

Studying the Relationship between Time Management and Knowledge Management in Special Care Units Supervisors

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Abstract

Time management and knowledge management are two important and influential components in the quality of care and in improving the performance of nurses, especially in the special care department; therefore, this study was conducted to determine the relationship between knowledge management and time management in supervisors working in special care units. The present study was a cross-sectional study that was conducted to determine the relationship between knowledge management and time management in 384 supervisors working in intensive care units. Nurses have the position of supervisors and were selected by informed consent and by census method. The participants completed demographic, time management, and knowledge management questionnaires. The findings of this study showed that the majority of people were female (189 people (93.1%)) and married (196 people (96.6%)). Time management in supervisors working in the special care department studied in most cases (177 people (87.20%)) is at the average level, and in terms of knowledge management scores, knowledge management in supervisors working in the special care department studied in most cases (186 people (91.62%)) were at a weak level. There was a significant relationship between knowledge management and time management ($P < 0.05$). According to the findings of the present research, the score of time management was at an average level and the score of knowledge management was at a weak level, therefore, including educational content related to these two subjects in the educational program of undergraduate students and designing in-service training courses, especially for nurses and supervisors are effective and can help improve the situation.

Keywords: Time management, Knowledge management, Nurses, Special care units, Supervisors

Introduction

Time management and knowledge management are two important and influential components of the quality of care and improving the performance of nurses, especially in the special care department. Mitchell and Sama define time management as the process of determining needs and prioritizing them based on importance. According to research results, in all jobs, time management depends on individual variables, knowledge, and people's culture [1-4].

Considering the need of the health sector for high-quality services and low cost, there is always a need for employees who have the best efficiency in a limited time [5, 6]. Nursing is also a profession that requires multitasking skills during the day to deal with time constraints and work pressure [7]. If nurses do not use their time rationally, they cannot meet related expectations and this cycle not only jeopardizes organizational goals but also creates risks for the entire society [5, 6]. Nurses must meet the expectations of patients, peers, and managers

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along with the activities of a certain nursing shift, and inadequate management leads to delays in patient care and patient safety. Whenever time constraints are greater, nurses may not be able to think critically, prioritize, and often make more errors [8, 9].

Today, due to modernization and subsequent changes in the role of nurses, healthcare systems have been accused of having negative effects on access to time and its use in nursing; therefore, nursing, especially nursing in the intensive care unit that deals with sick patients, is usually characterized by a lack of time to care for the disease [10]. The change in the role of nurses has changed so much compared to the past that nurses, especially nurses working in special departments, see themselves in a role with the traffic of issues related to the profession and the patient. Therefore, performance and time management along with high self-efficacy for nurses working in special departments are of great importance so that nurses can improve the quality of nursing care, which is the ultimate goal of the health and treatment organization, which is necessary for this Work is having the necessary knowledge and how to manage it [11-13].

Knowledge is one of the fundamental factors that its proper and successful application helps organizations to provide suitable and valuable services. In organizations, due to the high volume of knowledge and information and the use of new technologies, necessary and sufficient knowledge may not be provided to the applicants, so knowledge management is necessary for the efficiency and effectiveness of any organization [14, 15]. An organization must identify, acquire, and store the knowledge it needs to be able to use it when needed. Therefore, knowledge management includes the processes of creating and creating knowledge, validating knowledge, distributing knowledge, and its scientific application in the organization [16].

Since knowledge management is considered a more important category than knowledge itself, health organizations seek to explain and clarify how to transform individual and group information and knowledge into individual and group knowledge and skills, because Knowledge management and its application in improving nurses' performance may be effective [12]. However, despite the many benefits of knowledge management, it seems that there is not much study on the topic of knowledge management in universities, especially in universities of medical sciences, and especially among nurses who are faced with data and information in different situations. In addition, benefiting from intellectual capital has not been done and it is not clear what is the importance of knowledge management in time management and how this issue is applied [17].

