Efficacy of Talent Management Competencies Educational Program for Head Nurses on Nurses' Engagement at Intensive Care Units

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Abstract

Background: Talent management is used for employing the right nurses, developing their competencies, maintaining and engaging them and improving their productivity in the workplace. Therefore, nurses able to adapt to dynamic changes and growth as well as increase innovation in market place. Talent management has a positive effect on nurses' engagement by exploring the potential energies of them and filling the vacant positions with highly qualified talented nurses, which is reflected in increasing their satisfaction. **Aim:** To determine the efficacy of talent management competencies educational program for head nurses on nurses' engagement at Intensive Care Units. **Subjects and Method: Research Design:** Quasi-experimental research design was applied to achieve the purpose of the study. **Settings:** Intensive Care Units (ICUs) of Tanta Main University Hospital. **Subjects** :Two groups of subject were 40 head nurses and 90 nurses working in ICUs. **Results:** Preprogram, majority of head nurses had poor knowledge and low levels of total talent management competencies and seventy percent of nurses had low level of total work engagement which improved at immediately and after three months post educational program. **Conclusion:** There were a statistically significant improvements of head nurses' knowledge and levels of total talent management competencies and nurses' levels of total work engagement at immediately and after three months post program than preprogram. **Recommendations:** Hospital administration provides management support for implementing talent management competencies educational program into their future training to promote profitability, viability and market place of healthcare services.

Keywords: Intensive Care Units, Talent management competencies, Work engagement

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Introduction

Intensive care units (ICUs) are a controlled system within hospital for the delivery of nursing care to risky sick patients who having life threatening conditions and provision of continuous attention. [1] Nurses in ICUs are experienced nurses with academic facility who provide nursing care based on scientific principles, specialized body of knowledge and greater critical thinking skills to meet the new demands of sick persons. [2] The ICUs' head nurses are professional nurses who able to deal with high technological and sophisticated equipment based on their specialized body of knowledge. [3]

Nurses' development in ICUs is a critical for short-range and long-standing success of entire healthcare system. Therefore, head nurses need to be arranged with mechanical, intangible, human and guidance abilities for inspiring nurses. Head nurses have the ability to recognize the right nurse with competencies and skills to be located at right place to achieve healthcare organizational goals. [4] Head nurses need to reach talent management inside ICUs to maintain their operations and improve services and profitability. When the talented nurses are nurtured effectively within healthcare organization, nurses' fulfillment and patient care are increased and work costs are reduced. [5]

Head nurses' talent management competencies play an important role and have important implications for healthcare organizational performance. [6] Talent management is a new-fangled strategy in human resource management centered on developing competencies, occupation path, and more. [7] It includes seven competencies; talent attraction, talent selection, talent recruitment, talent development, talent retention, talent motivation and work life balance practices. [8]

Talent attraction is defined as the process of detecting a pool of qualified and expert nurses to apply for existing or predictable positions within healthcare organization.[9] It is the process by deciding who wish or wish not be allowed into healthcare organization as a process of formal judgment because it is based on career related factors.[10] Talent recruitment refers to the process of screening for expected nurses and exciting them for occupations in the healthcare organization through identification of recruits sources, estimation of different sources obtainable, selection of a certain source and interesting the probable nurse to set for the job, thus the correct nurse is obtained for the correct profession.[11]

Talent development means the manner of assisting talented nurses to acquire knowledge and skills that they need to be do well and enhance their healthcare organizational performance. [12] Talent retention is an efficient method practiced by head nurses that permit nurses to remain for longer period.[13] Talent motivation is a state of feeling in which nurse is energized or aroused to perform a task or engage in a particular behavior.[14]

Work life balance practices include (a) personal satisfaction that allows nurses to keep balance between their career and family life, (b) professional satisfaction through using of work life balance policies will enhance nurses' retention, (c) hospital support by applying supportive role for nurses' professional growth and development and overcome barriers to get the job done and, (d) work environment creates a comfortable and caring work environment where nurses are

enthusiastic to work every day. [15] Therefore talent management is considered the vehicle which allows head nurses to retain the existing talented nurses' and enhance their work engagement. [16]

Nurses' engagement is defined as nurses are immersed by and passionate about their work, so take a progressive action to healthcare organization's goals and benefits. [17] Furthermore, an engaged nurse is a fundamental concept in which increase nurses' commitment and satisfaction with their jobs. In contrast, a disengaged nurse may range from doing the bare minimum at work, up to nurses who are actively damaging the healthcare organization's work output and reputability. [18] Nurses' engagement is a favorable performing, and professional state that is described by vigor, dedication and absorption. Vigor; nurses feel bursting with energy and they feel strong with energy. Dedication; nurses discover the work that they do full of significance and objective. Absorption; nurses have the ability to be fully focused and feel happy when they are working intensely. [19]

