Effective Time Management for Head Nurses: An Educational Program for Improving Staff Nurses` Work Creativity

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Abstract: **Effective time management is an extensive concept that is related with promoting head nurses skills and staff nurses' creativity and their greatly affect success of organization. Aim of the study: The present study aimed to evaluate the effect of educational program about time management for head nurses on nurses' work creativity. Research design: A quasi experimental design was used in this study. Study setting: The study was conducted in inpatient units of Medical and Surgical departments at Benha University Hospital, the total number of the studied units were (27) units. The study sample was: All the available head nurses and their assistants (55), and convenient sample of nurses (110). Tools for data collection: Three tools were used: Time Management Knowledge Questionnaire, Self-Administered Questionnaire and Level of Creativity Questionnaire. The results showed that, there was a highly statistical significant improvement in head nurses and their assistant' knowledge and skills regarding time management thorough program. Moreover, there was a highly statistical significant improvement in nurses' level of work creativity. The study concluded that, there was a highly statistical positive correlation between head nurses and their assistant' time management skills and nurses' work creativity.The study recommended that: Hospital quality unit had to initiate an In-service education and training courses for staff in the different departments of the hospital in managerial skills especially time management. Nursing faculties should integrate creative thinking education in study courses.**

Keywords: **Effective time management, Head nurses and Staff nurses' work creativity.**

1. INTRODUCTION

In these days of rapid changing nursing environment and expanding global competition there is a continuing and health care suffers from both nursing shortage and decrease in funding, that has resulted in many health care organizations trying to do more with less. The effective use of time management tools becomes even more important to enable mangers to meet personal and professional goals. Good time management skills allow head nurses to spend time on things that matter. So, Time Management refers to managing time effectively. Therefore, that the right time is allocated to the right activity. It also allows head nurses to assign specific time slots to activities as per their importance. Also**,** it is necessary for a productive and balanced life. By adopting effective time management principles, determining one's priorities and making good choices help an individual to improve quality of life. Generally, considered to involve time monitoring and control. Time management requires that a lot of work and activities be fit into a period of time which is often short *(Ziapour et al., 2018).*

Time has a great importance for human life. Time management is a broad concept in various executive and managerial domains and is related to the promotion of the head nurses' qualitative performance. Also, Time management is the best method of using the time to achieve the personal and work objectives and time management techniques promote job performance, provide more time to carry out the tasks with higher priority and accelerate the activities. There by,

enhancing the nurses' creativity *Elsabahy et al., (2015).* The aim of effective time management is to achieve the lifestyle balance wanted and increase creativity for nurses. Improve the head nurses' behavior to become more productive, more satisfaction, less pressured, able to do the things they want, behave positively to others, and feel better about them. Good time management will increase nurses' creative, effective costly and time which result to optimal performance. The need for time management become very important not only as a motivating for first line manger behavior, performance and productivity on job, but as the bases for the overall performance of the organization. Nowadays, one of the most important challenges facing by any organizations is to creativity, satisfy and retain their nurses who are known as one of the most important differentiating success factors. Managing head nurses' time is an important issue in achieving competitive advantages for organizations *(White et al., 2017).*

Head nurse is the one who assumes responsibility for managing the human and material resources of a nursing unit and takes lead in developing the staff to provide quality of patient care and a good conductive environment to help staff growth and creativity *Ebrahimi et al, (2014).* From head nurse perspective, of one of his/her distinctive characteristics is reliable and effective time managment. In management, it is important to do more work in a certain time or to do the same amount of work in less time. Successful managers are expected to manage both the clients' and service providers 'time in the most effective way, as well as his/her own time. If they use their time effectively, they can contribute more to their own lives, personnel' lives, clients' lives, and the hospital for which they work *(Yanik and Ortlek, 2016).*

Sullivan and Decker, (2016) stated that to be effective, head nurse and nurses must be personally well organized and possess self- discipline. Being realistic about the amount of work to which they commit is an indication of effective time management. If a superior is overloading you, make sure the person understands the consequences of additional assignments. Be assertive in communicating their own needs to others. A cluttered desk, working on too many tasks at one time and failing to set aside blocks of uninterrupted time to do important tasks also indicate a lack of personal self-discipline. Clean desk, get out the materials needed to complete their highest- priority task, and start working on it immediately. Focus on one task at a time, making sure to start with a high- priority task.

