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DESIGNING AND IMPLEMENTING STRATEGIES TO PREPARE NURSING INSTRUCTORS FOR CLINICAL TEACHING'S COMPETENCIES

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Abstract

Background: Clinical nursing education is a highly complex process shaped by several influencing factors, among which the competencies of clinical nursing instructors (CNIs) are critical in determining the quality of practicum experiences and supporting students' professional development. **Aim:** to prepare clinical nursing instructors for clinical teaching's competencies through designing and implementing the preparation strategies. **Methods:** Methodological design used to develop the validity and reliability of the developed strategies, and quasi-experimental design was utilized to estimate the impact of training clinical instructors based on the developed strategies, this study that was conducted at the Faculty of Nursing, AL-Azhar University, Egypt; on a convenient sample of all clinical nursing instructors who train students at clinical settings (35 demonstrators, and 24 clinical nurse instructors).Three tools were utilized as follows:(1)Personal data sheet about clinical instructors. (2)Knowledge questionnaire about nurse educators core competencies practices (71items). Also (3) an observation check list for nurse educators Core competencies (71items) checked by the researcher. **Results:** There were statistically significant differences in Clinical instructors' total knowledge of competencies mean scores (χ^2=93.794,P=.000) immediately post-training and three months later than pre-training as well as statistically significant differences with marked increase in all dimensions of Clinical instructors' total practices of competencies mean scores (χ^2=88.921,P=.000) immediately post-training and three months later than pre-training. Also, the current study findings revealed a positive statistical significant correlation between the clinical instructors' total mean scores of competencies of clinical teaching knowledge and their total mean scores of competencies practices at the follow up phase after three months later training(ρ = 1.00, p = 0.00). Finally, There is an agreement of experts from different universities on the validity of the suggested strategies without modification (66.6%), and (33.4%) agree with modification. **Conclusion:** A valid and reliable preparation strategies were presented in a training program indicating positive effects on clinical instructors' competencies knowledge and practices. **Recommendations:** The College should implement mandatory clinical teaching preparation programs for all new and existing clinical nursing instructors before every academic year.

Keywords: Nursing Instructors, Preparation Strategies for Clinical Teaching Competencies, Competencies of Clinical Teaching.

INTRODUCTION

Nursing with its independent and collaborative roles is a professional occupational group providing care to every healthy or sick individual, family and society. In recent years

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nursing profession has not only taken important responsibilities such as protecting and promoting health and healing diseases, but also developing all branches of teaching and learning[1]. Nursing education consists of the theoretical and practical training provided to nurses with the purpose to prepare them for their duties as nursing care professionals. This education is provided to student nurses by experienced nurses and other medical professionals who have qualified or experienced for educational tasks, traditionally in Nursing schools. Most countries offer nurse education courses that can be relevant to general nursing or to specialized areas including mental health nursing, pediatric nursing and post-operatory nursing. Courses leading to autonomous registration as a nurse typically last four years. Nurse education also provides post-qualification courses in specialist subjects within nursing[2].

Clinical education plays a crucial role in undergraduate nursing program. Not only does it provide opportunities for students to apply the theory learned in the classroom to the real world of clinical nursing, but also it is a socialization process through which students are inducted into the practices, expectations and real-life work environment of the nursing profession. The aim of clinical education is to develop in the student the professional skills and knowledge needed in life-long learning and critical thinking, communication skills, learning nursing care, and applying ethical principles to create self-confidence as a nurse, and to ensure that the nurse is able to make her own decisions and be independent [3].

Clinical education is a relatively complex process, which is influenced by several factors the most important factor is presented in the competencies of nursing instructors'. Clinical nursing instructors play a vital role in the practicum experience to each student's professional development. The responsibility for guiding and training an inexperienced student to become a competent professional is great. Those clinical instructors who are willing to provide the amount of time, effort and energy required of this endeavor are to be praised; they perform an invaluable service to the students, faculty, and their profession[4].

The most important competencies of nursing instructors were their ability in clinical education. Competencies in the clinical teaching process included familiarity with organized teaching styles, careful planning of clinical teaching based on students' needs, designing and evaluating students learning programs, providing feedback and assessing students' clinical outcomes. Empirical evidence suggested that the outcomes of the clinical teaching process are establishing a creative learning environment to facilitate students' learning and achievement of clinical teaching outcomes[5]

Studies emphasized the importance of preparation of nursing instructors to teach clinical practice and develop educational skills. Although many educational institutions offer orientation programs, they are often not based on logical evidence or frameworks that support clinical content, but are designed based on the hypothetical learning needs of novice instructors. Professional development programs for clinical instructors, if structured and based on competency, lead to positive outcomes, increase job satisfaction, reduce the rate of attrition, and improve the performance of clinical nursing instructors[6].

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Many international and national studies recommended the importance of preparing clinical instructors for clinical teaching by enhancing their clinical teaching competencies. [7] in their study titled by “Predictors of effective clinical teaching – nursing educators’ perspective” concluded the need for appropriate training of clinical instructors and preceptors to meet clinical teaching demands that will bring a positive impact to the education process.

