

Intervention program for clinical instructors about clinical teaching

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Abstract:

Background: Clinical teaching is the core of nursing education and essential component for development of professional nurses. Clinical instructors are the clinical faculty members that facilitate the learning and competence of small groups of nursing students in professional practice environments.

Aim of the study: to conduct an intervention program for clinical instructors about clinical teaching.

Subjects and Methods: Research design: A quasi-experimental intervention design. **Setting:** Faculty of Nursing-Fayoum University. **Subjects:** included 40 clinical instructors working at Faculty of Nursing-Fayoum University, who agreed to participate in the program and had one year experience to have experience regarding clinical teaching.

Tools of data collection: Three tools were used for data collection: Clinical teaching knowledge questionnaire sheet, Clinical teaching performance checklist, and effectiveness of clinical teaching self-behavior tool.

Results: clinical instructors had poor clinical teaching knowledge and unsatisfactory level of clinical teaching performance and self-behavior in preprogram. Post program there were increases to good clinical teaching knowledge and to the satisfactory level of clinical teaching performance and self-behavior.

Additionally, there was a positive correlation between clinical teaching knowledge, performance, and self-behavior of clinical instructors throughout the program phases.

Conclusion: there are significant differences in clinical instructors' knowledge, performance, and self-behavior before and after implementation of clinical teaching program. That means clinical instructors' knowledge increases from poor level in preprogram to good level immediately post and three months later after program intervention.

As well clinical instructors' performance and self-behavior increases from unsatisfactory level in preprogram to satisfactory level immediately post and three months later after program intervention.

Recommendation: set up an orientation and continuing education sessions for clinical instructors regarding requirements for effective preparation of clinical instructor's roles to develop their clinical teaching knowledge. Regular meetings between mentor and clinical instructors to give them feedback to improve their knowledge, performance, and self-behavior, focusing on their tasks and specific needs to put them on the right track

Key words: Intervention program, clinical instructors, clinical teaching

Introduction:

Clinical teaching in nursing is defined as the interpersonal process where a skilled practitioner helps a less skilled or experienced one to achieve nursing professional abilities appropriate to her role. It is a new concept to many professional practitioners which is used to describe a formal process of professional system and learning which enables clinical instructors to develop knowledge and competence, assume responsibility for their own practice and enhance consumer protection and safety of care in completed situation. Nursing education is the professional education for preparation of nurses to enable them to render professional nursing care to clients of all ages, in all phases' health and illness, in variety of settings, individuals enter nursing education for a variety of reasons, including but not limited to: shaping the

profession, being intellectually stimulated, and working in an autonomous role with an expected degree of flexibility⁽¹⁾

Clinical teaching may be given by any faculty member, i.e. clinical instructor or tutor, or ward staff and will concentrate on a particular patients needs as a person and how the doctors treatment orders can be met by the right understanding of nursing care. The concept of the teacher holds determines the expectations, the evaluation strategies, and the reward system associated with clinical practice. Clinical area really poses a great challenge to nursing instructor. Psychomotor skills enjoy a dominant position and professional competency of a nurse recognized mainly by the demonstration of clinical skills. Developing clinical skills demands more effort from the side of instructor and

students compared to teaching and learning theoretical knowledge⁽²⁾

A well-structured clinical teaching well helps students to: improve her/his ability to give nursing care, develop an understanding of human being in need for care and to improve the integration of theory and practice, understanding of health, illness and health care system, developing an awareness of own attitudes, values of the interrelated roles of healthcare team, developing clinical competence like reasoning, psychomotor and interpersonal and communication skills.⁽³⁾

Clinical practice is a learning method essential for: developing healthcare delivery skills, which allow students to: prepare of their roles and responsibilities they will hold in their profession, provides opportunities to integrate knowledge, skills, and attitudes through observation and practice of healthcare skills in a real setting and receive feedback on their performance⁽⁴⁾.