Developing head nurses' skills for effective managing their time is essential to treat the conflicting demands of time for study, leisure, earning money and job performing. Time management skills are valuable in job hunting, and in many other aspects of life. These skills including setting clear goals, breaking goals, and reviewing progress towards these goals are covered in planning. Making a time log is the essential tool to identify how is using their time. Start by recording what are doing. In addition, estimate time required for doing the routine tasks can help to become effective planner and determine the time available for other activities *Adu-Oppong et al., (2014).* Other skills involved prioritizing - focusing on urgent and important tasks rather than those that are not important or don't move towards their goals. In prioritizing it is important to make a "to do" list. The list is a planning tool. Although the head nurses may use weekly or monthly list, a list can assist in coordinating daily operations. Rank the items on "to do" list in order of priority and should be reviewed periodically to see what was not accomplished. List should allow adequate time for each task and allows head nurses to say "no" to activities that do not fit their priorities and do not waste time *(Habib et al., 2018).*

"Creative" refers to novel products of value. In order to be creative, nurses need to be able to view things in new ways or from a different perspective. Among other things, nurses need to be able to generate new possibilities or new alternatives. Additionally, Creativity is an attitude to accept change and a readiness to play with ideas and opportunities, a flexibility of viewpoint, the practice of liking the good, while searching for approaches to enhance it. To engage in creative behavior, nurses need management support, resources, supportive work environment, and knowledge about creativity and nurses' role. Accordingly, nurses' creativity does not just rely upon individual qualities and their own creativity. The social or work workplace, education, reward system, and management style can impact both the level and the recurrence of creative behavior *(Tabarestani et al., 2014).*

Moreover, several researches had separated between two level of creativity, those are; *Technical level*; it is identified with production of creative goods and services. While the other one is *administrative level*; it is related to the administrative process in the organization, and related indirectly to the fundamental actions of the organization *Al-Srour, and Al-Oweidi, (2013)*. In line for the nurses to be creative, it is essential that the organization provide a supportive process and environment. Reasons why nurses are motivated to be creative: Need for novel, complex stimulation and varied, needs to communicate ideas and values, and need to solve problems *Chegani, (2016).* Everyone has substantial creative ability,

creativity has too often been suppressed through education, but it is still there and can be reawakened. Often, all that's needed to be creative is to make a commitment to creativity and to take the time for it. Creativity is a function of available time and is negatively related to time pressure experienced. demonstrated that members of work groups that produced low-creativity projects experienced higher time pressure than those who participated in high-creativity projects (*Zampetakis et al., 2017*).

1.1 Significance of the study

Now days, most head nurses do not know how they spend their time effectively. Thus, they need to learn how best to control the time that they have. So, useful time management has become increasingly important for first line managers as they seek to achieve objectives in today's organizations. Also, they can improve their ability to manage time effectively by examining their attitudes toward time, analyzing time-wasting behaviors, developing better time management skills and can improve their performance and promotion potential with more effective time utilization, through time management program to learning strategies for improving the time management skills *(Nayak, 2019)*

Moreover, Early research on creativity has demonstrated that time is an important resource. Time for instance, is important for head nurses, nurses should be given sufficient time if they are expected to do creative work. Creativity is considered as a key to personal and organizational social prosperity; creativity signifies the production of novel and useful ideas, and marks the starting point for innovation and entrepreneurship *El-Shaer, (2015)*. So, it hope that this time management program was enhance their skills and provide them with basic and essential principles of effective time management to the development and skilled workforce, improve head nurses behavior which in turn can contribute to staff nurses' work creativity.

1.2 Aim of the Study

The study aimed to evaluate the effect of educational program about time management for head nurses on nurses' work creativity**.**

1.3 Research Hypothesis:

• There will be significant improvement in head nurses and their assistants' knowledge test score of time management after the program implementation compared to before.

• There will be significant improvement in scores of head nurses and their assistants' skills regarding time management after the program implementation compared to before.

• There will be significant improvement in scores of work creativity as reported by staff nurses after the program implementation compared to before.

• There will be a positive correlation between time management and level of creativity in work after implementation of educational program.

2. SUBJECTS AND METHOD

2.1. Research Design:

A quasi experimental research design was one group pre and post test was used to carry out the study.

2.2. Setting:

• The study was conducted inpatient Medical and Surgical Units at Benha University Hospital, the total number of the studied units were (27) units.

2.3. Subjects:

Subjects of the study included two groups namely; Head nurses group: Included all the head nurses and their assistants (55) working in the above-mentioned study setting. Staff nurses' group; Included convenience sample of nurses (110) who are working in the above-mentioned study setting and with at least one year of job experience, available at the time of study, and agree to participate after clarification of purpose of the study.

2.4 Tools of Data Collection

Three tools were used to collect the study data**.**

A structured questionnaire developed by the researchers based on the review of the related literature *(Marquis and Huston, 2009, Soliman, 2009; Morsy,2010*, *Hepworth, 2011 and Almohamady, 2012 and Abdullah, 2014 and El-Shaer, 2015)*, to assess head nurses and their assistants' knowledge regarding time management. It consisted of two parts: Part one; include: Personal characteristics of head nurses and their assistants' as; department, age, sex, marital status, educational qualification, experience years and previous training regarding time management. Part two: It comprised 33 closed ended questions that covered the time management such as; the concept of time management. Out of them 17 questions multiple choice questions and 11 questions are responded by (true and false) while the last 5 questions are matching.

This tool was classified under four main categories as the following:

1- The first category related to Concept of time management (10 items).

2- The second category related to delegation (6 items).

3- The third category related to time wasters (8 items).

4- The fourth category related to time planning (9 items).

2.4.1.1. Scoring System

The questions were scored as "1" for correct answer, and "zero" for incorrect answer. The total scores was summed up and head nurses and their assistants' level was considered when total scores was ≥ 60% of total score mean satisfactory knowledge and < 60 % of total score means unsatisfactory knowledge.

