Effect of Implementing Educational Program regarding Nurse Managers' Performance in Human Resource Management on Nurses' Job Crafting

Nawal Mahdi Mohamed[1], Samar Hosny Ghadery[2], Lobna Khamis Mohamed[3], Seham Ali Mahmoud [4]

[1]Assistant Lecturer of Nursing Administration, Faculty of Nursing, Tanta University, Egypt
[2,3]Prof. of Nursing Administration, Faculty of Nursing, Tanta University, Egypt.
[4]Assistant Professor of Nursing Administration, Faculty of Nursing, Tanta University, Egypt

Corresponding author: Nawal Mahdi Mohamed
Email:nawalmahdi48@gmail.com

Abstract:

Background: The nurse managers' practices of human resource management in healthcare organizations are critical to ensure that nurses are able to provide the best possible care and increase their level of engagement and the ability to craft their jobs. **Aim:** This study aimed to determine the effect of nurse managers' educational program regarding human resource management practices on nurses′ job crafting. **Research design:** Quasi-experimental study design was utilized in the current study. **Setting:** The study was conducted at Tanta University International Teaching Hospital, as well as El-Menshawy General Hospital. **Subjects**: All nurse managers and a stratified proportional sampling of nurses (n= 355). **Tools**: Four tools were used: knowledge questionnaire about human resource management practices, human resource management practices self-report, observational checklist of human resource management practices, and job crafting questionnaire. **Results:** The vast majority (92.6%) of nurse managers had a high knowledge level immediately post-program implementation, which slightly declined post-three months of the program, while the majority (90.7%) of them had a satisfactory level of all human resource management practices immediately and after three months of program implementation. while the majority (87.3%) of nurses had a high perception level of job crafting immediately after implementation of educational program. **Conclusion:** There is a significantly improvement in nurse managers' perceptions and practices regarding human resource management and nurses' perceptions level of job crafting immediately and after three months of program. **Recommendations:** Conduct regular periodical enhancement programs and workshops for nurse managers to maximize their practices of human management.
Key words: Human resource management practices, Job crafting, Nurses and Nurse managers.

Introduction

In recent decades, there has been growing interest in the use of human resource practices (HRPs) in healthcare organizations as a way to enhance healthcare performance and nurses' commitment, job satisfaction, and skills (**Anwar & Abdullah, 2021**). Among the different groups of workers within the healthcare system, nurses make up the largest share of the workforce, spanning all segments of care, which puts them in the core position in providing healthcare services. Therefore, introducing effective human resource management practices (HRMPs) for nurses is critical to ensure the high quality of health care (**Alqudah, Carballo-Penela, & Ruzo-Sanmartín, 2022; Amjad et al. 2021**).

Successful health organizational administration is measured by its ability to effectively utilize its HRMPs as a cure of managerial roles to reach the innovative work behaviors desired level (**Salas-Vallina, Alegre, & López-Cabrales, 2021**). HRMPs are activities established for leading collectively and constructively to reach desired organization' goals and objectives. Main HRMPs include recruitment, selection, involvement, training, development, and education, work conditions, and competency-based performance appraisal, as well as compensation and rewards, which lead to superior performance for the organization (**Alsafadi, & Altahat, 2021; Ngoc, et al. 2021**).

Recruitment and selection are the first important HRMPs that ensure the availability of nurses who have enough skills, knowledge, and abilities fit for their job tasks (**Nisar, et al. 2021**). Involvement is the human resource management practice that encourages interaction, acknowledgement, relationship, participation, and good communication among nurses (**Alsafadi, & Altahat, 2021**). Training, development, and education practices support the innovative performance of nurses that the basic needs of each health organization's competitive environment (**Barasteh, Rassouli, Karimirad, & Ebadi, 2021**).

Work conditions are to maintain a positive work culture and unblaming environment (**Nisar, et al. 2021**). Competency-based performance appraisal allows nurses and supervisors to measure and manage performance competencies, as well as establish development plans, which identify knowledge, skills, abilities, and critical behaviors for successful nurses' job roles and specific functions. While compensations and rewards are beneficial for nurses in exchange for their labor, which allows achieving organization's goals and objectives (**Barasteh et al. 2021**).

The administration of health care organizations, particularly human resources management, will be influenced in various ways by

applying the new concept of job crafting. Professional nurses play a vital role in the provision of health care globally. The performance of health care workers, including professional nurses, links closely to the productivity and quality of care provision within the healthcare organizations. Therefore, it is important to identify factors influencing the performance of professional nurses to enhance the quality of health care delivery (**Kim, 2021; Lee & Kim, 2023**).

Job crafting describes a process in which nurses initiate changes in their jobs to adapt to their own needs and preferences. There are three types of job crafting: task, cognitive, and relational crafting. Task crafting refers to nurses taking the initiative to change the number, scope, and form of job tasks. Cognitive crafting refers to nurses′ proactively changing their views on work. Relational crafting refers to nurses changing their interpersonal relationships at work (**Iida et al. 2021; Sheehan et al. 2023**).

Today, it has been increasingly recognized that job crafting is an important proactive organizational behavior for nurse, which leads to various valuable outcomes for both organizations and nurses. Thus, job crafting helps nurses to adjust the work to achieve career competencies, and better attain work goals.

Significance of study

Human resource management practices are the key factor in Egypt's

Vision 2030 that aims to reduce the healthcare workforce suffering at their workplaces and creates a comfortable environment. Nurses play a vital role in determining the efficiency, effectiveness, and sustainability of the healthcare system. Therefore, it is important to identify and comprehend what variables satisfy and motivate them to continue working in hospitals (**Al Aina & Atan, 2020**). Accordingly, proper management of these human resources has a significant role in shaping the healthcare organization's performance and job crafting abilities. Therefore, this study aimed to determine the effect of implementing an educational program regarding nurse managers' practices in human resource management on nurses' job crafting.

