



Effect of Training Transfer Program on Development of Nursing Trainees' Professional Competencies

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ABSTRACT

Background: Effective training transfer experiences at healthcare organizations contribute to decent professional health care trainers who equip their trainees to exhibit professionalism in their daily clinical practice. **Aim:** Determine the effect of training transfer program on development of nursing trainees' professional competencies. **Setting:** The present study was implemented at Tanta International Teaching Hospital. **Participants:** A purposive sample (n= 330) was used. This sample was divided into two groups, group I; all qualified nursing trainers (n=30) and group II; nursing trainees (n=300) **Tools:** Three tools were used namely; Training Transfer Knowledge Questionnaire (TTKQ), Training Transfer Domains Questionnaire, and Professional Competencies Development Self-report **Results:** Preprogram 80.0% of trainers' knowledge level was at a poor level improved to (86.7%% and 70%) of their knowledge be at the good level immediately post-program and 3 months post-program respectively. A high percent (72%) of trainees pre-program had unsatisfactory practice level of professional competencies improved to 83 % of them have satisfactory practice level of professional competencies three months post-program. **Conclusion:** There were improvements in nursing trainers' knowledge and practice regarding effective training transfer domains after the implementation of the designed program than pre-program. Nursing trainees' professional competencies were developed after the implementation of the designed program compared to the pre-program. **Recommendations:** Conducting periodic educational training program and workshop about effective training transfer.

Keywords: Nursing trainees, Professional competencies, Training transfer program.

Introduction

Nurses are the biggest party in a hospital and are critical elements to its continuity. They must be highly-skilled, knowledgeable, and adaptable (Hoseini et al., 2018). With an increasing demand for quality of clinical service and safety of clinical procedures in hospitals, it has become a burden to them (Badiyepyma, Mosalanejad, Ghavi & Parandava, 2014). Thus, encouraging nurses to update their knowledge and maintain clinical competency becomes compulsory. Without a program of active learning, the nurses cannot remain competent after graduation, which increases the pressure on them to engage in continuous training (Ma1 et al., 2018).

Training is an imperative in any healthcare organization. It is used as a way to standardize practice, meet patient safety requirements, induct new nursing staff, embed new ways of working, and improve nursing practice that is expected to be applied in the workplace (Pool, Poell, Berings & Cate, 2016; and Gawlik & Allen, 2019). Nursing trainers educate technical and patient care staff in the use of new equipment, supplies, and instruments; coordinate in-service training and workshops for appropriate trainees. Trainers assist their trainees with educational needs, problem resolution, and health management across the continuum of care. (Olenick, Blume & Ford, 2020).

Successful training results in professionals' enhanced knowledge and skills, staff satisfaction and retention, reduced patients' mortality, and

improved quality of care (Stylianou & Zembylas, 2021). Training transfer is one of the important elements in the training effectiveness criteria which have a positive impact on job-related performance improvement and, consequently on organizational outcomes (Psoni, 2020; and Olenick, Blume & Ford, 2020).

Training transfer is defined as the extent to which knowledge, skills and attitudes learned in work-related training are applied on the job and subsequent maintenance of them over a certain period of time (Ma1 et al., 2018). Transfer of training is a process that occurs after the training is completed and takes place at the staff workplace (Mlambo, Silén & McGrath, 2021). A successful transfer is a desired, observable behavioral change of learners in an application context due to learning processes in a learning context, considering subjectively both internal and external factors in particular: social and organizational transfer conditions (Nafukho, Alfred, Chakraborty, Johnson & Cherrstrom, 2017).

To facilitate positive training transfer, it is imperative to identify the factors that influence it, which fall into three broad categories trainee, training design, and work environmental factors (Moon, Ryu & Jeon, 2019). Trainee factors are dominant characteristics that exert a direct or indirect effect through learning on training performance as the trainee's cognitive ability, motivation for participating in training, self-efficacy (belief inability to perform certain

tasks), perceptions of training utility, and organizational commitment (Zala-Mezö, Raeder & Strauss, 2019). Training design factors refer to the trainer's plan or blueprint for the learning intervention, or the activities occurring during training delivery and measured by training relevance and efficiency (Goudreau et al., 2015).

Work environmental factors include climate factors as supervisory or peer support as well as constraints and opportunities to perform learned behavior on the job and work autonomy (Nafukho et al., 2017). Successful training requires dialogue between those trainers, managers/organizations, and trainees, about the structures necessary to ensure training transfer is maximized. The responsibility for training transfer is shared, and outlining the roles and expectations of each partner in the transfer process will help ensure that transfer occurs (Zumrah, 2015).

Effective training transfer facilitates the improvement of human capital, which means the promotion of nurses' competency in the nursing profession (Ma1 et al., 2018). Nursing competency has been raised as a quality of care issue and ensuring competency in nurses' capabilities and actual performance is a moral and legal commitment to care recipients (Keykha, Mazlum, Varasteh & Arbabisarjou, 2016).