Significant of the study

Talent management is becoming a significant element about the strategies of human resource management. Competition and lack of available skilled nurses and retaining talented nurses are major priority for healthcare organizations. [20] Furthermore, head nurses play a vital role in creating a positive environment at ICUs as they direct nursing care within the clinical environment through managing, supervising, recognition, support and appreciation and promoting nurses' competencies. [21] By ensuring the availability of talent management competencies educational program for current and future ICUs' head nurses to apply talent

management strategies that help in hiring the talented nurses and engaging the right nurse in the right positions at the right time leads to enhance workforce planning for lack of skills and competencies in nursing. [22]

Head nurses that possess talent management competencies at ICUs are able to identify nurses' strengths and weaknesses. In order to recognize nurses, perform the jobs assigned to them effectively, prepare them for future roles and allow for strengthen of nurses like team building, leadership and effective decision making. [9] As well as, they create an open and innovation culture, retain the talented nurses and create high nurses' engagement to achieve healthcare organizational goals. [23]

Aim of the study

Detect the efficacy of talent management competencies educational program for head nurses on nurses' engagement at Intensive Care Units.

Research hypothesis

1. Knowledge and levels of head nurses' talent management competencies anticipated to be enhanced after implementation of the talent management competencies educational program.

2. Levels of nurses' engagement anticipated to be enhanced after implementation of the talent management competencies educational program.

Subjects and Method

Study design

Quasi-experimental research design was used to accomplish the objective of the existing study.

Setting

The present study was conducted at Tanta Main University Hospital in Intensive Care Units (ICUs). This hospital is consisting of 13 departments and 573 beds. Mainly Intensive Care Units are consisting of 8 departments and

110 beds which include; Cardiology (23beds), Medical (13beds), Neurology (11beds), Neonatal (21beds), Pediatric (14beds), Hematology (12beds), Chest (13beds), and Tropical ICUs (3beds).

Subjects

The study subjects were involved of two groups; all available (n = 40) head nurses and all available (n = 90) nurses working in pervious mentioned Intensive Care Units.

Tools: Three following tools were used: -

Tool I: Head Nurses' Talent Management Competencies Knowledge Questionnaire

This tool was established by investigator showed by **Sommer and Handrich (2017)** [24] and **Salas-Vallina and Fernandez (2017)** [25] and recent related literatures [26] to assess head nurses' knowledge about talent management competencies. It included two parts:

Part (1): Head nurses' personal characteristics included age, department, marital status, years of experience and level of education.

Part (2): Head nurses' knowledge questionnaire about talent management competencies. It involved of 46 questions, in the form of multiple choice questions (27 items) and true and false questions (19 items). It covered the following dimensions:

- Talent attraction, selection and recruitment. It included 8 questions.
- Talent development, retention and motivation. It included 9 questions.
- Benefits and obstacles of talent management competencies. It included 5 questions.
- Process of talent management. It included 11 questions.
- Talent management competencies dimensions. It included 6 questions.
- Work engagement and its dimensions. It included 7 questions.

Scoring system

Each question of knowledge questionnaire was selected which correct answer take a score of one and wrong answer take a score of zero. The total scores calculated by cut off points and summing scores of all categories. The total scores represented varying as shows:

- Good knowledge > 75%.
- Fair knowledge 60-75%.
- Poor knowledge < 60%.

Tool II: Head Nurses' Talent Management Competencies Self-reporting

This tool was advanced by the investigator showed by **El Dahshan *et al.* (2018)** [27], **Rani and Srivastava (2015)** [28], **Isfahani and Boustani (2015)** [29] and **Singh (2015)** [30] to assess head nurses' talent management competencies. It included 79 items distributed into seven competencies as follows:

A. Talent attraction. It included 16 items distributed into four subscales as follows:

- Interest value 7 items.
- Social value 4 items.
- Economic value 2 items.
- Development value 3 items.

B. Talent selection. It included 7 items.

C. Talent recruitment. It included 4 items.

D. Talent development. It included 9 items.

E. Talent retention. It included 9 items.

F. Talent motivation. It included 10 items.

G. Work life balance practices. It included 24 items distributed into four subscales as follows:

- Personal satisfaction 5 items
- Professional satisfaction 7 items.
- Hospital supports 7 items.
- Work environment 5 items.

Scoring system

Head nurses' answers were measured on a four points Likert Scale ranging from 1-4 where1=never, 2=scarcely, 3=often and 4=always. The total scores calculated by cut off points and summing scores of all

categories. The total scores represented varying as follows:

- High talent level > 75%.
- Moderate talent level 60-75%.
- Low talent level < 60%.

Tool III: Utrecht Work Engagement Scale

This tool was advanced by the investigator showed by **Schaufeli and Bakker (2013)** [31] to assess nurses' perception regarding work engagement. It included two parts:

Part 1: Nurses' personal characteristics included age, department, marital status, years of experience and level of education.

Part 2: Nurses' work engagement scale. It included 17 items distributed into three subscales:

- Vigor included 6 items.
- Dedication included 5 items.
- Absorption included 6 items.

Scoring system

Nurses' responses were measured on a four points Likert Scale ranging from 1-4 where1=never, 2=scarcely, 3=often and 4=always. The total scores calculated by cut off points and summing scores of all categories. The total scores represented varying as shows:

-High engagement level > 75%.
-Moderate engagement level 60-75%.
-Low engagement level < 60%.

