

The Influence of Time Management Strategies on Acute Care Nurses' Job Stress

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Abstract

Background: Effective stress management strategies as life style, self-regulation, problem solving abilities, accept responsibilities, and time management are crucial to improve work environment and reduce stress among nurses.

Aim: Examine the influence of time management strategies' educational intervention on reducing job stress level among acute care nurses.

Methods: Quasi-experimental one group pre-posttest design was employed. A convenient sample of forty one nurses were recruited from a University hospital's acute care units. The Expanded Nursing Stress Scale (ENSS) was used to assess nurses' stress level.

Results: Very sever (123.5) level of stress, with higher mean score for younger and less experienced nurses was identified. Inadequate emotional preparation, workload, and uncertainty about treatment were the predictors of stress. A negative correlation between time management strategies and reduction of acute care nurses' level of stress was found (53.6, 59.8) respectively.

Conclusion: Time management self-learning module helped in reducing stress level from very sever to moderate level. Roles clarification might decrease stress resulting from dealing with physicians. Specific orientation programs for novice nurses might reduce uncertainty regarding treatments and provide adequate emotional preparation. Utilization of proper staffing, scheduling and methods of organizing patients' care by nurse managers create healthy work environment and minimize workload.

Keywords: Acute care units, job stress, nurses, time management strategies.

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I. Introduction

Stress related to work environment has been a challenge for nursing professionals. It occurs as a result of the continuous demand to do the best in an environment that is full of sophisticated technology. Acute care nurses are required to deal with the sophisticated technology as well as the ethical and practical problems of patient care [1].

Nursing is considered one of the most stressful careers among healthcare professionals. Job stress that nurses experience has its negative impact on both nurses and organizations' performance [2]. Nursing job stress is the emotional and physical harmful body's responses that occur when work requirements exceed the abilities and resources of nurses [3]. Acute care nurses experience different job stressors than peers in other departments because they are susceptible to traumatic experiences such as patients' and families' aggression and violence. Literature revealed that acute care nurses are exposed to long lasting job stressors such as work overload, type of shift work, physical fatigue, low decision autonomy, and shortage of time [4].

Effective stress management strategies are crucial to improve nurses work environment and reduce stress level among nurses. Some of the strategies employed toward managing stress among nurses are nurses' life style, self-regulation, problem solving abilities, acceptance of responsibilities, and time management [5].

In relation to recent literature, shortage of nursing personnel and high turnover rates are among the international healthcare issues in many countries. Shortage of nursing manpower is closely related to occupational stress and unhealthy work environment. Nurses cannot subside these stressors that negatively affect not only the wellbeing of nurses but the health care organizations as well [6].

Time management is part of personal and professional nurses' skills and manners. These qualities play an essential role in nurses' productivity and their coping strategies to time pressures [7]. Time management is a crucial element for all nurses' success. Therefore, its unfavorable results lead to poor quality of patients' care,

nurses' job dissatisfaction, anxiety, turnover, burnout, uncertainty concerning roles, and work overload. These negative consequences affect not only nurses but nurse managers, patients, and the entire health care organizations as well [8].

Accordingly, work overload was the most stressor experienced by nurses employed in closed units. Research studies implied that career demands and work overload are the main predictors of occupational stress among nurses. These predictors lead to physical and emotional exhaustion among nurses in close units [9, 10, 11, 12, 13, 14].

Shortage of nursing personnel is associated with work overload, and inadequate time to complete patients' care activities. Thus, it negatively affects the quality of nursing care delivered to patients in acute care units. For that reason, work overload can be handled by nurse managers at different managerial levels through effective staffing, scheduling, and methods of organizing patients' care in order to provide nurses the opportunities to complete their tasks [5]. Work environment redesign, regulation of nursing task, the availability of assistive personnel, and advanced technology would save more time for nurses to use it in the direct patients' care activities [15, 16].

Research outcome had determined a strong correlation between occupational stress and poor health among healthcare providers. Ineffective stress management can lead to numerous physical and psychological problems among nurses. In addition, time is the most valuable resource in our lives, as managing it effectively leads to success in our personal and professional roles [17, 18].

Literature emphasized that there is a strong correlation between time management and stress management among nurses. Time management can be considered one way to reduce or prevent occupational stress among nurses complain of work overload [19]. Therefore, the current study aimed to examine the association between application of time management strategies and reduction of job stress level among acute care nurses.