Believing in the importance of time management and its vital role in nursing and the quality of providing care to clients, it is expected that nursing managers, especially nurses, as first-level (operational) managers in advancing and improving the goals of the organization and in the direction of correcting weaknesses and deficiencies their abilities and the ability of their personnel to be diligent [1-4]. Therefore, this study was conducted to determine the relationship between knowledge management and time management in supervisors working in special care units.

Materials and Methods

The present study is a cross-sectional study that determined the relationship between knowledge management and time management in supervisors working in special care departments in hospitals. Sampling in this study was done in an accessible way and due to the lack of similar studies in this field, the sample size was determined as a pilot.

Based on the pilot study and considering the standard deviation of the time management variable compared to the knowledge management variable, the sample size was calculated based on the mean and standard deviation (79 ± 9) of the time management variable score as follows. According to the sample size in cross-sectional studies, at a significance level of 0.05 and an error of 10%, the sample size was estimated to be at least 384 people.

At first, the researcher went to the research environments and after introducing and explaining the objectives of the research to the officials and research units and obtaining informed consent from them, he took samples and completed the questionnaires. The sampling method in this study was a census method, and each of the supervisors was included in the study and completed the questionnaires based on having the entry criteria (having the position of supervisor in the department) and completing the informed consent form. During the entire period of completing the questionnaires, the researcher was present with the research units to answer questions and any ambiguity regarding the questionnaires. If the questionnaire was incomplete, people were excluded from the study.

Data collection tools included demographic information questionnaires, time management questionnaires, and knowledge management questionnaires. Demographic information questionnaire included some personal

characteristics such as gender, marital status, age, work experience, education, etc. The time management questionnaire measures the amount of time management in nurses. This questionnaire had 20 questions in four components. Investigating the four dimensions of time management (setting goals and prioritization, time management mechanics, time control, establishing order and organization) and questionnaire questions are designed based on the five-option Likert scale (completely agree to completely disagree). If the scores of the questionnaire are between 20 and 60, the four dimensions of time management are weak, if the scores of the questionnaire are between 60 and 80, the four dimensions of time management are at an average level, and if the scores are above 80, the four dimensions are good time management.

The standard questionnaire of knowledge management measures the level of personal knowledge management of each person. The range used in the questionnaire was based on a five-point Likert scale (including very little, little, to some extent, a lot, and very much). If the scores of the questionnaire are between 31 and 93, the level of personal knowledge management is weak, if the scores of the questionnaire are between 93 and 124, the level of personal knowledge management is at an average level, and if the scores are above 124, the level of personal knowledge management is It was good [18].

Finally, the obtained data were entered into SPSS version 23 and analyzed.

Results and Discussion

The findings showed that the majority of people are female (189 people (93.1%)) and are married (196 people (96.6%)) (Table 1). It should be noted that since the supervisors working in special departments were not more than this number and it was not possible to create new special departments and about 70% of the estimated sample size was realized during the sampling, therefore the data analysis was based on 213 The sample was taken.

Table 1. Demographic characteristics of study participants.

Variable		Mean ± Standard deviation
Age (years)		43.31 ± 3.53
Service History (years)		17.78 ± 4.66
Variable		N (%)
Gender	Male	14 (6.9%)
	Female	189 (93.1%)
	Total	203 (100%)
Marital status	Single	7 (3.4%)
	Married	196 (96.6%)
	Total	203 (100%)
Education level	Bachelor	154 (75.9%)
	MSc	49 (24.1%)
	Total	203 (100%)

The findings showed that in the study variables and demographic variables, only there was a statistically significant relationship between time management and marital status ($P=0.047$) and no significant relationship was observed between other variables ($P=0.05$).

The findings also showed that the time management of supervisors working in the special care department studied in most cases (177 people (87.20%)) was at an average level and they managed time in a good way, and 13 people (6.40%) of supervisors were at a weak level (Table 2).

Table 2. Frequency distribution and mean time management scores.

Questionnaire	Evaluation score	N (%)	Lowest score	Highest score	Mean	Standard deviation
Time management	Weak	13 (6.40%)	53	60	56.84	2.03
	Average	177 (87.20%)	61	80	71.88	4.13
	Good	13 (6.40%)	81	87	82.76	1.69

In terms of knowledge management scores, knowledge management among the supervisors working in the special care department under study is at a weak level in most cases (186 people (91.62%)) and only 17 people (8.37%) of the supervisors have a favorable attitude towards management. have paid knowledge (Table 3).

