Talent Management Intervention Program for First Line Nurse Managers and Its Effect on Their Job Performance

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Abstract

Background: Nurse leaders will be required to manage the rapid change in the healthcare system. Talent management training plays a crucial role in preparing nursing leaders and improving their performance in health care systems. **This study** aimed to examine the effect of the talent management intervention program for first line nurse managers on their job performance. **Subjects and Method: Study design:** A quasi-experimental study. **Setting**: The study was implemented in medical- surgical, surgical intensive, toxicology and critical care units at the Alexandria Main University Hospital. **Subjects:** The study was carried out on 125 first line nurse managers who attended the talent management intervention program. **Tools of data collection**: The data of the present study were collected using self-report questionnaires regarding first line nurse managers' knowledge and practice of talent management and their job performance during training program intervention. **Results:** The present study revealed that the talent management training program generated an improvement in post and follow-up program assessment compared to pre-program evaluation. Z and t values indicated that there were highly statistically significant differences in first line nurse managers' knowledge and practice of talent management and first line nurse managers' job performance. Correlation and regression tests revealed that first line nurse managers' knowledge and practice about talent management were positively influencing first line nurse managers ' job performance during post ($r = .62, B=3.99, R^2 = .39$; $r = .30$, $B=3.11$, $R^2 = .09$ respectively) and follow up training intervention evaluation ($r = .97$, $B=.94$, $R^2 = .95$, $r = .93$; $B=.93$, $R^2 = .87$ respectively). **Conclusion:** This study indicated that talent management training is essential for enhancing first line nurse managers' job performance in their work. When the hospital has proper talent management processes and practices for first line nurse managers, it leads to enhanced organizational outcomes. **Recommendations:** Healthcare organizations should adopt certain strategies to attain high talent management and job performance among first line nurse managers as providing them with talent management skills and knowledge through establishing training programs and preparing newly hired head nurses with talent management practice training.

Introduction

Talent management (TM) has become a key performance issue that significantly influences critical operational concerns within healthcare settings (**Knott, 2016; Obeidat et al., 2018; Kumar, 2022**). It can be defined as "sets of behavior patterns that line managers need to bring to a position to attract, select, engage, develop and retain talented employees to reach specific desirable business objectives for the organization" (**Oehley, 2007**). The basic purpose behind TM development is to improve the process of recruitment, selection, retention, and employee development to meet current challenges faced by the organization and improve organizational performance by fulfilling TM needs (**Kumar, 2022; Mgbemena et al., 2022**) .

TM practices of first line nurse managers consist of a wide range of activities including displaying a TM mindset, attracting and recruiting talent, identifying and differentiating talented nurses, developing others, building and maintaining positive relationships, providing meaningful and challenging work, remunerating and rewarding fairly, managing work-life balance. TM practices are the specific responsibility of managers (**Knott, 2016; Oehley, 2007; Armstrong, 2006**).

The TM practice is considered a key element for managers' job performance outcomes (**Krishnan et al., 2020**). The ideal TM system is one where all managers understand the mission of the organization, how far they are towards achieving the organization's goals, and the skills required to improve performance and help the organization reach its dream. It improves manager performance and boosts the productivity of an organization (**Knott, 2016; Armstrong, 2006**).

Manager performance is a measure of the quality of a manager's job execution (**Knott, 2016; Kanapathipillai, 2020**). Job performance can be defined as "individual behavior - something that

people do and can be observed that generates value for the organization and contributes to the organization's goals" (**L´opez-Cabarcos, 2022**).

Significance of the study

First line nurse managers must be given appropriate and relevant knowledge, skills, and attitudes through TM training to enable them to develop these critical job performance goals (**Abd-Elmoghith & Abd-Elhady, 2021**). TM training program generates an improvement in first-line nurse manager performance. It positively influences nurse managers' performance due to the development of knowledge, behavior, abilities, skills and competencies. Thus, it provides benefits for both the health care organization and the managers (**Knott, 2016**).