II. Methods

Aim of the study

This study aimed to examine the effect of applying time management strategies' educational intervention on the level of stress among acute care nurses. To achieve this aim the following objectives were stated:

- 1) Identify level of stress among acute care nurses.
- 2) Investigate the association between the identified stress level and socio-demographic characteristics of the study sample such as: age, marital status, and experience.
- 3) Examine the influence of time management strategies' educational intervention on job stress level among acute care nurses after the intervention.

Hypothesis

There is a negative correlation between the application of time management strategies and reduction of stress level among acute care nurses.

Research Design

Whereas quasi-experimental research design aims to assess interventions without randomization i.e. determine causality between intervention and outcome. Thus, a quantitative quasi-experimental research design one group pre-test post-test was used to correlate between applications of time management strategies and reduction in the level of stress among acute care nurses [20].

Setting

Data were collected from acute care units in one of the governmental University hospitals in the Delta region of Egypt.

Instrument

The modified version of expanded nursing stress scale (ENSS) which was described by Pawar, (2014) was used. The questionnaire composed of 36 items divided into eight categories related to stress. The reliability cronbach alpha in the original scale was (0.506), for the current study was (0.615).The instrument used five point likert scale ranged from (0-4), (never, rarely, sometimes, often, always) respectively. The following table illustrated the adopted scoring system to calculate the stress level among study sample [1].

Table (1): The scoring system of the subcategory and items of the modified (ENSS)

Stress scale subcategories	No. of items	Mild	Moderate	Sever	Very Sever	Total
Death and dying.	6	0-6	7-12	13-18	19-24	0-24
Conflict with physicians.	4	0-4	5-8	9-12	13-16	0-16
Inadequate emotional preparation.	3	0-3	4-6	7-9	10-12	0-12
Problems with peer supports.	2	0-2	3-4	5-6	7-8	0-8
Problems with supervisor.	3	0-3	4-6	7-9	10-12	0-12
Workload.	7	0-7	8-14	15-21	22-28	0-28

Uncertainty concerning treatment.	7	0-7	8-14	15-21	22-28	0-28
Patients and families.	4	0-4	5-8	9-12	13-16	0-16
Total	36	0-36	37-72	73-108	109-144	0-144

Data Collection Procedure

Data collection lasted for 6 months (from October, 2017 to March, 2018). All participants who met the inclusion criteria were invited to participate in the study voluntarily. The estimated time to complete the study questionnaire was around 15 minutes. After taking an oral consent from nurses to participate in the study, the following steps were taken for data collection: (1) determine the stress level among acute care nurses through completing the self-administered questionnaire, (2) prepare the content of time management strategies' pamphlet, (3) distribute the pamphlet among selected acute care nurses and who were assessed for stress level in the first step. Identify the stress level among acute care nurses after reading the pamphlet with further explanation from the researcher because of time shortage for application of educational sessions. Finally, (4) nurses were assessed once more after three months from receiving and listening to the explanation about time management strategies from researchers.

Steps followed to prepare the educational pamphlet

- 1) Review of literature related to time management.
- 2) Preparation and organization of the first draft of education pamphlet.
- 3) Assure the content validity of health educational pamphlet by taking the opinion of three expertise in the area of time management.
- 4) Prepare the final draft of educational pamphlet.
- 5) The areas included in the educational pamphlet were: definitions, time wasters, barriers to time management, time management strategies, setting priorities, effective delegation, and how to deal with interruptions.

Application of the educational intervention

After assessing the level of stress among acute care nurses using the modified version of expanded nursing stress scale (ENSS), the educational pamphlet was prepared as previously mentioned. Because, acute care nurses could not leave their patients for long period of time, prepared educational pamphlet were used for self-learning among nurses with further explanation by researcher either face to face or via phone calls. To assure that nurses read the pamphlet oral quiz was conducted for each nurse related to the content of the pamphlet. Then, post-test was conducted for each nurse one day after reading the educational content. Finally, three months later post-test was performed to all nurses participated in the study.

Ethical Considerations

The ethical approval for conducting the current study was obtained from The Faculty of Nursing Institutional Research Board (IRB) committee. The ethical approval was also obtained from the selected settings for data collection. Confidentiality was assured to all participants and their information was used for research purpose only. The purpose of the study and the methods of completing questionnaires were clearly explained for all participants prior to complete the questionnaire. Cell phone number was required from each participating nurse; who was assured that it was for follow up purposes of the research.

Participants

A convenient sample of forty one nurses who met the inclusion criteria and agree to participate in the study completed the questionnaire. Accidentally, all nurses who were employed in the acute care setting were female and had a Bachelor degree in nursing. The inclusion criteria included that nurses should have at least one year of experience to guarantee that they were exposed to stress. These inclusion criteria guarantee that nurses who had exposed to job stress can express it.

