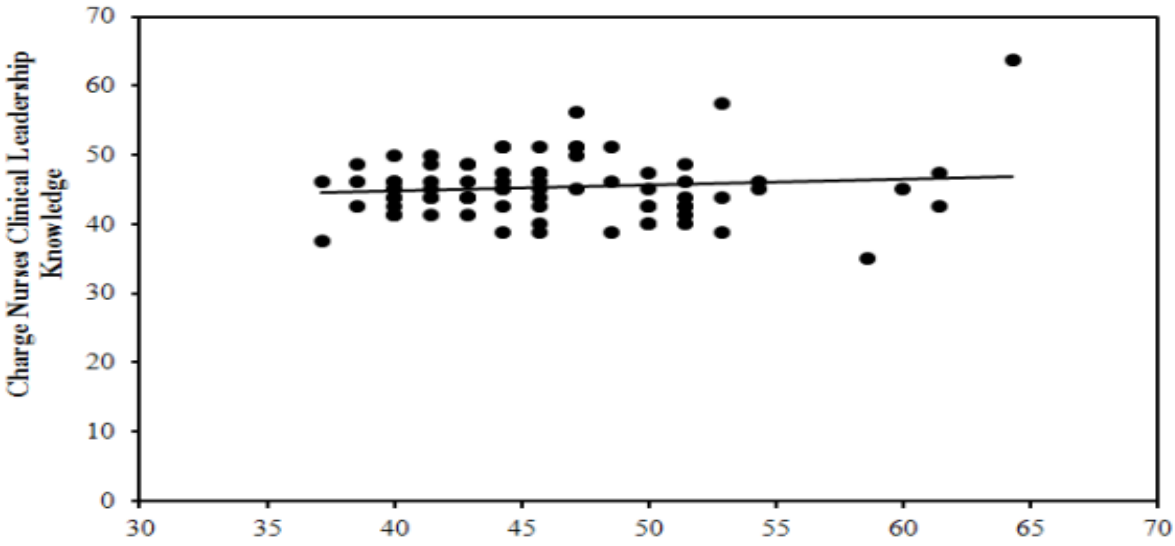
Figure (5): Overall level of charge nurses clinical leadership competency (n=78)

Table (6): Charge nurses' level of clinical leadership competencies pre and post program (n=78)

Clinical leadership competency	Pre						Post						^{MH}p
	Poor level competency <60%		Fair level competency >60%-75%		High level competency >75%		Poor level competency <60%		Fair level competency >60%-75%		High level competency >75%		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Personal qualities development competency	69	88.5	6	7.7	3	3.8	1	1.3	2	2.6	75	96.2	<0.001*
Development of working with other competency	63	80.8	12	15.4	3	3.8	2	2.6	0	0.0	76	97.4	<0.001*
Development managing service competency	16	20.5	50	64.1	12	15.4	2	2.6	0	0.0	76	97.4	<0.001*
Improving service competency development	57	73.1	9	11.5	12	15.4	3	3.8	0	0.0	75	96.2	<0.001*
Development setting direction competency	49	62.8	14	17.9	15	19.2	2	2.6	0	0.0	76	97.4	<0.001*
Developing of creating vision competency	64	82.1	5	6.4	9	11.5	2	2.6	0	0.0	76	97.4	<0.001*
Development of delivering strategy competency	78	100	0	0.0	0	0.0	2	2.6	1	1.3	75	96.2	<0.001*