Method

1. Official permission to acquire the agreement and support in data collection was gained from Dean of Faculty of Nursing to director of Tanta Main University Hospital.

2. Ethical consideration:

- Obtained the approval of ethical committee at Faculty of Nursing.
- Verbal consent was obtained from head nurses and nurses to gain their cooperation, for their participation in the study and explained the aim of the study.

- They had the right' to withdraw from the study and were informed about the confidentiality of their information.

3. Tool I, II and III were advanced by the investigator based on analysis of current related literatures.

4. Tool I, II and III were presented to a jury of five experts to check content validity of each tool. Necessary modifications were done included clarification, omission of certain questions, adding others and simplifying work related words. The content validity was 95%, 96% and 95% for tools I, II and III, respectively.

5. Reliability of tools was examined using Cronbach Alpha test, its value = 0.816 for head nurses' talent management competencies knowledge questionnaire sheet, it was 0,812 for head nurses' talent management competencies attitude scale and 0.834 for Utrecht work engagement scale.

6. A pilot study was applied before initiating the real data collection and after the opinion of experts. It was approved out on 10% of the subjects of head nurses (n=4) and nurses (n=9) and they included in the main study sample during the actual data collection. It used to check the clearness, reliability of tools, identify obstacles and complications that may be faced during data collection and minor alterations were done. The expected period required to complete knowledge test was 20-30 minutes.

7. **Data collection phase:** Tool I, II, and III were distributed by the investigator on the subjects in their work setting before, immediately and after three months implementation of the program and the subjects answered the questionnaire in the presence of the investigator.

8. The program for 40 head nurses which were divided into five groups. One session each day (1hrs every day for 10 days).

9. The data gathering beginning from December 2021 and lasted 6 months up to May 2022.

Construction of educational program

The educational program about talent management competencies for head nurses was designed by the investigator guided by recent related literatures [26]. The educational program was displayed in four stages:

Phase 1: Assessment

- Assess head nurses' knowledge about talent management competencies before implementation of the educational program through filling part 2 of tool I.

- Assess levels of head nurses' talent management competencies before implementation of the educational program by using tool II.

- Assess levels of nurses' engagement perception before implementation of the educational program by using tool III.

Phase 2: Development of the educational program

Specific objectives

After finishing of the program; head nurses able to

- Identify talent attraction, selection and recruitment.
- Recognize talent development, retention and motivation.
- List benefits and obstacles of talent management competencies.
- Discuss process of talent management.
- Apply talent management competencies dimensions.
- Recognize work engagement and its dimensions.

Selection and organization of content

The program contents were divided into six sessions as follow:

a) Talent attraction, selection and recruitment.

b) Talent development, retention and motivation.

c) Benefits and obstacles of talent management competencies.

d) Process of talent management.

e) Talent management competencies dimensions.

f) Work engagement and its dimensions.

Teaching-learning strategies

The devices used in instruction of program were group dialogue, brain storming and example from work.

Teaching aids

The instructional assistances used for attainment of program objectives were booklet, flow- sheet, and power point.

Phase 3: Implementation of program

- The investigator built good relationship with head nurses to enhance their involvement and more participation in the program.

- Data collection phase: The investigator met the head nurses in their work place at Tanta Main University Hospital, Intensive Care Units.

- The program for 40 head nurses. They divided into five groups. The program time was 10 hours for each group. One hour every day for 10 days.

- The program theoretical sessions was carried out head nurses' room at Intensive Care Units, Tanta Main University Hospital. They desired to start the session after concluding their necessary work based on six session plan.

Phase 4: Evaluation of the program

- This phase included evaluating of head nurses' knowledge and their levels of talent skills by using tools (I) and (II) pre, immediately and three months after the implementation of the

program. The investigator evaluated nurses' engagement perception levels by using tool (III) pre, immediately post and three months after the implementation of the program.

Statistical analysis

Data were nourished to the computer and examined using SPSS software bundle type 20.0. Qualitative data were defined using range, mean and standard deviation.

Results

Table (1) shows distribution of head nurses and nurses according to personal characteristics. The table revealed that the age of head nurses ranged from 32-49 years old with mean scores 42.86±4.09, while the age of nurses ranged from 25-45 years old with mean scores 36.99±5.07. More than three-quarters (77.5%) of head nurses aged ≥ 40, while more than two - thirds (71.1%) of nurses aged <40. The highest percent (25% and 20%) of head nurses worked at Medical and Neonatal ICUs, respectively, while 17.8% and 15.5% of nurses worked at Cardiology and Neonatal ICUs, respectively.

The majority (95% and 87.8%) of head nurses and nurses were married, respectively. Regarding years of experiences, more than half (52.5%) of head nurses had ≥ 20 years with mean years of experiences 19.13±4.69, while, the majority (85.6%) of nurses had <20 years with mean years of experiences 14.13±4.71. More than half (52.5% and 60%) of head nurses and nurses had bachelor degree of science in nursing and all (100%) of them didn't attend any previous talent management competencies.