Nursing competency is defined as the combination of skills, knowledge, attitudes, values, and abilities that underpin effective

and/or superior performance in a profession/occupational area and context of practice (Draper & Clark, 2016). It is also, viewed as an integrated performance reflecting the professional nurse's feelings, thoughts, and clinical judgment by which the nurses are able to safely care for patients through evidence-based practices (Bates & Yaghi, 2020).

Nursing competency is an all-inclusive and assimilated concept, which is assembled from composite proportions that are used for registered nurses (RNs) to appraise their competency and advance their career ladder (Fukada, 2018). Firstly, functional competency involves following performance standards, managing nursing care, ensure the protection and quality of nursing. Secondly, personal competency is accepting, self-control, critical thinking, and problem-solving ability (Nilsson et al., 2018). Thirdly, people and team competency were defined as the ability to join forces with other healthcare professionals, develop intrapersonal interactions, educate and teach (Tsangl et al., 2017).

Lastly, organizational proficiency competency as described as pioneering in reviewing the work progressions to improve efficiency and effectiveness (Fukada, 2018). For acquiring nursing competency, nurses must retain these attributes, have the stimulus and capacity to utilize them, and must effectively expenditure them to provide harmless, operative, and professional nursing care to his/her patient

(Ahmadi, Yazdani & Mohammad-Pour, 2017). Training transfer expedites nurses to provide an opportunity and broad configuration for professional competency (Chelliah, Bujang, Lew & Adriel, 2016).

Significance of the study

Within the ever-changing befalls in the healthcare system, nursing staff must bring up-to-date their knowledge and sustain their professional competencies (Osman, Ibrahim & Diab, 2019). So, a training transfer program is crucial for the investment return which was aimed to have higher productivity and quality of care for any hospital (Garavan et al., 2019). With continued and updated presenting of effective programs for active training in health care organizations, nurses can hope to remain competent for more than a few years after their graduation which reflects on the developing nursing professionalism in their practice areas (Fang & Yangjing, 2018). Many hospitals may be suffering from losses due to failure to implement training transfer adequately (Fukada, 2018).

Aim of study

This study aimed to determine the effect of training transfer program on development of nursing trainees' professional competencies.

Operational Definition:

- **Nursing trainers:** Qualified nurses who have at least Master of Science in Nursing (MSN), responsible for presenting training program to nurses (trainees), implement continuing

educational and training unit plan at Tanta International Teaching Hospital.

- **Nursing trainees:** Nurses of any educational level with a minimum of one year of experience who have completed the same training program from the same nursing trainers during the same timetable period.

Research objectives

1. Assess nursing trainers' knowledge and practice regarding effective training transfer domains.
2. Detect nursing trainees' level regarding professional competencies.
3. Detect the effect of training transfer program on the development of trainees' professional competencies.

Research hypothesis

- Nursing Trainers knowledge and practices about effective training transfer domains are expected to be improved after implementation of the designed program.
- Nursing trainees' professional competencies expected to be improved after implementation of the program.

Method

Study design

Quasi-experimental research design was applied to achieve the aim of the current study.

Setting

The present study was conducted at Tanta International Teaching Hospital, which is affiliated to Ministry of Higher Education and Scientific Research; including the departments of Neurology, Orthopedic, Cardiology, Medical,

Surgical, and Pediatric, as well as Intensive Care Units.

Participants

A purposive sample (n= 330) was used. The total study sample was calculated using the Epi. Info. Microsoft to ensure obtaining an adequate and representative size, where N= population size (1370), Z= confidence level at 95%, d= margin of error proportion (0.05). A total number of sample will be 300 out of 1370 nurses who enrolled during data collection time.

This sample was divided into two groups; **group I** included all available qualified nursing trainers (n=30) with at least a master degree who planned to give 'COVID-19 Safety Measures' training program at the first of March 2021 until the first of April 2021 to **group II** included nursing trainees (n=300) with a minimum of one year of experiences who were planned to attend the same training program at the same timetable period from the same nursing trainers. While the current study training transfer program was given to this sample before starting 'COVID-19 Safety Measures' training program from (the first of February/2021 to 23/2/2021).

Nursing trainers and trainees (n= 330) share in the inclusion criteria that those nurses actually either trained or attended at least two previous training programs to maximum of three previous training programs at Tanta International Teaching Hospital in the last year 2020. The exclusion criteria include nurses under the age of 22, with less than one year of experience, and who have never attended a training program before.

Tools

The data of the study was collected by using three tools:

Tool I: Training Transfer Knowledge Questionnaire (TTKQ).

This tool created by the researchers guided by Babkina,(2014) and Chelliah et al., (2016) to assess the nursing trainers' knowledge pre-program, post-program, and after three months post-training program about the concept of training transfer, types of training transfer, benefits of training transfer, factors influencing training transfer, phases of training need analysis, training transfer design, evaluation on transfer/ training results, methods for transfer improvement, training program characteristics, and a conceptual framework for operationalizing transfer climate. It translated into Arabic and included 2 parts as follows:

Part (1): Personal data included name of department, age, gender, marital status, residence, and level of education.

