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INVESTIGATING THE VIEWPOINTS OF NURSES WORKING IN AYATOLLAH ROUHANI HOSPITAL IN BABOL, USING INFORMATION TECHNOLOGY, ON THE PERFORMANCE OF MORE SERVICES TO PATIENTS REFERRED TO THIS CENTER

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ABSTRACT

Objective: In recent decades, modern information technology has had significant effects on the position and performance of many societies, organizations and individuals, along with the dramatic advances made in this field. This study aimed to investigate the viewpoints of nurses working in Ayatollah Rouhani Hospital in Babol, using information technology, on the performance of more services to patients referred to this center.

Methodology: The research is objective in terms of its purpose and it is descriptive-analytical of survey type and specifically based on the "Lisrel Model", which was conducted on 350 nurses from Ayatollah Rouhani Hospital in 2017. The data collection tool was a valid and reliable questionnaire distributed among the statistical population. Data were analyzed by descriptive and inferential statistical tests.

Findings: T-test (two independent samples) and ANOVA showed that there was no significant difference in any of the different levels of demographic variables ($p > 0.05$). In contrast, the results of a single-sample T-test showed that the mean of the four dimensions was greater than 3 ($p < 0.05$).

Conclusion: The results of this study showed that although the vast majority of nurses agree with information technology, some believe that information technology would not be accompanied by training with nurses

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would increase the length of documentation and workload of nurses and patient dissatisfaction.

INTRODUCTION

Information technology includes a set of techniques and tools for optimizing and supporting active systems based on information and knowledge, including the study, design, development, implementation, maintenance and management of computer-based information systems, and in particular software applications and computer hardware. The importance of information technology and its impact on organizations has increased dramatically and its growth and development are felt. It is often argued that information technology is the most important factor in increasing productivity and reducing costs [1, 2]. In the healthcare sector, the efficient use of information technology to increase the efficiency, effectiveness and quality of services as well as customer satisfaction is indispensable and since nurses are among the main users of clinical information technology for patients, their understanding and satisfaction with the usability and use of this information system, in addition to supporting patient care, will have a direct impact on the success or failure of the application of the clinical information system [3]. Poissant examined the impact of electronic recording of clinical reports on the documentation of nurses and doctors, and reported that reducing the documentation time is a deceptive and misleading goal [4]. A systematic review by Muller-Staub et al. examined the effects of nursing information system on the quality of documentation, frequency, accuracy and completeness of nursing diagnosis, correlation between nursing diagnosis and clinical interventions and outcomes. They found that standard nursing diagnosis leads to better documentation, but better documentation does not necessarily lead to better patient outcomes [5]. The results of the Darbyshire study to gain a deeper understanding of the experiences of nurses and midwives in using the clinical information system of the patient showed that nurses and midwives who had good clinical information system experience were more inclined toward using this system. On the contrary, there were people who had experienced many discrepancies and failures in using the clinical information system [6]. Therefore, the aim of this study was to investigate the viewpoints of nurses working in Ayatollah Rouhani Hospital in Babol, using information technology, on the performance of more services to patients referred to this center.

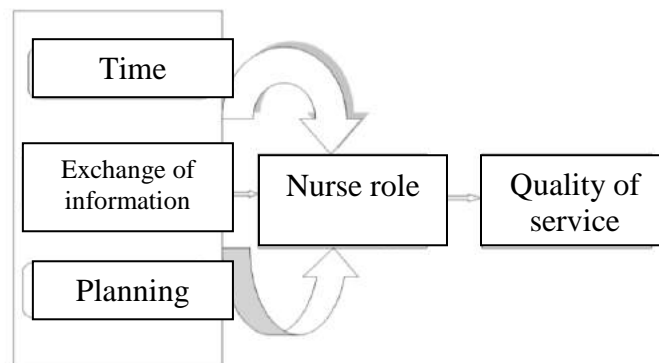


Figure 1. Conceptual Model of Research (Researcher)

METHODS

The research is objective in terms of its purpose and it is descriptive-analytical of survey type and specifically based on the "Lisrel Model", which was conducted on 350 nurses from Ayatollah Rouhani Hospital in 2017. In this study, the entire population was surveyed and no sampling was used. The data gathering tool was a researcher-made questionnaire, first designed on the basis of related scientific literature and library studies. The questionnaire consisted of 2 sections: 1) Demographic information such as gender, age, type of department, position, level of education and work experience, 2) The effect of clinical information technology of patients on nursing services. In the questionnaire, the subjects were asked to specify their opinion in the form of completely opposing options to completely agree. The how to score this part was completely disagree (1), disagree (2), no idea (3), agree (4), completely agree (5). If the average of each dimension was more than 3, this was interpreted as a nurses' view of it after having had acceptable utility. The first questionnaire was reviewed to evaluate the content validity in terms of fitness, accuracy and its relation with nursing roles by a group of experts in nursing and health information management. Then, according to experts, the questionnaire was rewritten and modified. The Cronbach's alpha reliability coefficient for the computer impact part in time dimension on nursing services was 92%, for the computer impact part in the information exchange on nursing services was 90%, for the computer impact part on the role of the nurse on nursing services was 91%, for the computer impact part in the planning dimension of nursing services was 94%, for the computer impact part on the quality of services on nursing services was 97%, and for all questions in both sectors were calculated 97.2%. Then, the questionnaire was distributed among the statistical community. To test the hypothesis of the research, the LISREL software and the structural equation test have been used. In this section, the standard estimation has been used to compare the effects of variables in the model.