Worldwide, to our knowledge, although many studies associated TM practice with organizational and employee performance (**Knott, 2016; El Dahshan et al., 2018; Sopiah et al., 2020; Sidek et al., 2021; Ngiu et al., 2021; Makki et al., 2022**), little research focused on the relationship between TM practice and manager's job performance (**Krishnan et al., 2020**). Two Egyptian studies linked TM training programs with nurses ' empowerment and head nurses' leadership effectiveness, yet the impact of TM training program on first line nurse manager job performance in health care settings was not studied comprehensively (**Mohammed et al., 2020; Elhanafy & Hessewi, 2021**).

Aim of the study:

The present study attempted to examine the effect of TM intervention program for first line nurse managers on their job performance (**Figure 1**).
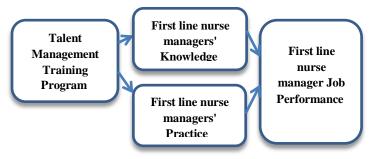

Figure (1): The study's conceptual frame

Operational definitions:

-   **TM practice**: is the set of TM behavior patterns that first line nurse managers need to adopt for effective and efficient management of their units as well as achievement of desirable organizational goals and outcomes.

-   **First-line nurse manager job performance**: is the action, achievement or fulfillment of first line nurse managers' responsibilities of TM, based on their TM knowledge and practice.

Study hypotheses:

(1) **H1:** Implementing the TM intervention program will significantly improve the first line nurse managers' knowledge of TM during post and follow-up intervention program compared to pre-intervention program

(2) .**H2:** Implementing the TM intervention program will significantly improve the TM practice of first line nurse managers in their workplace during post and follow-up intervention program compared to pre-intervention program.

(3) **H3:** Implementing the TM intervention program will significantly improve first line nurse manager job performance in their workplace during post and follow-up intervention program compared to pre-intervention program.

Subjects and Method:

Research design:

A quasi-experimental design was utilizing one group for pre, post and follow-up intervention.

Settings:

Study settings included all inpatient care units (medical- surgical, surgical intensive, toxicology and critical care units) at the Alexandria Main University Hospital. It is a teaching hospital affiliated to Faculty of Medicine, Alexandria University. It is considered the main teaching hospital among Alexandria University Hospitals, comprising inpatient care units (medical-surgical, critical, intensive and toxicology care units) and different specialty outpatient clinics. It provides free high quality medical care to Egyptian community and free training to health care practitioners.

Subjects:

A convenience sample was implemented on 125 first-line nurse managers (head nurses and their assistants) who participated in the study units after giving informed consent.

Study tools:

Tool (1): Personal demographic data: It was developed by researchers to collect data regarding age, experience and level education of first line nurse managers, in addition to their workplace.

Tool (2): The scale of first line nurse managers' self-reported knowledge about talent management: It contained forty items developed by the present study researchers based on literature reviews (**Oehley, 2007; Lyria, 2015; Thunnissen & Buttiens, 2017; Padoshi, 2018; Soud, 2020; Elhaddad et al., 2020; Rania, 2021**). It consisted of four main aspects of TM practice: **(a)** the concept of TM as the definition (2 items), benefits (3 items), the advantage (5 items), elements/components (4 items), principles (6 items); **(b)** process (10 items); **(c)** practice (5 items); and **(d)** role in nursing (5 items). First line nurse managers provided their answers using the binary scale (No=0, Yes =1). Kuder-Richardson (KR-20) was .92.

Scoring method: The total scores of knowledge were 40 points. A satisfactory level of knowledge was attained when scores were equal and more than 24 points ($\geq$ 60 %). Unsatisfactory level of knowledge was achieved when scores were less than 24 points (< 60 %).

Tool (3): The scale of first line nurse managers' self-reported TM practice: 38 of 43 items were developed by **Oehley (2007)** for assessing TM practice among first line nurse managers. A five Likert scale (from 1= never and 5 = always) was used for measuring this scale.