Aim of study

Determine the effect of implementing the educational program regarding nurse managers' practices in human resource management on nurses' job crafting.

Research hypothesis

After implementation the educational program; it was expected that:

-Nurse managers' knowledge, perceptions, and practices for human resources management will be improved.

-Nurses' perceptions about job crafting will be improved.

Subjects and Method

Study design: Quasi-experimental study design was utilized to accomplish the present study's aim.

Study setting:

The study was conducted at Tanta University International Teaching Hospital, which is affiliated to Ministry of Higher Education and Scientific Research in departments of Medical (A,B), Orthopedic, Neurological surgery, Vascular, and Oncology and ICUs of (Cardiac, Medical, Pediatric, and Neonates), as well as El-Menshawy Hospital, which is affiliated to Ministry of Health and Population in departments of Orthopedic, General surgery, Pediatric surgery, Neurological surgery and ICUs of (Medical, Pediatric, and Neonates)

Subjects:

The study's subjects included two groups; the first group consisted of all nurse managers who were working in Tanta University International Teaching Hospital (n= 17) and El-Menshawy General Hospital (n= 37).

The second group contained a stratified proportional sampling of nurses (n= 355) who were working in the previously mentioned settings. The total study sample was calculated using Epi. Info. Microsoft to ensure obtaining an adequate and representative size, where N= population size (650), Z= confidence level at 95% (1.96), d= margin of error proportion (0.05). A total number of samples was 195 out of 383 nurses from Tanta University International Teaching Hospital and 160 out of 267 nurses from El-Menshawy Hospital who are enrolled during data collection time.

Tools:

Four tools were used to accomplish the study's aim, including:

Tool I: Knowledge Questionnaire about Human Resource Management Practices:

This tool was developed by the researcher based on relevant literatures (**Jaiswal, Arun, & Varma, 2022; Shet, Poddar, Samuel, & Dwivedi, 2021**) to test nurse managers' knowledge about human resource management practices.

This tool consisted of two parts as follows:

Part one: Personal data of nurse managers: It involved their age, gender, marital status, educational level, hospital name, department, position, years of experience, and an additional question regarding attending a training program about human resource management practice.

Part two: Nurse managers' knowledge questionnaire regarding human resource management practices: It included knowledge questionnaire about HRMPs. It included 40 questions in the form of 25 true & false questions and 15 multiple choice questions.

Scoring system:

Each question was taken score (1) for a correct answer and (0) for a wrong answer. All the questions scores were summed up and categorized according to cut-off points into:

- High knowledge level > 80%

- Moderate knowledge level 60- 80%

- Low knowledge level < 60%

Tool II: Human Resource Management Practices Self-Report:

This tool was a self-reported questionnaire, which was developed by the researcher based on relevant literatures (**Irani, Kiliç, & Adeshola 2022; Dwivedi, Poddar, Samuel, & Shet, 2021; Hamouche, 2023**) to assess nurse managers' and nurses' perceptions regarding HRMPs. It included 66 questions, which were divided into six dimensions involving: recruitment and selection (15 items), involvement (19 items), training, development, and education (8 items), work conditions (13 items), competency-based performance appraisal (7 items), and compensation and reward (4 items).

Scoring system:

Responses of nurse managers and nurses were measured in a three points Likert Scale: agree (3), neutral (2), and disagree (1). The self-report scores of HRMPs were summed up and classified according to cut-off points into the following levels:
- High perception level >75%
- Moderate perception level 60%-75%
- Low perception level <60%

Tool III: Observational Checklist of Human Resource Management Practices (HRMPs):

This tool was developed by the researcher based on related literature reviews (**Vrontis et al., 2022; Irani et al., 2022)** to assess nurse managers' practices of HRM. It involved 38 items concerning dimensions of organizational support and involvement (22 items), training

and development (8 items), and work conditions (8 items).

Scoring system:

Responses of nurse managers were measured as follows: done = (1), not done = (0). The HRMPs levels among nurse managers were summed up and classified according to cut- off points into the following levels:
- Satisfactory level >80%
- Unsatisfactory level <80%

Tool IV: Job Crafting Questionnaire:

This tool was developed by the researcher based on related literature reviews (**Oprea et al., 2022; Melo et al., 2021; Kim, 2021)** to assess job crafting among nurses. It consisted of two parts as follows:

Part 1: Nurses' personal data: It involved nurses' age, gender, marital status, qualification, hospital name, unit name, years of experience, and an additional question regarding attending a training program about job crafting.

Part 2: Nurses' job crafting questionnaire: It was consisted of 34 items divided into three dimensions involving: task crafting (12 items), cognitive crafting (8 items), and relational crafting (14 items).

Scoring system

Nurses' responses were scored on a three points Likert Scale: agree (3), neutral (2), disagree (1). The total score was summed up and divided according cut-off points into varying levels as follows:
- High level of job crafting >80%
- Moderate level of job crafting 60-80%

- Low level of job crafting <60%

Method

1. Official permission to carry out the study was obtained from the Faculty of Nursing, as well as from the authoritative personnel in both hospitals.

2. Ethical considerations:

a) An approval was obtained from the Scientific Research Ethical Committee before conducting the study with a code number 122/11/2022.

b) The researcher introduced herself and provided a full explanation of the aim and the study's method was done to obtain their acceptance and cooperation as well as their informed consent.

c) The right to terminate participation at any time was respected.

d) Nature of the study did not cause harm to the entire sample.

e) Confidentiality and anonymity were maintained regarding data collection that will be used for the study purpose only.

3. Tools were presented to a jury of seven experts in the area of specialty to check the content validity of its items. The experts were five professors and two assistant professors of nursing administration, Faculty of Nursing at Tanta University. Responses of the experts were presented on a four points rating Scale ranging from strongly relevant= 4 to strongly not relevant = 1. Necessary modifications were done, including clarifying and simplifying certain words, excluding certain questions and adding others. The content validity index value for tool I was 98.5%, for tool II was 96.3%, for tool III was 97.7%, and for tool VI was 96.8%.

