

## Privacy Consciousness and Its Determinants Among Future Operating Room Professionals: A Cross-Sectional Study

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### RESEARCH ARTICLE

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### ABSTRACT

**Background:** Privacy is a fundamental ethical and legal principle in healthcare, especially in surgical settings where patients are physically and emotionally vulnerable. Ensuring privacy not only protects patient dignity but also enhances the quality of care and satisfaction. However, limited research has explored the privacy consciousness of future operating room professionals.

**Aim:** This study aimed to determine the levels of privacy consciousness among students enrolled in Anesthesia and Operating Room Services programs and to identify the factors influencing their awareness.

**Methods:** A descriptive and cross-sectional study was conducted at Burdur Mehmet Akif Ersoy University, Vocational School of Health Services, during the Spring semester of the 2024–2025 academic year. The sample included 178 second-year students who voluntarily participated. Data were collected using a Demographic Information Form and the Privacy Consciousness Scale (PCS), which assesses self-privacy, awareness of others' privacy, and privacy-maintaining behaviors. Data were analyzed using SPSS 24.0 with descriptive statistics, t-tests, ANOVA, and correlation analyses.

**Results:** Participants exhibited moderate to high levels of privacy consciousness ( $M = 3.9 \pm 0.4$ ). Female students and those with prior training on patient rights scored significantly higher ( $p < 0.05$ ). A positive correlation was observed between privacy scores and both age ( $r = 0.21$ ,  $p = 0.005$ ) and internship duration ( $r = 0.29$ ,  $p = 0.001$ ). No significant difference was found between program types.

**Conclusion:** The findings highlight the importance of privacy education and clinical experience in shaping ethical awareness among future surgical staff. Integrating structured privacy training into vocational health curricula is essential for promoting ethical, patient-centered care.

**Keywords:** clinical ethics, surgical ethics, patient rights, privacy consciousness, vocational health education,

### INTRODUCTION

The concept of privacy, originally derived from Arabic, refers to the sanctity, inviolability, and individuality of a person's private life. It constitutes a fundamental human right that ensures individuals feel secure and respected in all aspects of social interaction, particularly within healthcare environments (Lemonidou et al., 2003). The Turkish Language Association (2019) defines privacy as "confidentiality," emphasizing its personal, psychological, and cultural dimensions. In healthcare, privacy reflects respect for the individual's dignity, autonomy, and preferences, and is considered one of the core principles of patient rights (Demir, 2006; Heinrich and Gerhart, 2023).

The legal and ethical framework in modern healthcare mandates that medical professionals uphold and protect patients' right to privacy. This includes maintaining the confidentiality of patient information, restricted access during medical interventions, and ensuring that communication and treatment environments respect

personal boundaries (Capurro, 2005; Jacobson and Hoffman, 2003). Furthermore, institutional and national policies such as the Turkish Regulation of Patients' Rights codify privacy as a legal obligation, requiring healthcare providers to create environments that safeguard both physical and informational privacy (Öztürk et al, 2021; Avaner, 2018).

Despite advances in medical technology and an increased focus on patient safety, hospital settings often present challenges to maintaining privacy. These environments can limit individuals' control over their personal space, posing a significant risk to their sense of autonomy and dignity (Özata and Özer, 2016). The complexity of modern healthcare systems characterized by fast-paced interventions, interdisciplinary teams, and advanced technologies may lead to unintentional yet impactful breaches of privacy, especially in surgical settings where patients are most vulnerable.

Surgical interventions, defined as controlled trauma that alters

physiological function, are among the most frequently applied medical procedures (Heikkinen, Wickström, & Leino-Kilpi, 2006). These procedures often require patients to surrender control over their bodies, endure exposure, and undergo anesthesia- all of which compromise their privacy and can induce anxiety, fear, and stress (Bello et al., 2025; Akyüz and Erdemir, 2013). The transition of control to healthcare providers during the preoperative, intraoperative, and postoperative phases places the responsibility for safeguarding privacy squarely on healthcare professionals.

