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

Sally Abdelmongy Mohamed¹, Karima Ahmed. El-Sayed², Reda Abdelfattah. Abou Gad³, Amal Hamdy. Abou Ramadan⁴

¹ Assistant Lecturer of Nursing Administration, Faculty of Nursing, Tanta University.
², ³ Professor of Nursing Administration, Faculty of Nursing, Tanta University.
⁴ Assistant Professor of Nursing Administration, Faculty of Nursing, Tanta University.

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

**Subjects**

The study subjects were involved of two groups; all available (n = 40) head nurses and all available (n = 90) nurses working in previous 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 9 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:
- Professional satisfaction 5 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 where 1=never, 2=scarcely, 3=often and 4=always. The total scores calculated by cut off points and summing scores of all...
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 where 1=never, 2=scarcey, 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.
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 3rd 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 (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|
| Years of experience | No. | %   | No. | %   | No. | %   |
|---------------------|-----|-----|-----|-----|-----|-----|
| ≥20 years          | 21  | 52.5| 13  | 37  | 37  | 92.5|
| <20 years          | 19  | 47.5| 77  | 25  | 14  | 7.5 |

| Range               | 9-26| 8-25|

| Mean ± SD.          | 19.13±4.69 | 14.13±4.71 |

| Level of nursing education                                                                 |
|---------------------------------------------------------------------------------------------|
| Technical Institute of Nursing                                                             |
| Bachelor of Science in Nursing                                                              |
| Postgraduate Diploma in Nursing                                                             |
| Master of Science in Nursing                                                                |
| Doctorate in Nursing                                                                        |

| Previous attended about talent management                                                                 |
|----------------------------------------------------------------------------------------------------------|
| Didn’t attend                                                                                           |

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) | P1 | P2 | P3 |
|-------------------------------------------------------------------------------------------------------------|----------------|----------------|----|----|----|
|                                                                                                              | Preprogram | Immediately post program | After three months post program | \( \chi^2 = 69.333^* \) (<0.001) | \(<0.001^* \) | \(<0.001^* \) | \(<0.105 \) |
| Good                                                                                                       | -          | -               | 38 | 95.0 | 32 | 80.0 | \(<0.001^* \) | \(<0.001^* \) | \(<0.105 \) |
| Fair                                                                                                        | 3          | 7.5             | 2  | 5.0  | 6  | 15.0 | \(<0.001^* \) | \(<0.001^* \) | \(<0.105 \) |
| Poor                                                                                                        | 37         | 92.5            | -  | -    | 2  | 5.0  | \(<0.001^* \) | \(<0.001^* \) | \(<0.105 \) |
| Total score                                                                                                 | -          | -               | 38 | 95.0 | 32 | 80.0 | \(<0.001^* \) | \(<0.001^* \) | \(<0.105 \) |
| Mean ± SD.                                                                                                  | 9.57±2.53  | 41.28±3.7       | 39.84±3.62 | \( F = 282.999^* \) (<0.001) | \(<0.001^* \) | \(<0.001^* \) | \(0.143 \) |
| % score                                                                                                     | 35.57 ± 12.16 | 87.40 ± 5.29 | 83.37 ± 11.47 | \(<0.001^* \) | \(<0.001^* \) | \(<0.001^* \) | \(0.143 \) |

P1= Preprogram and immediately post program.

P2= Preprogram and after 3rd months post program.

P3= Immediately and after 3rd months post program.

*: Statistically Significant at \( p \leq 0.05 \)
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<sub>1</sub> | p<sub>2</sub> | p<sub>3</sub> |
|---|---|---|---|---|---|
| | Preprogram | Immediately post program | After three months post program |  |  |  |
| No. | % | No. | % | No. | % |  |  |  |  |
| Low | 32 | 80 | 0 | 0 | 1 | 2.5 |  |  |  |  |
| Moderate | 5 | 12.5 | 3 | 7.5 | 8 | 20 |  |  |  |  |
| High | 3 | 7.5 | 37 | 92.5 | 31 | 77.5 |  |  |  |  |
| Total score |  |  |  |  |  |  |  |  |  |  |
| Mean ± SD. | 24.03±3.12 | 141.57±4.56 | 137.98±3.87 |  |  |  |  |  |  |  |
| % 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 | χ²=160.689⁴ (<0.001*) | <0.001* | 0.030* |
| No. | % | No. | % | No. | % |
| Low | 63 | 70 | 1 | 1.1 | 4 | 4.4 |
| Moderate | 24 | 26.7 | 5 | 5.6 | 14 | 15.6 |
| High | 3 | 3.3 | 84 | 93.3 | 72 | 80 |
| Total score | Mean ± SD. | 3.67±1.08 | 25.84±3.26 | 24.95±2.84 | F=229.745⁴ (<0.001*) | <0.001* | 0.051 |
| % score | Mean ± SD. | 44.79 ± 21.20 | 86.31 ± 9.19 | 82.89 ± 14.01 |

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
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 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.