Part (2): Nursing trainers' knowledge questionnaire about effective training transfer program, it consisted of (30) questions in the form of true and false (20 items) and multiple choice (10 items).

Scoring system

Total score of participants answers were scored by (30 marks) which was allotted a score of (1) for true answer and (0) for false answer. The total scores of nursing trainers' knowledge were summing up and classifying into levels according to cut off point as good knowledge level $> 80\% = (25 -30$ marks), fair knowledge level $\leq 80\% - \leq 60\% = (18- 24$ marks), and poor knowledge level $< 60\% = (0-17$ marks).

Tool II: Training Transfer Domains Questionnaire

This tool was designed by Myers, (2009) to assess the nursing trainers' levels for effective training transfer domains and compare their levels pre-program and after three months post program. It was classified into three main domains with 71 items named (learners' characteristics, learning design, and work environment).

- (1) **Trainees' characteristics domain** included three subscales with 20 items: Ability (8 items), Personality (7 items), and Motivation (5 items).
- (2) **Training design domain** contained three subscales with 24 items: Learning content (5 items), Sequencing (9 items), and Principle of learning (10 items).
- (3) **Work environment domain** included three subscales with 27 items: Supervisor support (9 items), Peer support (8 items), and Opportunity to use (10 items) respectively.

Scoring system

The participants' responses were assessed on a three points Likert Scale 3= agree, 2= neutral, and 1= disagree. It was obtained as high training transfer level $\geq 67\%$, moderate training transfer level $46\% - <67\%$, low training transfer level $<46\%$ (Myers, 2009)

Tool III: Professional Competencies Development Self-report

This tool was designed by Tsang et al., (2017) to assess the effect of training transfer program on development of nursing trainees' professional competencies levels from trainees perspectives and compare their levels pre-program and after three months post-program. It was classified into four dimensions subscales with 23 items named; functional competency (11 items), personal competency (4

items), people and team competency (5 items), and organizational effectiveness (3 items).

Scoring system

Nursing trainees' response were ranged from (minimum 23 to maximum 46 scores) which assessed on a two points Likert Scale 1= little done and 2= always done. The total scores of nursing trainers' knowledge were summing up and classifying into levels according to cut off point as satisfactory professional competencies level ($\geq 80\%$) = (≥ 38 scores) and unsatisfactory professional competencies level ($< 80\%$) = (< 37 scores).

Ethical consideration:

- Official permission from the Hospital Manager and Nursing Administrator of Tanta International Teaching Hospital to conduct the current study program was obtained and the purpose of the study was clearly explained to nursing trainers and trainees to gain their cooperation.

- Written nursing trainers' and trainees' consent for participation in the study was obtained after an explanation of the nature and purpose of the study, confidentiality of the information was kept, and the right to withdraw.

Reliability analysis:

Reliability analysis of the three tools was tested using Cronbach's Alpha, and coefficient test and take a mean average of scores. Its value for three tools (I, II, and III,) were ($\alpha=0.891$, $\alpha=0.935$, and $\alpha=0.855$) respectively.

- A pilot study was conducted on 10% of nursing staff ($n=33$) randomly selected to test the tools for clarity, applicability, and relevance of the questions excluded from the study sample, then needed corrections was done.

Data collection techniques

1) - Preparing phase of the program

Construction of educational program

-The preparing phase of the program lasted one month (November, 2020) before beginning the actual program.

-The first step was to set the statement of the instructional goal of the program to improve nursing trainers' knowledge and practice regarding training transfer program and evaluate its effect on their nursing trainees' professional competencies development. That goal was derived from assessing the needs of the participants' sample at Tanta International Teaching Hospital.

-The second step was to list the names of participants and plan the timetable of the program.

The third step was selected of teaching methods by studying the subjects themselves and the content of the program. The teaching methods used were: lectures, group discussions, and role play of real life and work situations. Also, the teaching aids used for the attainment of program objectives were data shows, videos, flow sheets, pens, and papers.

Program content

The content was designed to provide knowledge and practice related to the training transfer program and its' effect on nurses' professional competencies development. The program includes 3 sessions as follows:-

1. The difference between learning and training programs and factors influencing training transfer programs.
2. The professional nursing competencies.

3. Methods and techniques for effective training transfer programs and methods for improvement.

2) -Implementing phase of the program

-The researchers applied the program to all nursing trainers' (30) which was divided into three groups, each group (10 trainer's nurses). The total program time was 4:30 hours for each group. Every session took one hour/week continued for three weeks (group 1 on Sunday, group 2 on Tuesday, and group 3 on Thursday for each week) and the program was conducted in the conference room of Tanta International Teaching hospital, Hall 3, level 4. The current study training transfer program was given before starting the actual hospital 'COVID19 Safety Measures' training program from (the first of February /2021 to 23/2/2021).

-They preferred to start session at 10:30 am – 11:30 am pm of morning shift as it was the most suitable time for them after finishing first necessary work. They were informed about objectives of program. The researchers built a good relationship with them and motivated to participate during the program.

