

## *Patients' Privacy in the Operating Room in Zanjan Educational Hospitals in 2019: Perspectives of Patients and Operating Room Staff*

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### **Abstract**

**Background:** Privacy is one of the basic human needs and is considered one of the most important rights of patients. There is little information about respecting the privacy of patients undergoing surgery in the operating rooms of educational hospitals in Zanjan Iran.

**Objectives:** Determine the status of respect for privacy in operating room from the perspectives of patients and staff.

**Methods:** This is a descriptive cross sectional study. Participants in the study included 204 operating room staff and 323 patients undergoing surgery who were selected by convenience sampling. Patients and staff viewpoints were gathered through combining Serenko Fan privacy questionnaires and Noorian in three physical, informational, and psychological dimensions using self-reporting method for staff and interviewing for patients. Data analysis was performed using descriptive statistics and SPSS software version 16.

**Results:** The findings of this study showed that the rate of total respect for privacy from the patients' perspective was 13.6% moderate and 86.4% good. In physical, informational and psychological dimensions, 77.1%, 72.8% and 12.7% of patients, respectively, assessed the status of privacy as good. From the perspectives of the operating room staff, respect for privacy was generally poor in 0.5% of cases, moderate in 5.4% of cases, and good in 94.1% of cases. In physical, informational and psychological dimensions, 89.7%, 95.1% and 71.1% of operating room staff, respectively, assessed the status of privacy as good.

**Conclusion:** The findings showed that the evaluation of respect for privacy from the perspectives of staff was better than that of patients. The lowest score given by patients and staff was related to the psychological dimension of respect for privacy. Despite the total favorable status of respect for privacy from the perspectives of patients and staff, taking the necessary strategies is required to improve the current status.

**Keywords:** *privacy, staff, patients, operating room*

### **Introduction**

Privacy is one of the basic human needs, and its maintenance is a fundamental principle of the psychological dimension [1-3]. The term "privacy" refers to parts of the body that, from an individual's perspective, should not be seen or touched by another individual and may also be anything personal that the individual does not

want others to know [4,5]. Privacy is also a very important concept in the field of nursing and medicine [6], which is very closely related to human personality, dignity, and honor [4]. Protecting the patient's dignity should be considered as an important part of any treatment and health care activity. The necessity to maintain patients' dignity and respect has been included in

most policy-making statements of healthcare institutions by health professionals [7]. Respect for patients' privacy is very important for establishing effective relationships and trust in patients and promoting their peace and satisfaction [1,8-10]. Also, the lack of respect for patient privacy increases the likelihood of anxiety, stress, arousal, and aggressive behaviors [11].

Burgeon (1982) and Leino-Kilpi (2001) have mentioned four physical, informational, psychological, and social dimensions for the concept of privacy [12,13]. Serenko and Fan (2013) have mentioned that patients' privacy consists of three dimensions, including physical, informational, and psychological dimensions [1].

The results of studies conducted in Iran regarding the privacy of patients undergoing surgery in the operating room indicate a moderate level of privacy [4,14,15]. According to the perspectives of patients reported in the studies in Iran, privacy has been evaluated from moderate to poor [3,4,11]. The results of a study by Noorian (2016) showed that from the perspectives of the majority of the operating room staff, privacy was respected moderately regarding physical and informational dimensions and poorly regarding the psychological dimension [4]. Zirak et al.'s (2011) study on physical dimension of privacy patients admitted to the general wards of two educational hospitals in Zanjan showed that in 70.3% of cases, the physical privacy of patients in different wards was respected. In this regard, the status of respect for privacy in Mousavi Subspecialty Hospital was better than that in Valiasr Hospital [16]. Studies on patient privacy from the view point of operating room staff in Iran hospitals showed that the patients' privacy is often well respected [3,14,15]. However, the results of two studies conducted in 2015 in the internal medicine and surgery wards of Birjand [17] and Mashhad [18] and one in 2017 in the emergency department of Tehran [19] showed a poor privacy.

