

The relationship between attitude toward the effectiveness of teamwork and observing safety standards in Isfahan educational hospitals

La relación entre la actitud hacia la efectividad del trabajo en equipo y la observación de las normas de seguridad en los hospitales educativos de Isfahan

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Abstract

Effective teamwork among health care providers is important for improving the quality of services and providing safe and effective care. In fact, patient safety is an essential part of the quality of care in the operating room, which for making it, appropriate communication between health care providers in the operating room is essential. The purpose of this study was to investigate the relationship between attitude toward the effectiveness of teamwork and safety standards.

This is a descriptive-analytic study. The study population was 73 operating room nurses in the operating rooms of 6 educational hospitals in Isfahan, Iran. The data gathering tools in this study consisted of a demographic questionnaire, a Safety Standards Compliance Questionnaire, and Team Stepps-TAQ Questionnaire. Data was analyzed by SPSS software, version 16.

Out of 73 subjects, 49 (1.67%) were female and 24 (39.2%) were male. The mean age of the study population (8.20) was 37.33 years. In this study, the mean score of attitude toward teamwork effectiveness was 136.77 (2.15) and the mean score of observing individual safety standards was 202.34 (29.37).

In this study, there was no significant relationship between positive attitude toward the effectiveness of teamwork and observing individual safety standards, but considering the positive correlation coefficient between these two factors, we can provide a suitable framework for observing safety standards and teamwork to maintain the physical and mental health of the personnel, which will ultimately lead to high efficiency and reduce risks.

Keywords: Effectiveness, Operating Room, Teamwork, Safety

Resumen

El trabajo en equipo eficaz entre los proveedores de servicios de salud es importante para mejorar la calidad de los servicios y proporcionar una atención segura y efectiva. De hecho, la seguridad del paciente es una parte esencial de la calidad de la atención en el quirófano, que para hacerlo es esencial la comunicación adecuada entre los proveedores de atención médica en el quirófano. El propósito de este estudio fue investigar la relación entre la actitud hacia la efectividad del trabajo en equipo y los estándares de seguridad.

Este es un estudio descriptivo-analítico. La población del estudio fue de 73 enfermeras de quirófano en los quirófanos de 6 hospitales educativos en Isfahan, Irán. Las herramientas de recopilación de datos en este estudio consistieron en un cuestionario demográfico, un Cuestionario de cumplimiento de estándares de seguridad y un Cuestionario Team Stepps-TAQ. Los datos fueron analizados por el software SPSS, versión 16.

De 73 sujetos, 49 (1.67%) eran mujeres y 24 (39.2%) eran hombres. La edad media de la población de estudio (8,20) fue de 37,33 años. En este estudio, la puntuación media de la actitud hacia la efectividad del trabajo en equipo fue de 136.77 (2.15) y la puntuación media de la observación de las normas de seguridad individuales fue de 202.34 (29.37).

En este estudio, no hubo una relación significativa entre la actitud positiva hacia la efectividad del trabajo en equipo y la observación de estándares de seguridad individuales, pero considerando el coeficiente de correlación positiva entre estos dos factores, podemos proporcionar un marco adecuado para observar estándares de seguridad y trabajo

en equipo y la salud mental del personal, lo que finalmente conducirá a una alta eficiencia y reducirá los riesgos.

Palabras clave: Eficacia, quirófano, trabajo en equipo, seguridad

Teamwork is a dynamic process involving two or more health care professionals with different skills that coordinate with the sharing of aims and physical and mental efforts in evaluating, planning and evaluating the patient care¹.

Health care is an undeniable team effort, and no one can complete the healthcare providing chain alone. The failure in communication and lack of effective teamwork among health care providers cause medical errors and side effects².

One of the most prominent human rights is the right to stay safe from the risks and disadvantages during the receiving health care. The concept of patient safety is one of the essential elements of health care in many healthcare systems and is one of the main pillars of the health care organizations³. For this reason, it has been the focus of attention for three decades, and the safety culture has been known as the most fundamental issue with regarding the patient safety⁴. In fact, patient safety is an essential part of the quality of care in the operating room, which is essential in order to establish appropriate communication between health care providers in the operating room⁵.