-The researchers collected data of tool I from nursing trainers by creating a special online Google Form link and sending this online link to each group. While, the data was collected from participant trainees in different units during work hours through giving them questionnaire sheet to fill in by using tool II. The researchers told them that all information gathered will be used only for research purpose, and the results of the study will be published in

aggregates. The estimated time to complete all questionnaires was 10 minutes.

-Knowledge questionnaire tool (I) was used before, immediately after, and after three months of program implementation for nursing trainers. Also, assessment tool II was used before and after 3 months of the program implementation for nursing trainers.

- While, professional competencies development self-report tool (III) of nursing trainees were collected pre-program and after three months post-program.

The researchers collected data pre-program, presented the program, recollected data, and gave direction of the program took the duration of ten months (start from December month at 2020 until end of September month 2021).

3)- Evaluation phase of the program

The study program evaluated by:

- a) Pre -implementation of the program, a pre-test was done for nursing trainers using tool I and tool II to assess their level of knowledge and practice for applying effective transfer of training techniques. Also, a pre-test was done for nursing trainees using tool III to assess their professional competencies development level before applying effective training transfer program.
- b) Tool I only was done immediately implementation of the program and after three months of implementation of the program. While, after three months of implementation of the program, Tool II was done for nursing trainers and tool III for nursing trainees using.

Statistical analysis:

The collected data were tabulated, coded, and statistically analyzed using the mean, standard deviation standard error, unpaired student t-test and the linear correlation coefficient, Analysis of variance [ANOVA] tests Paired t-test, and chi-square, and Cronbachs Alpha test by SPSS V20 (Statistical Package for Social Studies). The level of significance was adopted at $p < 0.005$ (Kirkpatrick & Feeney, 2013).

Results

Table (1): Shows personal data of the two studied nursing groups. As observed in the table, more than half (53.3%) of nurses trainers work in intensive care units while 60% of nurses trainees work in ICUs. Less than half (46.7%) of nursing trainers' age range from 30-<35 and 42.3% of nursing trainees' age range from 35-45. The majority of trainees (89.7% and 85.7%) are female and married respectively. According to residence, 70% and 79% of nurses trainers and trainees are from rural area respectively. Also, 62.3% of nurses' trainees have a technical institutional degree and but half of nurses trainers (50%) have a master degree.

Figure (1): Illustrates nursing trainers' total knowledge levels for effective training transfer practices pre, immediate, and 3 months post-program. Preprogram 80.0% of trainers' level of total knowledge about effective training transfer domains sessions is at a poor level. While (86.7%% and 70%) of their knowledge improve to be at the good level immediately post-program and 3 months post-program respectively.

Table (2): Illustrates relations between nursing trainers' total knowledge levels for effective training transfer practices pre, immediate, and 3 months post-program. There is statistically significant improvement of nursing

trainers' level of knowledge in all training transfer three sessions at ($p < 0.001$) immediate, and 3 months post-program compare to pre-program. Nursing trainers (80%, 73.3%, and 70%) have poor knowledge pre-program regarding difference between learning and training and factors influencing training transfer, the professional nursing competencies, and methods and techniques for effective training transfer session respectively, in contrast, (66.7%, 73.3%, and 70%) of them have good knowledge level after 3 months post-program.

Table (3): Shows nursing trainers' practice levels about effective training transfer domains pre and three months post-program. There is a statistically significant improvement of nursing trainers' practice level for overall training transfer domains at ($p \leq 0.05$). Nursing trainers 66.7% have low practice levels for training transfer domains preprogram, which decrease to 3.3% after three months post program. Nursing trainers' 70.0% have low practice level for trainees' characteristics preprogram, improve to none of them have low practice level after 3 months post-program. Nursing trainers 60.0% show low practice level for training design domain preprogram, decrease to be 6.7% after 3 months post-program. A high percent (73.3%) nursing trainers show low practice level of work environment domain improve to none of them had low practice level after three months post-program.

Table (4): Shows nursing trainees practice levels for professional competencies pre and three months post-program. There is statistically significant improvement of nursing trainees' practice levels in overall professional competencies subscales at ($p \leq 0.05$) three months post-program than pre-program. A high percent

(72%) of trainees pre-program have unsatisfactory practice level of professional competencies improve to 83 % of them have satisfactory practice level of professional competencies three months post-program.

Table (5): Illustrates a correlation between nursing trainers' overall knowledge and practice about effective training transfer domains pre and three months post-program. It observes that there is a positive significant correlation between overall knowledge and practice of nursing trainers after three months post-program at ($p \leq 0.05$). In contrast, there is no significant correlation between overall knowledge and practice pre-program.

Table (6): Shows a correlation between nursing trainees' overall professional competencies and nursing trainers' overall practice regarding training transfer pre and three months post-program. As evident in the table, there is a positive significant correlation between nursing trainers' overall practice regarding training transfer and overall nursing trainees' professional competencies three months post-program, in contrast pre-program there is no correlation between them.