Data Analysis

Data were coded, entered, and analyzed using Social Package for Social Sciences (SPSS) version 22. Quantitative data presented by mean and standard deviation. For the comparison between two means, paired t-test was used (pre and post intervention), and repeated measures ANOVA with a Greenhouse-Geisser correction for comparison between more than two means (pre, post, and follow up intervention) was conducted.

III. Results

The current study aimed to examine the relationship between application of time management strategies and the reduction of stress level among acute care nurses. Table (2) showed the socio-demographic characteristics of study sample. The table indicated that all participating nurses were female, the majority of them (73.2%) were married, their mean age was (32.6), and the mean years of experience was (6.8).

Table 2: Soci-demographic characteristics of study sample

Characteristics	Frequency	%	M	SD
Age			32.6	4.6
25-30 years	17	41.6		
>30-35 years	12	29.3		
>35-40 years	12	29.3		
Marital status				
Married	30	73.2		
Unmarried	11	26.8		
Gender				
Female	41	100		
Experience			6.8	4.1
1-< 5 years	18	43.9		
5-<10 years	17	41.6		
10-15 years	6	14.5		
Total	41	100		

Table (3) showed the total mean score of stress level subcategories among study participants before intervention. According to the used scoring system (table 1), the table revealed that study participants' experience: mild level of stress (7.1, 10.6) regarding (problems with peers and supervisors) respectively, very sever level of stress (11.3) at the third subcategory (inadequate emotional preparation), and severe stress at the rest subcategories of the stress scale. According to the number of sub-items in each of the subcategories of the stress scale, the highest mean score (11.3, 26.5, 24.9 respectively) of stress among acute care nurses were in the inadequate emotional preparation, workload, and uncertainty concerning treatment.

Table (3): Total mean score of stress subcategories among study sample before intervention

Stress Scale Subcategories	M	SD
Death and dying.	16.9	2.4
Conflict with physicians.	12.4	1.3
Inadequate emotional preparation.	11.3	1.3
Problems with peer supports.	7.1	0.8
Problems with supervisor.	10.6	1.0
Workload.	26.5	2.1
Uncertainty concerning treatment.	24.9	3.1
Patients and families.	13.7	1.9

Table (4) showed the relationship between sociodemographic characteristics of participants and stress level before the intervention. The table implied that there were: high significant difference between grand total mean score of stress and age with the highest mean score (127.8) for participant between the ages of (20-30), and experience with the highest mean score (127.6) for (2-5) years of experience. The table concluded that young age nurses with less experience are prone to higher level of stress than older and more experienced nurses.

Table (4): Relation between socio-demographic characters of study sample and their means of grand total stress score pre-intervention.

Characteristics	M	SD	Test of sig.		
			t	F	P
Age				5.74	0.007**
25-30 years	127.8	4.9			
>30-35 years	123.4	2.1			
>35-40 years	117.7	13.2			
Marital status			1.91		0.06
Married	122.0	9.6			
Unmarried	127.7	3.5			
Experience				37.6	0.000**
1-<5 years	127.6	4.8			
5-<10 years	125.2	3.7			
10-15 years	106.7	9.1			

** P<0.001

Table (5) signified the effect of applying time management strategies on nurses' stress level. A repeated measures ANOVA with a Greenhouse-Geisser correction determined that mean total stress scale differed with highly statistical significant difference between pre, immediate post, and follow up (3months after intervention) points (F=400.9 , P < 0.000). Post hoc tests using the Bonferroni correction revealed that time management strategies caused a remarkable reduction in mean total stress scale from pre-intervention (123.5 ± 8.7) to immediate post-intervention (53.6 ± 8.3), which was highly significant statistically (p =0.000).

Unfortunately, follow up total mean stress scale had been slightly increased to (59.8 ± 9.1), which was statistically significant different to both pre and post- mean total stress scale (p=0 .000) for each. Therefore, a highly statistical significant difference in the stress level among acute care nurses after conduction of the intervention was noticed i.e. stress levels among acute care nurses has been remarkably decreased in all subcategories after the implementation of time management strategies educational intervention, which is in favor with the hypothesis of the current study.