A study titled “Clinical Supervisors’ Preparedness for Clinical Teaching of Undergraduate Nurses at a University in the Western Cape” conducted by [8] has recommended the need for a detailed, structured induction and orientation period to alleviate possible discrepancies between job expectations, roles and the actual workload; regular updates through training sessions to ensure standardization of clinical teaching methods and maintenance of quality in clinical teaching. A national study, conducted by [9] at Ain-shams university titled” Training strategies :Its effect on developing Core competencies among nurse educators,” this study recommended developing guidelines for preparation of academic nurse educators to become competent. Moreover, preparing practical training programs to be proficient in the use of different teaching methods.

Another national study by [10] titled “Designing and validating an evaluation tool for nurse educators regarding core competencies” recommended using the evaluation tool continuously to evaluate the competencies of clinical instructors, preparing practical training program for nurse educators to be proficient in the use of advanced teaching methods, and strategies and evidence based teaching practices.

From the researcher point of view, one of the most important challenges in clinical nursing education at AL-Azhar nursing faculty is recruiting clinical instructors without preparation for their roles in clinical teaching. Newly hired clinical instructors are lacking knowledge about rules, regulations, policies, procedures of the faculty\specialty department, as well as the competencies of clinical teaching that enable them to be ready to teach students at clinical settings. In response to this challenge ,the present study will prepare clinical instructors for competencies of clinical teaching by designing and implementing preparation strategies that include general orientation to the faculty physical set up, clinical settings, rules and regulations, policies ,procedures, job description, and identification of core competencies of clinical teaching. The research also will add some more valuable insights that guide clinical instructors in and outside class. Moreover the findings of this study would be used as a reference for further studies that enable researchers to make some empirical evidence.

2. METHODS

2.1 Aim

The current study aimed to prepare clinical instructors for clinical teaching’s competencies through designing and implementing the preparation strategies.

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Hypotheses of study

Based on literature and theoretical framework the following hypotheses will guide the study:

H1: There will be statistically significant difference of knowledge mean scores of nursing instructors about clinical teaching's competencies immediately after attending the preparation program and three months later compared to preprogram scores.

H2: There will be statistically significant difference of application and adoption of clinical teaching's competencies mean scores immediately post implementation and three months later compared to pre implementation scores.

2.2. Design

Two research designs were utilized for this study:

1) **Methodological research design:** Methodological design a process used to develop the validity and reliability of instruments to measure constructs used as variables in research.
2) **Quasi experimental research (one group pretest/posttest) design:** Quasi experimental research design is an empirical study used to estimate the causal impact of an intervention on its target population without randomization and control[11].

2.3 Setting

This study was conducted at the clinical settings related to the Faculty of Nursing Al-Azhar University, Clinical settings include clinical laboratories at the college and clinical training areas of students at the University hospitals (El-hosein University hospital and Bab El-shereya University hospital).

2.4. Participants

A convenience sample of all clinical nursing instructors who train students at clinical settings (35 demonstrators, and 24 clinical nurse instructors) were recruited to be the study sample. Also, a group of 30 experts and professors from the faculties of nursing(Cairo University, Ain-Shams University, and Al-Menoufeya University have tested, revised the suggested preparation strategies, orientation program.

2.5. Data Collection Tools

Data of the current study was collected using these three tools:

First tool: Personal data sheet developed by the researcher about clinical instructors including (age, marital status, years of experience, type of secondary education; technical associate degree or general secondary, and if receiving training courses about competencies of clinical teaching and evaluation, and academic position; if they were demonstrator or clinical nurse instructor).

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Second tool: Knowledge questionnaire about nurse educators core competencies was used to assess knowledge of clinical nursing instructors about competencies of clinical teaching. It was adopted from [10] It contains 71items categorized into eight dimensions representing core nursing competencies (1-facilitate learning(10items),2- facilitate learner development and socialization(15 items), 3-use assessment and evaluation strategies(8 items), 4- participate in curriculum design and related activities(8 items), 5- function as change agent and leader(13 items, 6-pursue continuous quality improvement in the nurse educator role(6 items), 7-engage in scholarship(5 items), 8-function within the educational environment(6 items).The answers of the questions were checked against two point scale (2=know, 1=don't know).The participants were instructed to rate all the items to indicate the knowledge of each statement . A total score of the questionnaire was generated by adding the knowledge ratings (know =2, not know =1) to the 71items questionnaire. The maximum scores is142, the minimum scores is71, the cut point will be 60% at the assessment phase. The knowledge level of the total dimensions was divided into two levels as follows; total score < 60% was considered as low level, and total score ≥60% was considered as high level of knowledge.

Third tool: An observation check list for nurse educators Core competencies checked by the researcher. It has 71 items with three point likert scale (done=3, partially done=2, not done=1).It was adapted from [10] as it will be modified, used to observe core competencies of clinical instructors at classes and clinical settings. The cut point after program implementation will be 90%. The level of application and adoption of the competencies was divided into two levels as follows; total score < 90% was considered as low level, and total score ≥90% was considered as high level of knowledge.

