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EFFECTIVENESS OF TIME MANAGEMENT LEARNING MODULE ON HEAD NURSES` JOB SATISFACTION

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Abstract

Time management is a critical skill for healthcare professionals, particularly for head nurses who juggle multiple responsibilities. Effective time management can lead to increased job satisfaction, reduced stress, and improved patient care. So, it is important for hospitals to provide adequate training in time management skills for their staff. ***Research design***: A one-group pretest-posttest quasi-experimental design was used to carry out the study. ***Study setting:*** The studywas conducted at Ain Shams University hospitals. ***Study subjects:*** The subjects of the study were the head nurses working in the aforementioned setting during the time of the study. Their total number was 154. ***Data collection tools:*** Three tools were used, time management questionnaire, job satisfaction questionnaire and an evaluation form for time management learning module. ***Results:*** The results showed an increase in the studied variables at post and follow-up compared to pre-module implementation with statistically significant differences at (p=.000). Total satisfactory knowledge related to time management increased from (24.6%) to (77.7% & 71.5%), adequate time wasters` management percentage rosed from (27.7%) to (90.8% & 89.2%), high time management behavior percentage enhanced from (60.8%) to (99.2%& 99.2%) and job satisfaction percentage heightened from (29.2%) to (70% & 63.9%) respectively. ***Conclusion:*** Time management learning module implementation has a positive effect on the head nurse's time management knowledge, time wasters management, time management behavior and job satisfaction. ***Recommendations:*** Integrating time management training for both under graduate and graduated nurses whether pre- or in-service programs. Further research is needed to identify the factors affecting time management behaviors and evaluate the effectiveness of the time management learning modules on head nurses' performance.

Keywords: Head Nurses, Job satisfaction, learning module, Time management, and Time wasters.

Introduction:

Nursing managers have a variety of responsibilities and must manage intricate relationships at all levels (e.g. manager, communication coordinator, and educational consultant). In addition to being nurses, some nursing managers work as price clerks, branch secretaries for youth league committees, and leaders of labor union groups. Nursing managers frequently need to study overseas, complete nursing research, and engage in continuing education in order to meet increased professional requirements. They must also take on the duties of several roles in the family at the same time. In addition, nursing managers are key players in both basic nursing practice and ward management ***(Islam et al., 2022).***

Time management is the act or process of exercising conscious control over the amount of time spent on specific activities, especially to increase efficiency or productivity. A broad range of tasks are included in this process, such as goal-setting, delegation, monitoring, organizing, scheduling, prioritizing, and time-spending analysis ***(Wolters & Brady, 2020).***

Time management becomes crucial since it drives first-line managers' behavior, output, and performance at work and serves as the cornerstone for the organization's overall success. Nurses who practice good time management perform at their best because they are more creative, effective, and have more time ***(Alyami et al., 2021).*** Moreover, Effective time management contributes enables individuals to cope with daily work more freely, and enhances job satisfaction. Additionally, there are some effects that time management has on psychology, the workplace environment, and individual feelings. It is thought to be crucial for a head nurse to meet deadlines, accomplish organizational goals, and exercise moral judgment when carrying out a duty in order to control the time required to complete a task and boost productivity, efficiency, and effectiveness ***(Zhijie et al., 2022).***

A time waster is any activity that has less value and typically keeps the head nurse from finishing the task at hand or reaching the objective. Time wasters can be things that one imposes on themselves internally or externally by other people ***(Saleh & El Shazly, 2020).*** External time wasters include, but are not limited to, answering pointless phone calls, ineffective communication, paperwork, pointless meetings and conversations, misplacing items, using the internet, interruptions, a lack of a clear plan, unclear roles and responsibilities, a lack of authority, a lack of role delineation, a staffing shortage, distractions, and a lack of self-discipline ***(Addis et al., 2023).***

Internal time wasters include the following: lack of strategic planning, absence of daily plans, inability to prioritize, opening and filing mail, responding to non-essential requests from others, starting a task without careful thought or planning, disorganization, and attention to unimportant matters; fear of making decisions and the fear of making a mistake; work reputation; ineffective delegation of routine tasks; inability to say no; employees' irresponsibility; their follow-up matters and personal transactions; unrestrained use of the phone and internet for personal purposes; and conversations with coworkers about unrelated topics ***(Gaber et al., 2022).***

The concept of job satisfaction is very complex and it is one of the most frequently identified outcomes of time management. Job satisfaction is a combination of psychological, physiological, and environmental circumstances that cause a person to say that he is satisfied with his job. It is an efficient way for people to become oriented toward the jobs that they currently hold ***(Keith et al., 2021).***

Today, the aspiration for continuous learning, application of new strategies at work, and staff development module taking into consideration the value and essence of time. A time management module is crucial for both professional and personal success because it teaches head nurses how to use time management techniques effectively and make the most of their time; it also supports them in making wise decisions and allows them to dedicate the majority of their time to highly valuable and important tasks. The module can help them become more creative, productive, and always able to do the right thing at the right time without delay. It can also help reduce wasted time and energy on unimportant things ***(Qtait, 2023; Behdarvand et al., 2023).***

Significance of the study:

It is imperative that time management be done carefully because time wasted cannot be recovered. Hence, proficient time management not only enables individuals to mobilize and utilize resources efficiently but also fosters task-oriented coping behaviors in the face of demands on their time, a fact that also applies to head nurses. Thus, thorough grasp of time management is beneficial for head nurses in developing managerial skills and improving all aspects of high-quality ***(Alziyadat & Obidat 2022).***

The linkages between job satisfaction and time management are well-established by ***Aprison et al. (2021).*** That is, time management is positively related to job satisfaction ***(Aeon et al., 2021).*** Thus, the

present study aimed to assess the effectiveness of the time management learning module on head nurses` job satisfaction among head nurses worked full-time at Ain Shams University hospitals.

Aim of the study:

This study was aimed at assessing the effectiveness of the time management learning module on head nurses` job satisfaction among head nurses.

Research hypothesis:

Implementation of a time management learning module will improve job satisfaction among head nurses

Subjects and Methods:

Research Design:

A one-group pretest-posttest quasi-experimental design was used to carry out the study.