Given the importance of respect for privacy by healthcare staff and the limited information about status of respect for patients' privacy in the operating room of Zanjan educational hospitals from the viewpoints of patients and the operating room staff, this study was performed aiming to determine the status of respect for privacy from the perspectives of patients and staff. This paper presents some of the results of a larger study on

respect for patients' privacy in the operating room from the perspective of the patient and staff. This paper presents some of the results of a larger project. The results of psychometrics of the study tool and the performance of the medical staff based on the observation checklist will be reported in future articles.

### **Methods**

This descriptive cross sectional study performed after obtaining the code of ethics (IR.ZUMS.REC.1397.181) from the ethics committee of Zanjan University of Medical Sciences and permission to perform the research from 15 June to 18 September 2019, in the operating room of the educational hospitals of Zanjan University of Medical Sciences.

The sample size consisted of 284 patients based on the results of a pilot study on 24 patients undergoing surgery ( $p=0.79$ ,  $d=0.06$ ,  $\alpha=0.05$ ), given a 15% drop out of 335 patients who had referred to operating rooms of educational and medical centers of Zanjan for elective and outpatient surgeries and were eligible for sample specifications were included in the study using the convenience sampling method. Patient characteristics for inclusion in the study involved the willingness to participate in the study, having between 12 and 70 years of age, being able to communicate verbally, and not having mental illnesses. Also, to assess the viewpoints of staff regarding respect for patients' privacy in the operating room, 212 operating room staff were included in the study using the convenience sampling method. The staff specifications included employment in the operating room at the time of study as a surgeon, anesthesiologist or anesthesia technician, nurse, or operating room technician.

After obtaining permission from the hospital authorities and informed consent from patients and staff, the viewpoints of patients were collected before discharge from the hospital by interview. The staff viewpoints were also collected using a questionnaire and a self-reporting method. The research tools in this study were the privacy questionnaire from the perspectives of patients (19 items) and staff (18 items) extracted from Serenko & Fan [1] and Noorian [4] patient privacy instrument, approved

with Cronbach's alpha coefficients of 0.92 for staff and 0.86 for patients.

The patient privacy questionnaire consisted of two parts. The first part was related to patient demographic information, including age, gender, education, marital status, place of residence, history of surgery, type of surgery, and type of anesthesia. The second part of the questionnaire included 19 questions in physical (13 items), informational (3 items), and psychological (3 items) dimensions. The questionnaire scoring was based on a 3-point Likert scale, including "always" (2 points), "sometimes/to some extent" (1 point), and "never" (0 points). In reverse questions, the scoring process was performed reversely. The range of scores for the patient questionnaire was 0-38, for the physical dimension was 0-26, and for informational and psychological dimensions was 0-6. The scores were classified into three ranges: Poor, moderate, and good. First, the scores were converted to percentages. A score of less than 33.5% was considered poor, a score between 33.5 and 67 was considered moderate, and a score of more than 67% was considered good.

The staff questionnaire also consisted of two parts. In the first part, demographic information included age, gender, marital status, occupational group, educational degree, employment status, and workplace and work experience. The second part with 18 questions was related to the privacy questionnaire from the perspectives of staff in physical (9 items), informational (5 items), and psychological (3 item) dimensions and 1 question was related to the overall attitudes of staff toward respect for patients' privacy. For scoring, a 3-point Likert scale was used, including "often to always" (2 points), "sometimes" (1 point), and "rarely or never" (0 points). The method to score reverse questions included 0 points for "always" and 2 points for "rarely/never". Also, the range of scores for the staff questionnaire was 0-36, for the physical dimension was 0-18, for the

informational dimension was 0-10, and for the psychological dimension was 0-6. The scores were classified into three ranges: Poor, moderate, and good. First, the scores were converted to percentages. A score of less than 33.5% was considered poor, a score between 33.5 and 67 was considered moderate, and a score of more than 67% was considered good. To analyze the data, SPSS software version 16 and the nonparametric Kruskal-Wallis and Mann-Whitney tests were used.