Table (5): The Effect of time management strategies on acute care nurses' job stress

Stress Scale Subcategories	Pre		Post		Follow up		F	P
	M	SD	M	SD	M	SD		
Death and dying.	16.9	2.4	9.0	2.0	10.5	2.3	219.0	0.000**
Conflict with physicians.	12.4	1.3	6.3	2.1	7.1	1.5	158.2	0.000**
Inadequate emotional preparation.	11.3	1.3	5.2	1.7	5.8	1.6	243.3	0.000**
Problems with peer supports.	7.1	0.8	4.3	1.2	4.8	1.2	93.4	0.000**
Problems with supervisor.	10.6	1.0	5.6	1.3	6.3	1.7	234.9	0.000**
Workload.	26.5	2.1	6.0	3.1	5.7	3.3	773.9	0.000**
Uncertainty concerning treatment.	24.9	3.1	10.4	2.3	12.9	2.9	514.9	0.000**
Patients and families.	13.7	1.9	6.5	1.3	6.8	1.7	392.8	0.000**
Total	123.5	8.7	53.6	8.3	59.8	9.1	400.9	0.000**

** P<0.001

IV. Discussion

The current study aimed to examine the association between application of time management strategies and level of stress among acute care nurses. The study indicated that acute care nurses experienced very severe level of stress. Inadequate emotional preparation, workload, and uncertainty about treatment were the most predictors of stress among study sample. Younger and less experienced nurses showed higher stress level than other nurses in acute care units. There was a negative correlation between time management strategies and acute care nurses' stress level i.e. the implementation of time management strategies self-learning module had remarkably reduced stress level of acute care nurses from very severe before the intervention to moderate level of stress after the intervention.

Because of the global issue of nursing shortage especially in the Middle East region and high rate of migrants for better salaries. Particularly acute care nurses complain of occupational stress as result of work overload which is reflected in increase nurse/patient ratios, increase work demands with shortage of time to complete the activities related to patients' care. Additionally, these stressors may also increase as a result of poor relationship with peers, supervisors, and other health care professionals particularly physicians.

Moreover, uncertainty about various models of therapies for acute care patients is considered another source of job stress for nurses. This outcome may be related to the expanded role of nurses in acute care settings, and the ineffective orientation programs provided by in-service education departments. These two factors may lead to lack of self-confidence and regulation among acute care nurses in delivering patient care. Ineffective orientation programs for acute care nurses also lead to inadequate emotional preparation for the acute care environment which is considered one of the most stressful work environments in health care organizations.

These results were supported by Laal [21] which concluded that arranging work environment play an important role in decreasing nurses' job stress. Another study in favor of the current results indicated that contact with death and dying situations, and ambiguity related to patients' treatments produced high stress level among nurses [22]. In addition, quantity of workload was the most relevant source of stress. Environmental factors and associations with peers and other health care professionals were the best predictors of job stressors. Improving work environment and relationships with other health care members were recommended [23].

Another supporting study examined the job stress management among nurses in selected hospitals in Benin City, Edo state, Nigeria. The study emphasized that managing time better, practicing exercise and relaxation techniques were beneficial methods of reducing job stress [24].

Happell, Dwyer, Reid-Searl, Burke, Caperchione, & Gaskin, [25] conducted a study to detect nurses' occupational stressors and approaches employed to reduce it from nurses' point of view. Thirty eight nurses were divided into six focus groups using a qualitative exploratory approach. The identified sources of job stress were: high workloads, unavailability of doctors, unsupportive management, human resource and interpersonal problems, shift work, handover technique, and lack of professional growth. Recommendations to decrease job stress included: change workload, changing number of shift hours. Other recommendations such as music,

ensuring nurses get breaks, massage therapy, acknowledgement within work unit from various management levels were also highlighted [26].

V. Conclusion

Occupational stressors negatively affect the physical, emotional, and psychological health of acute care nurses. Therefore, to reduce nurses' job stress hospitals' management boards should establish guidelines for nurse-physician collaboration. In-service education department in each hospital should conduct periodic (less than three months is recommended) stress management educational intervention to reduce stress level among acute care nurses. Specific effective orientation programs should be conducted for newly, younger, less experienced recruited nurses in acute care units to reduce uncertainty regarding treatments and provide them with the adequate emotional preparation they need to conduct the actual work in acute care units. Nurse managers are required to minimize workload among acute care nurses, create healthy work environment, and use justice in distributing work assignment, shift work schedule and rewards.

Limitation of the study

Due to shortage of time among acute care nurses and increase workloads it was difficult to provide educational sessions for nurses. Therefore, this study recommended that a full package self-learning module about stress management that include topics such as: time management, message, relaxation, music and meditation techniques could be prepared as a software that can be downloaded on acute care nurses' cell-phones for easier continuing self- learning and application at any suitable time for them.

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