Table (2) and Figure (1) represents levels, mean score, and mean percent of head nurses' total knowledge about talent management competencies preprogram, immediately and after three months post program. The table showed that there were statistically significant

improvements of head ' nurses' total knowledge levels about talent management competencies at immediately and after three months post program than preprogram at (p ≤ 0.05).

Preprogram, the majority (92.5%) of head nurses had poor knowledge level about talent management competencies, which improved to be 95% and 80% of them had good knowledge level about talent management competencies at immediately and after three months post program, respectively. The total mean score of head nurses' total knowledge about talent management competencies was 9.57±2.53 with mean percent 35.57% at preprogram which increased to 41.28±3.7 with mean percent 87.40% at immediately post program, and slightly decreased to 39.84±3.62 with mean percent 83.37% after three months post program.

Table (3) and Figure (2) shows levels, mean score, and mean percent of head nurses' total talent management competencies preprogram, immediately and after three months post program. The table showed that there were statistically significant improvements in levels of head nurses' total talent management competencies at immediately and after three months post program than preprogram at (p ≤ 0.05). Preprogram, the majority (80%) of head nurses had low level of total talent management competencies, which improved to be 92.5% and 77.5% of them had high level of total talent management competencies at immediately and after three months post program, respectively.

Preprogram, the total mean score of head nurses' total talent management competencies was 24.03±3.12 with a mean percent 42.29% which increased to 141.57±4.56 with a mean percent 86.03% at immediately post program and slightly decreased to 137.98±3.87 with a

mean percent 82.07% after 3th months post program.

Table (4) and Figure (3) shows levels, mean score, and mean percent of nurses' total work engagement preprogram, immediately and after three months post program. The table showed that there were statistically significant improvements in levels of nurses' total work engagement at immediately and after three months post program than preprogram at (p ≤ 0.05). Preprogram, seventy percent (70%) of nurses had low level of total work engagement, which improved to be 93.3% and 80% of them had high level of total work engagement at immediately and after three months post program, respectively.

Moreover, preprogram the total mean score of nurses' total work engagement was 3.67±1.08 with a mean percent 44.79% which increased to be 25.84±3.26 with a mean percent 86.31% at immediately post program and slightly

decreased to 24.95±2.84 with a mean percent 82.89% after three months post program.

Table (5) and Figure (4) reveals correlation between head nurses' talent management competencies and nurses' work engagement preprogram, immediately and after three months post program. The table illustrated that there were positive statistically significant correlation between head nurses' talent management competencies dimensions and nurses' dedication and absorption of work engagement preprogram, immediately and after three months post program. Also, there were positive statistically significant correlation between head nurses' talent management competencies dimensions and nurses' vigor of work engagement except talent motivation preprogram, immediately and after three months post program at (p≤ 0.05).

Table (1): Distribution of study subjects according to personal characteristics (n= 130)

Variables	Head nurses (n= 40)		Nurses (n= 90)	
	No.	%	No.	%
Age				
<40	9	22.5	64	71.1
≥ 40	31	77.5	26	28.9
Range	32-49		25-45	
Mean ± SD.	42.86±4.09		36.99±5.07	
Department				
Cardiology ICU	6	15.0	16	17.8
Medical ICU	10	25.0	10	11.1
Neurology ICU	3	7.5	12	13.3
Neonatal ICU	8	20.0	14	15.5
Pediatric ICU	5	12.5	12	13.3
Chest ICU	3	7.5	11	12.2
Hematology ICU	2	5.0	7	7.7
Tropical ICU	3	7.5	8	8.8
Marital status				
Married	38	95.0	79	87.8

un married	2	5.0	11	12.2
Years of experience				
<20 years	19	47.5	77	85.6
≥20 years	21	52.5	13	14.4
Range	9-26		8-25	
Mean ± SD.	19.13±4.69		14.13±4.71	
Level of nursing education				
Technical Institute of Nursing	-	-	14	15.6
Bachelor of Science in Nursing	21	52.5	54	60.0
Postgraduate Diploma in Nursing	10	25.0	22	24.4
Master of Science in Nursing	8	20.0	-	-
Doctorate in Nursing	1	2.5	-	-
Previous attended about talent management				
Didn't attend	40	100	90	100

Table (2): Levels, mean score, and mean percent of head nurses' total knowledge of talent management competencies preprogram, immediately and after three months post program (n= 40)

Levels, mean score, and mean percent of head nurses' total knowledge about talent management competencies (n=40)	Program phases						Test of Sig.(p)	P_1 P_2 P_3
	Preprogram		Immediately post program		After three months post program			
	No.	%	No.	%	No.	%		
Good	-	-	38	95.0	32	80.0	χ^2=69.333* (<0.001*)	<0.001*
Fair	3	7.5	2	5.0	6	15.0		<0.001*
Poor	37	92.5	-	-	2	5.0		0.105
Total score Mean ± SD.	9.57±2.53		41.28±3.7		39.84±3.62		F=282.999* (<0.001*)	<0.001*
% score Mean ± SD.	35.57 ± 12.16		87.40 ± 5.29		83.37± 11.47			<0.001* 0.143

P1= **Preprogram** and **immediately post program**.