Table (1): Personal data of the two studied nursing groups

Personal data	G I		GII	
	Nursing trainers (n =30)		Nursing trainees (n =300)	
	No.	%	No.	%
Department				
Wards	8	26.7	120	40.0
Intensive care units(ICUs)	16	53.3	180	60.0
Continuing education and training unit at hospital	6	20.0	-	-
Age (years)				
<30	0	0.0	33	11.0
30-<35	14	46.7	123	41.0
35-45	7	23.3	127	42.3
≥45	9	30.0	17	5.7
Gender				
Male	0	0.0	31	10.3
Female	30	100.0	269	89.7
Marital status				
Single	2	6.7	19	6.3
Married	28	93.3	257	85.7
Widow	0	0.0	24	8.0
Residence				
Rural	21	70.0	237	79.0
Urban	9	30.00	63	21.0
Level of education				
Nursing diploma	-	-	16	5.3
Technical institutional	-	-	187	62.3
Bachelor	-	-	91	30.3
Master	25	50.0	6	2.0
Doctoral	5	6.7	-	-

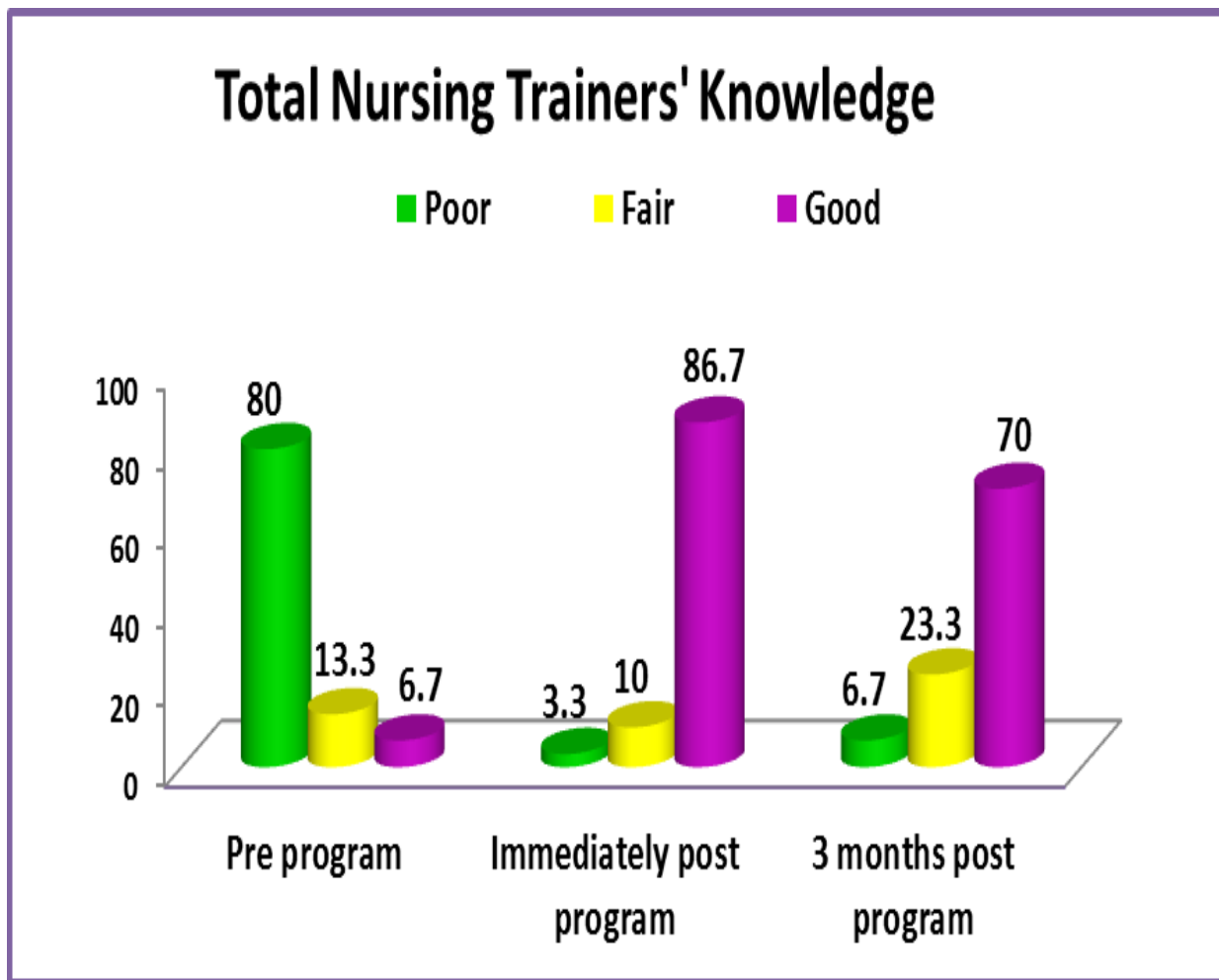


Figure (1): Nursing trainers' total knowledge levels for effective training transfer domains pre, immediate, and three months post program

Table (2): Relations between nursing trainers' total knowledge levels for effective training transfer domains pre, immediate, and three months post program