In operating rooms, nurses, anesthetic technicians, and surgical technicians interact most intimately with patients. As frontline professionals, they play a critical role in preserving dignity, protecting confidentiality, and ensuring a secure and respectful surgical environment (Leino-Kilpi et al., 2001; Lemonidou et al., 2003). However, a review of the literature reveals a notable scarcity of studies focusing on the attitudes, perceptions, and behaviors of surgical personnel regarding privacy. Most existing research centers on nursing perspectives or emphasizes only the physical aspects of privacy, neglecting its psychological, informational, and social dimensions (Heinrich and Gerhart, 2023; Öztürk et al., 2021).

Privacy encompasses far more than the physical space surrounding an individual. It includes the right to control access to personal information, thoughts, emotions, and the body. Concerns over exposure, bodily vulnerability, and unauthorized access to personal data in surgical environments contribute significantly to patient's emotional distress and potential loss of trust in the healthcare system (Giddens, 2010). These issues are further compounded in the operating room a complex, high-tech, and often impersonal setting where breaches in privacy may go unnoticed or unaddressed.

In recent years, there has been growing recognition of the need to strengthen privacy consciousness among healthcare professionals through targeted educational interventions. The Privacy Consciousness Scale (PCS), developed by Tabata and Hirotsune (2014), provides a validated tool for assessing individual awareness and sensitivity regarding privacy. Its Turkish adaptation and validation by Öztürk, Eyüboğlu, and Baykara (2019) confirmed its utility in healthcare education, particularly in training future healthcare professionals.

Given the unique nature of surgical environments, it is imperative that future operating room staff particularly students studying to become anesthetic and surgical technicians cultivate a strong awareness of privacy-related principles and ethical standards. Their perceptions and behaviors regarding privacy are shaped by educational experiences, clinical training, cultural background, and individual value systems. Understanding how these elements influence privacy consciousness is vital for improving patient satisfaction and trust, as well as overall care quality and safety.

This study aims to address this gap by examining the level of privacy consciousness among anesthetic and surgical technician students and identifying the personal, educational, and sociocultural factors that influence their attitudes. The findings are expected to inform curriculum development, guide ethical training programs, and contribute to building patient-centered and ethically robust surgical care environments.

## METHODS

### Aim and Design of the Study

This study was designed as a descriptive and cross-sectional study. The primary objective was to evaluate the levels of privacy consciousness among future operating room professionals specifically, students enrolled in anesthesiology and operating room technician programs and to identify factors that influence their privacy awareness.

### Study Setting and Sample

The study was conducted at Burdur Mehmet Akif Ersoy University, Burdur Vocational School of Health Services, during the Spring semester of the 2024–2025 academic year. The target population consisted of students enrolled in the Operating Room Services and Anesthesia Technician programs. Data collection occurred between April and May, 2025. A total of 178 second-year students who voluntarily agreed to participate constituted the study sample. Since the entire population was accessible, sampling calculation was not required, and the whole population was included in the study.

### Data Collection Tools

#### 1. Descriptive Characteristics Form

This researcher-designed form developed based on relevant literature, gathered socio-demographic and educational background information from the participants. It included items on age, gender, previous training in patient rights, and awareness of privacy-related topics.

#### 2. Privacy Consciousness Scale (PCS)

The Privacy Consciousness Scale (PCS) developed by Tabata and Hirotsune (2014), measure individuals' awareness of privacy. The Turkish version, validated by Öztürk, Eyüboğlu, and Baykara (2019), was used in this study. The scale comprises 11 items divided across three subdimensions:

Self-Privacy Consciousness (4 items): Behaviors to maintain one's own privacy.

Consciousness of Others' Privacy (4 items): Awareness and respect for others' privacy.

Behaviors for Maintaining Others' Privacy (3 items): Specific actions to preserving others' privacy.

The PCS uses a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). Items 5, 7, 8, and 9 are reverse-coded. The total score ranges from 11 to 55, with higher scores indicating greater privacy consciousness. Score interpretation in the Turkish context is as follows:

2.5 or below = Low privacy consciousness

2.5–3.5 = Moderate privacy consciousness

3.5–5 = High privacy consciousness

The scale's Cronbach's alpha reliability coefficient was 0.77 overall, with subscale values of 0.73 (Self-Privacy), 0.74 (Others' Privacy), and 0.70 (Behaviors to Maintain Privacy) (Öztürk et al., 2019).