In planning and selecting clinical nursing practice to accomplish desired behavioral outcomes, these guidelines are considered as: providing essential learning experience for all students. Adding to this consideration of principles of learning in meeting students' needs and abilities, cooperative student-teacher planning and selection of clinical learning experience, flexibility in selecting available resources for clinical experience assignments, maximum utilization of clinical resources, selection of desirable time periods for clinical nursing experience and utilization of vicarious learning experiences⁽⁵⁾

Selection of teaching methods should appropriate for use in clinical setting, depending on the objectives to be accomplished. It must be in accord with principles of learning, capacity of students, availability of resources and teacher's ability to use it effectively and creatively. Creativity in the planning and guiding of student experiences involving patient-centered clinical nursing activities requires a clinical instructor who can provide an environment conducive to the student's ability to develop skills into

functioning ability in accord with the desired competencies of the program. The creative clinical nursing guide the students desired learning activities by integrating the function of; determining the specific expected levels of competencies in accord with objective of the according to their various learning needs and abilities, guide student given program, planning and selecting clinical learning experiences with students experiences in direct patient care, and observing student progress and performance in the integrated development of skills needed to provide patient –centered nursing care^(6,7)

Clinical instructor is aware that she is being constantly evaluated, in an informal or unsystematic manner, by students, colleagues, superior and the community at large, evaluation can bring about renewal of motivation, more effective classroom teaching, improved relationship with pupils and colleagues, more sharing of ideas and problem, and general improvement in the atmosphere, exists a strong feeling among clinical instructor that appraisal process offers them the opportunity to discuss and reflect, on a one-to-one basis their individual concerns⁽⁸⁾

Significance of the study:

Enrollment and graduations in baccalaureate and graduate programs in nursing degrees have increased every year since 2000 to try to meet the demands for more baccalaureate-prepared RNs. The increased enrollment has improved graduation rates only slightly because a higher number of admitted students are unable to be successful in the nursing program, they are lost due to failure or dismissal for poor academic performance, this study offering a clinical teaching program for clinical instructors which will enable them to become effective clinical instructor (resource person for students in clinical areas) to improve their knowledge and performance of clinical teaching skills which subsequently improve clinical skills of the graduated students.

Aim of the study:

The aim of the current study was to: Conduct an intervention program for clinical instructors about clinical teaching.

Study Hypothesis:

There will be significant difference in clinical instructors' knowledge, performance, and behavior before and after implementation of clinical teaching program.

Subjects and Methods:**Research design:**

A quasi-experimental intervention design was used to conduct the study.

Study setting:

The current study was conducted out at Faculty of Nursing-Fayoum University

Study subjects:

All available number of clinical instructors (n=40), who agreed to participate in the program and had one year experience to have experience regarding clinical teaching

Tools of data collection:

Three tools were used to collect data.

1. Knowledge questionnaire sheet: Which developed, constructed by the researcher based on reviewing related literature and included two parts: I) personnel data as department, position, age, years of experience in teaching field, level of education, and marital status. II) a structured knowledge questionnaire sheet contains 40 questions concerned with the assessment of the clinical instructor's knowledge about clinical teaching, in the form of multiple choice questions to choose one correct answer, which grouped under these subscales: Clinical teaching and learning (10 questions), clinical teaching strategies (9 questions), clinical teaching competence (4 questions), clinical instructors (7 questions), and evaluation (10 questions).

Scoring system:

Correct answer scored (1). Incorrect answer scored (zero). Total knowledge score was considered as (good >75% of total, average 60-75%, and poor < 60%).

2. Observational checklist:

Developed, constructed by the researcher based on literature review to observe clinical instructors during clinical performance in classrooms, in labs and in hospitals, it is composed of 71 items in which answers were given in the form of strongly disagree, disagree, neutral, agree, and strongly agree, includes these subscales: teaching competence (20 item), clinical skills (8 items), personality (12 item), collaboration (10 items), role model (13 item), and facilitator role (8 items).

Scoring system:

Responses of clinical instructors were measured on a five-point likert scale that range from 0 (minimum score) for "strongly disagree" to 4 (maximum score) for "strongly agree". Total performance scored as (satisfactory \geq 80%, unsatisfactory < 80%).

3. Effectiveness of clinical teaching self-behavior:

Developed, constructed by the researcher based on reviewing related literature, the tool was answered by participant themselves to have their opinion about their clinical teaching behavior, and consists of 54 items grouped under these subscales: teaching competence (20 item), personality (15 item), facilitator, (5 items), communication (7 items), and evaluation (7 items).

Scoring system:

Responses of clinical instructors were measured on a five-point likert scale that range from 0 (minimum score) for "strongly disagree" to 4 (maximum score) for "strongly agree". Total performance scored as (satisfactory \geq 80%, unsatisfactory < 80%).