### Results

Out of 335 patients participating in this study 12 patients (3.6%) were excluded from the study due to early discharge, unfavorable condition of the patient, and postoperative forgetfulness. The results were provided based on the data obtained from 323 patients. The age range of patients was 10-69 years with a mean of  $38.5 \pm 14.22$ . Among the participants, 53.3% were female, 77.7% were married, 68.4% were undergraduates, and 69.3% lived in urban areas. In addition, 61.3% of participants had a history of previous surgery, 41.2% underwent general anesthesia and 58.8% had received spinal anesthesia/sedation/local anesthesia. Also, the highest percentage of surgeries in this study (47.4%) was related to gynecological and urological surgeries (Table 1). Of a total of 212 operating room staff, 8 did not participate in the study because of long leave or unwillingness to cooperate. The results were provided based on 204 (96.2%) completed questionnaires. The mean age and work experience of staff were  $35.71 \pm 9.87$  and  $10.4 \pm 8.67$  years, respectively. The majority of staff participating in this study involved individuals in the age group of 23-35 years, female, married, with a bachelor's degree, from the operating room, commitment to serve for the duration of study, and working in Mousavi Hospital (Table 1).

**Table 1: Frequency distribution of personal characteristics of patients and staff**

Patient Personal Variables		N(%)	Staff Personal Variables		N(%)
Age (year)	10-24	57(17.6)		<36	109(53.4)
	25-49	193(59.8)		36-45	59(28.9)
	50-69	73(22.6)		>45	36(17.6)
Gender	Male	151(46.7)	Male		82(40.2)
	Female	172(53.3)	Female		122(89.8)
Marital status	Single	72(22.3)	Single		47(23)
	Married	251(77.7)	Married		157(77)
Educational degree	Under diploma	22(68.4)	Associate		35(17.2)
	Diploma	56(17.3)	Bachelor		106(52)
	Associate and bachelor	39(12.1)	Master		3(1.5)
	Master and doctorate	7(2.2)	Doctorate and sub-specialist		60(29.4)
Hospital of surgery	Mousavi	242(74.9)	Workplace hospital	Mousavi	147(72.1)
	Valiasr	81(25.1)		Valiasr	57(27.9)
Type of Anesthesia	General	133(41.2)	Type of Job	Operating room technician/nurse	85(41.7)
	Spinal anesthesia	114(35.3)		Anesthesia technician	59(28.9)
	Sedative	69(21.4)		Surgeon and resident	50(24.5)
	Local anesthesia	7(2.2)		Anesthesiologist	10(4.9)
Type of surgery	Gynecological, urological	153(47.4)	Employment status	Definitive formal	48(23.5)
	Eye and ear, throat and nose	61(18.9)		Contractual formal	20(9.8)
	Other surgeries	109(33.7)		Company contract	7(3.4)
A history of previous surgery	Yes	198(61.3)		Commitment to serve for the duration of study	69(33.8)
	No	125(38.7)			
Place of residence	Urban	224(69.3)			
	Rural	99(30.7)			

The relative frequency distribution of patients' responses regarding total scores of respect for the privacy in the operating room was good (86.4%). The results indicated a good evaluation of participants in terms of physical (77.1%) and informational (72.8%) dimensions of respect for privacy. However, the majority of participants reported the psychological respect for privacy as

moderate (87.0%). The relative frequency distribution of the responses of staff regarding respect for patients' privacy in the operating room showed that the privacy of patients was well respected in terms of physical (89.7%), informational (95.1%), and psychological dimensions (71.1%), and the total privacy (94.1%) (Table 2).