The tools were checked for validity and reliability, High agreement of jury Group upon the face validity of evaluation tool, in which all jury group agreed that it look like a tool for evaluating nurse educator core competencies. Highly construct validity through using factor analysis and Eigen value. In addition, all items of the tool had high value of alpha ranged from 0.92 % to 0.96% as well as the total alpha for the tool was high 0.98%.

2.6. Procedure

The study was conducted on six phases:

I. **Assessment phase:** Assessing the knowledge level of clinical instructors about competencies of clinical teaching, assessing the presence of any preparation strategies at the faculty, and assessing if instructors received any courses about competencies of clinical teaching or not.

II. **Planning phase:** Based on the results of the initial assessment of nursing instructor's knowledge that was analyzed, the researcher designed the preparation strategies, and training program including six sessions.

III. **Validation phase:** The suggested preparation strategies, training program were tested, revised by group of 30 experts, professors from the faculties of nursing (Cairo University, Ain-Shams University, and Al-Menoufeya University).

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IV. **Approval and Communication phase:** After testing the validity of the suggested preparation strategies and the suggested program, it was communicated to the dean of the faculty of AL-Azhar, then taking an approval for implementing the preparation program for clinical instructors at the faculty.

V. **Implementation Phase** After designing the preparation strategies, and preparation program, taking approval for implementation, the researcher implemented the program on six sessions. The sessions were provided with international training activities like “brain storming, group discussion, task cards, mental reflection, discussion, think-pair-share, image impression, story - telling, matching , managing dialogue, work shop, case study). The first day of training included general orientation starting the session by case study to show that clinical instructors must first understand the administrative components and organizational framework before applying their clinical expertise, passing through the second session by classifying the participants into workshops groups to formulate mission, vision, goals, objectives, and organizational structure for their college, and finally presenting the third chapter of “The Egyptian Universities Organization Law”, that presents the internal academic and administrative structure of universities, including faculties, departments, and their governing councils and responsibilities. The second day included training on their roles and responsibilities according to job description showing the components of any job description and the required skills and competencies of CIS. The third day included training sessions on Interposal relations abilities (Leadership, problem solving, communication),stating the session by “matching”, a training activity to show the components of communication process through system theory components, and presenting a brochure showing how clinical instructor can master his body language, and discussing challenges of communication and how to overcome, and finally story telling about positive and negative situations that have met with health team members. The second session includes “task cards” about different leadership styles according to different situation. And finally at the third session, presenting examples of problems faced in clinical training and how to deal with. The fourth day included training on different teaching methods at class, at hospital, and at clinical laboratories with application on each. And the second session included “matching “a training activity to show the components of evaluation process using Kirkpatrick Level(s) of evaluation including a work shop to formulate an evaluation checklist, and using SBAR model for feedback. The fifth day included training on data search, collection, and analysis skills, starting the training by showing the competencies of researcher, then workshops on formation of library using Mendely desktop program, and data analysis with SPSS, from setting up the program, data entry, and running different descriptive and inferential statistics. And finally, starting the last day of training by case study about the importance of professional development for curriculum development including work shop on how to formulate a clinical nursing procedure, then “mental reflection “activity to show faculty development programs, then discussion Challenges to Faculty Development, and how to overcome.

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VI. Evaluation and Follow-up phase: In this phase the researcher evaluated the knowledge level of competencies immediately after attending the program and three months later using questionnaire of competencies filled by clinical instructors. Also evaluation of the level of application and adoption of competencies immediately after the preparation program and three months later using the evaluation check-list by the researcher.

2.7. Statistical data analysis

The collected data was organized, computed, and statistically analyzed using IBM Statistical Package for The Social Sciences (SPSS) software version 24 (SPSS Inc., Chicago, IL, USA). Both descriptive and inferential statistics were applied, including frequency distribution, percentages, means, standard deviations, Friedman test, and spearman's correlation coefficient.

3. RESULTS

Table 1 shows that near half of clinical instructors (49.2%) were in the age range of 30 years or more, and the lowest of them (3.4%) were in the age range of 22 to less than 25 years. The majority (67.8%) of them were married. As regards to Years of experience, the highest percentage (44.1%) of clinical instructors had seven years or more of experience, and the least percentage of them (18.6%) had from four to six years. Moreover, most of clinical instructors (74.6%) were graduated from general secondary, and (25.4%) of them had Technical associate degree in nursing. With respect to attending training courses , most of clinical instructors (64.6 %), didn't attend any training courses about core competencies of clinical teaching, while (35.6 %) of them attended training courses about core competencies of clinical teaching. About their academic position, (59.3%) of them were demonstrators and (40.7%) of them were clinical nurse specialists.

