

## **The Influence of ISO 9001-2000 Standard Quality Management System Implementation on Health Care**

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### **ABSTRACT**

This research surveys the effectiveness of ISO 9001-2000 Standard Quality management system implementation on health care in the hospital wards of Aligoodarz, Nahavand and Alashtar provinces. It is cross-sectional from the view of time and practical from the view of purpose. Statistical society of the current research is all patients of care centers and all personnel of hospital wards in Aligoodarz, Nahavand and Alashtar provinces. According to Krejcie and Morgan table, the sample volume is proportional to statistical society volume. Patients sample volume is 385 persons and care personnel sample volume is 119 persons. Gathering data for statistical data in this research is two kinds of certain questionnaires as following: Questionnaire of measuring health level and questionnaire for measuring the effectiveness of training for medical personnel. Questionnaire reliability is confirmed after consulting with respected Faculty supervisor and consultant and responsible persons in the hospitals. Questionnaire validity is calculated with using Cronbach's alpha coefficient for related questions to health level that is 0.73, for questions of the effectiveness amount of personnel training that is 0.91 and validity of the whole questionnaire that is 0.78. Wilcoxon nonparametric test is used for data analysis. Results in all related indicators to health situation show that referred persons rated the health level of the studied hospitals better after ISO 9001-2000 Standard Quality management system implementation comparing. Moreover, there is a significant different between the effectiveness of provided trainings before and after Quality management implementation. Responsible persons in all related sections of the studied hospitals rated the health level of the studied hospitals better after ISO 9001-2000 Standard Quality management system implementation comparing in all indicators.

**KEY TERMS:** Effectiveness, Implementation, System, Quality Management, Standard, Hospital Wards.

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### **INTRODUCTION**

When consumers become more informed, organizations are required to meet their expectations. Therefore, strong logic rules according to performance and justice that an organized system attempts continuously for improving the quality of health-care services and preserve, protect, restore and enhance the mental, social and physical activities of citizens. Hospital behavior towards its patient as well as its financial and economic relations with him, has an important reflection on the patient's experience towards that reply. Therefore, kind of access, care, respect and guide affect the patient's rights. Patients' rights must be respected and protected when providing care or services (Sadaghiyani, 2004, p 75-76).

In today's comparative world that time passes quickly in, some organizations are succeed that according to prevention principals before an event happens as well as the approach according to the customer, knowledge and insight of consumers, improve the services and goods' quality. Undoubtedly, in such a situation that limitation of financial and human resources underline it, there is no solution except establishment a suitable and flexible system for responding to customer needs. Experience shows that such a system should lead to continuous improvement, cost reduction and gradual elimination of resource waste with stable profit. This system is nothing except "quality management". In this regard, improvement of services or goods' quality as the final product of the organization needs a special strategy and method (Baghbaniyan and et al, 2003, p 791).

Health- care policies are a part of social economic development policies of a country that its aim is to create a fundamental change in the situation of people health and remove poverty with the help and participation of people. The aim of health strategies and policies is equitable distribution of resources and observance of social justice. Hospitals are a valuable and costly resource in health and care sector. It is a combination of expert human forces as well as complicated technical tools and instruments for meeting the people's needs (AsefZade, 2003, p 113).

## RESEARCH BACKGROUND

According to the activities of Dr. She Wart in 1929, two persons with the names of Doj and Romig published Product Quality Inspection Tables based on sampling methods. In 70 decade of BC, because of urgent need of countries to have uniformity and homogeneity in terms of quality in the world, having criteria and standard in international trade agreements and having standard for issuing certification and usage via authorized organizations (third party), technical committee of 176 was established for codification of related standards and quality assurance. In 1987 this committee published standards series ISO 9000 according with quality glossary (Amiran, 1999, p 10-19).

**Quality management:** a group of coordinate activities for guide and control the organization in the related affairs to the quality (Poor Hossein, 2004, p 27)

**Total Quality Management:** a smart, quiet and continuous act that has strategic effect in providing the organization's goals and finally reaches to the customer satisfaction, increase efficiency and promotion of competition level in the market (Haji Sharif, 1997, p 24).

**Standard:** standard is one of the important aspects in providing social welfare that has direct relation with quality element and is necessary for human happiness. The meaning of it is order, rule and synonym concepts and finally standard means order-taking (Dargahi, Sadr Momtaz, Faraji, Farzad, 2005, p 5-6).

**ISO:** the international organization for standardization is considered as a universal resource concluding standard national resources (ISO members). The work of making international standards ready is often done via ISO technical committees (Rezaii and Hooshmand Azad, 2000, ISO9001-2000 standard).

**Patient's rights:** patient bill of rights indeed means defense of human rights for keeping his dignity and sanctity to assure in illness and especially in emergency medicine without age and sex discrimination and having financial power as well as enough care of his health and this care will provide in an environment full of respect and suitable quality (Sadaghiyani, 2004, p 476)

**Effectiveness:** indicator and rate of achieving programming affairs and access to results and expected goals (Poor Hossein, 2004, p 29).