P2= **Preprogram** and **after 3th months post program.**

P3= **Immediately** and **after 3th months post program.**

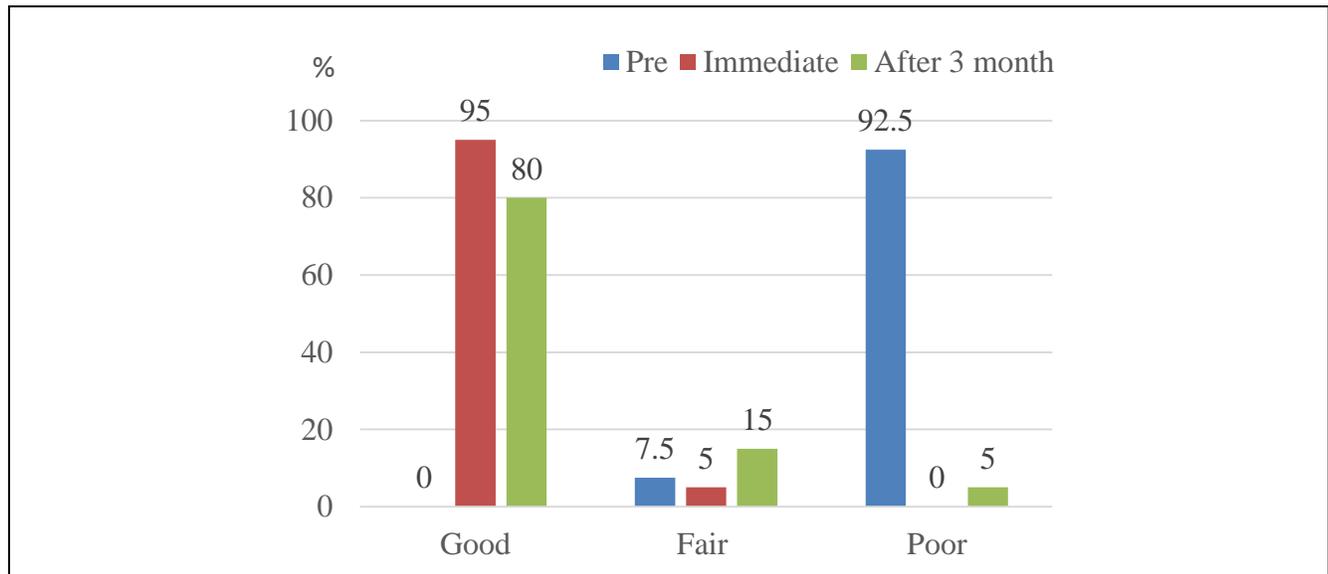*: **Statistically Significant at p ≤ 0.05**

Figure (1): Levels of head nurses' total knowledge about talent management competencies preprogram, immediately and after three months post program (n = 40)

Table (3): Levels, mean score, and mean percent of head nurses' total talent management competencies preprogram, immediately and after three months post program (n= 40)

Levels, mean score, and mean percent of head nurses' total talent management competencies (n=40)	Program phases						Test of Sig.(p)	p_1 p_2 p_3
	Preprogram		Immediately post program		After three months post program			
	No.	%	No.	%	No.	%		
Low	32	80	0	0	1	2.5	χ^2=69.282* (<0.001*)	<0.001*
Moderate	5	12.5	3	7.5	8	20		<0.001*
High	3	7.5	37	92.5	31	77.5		0.149
Total score Mean ± SD.	24.03±3.12		141.57±4.56		137.98±3.87		F=226.140* (<0.001*)	<0.001* <0.001* 0.013*
% score Mean ± SD.	42.29 ± 16.62		86.03 ± 4.99		82.07 ± 11.48			

P1= **Preprogram** and **immediately post program**.

P2= **Preprogram** and **after 3th months post program.**

P3= **Immediately post program** and **after 3th months post program**
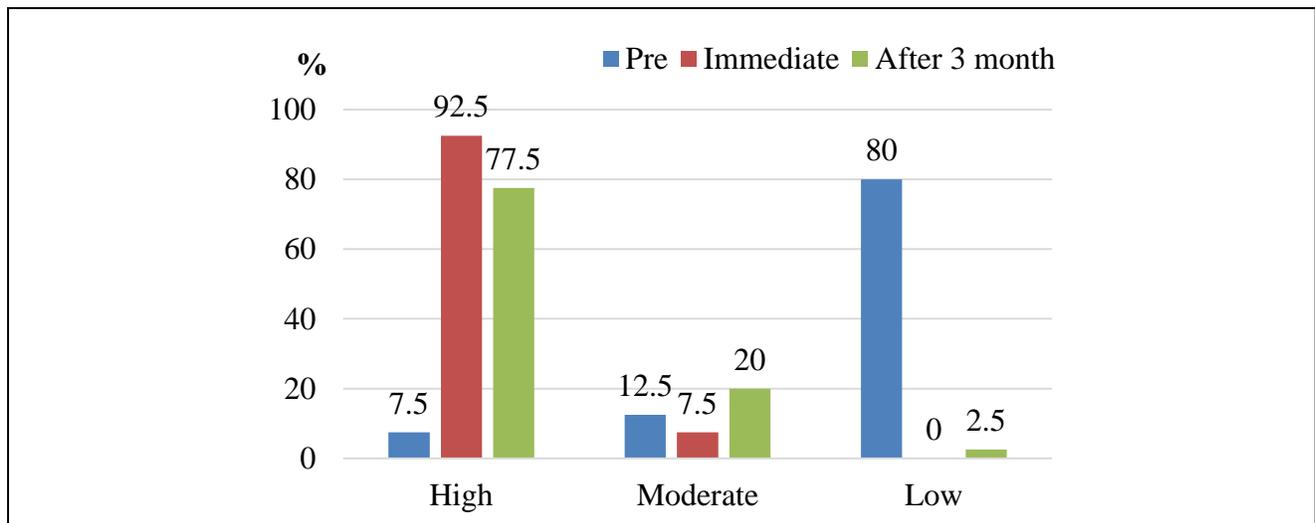
*: **Statistically Significant at p ≤ 0.05**