### Data Collection Procedure

Data were collected via face-to-face interviews conducted by the researchers using a structured questionnaire. Participants completed the survey in their classrooms under supervision.

Each survey took approximately 10–15 minutes to complete. Participation was voluntary, and informed consent was obtained before administration.

Data Analysis

The data were analyzed using the SPSS version 24.0. Descriptive statistics, including frequencies and percentages for categorical variables, and means with standard deviations for continuous variables, were calculated. The Kolmogorov-Smirnov test was used to assess the normality of distributions. To compare two independent groups, the Independent Samples t-test was employed. One-Way ANOVA with Bonferroni post-hoc tests were applied for comparisons involving more than two groups. All analyses were conducted at a 95% confidence level, and statistical significance was set at  $p < 0.05$ .

Ethical Considerations

This study was conducted in accordance with the ethical standards outlined in the Declaration of Helsinki and was approved by the Ethics Committee of Burdur Mehmet Akif Ersoy University. Ethical approval was obtained under protocol ID GÖ2025/1360 on April 16, 2025. All participants were informed of the study’s purpose, and written informed consent was obtained before data collection. Participation was voluntary, and students were assured of their right to withdraw at any time without penalty. Data confidentiality and anonymity were maintained throughout the study process.

RESULTS

A total of 178 students participated in the study (Table 1). Of these, 72% ( $n = 128$ ) were female, and 57.9% ( $n = 103$ ) had received education on patient rights. Participants were enrolled in either the Anesthesia Program (52.8%) or the Operating Room Services Program (47.2%). The mean age of participants was 20.6 years ( $SD = 1.2$ ).

Table 1. Descriptive Characteristics of Participants ( $n = 178$ )

Variable	n (%)
Gender (Female)	128 (72.0%)
Received Patient Rights Training (Yes)	103 (57.9%)
Program (Anesthesia)	94 (52.8%)
Program (OR Services)	84 (47.2%)
Age (Mean $\pm$ SD)	20.6 $\pm$ 1.2

Privacy Consciousness Scale Scores

The mean scores and standard deviations for the Privacy Consciousness Scale and its subdimensions are shown below (Table 2). The overall mean score was  $3.9 \pm 0.4$ , indicating a high level of privacy consciousness among participants. The highest subscale score was observed in Self-Privacy Consciousness (Mean =  $4.1 \pm 0.5$ ).

Comparison of Demographic Characteristics with Privacy Scores

Significant differences in total privacy consciousness scores were observed based on by gender and patient rights training ( $p < 0.05$ ) (Table 3). Female students had

significantly higher scores ( $p = 0.033$ ), as did students who had received patient rights education ( $p = 0.003$ ). No statistically significant difference was found between the Anesthesia and Operating Room Services programs ( $p = 0.591$ ).

Table 2. Participants’ Privacy Consciousness Scale Scores ( $n = 178$ )

Subscale	Mean	SD	Min	Max
Self-Privacy Consciousness	4.1	0.5	2.8	5.0
Consciousness of Others’ Privacy	3.7	0.6	2.4	5.0
Behaviors for Maintaining Privacy	3.8	0.5	2.5	5.0
Total Score	3.9	0.4	3.0	5.0

Correlation Between Age, Internship Duration, and Privacy Scores

A statistically significant positive correlation was identified between age and total privacy scores ( $r = 0.21$ ,  $p = 0.005$ ), as well as between internship duration and total privacy scores ( $r = 0.29$ ,  $p = 0.001$ ). These findings suggest that older age and longer clinical exposure are associated with higher levels of privacy consciousness. (Table 4).

DISCUSSION

This study aimed to assess the level of privacy consciousness among students in the Anesthesia and Operating Room Services programs and to determine the demographic and educational factors influencing their awareness. The findings revealed an overall high level of privacy consciousness among participants, with significant associations between privacy awareness and, gender, patient rights training, age, and internship duration.

