Effect of Time Management Training on Lifestyle of Nurses Working at General Surgery Wards of Hospitals in Sari Affiliated to Mazandaran University of Medical Sciences, 2016

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Abstract

Introduction: Time management skills are necessary for success and promotion of clinical competency among nurses. Effective use of time is one of the unavoidable necessities for success in work and life and is considered as one of the methods to create balance between work and life aspects. Time management includes the use of skills to control and use time. The current study aimed at determining the effect of time management training on lifestyle of nurses working at general surgery wards in hospitals of Sari affiliated to Mazandaran University of Medical Science in 2016.

Methods: The current interventional study was conducted on 70 nurses working at general surgery wards of hospitals in Sari. Samples were selected by the convenience sampling method and divided into the control and experiment groups. Data were gathered by two questionnaires including demographic information and health promoting lifestyle profile developed by Walker before and after time management skills training. The validity of instruments was examined and necessary modifications were done. The reliability of instruments was measured by Cronbach's alpha (0.83). Time management skills were instructed for three hours in two sessions for the intervention group. After a month, all participants in two groups again completed the questionnaire. Data were analyzed with SPSS version 22, descriptive and analytical statistics such as mean, standard deviation (SD), absolute and relative frequency, independent *t* test, and pairwise *t* test.

Results: The control and experimental groups were similar in terms of demographic variables and lifestyle in all aspects and no significant difference was observed between the groups in before intervention measures. But, one month after intervention, a significant difference was observed between the variables. Scores in all aspects and total score of lifestyle in both groups before and after the intervention showed significant differences.

Conclusions: The findings of the current study showed that time management training influences lifestyle at all aspects as well as total score. Therefore, some efforts should be applied to train time management skills and improve lifestyle. Therefore, it is recommended to consider time management training for nurses.

INTRODUCTION

In today's societies, people have to do several tasks at the same time, prioritize tasks, and perform them in limited time span [1]. To avoid waste of time, parallelism should be avoided and different methods of time saving should be developed and implemented. People face time limitation, physical energy, and psychological resources. Each role requires the implementation of these limited resources. The amount of consumed energy for work and family influences the relationship between stresses and conflicts regarding family and work [2]. Those who cannot effectively manage time may not be successful in managing their professional life and face numerous problems. Time is a unique source that all the people have equal share of it. Time cannot be eliminated, stored, and replaced. Nowadays, effective use of time or time management is an essential issue [1]. The background of human life shows that with development of sciences and technologies, the importance of time as an invaluable source increases [3]. According to Makan, time management influences education, job performance, and quality of life. Time management is the effective use of time for better living and aims at avoiding waste of time [1]. Various factors influence individual's life and an example can be lifestyle that as an important component has a close relationship with different health aspects. Feyzi (2011) showed that individual's quality of life and satisfaction with life increases with higher levels of health. On the other hand, stress is one of the health promoting behaviors [4]. During the 20th century, deep transformations occurred in terms of lifestyles, social relations, and health issues. Efforts regarding industrialization and rapid development of urbanism negatively influenced human health and created new health problems. Advances in technology lead to decreased physical activity and facilitated life; in addition, technology results in the emergence of chronic diseases. Nowadays, such diseases are known as lifestyle or civilization diseases. According to the World Health Organization (WHO), by 2020, diseases related to lifestyle constitute seven leading causes of 10 lethal diseases in the developing countries, while balancing the lifestyle in controlling and decreasing disease complications is very effective and leads to decreased mortality by 50%. Nowadays, prediction of diseases contribute to lifestyle and strategies decreasing the risk of diseases such as diabetes, cardiovascular disorders, cancer, asthma, muscular diseases, and mental disorders are taken into consider seriously and nurses can play an important role in this regard. However, goals can be achieved when nurses have healthy mental and physical conditions and lifestyle [5]. Health promoting lifestyle includes six dimensions of physical activity, nutrition, accountability, spiritual growth, interpersonal relationships, and stress management [6]. Identified components of lifestyle include physical activities,