2.4.2. Self-Administered Time Management Questionnaire

It was developed by *Abdullah, (2014)*, to assess time management skills among head nurses and their assistants; it consisted of two main parts;

The first part, it consisted of 23 items for assessing the time planning skills among head nurses and their assistants.

2.4.2.1. Scoring system:

Scores were allocated as follow: (3) often, (2) sometimes, (1) rarely. The participant time planning skills was considered high if the percent ≥ 75% (score ≥ 52), moderate: 60%- 74% (score 41 - 51) and low: < 60% (score < 41).

The second part, time interruption: It consists of 30 items for assessing the presence of time interruptions by head nurses and their assistants. These were classified into 2 categories of interruptions as follow: External and internal interruptions each 15 items.

2.4.2.1.2 Scoring system:-

Scores were allocated as follow: (3) often, (2) sometimes, (1) rarely. If the score was 60% or more it referred to the satisfactory level of dealing with time wasters and unsatisfactory level of dealing with time wasters if less than 60%.

2.4.3 Level of Creativity Questionnaire

This tool was developed by the researchers through reviewing the related literatures *(Jokari. et.al., 2012; Isfahani et al., 2015; Ivanovici, 2016).* It included different items to assess staff nurses' level of creativity at work, it consisted of (62) items divided into five main categories; general features that characterized personality "20" items, , keeping the direction or goal "12" items, sensitivity to solve problem " 14" items, degree of flexibility in work "10" items, and accepting the risk at work "6" items.

2.4.3.1. Scoring system:

The response of nurses for questionnaire was measured by using a three-point Likert - scale as follow: disagree (0), neutral (1), and agree (2). The scores of each dimension summed up and converted in to percent score. Level of creativity is considered high if the percent ≥ 75% (score ≥ 93), moderate: 60%- 74% (score 74 - 92) and low: < 60% (score < 74).

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2.5. Methods

2.5.1. Operational Design

The operational design of the current study included; content validity and reliability, pilot study and field work.

2.5.1.1. Tools Validity

Study tools contents were developed and tested for its validity by jury of 5 academic staff in nursing administration at different faculties of nursing. The validity of the tools aimed to judge its clarity, comprehensiveness, relevance and accuracy. All of their comments were taken into consideration; some items were re-phrased.

2.5.1.2. Tools Reliability

The Cronbach's Alpha test was done for study tools. The calculated reliability was (r=0.85, 0.89and 0.86) for time management knowledge questionnaire, self administered time management questionnaire and Level of Creativity Questionnaire scale respectively and that within the accepted limit.

2.5.1.3. Approval

An official permission was obtained from the hospital authorities in the identified setting to collect the necessary data and implement the program after explaining its purpose.

2.5.1.4. Pilot Study

A pilot study was carried out during December 2018 on (6 head nurses and 11 staff nurses) who were constituted 10% of the current study sample before starting the actual data collection to ascertain the clarity and applicability of the study tools. It also, needed to estimate the time necessary to fill in these tools. Based on the pilot study analysis, no modifications were done in the time management knowledge questionnaire as well as self administered questionnaire and level of creativity questionnaire. So, pilot study was included in main study subjects.

2.5.1.5. Ethical Considerations

Purpose and expected outcomes of the study were explained to each study subject. They were secured that all the gathered data will be used for the research purpose only, the study is harmless and their approval to participate is a prerequisite to be included in the study. Each subject was assured that they can withdraw whenever they want.

2.5.6. Field Work

The study was carried out for (Seven months) from at the beginning of January 2019 to the end of July 2019 as the following:

☐ Pre-implementation phase (Initial assessment): Preparation of data collection tools and the training program about time management based on a review of recent national and international related literature using journals, periodicals, textbooks, internet and theoretical knowledge of the various aspects concerning the topic (from the beginning of January to the end of February 2019). Contents of the program included: Concept, steps and importance of time management, types and strategies for management of time, tools and factors facilitating for time management and barriers.

☐ Implementation phase (intervention): was carried out from the beginning of March 2019 to end of May 2019. At the beginning; studied head nurses and their assistants divided into 6 groups (10 head nurses and their assistants in each group) then the preprogram tests were fulfilled by the head nurses and their assistants' before beginning of the training program. Time management knowledge questionnaire took from 25–30 minutes to be completed, while the researcher took about 20-35 minutes for completing self-administered time management questionnaire and staff nurses took about 20-25 minute for completing level of creativity questionnaire. This pre-study test was designed to allow the researchers collect a baseline assessment of head nurses and their assistant' knowledge and skills in order to compare it with immediate post and follow-up program. The data collected four days/week in the morning and afternoon at the beginning of March 2019 to the end of March 2019.