Research Setting: The study was conducted at Ain Shams University Hospital, El Demerdash Hospital, Obstetric and Gynecological hospital, Pediatric hospital, Martyr Ahmed Shawqi Hospital and Cardiovascular hospital which affiliated to Ain Shams University Hospitals- Ain Shams University.

Research Subject:

The subjects of the study were head nurses working full-time in Ain-Shams university hospitals. Their total number was (154). The sample size was calculated to demonstrate a correlation coefficient of 0.32 or stronger ***Elsabahy et al. (2015),*** with 90% power and a 95% level of confidence between the scores of time management and job satisfaction. Using the Open-Epi software package for sample size estimation for correlation, the required sample size was 110. That was increased to 130 to account for a non-response rate of about 15%. The sample size was selected by simple random sample.

Data collection tools:

Data were collected by using the following tools:

Tool 1: Time management questionnaire: This tool consisted of four parts:

Part 1: Personal characteristics of the studied head nurses

It aimed at collecting personal characteristics of the studied head nurses and included age, gender, marital status, educational qualification, working department, nursing experience, work unit experience and attending time management training courses.

Part 2: Time management knowledge questionnaire:

It is a structured questionnaire which was developed by the researchers, guided by pertinent literature review ***Rahman et al. (2021); Abd-Elmoghith (2019); El Shahat &Gadery (2019); Khalil (2017); Elsabahy et al. (2015).*** It aimed at assessing head nurses` knowledge related to time management. It contained 42 closed-ended questions that covered time management principles and concepts (8 questions), time management benefits (8 questions), time management techniques (10 questions), time management facilitators and barriers (8 questions), and delegation (8 questions).

Scoring system:

The Scoring system for each question was granted one point for the correct answer, and zero for the incorrect one. The total score was 42 degrees which was summed up and converted into percent, which was classified into two categories. If the score is 60% or more it was considered satisfactory and unsatisfactory if less than 60% based on ***Soliman (2009)***

Part 3: Time waster questionnaire:

It was a structured questionnaire, developed by ***Baillie et al. (1989)*** and adapted by the researchers. It aimed to determine to what extent the head nurses can manage the time wasters and it consisted of forty-four items; 24 items for internal time wasters (planning 7 items, procrastination 5 items, assertiveness and perfectionism 7 items, and delegation 5 items) and 20 items for external time wasters (work policies 3 items, communication and information availability 5 items, phone calls, texts, and visits 5 items, work environment 4 items, and meetings 3 items. The possible response for each item is yes (score 3), sometimes (score 2), and no (score 1).

Scoring system:

The scoring level was arranged according ***Elsabahy et al. (2015)*** as follows for each head nurse separately. The score 44- 87 (<67%) indicated inadequate time wasters` management and 88- 132 (≥ 67%) indicated adequate time wasters` management.

Part 4: Time management behavior scale

It was a structured questionnaire developed by ***Macan (1994)*** and adopted by the researchers. The time management behavior questionnaire was used to assess the frequency at which head nurses practice time management behavior in their work situations. It consisted of seventy-five items; goals setting 10 items, prioritizing 6 items, organizing 13 items, scheduling 10 items, avoiding and managing interruptions 17 items, avoiding procrastination 5 items, delegating 11 items and controlling 3 items. Responses were measured on a 5-point Likert-Scale ranging from "1" (seldom true) to "5" (very often true).

Scoring system:

The scoring level was arranged as follows for each head nurse separately. The total score ≥75% indicated high time management behavior and <75% indicated low time management behavior.

Tool 2: Job Satisfaction Questionnaire.

It is a structured questionnaire developed by ***Amr & Fekry (2011)*** and adapted by the researchers. It was used to assess head nurses` job satisfaction. Responses of the participants were measured on a three-point Likert scale ranging from 1, 2, and 3 for the responses never, sometimes, and always respectively. It consisted of fifty-five items; work policies 5 items, work relationship

10 items, work environment 10 items, work system 6 items, achievement 16 items, psychological status 4 items, and work safety 4 items.

Scoring system:

The scoring level was arranged as follows for each head nurse separately. The total score ≥75% indicated satisfied and <75% indicated unsatisfied.

Tool 3: Evaluation form for time management learning module.

It was a structured form, developed by ***Elsabahy et al. (2015)*** and adapted by the researchers. It included 12 questions aimed at identifying the strengths and weaknesses in the design/content of the module such as (Was the module's objectives clear or not).

Scoring system:

The responses were scored as a positive response took a score of two and a negative response took one score. The scores of the items were summed up and converted into a percentage score. If the score is 60% or more it was considered satisfactory and unsatisfactory if less than 60%

II. Operational Design

This design involves a description of the preparatory phase, validity and reliability of the developed tools, pilot study, fieldwork and ethical considerations.

Preparatory Phase:

This phase lasted for two months on the beginning of January 2023 and ended in February 2023. In this phase, the researchers reviewed related past, current, local and international literature as well as theoretical knowledge of various aspects of the study using books, articles and the internet to develop and adapt data collection tools. During this phase, the researchers also visited the selected places to get acquainted with the personnel and the study settings.

Tools validity and reliability:

Tool Validity:

The preliminary form of the time management knowledge questionnaires and job satisfaction questionnaire were presented to a panel of experts for face and content validation, the jury panel consisted of five expert professors in nursing administration, two in faculty of nursing- Ain Shams university, two in faculty of nursing- Cairo university and one in faculty of nursing – Banha University. The process involved their general and overall opinions about the form. Then, they assessed each item for clarity, comprehensiveness, simplicity, understanding, and applicability. Accordingly, to their opinions recommended modifications were performed by the researchers. Additionally, the other tools used in data collection reported validity and reliability ***Rahman et al. (2021); Abd-Elmoghith (2019); El Shahat&Gadery (2019); khalili (2017); Elsabahy et al. (2015); Amr & Fekry (2011); Soliman (2009); Macan (1994); Baillie et al. (1989).***

Tool Reliability:

Reliability for tools were done to test the internal consistency of the tools. Internal consistency reliability of all items of the tools was assessed using Cronbach's alpha coefficient. Time management knowledge questionnaire (0.832), Time waster scale (0.812), Time management behavior scale (0.915) and Job satisfaction scale (0.869).

