

Examining the Role of Informatics on the Improvement of Quality of Services and Satisfaction Level among Nurses: A Case Study at Imam Reza Hospital in Kermanshah Province

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Abstract:

The purpose of the present study was to examine the effectiveness of the role of informatics to improve the quality of services and satisfaction level among nurses at Imam Reza Hospital in Kermanshah Province in 2014. The research was applied in purpose and the descriptive-survey research method adopted was correlational. The results revealed that informatics has an effective role in improving nurses' quality of services as well as their job satisfaction. According to

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the results of the average of the ranks in the Friedman test, the most and the least important factors increasing the role of informatics were the improvement of nurses' quality of services and nurses' reliability, respectively. Among the components of the improvement of nurses' quality of services; the variable of nursing facilities and equipment plays the most influential role in the improvement process and the informatics role in the organization.

Key words: informatics, quality of services, nurses, job satisfaction

Introduction

Currently, the development of information and communication technologies plays an important role in the creation process of teamwork, rapid feedback of results, development of organizational creativity, establishment of collaborative issues and dynamic organizational communication as factors which lead to mental satisfaction among the employees in an organization. Informatics, today, is one of the most important technological indices that is extensively employed in organizations due to its role in facilitating tasks and affairs as well as reducing costs of time and financial ones (Rastegar, 2010: 42). One of the most significant applications of informatics technology is in the field of health and nursing. Clinical decision-making informatics systems or decision support systems as any designed computer program have been considered to assist healthcare professionals in making clinical decisions. In fact, the purpose of these systems is to support nurses and physicians in the field of healthcare in place, which means that a doctor could be interacting with the system which uses the system throughout patient data analysis, diagnosis, and evaluation of other clinical activities. The use of decision support systems in clinical processes can result in an increase

in the care quality, a decrease of unnecessary diagnostic and therapeutic procedures and a reduction in medical errors.

Objectives and Significance of Research

The development of information technology in the past decade in the world has provided significant opportunities for nurses to become aware of the conditions of the patients and this issue has led to the creation of new roles for nurses and the improvement of their decision-making power in the provision of nursing care (MacBride, 2005). Therefore, nurses need to increase their knowledge in order to do an appropriate management of the information (Henry and Mead, 1997). Information computer systems as a tool to help in research could lead to the improvement of nursing care as well as speed and precision in the process of decision-making. Nurses should always be able to work with information systems especially in terms of information processing to achieve the results of their studies (MacBride, 2005). As information processing is an integral part in the field of research in nursing, the nurses' performance would depend on authentic data which is obtained through information processing in these systems. In this respect, the results of these studies could be applied to medical cares, management, consulting, and training (Grobe, 1990).

Research Objectives

The present study is to examine the role of informatics in the improvement of nurses' service quality as well as nurses' job satisfaction.

Theoretical Issues

The development of information technology i.e. informatics has been always assumed as one of the fundamental principles to explain the strategic planning of human resources management by managers and stakeholders in current organizations. Achievements towards implementation and use of this technology in the hierarchy of an organization including service departments, internal automation systems, marketing, etc. not only has led to the effectiveness and efficiency of lowering costs, saving time, and speeding up the work; but has also provided important results in terms of increasing the status of the organization and its nominal and inherent value among other competitors. Therefore, great efforts have been underway to provide the background for the establishment and use of these systems more and more (Peers and Mark, 2008).

Informatics Perspective

Organizational activities which are based on the application of informatics technology in organizations strengthen interaction and collaboration among employees, managers and specialists regardless of their location. Apart from bilateral relations, organizational activities which are based on the application of informatics technology in organizations provide chances for learners to work with people from different cultures, thereby they promote team-building among the learners as well as their communication skills (such as global awareness). Organizational activities which are on the basis of the application of informatics technology in organizations form organizational activities done throughout the life of learners with the development of spaces for organizational activities which are not only helpful for the nobles but also for teachers and professionals in various fields (Stevens, 2007).

Nursing Informatics Perspective

Nursing informatics is a specialization which links the nursing knowledge to computer science and informatics in order to manage data, information, knowledge, experience and wisdom in nursing. Nursing Informatics gives support to consumers, patients, nurses and other service providers that play a role in their decision-making. The support is accomplished through the use of data structures, information processing, and information technology. Studies have shown that the interaction of nursing with information technology in all professional aspects not only results in the improvement of the quality of care, prevention of errors, reduction in health costs, decrease in paperwork and increase in the efficiency of the management; but also involves hidden potentials for innovation and health promotion, particularly through early diagnosis, monitoring patients with chronic diseases via remote access, decision-making, comparison, and evaluation based on authentic data collected.

Methodology

Type and Method of Research

The research is applied in purpose and the descriptive-survey research method adopted is correlational.

Statistical Population

The study population consisted of 700 nurses at Imam Reza Hospital in Kermanshah Province.

Sampling Method and Sample Size

In this study, a simple random sampling method is used. The sample size was calculated using the Cochran formula.

$$n = \frac{N \times z_{\alpha/2}^2 \times p(1-p)}{\varepsilon^2(N-1) + z_{\alpha/2}^2 \times p(1-p)} = \frac{700(1.96)^2 \times 0.5 \times 0.5}{(0.07^2)(700) + (1.96)^2 \times 0.5 \times 0.5} = 248$$

In order so, a total of 248 employees of this organization were selected.

Data Collection Tools, Reliability and Validity

To collect data in the present research, a library method was employed in connection with the theoretical issues and literature. As well, a questionnaire was used to evaluate and test the hypotheses. The validity for the questionnaire of the impact of informatics in organization in the primary and final stages was 78% and 79%, respectively. Moreover, the Cronbach's alpha calculated for the job satisfaction scale was 85.2% in the primary stage and 86% in the ultimate one.