Knowledge Sessions	GI (Nursing trainers' knowledge levels (n =30))																		Fr	p
	Pre-program						Immediately post-program						3 months post-program							
	Poor		Fair		Good		Poor		Fair		Good		Poor		Fair		Good			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
-Difference between learning and training and factors influencing training transfer	24	80.0	3	10.0	3	10.0	2	6.7	2	6.7	26	86.7	3	10.0	7	23.3	20	66.7	36.067*	<0.001*
-The professional nursing competencies	22	73.3	5	16.7	3	10.0	1	3.3	4	13.3	25	83.3	2	6.7	6	20.0	22	73.3	34.404*	<0.001*
-Methods and techniques for effective training transfer	21	70.0	5	16.7	4	13.3	2	6.7	6	20.0	22	73.3	1	3.3	8	26.7	21	70.0	36.325*	<0.001*
Total	24	80.0	4	13.3	2	6.7	1	3.3	3	10.0	26	86.7	2	6.7	7	23.3	21	70	38.854*	<0.001*

*: Statistically significant at $p \leq 0.05$

Table (3): Nursing trainers' practice levels about effective training transfer domains pre and three months post program

Total training transfer practice domains	GI (Nursing trainers(n =30))														MH	p
	Pre program							Post 3 months								
	Low		Moderate		High		% score Mean ± SD.	Low		Moderate		High		% score Mean ± SD.		
	No.	%	No.	%	No.	%		No.	%	No.	%	No.	%			
Trainees' characteristics	21	70.0	7	23.3	2	6.7	67.46±16.98	0	0.0	19	63.3	11	36.7	80.71±9.54	25.000*	0.001*
Ability	19	63.3	6	20.0	5	16.7	71.67±16.25	2	6.7	14	46.7	14	46.7	82.71±11.48	2.982*	0.003*
Personality	20	66.7	7	23.3	3	10.0	66.67±22.79	0	0.0	21	70.0	9	30.0	80.71±9.27	2.837*	0.005*
Motivation	13	43.3	10	33.3	7	23.3	61.83±24.19	2	6.7	18	60.0	10	33.3	77.50±13.69	2.400*	0.016*
Training design	18	60.0	9	30.0	3	10.0	63.78±23.86	2	6.7	23	76.7	5	16.7	77.57±11.76	14.500*	0.029*
Learning content	14	46.7	9	30.0	7	23.3	65.50±22.91	2	6.7	18	60.0	10	33.3	77.67±10.96	2.236*	0.025*
Sequencing	15	50.0	8	26.7	7	23.3	64.91±24.68	1	3.3	18	60.0	11	36.7	78.98±13.97	2.400*	0.016*
Principle of learning	18	60.0	9	30.0	3	10.0	61.92±24.93	2	6.7	23	76.7	5	16.7	76.25±11.98	2.183*	0.029*
Work environment	22	73.3	7	23.3	1	3.3	66.88±18.42	0	0.0	23	76.7	7	23.3	79.97±8.79	19.500*	0.003*
Supervisor support	19	63.3	7	23.3	4	13.3	66.57±19.43	0	0.0	23	76.7	7	23.3	79.35±8.92	2.357*	0.018*
Peer support	22	73.3	3	10.0	5	16.7	70.94±16.86	1	3.3	18	60.0	11	36.7	82.29±11.29	2.828*	0.005*
Opportunity to use	18	60.0	8	26.7	4	13.3	63.92±23.12	1	3.3	22	73.3	7	23.3	78.67±10.12	2.357*	0.018*
Total	20	66.7	9	30.0	1	3.3	66.0 ± 19.45	1	3.3	23	76.7	6	20.0	79.37±9.47	2.837*	0.005*

*: Statistically significant at $p \leq 0.05$

Table (4): Nursing trainees ' practice levels for professional competencies pre and three months post program

Professional competencies subscales	G II (professional competencies levels Nurses trainees (n =300))										McN	P
	Pre program					Post 3 months						
	Unsatisfactory level		Satisfactory level		% score Mean ± SD.	Unsatisfactory level		Satisfactory level		% score Mean ± SD.		
	No.	%	No.	%		No.	%	No.	%			
Functional competency	146	48.7	154	51.3	29.85±33.55	61	20.3	239	79.7	90.39±21.42	147.688*	<0.001*
Personal competency	238	79.3	62	20.7	25.67±40.79	44	14.7	256	85.3	88.83±24.29	170.867*	<0.001*
People and team competency	241	80.3	59	19.7	25.67±40.91	46	15.3	254	84.7	89.27±24.17	173.438*	<0.001*
Organizational effectiveness	239	79.7	61	20.3	23.67±39.87	52	17.3	248	82.7	86.44±30.87	162.423*	<0.001*
Total	216	72.0	84	28.0	26.39±38.67	51	17.0	249	83.0	89.36±23.40	164.391*	<0.001*

*: Statistically significant at $p \leq 0.05$

Table (5): Correlation between nursing trainers' overall knowledge and practice about effective training transfer domains pre, and three months post program