Ethical Considerations:

Before the actual fieldwork of the research study, the study protocol was approved by the research committee at the Faculty of Nursing, at Ain-Shams University. After obtaining official permission from the Faculty of Nursing, Ain Shams University, the researchers met the nursing director of Ain-Shams University hospitals and discussed with her the aim of the work and the expected benefits. Also, the researchers ensured the confidentiality of the information obtained then the researchers communicated with the Ain-Shams University Hospital's central nursing training department to plan the module timetable.

Then the researchers met with the study subjects to explain the purpose of the study and to obtain their agreement to participate. Their agreement to fill out the study questionnaires was considered a written informed consent to participate. All the studied head nurses were informed that participation in the study was voluntary; their names were voluntarily included in the questionnaire sheet. The anonymity and confidentiality of each participant was respected and protected, and subjects were informed that the content of the tool was used for research purpose only and they had the right to refuse to participate in the study or withdrawal at any time without any consequences.

Pilot Study:

A pilot study was conducted in March 2023 and it took two weeks. It was held on 10% of the main study sample (13 head nurses) aiming to test the study process and determine the clarity and feasibility of the study tools, as well as estimate the time needed for filling the forms; all participants in the pilot study were included in the main study sample.

Fieldwork:

Assessment phase

The study sample was divided into four groups to facilitate data collection. A group interview was conducted by the researchers with the head nurses who fulfilled the inclusion criteria to explain the aim of the study and ensure their acceptance for participating in the study by obtaining oral consent and to collect data about head nurses` socio-personal characteristics, time management knowledge, time management behavior, and job satisfaction using the different study tools before the first-time management module implementation. The average time needed for head nurses to fill time management knowledge questionnaire, time management behavior questionnaire, and job satisfaction questionnaire was around 45-50 minutes. This phase took one month and half ended in April 2023.

Planning phase

After completing the data collection in the assessment phase, analysis was done by the researchers in order to identify all strengths and weakness of head nurses' time management knowledge, time wasters` management, time management behavior and job satisfaction. It also involved all comments reported and recorded by the researchers. This process took approximately one month conducted until the end of June 2023. Based on the information obtainedfrom analysis of the assessment phase data, the

researchers developed the time management learning module content, booklet and media used. The researchers also used pertinent literature in this process. This phase took two months.

Implementation phase

The main objective of the module was to assess the effectiveness of a time management learning module on head nurses` job satisfaction. Teaching methods used were lectures, group discussion, brainstorming, real situations, role play, and participation in discussion. The media used were videos and data presentation for PowerPoint presentations. The time management module contains both face-to-face and online sessions. The face-to-face lectures were conducted in the lecture rooms at the cardiovascular hospital after obtaining the hospital director's acceptance during the morning shift from 9:00 pm. to 1:00 pm, two days per week for four weeks. The online sessions were conducted using the Microsoft Teams application during after noon time from 6:00 pm to 8:00 pm two days per week for four weeks. At the end of the last session, the researchers collected the study data post-time management module implementation from head nurses about their time management knowledge. At the end of the time management learning module, each head nurse was handled with a soft copy of the module booklet using What`s Application. This phase took one and half month from the beginning of July till the mid of August 2023.

The module included face-to-face and online sessions. Each session started with a pre-text regarding session topics and ended with a post-test. The use of simple scientific and professional language was considered to be convenient and suitable for various head nurses' qualifications. It consisted of six sessions for each group; they were preceded by an opening & awareness session. The six sessions were divided into (4) face-to-face sessions with total hours (8) and (2) online sessions with total hours (8). The six sessions were as follows:

Session 1: Introduction to time management and time wasters (Theory/Application).
Session 2: Time management strategies (Theory/Application).
Session 3: Time management tools (Theory/Application).
Session 4: Managing work environment (Theory/Application).
Session 5: Delegation (Theory/Application).
Session 6: Motivation and Productivity (Theory/Application).

Evaluation phase

Immediately at the end of the last session of the program, the researchers collected the post-testing knowledge questionnaire from the studied head afterimplementation of the learning module. Two weeks later, the researchers collected the post-testingtime wasters` management questionnaire, time management behavior questionnaire and job satisfaction questionnaire. For follow up phase, three months after the completion of implementing the time management learning module, the researchers evaluated the effect of the intervention on head nurses` time management knowledge and behavior, time wasters, and job satisfaction. This was done using the same data collection tools. This phase took about two weeks. The researchers collected the data at the morning shift three days per week from 9:00 am to 1:00 pm.

Statistical Design:

Data collected from the studied sample was revised, coded and entered using a Personal Computer (PC). Computerized data entry and Statistical analysis were fulfilled using the Statistical Package for Social Sciences (SPSS) version 27 (SPSS Inc., Chicago, IL, USA). Data were presented using descriptive statistics in the form of frequencies and percentages for categorical data, the arithmetic mean (X) and standard deviation (SD) for quantitative data. Cronbach alpha coefficient was

calculated to assess the reliability of the scales used through their internal consistency. Qualitative categorical variables were compared using the chi-square test (X2). Whenever the expected values in one or more of the cells in a 2×2 table were less than 5, the Fisher exact test was used instead. In larger than 2×2 cross-tables, no test could be applied whenever the expected value of 10% or more of the cells was less than 5. Spearman correlation was used for the assessment of the inter-relationships between quantitative variables and ranked ones. To identify the independent predictors of the score of time management knowledge, time management behavior, time wasters, and job satisfaction multiple linear regression analysis was used. Statistical significance was considered at p-value < 0.05.

Significance of the results:

- Highly significant at p-value <0.01.
- Statistically significant was considered at p-value <0.05.
- Non-significant at p-value >0.05.

Results:

Table (1): reveals that the studied head nurses` mean age and SD. were 45.46±7.280 years and ranged between 22 to 57 years. Also, 86.9% of them were females and 83.8% of them were married. As regards educational level, 58.5% of them had technical nursing diplomas and 23.8% of them had bachelor's degree in nursing. Concerning working units, 36.2% of them worked in the medical-surgical department and 35.4% of them worked in the medical-surgical ICU. Regarding their experience, the majority (80.8%) of them had more than 20 years of nursing experience while 56.2% of them had less than 20 years of experience in the current work. Finally, 59.2% of them attended training on time management.