The importance of teamwork, the benefits and factors affecting it have been considered in many studies in many parts of the world. As the study by plaza (2015) showed that about 50% of hospital mistakes occurring in the operating room and the resuscitation center are due to the lack of communication⁶. Also the study by Pronovost (2006) showed that 32% of hospital mistakes were related to the lack of teamwork⁷. This is why the communication skills are the most important factor in the quality of patient care and safety⁸.

Researchers have claimed that more than 36 percent of admissions to specialized care units are due to adverse events resulting from patient injury and often accidents due to medical mistakes⁹. Also, 15 percent of the causes of adverse events directly relate to communication problems between care providers and patients or within the care provider teams, and in more than 50 percent of the cases the lack of effective teamwork has been the cause of the incident⁹. In other words, appropriate communication promotes teamwork, patient safety, and better outcome⁵.

In the operating room as a unit that coordination, speed of operation and quality of service are very important, a special attention should be paid to teamwork¹⁰. Failure

in communication and lack of team work in the operating room can lead to problems that put patient's life in risk, interrupt routine work and increase stress¹¹. So that mistakes such as forgetting the gauze, organ damage, or misplaced injection of blood are usually the result of poor communication and lack of coordination among team members¹². Preventing these irreparable mistakes is not possible alone and without the cooperation of others. In the operating room, due to patient conditions and the complexity of the technology, the number of tasks has increased and the need for manpower also has increased¹³. That's why most organizations seek to strengthen teamwork and believe that teamwork is more successful than individual work¹⁴.

On the other hand, the meta-analysis study done by Nahrgang based on the JDR model showed that lack of coordination and teamwork had a significant relationship with the risking of safety of the environment and personnel¹⁵.

Regarding the role and importance of teamwork in patient safety and prevention of human errors, it is important to study the attitude toward its strengths and weaknesses. In most studies, there was a strong correlation between teamwork and patient safety. This may indicate the fact that teamwork can be effective in preventing inadvertent errors that threaten patient safety.

Methods: This is a descriptive-analytic study in which the study population was composed of operating room nurses. Entry criterion was at least one year of work experience. Similarly, the subjects having the exclusion criteria were deleted. Exclusion criteria included the transfer from the operating room to other departments, lack of cooperation and incomplete questionnaires.

A total of 73 personnel from nine operating rooms were participated in the study. The data collection tools in the present study were the Team Stepps-Team Assessment Questionnaire (TAQ) and Safety Standards Compliance Questionnaire. The Team Stepps-Team Assessment Questionnaire (TAQ) is a questionnaire made by Team Stepps Co. The word team stepps abbreviated to words: Team Strategies and Tools to Enhance Performance and Patient Safety and it assesses the team by effectiveness of teamwork.

The TAQ questionnaire includes 7 sections and 55 items. These 7 sections include team infrastructure (12 questions), team ability (6 questions), team performance (4 questions), team skills (6 questions), team leadership (8 questions), team atmosphere (10 questions) and team identity (9 questions). All questions were completed on Likert scale of 5 options.

The Safety Standards Compliance Questionnaire consisted of two parts: in the first part, there were demographic data of the research units and in the second part, there were 60 questions related to the safety standards. 60 questions consisted of four parts of ergonomic (15 ques-

tions), biological (25 questions), chemical (10 questions) and physical (10 questions standards questions).

The content validity method was used to validate the validity of the questionnaires. The first questionnaires after the translation and preparation were given to the ten faculty members of the Faculty of Nursing and Midwifery of Isfahan University of Medical Sciences. They were asked to give their corrective comments and suggestions in the form of extensive and written presentations. Then, it was corrected and approved.

In order to confirm the reliability of the questionnaires, 20 questionnaires were given to the operating room staff during the two sessions and based on the test retest, their reliability score was obtained. The correlation coefficient between the attitude toward the effectiveness of team-work score of two identical samples in the TAQ questionnaire was 0.995 and in the questionnaire for measuring observing safety standards was 0.833.

The total period of sampling was three months. During this period, the researcher referred to the 6 hospitals to and gave the questionnaires to the subjects by observing the ethical issues, describing the research objectives and taking their consent for participation in the research. The time required for the answering was given and the subjects were assured about the privacy of their information obtained from the questionnaire.