Findings

This study was conducted on 350 nurses from Ayatollah Rouhani Hospital in Babol. In total, 11 person were males (1.3%) and 339 person were females (96.9%), 305 (87.1%) were married and 45 (12.9%) were single, 336 (96%) were graduate students and 14 (4%) were graduate students, 270 (77.1%) were work experience of under 10 years, 63 (18%) were work experience of 10-15 years, and 17 (4.9%) were work experience of 20 years. Of the total number of participants in the study, 210 (60%) in the internal medicine, 3 (0.9%) in the ICU, 107 (30.6%) in the heart, 24 (9.6%) were in the obstetrics and gynecology department and 6 (1.7%) were in the emergency

department. The mean age of participants in this study was 31.11 ± 4.47 . Regarding the scores obtained from the viewpoint of nurses in four dimensions (time, information exchange, role of nurses and service quality), the results of T-test (two independent samples) and ANOVA showed that there was no significant difference in any of the different levels of demographic variables including gender, marital status, education, work experience and sections ($p > 0.05$). In contrast, the results of a single-sample T-test showed that the mean of the four dimensions was greater than 3 ($p < 0.05$), and the nurses' viewpoints on the quadruple dimensions were acceptable (Table 1).

Table1. Four Dimension Utilization (Time, Information Exchange, Nurse's Role and Service Quality)

| Dimensions | Number | Average | t-value | p-value |
|-------------------------|--------|-----------|---------|---------|
| Time | 350 | 0.84±3.96 | 21.36 | 0.00 |
| Exchange of information | 350 | 0.71±4.14 | 30.13 | 0.00 |
| Nurse role | 350 | 0.69±3.99 | 27.05 | 0.00 |
| Planning | 350 | 0.67±3.90 | 24.81 | 0.00 |
| Quality of services | 350 | 0.84±3.71 | 15.55 | 0.00 |
| Total | 350 | 0.65±3.94 | 26.59 | 0.00 |

In the study of goodness, the fitting of the conceptual model was presented and the causal relations between the variables were derived from the structural

equations and specifically by the path analysis method (Figures 2 and 3)