Table 2: illustrates there is a statistically significant difference in the studied head nurses` total time management knowledge and it`s domains between pre- and post-module intervention and between pre-and follow-up module intervention with (p< 0.05). Moreover, there is an increase in their total satisfactory knowledge (77.7% &71.5%) post and follow-up module implementation compared to pre-implementation (24.6%). Thus, they had satisfactory knowledge post and follow-up implementation regarding delegation (86.9% &81.5), time management concepts and practices (78.5& 71.5%), time management techniques (76.2% 73.8%), time management facilitators and barriers (76.2% & 70.8%) and time management benefits (69.2% &66.9%) respectively.

Table (3) presents that there is a statistically significant difference in the studied head nurses` total time wasters' management, total internal and external time wasters' management and their domains between pre- and post-module intervention and between pre and follow-up module intervention (p<0.05). Moreover, there is an enhancement in their total adequate time wasters` management (90.8% &89.2%) post and follow-up module implementation compared to pre-implementation (27.7%).

Table (4) portrays that there is a statistically significant difference in head nurses' total time management behavior and it`s domains between pre- and post-module intervention and there is a statistically significant difference between pre and follow-up module intervention with (p= 0.00**). Additionally, the high total time management behavior rose (99.2%) post and follow-up module implementation compared to pre-implementation (60.8%).

Table (5) clears that there is a statistically significant difference in head nurses` total job satisfaction and its` domains between pre- and post-module intervention and there is a statistically significant difference between pre and follow-up module intervention with (p<0.05) except for the satisfaction for hospital policies. Moreover, there is an increase in their total job satisfaction (70% &63.8%) post and follow-up module implementation compared to pre-implementation (24.6%). Thus, they had job satisfaction post and follow-up implementation regarding work system (89.2%

&78.5), safety at work (87.7 & 82.3%), psychological status (86.2% 82.3%), and work relationship (82.3% &81.5%) respectively.

As regards total knowledge, **table (6)** shows that education level, attending training on time management, and module intervention were the statistically significant independent positive predictors of total knowledge among the studied head nurses. The module explains 61.5% of the variation.

Concerning total time waster's management, **table (7)** presents that educational level of the studied head nurses and module intervention were the statistically significant independent positive predictors of total time waster's management among the studied head nurses. The module explains 68.361.2% of the variation.

In multivariate analysis, **table (8)** declares that the statistically significant independent positive predictors of total time management behavior were attending time management training courses, module intervention and total time wasters` management. The module explains 45.4% of the variation.

Finally in multivariate analysis, **table (9)** portrays that intervention was the only statistically significant independent positive predictors of total job satisfaction. The module explains 23.8% of the variation.

Figure (1) declares that 96.2% of the studied head nurse's total satisfactory module evaluation while only 3.8% of them had total unsatisfactory module evaluation.

Table 1: Personal data of the studied head nurses (n=130)**Personal characteristics**	**N**	**%**
Age		
<40	20	15.4
≥40	110	84.6
Mean ±SD	45.46±7.280	
Gender		
Male	17	13.1
Female	113	86.9
Marital status		
Married	109	83.8
Unmarried	21	16.2
Education level		
Technical nursing diploma	78	58.5
High technical Diploma	16	12.3
Bachelor degree	31	23.8
Master degree	2	1.5
Doctorate	5	3.8
Work unit		
ICU	46	35.4
Operating room	19	14.6
Medical surgical department	47	36.2
Emergency unit	12	9.2
Outpatient department	6	4.6
Experience years in nursing		
<20	25	19.2
≥20	105	80.8
Mean ±SD	25.13±7.779	
Experience years in the current work unit		
<20	73	56..2
≥20	57	43.8
Mean ±SD	16.12±11.375	
Attending training on time management		
Yes	53	59.2
No	77	40.8

Table (2): Head nurses` total time management knowledge through the study phases (n=130)

Total knowledge domains	Pre		Post		Follow-up		X^2 (pre-post) P value	X^2 (Pre-FU) P value
	No	%	No	%	No	%		
Time management concept and practices				78.5			13.383	11.712
Satisfactory	53	40.8	102	21.	93	71.5	.000**	.000**
Unsatisfactory	77	59.2	28	5	37	28.5		
Time management benefits				69.2			9.802	8.419
Satisfactory	59	45.4	90	30.	87	66.9	.000**	.000**
Unsatisfactory	71	54.6	40	8	43	33.1		
Time management techniques				76.2			5.742	7.886
Satisfactory	62	47.7	99	23.	96	73.8	.000**	.039*
Unsatisfactory	68	52.3	31	8	34	26.2		
Time management facilitators and barriers				76.2			12.792	12.087
Satisfactory	37	28.5	99	23.	92	70.8	.000**	.000**
Unsatisfactory	93	71.5	31	8	38	29.2		
Delegation				86.9	10		14.483	12.559
Satisfactory	32	24.6	113	13.	6	81.5	.000**	.000**
Unsatisfactory	98	75.4	17	1	24	18.5		
Total Time management knowledge				77.7			20.806	17.833
Satisfactory	32	24.6	101	22.	93	71.5	.000**	.000**
Unsatisfactory	98	75.4	29	3	37	28.5		

(*) Statistically Significant at p ‹0.05. (**) Statistically Significant at p ‹0.01. Not significant at p>0.05

Table (3): Head nurses` total time wasters' management through the study phases (n=130)