Figure (2): Levels of head nurses' total talent management competencies preprogram, immediately and after three months post program (n= 40)

Table (4): Levels, mean score and mean percent of nurses' total work engagement preprogram, immediately and after three months post program (n= 90)

Levels, mean score and mean percent of nurses' total work engagement (n= 90)	Program phases						Test of Sig.(p)	p₁ p₂ p₃
	Preprogram		Immediately post program		After three months post program			
	No.	%	No.	%	No.	%		
Low	63	70	1	1.1	4	4.4	χ^2=160.689* (<0.001*)	<0.001*
Moderate	24	26.7	5	5.6	14	15.6		<0.001*
High	3	3.3	84	93.3	72	80		0.030*
Total score Mean ± SD.	3.67±1.08		25.84±3.26		24.95±2.84		F=229.745* (<0.001*)	<0.001* <0.001*
% score Mean ± SD.	44.79 ± 21.20		86.31 ± 9.19		82.89 ± 14.01			0.051

P1= **Preprogram** and **immediately post program**.

P2= **Preprogram** and **after 3ᵗʰ months post program.**

P3= **Immediately post program** and **after 3ᵗʰ months post program.**
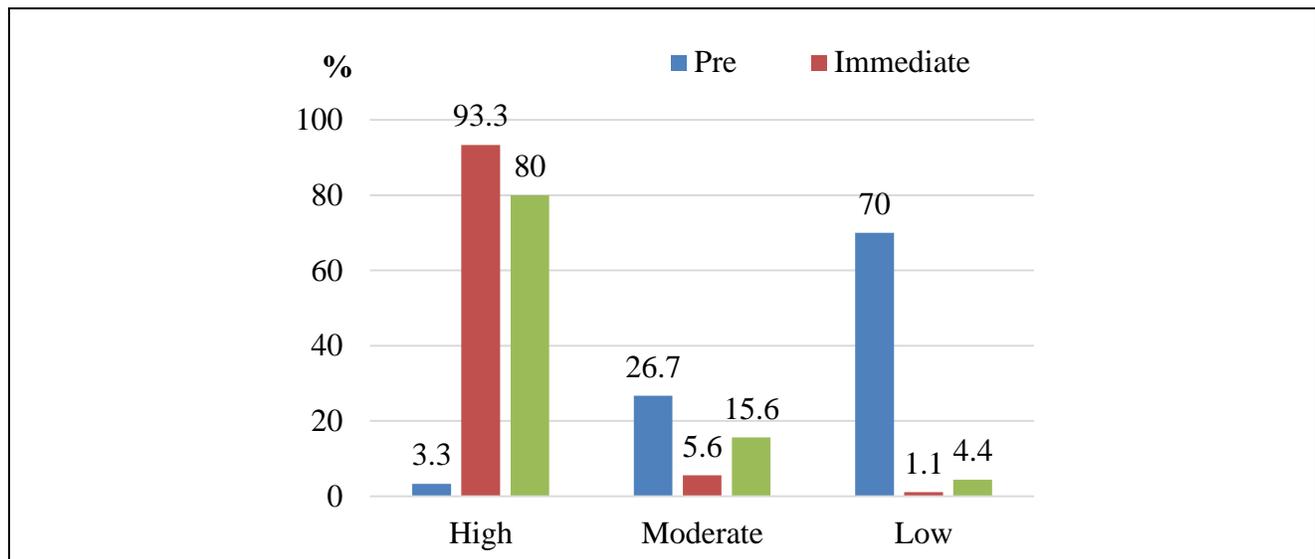
*: **Statistically Significant at p ≤ 0.05**

Figure (3): Levels of nurses' total work engagement preprogram, immediately and after three months post program (n= 90)

Table (5): Correlation between head nurses' talent management competencies dimension and nurses' work engagement subscales preprogram, immediately and after three months post program