Scoring method: Mean score of first line nurse manager self-reported practice of TM was at an unsatisfactory level when the total mean scores were less than 3 points and were at the satisfactory level when the total mean scores were equal and more than 3 points.

Tool (4): First-line nurse manager job performance scale: 65 of 80 items was developed by researchers and based on literature reviews for measuring first line nurse manager job performance (**DeOnna, 2006; Cadmus & Wisniewska, 2013; Nurmeksela et al., 2019; Nurmeksela et al., 2021**). First line nurse managers rated their response on a five Likert scale (1= Not once to 5= Always).

Scoring method: Mean score of first line nurse manager job performance was at an unsatisfactory level when the total mean scores were less than 3 points and was at the satisfactory level when the total mean scores were equal and more than 3 points.

Validity and Reliability:

Face validity was achieved through literature review. The content validity was established by five experts. They examined first line nurse

manager self-report questionnaires using a five-ranking Likert scale (1= not applicable to the study and 5 = highly applicable to the study). The consensus among experts was achieved by the content validity index (CVI) which should not be less than 80 %.

Factor analysis was utilized to determine the construct validity of first line nurse manager self-reported practice of TM and first line nurse manager job performance questionnaires. 43 items of TM practice and 80 items of first line nurse manager job performance were subjected to a factor analysis utilizing principle component analyses with Varimax Rotation.

Factor analysis was performed according to the following principles: The total variance was more than 70 % and Eigen value was more than one; item loading was greater than .5. Item loading less than .5 was excluded from factor analysis. KMO was statistically significant for Bartlett's Test of Sphericity (p=0.000).

Factor analysis principles and inter-consistency reliability were as follows: Dimensions of TM practice were explained by 86.7 % of total variance, the factor loading ranged from .57 to .95, KMO was .75 with statistical significance of Bartlett's Test of Sphericity. Dimensions of first line nurse manager job performance yielded 87.3 % of total variance, the factor loading varied from .65 to .98, and KMO was .74 with statistical significance of Bartlett's Test of Sphericity.

Thirty eight items of TM practice were emerged into seven dimensions as follows: display a TM mindset (4 items); build and maintain positive relationships (6 items); provide meaningful and challenging work (5 items); remunerate and reward fairly (6 items); manage work-life balance (5 items); identify and differentiate talented nurses (6 items); develop nursing staff (6 items). Alpha coefficient was .83.

Sixty five items of first line nurse manager job performance were applied into nine dimensions as follows: responsible for new nurses (5 items); human resources management (9 items); development of the unit (12 items); development of nursing staff (7 items); personal self-development (7 items); supervisory responsibility (10 items); daily management practice (5items); interpersonal organizational communication (5 items); and decision making (5 items). Alpha coefficient was .89.

All questionnaires were translated into Arabic and retranslated into English for ensuring the consistency and applicability of questionnaires

among first line nurse managers. The final version of the questionnaires' items included 143 items (40 items of knowledge about TM and 38 items of TM practice and 65 items of job performance).

Test–retest reliability was accomplished through pilot study**.** A pilot study was applied on 30 first line nurse managers to establish the clarity, practicability and feasibility of questionnaires and calculate the time required to fill questionnaires. The same questionnaires were distributed to the same first line nurse managers at different two times over three weeks. The reliability coefficient was .86 for the knowledge questionnaire, .79 for self-reported practice and .83 for job performance.

Data collection:

Data were collected from 30 December 2022 to 30 April 2023 using first line nurse manager self-report administered questionnaires regarding TM (self-reported knowledge and practice) and job performance during the training program. This program was established as follows:

- *Aim of the intervention program***:**

This program aimed to build first line nurse managers' knowledge and practice around TM for achieving greater first line nurse managers' job performance in their workplace.

