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THE IMPACT OF INFORMATION TECHNOLOGY ON INTERSECTIONAL COMMUNICATION IN YAZD EDUCATIONAL HOSPITALS



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**ABSTRACT:**

Extensive use of health information technology can improve health care quality, prevent medical errors, improve management and health care costs, increase administrative efficiency, and reduce paper work. Speed and efficiency in patient care diagnostic and health services would be more efficient.

**Methods:** The aim of applied research is a descriptive way.

The study sample included 200 staff in teaching hospitals of Yazd and analyzed by SPSS software using descriptive statistics was conducted.

**Results:** The overall attitude of the average is 87% of the total population, compared to the positive impact of information technology on reducing costs.

The research societies analyzes the impact of information technology on the clinical diagnosis and expedites and facilitates risk reduction of 80% and 77% respectively of the total received favorable evaluations.

**Discussion and conclusion:** The use of the information technology and providing enough educations in this field have significant effects in decreasing the costs and facilitating the diagnosis of the maladies and decreasing the patient's risks and must be one of the main goals of the statesmen and policy makers of Health Ministry and has specifically to be in the programming of health system.

#### KEYWORDS

*information technology, inter-sectional relations, emergency department, clinical unit.*

#### INTRODUCTION :

Due to extensive changes in medical technology and rising patient expectations, this increasing needs to use a computerized hospital information system is essential. It is clear that in the twenty-first century hospitals without computerized hospital information system will not compete with other hospitals (1) And widespread use of health information technology can improve service quality, prevent medical errors, improve the management of health care costs, increase administrative efficiency, reduce paper work and efficiency of the health services (2).

The hospital information system is a comprehensive way for unifying clinical information in order to send and share information between clinical units and other comprehensive patient care centers to expedite the process of care, improve quality, increase patient satisfaction and reduce cost (3). It is necessary to mention that information technology is not free from errors because some things can be improved and make it difficult for others. However, the final results in unpredictable. So all procedures require a thorough investigation. The great advantages of this methods are organizing all information and avoiding repetitive tasks and establish relationships between small units of information. They can never be replaced, so the best medical systems. But they can increase IT efficiency by which people are able to communicate with each other and make practical decisions. (4)

Information technology in the individual level permits a person to keep himself/herself healthy by keeping health information in the same place via making personal medical files, their better management, and sharing this information with inspectors helps health and public health through early detection of infectious disease that outbreaks around the country, better tracking of chronic diseases and to gather comparable data based on the costs of the quality of care. (5)

Offering health care needs interaction and cooperation between all of those peoples who are involved in health care in the society. Interpersonal communication is the key to this interaction and can be changed through the use of technology. The issue of communication between individuals in the healthcare system and how it plays a key role has often been neglected. (6) Despite the obvious importance of the information to the proper functioning of an organization and the need to establish a comprehensive information management system that meets the information needs of managers in decision making from theoretical aspect has been established. The question that arises is why in our country, especially in the treatment section, you should deal with this issue? The present study aims to identify the impact of information technology on emergency departments and clinical relationships intersectional.

## METHODS

The purpose of the study is functional and application of the method is descriptive. The entire study population is clinical staff in the emergency departments of public teaching hospitals in Yazd and they were two hundred persons. For gathering information, first the articles and related literature and library and Internet research were analyzed and a questionnaire was designed by using Likert scale to assess the impact of IT on inter-sectional relations in three dimensions, reduce costs, manage risk, accelerate and simplify the diagnosis and treatment of the hospitals in the city of Yazd in three sections with 27 questions. To determine test-retest reliability of the questionnaire within 20 days, the Pearson correlation was used to calculate the reliability and  $r = 0.789$  was obtained. The validity of the questionnaire given to teachers and scholars, managers and physicians with hospital experience was measured. After collecting the data and completing the questionnaires, the results of SPSS software using descriptive statistical methods based on linear regression analysis and Pearson correlation were analyzed. With the results of the correlation factors and the impact of information technology on relationships intersectional three goals after lower costs were identified. It reduces risk, accelerates and simplifies the diagnosis and treatments at the hospital discussed and conclusions were reached.