Then, the results obtained from questionnaires were entered into SPSS version 16. Independent t-test and correlation analysis was used for two groups.

Results

In this study, 73 personnel of operating room personnel of educational centers in the city of Isfahan were studied to examine the relationship between attitude toward the effectiveness of team work with the compliance of personal safety standards of the studied personnel. Of the total of 73 studied personnel, 49 (1.67%) were female and 24 (39.2%) were male. The mean age of the population of the study (8.20) was 37.33 years.

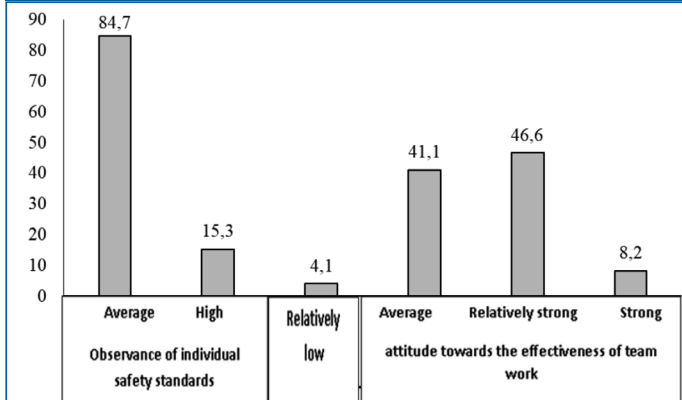
The mean score of attitude toward effectiveness of team work was 136.77 (15.2) and the mean score of observing individual safety standards was 34.202 (29.37). The mean scores of attitude toward the effectiveness of team work and the score of observing individual safety standards in different genders of the studied personnel with its different aspects are shown in Table 1. The mean score of biological safety standard in male personnel (99.54) was significantly higher than female personnel (90.80) ($P = 0.04 < 0.05$).

Table 1. Determining and comparing the mean scores of attitude towards the effectiveness of team work, observing individual safety standards and its aspects in different genders of the personnel

Variable	Gender	Mean	SE	Significance level
Ergonomy	Male	39.33	7.76	0.95
	Female	39.49	11.71	
Total		39.44	10.52	
Biological	Male	99.54	16.82	0.04*
	Female	90.80	17.13	
Total		93.67	17.41	
Physical	Male	34.83	6.09	0.73
	Female	35.35	5.92	
Total		35.18	5.94	
Chemical	Male	31.83	5.48	0.82
	Female	32.44	12.48	
Total		32.24	10.63	
observing individual safety standards	Male	205.54	25.60	0.52
	Female	200.75	31.22	
Total		202.35	29.37	
attitude towards the effectiveness of team work	Male	135.33	27.33	0.77
	Female	137.47	30.90	
Total		136.77	29.62	

84.7 percent of the studied personnel observed individual safety standards at a average level, and only 15.3 percent of the personnel observed individual safety standards at the highest level. A higher percentage of personnel (46.6%) evaluated the effectiveness of team work as strong (Figure 1).

Fig. 1 Percent of frequency of evaluating the attitude towards the effectiveness of team work score and observing individual safety standard score



In the present study, there was no significant correlation between the attitude towards the effectiveness of team work and observing individual safety standards and its aspects ($P > 0.05$). The correlation coefficient between the two scores of attitude towards the effectiveness of team work and observing individual safety standards was 0.20. It is showed that with increasing the effectiveness of teamwork, the observance of individual safety standards will also increase at a relatively low level (Table 2).

Table 2. Determining the relationship between the attitude towards the effectiveness of team work and the score of observing individual Safety Standards and aspects

	Ergonomy	Biological	Physical	Chemical	Observing individual Safety standards
Effectiveness of team work	0.05	0.13	0.19	0.13	0.20
Significant level	0.68	0.27	0.11	0.28	0.12

The effectiveness of teamwork in female personnel had a significant relationship with the observing individual safety standards ($P = 0.049 < 0.05$ *). Considering the correlation coefficient of these two variables (0.29), with increasing the effectiveness of teamwork in female personnel, observing individual safety standards also increased. However, this relationship was relatively weak. There was no significant relationship in male personnel ($P > 0.05$) (Table 3).