Validity and reliability:

Validity was done for three tools by five expertise's, and necessary modifications were done. The reliability of the tool 2 and 3 was tested using the internal consistency method. It proved to be high with Cronbach's alpha reliability coefficients 0.758 and 0.867, respectively

Field work:

Approvals to conduct the study were taken from participants after explaining the aim of the study and obtaining their acceptance to participate in the study. Study sample (40 clinical instructors) were taken as one group in every session which was taken one time for all. The study was conducted through three main phases: 1) Preparatory phase; 2) Implementation phase; 3) and evaluation phase.

Total data collection was carried out during a period of eight months from October 2014 to May 2015. Two sessions/ week. Total duration of the program was 24 hours, divided into 12 sessions of theory and practice, two hours in every session, twice per week for 6 weeks.

1. Preparatory phase: It begins with reviewing the theoretical and empirical literature of the national and international resources concerning the topic of the study using textbooks, articles, magazines, research, and internet search. In order to get a clear picture of all aspects related to the study

2. Implementation Phase: The program designed for this study has been implemented through 12 sessions which are: (1) Concept of teaching and learning, (2) Learning theories, (3) Teaching methods used in nursing, (4) Clinical learning in nursing, (5) Clinical learning methods used in nursing, (6) Clinical Instructional materials, (7) Collaboration between education and service, (8) Educational objectives and instructional objectives, (9) Lesson plan in teaching, (10) Classroom communication, (11) Clinical teaching competences, (12) Evaluation of clinical practice in nursing. These sessions total of 24 hours, divided into 12 sessions of theory and practice, two hours in every session, twice per week for 6 weeks.

3. Evaluation phase: The evaluation phases were focused on estimating the impact of the program on clinical instructor's knowledge, performance, and behavior. The program evaluation was applied three times for clinical instructors, one before the program intervention and

second done immediately post program intervention and the third occurred three months later by using three tools mentioned before.

Pilot study:

The pilot study was carried out on four clinical instructors to test the clarity and applicability of the study tools as well as estimation of the time needed to fill the questionnaire. The necessary modifications in form of changing few words were done according to comments made by clinical instructors

Administrative and ethical considerations:

An official permission was granted from the dean of the pre mentioned settings. Each clinical instructor informed about the purpose of the study. Confidentiality was ensured throughout the study process, and clinical instructors were assured that all data was used only for research purpose. Each clinical instructor was informed that participation is voluntary and free to withdraw from the study at any time.

Statistical analysis:

Data were verified prior to computerized entry. The statistical package for social sciences (SPSS) version (14) was used for that purpose, followed by data analysis and tabulation. Descriptive statistics were applied e.g., mean, standard deviation, frequency and percentage. Test of significance were applied to test the study questions (i.e., Paired T-test Pearson's correlation coefficient was applied between quantitative variables, significant level values was considered when $p \leq 0.05$ and highly significant when $p \leq 0.001^{**}$.

Results:

The study included 40 clinical instructors. (72.5%) of them at the age group ≥ 20 to < 30 years with a Mean \pm SD of (22.00 ± 2.23) years, as for years of experience in teaching field (45.0%) ranged from ≥ 1 year to < 4 with a Mean \pm SD (4.420 ± 0.860) years. The majority (75.0%) of the clinical instructor's educational degree was bachelor degree in nursing (**Table 1**).

Table (2): The immediate post intervention total means scores (32.000) was significantly higher (Paired t test - 22.148 & P value < 0.001**) than pre intervention total scores (10.075), decreased to (27.800) in three months later. It is apparent that in the immediate post intervention mean score of each question measuring clinical teaching knowledge was significantly higher than the pre intervention mean scores. **Figure (1):** There was high statistical significance improvement in level of clinical instructors' clinical teaching knowledge in immediate post intervention and in three month later in relation to pre intervention, the figure shows that in preprogram the majority (77.5 %) were poor in their clinical teaching knowledge, while in immediate post intervention the majority (72.5%) were at good level, in relation to three month later; the most (62.5%) were at good level in clinical teaching knowledge.

Table (3): The immediate post intervention total mean scores was (264.775) significantly higher (Paired t test - 42.241 & P value < 0.001**) than pre intervention test total score (88.400) decreased to (256.925) in three months later. It is apparent that in the immediate post intervention and in three months later means score of each item measuring clinical teaching performance was significantly higher than the pre intervention mean score. **Figure (2):** There was high statistical significance improvement in clinical instructors' clinical teaching performance in immediate post intervention and in three months later in relation to preprogram intervention. The figure shows that in intervention (95%) were at unsatisfactory level in relation to clinical teaching performance, while in immediate post intervention (90%) were at satisfactory level, in three month later the figure reveals that (82.5%) become at satisfactory level in relation to clinical instructors' clinical teaching performance.

