Original Article

The Relationship between the Awareness of Privacy, Registration and Preservation of Personal Health Data Attitude of Nursing Students: A Cross-Sectional Study

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Abstract
Aim: Purpose of this study is to inquire the relationship between awareness of privacy and registration and preservation of personal health data attitude of nursing students.
Methods: This study was cross-sectional design. The study sample consisted of 378 fourth graders of the school of nursing of a university. "Registration and Preservation of Personal Health Data Attitude Scale for Nursing Students (RPPHDASNS)" and "Privacy Awareness Scale (PAS)" were used in data collection.
Results: It was determined that the level of privacy awareness of the students participating in the study was 4, and the level of registration and preservation of personal health data attitude was 4.1. It was determined that the mean scores of privacy awareness and the Registration and Preservation of personal health data attitude of female students were statistically significantly higher than that of males. A statistically positive and moderately significant relationship was found between privacy awareness of the students and their mean scores on the Registration and Preservation of personal health data awareness.
Conclusion: In this study, it was determined that the privacy awareness of nursing students and their Registration and Preservation of personal data awareness is high and the attitude towards Registration and Preservation of personal data increases as the privacy awareness of the students increases.
Implications for nursing and health policy: The subject of patient privacy must be kept current in theoretical education and clinical applications to ensure continued positive perception of privacy by students. Policies should be determined to protect and store this information and students should be informed about these laws.

Keywords: Nursing students, personal data, personal health data, privacy awareness

Introduction

Privacy and confidentiality, have been the two main pillars of medical ethics since Classical Antiquity even though they have not always been expressed in such terms (Higgins, 1989). Whatsoever I shall see or hear in the course of my profession. I will never divulge, holding such things to be holy secrets (Jones, 1868). Confidentiality in healthcare refers to the obligation of professionals who have access to patient records or communications to keep this information confidential. This concept of

confidentiality that dates back to the 4th century BC and the Hippocratic Oath, is based on the patient-caregiver relationship and forms the basis of confidentiality principles of medical professionals (Dana, 2016).

Confidentiality and privacy among ethical concepts are important basic properties of medical practices (Jones, 2003). Privacy expresses control exerted by individuals over the extent to which, when and under what circumstances they may share details of their physical, behavioral or intellectual life with others and restrict access of others to their personal information (Columbia Center for Teaching and Learning, 2020). Confidentiality is an extension of privacy and mainly refers to protection of information, especially sensitive clinical data. This refers to confidential communication or agreement between healthcare providers and patients and separates from privacy (Prater, 2014).

Unlike confidentiality, privacy is accepted as patients' right to be left alone and decide how their personal information would be shared (Brodnik, 2017). Respecting the confidentiality of patient information in medical practices is a fundamental ethical principle. Confidentiality is a guarantee of ensuring privacy of patients (Vigod et al., 2003). From an ethical point of view, sharing information of patients without their consent is a violation of their autonomy. Such behavior by a member of the healthcare team is ethically unacceptable even if the patient never learns about the case or suffers any harm (Singer & Viens, 2013).

Protection of personal data comes about as an important problem in all areas of life. Personal data is an ambiguous and controversial concept which does not have clear boundaries and can be defined as any information that identifies the individual (Dulger, 2010). Protection of personal data has relatively found more place for itself on the agenda with the use of developing technology and has been associated with the use of technology. On the basis of associating protection of personal data with technology, there is storing data in one place in bulk, easier distribution and dissemination of the stored data, and the fact that there is no need for physical distance in data management which brings to the fore security concerns about data. While protection of personal data is mostly associated with technology today, privacy is one of the basic concepts of medical ethics, that took place in oaths before the intensive use of technology (Zigdon et al., 2020; Beck et al., 2016; Bietz et al., 2016; Izgi et al., 2013; Weitzman et al., 2010).