Time wasters domains	Pre		Post		Follow-up		X^2 (pre-post) P value	X^2 (Pre-FU) P value
	No	%	No	%	No	%		
Planning							5.127 .024*	6.031 .014*
Adequate	27	20.8	113	86.9	103	79.2		
Inadequate	103	79.2	17	13.1	27	20.8		
Procrastination							6.044 .014*	6.044 014*
Adequate	62	47.7	122	93.8	117	90		
Inadequate	68	52.3	8	6.2	113	10		
Assertiveness and perfectionism							26.531 .000**	39.641 .000**
Adequate	25	19.2	60	46.2	57	43.8		
Inadequate	105	80.8	70	53.8	73	56.2		
Delegation							39.140 .000**	41.964 .000**
Adequate	37	28.5	74	56.9	68	52.3		
Inadequate	93	71.5	56	43.1	62	47.7		
Total internal time wasters							18.957 .000**	14.816 .000**
Adequate	76	58.5	108	83.1	106	81.5		
Inadequate	54	41.5	22	16.9	24	18.5		
Work policies							53.182 .000**	41.414 .000**
Adequate	40	30.8	110	84.6	107	82.3		
Inadequate	90	69.2	20	15.4	23	17.7		
Communication and information availability	87	66.9	110	84.6	92	70.8	11.682 .001**	26.539 .000**
Adequate	43	33.1	20	15.4	38	29.2		
Inadequate								
Telephone calls, text messages and visits	55	42.3	125	96.2	125	96.2	7.091 .003**	7.091 .003**
Adequate	75	57.7	5	3.8	5	3.8		
Inadequate								
Work environment							12.295 .000**	12.295 .000**
Adequate	44	33.8	124	95.4	124	95.4		
Inadequate	86	66.2	6	4.6	6	4.6		
Work meetings							28.600 .000**	28.600 .000**
Adequate	75	57.7	100	76.9	100	76.9		
Inadequate	55	42.3	30	23.1	30	23.1		
Total external time wasters management	38	29.2	116	89.2	1221	86.2	23.003 .000**	26.191 .000**
Adequate	92	70.8	14	10.8	8	13.8		
Inadequate								
							25.842	25.992

Total time wasters management							.000**	.000**
Adequate	36	27.7	118	90.8	116	89.2		
Inadequate	94	72.3	12	9.2	14	10.8		

(*) Statistically Significant at p ‹0.05. (**) Statistically Significant at p ‹0.01. Not significant at p>0.05

Table (4): Head nurses` total time management behavior through the study phases **(N=130)**

Total time management behavior domains	Pre		Post		Follow-up		X^2 (pre-post) P value	X^2 (Pre-FU) P value
	No	%	No	%	No	%		
Goal settings							38.78 .000**	36.74 .000**
High	64	49.2	127	97.7	128	98.5		
Low	66	50.8	3	2.3	2	1.5		
Prioritization							19.660 .000**	20.62 .000**
High	74	56.5	126	96.9	126	96.9		
Low	56	43.1	4	3.1	4	3.1		
Organizing							30.14 .000**	30.14 .000**
High	73	56.2	128	98.5	128	98.5		
Low	57	43.8	2	1.5	2	1.5		
Scheduling							22.59 .000**	26.31 .000**
High	61	46.9	121	93.1	122	93.8		
Low	69	53.1	9	6.9	8	6.2		
Avoiding and managing interruptions							18.68 .000**	18.68 .000**
High	75	57.7	122	93.8	122	93.8		
Low	55	42.3	8	6.2	8	6.2		
Avoiding procrastination							14.53 .000**	14.53 .000**
High	81	62.3	126	96.9	126	96.9		
Low	49	37.7	4	3.1	4	3.1		
Delegation							12.54 .000**	12.54 .000**
High	93	71.5	129	99.8	129	99.8		
Low	37	28.5	1	0.8	1	0.8		
Controlling							21.57 .000**	24.04 .000**
High	79	60.8	118	90.8	118	90.8		
Low	51	39.2	2	9.2	2	9.2		
Total time management behavior							34.163 .000**	34.163 .000**
High	79	60.8	129	99.2	129	99.2		
Low	51	39.2	1	0.8	1	0.8		

(*) Statistically Significant at p ‹0.05. (**) Statistically Significant at p ‹0.01. Not significant at p>0.05

Table (5): Head nurses` total job satisfaction through the study phases **(N=130)**

Total job satisfaction domains (Satisfactory≥ 75%)	**Pre**		**Post**		**Follow-up**		**X^2 (pre-post) P value**	**X^2 (Pre-FU) P value**
	No	**%**	**No**	**%**	**No**	**%**		
Hospital Policies							.141	.063
Satisfactory	73	56.2	76	58.5	75	57.7	.707	.802
Unsatisfactory	57	43.8	54	41.5	55	42.3		
Work relationships							39.825	38.049
Satisfactory	58	44.6	107	82.3	106	81.5	.000**	.000**
Unsatisfactory	72	55.4	23	17.7	24	18.5		
Work Environment							10.7402	7.462
Satisfactory	51	39.2	77	59.2	73	56.2	.001**	.006**
Unsatisfactory	79	60.8	53	40.8	57	43.8		
Work System							60.133	32.785
Satisfactory	57	43.8	116	89.2	102	78.5	.000**	.000**
Unsatisfactory	73	56.2	14	10.8	28	21.5		
Achievement							11.082	7.915
Satisfactory	20	15.4	43	33.1	39	30	.001**	.005*
Unsatisfactory	110	84.6	87	66.9	91	70		
Psychological Status							74.103	62.698
Satisfactory	44	33.8	112	86.2	107	82.3	.000**	.000**
Unsatisfactory	86	66.2	18	13.8	23	17.7		
Safety at Work							32.017	20.872
Satisfactory	73	56.2	114	87.7	107	82.3	.000**	.000**
Unsatisfactory	57	43.8	16	12.3	23	17.7		
Total job satisfaction							43.218	31.304
Satisfactory	38	29.2	91	70	83	63.8	.000**	.000**
Unsatisfactory	92	70.8	39	30	47	36.2		

(*) Statistically Significant at p ‹0.05. (**) Statistically Significant at p ‹0.01. Not significant at p>0.05

Table (6): Multiple Linear regression model for total time management knowledge

	Unstandardized Coefficients		**Standardized Coefficients**	**T-test**	**P-value**	**95.0% Confidence Interval for B**	
	B	**Std. Error**	**Beta**			**Lower**	**Upper**
(Constant)	16.276	1.610		10.110	.000	13.111	19.441
Educational level	1.295	.248	.212	5.227	.000	.808	1.782
Attending time management training courses	4.301	.953	.221	4.514	.000	6.175	2.428
Intervention	9.334	.687	.661	13.587	.000	7.984	10.685
R Square = .615 Model ANOVA: F=78.428, p=0.000 Variable entered: educational level, attending time management training courses and intervention.							