☐ After the questionnaires were completed, the training program was implemented by the researchers. The time plan of the program implemented over the period from the beginning of April 2019 to end of May 2019. The training program has taken 12hours for each group distributed as the following; 8 sessions, 1.30hour/session, 2 days/week in the morning and

afternoon shift, at the beginning of the program sessions, an orientation to the program and its purpose took place and the nurse managers were informed about the time and place of sessions which were carried out at the training department lecture room. Each session was started by setting objectives and overview of the new topic, at the end of each session the head nurse and their questions were discussed. Each

group perceived the program content using the same teaching strategies and handout, methods of teaching were used as the following; lecture, group discussion, role play and brain storming. Teaching and instructional media included the following; hand out, CD and power point presentation. Each researcher implements the program with two groups in the day by using the same available resources, relevant contents and instructional strategies for each session.

2.5.6.1. Statistical Analysis:

Data entry and analysis were done using statistical package for social science (SPSS) version 18. Data were presented using: Descriptive statistics in the form (frequency, percentage, mean and standard deviation, and Chi-square). Test of significant was done. Significant level value was considered when $p \leq 0.05$ and a highly significant level value was considered when $p \leq 0.01$.

3. RESULTS

- **Table (1):** Indicated distribution of head nurses and their assistant and nurses according to their personal characteristics, where more than half (68.1%, 54.5%)were had working in medical department respectively, more than two fifths (47.3%) of head nurses and their assistant had age from ≥ 40 years with a mean age of 35.372±0.254 while 40.9 % of nurses had age 35 <40 with a mean age of 37.932±5.24. in addition, the majority of both head nurses and their assistant and staff nurses (94.5 %, 90.9 % , 85.4%, 84.5% respectively) were female and married. As regard to educational qualification, highest percent of both head nurses and their assistant and nurses (52.5.0 %, 50.0 respectively) had Bachelor of nursing. In relation to years of experience, more than half of both head nurses and their assistant and staff nurses (60.9 %, 51.0 % respectively) had ≥ 15years. Also, the majority of head nurses and their assistant (87.3 %) hadn't previous time management training.

- **Figure (1):** Showed total score of head nurses and their assistant' knowledge about time management. Pre- post and follow up program implementation. It was observed that there was a highly statistical significant improvement in head nurses and their assistant' knowledge scores regarding time management immediate post program (89.5%) and three months follow up the program (80.5%)compared to preprogram scores (62.3%).

- **Table (2):** Showed that there was highly statistically significant improvement in head nurses and their assistant' skills about time planning, internal time wasters and external time waster both immediate post program and follow up after three months than pre-program.

- **Figure (2):** Displayed total level of head nurses and their assistant 'skills regarding time management. Pre- post and follow up program implementation. It was observed that there was a highly statistical significant improvement in head nurses and their assistant 'skills regarding time management immediate post program (81.8%) and slightly decreased three months follow up the program (72.8%) compared to preprogram scores (9.1%).

- **Table (3):** Clarified that the highest percent of staff nurses had low creativity level regarding General features that characterize personality followed by keep the direction or goal (80.0% &74.5%) respectively for preprogram.

 While immediate post program, the highest percent of them had high creativity level regarding General features that characterize personality followed by keep the direction or goal (76.3 % & 70.9%) respectively. In addition, there was a highly statistically significant improvement in staff nurses` level of creativity scores regarding creativity in work thorough the program.

- **Figure (3):** Showed that there was highly statistically significant improvement in staff nurses` level of creativity in work immediate post program (74.4.5%) and three months follow up the program (52.7%) compared to preprogram scores (12.7%).

- **Table (4):** Demonstrated that there was a highly statistical positive correlation between head nurses and their assistant time management knowledge and skills and their years of experience and education qualification. Also, there was a highly

statistical positive correlation between staff nurses' level of work creativity and their years of experience and education qualification.

- **Table (5):** Showed that there was a highly statistical positive correlation between head nurses and their assistant' time management skills and staff nurses' work creativity.

Table (1): Personal characteristics of studied subjects.