leisure time, sleep, social relations, family relations, safety and relaxation, and diet. According to WHO, five diseases are identified as the most important chronic diseases in the world including obesity, myocardial infraction, diabetes, cancer, and osteoporosis and all of them have a direct relationship with lifestyle and nutrition [7]. According to the studies by WHO, the health status of 65% of people depends on their lifestyle and personal behavior. According to the statistics, 53% of mortalities are related to unhealthy lifestyle and behaviors. A part of health training purposes is to change people's behavior to follow a healthy lifestyle [8]. Health promotion includes behaviors by which the person focuses on healthy diet, regular exercising, avoid destructive behaviors, protect against accidents, early diagnosis of diseases based on physical symptoms, control emotions, feelings, and thoughts, mentally compliance with stresses, independence, and modification of interpersonal relations socially [9]. According to Heydari and Kermanshahi (2012), investigating the lifestyle and its relationship with the health condition of nurses showed an average level of nurses' attention toward health promoting behaviors; in other words, nurses got low scores in physical activity, diet, accountability, and stress management. Decreased physical activity in the past 10 years increased obesity by 15%. Studies on health staff showed that about 69% of staff has obesity [8]. In a study by Mahmoudi et al. (2014), there is a relationship between lifestyle aspects and occupational parameters. For example, some occupational conditions such as night shift or holidays work decreases healthy behavior in nurses' lifestyle [10]. Studies by Wong et al., (2010) indicated different health complications of nurses including anxiety, depression, insomnia, chronic fatigue, and gastrointestinal and cardiovascular disorders result from long working hours [11]. In this regard, time management can influence lifestyle as one of the control and life control and management methods. Time management can influence different aspects of life and its consequences promote mental and physical relaxation. Therefore, the current study aimed at answering this question that how much the time management can affect the lifestyle of nurses working at general surgery wards of hospitals in Sari affiliated to Mazandaran University of Medical Sciences.

METHODS

The current quasi-experimental study with pretest and posttest design aimed at investigating the effect of time management skill training on lifestyle of nurses working at general surgery wards of two hospitals in Sari affiliated to Mazandaran University of Medical Sciences in 2016. A total of 70 nurses working at general surgery wards were selected. Subjects were selected by the convenience sampling method, based on the inclusion

criteria following the distribution of questionnaires among them. Those hospitals that lacked general surgery wards were excluded and only the hospitals with such wards were considered. The subjects were assigned into the intervention (n = 35) and control (n = 35) groups. The sample size in each group was calculated based on the following equation:

$$n \geq \frac{(z_{\alpha/2} + z_\beta)^2 \sigma^2}{(\mu_1 - \mu_2)^2}$$

Where:

The probability of the first type error α = 0.05 → $z_{\alpha/2}$ = 1.96

Secondary error probability β = 0.20 → z_β = 0.85

Power 1-β = 0.80

The size of the observed effect $(\mu_1-\mu_2)/\sigma$ = 0.70

The mean and standard deviation of work-life conflict score were measured based on Rassouli et al. (2008). The minimum sample size required for each group was 35 subjects, considering drop outs. Since the number of nurses in the two hospitals was equal, equal subjects were selected from each hospital. The subjects of the both groups were selected from the two hospitals by lottery method. To make distinction between intervention and control groups, one hospital was considered as the intervention and another as the control groups. After determining the number of nurses in each section, samples were determined proportionally. Data were gathered by two questionnaires: demographic characteristics and the health promoting lifestyle profile (52 items) developed by Walkers in 1987 and employed in the current study before and after time management skills training. Demographic characteristics included age, marital status, gender, education, work shift, employment, work experience, work experience in general surgery wards (Table 1).