Correlation items	GI overall knowledge		
		Pre program	Post 3 months
G I overall training transfer practice	r	0.205	0.276
	p	0.409*	0.025*

*: Statistically significant at $p \leq 0.05$

Table (6): Correlation between nursing trainees' overall professional competencies and nursing trainers' overall practice regarding training transfer pre and three months post program

Correlation items	G II nursing trainees' overall professional competencies		
		Pre program	Post 3 months
GI nursing trainers overall practice regarding training transfer	r	0.132	0.487
	p	0.457*	0.011*

*: Statistically significant at $p \leq 0.05$

Discussion

The complexity of nurses' roles entails a greater sense of charge and accurateness, and any deficit or lack of competency distresses the quality and quantity of care. Strict learning interventions and training speculation will be rewarded off by the bonuses in terms of the magnitude of staff competencies and short of training transfer - the training can be discarded of both time and coinage. There is a growing gratitude that training is not translated into staff capabilities and the 'transfer problem' exists in organization training (Mal et al., 2018). So, this study aimed to determine the effect of training transfer program on the development of nursing trainees' professional competencies at Tanta International Teaching Hospital.

Regarding nursing trainers' knowledge, the current study results revealed that a high percent of them had poor knowledge about training transfer concepts and methods pre-program compared with immediately post-program and after three months post-program they had good ones. These findings may be due to the fact that the most of the trainers didn't differentiate between learning, training, and training transfer process correctly. Also, they were confused about factors influencing training transfer programs and didn't completely aware of the methods and techniques for effective training transfer pre-program. While, immediately post-program they had the ability to memorize methods for t-transfer improvement and its characteristics, types of training transfer, and benefits of training transfer.

Plus, they became able to set a conceptual framework for operationalizing training transfer design and in evaluation themselves after the training program, even after three months post-program. The study results confirm and implicit that there was a significant positive correlation between overall

training transfer knowledge and training transfer practice levels for nursing trainers after three months post-program compared to pre-program.

Franklin & Melville (2013) supported the present study and revealed that in health care settings had high percent of nurses' use only a small amount of what is learned in training programs in their workplace. And these means that trainers had defected from ineffective training transfer knowledge and practices; and needed for inter-professional training transfer knowledge as a means to accomplish the development of nursing, patients, and population outcomes. Additionally, David (2017) showed that knowledge, skills, and attitudes gained through training are not fully used on the job and most of the findings showed a lack the applicability aspect. Also, Botma & MacKenzie (2016) found that nurses had lack desire to use knowledge and skills mastered in the training program in their clinical practice because professional nurses are required to up-dated knowledge for providing nursing care in safe, ethical, and legal nursing practice in rapidly changing environments by maintaining professional competencies.

If the letdown of training transfers effective through utilizing proper implementation techniques with the newly acquired knowledge and learning at hospitals occurs; it may be helpful in staying nursing trainers in the pre-training level which will reflect on their nursing practice in the future. The current study found that more than half of nursing trainers had low practice levels for effective training transfer preprogram compared with a high percent of them after three months post-program had moderate practice levels.

These findings may be because those nursing trainers were inadequately furnished with training transfer knowledge and methods necessary for fitting

training transfer practice preprogram. Moreover, most trainers at Tanta International teaching hospital concentrated on attending and giving teaching and learning programs that address their specific clinical practice needs for building upon their existing knowledge and expertise rather than concentrating on the principles, factors, and methods for effective training transfer program. In addition, a trivial amount of what trainers learned for their trainees in the training program wasn't applied to the real job ideally or completely.

But after three months post-program, the perception of trainers changed for realizing the importance of proper training transfer methods and principles especially trainers' awareness improved toward their trainee's personal characteristics such as keeping a good sense of friendly humor between them, respond appropriately to any questions during the transfer of training, and motivating them to overcome any obstacles on the job that hinder their use of new skills or knowledge at work setting.

Furthermore, after three months post-program, nursing trainers were able to set content that fit Tanta international hospital culture and policy, focus on an area of their job that helps them provide higher quality nursing care, and their performance changed to be satisfactory during the training transfer process compared to pre-program. All these factors create a positive work environment and climate for the trainers and let the chance and interest to them for trying out accepted new knowledge and skills straightaway.

A qualitative study conducted by Choi & Roulston (2015) highlighted some constructs related to trainees' characteristics influencing training transfer effectiveness and considered them as a crucial factor in t-transfer and trainers' success. Also, Ravanipour &

Bahreini, (2015) stated that trainers who allow active participation in the training process as the fit principle of learning process attainment which allows trainees to learn from and with their peers resulting in developing competencies faster compared to learning and performing alone, namely through peer learning. In another qualitative study performed by Baldwin, Ford & Blume, (2017) highlighted the importance of trainees' roles in training transfer. Whether trainees look for opportunities to apply what they learned or/and acquired through their good trainers' ones in the workplace.