| Personal characteristics	Head nurses and their assistant (Total n= 55)		Staff nurses (Total n=110)	
	N	%	N	%
Department				
Medical	30	54.5	75	68.1
Surgical	25	45.5	35	31.9
Age (years)				
25 <30	5	9.1	12	10.9
30 <35	13	23.6	37	33.6
35 <40	11	20.0	45	40.9
≥ 40	26	47.3	16	14.6
X-±SD	35.372±0.254		37.932±5.24	
Sex				
Female	47	85.4	93	84.5
Male	8	14.6	17	15.5
Marital status				
Married	52	94.5	100	90.9
Unmarried	3	5.5	10	9.1
Educational Qualification				
Nursing diploma	18	32.7	38	34.5
Technical institute	8	14.6	17	15.5
B.Sc. Nursing	29	52.7	55	50.0
Years of experience				
< 10	7	12.7	24	21.8
10 <15	20	36.3	19	17.3
≥ 15	28	51.0	67	60.9
X-±SD	16.748±1.254		19.263±3.17	
Training in time management			-	-
Yes	7	12.7		
No	48	87.3		
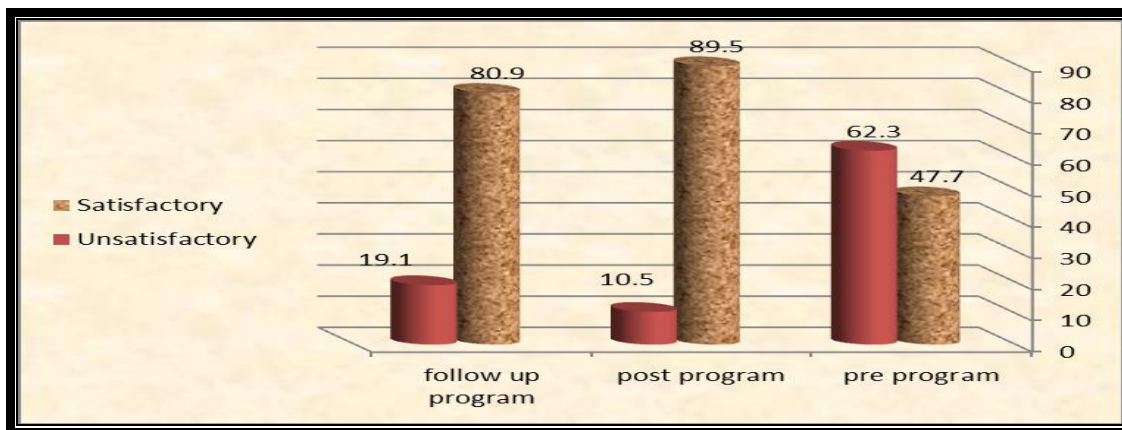
Figure (1) Total level of head nurses and their assistant' knowledge about time management. Pre- post and follow up program implementation. (n=55).

Table (2): Frequency distribution of time management skills among head nurses and their assistant thorough program (n=55).

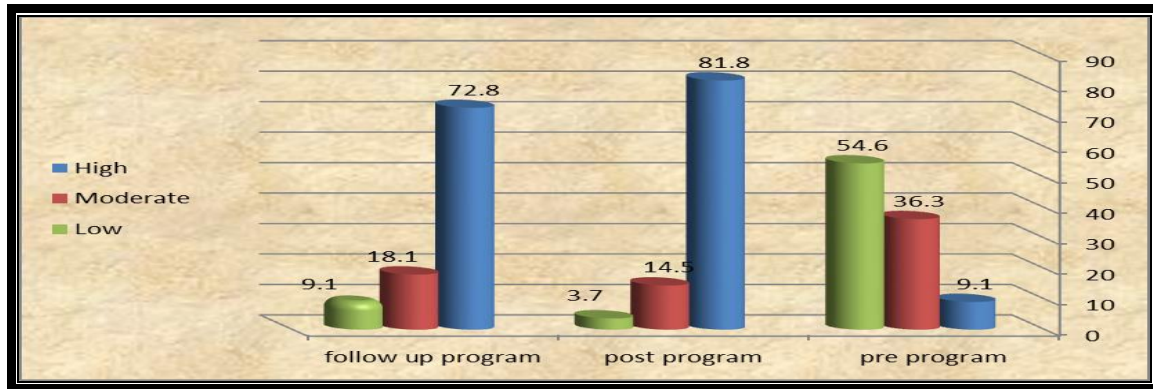| Time management skills	Pre Program		Immediately Post Program		Follow up Program		X^2 Test	P-Value
	No	%	No	%	No	%		
Time planning								
Satisfactory	22	40.0	51	92.7	49	89.0	209.35	0.000**
Unsatisfactory	33	60.0	4	7.3	6	10.9		
Dealing with internal time wasters								
Satisfactory	0	0.0	50	90.9	36	65.5	250.80	0.000**
Unsatisfactory	55	100.0	5	9.1	19	34.5		
Dealing with external time wasters								
Satisfactory	12	21.8	47	85.5	38	69.1	230.55	0.000**
Unsatisfactory	43	78.2	8	14.5	17	30.9		

Figure (2): Total level of head nurses and their assistant 'skills regarding time management. Pre- post and follow up program implementation. (n=55).

Table 3: Frequency distribution of creativity level among staff nurses thorough program (n=110)

Level of Creativity in Work	Staff nurses (n=110).						X^2	P-Value
	Pre-program		Post-program		Follow up-program			
	No	%	No	%	No	%		
General features that characterize personality							42.145	0.000**
High creative	0	0.0	84	76.3	60	54.5		
Moderate creative	22	20.0	18	15.7	38	34.5		
Low creative	88	80.0	8	8.0	12	11.0		
Keep the direction or goal							28.945	0.003**
High creative	0	0.0	78	70.9	56	50.9		
Moderate creative	28	25.5	10	9.1	42	38.1		
Low creative	82	74.5	22	20.0	12	11.0		
Sensitivity to solve problems							23.164	0.001**
High creative	12	11.0	74	67.3	70	63.6		
Moderate creative	40	36.4	14	12.7	24	21.8		
Low creative	58	52.6	22	20.0	16	14.6		
Degree of flexibility in the work							22.727	0.000**