p: p value for comparing between pre and post

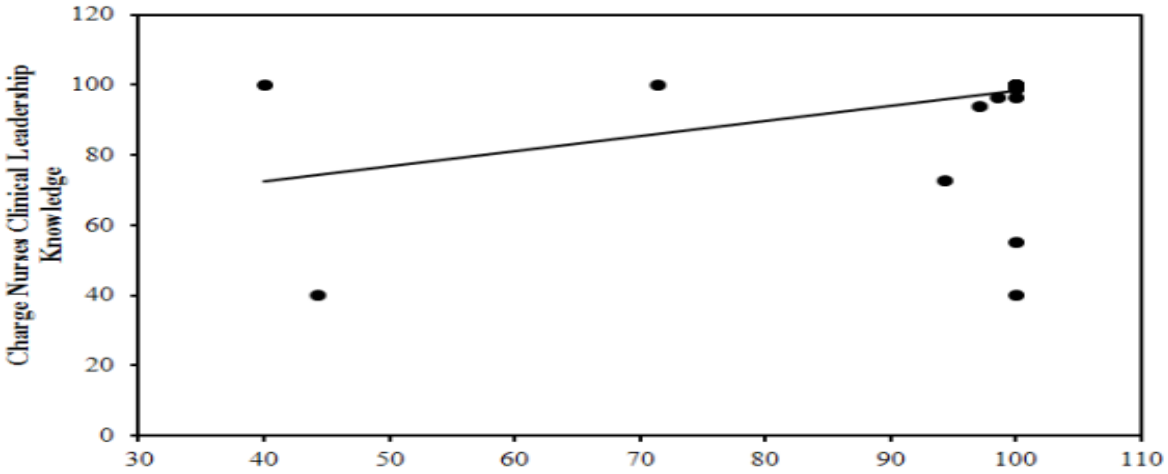
*: Statistically significant at $p \leq 0.05$



Charge Nurses Clinical Leadership Competency

****Correlation is significant at the 0.01 level (2-tailed).**
*** Correlation is significant at the 00.05 level (2-tailed).**
(-) Minus = inverse or negative correlation

Figure (6) Correlation between charge nurses' knowledge and competency for clinical leadership at preprogram (n=78)



Charge Nurses Clinical Leadership Competency

****Correlation is significant at the 0.01 level (2-tailed).**
*** Correlation is significant at the 00.05 level (2-tailed).**
(-) Minus = inverse or negative correlation

Figure (7) Correlation between charge nurses' knowledge and competency for clinical leadership at post-program. (n=78)

Discussion

Clinical leadership in nursing is essential for optimizing and improving the environment of care delivery and patient care outcomes, as well as enhance charge nurses' self-confidence and increase their leadership skills and capabilities. [22] Clinical leadership competencies play significant role in emphasizing the responsibility of charge nurses for demonstrating appropriate behaviors contributing the leadership developing process and empowering their leadership capacity. [23]

Needs of Charge Nurses

Results of present study revealed that preprogram charge nurses showed high overall needs of clinical leadership for care delivery. Actually, charge nurses were at poor level of overall knowledge and competencies about clinical leadership. Those charge nurses' self-need assessment devoted that their upper most needs were improving the environment for care delivery, skills of clinical leadership, personal and professional development. This finding explained charge nurses lack of specific training that focused on clinical leadership. They need education program to improve their knowledge skills and capabilities. About half of those charge nurses inter clinical areas without orientation leadership program and the rest not refreshed their clinical leadership skills yet.

The fact is that those charge nurses showed important need for improvement in distributing duties of team members, identify priorities of services of emergency and ensure that outcomes of care and nursing interventions are documented. As well as they have important need to stimulate nursing staff to insure patient safety and to insure that adequate resources are available. Really they need to be prepared by post-graduation training programs to increase their clinical leadership development, improving and coordinating care delivery. **Mc Carthy et al. (2019) [24]** reflected that clinical nurse leaders had high level of overall need assessment of clinical leadership development. Also, **Fealy, et al. (2015) [25]** emphasized that clinical nurse leaders expressed a high need of clinical leadership competency development.

Charge nurse showed needs and importance to involve patients and their families in their treatment care plans, may be due to charge nurses neglect and ignoring patients' autonomy, not contribute patients' right and consider it' too much time-consuming. They may prefer that the important decisions made away from bedside. They also not motivating or empowering nursing team

for providing optimal patient care and for being accountable for their action and not manage nurses' conflicts. Really those charge nurses in ICUs seem to be overwhelmed with motivating nursing team without effect and they prefer offering encouragement only. **Grindel, (2016)** [26] confirmed that when clinical nurse leaders exhibit a high level of clinical leadership skills, they motivate nurse colleagues and others to act.