Table (4): The table shows that in immediate post intervention total mean scores was (207.100) significantly higher (Paired t test -64.554 & P value < 0.001**) than pre intervention test total score

(78.875), decreased to (197.575) in three months later. It is apparent that in the immediate post intervention and in three months later means score of each item measuring clinical instructors' clinical teaching behavior was significantly higher than the pre intervention mean score.

Figure (3): There was high statistical significance improvement in clinical teaching behavior in immediate post intervention and in three month later in relation to pre-intervention, the figure shows that in pre-intervention (87.5%) were at unsatisfactory level, while in immediate post intervention (95%) were at satisfactory level, and in three month later (92.5%) become at satisfactory level.

Table (5): Shows the correlation between clinical instructors' clinical teaching knowledge, performance and behavior in pre-immediate post intervention and three months later. This table displays that, there was statistically significant positive correlation between clinical instructors' clinical teaching knowledge, performance and behavior in pre intervention, immediate post intervention and three months later (P < 0.01).

Table (6): Shows the relationship between personal characteristics and clinical teaching knowledge, performance, and behavior of clinical instructors. It is clear from the table that there are no statistically significant relationship between personal characteristics and clinical teaching knowledge, performance, and behavior of clinical instructors.

Discussion:

Clinical teaching knowledge of clinical instructors: Findings of the study revealed that clinical teaching knowledge were poor in preprogram intervention. This may be due to that the highest percent of study sample were demonstrators and they were newly hired to academic career directly after graduation. As well as, they were still not registered in master degree where teaching methods and curricula are studied. In addition one quarter of study sample were assistant lectures and they were previously worked as head nurses in hospitals before recruitment in the faculty so their clinical teaching knowledge were

poor also in preprogram intervention. These results agreed with *Jane., et al*⁽⁹⁾, who founded that the problem of insufficient information affect negatively in clinical instructors roles. Accordingly, these results congruent with those of a study by *Abd-El Alim*⁽¹⁰⁾ who reported that, all the clinical instructors had poor level in clinical teaching knowledge test in the preprogram period.

After implementation of the program the result of the present study revealed that there were increasing in clinical teaching knowledge of clinical instructors to good level, there were highly statistically significant differences in total mean scores of all subscales of clinical teaching knowledge in immediate post intervention and three months later of clinical teaching program. This proved that the program had a positive impact on improving clinical teaching knowledge. This might be related to the desire of clinical instructors to promote their personal clinical teaching knowledge to be ready to any situation during their profession as faculty clinical instructors. This finding was in agreement with *Soliman*⁽¹¹⁾ who founded that there was an improvement for clinical instructors in total scores of clinical knowledge achievement in pretest, immediate, and two months later from the program implementation. Furthermore, in agreement with a study done by *Zahner., et al*⁽¹²⁾ who founded that there was an increase in clinical teaching knowledge of clinical instructors after program implementation, Clinical teaching knowledge scores increased significantly in pre- posttest. On the same line *Bourbonnais and Kerr*⁽¹³⁾ reported that knowledgeable clinical instructors provide nursing students with an opportunity to achieve competence in work practice.

However, the previous results were inconsistent with a study done by *Salah*⁽¹⁴⁾, who found that there wasn't a significant statistical difference in the pre-posttest of clinical instructor's clinical teaching knowledge.

Clinical teaching performance of clinical instructors: Findings of this study revealed that the clinical instructor's performance was unsatisfactory before

implementation of the program. This may be due to that the majority of clinical instructors did not practice nursing on real field after graduation, also after their recruitment in the faculty they concentrate on academic career which concentrate with large percent on theoretical part of course content, on consequently their clinical teaching performance become poor. Also, the previous finding in agreement with the study done by *Kamel*⁽¹⁵⁾ who founded that the majority of faculty clinical instructors have problems related to incompetency of clinical teaching performance skills. Otherwise, the previous results are consistent with those of a study carried out by *Kaphagawani*⁽¹⁶⁾, who revealed that skillful clinical teaching takes place when clinical instructors practicing of bedside nursing.