### Results

The view of the research society which is respectively, 63 percent of bachelor's and 37 percent masters. The number of participants was 200, 102 were women (51%) and 98 men (49%) and they were serving in different emergency departments and clinical hospitals with an average of 87 percent, and they had a positive view on the impact of information technology on reducing costs and believed that it was generally positive. The research community believed that information technology facilitates and accelerates the diagnosis and treatment; with an average risk reduction of respectively 80 percent and 77 percent have a favorable rating. According to table 1 average cost is the largest component (59/29) that means most of the respondents were of the opinion that IT was effective in decreasing the costs. And risk management component has the lowest average (41/16) and this means the respondents did not believe in the impact of information technology on reducing the risk.

Table 1: Statistical parameters of the components of the research

Standard deviation	Average	Frequency	Statistical index
44/4	59/29	200	Less cost
16/6	16/41	200	Risk management
16	16/6	200	Expedite and facilitate medical diagnosis

According to Table 2 participants considered IT index (beta coefficient) in the equation and reduction of information technology costs has been 87/0. This means that if the IT increases a unit, costs will decrease 87 percent. It means that whatever the information technology is used more in the

hospitals, the costs will be reduced.

Table 2 Variable Regression coefficients IT

Sig	T	Beta	SE(B)	B	Variable
0/00	20/26	0/87	0/02	0/4	IT
0/65	0/65		1/1	0/497	Constant

From the perspective of the participants, the impact of information technology on reducing the risk variable is significant. The impact of information technology on reducing risks has been as much as 77% of patients, respectively. The regression coefficient ( $R = 0.77$ ) shows the correlation between the variables of IT and the patients risk variable.

The variable effect of information technology on facilitating and expediting the diagnosis of diseases has become meaningful. Also the effect of IT on facilitating and expediting the diagnosis of diseases has been 77 percent overall. The regression coefficient is ( $R = 0.8$ ) which shows strong correlation IT variable and variable of facilitating and simplifying medical diagnosis.

## DISCUSSION AND CONCLUSION

This research clarifies the serious role of IT on increasing precision and ease and speed of treatment processes, decreasing hospitalization costs and patients' risks and the need for improved planning of hospital services is emphasized. From the results of the regression analysis of the assumptions, it can be said that the general view of the research society with the average of 87 percent overall has been positive towards the effects of IT on decreasing the costs. The impact of information technology on cost reduction is 87 percent, versus 80 percent of the speed and facilitates medical diagnosis and ultimately the impact on risk reduction is 77%. This shows the strong correlation between the variables. Therefore, the IT variable has major effects on reducing costs, reducing risk, accelerating and simplifying the diagnosis and treatment of patients. In a research that has been done by Shokrizah and Karami in 1388, under the name of impact of information technology in health promotion perspectives on martyr Beheshti hospital staff, the final conclusion was that the general attitude of research society in all clinical departments and offices, with an average score of 367 compared to the effect of information technology on the promotion of health was positive. Also the research has a positive and desirable view towards the effects of IT on increasing productivity while average scores were 1/464, 3/311 and 2/434. So we can conclude that the effects of the current research have the consistent and unified result with that of their research project.

In another research that was done in 1384 under the title of a review of the effectiveness of the technology in terms of health from the view point of faculty members of the University of Medical Sciences of the country which was done by Mohammadzadeh et al, it has been announced that 26.53 percent of the total statistical population considers the effects of IT and communications as something significant in decreasing medical errors. The results of this study are consistent with the results of their research. (9)

In a research that was done by Mozafari et al in the name of the impact of the use of Hospital Information System in improving the quality of health care at Daneshvari Hospital in Tehran in which all the statistical members were the IT users of Masih Daneshvari Hospital, it is stated that the use of software is suitable for establishing communication between the units and sections of the hospital and access to the patients information and facilitating treatment process is good and this is consistent with the results of this research.

This research clarifies the serious role of information technology in increasing accuracy and easing and speeding of treatment processes, reducing costs and hospital risks and emphasizing attention and programming for improving the quality of hospital services. The use of information technology and providing enough education in this field has remarkable effects on reducing costs and speeding and easing medical treatments and must be one of the main aims of statesmen and policy makers of Health Ministry and must be included in planning health care system.

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