- *Content of intervention program:*

The program consisted of five topics regarding four aspects of TM practice and first line nurse manager job performance, such as the concept of TM (the definition, benefits, the advantage, elements/components, principles), process of TM, practice of TM, role in nursing in TM and job performance of first line nurse managers.

- *Intervention program process:*

Pre- and planning intervention phase: A pre-test was carried out to determine first line nurse managers' learning needs about TM practice using first line nurse manager self-reported knowledge and practice questionnaires. Learning content and objectives were developed based on the results of the pre-test. The teaching methods of the program proceeded in the order of presenting the lecture with an audiovisual power point and group discussion, presenting role-play and case studies, preparing assignments, conducting brainstorming, self-directed problem-based learning and group activities. Lecture notes and timetable of learning sessions were delivered to first line nurse managers during this phase.

Implementation intervention **phase:** 125 first line nurse managers were divided into five groups, 25 FLNMs / each. This program was provided over one month, composed of 3-hour sessions offered twice weekly. The training involved eight learning sessions requiring a total of 24 learning hours. Eight learning sessions were divided into 5-day theoretical sessions and 3-day practical sessions.

Face to face learning was delivered by researchers to five groups of first line nurse managers throughout theoretical and practical sessions, in the classroom of the medical- surgical departments of Alexandria Main University Hospital. Theoretical sessions comprised four aspects of TM practice and first line nurse manager job performance. Practical sessions included training first line nurse managers to be able to apply TM plans in managing their units.

At the beginning of each session, revision and summarization of previous sessions were carried out and the participants were asked to provide their feedback about the previous session. The learning objectives and content of the current session were described to participants, and at the end of each session, they were reviewed. By the completion of the TM training program, the feedback of participants was obtained by asking each participant to develop a TM plan for their units and explain it to other first line nurse managers.

Post and follow-up intervention phase: Post-test was held four weeks after the completion of the program and a follow-up test was held three months after the completion of the program using the same three-designed questionnaires utilized for the first-line nurse managers in the pre-test phase.

Ethical considerations: Ethical committee of Faculty of Medicine at Alexandria University and Faculty of Medicine administration provided approval to conduct the study. First line nurse managers participated in the training intervention program after signing informed consent. They had the right to withdraw from the study at any time. The participants were reassured that their responses would be kept confidential and handled by anonymous manner.

Statistical analysis: Data were analyzed by SPSS version 20. Descriptive analysis was used to demonstrate the percentage, mean and standard deviation between study variables. Paired t and Z tests were used to identify improvement and change in the mean scores of the study variables. Correlation and linear regression were used to identify the effects of the TM training program on first line nurse manager job performance. Inter-consistency and test–retest reliability were accomplished using Cronbach's Alpha coefficient and Kuder-Richardson, while test–retest reliability was attained using Pearson's moment coefficient.

Results:

Data of participants

More than 40 % of first line nurse managers worked in medical -surgical wards (44.8 %), aged from 40 to 49 years old (43.2 %) and had a bachelor degree (48 %). More than one third of them had more than 30 years of experience (36.8 %) (**Table 1**).

Levels and mean scores among first line nurse managers

The results throughout the post and follow-up program assessment showed that when first line nurse managers demonstrated a satisfactory level of knowledge (92.8%, 85.6 %, respectively) and practice of TM (84.8 %, 83.2 %, respectively), first line nurse managers' perception of their job performance was at a satisfactory level (83.2 %, 80 %, respectively), while all participants showed unsatisfactory levels more frequently in pre-program evaluation (**Table 2**).

There were significant differences throughout the post and follow-up program assessment in overall mean scores of first line nurse managers' self-reported knowledge (t = -53.928; t=-29.704, respectively) and practice of TM (Z= -9.830; Z= -9.554, respectively), compared to pre- program assessment (**Table 3**).