Results

The First Hypothesis: Informatics has a significant impact on the improvement of nurses' services.

Table 1. Tabular coefficients of the independent variables

Model	Non-Standard Coefficients		Standard Coefficients	T-Test	Significance Level
	B Expected Variations	Standard Error	Beta		
(Constant)	170.379	6.927		24.598	0.000
Nurses' accountability	0.182	0.234	0.030	0.774	0.002
Nurses' reliability	1.356	0.209	0.246	6.495	0.000
Nurses' trustworthiness	4.181	1.249	0.298	3.347	0.000
Nurses' empathy	1.383	0.64	0.160	3.795	0.000
Nurses' facilities and equipment	1.210	0.062	0.844	19.357	0.001

The results showed that, with regard to the level of significance obtained, the effect of the improvement of nurses' services variable is significant and affects the prediction of the dependent variable. Also, it can be concluded that the variable of facilities and equipment for nurses has a considerable role in predicting the dependent variable.

Second Hypothesis: Informatics has a significant impact on nurses' job satisfaction.

Table 2. Tabular coefficients of the independent variables

Model	Non-Standard Coefficients		Standard Coefficients	T-Test	Significance Level
	B Expected Variations	Standard Error	Beta		
(Constant)	473.774	82.137		5.768	0.000
Satisfaction of nurses within work	3.681	1.439	0.185	2.557	0.03
Nurses' satisfaction with management unit in the organization	1.235	0.458	0.180	2.698	0.04
Nurses' satisfaction with organizational incentive system	0.487	0.556	0.060	0.876	0.000
Nurses' satisfaction with benefits and salary	0.721	0.352	0.152	2.051	0.41
Nurses' satisfaction with their colleagues in workplace	1.176	0.531	0.151	2.212	0.28

Given the level of significance obtained, the results revealed that the effects of three variables including satisfaction of

nurses within work, nurses' satisfaction with management unit in the organization, and nurses' satisfaction with organizational incentive system are significant. Nurses' satisfaction with benefits and salary as well as nurses' satisfaction with their colleagues in workplace have very little effect on predicting the dependent variable (the role of informatics). Likewise, according to the coefficients obtained, it can be concluded that the variable of nurses' satisfaction within work has a much larger share than other variables in predicting the dependent variable.

Conclusion

The aim of the present study was to investigate the role of informatics in the improvement of nurses' service quality and its impact on the level of satisfaction among nurses. The findings demonstrate that there is a significant and positive relationship between the improvement of nursing service quality and the role of informatics. Researchers in previous studies concluded that with the increasing expansion of service economy; organization and institutions are looking for new ways to attract and retain customers and employees in order to achieve and maintain a sustainable competitive advantage. To this end, they are also compelled to adapt to the continuous changes and strengthen and support innovative processes. Information technology has a considerable impact on the issue of education and productivity of workers. There is a relationship between the productivity of the employees and the further scientific and professional dimensions of learning. Moreover, the results indicate that there is a positive and significant relationship between nurses' job satisfaction and the role of informatics. Researchers in their prior studies argued that informatics within nursing which involves the nursing process and related information, nursing information

management, and other information processing issues is used in the care-related, educational and research-oriented areas of nursing. Among the numerous factors affecting nurses' job satisfaction; satisfaction with pay and its suitability for job efficiency rate plays an important role in promoting the level of job satisfaction among nurses.

REFERENCES

- 1- Brooten. D, Youngblut JM. Kutcher J. Bobo C. Quality and the nursing workforce: APNs, patient outcomes and health care costs. *Nurs Outlook* 2004;52:45-52.
- 2- Schwirian P. The NI pyramid: A model for research in nursing informatics. *Comput Nurs*. 1986;4(3):134-6
- 3- McBride AB. Nursing and the informatics revolution revolution. *Nurs Outlook*. 2005;53(4):183-91.
- 4- Scholes M, Barber B. *Towards nursing informatics*. Amsterdam: Medinfo Publisher; 1980.
- 5- Morovati F, Kalbani R, Majidian B, Yaghmaei F. Nursing attitude about computerizes systems. *Hampa J*. 2008;3:1-6. [Persian].
- 6- Staggers N, Thompson CB. The evolution of definitions for nursing informatics: A critical analysis and revised. definition, *Am Inform Assoc*. 2002;9(3):255-61.
- 7- Garde S, Harrison D, Hovenga E. Skill needs for nurses in their role as health informatics professionals: A survey in the context of global health informatics education. *Int J Med Inform*. 2005;74(11-12):899-907.
- 8- Hovenga E, Garde S, Heard S. Nursing constraint models or electronic health records: A vision for domain knowledge governance. *Int J Med Inform*. 2005;74(11-12):886-98.

9- Hannah KJ, Ball MJ, Edwards MJA. Introduction to nursing informatics. New York: Springer-Verlag; 1994.

10- Zielstorff RD, Roglieri JL, Marble KD, Poitras JW, Van Deusen F, Follayttar SM. Experience with a computer based medical record fo nurse practitioners in ambulatory care. *Comput Biomed Res.* 1977;10:61-74.

11- Bjorvell C. Nursing documentation in clinical practice. Stockholm: ReproPrint AB. 2002.

Grobe SJ. Nursing intervention language and taxonomy study: Language and classification methods. *Adv Nurs Sci.* 1990;13:22-33

12- Grobe S.J. Nursing intervention language and taxonomy study: Language and classification methods. *Adv Nurs Sci.* 1990;13:22-33.

13- Saba V, Coenen A, McCormick K. Nursing language terminology models for nurses. *Int Stand Organ Bull.* 2003;104(18):16-8.