High creative	16	14.6	70	63.6	52	47.2	
Moderate creative	28	25.5	16	14.6	46	41.8	
Low creative	66	60.0	24	21.8	12	11.0	
Accept the risk at work						48.637	0.002**
High creative	20	18.2	48	43.6	44	40.0	
Moderate creative	20	18.2	36	32.8	38	34.5	
Low creative	70	63.6	26	23.6	28	25.5	

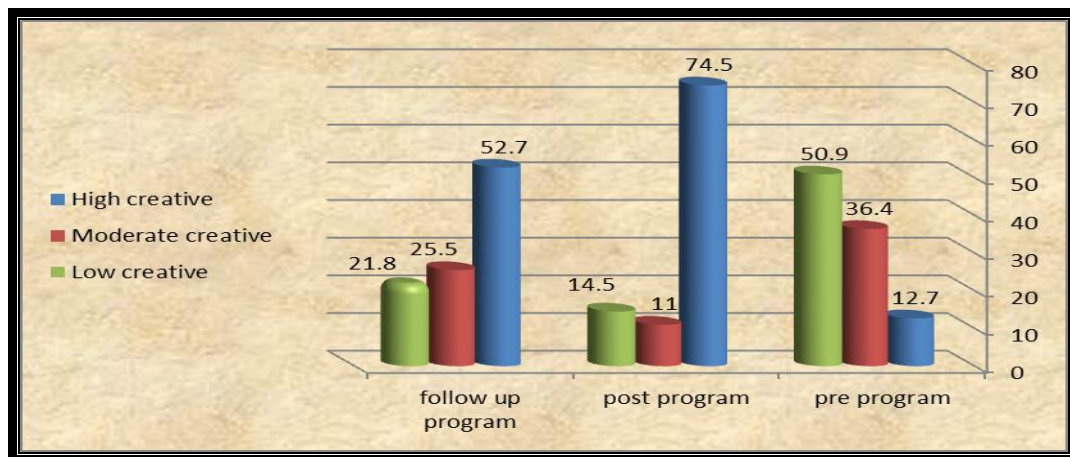***A High Statistically Significant Difference (P ≤0.001)*

Figure (3): Total level of nurses' work creativity. Pre- post and follow up program implementation. (n=110)

Table (4): Correlation between time management knowledge, time management skills and Level of work creativity and years of experience, educational qualification of studied subjects during Immediate Post Program Phase

Variables	Personal Characteristics of studied subjects							
	Head nurses and their assistant (55)				Staff nurses (110)			
	Years of experience		Educational qualification		Years of experience		Educational qualification	
	r	P-value	*r*	P-value	*r*	P- value	*r*	P- value
Time management knowledge	0.552	0.000**	0.324	0.000**				
Time management skills	0.454	0.001**	0.485	0.002**	-	-	-	-
Level of work creativity	-		-		0.325	0.000**	0.631	0.000**

***A High Statistically Significant Difference (P ≤ 0.001)*

Table (5): Correlation between total time management level and total level of work creativity

Variable	Total work creativity level	
	r	p
Total time management skills level	**0.331**	**0.000****

***A High Statistically Significant Difference (P ≤ 0.001)*

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4. DISCUSSION

Time management is core skill of effective management, it affects the way one uses or wastes other people's valuable time as well as one's own. Of particular interest, it is concerning attitude towards time management. If time is managed effectively, this lead to saving available time, increased quality of patient care, productivity and enhanced effectiveness. Moreover, time management helps head nurses to get organized and focused, and learn to control their time rather than letting their time control them Also, as pressure on organizations to adapt and solve problems creativity increase, staff creativity will become an increasingly important concern to increase nurses' creativity by training their managers *(Nayak, 2019)*.

Concerning head nurses and their assistant' knowledge regarding time management, the result of present study revealed that there was highly statistically significant improvement in head nurses and their assistant' knowledge scores regarding time management immediate post program and three months follow up the program. This might be due to head nurses and their assistants were ready and able to acquire knowledge easily. In addition that it is the important of head nurses and their assistant to attend training program regarding time management to increase their knowledge about effective time management.

These findings were similar *Ellis and Hartley (2013),* who indicated that there was a significant improvement of head nurses' knowledge regarding types of time management and activities to be delegated after intervention both immediately post program and on follow up. Also, *Nasri et al., (2014)* who found that most of the head nurses and their assistance not attended time management courses. Also, head nurses and the assistant have little knowledge about benefits, methods and common management techniques of time management. On the other hand, *Ebrahim et al., (2014)* who's mentioned that more than one third only of them had passed time management course.

These findings were supported by *Abdullah*, *(2014)* who found in his study done on newly baccalaureate graduate nurses at Benha University Hospital that there was a highly significant improvement in knowledge score after intervention both immediately post program and on follow up.

Regarding to time management skills among head nurses and their assistant thorough program ,the study findings showed that, the majority of head nurses and their assistance were post and follow up program use time planning management against pre program. This result means that training program helps head nurses and their assistant to improve their skills in managing their time through time planning; putting priorities and learn to differentiate between important and urgent activities; dealing with internal time wasters and dealing with external time wasters; identifying how to management with different interruption such as telephone visitors and meeting interruption .