In this study the findings revealed that after implementation of the program there were highly statistically significant differences in all items of clinical learning behavior. This because of the effect of clinical training program on clinical instructors' behavior who was interested in acquiring knowledge and practices related to clinical teaching when engaged in the program. This finding was consistent with *Abrahamson*⁽¹⁷⁾, and *Klimkewicz and Patricia*⁽¹⁸⁾, who founded that there were significant changes in clinical teaching behavior of clinical instructors after implementation of the program. Similarly, these results are congruent with those of a study done *Etway et al.*⁽¹⁹⁾, who reported that the clinical instructor's behavior was highly positive after program implementation. However, these finding in disagreement with a study done by *Wiens*⁽²⁰⁾, stated that clinical instructors' perceptions about their behavior were unsatisfactory, results in lack of positive feedback and mentoring from academic faculty.

Correlation between clinical teaching knowledge, performance, and self-behavior of clinical instructors

Findings of the study indicated that there were statistically significant positive correlations between clinical teaching knowledge, performance and behavior in

pre intervention, immediate post intervention and three months later. It may be due to that the clinical teaching knowledge considers the basic attribute required to perform clinical teaching which leads to developing of clinical teaching performance with increase of clinical teaching behavior. As well when clinical teaching knowledge increases each of clinical teaching performance, and clinical teaching behavior also increases. These results were congruent with those of a study by *Morsi*⁽²¹⁾ and *Ahmed*⁽²²⁾ in King Saud University; the studies were about the relationship between behavior, performance, and knowledge of clinical teaching. They reported that clinical teaching knowledge is positively related to the performance and behavior in clinical teaching process. These findings also in accordance with the findings of a study by *Taipe*⁽²³⁾ who reported that there was strong relationship between teaching behavior and educational knowledge, and performance.

Relationship between personal characteristics and clinical teaching knowledge, performance, and self-behavior of clinical instructors

Regarding to relationship between personal characteristics and clinical teaching knowledge, performance, and self-behavior of clinical instructors, the results of this study revealed that there were no statistically significant relationships found between position, marital status and clinical teaching knowledge, performance, and self-behavior of clinical instructors. This may be due to that the position and marital status does not play effective role in development of clinical teaching knowledge, performance, and self-behavior of clinical instructors. Usually knowledge, performance, and self-behavior are growing by training and practice whatever the position where they work and whatever marital status of them. This finding was in agreement with a *Karkare., & Paul*⁽²⁴⁾, who founded that there was no statistical significant relation between position and marital status of clinical instructors and their knowledge,

performance, and behavior related to clinical teaching.

In relation to other personal characteristics of clinical instructors as: age, years of experience in teaching field, and degree of education, findings of the study showed that there were no statistically significant relationship were founded between age, years of experience in teaching field, degree of education and clinical teaching knowledge, performance, and self-behavior of clinical instructors. From personal characteristics results it is observed that the highest percent of clinical instructors at age group from twenty to less than thirty years, and about half of clinical instructors' years of experiences in teaching field ranged from one to less than four years, the highest percent had bachelor degree in nursing. That means they are still younger in age and their position and need more time to be proficient clinical instructors. These findings supported with a study by *Hallin., & Danielson*⁽²⁵⁾, and *Gray., & Smith*⁽²⁶⁾, who founded that a negatively association between the personality traits as age of younger faculty clinical instructors (who are seeking help and advice) with perceived teaching performance and knowledge.

Moreover, this agreed with those of a study conducted by *Walker*⁽²⁷⁾ and *Gaberson et al.*⁽²⁸⁾, who clarified that clinical teaching experience is the most important component of effective nursing clinical instructor. However, this result is not consistent with a study by *Hamilton*⁽²⁹⁾, who reported that teacher demographic variables were found significantly impact teachers' attitudes and practices; a strong relationship was found between clinical instructors' knowledge, performance and personality traits.

Conclusion:

In the light of the study findings, it can be concluded that: There are significant differences in clinical instructors' knowledge, performance, and behavior before and after implementation of clinical teaching program. That means clinical

instructors' knowledge increases from poor level in preprogram to good level immediately post and three months later after program intervention. As well clinical instructors' performance and behavior increases from unsatisfactory level in preprogram to satisfactory level immediately post and three months later after program intervention

Recommendations:

Based on the study results of the current study the following recommendation can be suggested that:

1- All new faculty clinical instructors are employed -only- after they have undertaken a mentorship/preceptor ship program to develop their clinical knowledge, performance, and behavior,

2-Overall empowerment and supporting must be increased for clinical instructors as; giving them partial power constitutes with their position, rewards, motivational support and participation in decision making, all these can make the clinical instructors to do her best in their position.