References
1. Mostafa S. Effect of assertiveness educational program on conflict handling styles for nursing staff at intensive care unit. International Journal of Novel Research in Healthcare and Nursing. 2019; 6(2): 1729-739.
2. Ervin J, Kahn J, Cohen T, Weingart L. Teamwork in the intensive care unit. Am Psychol. 2018; 73(4): 468-77.
3. El-Nageer S. Quality nursing care barriers in critical care units at Tanta University Hospitals. Unpublished Master Thesis. Faculty of Nursing. Tanta University. 2016; 1-5.
4. Marshall J, Bosco L, Adhikari N, Connolly B, Diaz J, Dorman T. What is an intensive care unit? A report of the task force of the World Federation of Societies of Intensive and Critical Care Medicine. Journal of Critical Care. 2017; 37 (1): 270–76.
5. Mohamed S. Studying registered nurses' roles as patient advocacy. Unpublished Master Thesis. Faculty of Nursing. Tanta University. 2016; 18-19.
6. Abozied L, Shabaan F, El-syaid K, Eid W. Effect of educational program on head nurses negotiation skills for resolution of conflict among nurses in intensive care units. Tanta Scientific Nursing Journal. 2021; 21(2): 50-74.
7. Abdul-Kareem A. Best practices for talent management: critical drivers for organizational success and survival. European Journal of Business and Management. 2016; 25(8): 98-105.
8. Al-Qeed M, Khaddam A, Al-Azzam Z, Atieh K. The effect of talent management and emotional intelligence on organizational performance: applied study on pharmaceutical industry in Jordan. Journal of Business and Retail Management Research. 2018; 13(1): 1-14.
9. Al Jarrah A, Abu-Doleh D. The impact of applying talent management strategies in enhancing the organizational affiliation among faculty members in Jordanian Public Universities. Jordan Journal of Business Administration. 2015; 11(2): 283-315.
10. Aibieyi S, Henry O. Talent management and employees retention in Nigerian universities. NG-Journal of Social Development. 2015; 5(1): 23–31.
11. Abdul'aal S, Alheet A. The impact of talent management on organizational excellence: An applied study on Jordan Telecommunication Company. European Journal of Business and Management. 2018; 10(5): 70-73.
12. Younas M, Bari M. The relationship between talent management practices and retention of generation ‘Y’ employees: Mediating role of competency development.
Economic Research-Ekonomska Istrazivanja. 2020; 33(1): 1330-53.
13. Wahyuningtyas R. An integrated talent management system: challenges for competitive advantage. International Business Management. 2015; 9 (4): 384-90.
14. Rutledge L, LeMire S, Hawks M, Mowdood A. Competency-based talent management: three perspectives in an academic library. Journal of Library Administration. 2016; 65(3): 235-50.
15. Rostam A.F. A review of talent management as a key in any organizations. International Journal of Indian Psychology. 2019; 7(3): 78-83.
16. McDonnell A, Collings G, Mellahi K, Schuler R. Talent management: A systematic review and future prospects. European Journal of International Management. 2017; 11(1): 136-38.
17. Gelens J, Dries N, Hofmans J, Pepermans R. The role of perceived organizational justice in shaping talent management outcomes: A research agenda. Human Resource Management Review. 2018; 4(23): 341-53.
18. Marina L, Louisa S. Talent management practices in it companies from emerging markets: a comparative Analysis of Russia, India, and China. Journal of East-West Business. 2016; 22(3): 168-197.
19. Marina L. Talent management in Russian companies: Domestic challenges and international experience. The International Journal of Human Resource Management. 2016; 26(8): 1051-75.
20. Wilcox M. Effective Talent Management: Aligning strategy, people and performance. 1st Ed. Routledge. 2016; 165-186.
21. Furusawa M, Brewster C. The bi-cultural option for global talent management: The Japanese/Brazilian Nikkeij in example. Journal of World Business. 2016; 50(1): 133-43.
22. Thunnissen M, Boselie P, Fruytie B. A review of talent management: Infancy or adolescence. The International Journal of Human Resource Management. 2013; 24(9):1744–61.
23. Sarangal R, Sharma P, Manhas P. Organizational commitment, talent management and performance in hospitality industry. Journal of Tourism, Hospitality and Culinary Arts. 2020; 12(3): 65-83.
24. Sommer P, Handrich M. War for talents-how perceived organizational innovativeness affects employer attractiveness. R and D Management. 2017; 47(2): 299-310.
25. Salas-Vallina A, Fernandez R. The HRM-performance relationship revisited: inspirational motivation, participative decision making and happiness at work. Employee Relations. 2017; 39(5): 626-42.
26. Orgamiedez-Romsa A, Almeidah H. Talent management, work engagement, social support and job satisfaction in Portuguese nursing staff: A winning combination. Applied Nursing Research. 2017; 6(3): 37-41.
27. El Dahshan M, Keshk L, Dorgham L. Talent management and its effect on organization performance among nurses at Shebin El-Kom Hospitals. International Journal of Nursing. 2018; (5)2: 108-23.
28. Rani M, Srivastava U. Study of organizational culture and its impact on employee retention. International Journal of Research of Management Sciences and Technology. 2015; 6(10): 1-22.
29. Isfahani A, Boustani H. Effects of talent management on employees’ retention: the mediate effect of organizational trust. International Journal of Academic Research
in Economics and Management Sciences. 2015; 3(5): 114-28.
30. **Singh S.** Impact of talent management practices on employees’ performance. International Journal of Science Technology and Management. 2016; 5(8):636-42.