Table 1: Demographic and Occupational Characteristics of Nurses

Demographic and Occupational Characteristics of Nurses	Intervention Group		Control Group		Total	
	Number	**Percentage**	**Number**	**Percentage**	**Number**	**Percentage**
Marital status						
Single	18	51.43	16	45.71	34	48.6
Married	15	42.86	16	45.71	31	44.3
Gender						
Male	5	14.29	4	11.43	9	12.9
Female	30	85.71	31	88.57	61	87.1
Level of education						
BA	35	100	33	94.29	68	97.1
MA	0	0	2	5.71	2	2.9
Work shift						
Morning	8	22.9	3	8.6	11	15.7
Evening	1	2.9	6	17.1	7	10
Night	0	0	7	20	7	10
Employment						
Formal	9	25.7	11	31.4	20	28.6
Covenant	2	5.7	1	2/9	3	4.3
Plan	6	17.1	7	20	13	18.6
Age						
Group	**Mean**		**SD**		**Minimum (yr)**	**Maximum (yr)**
Intervention	34.6		5.59		24	50
Control	34.98		6.11		25	49
Work experience						
Intervention	7.15		40.10		1	26
Control	6.84		0.949		2	25
Work experience in general surgery ward						
Intervention	5.67		0.910		1	22
Control	5.38		0.838		1	20

The validity of the instruments was examined by content validity analysis. For this purpose, 10 experts of Faculty of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran and five nurses with Master's degree or PhD participated in a pilot study and their comments were applied. To confirm the reliability of the instruments, test-retest as well as internal consistency analysis was performed. The questionnaires were completed by 10 nurses with similar characteristics and after a week, they recompleted the same

questionnaires. Then, the Cronbach's alpha was calculated for lifestyle questionnaire (0.83). After obtaining the official permission from the authorities of Mazandaran University of Medical Sciences, samples were selected by referring to the hospitals. Lifestyle

dimensions were nutrition, exercise, stress management, accountability, self-fulfillment, and interpersonal support. All of the dimensions were assessed by the Walker questionnaire (Table 2).

Table 2: Descriptive and Inferential Statistics of the Study Subjects based on Lifestyle before and after the Intervention

Group	Mean	SD	P-value
Nutrition			
Before intervention			0.96
Intervention	39.65	7.34	
Control	40.42	7.20	
Exercise			
One-month follow-up			0.006
Intervention	33.02	5.45	
Control	30.48	5.69	
Before intervention			0.67
Intervention	30.45	7.17	
Control	31.20	7.33	
Accountability			
One-month follow-up			0.000
Intervention	42.85	4.44	
Control	36.62	6.95	
Before intervention			0.82
Intervention	21.48	2.904	
Control	21.34	2.57	
One-month follow-up			0.49
Intervention	20.17	3.43	
Control	20.08	6.34	
Stress management			
Before intervention			
Intervention	14.74	2.92	
Control	14.94	3.00	
One-month follow-up			0.51
Intervention	16.40	2.353	
Control	16.02	2.43	
Interpersonal support			
Before intervention			0.87
Intervention	17.77	6.44	
Control	18.20	6.46	
One-month follow-up			0.05
Intervention	24.11	5.57	
Control	21.45	5.95	
Self-fulfillment			
Before intervention			0.55
Intervention	21.14	4.89	
Control	21.85	5.20	
One-month follow-up			0.21
Intervention	16.42	2.73	
Control	15.91	2.63	
Total lifestyle			
Before intervention			0.85
Intervention	1.42	1.33	
Control	1.45	1.25	
One-month follow-up			0.008
Intervention	1.52	2.86	
Control	1.40	3.55	

The 54-item lifestyle questionnaire measures health promoting behaviors (nutrition, exercise, health responsibility, stress management, interpersonal support, and self-actualization). The lifestyle questionnaire is scored based on a five-option Likert scale as follows:

Option	Never	Sometimes	Once a month	Always
score	1	2	3	4
The lowest score		**Average score**		**Highest score**
54		135		216