Gender and Privacy Awareness

Female students demonstrated significantly higher privacy consciousness scores compared to male students. This finding aligns with previous research suggested that women in healthcare setting often exhibit greater empathy and attentiveness to patient-centered principles, including privacy (Lemonidou et al., 2003). Differences in communication styles and caregiving behaviors may explain the heightened sensitivity of female students toward maintaining patient dignity and confidentiality.

The Role of Education and Training

One of the most notable outcomes of this study was the positive effect of patient rights training on privacy awareness. Students who had received training scored significantly higher across all subdimensions of the Privacy Consciousness Scale. This supports the notion that structured educational interventions enhance ethical sensitivity and awareness in healthcare students (Guraya et al., 2025). Interprofessional education (IPE) programs, that incorporate professionalism, patient safety, and privacy topics have been found to improve students' ethical conduct and quality care.

Moreover, the use of validated tools like the Privacy Consciousness Scale provides an evidence-based approach to measure awareness and inform curriculum development. Prior studies, such as those by Öztürk et al. (2019), have also underscored the value of this scale in evaluating the outcomes ethical training.

The significant positive correlations between age, internship duration, and privacy scores suggest that both maturity and clinical experience contribute to enhanced privacy consciousness.

As students gain more exposure to real-world healthcare environments, they encounter diverse patient situations that demand a nuanced understanding of privacy. This aligns with the findings of Tabata and Hirotsune (2014) who argued that ethical reflection and behaviors improve with practical clinical engagement.

**Table 3.** Comparison of Demographic Characteristics and Privacy Scores (n = 178)

Variable	Group	Mean ± SD	Test (t/F)	p-value
Gender	Female/	3.95 ± 0.40,	t = 2.15	0.033
	Male	3.81 ± 0.42		
Patient Rights	Yes/No	4.02 ± 0.35,	t = 3.01	0.003
		3.78 ± 0.45		
Program	Anesthesia/	3.88 ± 0.38,	t = -0.54	0.591
	OR Services	3.91 ± 0.41		

Educational Program Differences

Although no significant difference was observed between students from the Anesthesia and Operating Room Services programs, the generally high levels of awareness across both groups indicate a solid intuitional emphasis on ethics education. Nonetheless, this similarity also highlights an opportunity to further tailor ethical training to the unique responsibilities and challenges of each discipline. Ethical issues frequently encountered in surgical settings such as bodily exposure, anesthesia-induced unconsciousness, and crowded operating rooms require targeted training. Previous studies (e.g., Gkiolnta et al., 2025) emphasize the value of simulation-based modules and case-based discussions to prepare students for such privacy-related challenges.

**Table 4.** Correlation of Age and Internship Duration with Privacy Scores (n = 178)

Variable	r	p-value
Age	0.21	0.005
Internship Duration (weeks)	0.29	0.001

Implications for Practice

High privacy consciousness among healthcare students is critical for ensuring ethical patient care, minimizing psychological distress, and promoting treatment success. Given the evidence can be shaped through targeted education, institutions should integrate privacy-focused content early and consistently across healthcare curricula. Educational strategies should include not only theoretical instruction but also experiential methods such as role-play, ethical dilemmas, and supervised clinical training (Guraya et al., 2025). Furthermore, institutional policies must support ethical practice through clinical mentorship and by fostering a culture of accountability and respect. In high-risk environments like operating rooms, ethical vigilance should be a standard expectation rather than an optional competency.

Limitations and Future Directions

Although the findings are robust, they are limited by the single-institution scope and the use of self-report

measures, which may be subject to social desirability bias. Future studies should incorporate longitudinal designs and multi-institutional samples to enhance generalizability. Moreover, qualitative methods could provide deeper insight into how students interpret and apply privacy principles in real clinical settings.

CONCLUSION

This study revealed that students in the Anesthesia and Operating Room Services programs possess moderate to high levels of privacy consciousness. Significant differences were observed based on gender, patient rights education, age, and internship experience. Students who were female, older, and had received training or clinical exposure showed greater awareness. The findings emphasize the essential role of ethical education and practical training in cultivating privacy consciousness among future surgical professionals. Integrating comprehensive privacy education into vocational health curricula is not only beneficial but necessary to protect patient dignity, enhance trust, and improve the overall quality of care.

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