Head nurses' talent management competencies dimension (n= 40)		Nurses' work engagement subscales(n= 90)					
		Vigor		Dedication		Absorption	
		r	P-value	r	P-value	R	P-value
- Talent attraction	Pre	0.256	<0.001*	0.184	<0.001*	0.212	<0.001*
	Post	0.427	<0.001*	0.372	<0.001*	0.356	<0.001*
	After 3th months	0.332	<0.001*	0.254	<0.001*	0.287	<0.001*
- Talent selection	Pre	0.235	<0.001*	0.221	<0.001*	0.168	<0.001*
	Post	0.384	<0.001*	0.425	<0.001*	0.332	<0.001*
	After 3th months	0.298	<0.001*	0.325	<0.001*	0.258	<0.001*
- Talent recruitment	Pre	0.094	<0.001*	0.056	0.015*	0.132	0.004*
	Post	0.198	0.035*	0.169	<0.001*	0.230	<0.001*
	After 3th months	0.119	<0.001*	0.134	<0.001*	0.189	<0.001*
- Talent development	Pre	0.240	<0.001*	0.123	0.002*	0.256	<0.001*
	Post	0.430	<0.001*	0.375	<0.001*	0.377	<0.001*
	After 3th months	0.339	<0.001*	0.254	<0.001*	0.310	<0.001*
- Talent retention	Pre	0.103	<0.001*	0.238	<0.001*	0.183	<0.001*
	Post	0.284	<0.001*	0.395	<0.001*	0.323	<0.001*
	After 3th months	0.176	<0.001*	0.298	<0.001*	0.265	<0.001*
- Talent motivation	Pre	0.043	0.085	0.132	<0.001*	0.243	<0.001*
	Post	0.129	0.201	0.234	0.003*	0.337	<0.001*
	After 3th months	0.098	0.139	0.212	<0.001*	0.275	<0.001*
- Work life balance practices	Pre	0.123	<0.001*	0.286	<0.001*	0.144	<0.001*
	Post	0.298	<0.001*	0.401	<0.001*	0.278	<0.001*
	After 3th months	0.165	<0.001*	0.332	<0.001*	0.181	<0.001*

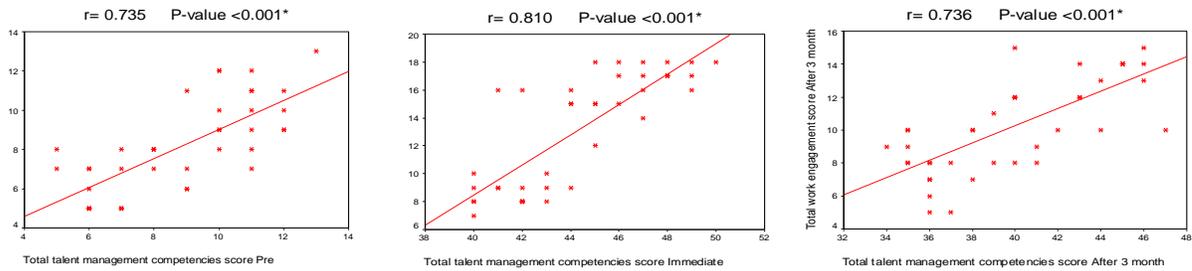***statistically significant at p ≤ 0.05**

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Figure (4): Correlation between head nurses' talent management competencies and nurses' work engagement preprogram, immediately and after three months post program

Discussion

The finding of this study demonstrated that preprogram, the majority of head nurses had poor knowledge level about talent management competencies. This result may be due to lack of comprehensive application of the talent management model through instructional education and actually all head nurses didn't attend any related orientation or educational programs about talent management.

This result study is supported by **Taie (2015)** [32] who viewed that displayed nurse managers' level of knowledge about talent management before awareness sessions was poor. In contrary, **Al Jarrah and Abu-Doleh (2015)** [9] study who showed that there was a medium level of knowledge about talent management among the members of faculty in Jordanian Universities.

Finding of the present study indicated that there were significant improvements of head nurses' total knowledge levels about talent management competencies, the majority of head nurses had a good knowledge level after implementing the program immediately and after three months post program than preprogram. This outcome may be related to positive consequence of the educational

program on head nurses with active participation and attention in the program sessions. In addition, they acquire new knowledge by using of illustrative media as power points and booklets which gave them the opportunities to understand talent management and its competencies.

This result is confirmed by **Mostafa et al. (2021)** [33] who found that there was a highly statistical general improvement in total level of nurse managers' knowledge related to talent management throughout program phases. Equally, **Abdrabou and Ghonem (2020)** [34] revealed that there was a greatly significant enhancement in nurse managers' knowledge concerning talent management in the post

immediately and follow up phases compared with their pre involvement phase.

Furthermore, this result is matched with **Ogbari et al. (2018)** [35] who represented that the effect of talent management on head nurses' effectiveness in healthcare which found that more than half of them reported significant improvement in talent management knowledge. **Ahmed and Dutta (2016)** [36] reported that nurses' level of knowledge about talent management significantly improved

after the training program which in turn effect on their performance.

Finding of the present study showed that at preprogram, the majority of head nurses had low level of total talent management competencies. This outcome may be due to head nurses had poor knowledge level about talent management which it is a new concept and it was not included in the curriculum taught for nurses.