Nursing is a profession which has the property of learning, registering, and sharing health data of patients. Nurses have ethical responsibilities such as protecting the confidentiality of the information they have obtained about their patients, not sharing them with third parties, not disclosing and not giving them to others. It is very important to determine the attitudes of nursing students towards Registration and Preservation of personal health data and to improve their knowledge and awareness levels. It is noted that most of the nursing students receive training on the protection of patient privacy in schools or hospitals, but these trainings are brief and the training content is not specific. It was stated that the students may encounter various patient groups and the brief trainings given may be insufficient in displaying the correct approaches (Kim et al., 2013).

Aim of the study: This study is to investigate the relationship between privacy awareness of nursing students and their Registration and Preservation of personal health data attitudes.

Methods

Research design, sample and setting in research: This study was cross-sectional design. The study was conducted with nursing students studying at the faculty of nursing at a state university in the south of Turkey. The sample of the study consisted of 378 students who volunteered to participate in the study. Inclusion criteria for the study are all grades, actively continuing students. Students who did not come to the school on the dates of the study, who had medical reports and did not volunteer, were excluded from the study.

Data collection and measurement: The study was conducted between October and December 2019. Data was collected between the given dates, in face-to-face meetings. In the dates of the study, the questionnaire was distributed to students in every grade personally by the authors. The time required

to fill out the questionnaire was about 10-15 minutes. Questionnaires were collected from students by the authors at the end of the given time. In the collection of data Personal Information Form, Registration and Preservation of Personal Health Data Attitude Scale for Nursing Students (RPPHDASNS) and Privacy Awareness Scale (PAS) were used. Personal Information Form is a form with seven questions on age, sex, grade, like for the department, hearing about the concept of personal data, and hearing about the concept of personal health data. Registration and Preservation of Personal Health Data Attitude Scale for Nursing Students (RPPHDASNS) was developed by Gozmener and colleagues (2019) to determine attitudes of nursing students on Registration and Preservation of personal health data. The scale has 31 items and five sub-dimensions. The sub-dimensions of the scale are "personal health data information", "legal information", "legal sharing of data", "sharing of personal health data", and "personal health data record". This 5-point Likert-type scale is graded between "1" absolutely do not agree and "5" absolutely agree. The scale is calculated by dividing the total score to the number of items. Breakpoint of the scale was determined to be 3. Receiving average score on the scale below 3 shows negative attitude while 3 and higher shows positive attitude. Negative attitude demonstrates that students have low awareness regarding Registration and Preservation of personal data while positive attitude demonstrates that students have high awareness regarding Registration and Preservation of personal data. Cronbach alpha coefficient of the scale was announced to be 0.94 by Gozmener et al.(2019). In this study the Cronbach alpha coefficient of the scale was found to be 0.89.

Privacy Awareness Scale (PAS) was developed by Tabata and Hirotsune (2014) in Japan to measure privacy awareness. Turkish validity and reliability of the scale was conducted by Ozturk and colleagues (2019). The scale consists of 11 items and three sub-dimensions. The sub-dimensions of the scale are "privacy awareness for the self /behaviors to maintain privacy for the self", and "privacy awareness for others", "behaviors to maintain the privacy of others". The 5-point Likert scale is graded between "1" strongly disagree and "5" strongly agree. There are reverse scored items in the scale. These are items 1, 3, 5, 7, 8, and 9. Calculation is made by adding the total and sub-dimension scores of the scale and taking their average. The highest score that can be received from the scale is 55, and the lowest score is 11 while a score of "2.5 and lower" indicates low, a score between "2.5-3.5" indicates a medium and a score between "3.5-5" indicates a high level of privacy awareness. As the score received from the scale increases, it indicates that privacy awareness increases positively. The Cronbach alpha coefficient of the scale was reported as 0.77 by Ozturk and colleagues (2019). The Cronbach's alpha coefficient of the scale was found to be 0.79 in this study.

Ethical considerations: This research was conducted in accordance with the principles of the Declaration of Helsinki. Data collection process to conduct the study was started after the ethics committee approval (dated 11.12.2019, decision No: 1187) was received from the clinical research ethics committee of the university where the study was conducted and the institution granted permission. On the data collection form, the purpose and benefits of the research were explained to the students, the principle of volunteering was underlined and verbal consent of the students was obtained. Participants filled out the forms anonymously.