Preprogram results showed that charge nurses showed needs and importance for being accountable for the resource implications. Most probably those charge nurses were exhausted, lack self-confidence and had poor work conditions, such as work overload, unfairness, lack of control over local resources and low collegial support. **Choudhry, Armstrong and Dregan (2017)** [27] stated that nurses need adequate resources not only to support and promote their practice but also to conduct patient assessment and perform treatment. When charge nurses were accountable for resources they create positive practice environments and deliver high quality care.

Charge nurses of present study showed need and important of clinical leadership personal and professional development, indicating that they are lacking personal and professional autonomy deficient in self-professional awareness, and not consider effect of organizational politics and polices on nursing profession. They need to be effectively cope with work pressure, contribute to team work and continuing professional education. They need to recognize own strengths and weaknesses. Actually, those charge nurses are in need for participation in continuing professional development while they are missing it because they obliged to participate for issues of career growth opportunities on their nursing profession.

Although continuous professional development can improve their knowledge, problem solving and clinical decision making skills, as well as their ability to provide evidence based nursing care to patients. **Price and Reichert (2017)** [28] revealed that ongoing professional development is an expressed need and expectation for clinical nurses across various career stages. Ongoing training, education and professional development opportunities help to ensure clinical competency, continuous growth in their practice and provide optimal quality patient care. Contrary to **Macaden, et al. (2017)** [29] found that clinical nurse leaders receiving management and clinical leadership development education not significantly affect clinical leadership characteristics.

Preprogram charge nurses showed need for offer constructive criticism to nursing staff. It is important to encourage charge nurses to be role model, provide feedback, and guide novice nurses to achieve goals. They must welcoming positive criticism from nursing staff and consequentially ensure that they deliver efficient and safe quality care. They need to be constructive in receiving criticism and suggestions from team work and should recognizes their own strengths and weaknesses. However the effective clinical leaders required to be self-aware and openness to criticism to challenges others, **Panneerselvam, (2018)** [30] asserted that nursing professionals should give significance attention to constructive criticism because it provides opportunity to self-assess for their skills and capabilities.

Knowledge of Charge Nurses

Preprogram charge nurses showed poor level of overall clinical leadership knowledge, and gave false answers for developing and creating vision, delivering the strategy, development of setting direction, personal quality development, development of working with others and managing services of clinical leadership. Also, they showed poor knowledge about clinical leadership concept, role of charge nurses and improving services development. This may be attributed to their low training and limited educational sources, and attendance of program about leadership development. So, they were unequipped with enough knowledge and need to be engage to formulate strategic plans, support and inspire others responsible for delivering strategic, educational and operational plans.

Apparently that clinical leadership program helped participants to innovate and improve their leadership knowledge and performance. The knowledge of most of present study charge nurses had significantly improved in majority of the items immediately post program due to their attendance of program sessions. As the program explained aspects related developing leadership knowledge and competencies in ICU clinical sittings. **Goktepe, et al. (2018)** [31] stated that clinical nurse managers' had poor clinical leadership knowledge preprogram but application of the managerial program made a key contribution towards enhancing clinical nurses' professional skills and clinical leadership competencies. Also **Jeon, et al. (2015)** [32] showed that development of clinical leadership qualities framework helped middle nurse managers to improve their skills and capabilities in clinical care processes with their management accountabilities.

Preprogram charge nurses showed lack of knowledge about all items of personal quality development for acting with integrity, self-awareness, role in continuing personal development and managing herself. Those charge nurses may need to recognize their own value and understand how these can affect their integrity and judgment. As well as participate in continuing professional development activities, uphold personal and professional ethics and values, taking into account the hospital' values and respecting others (culture, beliefs and abilities, religious, ethnic backgrounds as well as age and gender). They specially lacked knowledge about development of working with others, developing networks, building and maintaining relationships, encourage contribution and role in working within team. This results may be explained in terms of charge nurses not understand the goals of building and maintaining relationships and how to maintain it.

Theoretically speaking charge nurses are need to build social networks and relationships with contribution on delivering and improving patients' services. Working in partnership with patients and colleagues require opportunity for sharing of information, resources and actively seek the views of others. Through building and maintaining relationships by listening, supporting others as well as gaining trust and understandings. Creating an environment require others to have the opportunity to share their thoughts and ideas without fear of criticism but with encouragement to engage in decision making constructively. Working within teams require everyone to have a clear role, responsibilities and purpose. In this respect **Miehl, (2018)** [(33)] found that effectively working within others in the areas of clinical leadership, the nurse managers expect to be prepared for being an advocate, communicating effectively, influencing nursing practice and upholding a professional nursing practice.