**Table 2: Frequency distribution of the total privacy status and its dimensions from the perspectives of patients and staff**

Privacy Dimensions	Patient View points(%)			Staff View points (%)		
	Poor	Moderate	Good	Poor	Moderate	Good
Physical	0.3	22.6	77.1	0.5	9.8	89.7
Informational	3.1	24.1	72.8	0.5	4.4	95.1
Psychological	0.3	87	12.7	2	26.9	71.1
Total	-	13.6	86.4	0.5	5.4	94.1

The comparison of the mean and standard deviation of total privacy and its dimensions from the patients' perspective showed that the highest score was related to the informational dimension ( $88.75 \pm 17.39$ ), and the lowest score was related to

the psychological dimension ( $70.74 \pm 11.21$ ). From the staff viewpoints, the highest mean was related to the informational dimension ( $94.06 \pm 12.46$ ) and the lowest mean was related to the psychological dimension ( $44.92 \pm 17.12$ ) (Table 3).

**Table 3: Mean and standard deviation of the dimensions of privacy from the Perspectives of patients and staff**

Privacy Dimensions	Patient Viewpoints	Staff Viewpoints
	Mean $\pm$ SD	Mean $\pm$ SD
Physical	77.07 $\pm$ 77.01	89.60 $\pm$ 14.12
Informational	88.75 $\pm$ 17.39	94.06 $\pm$ 12.46
Psychological	70.74 $\pm$ 11.21	44.92 $\pm$ 17.12
Total	77.95 $\pm$ 10.52	90.05 $\pm$ 11.72

The comparison of patients' viewpoints regarding demographic variables (age, gender, education, marital status, place of residence, a previous history of surgery, type of surgery, and current anesthesia) showed that among the above variables, only education, place of residence, and a history of previous surgery were significantly different with some dimensions of privacy.

The results of the Kruskal-Wallis test showed a significant difference between different levels of education with the total privacy (KW=8.73,  $p=0.03$ ) and the informational dimension of privacy (KW=8.97,  $p=0.033$ ). The results of the post hoc test showed that the difference observed in the total privacy was related to the differences in the viewpoints of under-diploma participants with those having an associate's or bachelor's degree ( $p=0.01$ ), and in the informational dimension was related to under-diploma participants with those having a diploma ( $p=0.005$ ). In other words, from the perspectives of patients with under-diploma education, the rate of respect for privacy was higher in the informational dimension and the total privacy.

The results of the Mann-Whitney test regarding comparing the viewpoints of urban and rural

patients in the physical dimension, (Mw=9303,  $p=0.021$ ), the informational dimension (Mw=9342,  $p=0.007$ ), and the total score (Mw=8979,  $p=0.006$ ) were significant. The comparison of the mean total rankings of urban and rural patients showed that from the perspectives of rural patients, the rate of respect for privacy was higher in the mentioned dimensions.

The results of the Mann-Whitney test regarding comparing the viewpoints of patients with and without a history of surgery were significant in the informational dimension (Mw=9871,  $p=0.001$ ) and the total status (Mw=10487,  $p=0.02$ ). The comparison of the mean total rankings of patients with and without a history of surgery showed that from the perspectives of patients with a history of surgery, privacy was better respected in the informational dimension and the total status.

The comparison of staffs' viewpoints regarding demographic variables (age, gender, marital status, occupational group, educational degree, employment status, and workplace and work experience), showed that age, marital status, and the type of staff employment were significantly different with some dimensions of privacy. The

results of the Kruskal-Wallis test indicated the differences between the staff viewpoints in terms of age group and the total privacy status ( $K_w=12.18$ ,  $p=0.002$ ) as well as the physical ( $K_w=11.73$ ,  $p=0.003$ ) and psychological ( $K_w=8.27$ ,  $p=0.016$ ) dimensions. The comparison of the mean rankings in different age groups showed that the staff viewpoints in the age group of 36 years and above were better compared to that in the age group less than 36 years regarding respect for patients' privacy.