4. A pilot study was carried out on a sample of 10% of subjects, including six nurse managers and 36 nurses for testing the clarity and applicability of tools, who were excluded from the total study's subjects because they worked in different workplaces but had the main key features of the study's sample. It was carried out after the experts' opinions and before starting the actual data collection to test the clarity, items' sequence, applicability, and relevance of questions. The estimated time needed to complete the questionnaire items from nurses was 10 – 15 minutes for each sheet (questionnaire).

5. Reliability of tools was tested using Cronbach's Alpha Coefficient Factor; its value was 0.869 for tool I, 0.954 for tool II, 0.901 for tool III, and 0.898 for tool VI.

6. The tools were distributed by the researcher to the subjects in the work settings or in the conference room in small groups. The subjects were answering the questionnaire in the presence of the researcher .

7. Data collection was done in six months, starting from the beginning of July 2023 to the end of January 2024.

8. The educational program will be conducted in four phases, including assessment, planning,

implementation, and finally evaluation.

Phase I: Assessment

Pre-implementation of the instructional program, a pre-test was given to assess nurse managers' levels of knowledge regarding HRMPs through filling tool I. Also, nurse managers' and nurses' perceptions regarding HRMPs through filling tool (II), and nurses' job crafting using tool (IV).

Phase II: Planning of the instructional program

The instructional program construction started with determining the general and specific objectives according to the assessed nurse managers' knowledge and perceptions' levels regarding HRMPs and a review of relevant recent literature.

Aim of the instructional program:

At the end of the educational program, the nurse managers acquired knowledge of HRMPs and determined their effect on nurses' job crafting.

Content of the instructional program

The instructional program content was designed, and teaching methods were selected to enable nurse managers to acquire both knowledge and practices about HRMPs. Six sessions were included in the instructional program:

- **First session**: HRM concepts, objectives and its importance.
- **Second session:** Workforce planning and development (staffing).
- **Third session**: Workforce maintenance, satisfaction, and retention, as well as collective bargaining agreements.
- **Fourth session**: Challenges of HRM in healthcare and its models.
- **Fifth session**: Different HRMPs and its applications.
- **Sixth session**: Key dimensions to HRM, its ethics and job crafting.

Teaching and learning strategies

Interactive lecture, discussion, and brain storming were teaching and learning strategies included and utilized in the instructional program.

Teaching aids

PowerPoint Presentation (PPT), handouts, and videos were included and utilized as teaching aids in the instructional program.

Phase III: Implementation of the instructional program

- Nurse managers were divided into six groups. The instructional program was implemented in the form of (6) sessions, one session every day, in which each session continued from 30 to 45 minutes for 6 days. The sessions were held out of clinical time in breaks and after ending work time.

- After completing the instructional program sessions, praising and giving full thanks to nurse managers for their participation. Also, encouraging them to start HRMPs implementation in their clinical setting.

- The researcher conducted the observation during clinical practice.

Phase IV: Evaluation of the instructional program

The instructional program was evaluated to determine the extent to which it improved nurse managers' levels of knowledge regarding HRMPs implementation and helped them to practice it in their clinical areas through:

- Post-test to assess nurse managers' levels of knowledge regarding HRMPs (tool I) immediately post implementation of program and after three months.
- Observational checklist to assess nurse managers' levels of practice regarding HRMPs (tool III) immediately post implementation of program and after three months.
- Assess job crafting among nurses (tool IV) immediately post implementation of program and after three months.

Statistical analysis of the data

Data were fed to the computer and analyzed using the IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp) Qualitative data were described using number and percent. Quantitative data were described using range (minimum and maximum), mean and standard deviation. Significance of the obtained results was judged at the 5% level. The Marginal Homogeneity Test was used to analyze the significance between the different stages, and paired t-test was utilized for normally distributed quantitative variables, to compare between two periods. Furthermore, the Chi-square test was used for categorical variables to compare between different groups, and Pearson coefficient was used to correlate between two normally distributed quantitative variables. The statistically significant is stated when a p-value is less than 0.05.

Results

Table 1 showed that the majority (79.6%) of nurse managers were in the age group 30–<40 years with a mean score of 37.19±3.41 and all of them were females. The vast majority (94.4%) of nurse managers were married, and less than half (48.1%) of them had 10-<15 years of experience with a mean score of 13.65±3.26. Furthermore, 92.6% of nurse managers had a bachelor degree of science in nursing and the highest percent (14.8%) of them worked in intensive care units of neonates and medical, as well as department of the neurological surgery. The majority (88.9%) of nurse managers did not attend previous training programs about HRMPs.

Table 2 displayed that more than two-fifths (44.5%) of nurses were at age group <30 years with a mean score of 32.32±5.89 and the vast majority (91.5%) of them were females. The vast majority (93.2%) of nurses were married, and less than half (44.2%) of them had 5-<10 years of experience with a mean score of 9.11±6.05. Furthermore, more than half (50.4%) of nurses had a technical nursing diploma and more than half (54.9%) of them worked in Tanta University International Teaching Hospital. The

majority (80%) of nurses did not attend previous training programs about HRMPs.

Table 3: presented statistically significant differences between levels of nurse managers' knowledge on HRMPs pre, immediately, and three months after program implementation at $\leq$ 0.001. Pre- program, a vast majority (98.1%) of nurse managers had a low level of knowledge for HRMPs of challenges and models, which turned to be 83.3% of a high level immediately, then slightly decreased to be 73.1% of a high level after three months of program implementation.