31. **Schaufeli W.B, Bakker A.B.** Job Demand, Job resources and their relationship with burnout and engagement. A multi Sample Study. Journal of Organizational Behavior. 2013; 25: 293-315.

32. **Taie E.** Talent Management is the future challenge for healthcare organizational success. American Research Journal of Nursing. 2015; 1(1): 18–27.

33. **Mostafa H, EL-Sayed H. Mahfouz, Ebraheem M.** Effect of Educational Program about Talent Management for Nursing Managers on Their Job Affiliation and Organizational Excellence Egyptian Journal of Health Care. 2021; 12(2):1-23.

34. **Abdrabou H, Ghonem N.** Talent management training program and its effect on leadership effectiveness among nurse managers. Egyptian Journal of Health Care. 2020; 11(3): 221-37.

35. **Ogbari E, Onasanya A, Ogunnaik O, Kehinde O.** Talent management as a determinant of firm performance: A conceptual approach. Business and Social Sciences Journal. 2018; 3(1): 21-32.

36. **Ahmed N, Dutta S.** Effectiveness of planned teaching program on nurses’ knowledge and practice regarding Glasgow Coma Scale for neurological clients of a selected hospital, Kolkata. American Journal of Nursing Science. 2016; 11(12): 122-25.

37. **Elhaddad S, Safan S, Elshall S.** Nurses’ perception toward talent management and its relationship to their work engagement and retention. Menoufia Nursing Journal. 2021; 5(1): 25-38.

38. **Elkady S, Bassiouni N, Atalla A.** Nurses’ Perception about the Relationship between Talent Management and Organizational Commitment. Journal of Nursing and Health Science. 2019; 8(6):41-52.

39. **Mukweyi S.** An investigation of the influence of talent management practices on retention of healthcare professionals at Kijabe Mission Hospital, Kiambu. Published PHD Thesis. Strathmore Business School. Strathmore University. 2016; 1-83. Available at: Anne Mukweyi.pdf (strathmore.edu).

40. **Elhanafy E, El Hesse G.** Effect of talent management training program on head nurses’ leadership effectiveness. Egyptian Journal of Health Care. 2021; 12(4): 351-61.

41. **Venkatesh N.** Integrated talent management framework for healthcare performance–a strategic approach. American International Journal of Research in Humanities, Arts and Social Sciences. 2017; 19(1): 46-54.

42. **Irtaineh H, Al-Azzam Z, Khaddam A.** Exploring the impact of talent management strategies and service quality on beneficiaries’ satisfaction in Jordan healthcare sector. Journal of Entrepreneurship and Organization Management. 2016; 5(3):1-9.

43. **Eliwa S.** Perceived organizational support and its relation to work engagement among staff nurses. Unpublished Master Thesis. Faculty of Nursing. Benha University. 2019: 4-21.

44. **Elhanafy E.** Relationship between organizational justice, work engagement and organizational trust among nurses. E-Proceeding of Management. 2019; 12(2): 1172-178.
45. **Wang Y, Gao Y, Xun Y.** Work engagement and associated factors among dental nurses in China. BMC Oral Health. 2021; 21(402): 1-9.

46. **Ayub Z.** The impact of talent management on employee engagement and retention in achieving organizational performance. Science international Journal. 2017; 29(6):1277-281.

47. **Sadek H.** The impact of talent management practices on employees’ engagement in Sharm El-Sheikh Hotels. Journal of Association of Arab Universities for Tourism and Hospitality. 2022; 22(2):132-53.

48. **Savarimuthu A, Jothi D.** Talent management: A strategy for employee engagement. International Journal of Research, Management Sociology and Humanity. 2019; 10(12): 134-40.

49. **Abazeed R.** The impact of talent management on organizational commitment of the employees of telecommunication companies in Jordan: The mediating role of employee work engagement. International Journal of Academic Research in Accounting, Finance and Management Sciences. 2018; 8(4): 153-62.