There were significant differences throughout the post and follow-up program evaluation in overall mean scores of first line nurse manager job performance (Z = -9.394; Z= -9.250 respectively), in comparison to pre-program assessment (**Table 4**).

Effectiveness of TM training program

First line nurse managers' self-reported knowledge of TM throughout post and follow-up assessment had a positive correlation with and had a direct effect on first line nurse managers' self-reported practice of TM (r = . 64; B=4.22, R^2 = .41; r = .43; B=4.37, R^2 = .18, respectively). Knowledge of TM throughout the post and follow-up program evaluation predicted greater first line nurse manager job performance (r = .62; B=3.99, R^2 = .39; r = .30; B=3.11, R^2 = .09, respectively). Additionally, the self-reported practice of TM throughout post and follow-up program assessment predicted greater first line nurse manager job performance (r = .97; B=.94, R^2 = .95; r = .93; B=.93, R^2 = .87, respectively) (**Table 5**).

Table (1): Personal data of first line nurse managers (n=125)

Variable	Frequency No.	Percentage (%)	Variable	Frequency No.	Percentage (%)
Age			**Experience**		
< 30	8	6.4	< 10	9	7.2
30-39	43	34.4	10-19	34	27.2
40-49	54	43.2	20-29	36	28.8
≥ 50	20	16.0	≥ 30	46	36.8
Level of education			**Workplace**		
Bachelor	60	48.0	Medical - surgical Wards	56	44.8
*Technical nursing institute	15	12.0	Surgical intensive care	25	20.0
*Secondary nursing school	50	40.0	Critical care	44	35.2

*Diploma

Table (2): Levels of first line nurse managers' self-reported knowledge and practice of TM and job performance

Knowledge & practice	Managers (n=125)			Job performance	Managers (n=125)		
	Pre No. (%)	**Post** No. (%)	**Follow-Up** No. (%)		**Pre** No. (%)	**Post** No. (%)	**Follow-Up** No. (%)
Overall self-reported knowledge				**Overall job performance**			
Satisfactory	8(6.4)	116(92.8)	107 (85.6)	Satisfactory	17 (13.6)	104 (83.2)	100 (80.0)
Unsatisfactory	117 (93.6)	9(7.2)	18(14.4)	Unsatisfactory	108(86.4)	21 (16.8)	25(20.0)
Overall self-reported practice							
Satisfactory	10 (8.0)	106(84.8)	104 (83.2)				
Unsatisfactory	115(92.0)	19 (15.2)	21(16.8)				

Table (3) Mean scores first line nurse manager' self-reported knowledge and practice on TM (n=125)