Figure 1: Descriptive Statistics of Lifestyle in Experimental and Control Groups before and after the Intervention and One-month Follow-up
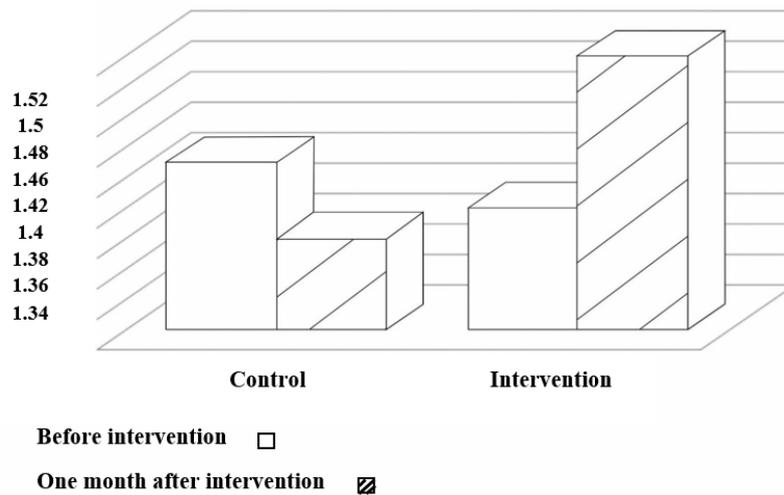
The total score of the health promotion lifestyle questionnaire. The researcher, after explaining the aims and objectives of the study to the participants, distributed the informed consent forms among them just before gathering data. Participants were assured about the confidentiality of their information and they were free to withdraw from the study at any time. Then, the author distributed the questionnaires and allocated adequate time for completion.

Finally, the time management skills were trained in two 90-minute sessions in two consecutive days to the intervention group.

Training was performed through lecturing, question and answer, showing slides, and distribution of educational pamphlets in a classroom only to the intervention group. Also, training contents of time management skills included goal-setting, operational planning, delay avoiding, delegation of authority, ability to say no, demanding skill, concentration skill, personal discipline, and using leisure times. The educational contents were reviewed by the faculty members of Shahid Beheshti University. It is worth mentioning that this class was only held for the intervention group and the control group did not receive any intervention. One month after the training, the lifestyle questionnaire was recompleted by both the study groups, and based on the study objectives and use of descriptive and analytical statistics with SPSS version 22, data were analyzed and findings were compared.

RESULTS

The control and intervention group were similar in terms of demographic variables and lifestyle in all aspects. In other words, the groups were statistically homogenous in terms of the penetration of contextual variables that could affect the findings. According to Table 1, descriptive and inferential statistics of lifestyle in the study groups showed no significant difference in all aspects between the groups, but after intervention, a significant difference was observed in nutrition (0.006), exercise (0.000), and total (0.008). However, no significant difference was observed in other aspects including accountability (0.49), stress management (0.51), interpersonal support (0.05), and self-fulfillment (0.21). Comparing lifestyle statistics in all aspects, it can be concluded that time management training has a significant and positive effect on lifestyle (Table 2 and Fig 1).

Comparing the values before and after the intervention in the intervention group using pairwise *t* test showed a significant difference in all aspects. Since the intervention group received training, it can be said that this difference is the result of time management skills training.

Comparing the values before and after the intervention in the control group using pairwise *t* test showed a significant difference in all dimensions, except total statistics. Since the control group did not receive any intervention, the observed significant difference was not

expected and may be influenced by other interventional variables. On the other hand, although a significant difference between before and after the intervention was observed in both groups, difference in the intervention group was significant, which confirms the effect of applied intervention. As pointed out, in total lifestyle, no significant difference was observed before and after the intervention in the study groups.

Table 3: Descriptive and Inferential Statistics of Lifestyle in Control and Intervention Groups before Intervention and One-month Follow-up