Table 3. Determining the relationship between the score of attitude towards effectiveness of team work and the score of observing individual safety standards in different genders

	Female personnel		Male personnel	
	Observing individual safety standards	Significant level	Observing individual safety standards	Significant level
Effectiveness of team work	0.29	0.049*	-0.23	0.28

There was no significant relationship between attitude toward effectiveness of team work and observing individual safety standards in two age groups of studied personnel ($P > 0.05$) (Table 4).

Table 4. Determining the relationship between the score of attitude towards effectiveness of team work and the score of observing individual safety standards in different age groups

	Personnel with 30 years old or less		Personnel with higher than 31 years old	
	Observing individual safety standards	Significant level	Observing individual safety standards	Significant level
Effectiveness of team work	0.15	0.35	0.19	0.31

Discussion



Observing individual safety is one of the important issues in the field of medicine, especially the operating room nursing. The severity of work and the various dangers present in this environment show the importance of observing safety standards by personnel more than other occupations and other work environments¹⁵.

On the other hand, the effective communication between team members depends on both team members and on working conditions, and with standard tools and behaviors, is a very effective strategy to reduce work-related risks and increase teamwork spirit¹⁶.

Also, the complexity of the operating room environment also highlights the importance of having a positive attitude toward teamwork, because any disruption in this issue can create risks and consequences for both the personnel and the patient⁵.

Morgeson and Humphrey stated that supports during the work, including counseling, getting help from others, and emphasizing team work while performing their duties, can affect the safety of personnel and the dangers threat-

ening them. Therefore, it is recommended that organizations, with emphasis on teamwork, expand the protection of personnel in the working environment¹⁷.

In general, individual safety has different aspects. In this study, only the individual and physical aspects (the dangers harming the person's body) of it were assessed. Since observing some of the individual safety standards requires the collaboration and assistance of other personnel, the prevalence of teamwork as well as personnel perceptions and attitudes toward the effectiveness of teamwork can also affect the level of observing individual safety standards¹⁸.

The results of this study showed that there is no significant relationship between the total score of observing standards and the effectiveness of the team work (Table 2). The reason could be due to scores and overall observance of safety standards. Table 1 shows that the highest level of observing the standards is average (84%), while the highest frequency of attitudes towards the effectiveness of teamwork was relatively strong (46%) and then average (41%). However, the correlation coefficient between these two scores was 0.2, which indicated a positive relationship, though weak. So by increasing the effectiveness of teamwork, the observance of individual safety standards also increased, in a relatively low level.

In a qualitative study of Gilipi et al., interviews with 16 surgeons, anesthesiologists and operating room nurses revealed that the good relation of the surgical team is the main part of teamwork culture and is recognized as the most important pillar of patient safety¹⁹.

Also, a study conducted by AbuAlRub on 381 nurses showed that there was a significant relationship between attitude and positive perception of teamwork and safety of environment ($P < 0.1$). Also, the results of this study showed that positive attitude toward the effectiveness of teamwork significantly increased the desire of nurses to stay in the work environment and perform their duties ($P < 0.1$)²⁰.

The cause of the difference between the mentioned study and the current study could be due to the type of safety examined, so that in the present study, individual safety and in the study of AbuAlRub the safety of environment has been studied.

According to Table 3, after gender segregation, there is a significant relationship between the observing standards and the attitude towards teamwork among the female personnel ($p = 0.049$). The correlation coefficient is also 0.29. An appropriate explanation in this regard is that women have a better score than men in observing standards and attitudes toward the effectiveness of teamwork. But in the study of Mahfouzpour et al., the results showed that there is no significant difference between the attitude of men and women providing the care towards team work and safety atmosphere¹⁶.

Conclusion: In the present study, there is no significant relationship between positive attitude toward the effectiveness of teamwork and observing individual safety standards, but considering the positive correlation coefficient between these two factors, a suitable framework for observing safety standards and teamwork could be provided to maintain the physical and mental health of personnel that will ultimately lead to high efficiency and reduce risks.

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