3- Regular meetings between mentor and clinical instructors to give them feedback to improve their knowledge, performance, and behavior, focusing on their tasks and specific needs to put them on the right track.4- Developing strategies for improving clinical teaching knowledge, performance and self-behavior of clinical instructors. As well as methods and tools for measuring their progress.

Table (1): Personal characteristics of clinical instructors (n=40).

Variables	No	%
Age in years		
- ≥ 20-	29	72.5
- ≥30-	11	27.5
Mean + SD		22.00 ± 2.23
Years of experience in teaching field		
-≥ 1 -	18	45.0
-4 -	17	42.5
-7 – 10	5	12.5
Mean ±SD		4.420 ± 0.860
Degree of education		
- Bachelor	30	75.0
- Master	10	25.0

Table (2): Total mean scores of clinical teaching knowledge, pre-immediate post intervention, and three months later (n=40).

Variables	Item No	Pre intervention	Immediate post intervention	T test (1)	P (1)	Three months later	T test (2)	P (2)
		Mean ± SD	Mean ± SD			Mean ± SD		
I-Clinical teaching and learning	10	.475 ± 1.811	.925 ± 1.288	-14.197	<0.001**	6.775 ± 1.22	-13.580	<0.001
II- Clinical teaching strategy	9	.850 ± 1.732	.325 ± 1.288	-18.148	<0.001**	.375 ± 1.513	-11.942	<0.001
III- Clinical learning competence	4	.150 ± 1.026	.200 ± 0.790	-11.951	<0.001**	.525 ± 0.905	-7.729	<0.001
IV-Clinical instructors	7	.050 ± 1.708	.775 ± 1.097	-11.285	<0.001**	.125 ± 1.304	-8.658	<0.001
V- Evaluation	10	.550 ± 2.099	.775 ± 1.476	-12.775	<0.001**	.000 ± 1.679	-8.618	<0.001
Total	40	0.075 ± 5.497	2.000 ± 3.366	-22.148	<0.001**	27.800 ± 3.337	-16.774	<0.001

Paired t-test (1): Difference between pre-intervention and immediate post intervention
 Paired t-test (2): Difference between pre-intervention and 3 months later
 P1: Probability of difference between pre-intervention and immediate post intervention.
 P2: Probability of difference between pre-intervention and 3 months later
 **Highly significant at P ≤ 0.001

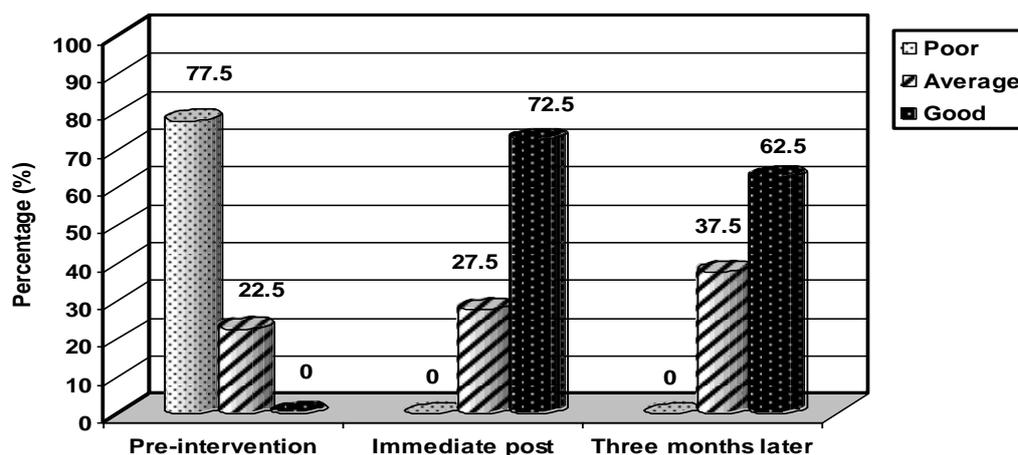


Figure (1): levels of clinical teaching knowledge, pre-immediate post intervention, and three months later.

Table (3): Total mean scores of clinical teaching performance, pre-immediate post intervention, and three months later (n=40).