**Hygiene:** science and art of preventing diseases, increase longevity, health and efficiency promotion of the people via organized society attempt (for improve the environment, fight against infectious diseases, individual health education, provision of medical services and nursing for diagnosis and timely treatment of diseases (ShojaiiTehrani and Ebadi Fard Azar, 2007, p 16).

**Training:** a series of pre-planned actions with the aim of promoting welfare and effectiveness of the person and organization in a continuous and systematic way for improvement of knowledge and skill level as well as attitude towards improvement of the current and future work performance of the employees (Abbas Zadegan, 1997, p 127).

## RESEARCH METHOD

It is cross-sectional from the view of time and practical from the view of purpose. Statistical society of the current research is all patients of care centers and all personnel of hospital wards in Aligoodarz, Nahavand and Alashtar provinces. According to Krejcie and Morgan table, the sample volume is proportional to statistical society volume. Patients sample volume is 385 persons and care personnel sample volume is 119 persons. Gathering data for statistical data in this research is two kinds of certain questionnaires as followed:

- a) Questionnaire of measuring health level and questionnaire for measuring the effectiveness of training for medical personnel. Questionnaire reliability is confirmed after consulting with respected Faculty supervisor and consultant and responsible persons in the hospitals. Questionnaire validity is calculated with using Cronbach's alpha coefficient for related questions to health level that is 0.73, for questions of the effectiveness amount of personnel training that is 0.91 and validity of the whole questionnaire that is 0.78. Wilcoxon nonparametric test is used for data analysis.

## DATA ANALYSIS

**Hypothesis 1-** There is a relation between ISO 9001-2000 Standard Quality management system implementation and improvement of health level in hospital wards affiliated of social security campaign management of Lorestan province.

**Table 1: Comparing the amount of hospitals' health level improvement before and after the establishment of quality management system**

Significant level	Z statistic	Sum of rates	Average Rating	number	Situation	Indicators
P<0/001**	15.153	456.50	91.30	5	The next rate is less than before	1- Cleaning supplies such as lockers, refrigerator, windows, cupboards, tubs, toilets, department
		46821.50	155.04	302	The next rate is more than before	
				41	The same rate	
				348	sum	
P<0/001**	15/499	467.00	116.75	4	The next rate is less than before	2- Training health to patients and their caregivers in health boards and posters
		51214.00	161.56	317	The next rate is more than before	
				27	The same rate	
				348	sum	
P<0/001**	14/774	812.50	62.50	13	The next rate is less than before	3- Isolation observance (separation of contagious infectious diseases from other diseases)
		45243.50	156.01	290	The next rate is more than before	
				45	The same rate	
				348	sum	
P<0/001**	15/256	451.50	64.50	7	The next rate is less than before	4- Cleanness of patient's linens and clothing and their timely replacement
		48276.50	158.61	305	The next rate is more than before	
				36	The same rate	
				348	sum	
P<0/001**	15/085	792.00	66.00	12	The next rate is less than before	5- All windows should overlooked to fresh air and equipped with mesh with suitable ventilation
		47724/00	156.61	299	The next rate is more than before	
				37	The same rate	
				348	sum	
P<0/001**	15/198	680.00	68.00	10	The next rate is less than before	6- personnel and service sector's use of gloves, mask and gun in the required situation
		487.0075	160.44	304	The next rate is more than before	
				34	The same rate	
				348	sum	
P<0/001**	16/056	10046	36.50	4	The next rate is less than before	Improvement of hygiene level
		59885.00	175.10	342	The next rate is more than before	
				2	The same rate	
				348	sum	

\*Significant at level 0.05

\*\* significant at level 0.01

NS no significant

According to the above table's data, the result of done analysis in relation with improvement the hygiene level of studied hospitals show that the calculated amounts for Z statistics of Wilcoxon are more than the amount of critical Z (2.58) at the level of  $\alpha = 0.01$ . Therefore the Hypothesis 0 is rejected and Hypothesis 1 (the opposite hypothesis) is confirmed that there is a relation between ISO 9001-2000 Standard Quality management system implementation and improvement of hygiene level in hospitals wards affiliated of social security campaign management of Lorestan province. Therefore, we conclude that there is a significant difference between the situation of hygiene level before and after Quality management system implementation. In all the related indicators to hygienic situation, referred persons study the hygiene level of hospitals after Quality management system implementation and rated it better comparing to it before. Therefore, the above hypothesis is confirmed.

**Hypothesis 2-** There is a relation between ISO 9001-2000 Standard Quality management system implementation and effectiveness of provided training to care personnel in hospital wards affiliated of social security campaign management of Lorestan province.