Table 2 includes Friedman test which revealed a statistically significant improvement across all eight competencies of clinical teaching throughout the training phases .Mean scores increased markedly from the pre-training phase (Mean = 1.28, SD = 0.20)to the immediate post-training phase(Mean = 1.85, SD =0.15),Although slight reductions were observed after three-months at the follow-up phase in some competencies (Mean = 1.79, SD =0.16), the scores remained notably higher than pre-training phase as total (χ^2= 93.794, P-value=0.000). Table 3 indicated a marked improvement in participants' knowledge levels following the training program. At the pre-training phase, only one-fifth of the participants (20.4%) demonstrated satisfactory knowledge, highlighting a substantial need for training. Immediately after training, all participants (100%) achieved satisfactory levels, reflecting the training's strong immediate impact on knowledge acquisition. Although there was a slight decline in performance at the three-month follow-up, two-thirds of the participants (67.7%) continued to maintain satisfactory knowledge levels. Table 4 illustrates Friedman test that demonstrated highly significant improvements (χ^2= 88.921, p = 0.000) across all eight practice dimensions of the clinical instructor competencies following the training program. Mean scores increased substantially from the pre-training (Mean=1.23, SD = ± 0.21) to the immediate post-

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training phase (Mean=1.78, SD =± 0.18) and were sustained or slightly improved at the three-month follow-up phase (Mean =1.78, SD =± 0.17). Table 5 shows a substantial improvement in clinical instructors' practice levels following the intervention. Before the training, less than one-third of participants (28.9%) demonstrated satisfactory practice, indicating considerable gaps in performance. After the training, the proportion of participants achieving satisfactory practice rose sharply to 84.7%, reflecting a strong and immediate positive impact of the training on practical skills. Although there was a slight decrease at the three-month follow-up, a high percentage (79.6%) of participants continued to exhibit satisfactory practice levels.

Table 6 shows the correlation between knowledge and practices of clinical instructors competencies, Before program implementation, Spearman analysis resulted in very weak and non-significant correlation (ρ = 0.082, p = 0.539), as well as Immediately after implementation, the correlation remained weak and non-significant but shifted to a slightly negative direction (ρ = –0.120, p = 0.364), but at the follow up phase, the analysis produced a perfect correlation (ρ = 1.00, P=0.00).

Table 7 shows that there is an agreement on the validity of the suggested strategies without modification (66.6%) of experts from different universities (Cairo University, Ain-shams University, AL-Menoufeya University)agreed that the strategies have met the validity assumptions (Clarity of Language, Presentation of Topics, Suitability of content, Adequateness of Purpose, Attainment of Purpose, Thoeritical framework, and objectivity).while about one third of them(33.4%)agree but recommended some modifications. Overall, the results reflect high level of consensus and validity of the strategies presented in the training program to clinical instructors.

Table1: Frequency Distribution of clinical instructors According to Personal data (n=59)

Variables	*No*	*%*
Age in years		
22–<25	2	3.4
26–<29	28	47.5
≥30	29	49.2
Marital status		
Single	40	67.8
Married	19	32.2
Years of experience		
1-3 years	22	37.3
4-6 years	11	18.6
7years or more	26	44.1
Type of secondary education		
General secondary	44	74.6
Technical associate degree	15	25.4
Did you received any training course about core competencies of clinical teaching?	38	64.4
- Yes	21	35.6
- No		
Academic position	24	40.7
Clinical nurse specialist	35	59.3
Demonstrator		

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Table 2: Comparison of The Mean Scores of Clinical instructors' knowledge of competencies during the three phases of training (Pre, immediately post, and follow up) (n=59)

Competencies of clinical teaching	Pre-training	Immediately Post	Follow up	χ^2	p-value
1. Facilitate Learning	Mean = 1.26 SD = 0.18	Mean = 1.88 SD = 0.12	Mean = 1.80 SD = 0.16	95.181	.000
2. Facilitate Learner Development and Socialization	Mean = 1.25 SD = 0.16	Mean = 1.87 SD = 0.13	Mean = 1.78 SD = 0.15	100.0	.000
3. Use Assessment and Evaluation Strategies	Mean = 1.28 SD = 0.19	Mean = 1.84 SD = 0.13	Mean = 1.79 SD = 0.13	95.195	.000
4. Participate in Curriculum Design and Related Activities	Mean = 1.29 SD = 0.20	Mean = 1.84 SD = 0.15	Mean = 1.78 SD = 0.13	74.073	.000
5. Function as Change Agent and Leader	Mean = 1.29 SD = 0.23	Mean = 1.80 SD = 0.18	Mean = 1.80 SD = 0.14	82.667	.000
6. Pursue Continuous Quality Improvement in the Nurse Educator Role	Mean = 1.33 SD = 0.27	Mean = 1.88 SD = 0.18	Mean = 1.76 SD = 0.20	68.310	.000
7. Engage in Scholarship	Mean = 1.21 SD = 0.17	Mean = 1.87 SD = 0.17	Mean = 1.74 SD = 0.21	90.607	.000
8. Function within the Educational Environment	Mean = 1.29 SD = 0.20	Mean = 1.84 SD = 0.16	Mean = 1.84 SD = 0.14	86.429	.000
Total	Mean = 1.28 SD = 0.20	Mean = 1.85 SD =0.15	Mean = 1.79 SD =0.16	93.794	.000

Table 3: Frequency distribution of clinical instructors' total knowledge levels of competencies during the three phases of training (pre, immediately post, and follow up (n=59)

Knowledge levels	Satisfactory (≥60%)		Unsatisfactory (<60%)	
Training phases	**Number (No)**	**Percentage (%)**	**Number (No)**	**Percentage (%)**
Pre-training	12	20.4%	47	79.6%
Immediately Post-training	59	100%	0	0%
Follow up phase	40	67.7%	19	32.3%