Table (7): Multiple Linear regression model for total time wasters` management

	Unstandardized Coefficients		Standardized Coefficients	T-test	P-value	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower	Upper
(Constant)	74.347	2.225		33.419	.000	69.973	78.721
Educational level	.822	.300	.092	2.743	.006	.233	1.411
Intervention	16.398	.967	.795	16.954	.000	14.496	18.300
R Square = .612 Model ANOVA: F=121.186, p=0.000 Variable entered and removed: work unit, attending time management training course and total time management knowledge							

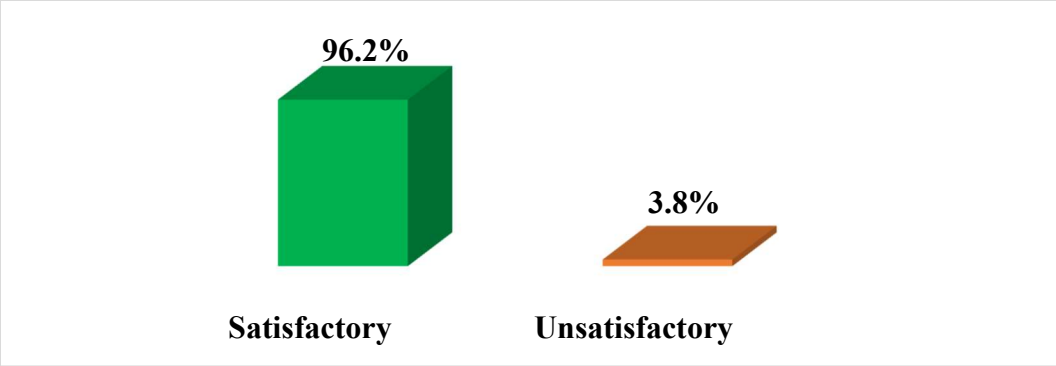
Table (8): Multiple Linear regression model for total time management behavior

	Unstandardized Coefficients		Standardized Coefficients	T-test	P-value	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower	Upper
(Constant)	149.409	17.287		8.643	.000	115.419	183.399
Attending time management training courses	14.304	4.147	.164	3.449	.001	22.457	6.150
Intervention	18.003	4.619	.285	3.898	.000	8.922	27.084
Total time wasters` management	1.457	.184	.476	7.912	.000	1.095	1.819
R Square = .454 Model ANOVA: F=53.024, p=0.000 Variable entered and removed: gender, work unit and total time management knowledge.							

Table (9): Multiple Linear regression model for total job satisfaction

	Unstandardized Coefficients		Standardized Coefficients	T-test	P-value	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower	Upper
(Constant)	104.475	3.619		28.872	.000	97.360	111.590
Intervention	14.783	1.349	.488	10.961	.000	12.131	17.435
R Square = .238 Model ANOVA: F=30.119, p=0.000 Variable entered and removed: marital status, educational level, work unit, and attending time management training courses							

Figure (1): Distribution of the studied head nurses according to their total evaluation of time management learning module.



Discussion

Deciding on how a head nurse spends time is very important to make oneself productive and more organized. The concept of time wasters is a dynamic that changes with climate conditions, crises, places and people, an activity that takes unnecessary or uses inappropriate time, or an activity that does not give a return commensurate with the time spent on it ***(Gaber et al., 2022).***

Job satisfaction depends on the job itself and the individual's characteristics or an interplay of both ***(Judge et al., 2020).*** It is one of the most challenging issues for organizations and employers. Job satisfaction affects employee performance, influencing organizations' productivity and efficiency ***(Davidescu et al., 2020).***

Since the nature of spending time during the performance of tasks varies from one job to another. Consequently, the imbalance between time allowed and work duties may increase work pressure for managers and employees. This growth in work pressure can cause negative consequences like lack of job satisfaction, poor performance, and lack of productivity ***(Kundi et al., 2022).***

Thus, the present study aims to assess the effectiveness of the time management learning module on head nurses` job satisfaction among head nurses.

Regards the head nurses` time management knowledge, the current study results, illustrates a statistically significant difference in the studied head nurses` time management knowledge between pre- and post-module intervention and between pre-and follow-up module intervention regarding their total time management knowledge and knowledge domains. Similar findings in a study conducted by ***Gaber et al., 2021*** confirmed that, in post program implementation and in follow up phase there was highly statistically significant difference in the intervention's group knowledge level about time management compared to the control group. Additionally, results of ***El Shahatet al., 2019*** showed harmony with the current study results as the results stated that there was a 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 compared to preprogram scores.

Additionally, the current results reveal that less than quarter of the studied head nurses had satisfactory total time management knowledge pre-module implementation. This could be due to the absence of regular scheduled activities and training programs that help head nurses in improving their time management knowledge.

And so, there is an increase in their satisfactory knowledge post and follow-up module implementation compared to pre-implementation regarding total time management knowledge and all knowledge domains. This might be explained by that the content of the time management learning module was developed and designed based on the head nurses` training needs to increase

their knowledge and capabilities in alignment with the vision and mission of Ain Shams university hospitals. In harmony, the current study findings are in congruence with ***Mohamed et al., 2019*** results that demonstrated high improvement of their subjects' knowledge level related to time management after attending the training program.

As regard the head nurses` time wasters' management, the current study results demonstrated that there is a statistically significant difference in the studied head nurses` total time wasters' management, total internal and total external time wasters' management between pre- and post-module intervention and between pre and follow-up module intervention. These results may be due that each session included a practical and application part and also explained by the implementation of the acquired knowledge regarding time management in the provided module that made a positive effect in increasing the head nurses` abilities in managing their internal and external time wasters. On the other hand, there was no statistically significant difference between pre and follow-up module intervention regarding work policies which may reflect that the head nurse's obligation to follow certain work policies that affect their abilities in managing their time.

In congruent with these results***, Gaber et al., 2021*** study findings showed that at pre-program phase the head nurses in both intervention and control groups had a lot of time wasters compared to post and follow up phases and there was statistically significant difference between the two groups in post and follow up phase. Also, ***Saleh & El Shazly 2020*** study results demonstrated that there was high statistically significant difference between studied nurses at pre, post and follow up intervention related to total time wasters, internal and external time wasters domains

Similarly, ***El Shahatet al., 2019*** results portrayed 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

Moreover, the current findings elicit that only more than one quarter of head nurses had adequate time wasters` management at pre- module implementation. These results reflect their awareness and capabilities deficiency of managing the time wasters. Moreover, this may be due to work load and working at hot areas that make more pressure on the head nurses. Similarly, ***Gaber et al., 2022*** results revealed that less than two thirds of head nurses had present time wasters while more than one third of them had not present time waster.