Aspects & dimensions of TM	Min – Max	Mean scores of self-reported Knowledge			A paired t-test (*p-value)	
		Pre-Mean± SD	Post Mean± SD	Follow Up Mean± SD	Pre-post	Pre- follow-up
Overall knowledge	**0-40**	**.25±.98**	**37.48±7.51**	**33.96±11.94**	**-53.928(.000)[a]**	**-29.704(.000)[a]**
Concept	**0-20**	**.25±.98**	**18.58±4.53**	**16.36±6.03**	**-43.739(0.000)[a]**	**-26.641(0.000)[a]**
▪ Definition	0-2	.00±.00	1.84±.54	1.71±.70	-37.762(.000)[a]	-27.150(.000)[a]
▪ Benefits	0-3	.00±.00	2.77±.78	2.64±.92	-39.715(0.000)[a]	-31.804(0.000)[a]
▪ Advantage	0-5	.00±.00	4.72±1.15	4.28±1.76	-45.720(.000)[a]	-27.150(.000)[a]
▪ Elements/components	0-4	.25±.98	3.87±.70	3.64±1.13	-34.171(.000)[a]	-18.631(.000)[a]
▪ Principles	0-6	.00±.00	5.37±1.83	4.08±1.94	-32.685(.000)[a]	-23.450(.000)[a]
Process	**0-10**	**.00±.00**	**9.92±.89**	**9.12±2.84**	**-124.000(.000)[a]**	**-35.840(.000)[a]**
Practice	**0-5**	**.00±.00**	**4.63±1.29**	**4.28±1.76**	**-39.883(.000)[a]**	**-27.150(.000)[a]**
Role of Talent leader	**0-5**	**.00±.00**	**4.53±1.67**	**4.20±1.84**	**-29.023(.000)[a]**	**-25.515(.000)[a]**
Dimensions of TM practice						
Overall self-reported practice	**1- 5**	**1.75±.23**	**4.07±.73**	**3.95±.69**	**-9.830 (.000)[b]**	**-9.554 (.000)[b]**
Display a TM mindset	1-5	1.69±.86	4.08±.17	4.00±.22	-9.723 (.000)[b]	-9.624(.000)[b]
Identifying & differentiating talented nurses	1-5	1.70±.94	4.09±.80	4.06±.69	-9.840 (.000)[b]	-9.807(.000)[b]
Nurses' remunerating and rewarding fairly	1-5	1.75±.98	4.06±.48	3.96±.69	-9.684(.000)[b]	-9.492(.000)[b]
Managing nurses' work-life balance	1-5	1.72±.93	4.09±.80	3.95±.87	-9.717(.000)[b]	-9.478(.000)[b]
Building and maintaining positive relationships	1-5	1.83±.97	4.05±.68	3.86±.52	-9.517(.000)[b]	-7.716(.000)[b]
Providing meaningful & a challenging work environment	1-5	1.80±.93	4.00±.56	3.86±.35	-9.407(.000)[b]	-7.999(.000)[b]
Developing nursing staff	1-5	1.76±.79	4.09±.89	3.95±.80	-9.690(.000)[b]	-8.692(.000)[b]

[a] **Paired t test was significant at ≤ 0.05**   [b] **Z test (Wilcoxon Signed Ranks) was significant at ≤ 0.05**

Table (4): Mean scores of first nurse managers' job performance (n=125)

Job performance	Min – Max	Mean scores			*Z test (p-value)	
		Pre-Mean± SD	Post Mean± SD	Follow Up Mean± SD	Pre-post	Pre- follow-up
Overall job performance	**1-5**	**1.86±.63**	**3.99±.64**	**3.94±.48**	**-9.394 (.000)**	**-9.250 (.000)**
Responsible for new nurses	1-5	1.80±.50	4.06±.81	4. 04±.66	-9.534 (.000)	-9.650 (.000)
Human resources management	1-5	1.89±.37	3.92±.82	3.87±.59	-9.378 (.000)	-9.308(.000)
Development of the unit	1-5	2.03±.36	4.08±.43	4.00±.47	-9.155 (.000)	-9.163 (.000)
Development of nursing staff	1-5	1.87±.69	3.98±.98	3.92±.59	-9.387 (.000)	-9.047 (.000)
Personal self-development	1-5	1.76±.97	4.01±.23	3.96±.28	-9.558 (.000)	-9.216 (.000)
Supervisory Responsibility	1-5	1.91±.36	3.83±.31	3.77±.36	-9.128 (.000)	-8.780 (.000)
Daily management practice	1-5	1.81±.91	4.12±.82	4.06±.46	-9.646 (.000)	-9.321 (.000)
Interpersonal organizational communication	1-5	1.71±.91	4.14±.90	4.08±.57	-9.867 (.000)	-9.530 (.000)
Decision making	1-5	1.78±.63	3.79±.37	3.74±.41	-9.087(.000)	-8.738(.000)

* Wilcoxon Signed Ranks Test and significant at ≤ 0.05

Table (5): Effect of TM training program on first-line nurse manager job performance