Results revealed that post program there are significant change of charge nurses' managing services knowledge of clinical leadership. Their knowledge changed from preprogram poor level to good level post program of clinical leadership. Really they need to understand how to manage and develop nursing staff and required to become more actively involved in planning process. It is essential to incorporating feedback from others including patients, service users and colleagues. **Mendis and Paton (2014**) [(34)] found that participants recognized a high need to be aware of massively untapped resource, managing resources and ensure

effective and appropriate utilization of human and fiscal resources. In same line**, Jasper, et al (2010)** [35] identified that charge nurses planning, managing resources, managing nursing staff and managing performance are the most important themes in development of a program targeted leadership roles at different levels.

Charge nurses lack knowledge for ensuring patient safety and their role in facilitating transformation. Most probably this results due to their need to identify and quantify risk to patients using information from a range of sources, they not use systematic ways of assessing risk to change and minimise risk, and not monitor the effects and outcomes of change. They need to appreciate the technological transformation as information system that can influence every aspect of nursing care services and encouraging its improvement and innovation. Contradicting the present study **Cathro (2016)** [36] found that charge nurses had high level of role functions and maintained a watchful eye over key patient safety. **Casey, et al. (2011)**[3] reported that the nurses with high level of clinical leadership had high level of ensuring patient safety, negotiating and facilitating transformational and reform in corporates of care delivery and managing relationships

Charge nurses in the present study showed poor knowledge regarding creating vision and not understand that they should align their vision with the wider health and care agenda. This result may be due to those charge nurses need to understand basic knowledge to share in developing the vision for hospital, understand meaning of vision and how this vision achieve hospital goals. Senior charge nurses must attend nursing forum and committees to help in reframe vision. In same line, **Stanley, et al. (2017)** [37] found that respondents had low level of vision and it is not a dominant feature in clinical leadership. While **Boamah, et al. (2018)** [38] found that formal nursing leaders had high level of vision, support, staffing, resources, and leadership, with the competencies, abilities, knowledge, skills, and motivation of nursing staff, are integral to the achievement of better patient outcomes.

Competencies of Charge Nurses

Results of present study revealed that preprogram charge nurses showed poor level of overall clinical leadership competencies, and showed poor competency level for development of each of delivering strategy, personal quality, creating vision and working with others. Most probably their insufficient

knowledge about clinical leadership behaviors prevent them to be competent in managing services development or setting good direction for nursing team. **Harmon (2018)** [39] revealed that the chief nursing officer and senior leadership team had highly strategically thinker, strategic planning, and creative visionary skills that enhance effective leadership team. While **Martin, et al. (2012)** [40] said that senior charge nurses and those with managerial responsibility experienced poor in delivering strategy competencies of clinical leadership.

Preprogram charge nurses had poor level of competency of personal quality development, they cannot recognize that their own values and principles influence own behavior and impact on staff. As well as cannot seek feedback from others on strengths and limitations to modify their behavior. They cannot identify impact of their stress emotion on their behaviour and on others. Indeed those charge nurses need to learn from others and share knowledge and experience, ensure plans and actions are flexible, plan their workload and activities to fulfil work requirements and commitments, without compromising their own health. **Magnusson, et al. (2014)** [41] found that new registered nurses had high level of self-awareness, communication, after providing supportive leadership educational program and may facilitate increased confidence and competence with delegation and supervision.

Preprogram charge nurses had poor level of competency for working with others as they found no importance for encouraging others to contribute ideas or to appreciate the efforts of others within the team. They not respect the team's decision and not put their selves forward to lead team. This result reflect that charge nurses in ICUs are in highly need to be competent in giving and receiving feedback to promote teamwork and to create an atmosphere of respect relationship. **Anonson, et al. (2014)** [42] reported that nurse leaders who had good communication skills are capable of interacting with their nursing staff and co- workers and determining the most effective ways to assist them. Also, **Quince, et al. (2014)** [43] asserted that working within team skills is preferred clinical leadership skill among medical students.