Also, the current study results present that the low percentage of the head nurses have adequate time wasters` management regarding planning, delegation, work policies and work environment at pre phase. This result may be explained by the high work load, the continues changes in the work policies, environmental work obstacles and infrastructure that hinder time management practices. Also, it might be explained by the absence of regular scheduled activities and training programs that help head nurses in identifying the time wasters and how to eliminate and deal with these wasters. In the same line, ***Gaber et al., 2022*** results described that three fifth of head nurses had present time wasters in planning, meanwhile nearly two third of them had time wasters in communication.

Further, the current study results present that the majority of head nurses have adequate time wasters` management regarding planning, procrastination, communication and information availability, telephone calls, text messages and visits, work environment and work meetings at post and follow up phases. Moreover, about half of them have adequate time wasters` management regarding delegation, assertiveness and perfectionism at post and follow up phases. This may be explained by during the teaching sessions the researchers used an interactive teaching methods

that transformed them to be active learners which lead to more acquisition of time wasters management.

Concerning the head nurses` time management behavior, the current study results reveal that about three fifth of the studied head nurses have high total time management behavior at pre-module implementation. This result may be explained by the previous background of the head nurses regarding time management methods and techniques. Similarly, ***Zyoud, 2023*** results mentioned that the average total score for the whole sample was relatively good time management skills among the respondents. Additionally, ***El-Ashry et al., 2022*** study findings llustrated that more than half of head nurses had high total time management skills. Moreover, ***Addis et al., 2023*** demonstrated that the magnitude of the studied health professionals had good time management practice.

On the other hand, with these results ***Boduç& Baykal. 2022*** study results illustrated that around half of the nurses primarily used time at a moderately efficient level. Also, ***Khalifa et al., 2021*** results figured that the majority of the sample have moderate level of time management and around one fifth of them have high levels of time management. This disparity with the current study findings may be due to infrastructure discrepancies in health services, differences in research settings, and differences in respondents, all of which may influence the status of time management practice.

Moreover, the current study results portray that there is a statistically significant difference in head nurses' total time management behavior and it`s domains between pre- and post-module and follow-up module intervention. The effect of the learning module also remained high after three months indicating the high quality of the module as well as the head nurses' eagerness and active participation.

Moreover, the current study results indicated an increase in the total satisfactory time management behavior among head nurses regarding goal setting, prioritization, organizing, scheduling, avoiding and managing interruptions, delegation, and controlling at post and follow up module implementation compared to pre-module implementation. This result might be due to improving level of head nurses` knowledge after module implementation led to increase current use of time management skills as use of effective tools and setting goals according to priorities. And so, this helping them to control their time and motivate the head nurses for creative work, job satisfaction, productivity and improve their performance.

In agreement with the previous results, ***Chanie et al., 2021*** results mentioned that the overall magnitude of time management practice among employees employed in Gondar's primary hospitals was low. Moreover, ***Saleh & El Shazly 2020*** study results revealed that there was a highly statistically significant difference in total time management, goal setting, managing interruptions, procrastination domains of time management at pre, post and follow up intervention. Similarly, ***El Shahat & Gadery, 2019*** results displayed that there was a highly statistically significant improvement in head nurses and their assistant 'skills regarding time management immediate post program and slightly decreased three months follow up the program compared to preprogram scores

As regard head nurses` job satisfaction, the current study findings clears that there is a statistically significant difference in head nurses` total job satisfaction and it`s domains between pre, post-module intervention and follow-up module intervention. Moreover, the results indicate improvement in head nurses` total satisfaction with work relationships, work environment, work system, achievement psychological status, and safety at post and follow-up module implementation compared with pre-module implementation. These results may be explained by

the positive effect of the time management learning module on the head nurses job satisfaction ***(Aprison et al. 2021; Aeon et al., 2021; Khan et al., 2020).*** While, there was no significant difference in head nurses` total work policies job satisfaction between pre, post-module intervention and follow-up module intervention. Which might be explained by that the policies are the same at the study phases and the multiple tasks administrative and technical mentioned in the policies that make burden on them and make them feel time pressure.

Moreover, the current results indicates that only around two thirds of the studied head nurses have total job satisfaction post and follow up module implementation. Which is considered slight improvement compared by the other study variables; time management knowledge, time wasters` management and time management behavior that may be explained by that the study didn`t measure the job satisfaction related to time management only but there are many variables that affect the head nurses job satisfaction which were not included in the current study.

These results supported by the study conducted by ***Elsabahy et al., 2015.*** The results figured that the head nurses job satisfaction increased after the program implemented and highly statistically significant differences were seen with regard to total actual job satisfaction domains, work relation, work environment, achievement, and psychological status pre, immediate and 3 months post the program. In congruent with these results, ***Amaliah et al., 2021*** mentioned that the assessment of the head nurse on the job satisfaction of the staff nurse respondents yielded an overall high mean score, implying that the head nurse respondents agree in their job. Moreover, ***Soesanto et al., 2022*** results showed that more than half of the studied reported satisfying with all job satisfaction dimensions. Meanwhile, indicators reported that lead to job dissatisfaction (context factor) were: health care policy and support supervisors/supervision.

On the other hand, ***Sammut, et al., 2021*** elicited that the nurses were satisfied with the opportunities available for interaction with other health-care professionals, their co-workers and the praise and recognition they received only. Additionally, ***Bit-Lian et al., 2021*** reported that the mean score of nurses' job satisfaction was lower satisfaction and the highest dissatisfaction perceived by nurses was on their salary and career development.

As regards total knowledge predictors, the current results show that education level, attending training on time management, and module intervention were the statistically significant independent positive predictors of total knowledge among the studied head nurses. These results are expected and may be explained attending training and module intervention provide the theoretical frame of the time management topic which affect positively the knowledge level of the studied head nurses. Also, the higher head nurses` educational level enables them to easily understand the provided information and think wisely on the implementation of these provided information and enhances critical thinking skills, problem-solving abilities, and the capacity to synthesize information. Additionally, higher education equips head nurses with both theoretical and practical knowledge, enhancing their ability to understand the interconnections between various managerial topics.