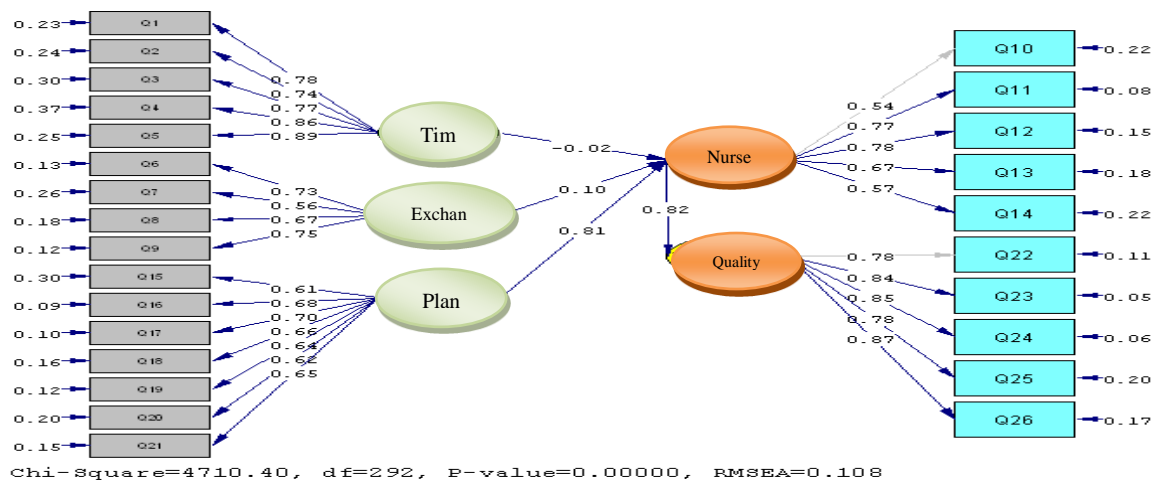


Figure 2. Standard Estimation Model

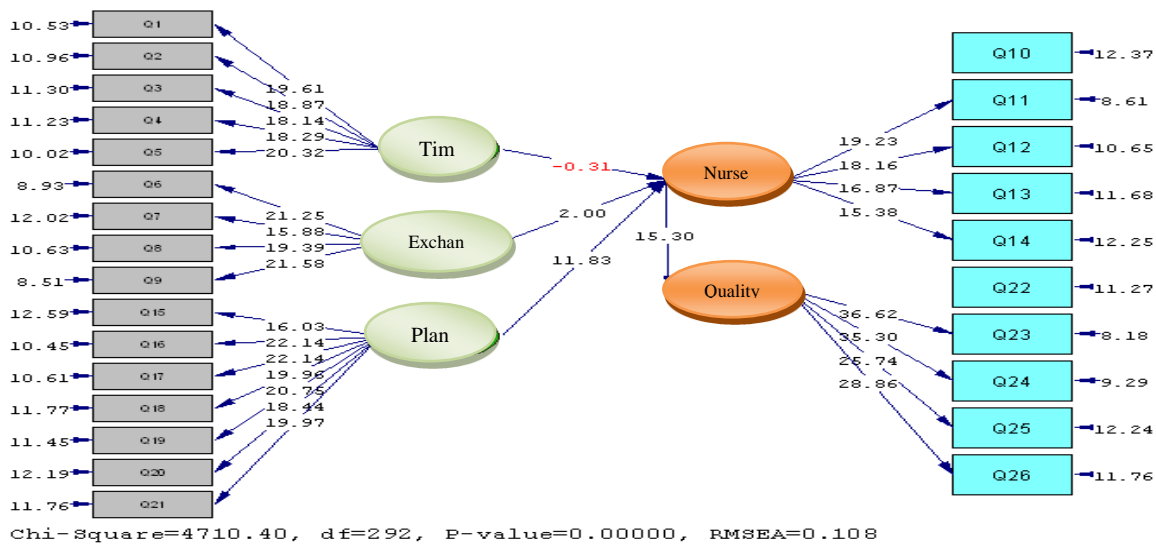


Figure 3. Model significant coefficients

According to the information obtained from the structural equation model, the results showed that the

conceptual model of the research was fit. Also, the amount of impact variables is described in Table 2.

Table2. Results of the standard coefficient and significant numbers (confirmation or rejection of hypotheses)

| From dimension | To dimension | Standardized coefficients | Meaningful numbers (t values) | Result |
|-------------------------|---------------------|---------------------------|-------------------------------|--------------|
| Time | Nurse role | 0.10 | 2 | Confirmation |
| Exchange of information | Nurse role | -0.02 | -0.31 | Rejection |
| Planning | Nurse role | 0.81 | 11.83 | Confirmation |
| Nurse role | Quality of services | 0.82 | 15.30 | Confirmation |

As shown in Table 2, the effect of the exchange of information on the role of the nurse was not significant.

DISCUSSION

The results of this study showed that the information exchange dimension does not have a significant relationship with the role of the nurse and the quality of nursing services. These findings may suggest that most nurses believed that they could not enter the patient's information at the same time at the time of providing care or that there was a rework in patient records [10, 11]. Moreover, as more users engage in the use of computers in the sector, the problem of accessing it increases, as a result of some reports are not completed or delayed [12, 13, and 14]. Of course, some nurses also believe that systemic clinical information can speed up nursing care in the patient care process and they will have more time for the patient. These findings may suggest that some computer nurses could better review patient information and have more complete

documentation and better readability. Other findings of the study confirm our findings, as in other nursing studies, systemic clinical information has led patients to spend about 30-60 percent of their time on direct and indirect care [15, 16, and 17]. Also, the results of this study indicate that there is a significant relationship between the dimension of information exchange and planning dimension (from the components studied on the systemicity of clinical information of patients) on the role of nurses and the quality of nursing services. The findings showed that most nurses believed that systemic clinical information of patients would result in faster exchange of information between departments and confidentiality of patient information. Hospitals also need to establish communication channels between clinical and para-clinical parts (such as the operating room) to provide patient information systems for nursing care [18]. Similarly, in a study conducted by Palm and colleagues to evaluate a clinical information system, most nurses responded to the question of mental perception of the usefulness of the hospital information system, and found it useful in the daily use of the system

[19]. Therefore, it can be said that the results of this study are consistent with other similar studies and nurses, in turn, are familiar with the necessity of using information technology in the field of medical science. In the present study, the findings showed that most nurses believed that a program designed to meet the nursing duties would reduce the cost of sections, Eliminates the need for head nurse and metronin and other managers, better coordination with colleagues for patient treatment plans, It is easier to plan for a patient's diet and can be better planned for hospital infections. The findings showed that there is a significant relationship between the role of the nurse and the systematic information of the patients' clinical information. These findings could indicate that most nurses believed that registering patient care records would be better by systematizing patients' clinical information, nursing diagnosis is facilitated in the process of improving patient care and the patient's condition is better evaluated; at any time, the nurse knows what to do, patient information can be recorded at the same time, and we can also access radiographic images or brain barks through the computer. Similarly, Banner and Oleny looked at the satisfaction of nurses about the hospital information system in one of the US hospitals and found that the hospital information system increased nurses' performance. So, nurses could spend more on taking care of the patient. Other findings included improved documentation quality, quick access to patient information and nurses' satisfaction with the system [20].

CONCLUSION

The results of the study showed that the majority of nurses agree with the clinical information technology of patients and believe that the systemicization of clinical information prompts patients to be accelerated, The patient's problems will be reduced, the training will be easier for the patient and the patient's stay will be reduced, that these factors may lead to a positive attitude in the minds of patients about the treatment center in which they were treated.

Suggestions

- ❖ Holding workshops of justification.
- ❖ Holding computer training classes.

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