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Table 4: Comparison of The Mean Scores of Clinical instructors' practices of competencies during the training phases (Pre, immediately post, and follow up phase) (n=59)

Competencies of clinical teaching	Pre – training	Immediate-training	Follow up	χ^2	P - value
1- Facilitate Learning	Mean =1.26 SD= ± 0.18	Mean =1.88 SD= ± 0.12	Mean =1.79 SD= ± 0.14	94.523	0.000
2- Facilitate Learner Development & Socialization	Mean = 1.24 SD= ± 0.17	Mean =1.86 SD= ± 0.13	Mean =1.81 SD= ± 0.15	92.911	0.000
3- Use Assessment & Evaluation Strategies	Mean =1.22 SD= ± 0.19	Mean =1.78 SD= ± 0.17	Mean =1.73 ± 0.16	94.903	0.000
4- Participate in Curriculum Design & Related Activities	Mean =1.22 SD= ± 0.17	Mean =1.70 SD= ± 0.18	Mean =1.81 ± 0.15	91.955	0.000
5- Function as Change Agent & Leader	Mean =1.31 SD= ± 0.17	Mean =1.77 SD= ± 0.14	Mean =1.74 ± 0.16	81.552	0.000
6- Pursue Continuous Quality Improvement	Mean =1.37 SD= ± 0.29	Mean =1.77 SD= ± 0.19	Mean =1.73 SD= ± 0.22	52.447	0.000
7- Engage in Scholarship	Mean =1.20 SD= ± 0.27	Mean =1.77 SD= ± 0.24	Mean =1.83 SD= ± 0.19	85.718	0.000
8- Function Within the Educational Environment	Mean =1.01 SD= ± 0.25	Mean =1.71 SD= ± 0.28	Mean =1.83 SD= ± 0.15	94.811	0.000
Total	Mean = 1.23 SD = ± 0.21	Mean = 1.78 SD =± 0.18	Mean =1.78 SD =± 0.17	88.921	0.000

Table 5: Frequency distribution of clinical instructors' total practices levels of competencies during the three phases of training (pre, immediately post, and three months later) (n=59)

Practice levels	Satisfactory (≥90%)		Unsatisfactory (<90%)	
Assessment periods	Number (No)	Percentage (%)	Number (No)	Percentage (%)
Pre-program	17	28.9%	42	71.1%
Immediately Post-program	50	84.7%	9	15.3%
Three Months Later	47	79.6%	12	20.4%

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Table 6: Correlation Between clinical instructors' Total Knowledge and practices of competencies During the training phases (pre, immediately-post, and follow up) (n=59)

Clinical instructors' Knowledge of competencies	Clinical instructors' practices of competencies	
	Correlation coefficient (ρ)	P- value
Pre implementation	0.082	0.539
Immediately after implementation	-.120	.364
Three months later implementation	1.00	0.00

Table 7: Frequency distribution of experts' responses regarding the validity of the suggested strategies to prepare clinical instructors for competencies of clinical teaching (n=30)

Levels of validity agreement	Number (NO)	Percentage(%)
Agree without modification	20	66.6%
Agree with modification	10	33.4%
Disagree	0	0.00%

4. DISCUSSION

The present study revealed that nearly half of the clinical instructors were aged 30 years or older, indicating a relatively mature workforce. This aligns with [12], who found that older nurses often demonstrate higher levels of clinical and cultural competence, suggesting that age may positively contribute to teaching readiness. However, this finding contrasts with [13], who reported no significant association between age and clinical instructor competency, arguing that professional development is more influential than chronological age.

In addition the findings showed that the majority of the clinical instructors were married. This is consistent with [12], who found marital status to be associated with higher professional competence in nursing contexts, possibly reflecting greater stability or social support. Conversely, [14] reported no significant relationship between marital status and teaching or clinical competence, indicating that marital status should not be interpreted as a determining factor in educational performance.

Besides, this study revealed that 44.1% of instructors had seven years or more of experience, reflecting a seasoned teaching staff. This agrees with [15] and [16], who showed that extended clinical or teaching experience is associated with higher competence and membership in advanced-competency profiles. However, [17]

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emphasized that years of service alone do not guarantee effective teaching, highlighting that structured pedagogical training is needed to translate experience into teaching competence.

Furthermore most clinical instructors at the current study graduated from general secondary education, with fewer holding higher technical qualifications. [13] found that higher academic degrees significantly predict stronger professional competencies, supporting the notion that academic preparation influences performance. In contrast, [15] and [18] argue that academic qualifications alone do not capture an instructor's pedagogical capability, which instead depends on teaching skill development and ongoing CPD.

As regard, the study showed that 64.6% of instructors had not attended any training courses related to core competencies of clinical teaching. This agrees with [19], who demonstrated that structured competency-based training significantly improves instructors' knowledge and performance, indicating that lack of training may limit teaching quality. Conversely, [20] found that training alone does not reliably predict competence unless it is sustained, well-designed, and institutionally supported.