Table 3. Frequency distribution and average scores of knowledge management.

Questionnaire	Evaluation score	N (%)	Lowest score	Highest score	Mean	Standard deviation
Knowledge management	Weak	186 (91.62%)	67	93	81.09	5.83
	Average	17 (8.37%)	94	106	97.41	3.14
	Good	-	-	-	-	-

The correlation coefficient for knowledge management and time management was equal to 0.209 and the significance level value was 0.003, which showed that there is a significant relationship between knowledge management and time management. As shown in Table 3, there is a significant relationship between the dimension of acquisition with control over time and establishing order and organization at the probability level of 0.05 and 0.01, respectively. The correlation coefficient between the dimension of acquisition and establishing order and organization (-0.186) shows that as acquisition increases, establishing order and organization decreases. Also, there is a significant relationship between the dimension of knowledge storage with establishing order and organization and the dimension of knowledge exchange and dissemination with control over time and application with control over time (0.000, 0.000, and 0.032, respectively) (Table 4).

Table 4. Spearman's correlation coefficient for the dimensions of knowledge management and time management.

Variable	Statistic	Developing goals and prioritizing	Time management mechanics	Time control	Establishing order and organization
Acquisition	Number	230	230	230	230
	Significant level	0.855	0.684	0.038	0.008
	Spearman correlation coefficient	-0.013	0.029	0.146	-0.186
Analysis	Number	230	230	230	230
	Significant level	0.253	0.347	0.869	0.313
	Spearman correlation coefficient	0.081	0.066	-0.12	0.071
Knowledge production	Number	230	230	230	230
	Significant level	0.302	0.133	-	0.061
	Spearman correlation coefficient	-0.073	-0.106	1.000	0.132
Knowledge storage	Number	230	230	230	230
	Significant level	0.407	0.161	0.709	< 0.001
	Spearman correlation coefficient	0.059	0.099	-0.026	-0.306
Exchange and dissemination of knowledge	Number	230	230	230	230
	Significant level	0.482	0.095	< 0.001	0.603
	Spearman correlation coefficient	-0.050	-0.118	0.325	0.037
Application	Number	230	230	230	230
	Significant level	0.685	0.159	0.032	0.574
	Spearman correlation coefficient	-0.029	-0.099	0.150	-0.040

The regression analysis also showed that 39.6% of the changes in the dependent variable of knowledge management are explained by the variables of time control, order and organization, and gender. By increasing one unit in the control variable, the average time of knowledge management increases by 1.828 units ($P < 0.001$). With an increase of one unit in the variable of establishing order, the average of knowledge management decreases

by -0.661 units ($P < 0.001$). By increasing one unit in the gender variable, the average of knowledge management increases by 4.056 units ($P = 0.011$). According to the value of the standard coefficient, the greatest effect on knowledge management was time control (**Table 5**).

Table 5. Regression model of control variables on time, establishing order and organization, and gender on knowledge management.

Variable	Coefficient (β)	Standard coefficient (constant)	Standard error	P-value
Constant (standard)	76.866	-	3.880	< 0.001
Time control	1.828	0.611	0.165	< 0.001
Establishing order and organization	-0.661	-0.227	0.160	< 0.001
Gender	4.056	0.142	1.572	0.011

The present study was conducted to determine the relationship between time management and knowledge management in the supervisors of intensive care units. The findings showed that time management in more than two-thirds of the supervisors working in the special care department studied was at an average level and the rest were at a poor level. The findings also showed that average time management has a significant relationship only with the marital variable. Barua *et al.*'s [4] study showed the average level of time management skills among clinical nurses in line with the current research in Bangladesh. However, contrary to the findings of the present study, there was a statistically significant relationship between the age, monthly income, work experience, and time management skills of nurses [4], which can be caused by the cultural conditions prevailing in that society and the methodological differences of the studies. The study of Xie *et al.* [19] showed that the evaluated nursing managers are at a favorable level of time management skills, but perform poorly in terms of time monitoring. The number of children, personality strength, managerial records, and self-efficacy score of self-control were predictors of skills and time management characteristics of nurse managers, which was not consistent with the present study [19].