Variables	Max score	Pre intervention	Immediate post intervention	T test (1)	P (1)	Three months later	T test (2)	P (2)
		Mean ± SD	Mean ± SD			Mean ± SD		
Teaching competence	80	36.150 ± 11.614	74.900 ± 5.812	-4.771	<0.001**	72.900 ± 5.541	- 4.671	<0.001**
II- Clinical skills	32	10.825 ± 3.120	28.250 ± 3.160	-34.771	<0.001**	25.150 ± 6.019	- 11.674	<0.001**
III- Personality	48	12.150 ± 5.380	46.750 ± 2.807	-20.641	<0.001**	46.750 ± 2.807	31.289	<0.001**
IV- Collaboration	40	12.525 ± 4.777	38.275 ± 2.230	- 31.289	<0.001**	36.325 ± 3.703	- 25.599	<0.001**
V- Role model	52	7.050 ± 4.132	46.250 ± 4.441	31.821	<0.001**	46.325 ± 3.576	33.899	<0.001**
VI- Facilitator role	32	9.700 ± 4.518	30.350 ± 2.130	31.163	<0.001**	29.475 ± 2.551	22.030	<0.001**
Total	284	88.400 ± 16.146	264.775 ± 12.158	-2.241	<0.001**	256.925 ± 6.093	-5.166	<0.001**

Paired t-test (1): Difference between pre-intervention and immediate post intervention

Paired t-test (2): Difference between pre-intervention and 3 months later

P1: Probability of difference between pre-intervention and immediate post intervention.

P2: Probability of difference between pre-intervention and 3 months later

**Highly significant at $P \leq 0.001$

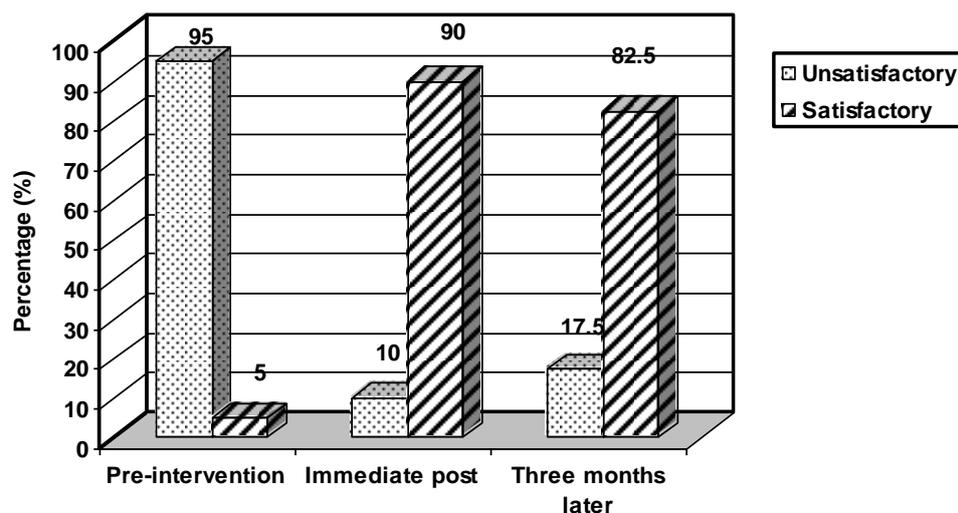


Figure (2): levels of clinical teaching performance, pre-immediate post intervention, and three months later.

Table (4): Total mean scores of clinical teaching self-behavior, pre-immediate post intervention, and three months later (n=40).

Variables	Max score	Pre intervention	Immediate post intervention	T test (1)	P (1)	Three months later	T test (2)	P (2)		
		Mean ± SD	Mean ± SD			Mean ± SD				
I-Teaching competence	80	27.250 ± 8.332	77.025 ± 3.277	-	36.895	<0.001**	73.200 ± 6.3010	-	29.717	<0.001**
II- Personality	60	18.200 ± 5.743	56.800 ± 3.314	-	32.975	<0.001**	55.384 ± 4.563	-	26.943	<0.001**
III-Facilitator	20	11.700 ± 4.368	26.900 ± 1.316	-	23.577	<0.001**	25.57 ± 2.649	-	11.693	<0.001**
IV- Communication	28	8.875 ± 3.014	18.525 ± 3.594	-	13.944	<0.001**	17.800 ± 3.596	-	24.499	<0.001**
V- Evaluation	28	12.850 ± 4.335	27.850 ± 1.426	-	21.958	<0.001**	27.000 ± 1.881	-	16.046	<0.001**
Total	216	78.875 ± 12.649	207.100 ± 7.063	-4.554	<0.001**	197.575 ± 12.971	-0.073	<0.001**		

Paired t-test (1): Difference between pre-intervention and immediate post intervention
 Paired t-test (2): Difference between pre-intervention and 3 months later
 P1: Probability of difference between pre-intervention and immediate post intervention.
 P2: Probability of difference between pre-intervention and 3 months later
 **Highly significant at P ≤ 0.001

Table (5): Correlation between clinical teaching knowledge, performance, and self-behavior, pre-immediate post intervention and three months later (n=40).