The results of the Mann-Whitney test showed the differences between the viewpoints of married and single staff regarding the psychological dimension of patients' privacy was significant ( $M_w=2931.5$ ,  $p=0.022$ ). Given the higher mean rankings of privacy in the psychological dimension of married staff (107.33) than that of single staff (86.37), it was concluded that the viewpoints of married staff regarding the rate of patients' privacy were better compared to that of single staff.

Also, the results of the Kruskal-Wallis test indicated the differences between the staff viewpoints regarding the employment status to the total score ( $K_w=8.45$ ,  $p=0.028$ ) and the physical dimension of privacy ( $K_w=9.07$ ,  $p=0.037$ ). The post hoc test showed that the observed differences were related to the differences in the viewpoints of definitive formal staffs compared to that of commitment to serve staffs. In other words, from the perspectives of formal staffs, the patients' privacy in the operating room was better respected in terms of total privacy and the physical dimension

### Discussion

In the present study conducted aiming to investigate respect for the privacy of patients undergoing surgery in educational hospitals in Zanjan-Iran, the results showed that from the perspectives of the majority of patients, respect for the total privacy and privacy in physical and informational dimensions was good and in the psychological dimension was moderate. From the perspectives of staff, the privacy of patients in the operating room was well respected.

The results of this study regarding patients' viewpoints on respect for privacy are consistent with the results of Zirak's (2015) study conducted in the general wards and operating rooms of

Mousavi and Valiasr educational hospitals in Zanjan [16] and Sarkheil's (2013) study in the intensive care units (ICUs) [20]. In Sarkhil's (2013) study, the majority of participants evaluated the rate of respect for psychological and social privacy as good [20], while as moderate in the present study. This difference may be due to the differences in the tools used in the two studies. In Sarkhil's study, psychological and social dimensions were separated, and the items of the psychological dimension emphasized the principle of empathy and sympathy of the treatment staff concerning patients, while the tools used in our study did not separate the social dimension and the emphasis of items in the psychological dimension was on selection and conscious decision-making. Our results were inconsistent with the results of studies conducted in the operating room by Noorian 2016 [4] and Mardani 2019 ([14]; in emergency units by Eyni et al. 2017 [19] and Harorani 2017 [11], Dehghani 2016 [21], Dehghan Nayeri 2010 [9]; in urology unit by Jafari Manesh 2014 [22]; general wards by Jahanpour 2014 [3]; medical and surgical wards by Salehi 2017 [18] in different parts of Iran and surgical clinics in Turkey [23]. Given the differences in the tools used in different studies to assess the privacy status, different results may be due to the differences in the number of items and how to classify the dimensions of privacy, how to score, or the differences in cultural sensitivity of people in different cities or countries, and the organizational culture of different places. Also, according to a study by Ama-Amadasun (2016) in Switzerland, 60% of patients believed that there was no sufficient confidentiality regarding their medical information [24]. Discrepancies in the results could be due to the patients' greater knowledge and awareness of their rights to privacy in European countries.

In the present study, also, rural populations were more satisfied with privacy compared to urban populations, which could be due to less awareness of privacy rights in rural than urban areas. (2014) study on determining the rate of privacy satisfaction of elderly patients admitted to Isfahan hospitals showed that 16.8% of patients evaluated the rate of respect for their privacy as good and 68.5% as moderate [25]. In Adib Hajbaghery's study, privacy was studied from the perspectives of the elderly patients, while the age range of

patients in the present study was 10 to 65 years, and only 22.6% of patients were in the age group of 46 years and higher. The higher age range seems to be more sensitive to their privacy and have a higher level of awareness.

The results of this study regarding the staff viewpoints are consistent with the results of the studies of Mardani (2019) [14], Rudi Rashtabadi (2014) [26], Bostani (2012) [27], and Akyuz (2013) (23). According to the results of Mardani's study, the mean score of satisfaction of the operating room staff with privacy was reported as  $30.6 \pm 7.52$ , which is considered at a good level due to the score range of privacy (16-32) [14]. The results of Mardani's study and the present research confirm the better viewpoints of staff than patients regarding respect for privacy.