In line of present study *Adebisi, (2015)* who mentioned that the time management training program seems to enhance time management skills. Also, who those recommend that managers at all level should realize the important of time management practices. Activities should be prioritized in order to urgent and important. Leader should also ensure that everyone in the organization is trained on effective practice of time management skills to ensure effective care in the organization. Time waster is something that prevents individual from accomplishing the job.

This result was in agreement with, *Mahmoud (2015)* who clarified that the majority of head nurses at Mansoura University Hospitals sometimes use time management skills, but they need more training. The efficient head nurses must have efficient and effective be time management skills. Head nurses that routinely use time management skills are the active achievers in all path of life and well help one to function effectively.

The result of present study revealed that mostly of head nurses and their assistant were satisfactory level with internal time wasters post and follow up program respectively .Also ,most of head nurses and their assistant were satisfactory level with external time wasters post and follow up program respectively .This result may be attribute to that the head nurses and their assistance post program know how to deal with time wasters as ; a vague purpose ; inability to reach to goal and unable to deal with conflict in their units. So ,after training program acquired skills of time management.

This result consistent with *Mohamed (2016)* who reported that staff development programs must be provided to head nurses with focus on strategy of time management for saving time and overcome time wasters which almost half of the head nurses in their study have time wasters. In the same line *Amabile et al., (2015)* who mentioned time pressures

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influence on head nurses and their assistant, possible leading to poor management skills. Head nurses feel overwhelmed with paperwork, new initiatives, achieving goals and outside obligation leading to negativity. At the same time, creativity needs time for trial and error and personal reflection, both of which are difficult in an environment under high time stress.

As regard total level head nurses and their assistant' skills about time management. The present study showed that improvement of total level of head nurses and their assistant skills regarding time management post and follow up program implementation. This result might be due to improving level of head nurses knowledge after program lead to increase current use of time management skills as use of effective tools and setting goals according to priorities. However, this helping their to control over time and motivate head nurses for creative work, job satisfaction, productivity and improve their performance.

This result supported with other findings for *Ahmed et al., (2012)* who mentioned that the nurses job performance in the organization were affected by their time management in managing the tasks during a work .Also, in this respect *Mahmoud (2015)* who found that positive relation between time management and performance of staff nurses.

Concerning work creativity level among nurses thorough program. The current result revealed that there is improving creativity level among staff nurses post program and follow up program than pre program regarding to general features of personality, keep the direction, sensitivity to solve problems, degree of flexibility in the work and accept the risk at work. This result may be attributed that the creative staff nurses that engaging in creative efforts needs willingness to work hard and for long hour with regular plan for care and effective time management. They need to enthusiasm from head nurses to help them to create new ideas. Also, creative staff nurses felt that they need to change without any prejudice prior to change and give them chance for participation in the plan and achieved delegated work. Also, the head nurses help to develop their capabilities, knowledge, expertise and technical skills and integrated their technical and professional skills with their nursing knowledge. Also, they need to provide to offered flexibility and motivate their staff nurses to be a creative and able to deal with a risk in their work.

This result agreed with *Faizanaul, (2013)* who study the nurses creativity as a key of success and reported that, most nurses are not ready to change there thinking because they don't have the courage to take risk. The main causes is they are afraid of losing the things they have already costumed it.

According **to** *Grant and Berry (2014)* the empirical evidence linking to combination of multiple motivational factors such as intrinsic and extrinsic to high creativity. Also, *Adams (2015)* noted that motivation is generally accepted as key to creative production. Most of individuals who fail to manage this mental time are not in control of their processing resources and are thus fated to reach optimum outcome. Creative supervisor make decision that lead their organizations toward innovative futures. They reformulate and redefine problems and analysis solutions to determine the possible outcomes.

Moreover, This result was in agreement with Also, *Kim and Hyunjae (2015)* who conducted a study entitled " Level of Creativity and Attitudes Toward an Advertisement" reported that more than two fifth exhibiting a high level of creativity post program, more than one third of them had a medium level of creativity, and more than one fifth had a low level of creativity. Also, *Panatik et al., (2016),* who conducted a study entitled "The Effect of Personal Factors on Creativity among Research Officers in Malaysia" and revealed that the level of creativity was high among research officers in Malaysia post program application.

Concerning total level of work creativity among staff nurses through program. there was highly statistically significant improvement in nurses` level of creativity in work immediate post program and three months follow up the program compared to preprogram scores. This result attribute that post training program of time management for head nurses and their assistance increase positive mood, playful , divergent thinking and generation of new ideas. However, pushes head nurses to try hard to improve matters through creative's ideas, systematic information's processing. Also, increase knowledge of them about effective strategies of time management that enable head nurses to create high level of communication with staff through behaviors and performance, consequence motivate staff to be creation. Moreover, their positive affect linked with personal level of creativity connecting to intrinsic motivation and good problem solving.

In the line of the result supported by *Darvish and Farzance (2014)* in their study "studying the effect of leader member exchange in creating energy and creativity at workplace. Also, This result was in agreement with *Amabile et al., (2016)*

conducted a study entitled " The Impact of Administrative Empowerment on Creativity Improvement among the Workers of Jordanian Public Administration Institute" and stated that there was significance difference level in the workers' tendencies towards creativity improvement.