**Table 2: Comparing the amount training effectiveness before and after the establishment of quality management system**

Significant level	Z statistic	Sum of rates	Average Rating	number	Situation	Indicators
P<0/001**	8.911	117.00	39.00	3	The next rate is less than before	1- the amount of effectiveness in accuracy of affair performance and decrease of errors
		5239.00	52.39	100	The next rate is more than before	
				16	The same rate	
				119	sum	
P<0/001**	9.456	85.00	42.50	2	The next rate is less than before	2- Increase staff awareness
		6243.00	56.75	110	The next rate is more than before	
				7	The same rate	
				119	sum	
P<0/001**	9.197	83.00	41.50	2	The next rate is less than before	3- The amount of learning use
		5482.00	53.22	103	The next rate is more than before	
				14	The same rate	
				119	sum	
P<0/001**	8.564	268.00	67.00	4	The next rate is less than before	4- The increasing interest in the work
		5297.00	52.45	101	The next rate is more than before	
				14	The same rate	
				119	sum	
P<0/001**	8.901	111.00	37.00	3	The next rate is less than before	5-Increase staff satisfaction
		5349.00	52.96	101	The next rate is more than before	
				15	The same rate	
				119	sum	
P<0/001**	9.031	118.50	39.50	3	The next rate is less than before	6- Increase customer satisfaction
		5525.50	53.91	103	The next rate is more than before	
				13	The same rate	
				119	sum	
P<0/001**	9.080	118.50	59.25	2	The next rate is less than before	Training effectiveness
		6667.50	58.49	114	The next rate is more than before	
				3	The same rate	
				119	sum	

\*Significant at level 0.05

\*\* significant at level 0.01

NS no significant

According to the above table's data, the result of done analysis in relation with the effectiveness of provided trainings to care personnel in hospital wards show that the calculated amounts for Z statistics of Wilcoxon are more than the amount of critical Z (2.58) at the level of  $\alpha = 0.01$ . Therefore the Hypothesis 0 is rejected and Hypothesis 1 (the opposite hypothesis) is confirmed that there is a relation between ISO 9001-2000 Standard Quality management system implementation and the amount of provided trainings to care personnel in hospitals wards affiliated of social security campaign management of Lorestan province. Therefore, we conclude that there is a significant difference between the effectiveness of provided trainings before and after Quality management system implementation. In all the indicators, responsible persons of the related sectors in the studied hospitals confirm that training effectiveness are better after Quality management system implementation and rated it better comparing to it before. Therefore, the above hypothesis is confirmed.

## CONCLUSION

The result of done analysis in relation with improvement the hygiene level of studied hospitals show that the calculated amounts for Z statistics of Wilcoxon are more that the amount of critical Z (2.58) at the level of  $\alpha = 0.01$ . Therefore we conclude that there is a significant difference between hygiene level before and after ISO 9001-2000 Standard Quality management system implementation. In all the related indicators to hygienic situation, referred persons study the hygiene level of hospitals after ISO9001-2000 Quality management system implementation and rated it better comparing to it before. Therefore, the above hypothesis is confirmed.

Moreover, the result of done analysis in relation with the effectiveness of provided trainings to care personnel in hospital wards show that the calculated amounts for Z statistics of Wilcoxon are more that the amount of critical Z (2.58) at the level of  $\alpha = 0.01$ . Therefore, we conclude that there is a significant difference between the effectiveness of provided trainings before and after Quality management system implementation. In all the indicators, responsible persons of the related sectors in the studied hospitals confirm that training effectiveness are better after ISO9001-2000 Quality management system implementation and rated it better comparing to it before.

## REFERENCES

- [1]. Abbas Zadegan, Seyed Mohammad, **Case Studies in Management**, Tehran, Soroosh Publication, 1997.
- [2]. Amiran, Heydar (1999), **Guide Of ISO900Standards Performance in Medical Services Sector**, First Printing
- [3]. Asefzade, Saeed (2003), **Hospital Research and Management**, Qazvin Medical Science University, First Printing
- [4]. Baghbaniyan, Hojjatand Saeedpoor, Jalal (2003), **Management in Healthcare**, Gap Publication
- [5]. Dargahi, Hosseinand Sadr Momtaz, Naserandfaraji, Farzad (2005), **Hospital Standards**, Tehran University Publication, First Printing
- [6]. Poor Hossein, Mohammad (2004), **IMS Consolidated Systems Audit**, Mosgaverin-E- Keyfiatsaz Company
- [7]. Rezaii, Kamran and Hooshmand Azad, Kave (2000), **ISO9001-2000 Standard**, Eleventh Printing
- [8]. Sadaghiyani, Ebrahim (2004), **Hospital Management and Organization**, First Volume, Jahanrayane, First Printing
- [9]. ShojatiiTehrani, Hossein And Ebadifardazar, Farbod (2007), **Principles of Health Care**, Samat Publication, Fifth Printing