Effective training transfer program arose from good professional trainers' individualities, training design, and work environment were the most important factors in getting trainees nurses' professional competencies. The current results assumed that there was a positive significant correlation between overall nursing trainers training transfer practice and nursing trainees nurses professional competencies after three months post-program than pre-program. Conversely, Saks & Burke-Smalley (2014) did not support the present finding and showed that organizations reporting a higher rate of transfer of training practice level all the times.

In the same line Nafukho et al., (2017) revealed that trainers who apply efficiency relevance training enabled their participants to acquire knowledge and skills for application in the workplace and had a significantly positive influence and relation in the transfer of learning. Zumrah,(2015) found that training has long been held as the cornerstone of organizational development, so the transfer of training was positively and significantly related to employees' competencies and performance. Furthermore, the study of Thabet, Ghanem, Ahmed & AbdEl-Mouhsen, (2019) agreed with the present study results as it

illustrated that continuing nursing education programs increase both knowledge and practice and can also improve attitudes which enhance the nurses' competencies as a whole.

Moreover, the study findings confirmed that there was a significant difference between trainees nurses' levels of professional competencies preprogram and after three months post-program, which majority of them preprogram have the unsatisfactory level of their professional competencies conversed after three months post-program became the majority of them had satisfactory level. These may be due to the fact that nurses' age group, educational levels, departments, and length of experience in the hospital had significant differences scores led to significant differences levels of acquiring and applying knowledge and practices. Outstanding to over half of trainees' nurses had nursing technical institute degree which copied on their functional, personal, people and team and organizational effectiveness competencies.

But, an effective program for training transfer principles and methods weigh the rapport and trusting relationship between trainers and trainees so as to facilitate treatment and rehabilitation process of patients in achieving the expected outcome of trainees competencies including presenting accurate health education to facilitate patients' understanding and participation in own health management, to continuously monitor patient health progress against expected outcomes, and review care plans according to evaluation data.

After three months post-program, trainers still demonstrated knowledge on the rationale,

risk, and detriment benefit of the clinical procedures and identify promptly the unwelcome effect and barriers on patients and their trainees' needs. So, trainees became able to integrate organization's core values and objectives into daily work tasks and became inventive in revising the work processes to improve hospital efficiency and effectiveness. They kept back abreast of current advancements in health care to maximize patients' outcomes in multi-disciplinary care processes which reflected on promoting the professional image of nursing and accepted challenges and growing responsibilities to be able to manage self and be resilient in stressful situations.

The study of Gardulf et al., (2019) supported the current findings and stated that acquiring professional competence must learn during presenting any training or/and educational sessions to ensure safety and quality of nursing care provision. Conversely, the study of Heydari, Kareshki & Armat, (2016) reported that the majority of nurses assessed their overall nursing competencies as good and very good. Besides, another study by Shouryabi, Ghahrisarabi, Anboohi, Nasiri & Rassouli, (2017) was inconsistent with the present study result as it showed that most of the studied nurses had an excellent level of professional competence. Mozammel (2019) showed that more than half of the studied nurses had a good level of professional competency and satisfactory level of practice.

Indeed, the development of professional nursing competencies is required to provide nursing care in safe, ethical, quality, and legal nursing practice in health care settings by maintaining continuous professional training transfer principles. Also, the

hospital management and continuing training and education unit at Tanta International teaching hospital must support an effective training transfer program among all nursing staff to meet entry-level practice competencies.

Factually, the way that training is designed and delivered can have a huge impact on the quality of care and nursing competencies. As well as taking account of the principles of adult learning, tools such as learning needs analysis, practice, and feedback of skills are important. Other methods to increase training transfer effectiveness include discussing how the training will be used at work, ensuring that the content is relevant to delegates is also crucial; people are not likely to use training that they can't relate to their job. This ties into training preparation and ensuring that the right people attend programs.

Conclusion:

There were improvement of nursing trainers' knowledge and practice regarding effective training transfer domains after implementation of the designed program than pre-program. Nursing trainees' professional competencies were improved after implementation of the designed program than pre-program.

Recommendations:

- Conducting periodic educational training program and workshop about effective training transfer.
- Generalize the building of trainer proficiency regarding training transfer in all work settings.
- Setting up learning methods with immediate application and making the positive work environment within the workplace by welcoming to new ideas.
- Setting up expectations for gaining information from the training program and transferring it to practice.
- Hospital management has to support and develop programs for effective training transfer.

- Eliminate the barriers to make sure training transfer to the real job as possible ought to be anticipated, and the planning for eliminating the barriers should be considered, followed by strategies for elimination.
- Hospital management must consider all elements that influence training transfer effectiveness.
- Hospital Management should share in the development of trainees' capabilities, knowledge, skills, and abilities to ensure successful quality of care.
- Conduct positive comparison for trainees by other employees or staff who have received the training transfer program and have already successful improvement to their professional competencies.
- Hospital management and trainers have to conduct continuous feedback after the training transfer to ensure that the training content is retained over time.
- Immediate application of new information is very important for the transfer of the training process.
- Developing trainer communication skills, creating a suitable climate for trainer confidence, and personal characteristics, and professionalism all play a role in developing their trainees' professional competencies.

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