Table 4 revealed a statistically significant differences between nurse managers' and nurses perceptions levels regarding the dimensions of training, development & education, competency-based performance appraisal, as well as compensation and rewards at p<0.001. The highest percent of nurse managers' perception ranged from 72.2% to 83.3%, assigned as a low level of perception about HRMPs. The highest percent of nurses' perceptions ranged from 71.0% to 83.8%, assigned as a low level of perceptions about HRMPs.

Table 5: showed statistically significant differences among nurse managers' levels in dimensions of organizational support and involvement, as well as in work conditions immediately and after three months of program at P$\leq$0.05. Immediately after program, the satisfactory levels of nurse managers'

human resource management practices ranged from 83.3% to 88.9%, which slightly deceased to 77.8% up 83.3% after three months of program implementation

Table 6 displayed statistically significant differences between nurses' perceptions in all dimensions of job crafting pre, immediately, and post three months of program implementation at $\leq$ 0.001. Pre-program, 84.5% of nurses had a low perception level of relational crafting, which increased to 80.3% and 86.5% of high levels immediately and after three months of program implementation, respectively. While 81.7% of nurses had a low perception level of task crafting, which turned into high perception levels (78.9% & 80.6%) immediately and after three months of program implementation, respectively. while, 83.1% of nurse had a low perception level of cognitive crafting, which turned into high perception levels (82.3% & 78.9%) immediately and after three months of program implementation, respectively.

Figure 1 illustrated the correlation between nurses' perceptions of HRMPs and job crafting. There was a strong statistically significant positive correlation between nurses' perceptions about their nurse managers' practices of HRMPs pre-implementation of program and their job crafting at pre, immediate, and after 3 months of program at p<0.001.

Table (1): Frequency and distribution of nurse managers' personal data (n = 54)

Personal data	No.	%
Age (years)		
<30	0	0.0
30 – <40	43	79.6
≥ 40	11	20.4
Min. – Max.	30.0 – 50.0	
Mean ± SD.	37.19 ± 3.41	
Gender		
Male	0	0.0
Female	54	100.0
Marital status		
Married	51	94.4
Unmarried	3	5.6
Years of experience		
5 – < 10	4	7.4
10 – <15	26	48.1
≥ 15	24	44.4
Min. – Max.	7.0 – 25.0	
Mean ± SD.	13.65 ± 3.26	
Education level		
Post-graduates Studies	4	7.4
Bachelor of Science in Nursing	50	92.6
Hospital name		
Tanta University International Teaching Hospital	17	31.5
El- Menshawy General Hospital	37	68.5
Department names		
Medical	2	3.7
Neurological surgery	8	14.8
Orthopedic	6	11.1
Neonates ICU	8	14.8
Cardiac ICU	2	3.7
Medical ICU	8	14.8
Pediatric ICU	7	13.0
General surgery	6	11.1
Oncology	2	3.7
Pediatric surgery	4	7.4
Vascular	1	1.9
Attend to previous training programs		
Yes	6	11.1
No	48	88.9

SD: **Standard deviation**

Table (2): Frequency and distribution of nurses' personal data (n = 355)

Personal data	Nurse (n = 355)	
	No.	%
Age (years)		
<30	158	44.5
30 – <40	139	39.2
≥ 40	58	16.3
Min. – Max.	20.0 – 45.0	
Mean ± SD.	32.32 ± 5.89	
Gender		
Male	30	8.5
Female	325	91.5
Marital status		
Married	331	93.2
Unmarried	24	6.8
Years of experience		
<5	81	22.8
5 – < 10	157	44.2
10 – <15	49	13.8
≥ 15	68	19.2
Min. – Max.	1.0 – 25.0	
Mean ± SD.	9.11 ± 6.05	
Education level		
Nursing secondary diploma	25	7.0
Technical Nursing diploma	179	50.4
Bachelor of Science in Nursing	150	42.3
Post-graduates Studies	1	0.3
Hospital name		
Tanta University International Teaching Hospital	195	54.9
El- Menshawy General Hospital	160	45.1
Department name		
Medical A, B	27	7.6
Neonates ICU	57	16.1
Orthopedic	31	8.7
Neurological surgery	42	11.8
Cardiac ICU	16	4.5
Medical ICU	64	18.0
Pediatric ICU	39	11.0
General surgery	18	5.1
Oncology	15	4.2
Pediatric surgery	24	6.8
Vascular	22	6.2
Attend to previous training programs		
Yes	71	20.0
No	284	80.0

D: **Standard deviation**

Table (3):Levels of nurse managers' knowledge regarding human resource management practices pre, immediately, and three months after program implementation.

Item of human resource management practices	Pre						Post Immediate						After 3 Months						F	p
	Low		Moderate		High		Low		Moderate		High		Low		Moderate		High			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
Human resource management' concepts, objectives and importance	43	79.6	1	1.9	10	18.5	1	1.9	4	7.4	49	90.7	5	9.3	7	13.0	42	77.8	74.309*	<0.001*
Workforce planning and development	51	94.4	2	3.7	1	1.9	1	1.9	4	7.4	49	90.7	4	7.4	9	16.7	41	75.9	92.655*	<0.001*
Workforce maintenance, satisfaction and retention	43	79.6	2	3.7	1	1.9	1	1.9	4	7.4	49	90.7	4	7.4	9	16.7	41	75.9	82.337*	<0.001*
Challenges and its models	53	98.1	1	1.9	0	0.0	2	3.7	7	13.0	45	83.3	3	5.6	11	20.4	40	74.1	96.812*	<0.001*
Different human resource management practices and its applications	41	75.9	13	24.1	0	0.0	0	0.0	8	14.8	46	85.5	0	0.0	25	46.3	29	53.7	93.030*	<0.001*
Key dimensions and ethics in Human resource management	50	92.6	3	5.6	1	1.9	4	7.4	21	38.9	29	53.7	6	11.1	24	44.4	4	44.4	82.605*	<0.001*