Stage	Mean	SD	P-value
Nutrition			
Intervention			0.000
Before intervention	39.65	7.34	
One-month follow-up	33.02	5.45	
Control			0.000
Before intervention	40.42	7.20	
One-month follow-up	30.48	5.69	
Exercise			
Intervention			0.000
Before intervention	30.45	7.17	
One-month follow-up	42.85	4.44	
Control			0.000
Before intervention	31.20	7.33	
One-month follow-up	36.62	6.95	
Accountability			
Intervention			0.000
Before intervention	21.48	2.904	
One-month follow-up	20.17	3.43	
Control			0.001
Before intervention	21.34	2.57	
One-month follow-up	20.08	6.34	
Stress management			
Intervention			0.037
Before intervention	14.74	2.92	
One-month follow-up	16.40	2.353	
Control			0.021
Before intervention	14.94	3.00	
One-month follow-up	16.02	2.43	
Interpersonal support			
Intervention			0.000
before intervention	17.77	6.44	
One-month follow-up	24.11	5.57	
Control			0.005
Before intervention	18.20	6.46	
One-month follow-up	21.45	5.95	
Self-fulfillment			
Intervention			0.005
Before intervention	21.14	4.89	
One-month follow-up	16.42	2.73	
Control			0.000
Before intervention	21.85	5.20	
One-month follow-up	15.91	2.63	
Total lifestyle			
Intervention			0.000
Before intervention	1.42	1.33	
One-month follow-up	1.52	2.86	
Control			0.68
Before intervention	1.45	1.25	
One-month follow-up	1.40	3.55	

Table 4: Descriptive and Inferential Statistics of Lifestyle between the Study Groups One Month after the Intervention

Group	Mean Scores of One-month Follow-up	SD	Independent *t*	P-value
Intervention	1.52	2.86	2.743	0.008
Control	1.40	3.55	2.743	0.008

Table 5: Descriptive and Inferential Statistics of Lifestyle before and after the Intervention in the Study Participants

Lifestyle	Mean scores After Training	SD	Pairwise *t*	P-value
Before intervention	1.42	7.73	-0.842	0.40
One month after intervention	1.52	1.63	-0.842	0.40

Table 6: Descriptive and Inferential Statistics of Lifestyle before and after the Intervention in the Control Group

Lifestyle in Control Group	Mean Scores After of Intervention	SD	Pairwise *t*	P-value
Before intervention	1.45	1.25	0.41	0.68
One month after intervention	1.40	3.55	0.41	0.68

Comparison of the mean scores of the study groups showed a significant difference between the groups using independent *t* test (P < 0.05). The results of the test showed that the mean scores significantly increased after intervention in the intervention group (1.52) and was higher than that of the control group (1.40). Therefore, time management training influenced lifestyle of nurses.

According to Table 5 the difference before and after the intervention in terms of lifestyle was not significant (P > 0.05). Therefore, no significant difference was observed before and after the intervention in the intervention group; and according to the obtained mean scores, the mean scores of after intervention was not significantly higher than that of before the intervention. According to Table 6, there was no significant difference between the values (P > 0.05). Therefore, no significant difference in terms of lifestyle was observed in the control group in before and after intervention values, and the mean score of after intervention was higher than that of before intervention.

DISCUSSION

The current study aimed at determining the effect of time management training on lifestyle of nurses working at general surgery wards of hospitals in Sari affiliated to Mazandaran University of Medical Sciences in 2016. In the present study, after implementation of the time management training, a significant increase was observed in nutrition, exercise, and total lifestyle compared with pretest measures. Comparing the statistics of lifestyle in all dimensions, it can be concluded that time management training has a significant and positive effect on lifestyle. The result was consistent with that of the study by Roshan and Elhani (2014) that explained the problems of lifestyle promotion and suggested some solutions [5]. The reported that by specifying the most significant problems, proposing solutions based on the available data, nurses viewpoints, and research team thoughts, holding training courses such as workshops and conferences for nurses about the importance and promotion of healthy lifestyle, the highest score was obtained. In the current study, one of the most important problems in the lifestyle of nurses was training problems. Also, the effect of time management skills training on the promotion of lifestyle in nurses was confirmed. Findings of the present study showed that in some of lifestyle components such as accountability regarding health, stress management, interpersonal support, and self-fulfillment, no significant difference was observed between the before and after intervention measures. The results were consistent with those of a study by Scott Bley (2015) who investigated time management behaviors and balance between personal and occupational life in music instructors [12]. In his study, a negative correlation was observed between the employment of time management components and life-work balance. It should be noted that life-work balance can include various aspects of lifestyles including interpersonal relationships, accountability, sleep pattern, and physical activity and exercise. In other words, it can be stated that increased use of time management components negatively influences lifestyle components and is consistent with findings of the present study. The results of the current study were consistent with those of Rasouli et al., (2007) who investigated the effect of time management training on life-work balance in nurses. In their quasi-experimental study, several months after the intervention, a significant difference was observed between the research groups in terms of using lifestyle components (P < 0.001). The findings showed that time management training influences life-work conflict. Work and family conflict may include various components and dimensions of lifestyle. The lifestyle aspects such as interpersonal relations, accountability, sleep pattern, and physical activity and exercise can also be pointed out. In the current study, it was indicated that time management training influences life-work conflict in nurses that is consistent with the present study results. In the present study, comparison of the mean scores of lifestyle using independent *t* test showed a significant difference between the intervention and control groups (P < 0.05).