Additionally, the results indicated that 59.3% of instructors were demonstrators, while 40.7% were clinical nurse specialists. This aligns with [21], who found significant associations between academic position and competency levels, suggesting that instructors with advanced academic roles may demonstrate greater skill in teaching. However, [22] reported that academic rank alone does not predict teaching effectiveness; instead, factors such as training, confidence, and institutional support were stronger predictors of performance.

The current study revealed that clinical instructors' knowledge scores regarding clinical teaching competencies improved significantly across the training phases. The mean scores increased from a low to moderate level pre-training, rose sharply immediately post-training, and were largely maintained at the three-month follow-up. This indicates that the training program was effective in enhancing both immediate learning and short-term retention of clinical teaching knowledge.

These findings are consistent with recent research showing that structured educational interventions for clinical instructors significantly improve knowledge, skills, and self-confidence in clinical teaching [19] and [23]. For example, a "train-the-trainer" program in a multi-center study reported significant gains in participants' knowledge scores immediately after training, which were sustained over three months with follow-up reinforcement sessions [24].

Pertaining to the participants' knowledge levels, they have been improved markedly following the training intervention. Initially, few participants achieved satisfactory scores (≥60%), while the majority performed unsatisfactorily. Immediately after training, all participants (100%) reached satisfactory knowledge levels, demonstrating the short-term effectiveness of the training. However, at follow-up, the proportion with satisfactory knowledge declined to 67.7%, indicating a reduction in retained knowledge over time.

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This pattern mirrors findings from recent studies showing that formal training commonly leads to significant immediate improvements in knowledge. [25] Reported that nurses' knowledge increased significantly after structured training and was higher than baseline at follow-up).

The substantial and statistically significant increase across the application of all eight competency dimensions from pre-intervention to immediate post-intervention, and moreover the retention of most gains at 3-months follow-up, parallels findings from other intervention studies. For example, [26] reported that a structured clinical-teaching competency training program significantly improved performance across multiple teaching domains, with improvements maintained at 3 months.

However, findings from large scale surveys "an analysis of specialist nurse educators in China show substantial heterogeneity in educator competence; many remain at foundational or intermediate levels without specialized training. This suggests that while training interventions (such as in the present study) can yield significant improvement, wider implementation and continuous support are needed to achieve comparable results across diverse educator populations [15].

The current findings mirror a substantial body of literature showing that structured training programs can significantly improve practice levels in the short term. For example, continuous and spaced training approaches have been shown to improve long-term retention of knowledge and skills among healthcare students, indicating that reinforcement over time can sustain gains beyond immediate post-training effects [27]. However, other research highlights limitations in long-term retention and effectiveness.

For instance, evidence from basic life support training indicates that traditional training methods despite initial improvements fail to maintain competence beyond six months unless augmented with feedback-integrated strategies [28]. Thus, while training programs can be effective immediately, these studies underscore the need for ongoing reinforcement, booster sessions, and context-specific design to achieve sustained practice improvement.

Pertaining to the correlation between knowledge and practices of clinical instructors competencies, prior to the program, knowledge and practice were minimally correlated, and this correlation remained weak and statistically non-significant immediately after program implementation. The perfect correlation observed three months later. These findings suggest that possessing knowledge alone may not directly translate into practical competency, highlighting the importance of applying knowledge through structured, hands-on, and reflective learning experiences [29].

This aligns with recent research emphasizing that effective clinical teaching and competency application require not only theoretical understanding but also continuous experiential learning, mentoring, and feedback mechanisms that enable instructors to operationalize their knowledge in practice [15]. Overall, the results underscore the necessity of integrating practical training strategies alongside knowledge-based instruction to strengthen the translation of knowledge into clinical teaching practice.

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Finally, the findings of the study indicated that the suggested strategies demonstrate strong content validity, as evidenced by the high levels of agreement among the expert panel. All items received ratings within the “Agree without modifications” and “Agree with modifications” categories, suggesting that the experts perceived the strategies as relevant, clear, and aligned with the intended objectives of the study.

Such consistency in expert judgments reflects a high degree of coherence among the proposed strategy components, supporting the adequacy and appropriateness of their content. According to established methodological standards, when expert agreement exceeds 80%, the instrument is generally considered to possess acceptable content validity [30]. Therefore, the high percentages reported in the table confirm that the suggested strategies are valid and can be confidently utilized in subsequent phases of the research.

5. CONCLUSION AND RECOMMENDATIONS

In the light of the present study findings, it can be concluded that a valid and reliable preparation strategies presented into training program resulting in a statistically significant difference in the mean scores of knowledge test regarding competencies of clinical teaching among clinical instructors, indicating a marked improvement of their awareness about competencies of clinical teaching immediately post-program implementation and three months later compared to pre-program.

Besides, there was a statistically significant difference in clinical instructors’ mean scores of practices pertaining to competencies immediately post program implementation and three months later compared to pre-program. This indicated that there was positive effect of implementing an educational program about competencies of clinical teaching for clinical instructors, equipping them with the knowledge and practices needed to be competent in clinical teaching. Moreover, all hypothesizes of the study are accepted.