Fr: **Friedman test**

p: p value for comparing between the **different periods**

*: Statistically significant at $p \leq 0.05$

Table (4): Levels of nurse managers' and nurses' perception regarding human resource management practices

Dimensions of Human Resource Management Practices	Nurse managers (n = 54)						Nurses (n = 355)						χ^2	P
	Low		Moderate		High		Low		Moderate		High			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
Recruitment and Selection	45	83.3	5	9.3	4	7.4	277	78.0	29	8.2	49	13.8	1.714	0.424
Involvement	39	72.2	6	11.1	9	16.7	294	82.8	20	5.6	41	11.5	3.862	0.145
Training, Development and Education	39	72.2	3	5.6	12	22.2	252	71.0	42	11.8	61	17.2	18.508[*]	<0.001[*]
Work Conditions	45	83.3	2	3.7	7	13.0	276	77.7	33	9.3	46	13.0	1.899	0.387
Competency-Based Performance Appraisal	44	81.5	4	7.4	6	11.1	267	75.2	30	8.5	58	16.3	25.548[*]	<0.001[*]
Compensation and Rewards	45	83.3	4	7.4	5	9.3	286	80.6	14	3.9	55	15.5	6.294[*]	0.043[*]

χ^2: Chi square test   FE: Fisher Exact test

p: p value for comparing between the studied nurse managers and nurses

Table (5): Nurse managers' levels regarding dimensions of human resource management practices immediately and after three months of program implementation.

Dimensions of human resource management practices	Immediate				After 3 months				McN	p
	Satisfactory level		Unsatisfactory level		Satisfactory level		Unsatisfactory level			
	No.	%	No.	%	No.	%	No.	%		
Organizational support and involvement	45	83.3	9	16.7	42	77.8	12	22.2	17.192*	0.012*
Training and Development	46	85.2	8	14.8	44	81.5	10	18.5	2.242	0.774
Work Conditions	48	88.9	6	11.1	45	83.3	9	16.7	18.859*	0.012*

SD: Standard deviation   McN: McNemar test

p: p value for comparing between the different periods

*: Statistically significant at $p \leq 0.05$

Table (6):Nurses' perceptions levels of job crafting dimensions pre, immediately, and post three months of program implementation.

Job crafting' dimensions	Pre		Immediate		After 3 months		Fr	P
	No.	%	No.	%	No.	%		
Task Crafting								
Low (<60%)	290	81.7	7	2.0	43	10.5	456.137*	<0.001*
Moderate (60 – 80%)	30	8.5	68	19.2	26	6.4		
High (> 80%)	35	9.9	280	78.9	286	80.6		
Cognitive Crafting								
Low (<60%)	295	83.1	26	7.3	41	11.5	505.061*	<0.001*
Moderate (60 – 80%)	54	15.2	37	10.4	34	9.6		
High (> 80%)	6	1.7	292	82.3	280	78.9		
Relational Crafting								
Low (<60%)	300	84.5	10	2.8	27	7.6	538.354*	<0.001*
Moderate (60 – 80%)	33	9.3	60	16.9	21	5.9		
High (> 80%)	22	6.2	285	80.3	307	86.5		

Fr: Friedman test

p: p value for comparing between the different periods

*: Statistically significant at $p \leq 0.05$
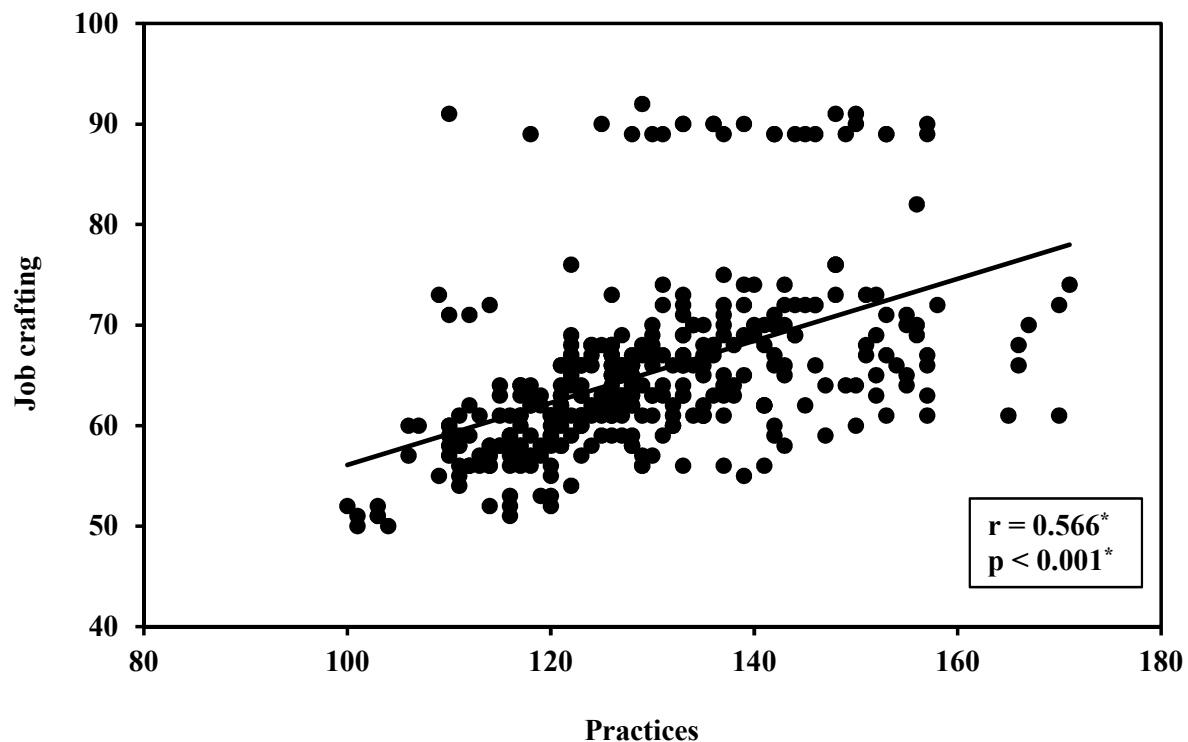
Figure (1): Correlation between nurses' perceptions about human resource management practices and job crafting (pre)

Discussion

The current study findings showed that in the pre-educational program, the majority of nurse managers had a low level of overall knowledge with a low mean score about HRMPs. This finding may be due to inadequate nurse managers' understanding about HRM concepts, dimensions, models, and challenges of human resource management. Also, the majorities of nurses managers do not attend previous training and workshops on HRMPs due to increased patient acuities and increased workload. The aforementioned finding suggests that nurse managers mostly rely on their experience to acquire teaching knowledge when beginning their careers.