Result of present study revealed that preprogram charge nurses' had poor competency level for managing services. Apparently those charge nurses were not clever to identify and address performance issues, cannot plan organized team work and they haven't structured approach to plan nursing care. Beside they can't monitor resources effectively but they

waste it. Ideally, to manage the resources effectively, leadership training program seems essential, also it is necessary to hold educational classes in order to enhance the nurses' awareness on effective supply chain and storage of the items in the unit stock. **Enterkin, et al. (2013)** [44] showed that ward leaders not deliver safe effective services within allocated resource of wider organizational networks, because they were overloaded with work in clinical area.

Results of present study revealed that preprogram, majority of charge nurses couldn't know how to setting direction, make decisions about future, and cannot evaluate impact of previous decisions and actions. In fact these results contributed that those charge nurses may lack participation in putting nursing team mission, vision, goals and objectives. They not trained on decisions making process and future issues' of the organization. Really those charge nurses need to be more self-directed in giving decision making and accept effective polices. **Nibbelink, and Brewer (2018)** [45] explained that charge nurses employ a variety of factors and processes informally, while experienced nurses are the important resources for decision making. They asserted that nurse decision making in acute care is highly demanding and improved understanding of decision making in this environment can help to guide future efforts to support nursing practice.

Beside **Montalvo (2015)** [46] reported that hospital nurses lived experience of power at their clinical settings had high understanding of sociopolitical needs and choose to be engaged in political situations. And **Uzarski, and Broome, (2019)** [47] supported that many leaders not always made strategic resources and they develop work planning and make recommendations for their application to other schools engaging in strategic team planning periodically. **Saarnio and Isola (2016)** [48] study about nurse managers' visions of future challenges in health care organizations, revealed that nurse managers have the ability to identify challenges in the future that they can influence by carrying out change management procedures.

Preprogram charge nurses cannot align strategy with local, national and health care system requirements. They cannot engage a wide range of stakeholders when formulating strategic plans, but they works to develop strategy in isolation without input or feedback from others. This results may contributed to those charge nurses overlook their role in the strategic plan of health organization and they focus only on

nursing care. **Waddell, et al. (2017) [49]** described and quantified the experiences of nurse leaders working to influence policy and to build consensus for priority skills and knowledge, useful in policy efforts within the context of a nursing conceptual framework. They reported that strategy is to enhance collaboration between a hospital or health center's nursing department and the organization's office of government relations, which fosters interest and opportunities for nurses to participate in legislative advocacy.

Present study post program results revealed that majority of charge nurses had positive significance improvement in their knowledge correlated significantly with their competency about clinical leadership. The fact is that their knowledge and competency level were unsatisfied preprogram implementation, but it was significantly increased to become at good level post program. This indicate the continuous need for periodical clinical leadership training program for all and specially newly appointed charge nurses to increase effective developing clinical leadership qualities. As well as to increase their self-awareness to utilize clinical leadership competencies and their performance for nursing care. Indeed clinical leadership training program assist those professional charge nurses to demonstrate on how to be at good level of clinical leadership competencies.

Conclusion ,recommendation

Conclusion

Charge nurses of Tanta Main University Hospital ICUs were at high level of overall needs and importance for clinical leadership competencies development. Improving environment for care delivery is the upper most need while personal and professional development was the lowest one. They were lacking knowledge and skills clinical leadership pre-program. But application of successful leadership program improved significantly charge nurses' clinical leadership knowledge and seven competencies including personal quality, working with other, managing service, improving service, setting direction, creating vision and delivering strategy.

Recommendations

1. Intensive Care Units conduct periodic surveys of clinical leadership competencies' need assessment for charge nurses.
2. Inform charge nurses by their job descriptions and responsibilities of ICUs clinical leadership.
3. Charge nurses should contribute to clinical leadership development by attendance of formal education programs, case-conferences,

workshops, distance learning, e-learning and self-directed learning.

4. Provide supportive clinical supervision and on-the-job leadership training and mentorship for clinical staff.
5. Faculty of nursing curricula should include self-awareness, personal and professional growth as values and skills for clinical leadership competencies.

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