Additionally, Sustained improvement over time shows that long-term professional development is essential for maintaining competency. The Ministries of Health and academic institutions should adopt policies requiring certification or credentialing clinical instructors in teaching competencies. Use standardized competency frameworks for clinical instructors aligned with national and international standards (NLN, WHO, ICN). Establishing collaborative training partnerships between universities and healthcare institutions to ensure unified and consistent instructor preparation. Investigating student outcomes such as clinical performance and satisfaction as indicators of instructor preparation effectiveness.

Abbreviations

CNIs	Clinical Nursing Instructors
CPD	Continuous Professional Development
NLN	National League of Nursing
WHO	World Health Organization
ICN	International Council of Nurses

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Declarations

Ethical Considerations

A primary official approval was obtained from the research ethics committee, Faculty of Nursing, Cairo University, to conduct the proposed study then an approval from the Dean of the AL-Azhar faculty. All participants reported that Participation in the study is voluntary. The ethical considerations include explaining the purpose, nature of the study and stating the possibility to withdraw at any time.

Availability of data and materials

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Competing Interests

The authors declare that they have no competing interests.

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References

1) lotaibi BN, Alenazi RS, Alharbi TBH, Al-otaibi IA, Alotaibi FF, Almutairi SM, et al. Advancing nursing practice and health education: a comprehensive review. *J Int Crisis Risk Commun Res.* 2024;7(S5):793–801. Available from: https://jicrcr.com/index.php/jicrcr/article/view/2511

2) Mukan SMW, Kulai D, Che Md Nor R. *Nursing students' perceived effective clinical teachers' behaviors. Asian J Univ Educ.* 2020;16(4):200–10. Available from: https://ir.uitm.edu.my/id/eprint/115467/

3) Hussien T, Shazly MM, Hassan RM. Developing and validating standards for clinical teaching skills. *Egypt J Health Care.* 2019;10(2):294–306. Available from: https://journals.ekb.eg/article_46259.html

4) Zakaria AM, Gheith NA, El-Sayed SH. *Job description for clinical instructors working in different academic departments in Faculty of Nursing at Mansoura University.* Med J Cairo Univ. Vol. 77, June 2009. Available from: https://www.medicaljournalofcairouniversity.net/index.php/2014-10-22-23-17-17/vol-77-june-2009/1559-job-description-for-clinical-instructors-working-in-different-academic-departments-in-faculty-of-nursing-at-mansoura-university

5) Beiranvand R, Zarei F, Heidarnia A, Ghalavandi S. *A blended educational intervention program on Pap-test related behavior among Iranian women.* Reprod Health. 2021;18:228. Available from: https://reproductive-health-journal.biomedcentral.com/articles/10.1186/s12978-021-01281-x

6) Beiranvand S, Mohammad Khan Kermanshahi S, Memarian R, Almasian M. *From clinical expert nurse to part-time clinical nursing instructor: design and evaluation of a competency-based curriculum with structured mentoring: a mixed methods study.* BMC Nurs. 2022; 21:10. Available from: https://bmcnurs.biomedcentral.com/articles/10.1186/s12912-021-00797-8

7) Al-Rawajfah OM, Al Hadid L, Madhavanprabhakaran GK, Francis F, Khalaf A. *Predictors of effective clinical teaching – nursing educators' perspective.* BMC Nurs. 2022 Mar 7; 21(1):55. Available from: https://pubmed.ncbi.nlm.nih.gov/35255923/

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DOI: 10.5281/zenodo.18336440

8) Hoffman M, Daniels FM. *Clinical supervisors' preparedness for clinical teaching of undergraduate nurses at a university in the Western Cape.* Afr J Nurs Midwifery. 2020; 22(2):7824. Available from: https://unisapressjournals.co.za/index.php/AJNM/article/view/7824

9) Negmeldin RF. *Training strategies: Its effect on developing core competencies among nurse educators* [dissertation]. Cairo: Faculty of Nursing, Ain Shams University; 2022. available from https://www.research.asu.edu.eg/

10) Mohamed DLA, Adam SM, Hassan RM. *Designing and validating an evaluation tool for nurse educators regarding core competencies.* Int J Health Sci. 2022;6(S1):1122–33. Available from: https://sciencescholar.us/journal/index.php/ijhs/article/view/4849

11) Polit DF, Beck CT. Essentials of nursing research: appraising evidence for nursing practice. 7th ed. Philadelphia: Lippincott Williams & Wilkins; 2014. Available from https://www.ncbi.nlm.nih.gov/nlmcatalog/101487590/?utm_source=chatgpt.com

12) Soleimani M, Yarahmadi S. Cultural competence in critical care nurses and its relationships with empathy, job conflict, and work engagement: a cross-sectional descriptive study. *BMC Nurs.* 2023;22:113. Available from: https://bmcnurs.biomedcentral.com/articles/10.1186/s12912%E2%80%91023%E2%80%9101285%E2%80%91x

13) Satoh M, et al. Competency of academic nurse educators: a mixed-methods investigation. BMC Nursing. 2020;19:45.available from https://pmc.ncbi.nlm.nih.gov/articles/PMC8832301/?utm_source=chatgpt.com