In this context, **Aburumman, Salleh, Omar, and Abadi (2020)** mentioned that HRMPs is a relatively recent concept and still in the process of analysis and interpretation, so nurse managers didn't have adequate knowledge about it. Also, **Nisar et al. (2021)** revealed a lack of knowledge and unfamiliarity among nurse managers regarding HRMPs and obligated them to know more new human resources policies to develop the organization and enrich nurses' satisfaction. In addition, **Sheehan et al. (2023)** reported that human resource management practices are not easy to apply in clinical

environments, but they require knowledgeable and dedicated nurse managers.

On the other hand, **Alluhidan et al. (2020)** found a high level of HRM knowledge for the majority of nurse managers. Additionally, **Cuskelly, Fredline, Barry, and Kappelides (2021)** findings did not support the current study results, which found that the majority of nurse managers rated themselves as having a high level of HRM knowledge.

The current's study results revealed that the majority of nurse managers had a high knowledge level immediately post-program implementation, which slightly declined post-three months of the program. These results demonstrate how well the current educational program affected nurse managers' comprehension and knowledge, enabling them to do their jobs' duties in a successfully and efficient manner. This can be interpreted by implementing the program, using a variety of instructional techniques; effective booklet helps the nurse managers gain information related to HRMPs and become interested in this valued information that led them to significant improvements in their knowledge, which helped them to carry out their duties successfully.

Along with the present study, **Islam, Jantan, Yusoff, Chong, and Hossain(2023)** revealed improvement in nurse managers' knowledge and understanding regarding HRMs post-program compared to pre-program. At

the same line, **Collins (2020)** concluded that the nurse managers found a positive change of developments when implementing human resource management program, so the healthcare organizations continued to expand the role of implementing educational programs to increase quality, collaboration, and engagement.

Contradictory, **Saridakis, Lai, Muñoz Torres, and Gourlay, S. (2020)** found some nurse managers unmotivated to utilize HRMPs and did not interest in attending any workshops related to workload demands and meeting their role expectations prior to experiencing a HRMPs program. Also, **Irani, Kiliç, and Adeshola (2022)** found that a high percent of the nurse managers reported that they didn't implement workshops about HRM due to limited time and shortage of their number for coverage all departments.

The current study results showed that pre-implementation of educational program, the majority of nurse managers and nurses had a low perception level of overall HRMPs. This may be due to a lack of theoretical knowledge of nurse managers and time constraints to implement it successfully, a long period for preparation and implementation, as well as poor nursing participation in HRMPs. Furthermore, poor motivational organizational environment is a crucial challenge affecting nurse managers perceptions. This is a

worrying finding that highlights the need for more focus on nursing management-related policies, procedures, and systems in relation to human resource practices.

This finding is supported by **Korkmaz, Van Engen, Knappert, and Schalk (2022),** who found that nurse managers stated that insufficient experience is a challenge to introducing HRMPs within clinical healthcare organizations. Also, **Aboramadan (2022)** found that the majority of nurse managers had a low perception level due to a lack of knowledge as most of the existing literature reviews on HRMPs are not comprehensive and remain fragmented, and fewer nursing reviews provide the latest approaches in a comprehensive way.

Furthermore, the Egyptian study of **Kassem and Ibrahim (2022)** found that nurses who assessed their own job performance as poor had a low perception level of HRMPs, which hindered their ability to achieve excellence performance in hospitals. On disagreement, **Votto, Valecha, Najafirad, and Rao (2021)** revealed that the majority of nurse managers had a high perception level of HRMPs. In addition, **Saks (2022)** found a high perception level and successful HRMPs implementation among nurse managers.

The current study results showed that the majority of nurse managers had a satisfactory level of total HRMPs immediately and after three months of program implementation. This demonstrated that nurse managers have grown more conscious of human resource management practices and are prepared to assume their duties and be accountable for them alongside nurses.

This finding is supported by **Akdere and Egan (2020),** who found that nurse managers demonstrated HRMPs at a higher level after the program than preprogram. In addition to **Jose, PM, & Kuriakose (2024),** who found that educational intervention for unit nurse managers about HRMPs achieves innovative work behavior and well-being, which reflects on the quality of health care services. Also, **Strohmeier (2020)** recommended the essentiality of educational programs related to human resource planning, recruitment and selection methods, training and development, retaining nurses, compensation methods, performance appraisal, and grievance handling mechanisms.

The current study results showed that the majority of nurses had a high perception level of job crafting immediately after implementation of educational program. This finding might be justified because nurse managers after program implementation can set challenging goals for their own work, seek and accept feedback, grow and improve continually, and may engage in more interactions with their staff. They also perceive their jobs as important and meaningful, so they may be intrinsically motivated to craft their jobs to improve the work process

and achieve a desired level of job performance.

Along with the present study findings of **Topa and Aranda-Carmena (2022),** there were a highest percentage of nurses who had a high level of engagement in job crafting activities after program. **Sook and Ji-Soo (2022)** reported that training courses had a high positive impact on nurses' knowledge regarding job crafting and performance. Moreover, **Han (2023)** reported that after the job crafting program nurses reported improving work meaningfulness and described a willingness to take on other tasks, being enriched by nurse-client and collegial relationships.