Incongruent with these results, ***Zyoud, (2023).*** research consistently shows that higher education levels are associated with enhanced knowledge and competencies in nursing. Nurses with advanced degrees, such as a Bachelor of Science in Nursing (BSN) or higher, tend to demonstrate better clinical knowledge and decision-making skills compared to those with lower educational qualifications. Also, ***Vizeshfar et al., (2022)*** elicited that training on time management is crucial for improving nurses' efficiency and effectiveness in their roles and their results indicate that structured time management training significantly enhances nurses' ability to prioritize tasks and manage their time effectively.

Concerning total time waster's management predictors, the current study results present that educational level of the studied head nurses and module intervention were the statistically significant independent positive predictors of total time waster's management among the studied head nurses. This may be explained by the fact that the provided module contained not only theoretical knowledge but also practical interactive activities with real faced situations by the studied head nurses that make them able to critique the real practice of faced time wasters compared to the best practice.

Similarly, ***Boduç & Baykal. 2022*** conducted a multiple regression analysis for the concurrent assessment of the effects the nurses' level of education had on their time wasters subscale scores. The results showed a significant effect. Moreover, ***Saleh & El Shazly 2020*** study results revealed that educational level, and time management had high positive predictor effect on time wastes.

Furthermore, the current study results, in multivariate analysis, declares the statistically significant independent positive predictors of total time management behavior were attending time management training courses, module intervention, total time wasters` management. These results may be due to with providing training and repeating it on regular bases with different methodologies in consideration with the differences between the studied head nurses in educational level, work load, age and so on. Moreover, the provided time management module was designed based on the real learning needs of the studied head nurses regarding time management that contained group discussion and practice for every topic that facilitated the experience sharing in dealing with time through the studied head nurses` day activities. Moreover, the ability of dealing with faced time wasters` make head nurses to be able to plan their activities and more committed to these plans which lead to more positive time management behavior. In the same direction, with the current study results, ***Zyoud, 2024*** figured that the time nursing wasting scale (Higher mean values indicate more frequent engagement in time-wasting behaviors among the participant) correlated negatively with the nursing time managements scale. A multiple regression analysis was conducted by ***Boduç & Baykal. 2022*** study for the assessment of independent variables that affected the nurses' TMQ total scores which show significance with time management training status.

In multivariate analysis, the current study findings portray that the intervention was the only statistically significant independent positive predictors of total job satisfaction. intervention was the only statistically significant independent positive predictors of total job satisfaction. This result can be attributed to the positive effects of the module on the nurses' management of time wasters and overall management behavior, enhancing their ability to schedule daily activities and reducing time pressure and associated stress, which in turn affects their job satisfaction positively. Furthermore, the module covered essential topics such as setting work and personal goals and managing human interactions, which likely fostered a new perspective on their roles, further contributing to their job satisfaction. Similarly, the current findings showed harmony with ***Yasa et al., 2022*** study which demonstrated that time management has a positive effect of on job satisfaction and the relationship is significant. Also, ***Alziyadat & Obidat. 2022*** found that the setting goals and priorities dimension of time management positively influences job satisfaction.

Finally, the implementation of targeted educational modules on time management has been shown to be an effective strategy for enhancing head nurses' time management knowledge, wasters` management, time management behavior and significantly improved head nurses' ability to manage their daily activities and reduced time-related pressures, and this intervention not only improve time management skills but also contribute to better job satisfaction among them. And

this result confirms the accuracy of the study hypothesis that implementation of a time management learning module improves job satisfaction among head nurses.

As regards the evaluation of head nurses` time management module, the results declares that the vast majority of the studied head had total satisfactory module evaluation while only few of them had total unsatisfactory module evaluation. Moreover, the current results reveals that the vast majority of the studied head nurses stated that the goals were clear, the duration was enough, the schedule was appropriate, the topics were interesting, the content was enough, the module added new information, the module environment was comfortable, and the teaching methods were clear. Regarding learning module activities, the vast majority of them demonstrated that the presentation methods were useful, the brainstorming ideas were useful, the discussion was useful, and examples were enough. Additionally, they mentioned that the learning module can be implemented at work.

This could direct the attention that the implementation of time management program was succeeded as a mean for improving head nurses' time management knowledge and maximized their knowledge. Furthermore, the simplification of educational matter of time management program and well-presented information by suitable educational aids increased the head nurses' desire to acquire needed principles and knowledge as well as trying to apply it. Unfortunately, Use of self-reporting measures may have some potential for reporting biases, which may have occurred because of the respondents' interpretation of the questions; they may over or under report a phenomenon.

Finally, the study findings indicate an increase in the importance of knowledge and skills within organizational techniques on managerial positions in health care facilities. Time management techniques are learnable, and nurses may experience lower stress levels and more job satisfaction while performing their duties on time when they are aware of these techniques. This explains that there is a demanding need to speed time management skills using to be more significant and their effectiveness be more consistent, efforts to avoid factors that inhibit time management skills would have been greater attention for implementation. Therefore, the effect of the educational intervention may be sustained over time, and the time management educational module must be followed for a longer duration.

Alternatively, unrealistic expectations and deadlines, insufficient time to complete responsibilities, over responsibility, inadequate education, commuting problems, lack of attention, childcare, and poor working conditions may be factors leading to nurses' job dissatisfaction. All of these factors may be confounding and the researchers could not control them in this study. Therefore, further studies that control for these factors are recommended.

Conclusion

Based on the findings of the current study, it is concluded that there were high significant differences in the studied head nurses` total time management knowledge, time wasters management, time management behavior and job satisfaction post and follow-up module implementation compared to pre- module. Also, module intervention was a statistically significant independent positive predictors of head nurses` total time management knowledge, total time wasters` management, total time management behavior and total job satisfaction. And these results confirm the accuracy of the study hypothesis that implementation of a time management learning module improves job satisfaction among head nurse.

Recommendations:

In the light of the findings of the current study the following recommendations can be suggested:

Hospital administration

- Considering implementing organizational policies and strategies to reduce time-wasting activities,

such as requiring excessive reporting, vague communications, and unnecessary meetings

Education

- Emphasis on providing practical instructions and exercises on how to avoid and eliminate time-wasting activities such as interruptions, distractions, and procrastinations.

Further research study

- Further research is needed to identify the factors affecting time management behaviors and how to control them with quantitative and qualitative methods.

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