14) Al-Ali A. Assessing professional competencies among undergraduate nursing students: associations with demographic variables. SAGE Open Nurs. 2025;11. doi:10.1177/23779608251234567. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC12035202/

15) Tian J, Zhang M, Zhang L, Wang Y, Lu Q. Core competencies and training needs of specialist-nurse clinical educators: a latent profile analysis. *BMC Nurs.* 2025;24:1360. Available from: https://bmcnurs.biomedcentral.com/articles/10.1186/s12912-025-04006-8

16) Ahmedin L, Birhanu A, Mekuria M, Ahmed N, Yassin AM, Keneni M, et al. Clinical practice competence and its associated factors among graduating BSc nursing students. *SAGE Open Nursing.* 2024;10:23779608241290002. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC11536384/

17) Nazari R, Mohammadi E. Characteristics of competent clinical instructors: a review of the experiences of nursing students and instructors. *J Nurs Midwifery Sci.* 2015;2(2):11–22. Available from: https://brieflands.com/journals/jnms/articles/141296

18) Alonso RQ, Miana Ortega M, Chamorro Rebollo E, García Redondo E, García Isidoro S, Cieza García JA. Competency model for academic excellence in nursing educators. *Educ Med (Edición Médica).* 2023;24(2):45–61. Available from: https://www.elsevier.es/es-revista-educacion-medica-71-articulo-competency-model-for-academic-excellence-S1575181323000049

19) Mustafa AS, Shazly MM, Kalaaf DA. Clinical teaching competencies training program for nurse teachers and its effect on their self-esteem. *Front Educ.* 2025;10:1654066. Available from: https://www.frontiersin.org/articles/10.3389/feduc.2025.1654066/full

20) Jobst S, Lindwedel U, Marx H, Pazouki R, Ziegler S, König P, Feuchtinger J. Competencies and needs of nurse educators and clinical mentors for teaching in the digital age – a multi-institutional cross-sectional study. *BMC Nurs.* 2022;21:240. Available from: https://bmcnurs.biomedcentral.com/articles/10.1186/s12912-022-01018-6

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DOI: 10.5281/zenodo.18336440

21) Youssif ERAE s, Mahmoud AAF, Ahmed HAE. Assessment of core competencies and clinical performance level of academic nursing educators at Damanhour University. *Alexandria Sci Nurs J.* 2024;26(4):395–406. Available from: https://asalexu.journals.ekb.eg/article_392734.html

22) Al-Rawajfah OM, Al Shidhani A, Al Lawati I, Al Lamki L. Predictors of effective clinical teaching – nursing educators' perspective. *BMC Nurs.* 2022;21:55. Available from: https://bmcnurs.biomedcentral.com/articles/10.1186/s12912-022-00836-y

23) BMC Med Educ. Effectiveness of train-the-trainer programs on clinical teaching competencies: a systematic review. 2023. Available from: https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04998-4

24) Nexø MA, Kingod NR, Eshøj SH, Mølholm Kjærulff E, Nørgaard O, Helms Andersen T. The impact of train-the-trainer programs on the continued professional development of nurses: a systematic review. *BMC Med Educ*. 2024;24:30. doi:10.1186/s12909-023-04998-4. Available from: https://bmcnurs.biomedcentral.com/articles/10.1186/s12909-023-04998-4

25) Singh T, Gupta P, Singh D. *Principles of medical education*. New Delhi: Jaypee Brothers Medical Publishers; 2023.Available from https://www.jaypeebrothers.com/products/9789390281411

26) Wu X, Chi Y, Selvam UP, Devi MK, Wang W, Chan YS, et al. A clinical teaching blended learning program to enhance registered nurse preceptors' teaching competencies: pretest and posttest study. J Med Internet Res. 2020;22(4):e18604. doi:10.2196/18604. Available from: https://www.jmir.org/2020/4/e18604

27) Khalafi A, Fallah Z, Sharif-Nia H. The effect of spaced learning on the learning outcome and retention of nurse anesthesia students: a randomized-controlled study. *BMC Med Educ*. 2024;24:322. doi:10.1186/s12909-024-05290-9. Available from: https://bmcnurs.biomedcentral.com/articles/10.1186/s12909-024-05290-9

28) Hussien RM, Khalil T, Nashwan AJ, Al-Najjar H, Khedr MA. Compassionate care in nursing: the role of simulation-based compassionate care on nurse's caring behavior, self-efficacy and compassion competency. *Nurse Educ Pract*. 2025;87:104470. doi:10.1016/j.nepr.2025.104470.Available from https://www.sciencedirect.com/science/article/pii/S1471595325001048

29) Chair S, Wong F, Bryant Lukosius D, et al. Construct validity of advanced practice nurse core competence scale: an exploratory factor analysis. *BMC Nurs*. 2023; 22:57. doi:10.1186/s12912-023-01203-1.Available from https://bmcnurs.biomedcentral.com/articles/10.1186/s12912%E2%80%91023%E2%80%9101203%E2%80%911

30) Polit DF, Beck CT. *Nursing research: principles and methods*. 7th ed. Philadelphia: Lippincott Williams & Wilkins; 2006. Available from: https://www.ncbi.nlm.nih.gov/nlmcatalog/101487590