Correlation between study's variables

There was a statistically significant positive correlation between nurses' perceptions of their nurse managers of HRMPs and their job crafting pre implementation of educational program. This finding might be due to when nurse managers pre-program did not have adequate knowledge about HRMPs, they perceived a low level of both HRMPs and their job crafting and when nurse managers provide nurses with extensive training, nurses are more able to craft their tasks efficiently and successfully.

Along with the results of the present study, **Sheehan et al. (2023)** confirmed that job crafting was found to mediate the positive relationship between HRMPs and work engagement. This result reflects the implications of HRMPs on job crafting for nurses who carry out many professional roles simultaneously. Also, **Zahoor, Khan, and Fazili (2023)** demonstrated a direct positive association between HRMPs and job crafting.

Conclusion

Based on the findings of the current study, it can be concluded that nurse managers' knowledge, perceptions, and practices regarding human resource management are improved after implementation of the educational program. There is improvement in studied nurses' perceptions about job crafting after implementation of educational program. In addition to, it was discovered a strong statistically significant positive correlation between nurses' perceptions about their nurse managers' practices of human resource management pre-implementation of educational program and their job crafting at pre, immediate, and after 3 months of educational program.

Recommendations

On the line of the findings of the current study, the following recommendations are suggested to:

For hospitals administrators

- Set up an orientation program for the preparation of newly appointed nurse managers about strategies for implementing HRMPs.
- Develop policies and strategies that promote nursing managers' HRMPs and link rewards and compensation with their practices.

- Conduct regular periodical enhancement programs and workshops for nurse managers to maximize their HRMPs.
- Promote personal and professional growth for nurse managers in a broad manner (*e.g.*, postgraduate programs, language courses, etc.).
- Ensure the availability of nurses who have enough skills, knowledge and abilities fit for their job tasks.

For nurse managers

- Create a culture within their organization that seeks opportunities to improve nurses′ quality of work life and plan their processes by aiming for both high quality and high value services.
- Foster empowered behaviors through engagement of nurses in decision-making, offering constructive feedback, providing autonomy, and enhancing goal accomplishment.
- Motivate nurses to introduce new work tasks that better suit their skills or interests and make sure that work is mentally less intense.
- Empower nurses' access to chances, information, training, and facilities, regarding job crafting.

Nursing education:

- Review and modify nursing curriculum to provide more opportunities for nursing students to be aware with the new human resource management practices and job crafting.
- Establishment of an educational program to raise the awareness of nursing interns and educators about HRMPs.

Further research:

- Conduct further nursing research to identify the nature of relationship between HRMPs and nurses' performance.
- Perform further qualitative research to increase efforts and add to the evidence-base documenting progress and challenges in meeting the HRMPs.
- Study the influence of nurse preceptors' practices of HRM on nursing interns' success in mastering entry-level skills and competencies.

References

Aboramadan, M. (2022). The effect of green HRM on employee green behaviors in higher education: the mediating mechanism of green work engagement. *International Journal of Organizational Analysis*, *30*(1), 7-23.

Aburumman, O., Salleh, A., Omar, K., & Abadi, M. (2020). The impact of human resource management practices and career satisfaction on employee's turnover intention. *Management Science Letters*, *10*(3), 641-652.

Akdere, M., & Egan, T. (2020). Transformational leadership and human resource development: Linking employee learning, job satisfaction, and organizational performance. *Human Resource Development Quarterly*, *31*(4), 393-421.

Al Aina, R., & Atan, T. (2020). The impact of implementing talent management practices on sustainable organizational

performance. *Sustainability*, *12*(20), 8372.

Alluhidan, M., Tashkandi, N., Alblowi, F., Omer, T., Alghaith, T., Alghodaier, H., ... & Alghamdi, M. G. (2020). Challenges and policy opportunities in nursing in Saudi Arabia. *Human Resources for Health*, *18*, 1-10.

Alqudah, I. H., Carballo-Penela, A., & Ruzo-Sanmartín, E. (2022). High-performance human resource management practices and readiness for change: An integrative model including affective commitment, employees' performance, and the moderating role of hierarchy culture. *European Research on Management and Business Economics*, *28*(1), 100177.

Alsafadi, Y., & Altahat, S. (2021). Human resource management practices and employee performance: the role of job satisfaction. *The Journal of Asian Finance, Economics and Business*, *8*(1), 519-529.

Amjad, F., Abbas, W., Zia-Ur-Rehman, M., Baig, S. A., Hashim, M., Khan, A., & Rehman, H. U. (2021). Effect of green human resource management practices on organizational sustainability: the mediating role of environmental and employee performance. *Environmental Science and Pollution Research*, *28*, 28191-28206.

Anwar, G., & Abdullah, N. N. (2021). The impact of Human resource management practice on Organizational performance. *International journal of Engineering, Business and Management (IJEBM)*, *5*.

Barasteh, S., Rassouli, M., Karimirad, M. R., & Ebadi, A. (2021). Future challenges of nursing in health system of Iran. *Frontiers in Public Health*, *9*, 676160.

Collins, C. J. (2021). Expanding the resource based view model of strategic human resource management. *The International Journal of Human Resource Management*, *32*(2), 331-358.

Cuskelly, G., Fredline, L., Barry, S., & Kappelides, P. (2021). Volunteer selection at a major sport event: A strategic Human Resource Management approach. *Sport Management Review*, *24*(1), 116-133.

Dwivedi, S. V., Poddar, T., Samuel, F. W., & Shet, Y. K. (2021). Examining the determinants of successful adoption of data analytics in human resource management–A framework for implications. *Journal of Business Research*, *131*, 311-326.