Variables	Managers' knowledge														
	Pre					Post					Follow Up				
	r	Regressing analysis				r	Regressing analysis				r	Regressing analysis			
		B	R²	Std. Error	t-test (sig.)		B	R²	Std. Error	t-test (sig.)		B	R²	Std. Error	t-test (sig.)
self-reported practice	.77**	.80	.60	.059	13.730 (.001)	.64**	4.22	.41	.2454	9.312 (.000)	.43**	4.37	.18	.822	5.317 (.000)
job performance	.73**	.68	.53	.057	11.953 (.000)	.62**	3.99	.39	.446	8.965 (.000)	.30**	3.111	.09	.865	3.599 (.000)
	Managers' self-reported practice														
	Pre					Post					Follow Up				
	r	Regressing analysis				r	Regressing analysis				r	Regressing analysis			
Variables		B	R²	Std. Error	t-test (sig.)		B	R²	Std. Error	t-test (sig.)		B	R²	Std. Error	t-test (sig.)
job performance	.97**	.86	.94	.019	45.782 (.000)	.97**	.94	.95	.019	49.788 (.000)	.93**	.93	.87	.032	29.409 (.000)

** Correlation (r) was sig. at 0.01

Discussion

Talent management (TM) plays a vital role in maintaining emotional stability and performance at work, along with the positive outcome of the improved overall organizational performance (**Makki et al., 2022**). TM aims to build stronger managers, directors, and supervisors, starting as early as an individual's first year on the job (**Mohamad, 2013**). Therefore the present study aimed to examine the effect of the TM intervention program on first line nurse manager job performance.

The results of the present study showed that first line nurse managers' self-reported knowledge and practice of TM had a significant influence on their perception of the quality of job performance. Talent development had a positive and significant effect on first line nurse managers' job performance throughout post and follow-up training interventions. Higher levels of TM are bound up with the performance and the manager's way of dealing with TM aspects (**Gorozidis & Papaioannou, 2014; Kamal, 2017; Nguyen et al., 2021; Khalil et al., 2022**).

From the researchers' point of view, the TM practice was considered an attractive new subject that stimulated the curiosity of first line nurse managers in the current study to learn more and more about this innovative subject. Thus, first line nurse managers were eager to the acquisition of knowledge and practice of TM through the learning process. First line nurse managers felt a responsible towards the application of TM practice in their

units. Thereby, this led to enhanced elements of first line nurse manager job performance.

These findings agreed with those of **Aswathappa (2008), Cascio (2010) and Knotte (2016)** who asserted that efficient talent management development program in an organization was effective in improving the performance of employees. It plays a psychological linking with the organization and the employee that leads to enhanced employee performance, thus achieving the end goal of the organization.

The present study pointed out that there was an improvement in first line nurse managers' self-reported knowledge and practice of TM through post and follow-up training program in comparison to the pre-training program assessment. These results were in agreement with Egyptian studies and a Jordan's study, which found that the poor parameters in the pretest significantly improved throughout the post and follow-up training phases (**Rashed , 2017; Khalil , 2017; Obeidat et al.,2018; Elhanafy & El Hessewi , 2021**).

There was a statistically significant enhancement in overall TM knowledge and practice, reaching a satisfactory level for all aspects of knowledge and dimensions of practice. TM practice mean scores reflected that the first line nurse managers perceived a satisfactory level of TM practice for displaying, TM mindset, identifying and differentiating talented nurses, fairly providing nurses' remunerating and rewarding, managing nurses' work-life balance, building and maintaining positive relationships, providing meaningful and a challenging work environment and developing nursing staff in their

units during post and follow up assessment of the training program in compared with pre-program evaluation.

Similar results were found in the study of **Taie (2015) , Obeidat, et al., (2018), Ogabari, et al, (2018) and Mohamed et al. (2020)** who reported that all of the participants had a lack of knowledge about TM before learning sessions. Throughout post and follow-up training interventions, there was a positive significant improvement in TM knowledge and practice among participants.