The results of this test showed that mean scores of after intervention in the intervention group was significantly higher than that of the control group (1.52 vs. 1.40). Therefore, time management training influenced the lifestyle of nurses. Also, in the present study, a significant difference was observed in all dimensions after intervention in the intervention group. Since the intervention group received intervention, it can be said that this difference was significant due to the implementation of time management skills training. In another cross sectional, descriptive study conducted by Kaya et al., (2012) the relationship between time management skills, and age, gender, and anxiety was investigated on midwifery students [13]; the results reported a significant and negative correlation between the evaluated measured. It means that with increasing the level of time management skill, anxiety decreased in the students (P <0.001). In other words, stress management is an aspect of lifestyle that can promote it. Therefore, it can be said that time management by influencing stress management and decreasing anxiety promotes lifestyle. The results of their study were consistent with those of the present study that focused on the effect of time management on lifestyle. The results of the present study showed a significant difference in before and after intervention measures of the intervention group in terms of stress management.

CONCLUSIONS

Consistent with the changes in healthcare systems, time management is considered in different domains and numerous studies were conducted on this issue so far. Lifestyle of nurses, due to occupational pressures caused by lack of time, is under the influence of detrimental changes. Therefore, preparing a suitable solution to prevent such changes is an important goal in nursing practices. According to the previous studies, time management training, in addition to decreasing stress, imposes pressure on various aspects of life such as personal, social, family, organizational, and professional. Findings confirmed that enhancement and use of different dimensions of time management includes regular planning, using leisure time, goal setting skills, planning skills, delays avoiding, concentration and accuracy, ability to say no, and delegation of authority. By investigating lifestyle of the intervention and control groups before intervention as well as one-month follow-up, it was indicated that exercise and nutrition dimensions were influenced by time management. Investigation of before intervention and one-month follow-up in the study groups using pairwise *t* test showed that stress management dimensions, accountability regarding health, and interpersonal supports were influenced by time management. Totally, the highest impact was imposed on exercise and nutrition aspects. Among the limitations of the study, lots of questions in the questionnaires and lack of cooperation among nurses and head nurses are noteworthy. The strength of the study was that it can be extended beyond nursing education, nursing research, and clinical nursing to other populations. Based on the strengths and limitations, the inclusion of time management skills to the curriculum of nursing students and in-service nursing programs at the clinic can be suggested. Integration of time management training programs for nurses and nursing students even before starting the professional activities can be an effective step to increase the efficiency of lifestyle. Change in people's behaviors to use time management skills is possible based on regular time programs and their implementation by nurses.

Ethical Considerations

Free and informed consent is given to the participants The research objectives included explanation about the plan, the voluntariness of the company in the plan, the lack of a need for a family name and the confidentiality of information received. Information about the method of implementation and the purpose of the study, the benefits, nature and duration of the research were made available to each participant in the study.The authorities of Mazandaran University of Medical Sciences, hospitals, hospitals metronomes, head nurses and nurses participating in the study were assured that the information was generally analyzed and not used elsewhere in the research

Authors' Contribution

All authors participated in the study design, literature review, data collection, analysis, and editing of the manuscript.

Conflicts of Interests

Performance and results of this research have not led to the problem of the risk of collapse of any of life style groups of the participating in the research

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