Hamouche, S. (2023). Human resource management and the COVID-19 crisis: Implications, challenges, opportunities, and future organizational directions. *Journal of*

Management & Organization, *29*(5), 799-814.

Han, S. (2023). Nurses' job crafting, work engagement, and well-being: a path analysis. BMC nursing, 22(1), 405.

Iida, M., Watanabe, K., Imamura, K., Sakuraya, A., Asaoka, H., Sato, N., & Kawakami, N. (2021). Development and validation of the Japanese version of the team job crafting scale for nurses. *Research in Nursing & Health*, *44*(2), 329-343.

Irani, F., Kiliç, H., & Adeshola, I. (2022). Impact of green human resource management practices on the environmental performance of green hotels. *Journal of Hospitality Marketing & Management*, *31*(5), 570-600.

Islam, M. A., Jantan, A. H., Yusoff, Y. M., Chong, C. W., & Hossain, M. S. (2023). Green Human Resource Management (GHRM) practices and millennial employees' turnover intentions in tourism industry in malaysia: Moderating role of work environment. *Global Business Review*, *24*(4), 642-662.

Jaiswal, A., Arun, C. J., & Varma, A. (2022). Rebooting employees: Upskilling for artificial intelligence in multinational corporations. *The International Journal of Human Resource Management*, *33*(6), 1179-1208.

Jose, G., PM, N., & Kuriakose, V. (2024). HRM practices and employee engagement: Role of personal resources-a study among nurses. *International Journal of Productivity and Performance Management*, *73*(1), 1-17.

Kassem, A. H., & Ibrahim, A. A. E. (2022). Effect of job crafting training program on staff nurses work involvement at Mansoura University Hospital. Tanta Scientific Nursing Journal, 25(2), 246-294.

Kim, H. (2021). Effects of Job Crafting on the Quality of Nursing Services among Clinical Nurses: The Mediating Effect of Work Engagement. *Journal of Korean Academy of Nursing Administration*, *27*(5).

Korkmaz, A. V., Van Engen, M. L., Knappert, L., & Schalk, R. (2022). About and beyond leading uniqueness and belongingness: A systematic review of inclusive leadership research. *Human Resource Management Review*, *32*(4), 100894.

Lee, E. Y., & Kim, E. G. (2023). Effects of clinical nurses' job crafting on Organizational effectiveness based on job demands resource model. *Journal of Korean Academy of Nursing*, *53*(1), 129-143.

Melo, N., Dourado, D., & Andrade, J. (2021). Reclaiming cognitive crafting: An integrative model of behavioral and cognitive practices in job crafting. *International Journal of Organizational Analysis*, *29*(5), 1302-1320.

Ngoc, D., Luc Tra, D., Thi Huynh, H. M., Nguyen, H. H. T., & O'Mahony, B. (2021). Enhancing resilience in the Covid-19 crisis: lessons from human resource management practices in Vietnam. *Current Issues in Tourism*, *24*(22), 3189-3205.

Nisar, Q. A., Haider, S., Ali, F., Jamshed, S., Ryu, K., & Gill, S. S. (2021). Green human resource management practices and environmental performance in Malaysian green hotels: The role of green intellectual capital and pro-environmental behavior. *Journal of cleaner production*, *311*, 127504.

Oprea, B., Miulescu, A., & Iliescu, D. (2022). Followers' job crafting: relationships with full-range leadership model. *Current Psychology*, *41*(7), 4219-4230.

Saks, A. (2022). Caring human resources management and employee engagement. *Human Resource Management Review*, *32*(3), 100835.

Salas-Vallina, A., Alegre, J., & López-Cabrales, Á. (2021). The challenge of increasing employees' well-being and performance: How human resource management practices and engaging leadership work together toward reaching this goal. *Human Resource Management*, *60*(3), 333-347.

Saridakis, G., Lai, Y., Muñoz Torres, R. I., & Gourlay, S. (2020). Exploring the relationship between job satisfaction and organizational commitment: an instrumental variable approach. *The International Journal of Human Resource Management*, *31*(13), 1739-1769.

Sheehan, C., Tham, T. L., Holland, P., Cooper, B. K., & Newman, A. (2023). The relationship between HIWPs and nurse work engagement: the role of job crafting and supervisor support. *The International Journal of Human Resource Management*, *34*(1), 1-27.

Shet, S. V., Poddar, T., Samuel, F. W., & Dwivedi, Y. K. (2021). Examining the determinants of successful adoption of data analytics in human resource management–A framework for implications. *Journal of Business Research*, *131*, 311-326.

Sook, K. J., & Ji-Soo, K. (2022). Association of Job Crafting and Perception of Patient Safety Culture with Patient Safety Management Activities among Hospital Nurses. *Journal of Korean Academy of Nursing Administration*, *28*(4).

Strohmeier, S. (2020). Smart HRM–a Delphi study on the application and consequences of the Internet of Things in Human Resource Management. *The International Journal of Human Resource Management*, *31*(18), 2289-2318.

Topa, G., & Aranda-Carmena, M. (2022). Job crafting in nursing: Mediation between work

engagement and job performance in a multisample study. International journal of environmental research and public health, 19(19), 12711.

Votto, A. M., Valecha, R., Najafirad, P., & Rao, H. R. (2021). Artificial intelligence in tactical human resource management: A systematic literature review. *International Journal of Information Management Data Insights*, *1*(2), 100047.

Vrontis, D., Christofi, M., Pereira, V., Tarba, S., Makrides, A., & Trichina, E. (2022). Artificial intelligence, robotics, advanced technologies and human resource management: a systematic review. *The international journal of human resource management*, *33*(6), 1237-1266.

Zahoor, A., Khan, D., & Fazili, S. B. (2023). Cultivating Well-being of Nurses Through Job Crafting: The Moderating Effect of Job and Personal Resources. *Journal of Health Management*, 09720634231216024.