The results of this study are in line with the results of AL-Bitawi & AL-Omari's (2013) study in Jordan, reporting that 55.5% of nurses always and 34.9% often protect patients' physical privacy. In their study, just 18.5% of the study nurses were always protecting the informational privacy, 21.9% usually, 26.5% rarely and 32.8% not at all [28]. However, in our study, 95.1% of the staff stated that they protected patients' privacy. According to Jordanian nurses, the cause of violation of patients' privacy in 36.5% of cases was the treatment team, and in 53.6% of cases were visits and patients' companions [26]. It is noteworthy that the tool used by Manal examined privacy from two physical and informational dimensions while, in the present study, privacy was examined from the perspectives of staff on three physical, informational, and psychological dimensions. In addition, AL-Bitawi & AL-Omari examined the viewpoints of staff in medical and surgical wards, while the field of study in the present research was the operating room [28]. In Noorian's (2016) study, the viewpoints of most operating room staff regarding the rate of respect for privacy showed that privacy in physical and informational dimensions was at a moderate level and in the psychological dimension was at a poor level [4], being inconsistent with our findings. This discrepancy may be due to differences in sample size and tools used in the studies, sensitivity and organizational culture in different part of Iran. In the present study, only two questions of the Noorian tool have been used and

the sample size of this study was 5 times the sample size in Noorian study.

In the study of Jahanpour and Rasti (2014), the rate of respect for the human territory and personal space from the perspectives of the majority of the nursing staff was moderate [3], which is not in line with our findings. The discrepancy in results could be due to the differences in field, organizational culture, cultural sensitivity, and the characteristics of the samples of the two studies. The studied staff in present study were from different occupational groups in the operating room, while in Jahanpour's study, only nursing staff were surveyed in general and emergency wards as well as the operating room. It seems that the lack of awareness of patients in the operating room makes staff less sensitive to the importance of respect for patients' privacy than nurses in general wards. Therefore, the operating room staff in the present study believed that patients' privacy in the operating room was respected very well. In our study, the rate of respect for privacy in physical and psychological dimensions as well as the total status was significantly related to the age of the staff. In the assessment of each dimension, it was found that from the perspectives of staff, privacy in the age range of 36-45 years was respected better than 23-25 years. In addition, it was better respected in the age range of 46-65 years than that in 36-45 years. Therefore, given the findings obtained, it can be confirmed that the rate of respect for privacy in physical and psychological dimensions as well as the total status is significantly associated with the age of the staff. This issue can be due to staying away from the university educational issues, normalization of working conditions in the operating room, the impact of the environment and other colleagues, lack of supervision over the performance of staff, and staff job security. Also, the rate of respect for privacy in the psychological dimension from the perspectives of staff was significantly related to the marital status of staff. From the perspectives of married staff, patients' privacy was better respected regarding the psychological dimension, which is consistent with the findings of Kim and Han (2017), showing that nurses' perception of the importance of privacy protection behaviors was significantly related to their marital status

[29]. Also, from the perspectives of staff, the rate of respect for privacy in the physical dimension, as well as the total status was significantly associated with the type of their employment contract. In the other words formal employees believed that the rate of privacy in the physical dimension and the total status were more respected. This finding is consistent with the findings of Kim and Han's (2017) study [29]. In their study, staff with a higher ranking or position had a higher understanding of protective behaviors regarding patient privacy. This finding may be due to the normalization of patients' conditions in the operating room due to the increase in work experience and stabilization of employees' employment status, so they reported better conditions than novice employees.

### Conclusion

The results of our study showed that according to the patients and the operating room staff in the educational hospitals of Zanjan University of Medical Sciences, privacy was respected at a good level. In this regard, the viewpoints of the operating room staff regarding respect for patients' privacy were better.

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### Conflict of interest

The authors declare that there is no conflict of interest.

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