As regards to correlation between head nurses and their assistant of time management knowledge and skills and years of experiences, educational qualification of studied subjects during ,immediate post program phase. There was highly statistical positive correlation between head nurses and their assistant time management knowledge's and skills and their years of experience and education qualification.

This result attributed to that both head nurses and their assistant had bachelor of nursing and more than half of them were had fifteen years of experiences. According to the correlation between staff nurses creativity and their years of experience and educational qualification. There was high statistical positive correlation between nurses level of work creativity and their years of experience and educational qualification.

Also, this result means that the knowledge and skills of time management of head nurses and their assistant were increases by their higher level of clinical work experiences and nurses age. So, the head nurses become more competent in time management, have background information and enthusiasm that make them tolerate responsibility and use time estimation to organize their work with time constraints especial managing time wasters. This result agreed with *Radhika (2018)* who found that as years of nursing experience increases competent with their work due to better time management.

On the other hand, the result disagreed with *Darvish and Farzance (2014)* who found that no significant relation between head nurses years of experiences with time management and delegation. Moreover, *Mohamed et al.,* **(2015)** who opposed to previous findings and revealed that negative correlation were found pre and post program between head nurses and experiences with their level of knowledge, current use of time management behaviors time wasters and their perception toward effective organizational performance.

Moreover, there was high positive correlation among nurses creativity with staff nurses experience and educational qualification. This result revealed that staff nurses were old age and had more experience and most of them had a bachelor degree which expected after time training program to be more knowledgeable and competent to become a creative person .Also, able to change there thinking and not hesitate to change themselves. Also , after time management program the head nurses behaviors become more motivate and had capabilities and characteristics to guide nurses and give a chance to nurses to be a creative or give new options and ways for updating their job.

This result supported with *Farmer and Tierney (2017)* who found that there is a positive relation between leader behaviors and creativity and leaders must have creative capabilities and characteristics to guide subordinate. Moreover, *zampetakis et al. (2013)* whose found that there was high significance relation among creativity with nurses qualification.

Concerning correlation between head nurses and their assistant' time management skills and nurses' work creativity. The results of present study showed that there was a highly statistical positive correlation between head nurses and their assistant' time management skills and nurses' work creativity. These finding attributed that time management training can help head nurses and their assistant to create better learning habits and strengthen their skills. They keep up to date with new concepts, daily planning, confidence on long-range planning and time attitudes as perceived control of time and, tenacity. In other words, this result suggest that time management practice may be necessary for the effective exploitation of creative ideas.

However, creative individuals who are able to manage their mental time have a much greater likelihood of meeting their creative goals. Moreover, the head nurses that implies of planning daily activities, prioritizing them and having a confidence with nurses and give chance to explore new ideas and to be a creative person .Nurses belonging to the high-creativity in all time management. However, those individuals who had the ability to self-regulate time and were learning-oriented applied effective strategies for creative problem solving. Also, *Darini* **et al.,** (*2014*) who's found that moderate positive correlation between time management and personal creativity.

Moreover, This result supported by *Mumford (2013)* who mentioned that the supervisors planning skills are an important influence on the work people high in creativity. Also, *Laura (2016)* who found that the individual creativity was significantly related time management.

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In the line of this result *Azampetakis et al., (2014)* whose found that the there is appositive correlation between individual creativity and time management behavior. Overall these results in line with arguments about the importance of time as a valuable resource for creativity.

In addition, *Williams (2014)* **who** mentioned that, several training interventions for leader have been shown to be effective in enhancing the nurses' creativity. However, the skilled time managers are somewhat likely to provide opportunities for their staff nurses that encourage creative problem solving. Specifically, setting goals and priorities, understanding the mechanics of time management, perceived control of time, along with daily and long term planning enhance their staff nurses creativity.

5. CONCLUSION

There was a highly statistical significant improvement in head nurses and their assistants' knowledge and skills level regarding time management immediate post program and three months follow up the program compared to preprogram scores. There was a highly statistical significant improvement in nurses' level of work creativity immediate post program and three months follow up the program compared to preprogram scores. In addition, there was a highly statistical positive correlation between head nurses and their assistants' skills regarding time management and nurses' level of work creativity.

6. RECOMMENDATIONS

Based on the findings of the current study, the following recommendations can be suggested

• Hospital continuous training unit had to initiate an In-service education and training courses for staff nurses in all level in the different departments of the hospital in managerial skills especially time management.

• Publishing posters containing tips for time management and its effect on outcome of staff nurses posted in each department.

• Study causes of the decrease of head nurses` level knowledge and skills that occur three months after the implementation of educational program and to find solutions to prevent it.

• Head nurses must be respect staff nurses differences and encourage subordinates to be participated in plan of care and give them chance to be creative.

• Nursing faculties should integrate creative thinking education in study courses.

• Head nurses must be give staff nurses innovative ideas for updating their job.

• Encourage creative activities by provide different rewards for the creative work.

• Replication of the study on other categories of nursing staff is highly recommended to achieve generalizable results.

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