Variables	Pre-intervention				Immediate post intervention				Three months later			
	Performance		self-behavior		Performance		Behavior		Performance		Behavior	
	r	P value	r	P value	r	P value	r	P value	r	P value	r	P value
Pre intervention	0.06	0.711	0.169	0.298								
Immediate post intervention			0.227	0.159	0.315*	0.048						
Three months later							0.115	0.479	0.157	0.332		

** Correlation is significant at the 0.01 level (2-tailed).
 * Correlation is significant at the 0.05 level (2-tailed).

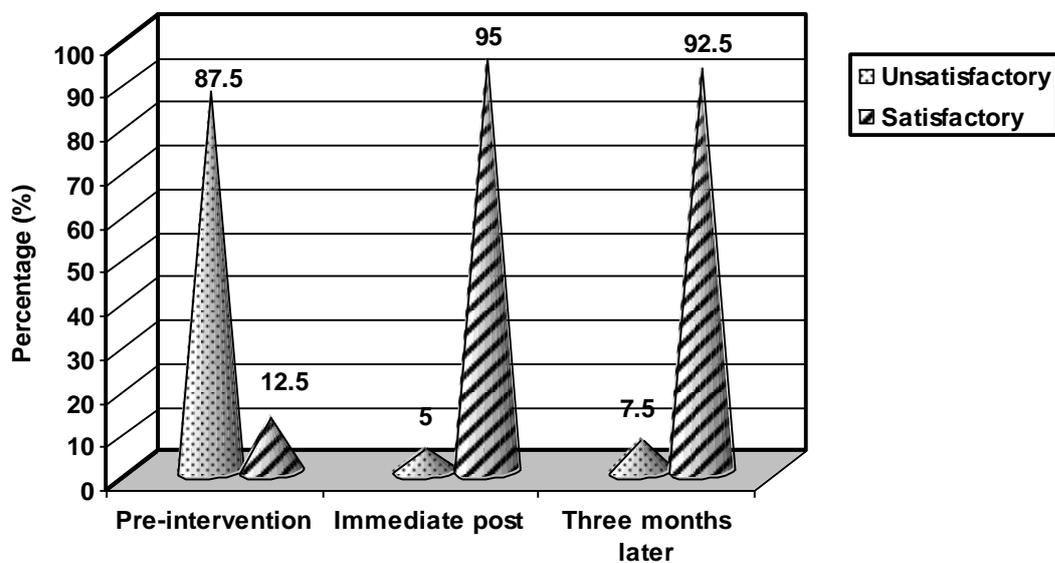


Figure (3): levels of clinical teaching behavior, pre-immediate post intervention, and three months later.

Table (6): Relationship between personal characteristics and clinical teaching knowledge, performance, and self-behavior, of clinical instructors (n=40).

Personal characteristics	Clinical teaching knowledge		Clinical teaching performance		Clinical teaching self-behavior							
	Immediate post intervention		Three months later		Immediate post intervention		Three months later					
	r	P value	r	P value	r	P value	r	P value				
Position	-0.037	>0.05	-0.28	>0.05	-0.03	>0.05	0.12	>0.05	0.10	>0.05	0.02	>0.05
Age in years	-0.13	>0.05	-0.09	>0.05	-	>0.05	-0.17	>0.05	0.01	>0.05	0.29	>0.05
Years of experience in teaching field	-0.04	>0.05	-0.29	>0.05	-	>0.05	0.05	>0.05	-	>0.05	0.10	>0.05
Degree of education	-0.03	>0.05	-0.28	>0.05	-	>0.05	0.12	>0.05	0.10	>0.05	0.02	>0.05
Marital status	-0.03	>0.05	-0.28	>0.05	-0.03	>0.05	0.12	>0.05	0.10	>0.05	0.02	>0.05

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

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