This result is attached with **Elhaddad et al. (2021)** [37] who showed that the majority of studied nurses had low perception level toward talent management, while a very small percentage of them had high perception level toward it. This result is contrary with **Elkady et al. (2019)** [38] who indicated that student nurses at hospitals have a moderate level perception about talent management. Similarly, **Mukweyi (2016)** [39] stated that talent management can be acquired easily through good arrangement and continuous exertions of the hospital and create the desired outcomes.

Finding of the present study showed that there were highly significant improvements in head nurses' total talent management competencies levels, the majority of them had high level at immediately and after three months post program than preprogram. This is may be due to after implementing the program, head nurses acquired more information and new ideas about talent management which allowed them to manage talented nurses, develop, retain and support them. Also, they knew to plan the future and align the talent' objectives with healthcare organizational objectives.

This result is congruent with **Elhanafy and El Hesse (2021)** [40] and **Abdrabou and Ghonem (2020)** [34] who revealed that there was a very significant enhancement in nurse managers'

practice regarding talent management in the post immediately and follow up phases rather than their pre interference phase. In addition, **Venkatesh (2017)** [41] found that the majority of health care providers showed good talent management behaviors after integrating the talent management framework. Furthermore, **Irtaimeh et al. (2016)** [42] showed that a positive significant and statistical effect of talent management strategies on service quality and nurses' satisfaction.

The result of the present study illustrated that preprogram, seventy percent of nurses had low level, mean score and mean percent of total work engagement. This may be linked to head nurses didn't aware about barriers to engage their nurses as provided little estimation, recognition or feedback, which leads to a lack of self-assurance or self-confidence. Furthermore, the varieties of jobs with very little flexibility or autonomy, the highly stressful jobs, working for extended periods of time without taking a break and lack of self-assurance make difficult for head nurses to define roles and tasks in which nurses' jobs do not match with their expectations creating further engagement barriers. This study result is supported by **Eliwa (2019)** [43] who showed that the majority of the nurses had low work engagement levels. On contrary, **Elhanafy (2019)** [44] revealed that the nurses had an adequate level of their work engagement.

The finding of the present study result indicated that there were highly significant improvements levels, mean score and mean percent of nurses' total work engagement at immediately and after three months post program than preprogram. This could be linked to the impact of educational program of talent management as the majority of head nurses respond positively to nurses. In addition, head nurses support the development

of nurses by providing learning opportunities created by talent management initiatives which have an effect on increasing nurses' performance and engaging them more effectively.

This result is attached with **Wang *et al.* (2021)** [45] who showed that the majority of nurses had the higher level of engagement (vigor, dedication, and absorption). **Ayub (2017)** [46] stated that talent management is a part of the general approach for engaging and retaining their talents of nurses.

Finding of the present study result revealed that that there were highly significant correlation between head nurses' talent management competencies and nurses' work engagement preprogram, immediately and after three months post program. This result is may be related to head nurses acquired knowledge and skills regarding talent management competencies program which allow them to place nurses on the right jobs for high performance. As well as, head nurses enabled nurses to feel that they were be acknowledged, appreciated and respected, enthused and affiliated to the healthcare organization's goals and objectives which leading to enhance their engagement, and reduced their turnover.

This result is in the same line with **Sadek (2022)** [47] who showed that a highly positive correlation between alertness of nurses about talent management and engagement of them. Also, **Savarimuthu and Jothi (2019)** [48] reported that there was positive significant association between talent management and nurses' engagement and **Abazeed (2018)** [49] stated that talent management plays an substantial role in improving nurses' attachment and stay to be committed to the healthcare organization thus increase their engagement. In addition, **Taie (2015)** [32]

reported that there was a strong positive relationship between talent management elements and nurses' engagement levels through maximize nurses' talents for optimal success of healthcare organization.

Conclusion

Head nurses in Intensive Care Units at Tanta Mean University Hospitals had poor knowledge levels about talent management competencies and had low level of total talent management competencies at preprogram. Also, nurses had low level of total work engagement. Immediately and after three months post program implementation of an educational program about talent management competencies lead to significant improvement of total knowledge and levels of head nurses about talent management and competencies. There were significant improvements in levels of nurses' total work engagement. Also, there were positive significant correlation between talent management knowledge and competencies of head nurses and nurses' work engagement.

Recommendations

The following recommendations were submitted:

For hospital administration:

- Implementing talent management competencies educational program into their future training to promote profitability, viability and market place of healthcare services.

- Providing an orientation programs about job description of nurses' duties, responsibilities and working condition to avoid role ambiguity.

- Participating in identifying rules and regulations of recruitment to place the right nurse for the right work at the right time.

- Providing an effective payment programs such as bonuses, flexible labor times to

increase assurance, work engagement, and retention of nurses.

For head nurses:

- Monitoring nurses' performance by using periodic evaluation and advise them to improve it.
- Strengthening open communication with their managers for meeting nurses to reach a high level of work engagement.
- Creating more alternative solutions for nurses' problems by contributing in decision-making with commitment to decisions made.

Recommendations for further research:

- Study the effect of head nurses' talent management competencies on quality of patient care.
- Study the effect of head nurses' talent management competencies on productivity of healthcare organization.

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