In the study of Ziapour *et al.* [20] in Kermanshah, the results showed that among the dimensions of management behaviors, time, the dimensions of setting goals, prioritization, and mechanics of time management received the highest and lowest scores, respectively, among nursing managers, and the comparison of the average time management behaviors according to demographic variable. Occupation showed that there is a significant relationship between gender, education level, age, management experience, job experience, and management rank; so in older employees with master's education, more work and management experience, and higher management rank, time management behaviors were better. The findings of this study were not consistent with the present study [20].

In general, the findings of the present study and the review of other studies show that time management skills are at an average level in the nursing community. The findings also showed that the knowledge management of most of the supervisors working in the special care department under study was at a weak level and less than one-fifth of them did knowledge management in a good way. The average score of knowledge management among supervisors was the same with gender, marital status, and education degree, and there was no significant difference in this regard. In line with the present study, Yan *et al.*'s [21] research in Chinese hospitals showed that the overall level of knowledge management implementation in Chinese hospitals is low, and about two-thirds of the investigated hospitals have not applied knowledge management so far, and in the meantime, 46% did not even have the plan to implement it.

Reviewing the results of this study and comparing it with other studies shows that the status of knowledge management among nurses and managers in different countries is weak and average and most of the studies have emphasized that it is necessary to take urgent measures in this regard. In this regard, it is necessary to first make nursing managers and hospitals aware of the importance of knowledge management, and then, by identifying the factors affecting knowledge management, try to remove its obstacles and provide the conditions for its application and development. The most important factors affecting knowledge management include organizational culture, information technology, organizational structure, and performance evaluation and monitoring, and in developed countries, the role of organizational culture and information technology is more colorful. In the meantime, the effect of demographic and occupational variables, especially the age of work experience and managerial experience, should not be forgotten [22-26]. The systematic review of Karamitri *et al.* [27] showed that the important barriers to the implementation of knowledge management were time and skill limitations, and it is necessary to intervene in both of these factors. Empowering nurses and managers regarding how to use knowledge management is one of the prerequisites for its development in medical centers. Nursing managers should

strengthen the organizational climate based on knowledge management, act as role models in this field, provide knowledge management tools, and provide appropriate rewards to people who act as knowledge management intermediaries. Opportunities for collaboration and knowledge sharing should also be strengthened [27].

The findings of the present study showed that there is a significant relationship between knowledge management and time management. The results of the correlation between knowledge and time management dimensions also showed that there was a significant relationship between the dimension of acquisition with control over time and establishing order and organization; as the acquisition dimension increases, the establishment of order and organization decreases. In addition, a significant and direct relationship was observed between the dimension of knowledge storage and the dimension of establishing order and organization, and between the exchange and dissemination of knowledge with control over time and the dimension of application with control over time. One of the strengths of this study was that it investigated the relationship between two influencing variables in the quality of care and nurses' performance, which was neglected in other studies. The limitation of the sample size and the non-random sampling method can affect the generalizability of the findings.

Conclusion

The findings of the study showed that time management in more than two-thirds of the supervisors working in the special care department studied was at an average level, and in terms of knowledge management, most of the supervisors working in the special care department studied were at a weak level. In addition, the findings showed a significant relationship between the two main variables of the study. Considering the current situation of supervisors, it is necessary to make serious planning regarding the improvement of time management skills and especially knowledge management. Including educational content related to these two subjects in the educational program of undergraduate students, using the potential of post-graduate personnel in hospitals, and designing in-service training courses are effective steps that can help improve the situation. It is also necessary to plan and implement this training based on the specific conditions of each hospital and after a needs assessment, and to avoid providing routine training without considering the real needs of the audience. Further investigations are suggested to determine how these two variables are related and other factors affecting this relationship

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