Improving employee job performance will lead to the overall enhancement of organizational performance (**Cheboi, 2014**). Managers who practice TM regularly demonstrate exceptional ability and achievement over a range of activities and transferable high competence (**Hatum, 2010; Hamidi et al., 2014; Taie, 2015**). The present study revealed that the TM practice had a positive significant impact on first line nurse managers' job performance. First line nurse managers satisfactorily identified their job performance and its dimensions as responsibility for new nurses, human resources management, development of the unit and nursing staff, personal self-development, supervisory responsibility, daily management practice, interpersonal organizational communication and decision making.

These findings were consistent with **Dashan et al. (2018) and Makki et al (2022)** who stated that the TM practice had a positive significant impact on nursing performance. Similar findings were also found in the study of **Kanpathipillai (2020), Shaheen et al., (2013) and Amin et al. (2013)** who reported that the training positively and significantly affected performance. However, the present study was incongruent with the study of **Krishnan et al., 2020** who reported that not all TM practice dimensions affected managers' job performance in Malaysia SMIS manufacturing sector context. The present Egyptian study was quasi-experimental study and conducted in health care sector, while the study in Malaysia was descriptive correlational study and implemented in the manufacturing sector.

Also, the result of the present study was in contrast to the study done by **Hariyati and Ungsianik (2018)**; who stated that not all head nurses reported high leadership effectiveness levels after participating in active learning sessions. This discrepancy might be related to different sample size and study settings. Hariyati and Ungsianik study was implemented on 25 head nurses, in a different organizational and management structure.

From the researchers' point of view, unsatisfactory level of self-reported knowledge of TM among first line nurse managers were related to poor TM practice or inability to manage well in their units during the pre - intervention. Additionally, the hospitals may not be sharing TM practices with their staff before the training program. This program improved first line nurse managers' ability to perform their job by increasing their knowledge of talent management. Furthermore, they were able to gain the TM practice necessary for the attainment of work outcomes and goals.

In this respect, first line nurse managers had the ability to perform their task well with the desired level of performance after completing the TM program in this study , through using effective communication, sharing staff feelings, performing the objective assessment of individual nursing needs with their nursing staff, establishing workshop training, developing knowledge and skills of their staff through frequent conferences and written instructions on daily basis, providing frequent feedback to their staff and developing policies and procedures for safe patient care. Thus, they achieved a satisfactory level of TM practice and job performance through the post and follow-up training.

Conclusion

The present study concluded that the TM training program had a significant improvement and influence on first line nurse manager job performance through increasing their knowledge and practice of TM. The enhanced knowledge of TM had a positive impact on their practice of TM and their performance.

There were statistically significant differences between mean scores of first line nurse managers' self-reported knowledge and practice on TM and their job performance in the post and follow-up training phase. It indicated that when the first line nurse managers achieved satisfactory levels in all aspects of TM knowledge and dimensions of TM practice, they also attained a satisfactory level of job performance after attending TM training program.

Implications for nursing management:

Healthcare organizations attain progress through talent management. TM training leads to an improvement in first line nurse manager job performance. Healthcare organizations should adopt certain strategies to attain high TM and job performance among first line nurse managers as

providing them with TM skills and knowledge through establishing training programs, providing refreshment TM courses ; preparing newly hired head nurses with TM practice training and periodical workshops for enhancing their performance and introducing TM policy in their strategic planning.

In this respect, first line nurse managers should be encouraged to engage in and conduct regular discussions with their nurses, especially around their career goals and needs. This would help the correct allocation of work assignments to high-potential nurses to increase their loyalty to their workplace. Providing financial and moral rewards for first-line nurse managers is essential to enhance their performance, which eventually results in organizational success.

Study limitations:

The present study had some limitations that should be considered before generalization. The sample should have preferably been larger; from different health care organizations; whether teaching, health insurance or ministry of health hospitals. Moreover, a probability sampling procedure could preferably have been used rather than a convenience sample. Another limitation in the present study was the use of self-report questionnaires to collect study data.

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