Data analysis: SPSS 23 package program was used in the analysis of the data. Number, percentage, mean, standard deviation, Kruskal Wallis analysis, Mann-Whitney U test and Sperman correlation analyzes were used to assess the data. Statistical significance value was determined as $p < 0.05$.

Results

Sociodemographic characteristics

It was determined that the mean age of the students participating in the study was 20.02 ± 1.45 and 74.6% of them were women. When distribution of students according to grades are considered, freshmen students were 31%, sophomore students were 23%, junior students were 29.4%, and senior students were 16.7%. It was determined that 53.2% of the students willingly preferred studying at the department and 72.8% were satisfied with

the department. In addition, it was determined that 48.9% of the students knew the concept of personal data and 48.1% knew the concept of personal health data (Table 1). It was determined that the total score average students received from personal health data Registration and Preservation scale was "4.1", and the total score average they received from the privacy awareness scale was "4" (Table 2).

Univariate analysis findings of the privacy awareness and Registration and Preservation of personal health data awareness mean scores

Sociodemographic characteristics of the students and the mean scores of the privacy awareness scale and its sub-dimensions are presented in Table 3. There was no statistically significant difference between the total mean scores of the privacy awareness scale according to the students' grades, satisfaction with the department, and knowing the concept of personal data and personal health data. According to the sex of the students, a statistically significant difference was found between the total mean scores of the privacy scale ($p < 0.01$), the awareness of privacy for oneself ($p < 0.01$), and the awareness of privacy for others ($p < 0.05$). It was determined that the mean score of the privacy awareness scale of female students was statistically higher than that of male students. It was determined that the students who knew the concept of personal data and personal health data had a statistically significant higher mean score of their own privacy awareness and behavior of maintaining the privacy of others ($p < 0.05$).

Sociodemographic characteristics of the students and the mean scores of the scale and sub-dimensions of registration and preservation of personal health data attitude are presented in Table 4. No statistically significant difference was found between the total and sub-dimensions mean scores of the scale of registration and preservation of personal health data attitude according to the students' grades and their knowing the concept of personal data ($p > 0.05$). A statistically significant difference was found between total scores, personal health data information and legal information mean scores according to sex and satisfaction with the department. It was determined that the registration and preservation of personal health data attitude scores of female students and students who were satisfied with the department were statistically significantly higher than those of male students and students who were not satisfied with the department ($p < 0.05$). It was determined that the total, legal data sharing and personal health data record mean scores of the students who knew the concept of personal health data were statistically significantly higher than those who did not know ($p < 0.05$).

Relationship between privacy awareness scale and registration and preservation of personal health data attitude mean scores

The relationship between mean scores students received from privacy awareness and their registration and preservation of personal health data attitude scale is shown in Table 5. There was a statistically positive, moderately significant relationship ($p < 0.01$) between the total score students received on the privacy awareness scale and the total, legal information, legal data sharing mean score on the registration and protection of personal health data attitude scale ($p < 0.01$), while there was a positive significant relationship at low level between the mean scores of personal health data information and personal health data sharing ($p < 0.05$). There was a statistically positive and moderately significant relationship ($p < 0.01$) between the mean score students received from own privacy awareness and the total, personal health data knowledge, legal information, legal data sharing mean scores of the registration and preservation of personal health data attitude scale while there was a positive significant relationship at low level between personal health data sharing mean scores ($p < 0.05$). There is a statistically positive and significant relationship at low level between the mean score students received from privacy awareness for others and total, personal health data knowledge, legal data, legal data sharing, personal health data sharing mean scores of registration and preservation of personal health data attitude scale ($p < 0.05$).

Table 1. Sociodemographic characteristics of student nurses

Sociodemographic Characteristics	n	%
Age (Mean±SD)	20.02±1.45	
Sex		
Women	282	74.6
Men	96	25.4
Grade		
Freshman	117	31.0
Sophomore	87	23.0
Junior	111	29.4
Senior	63	16.6
Preference of the Department		
Willing	201	53.2
Unwilling	177	46.8
Satisfaction With the Department		
Satisfied	275	72.8
Not Satisfied	103	27.2
Knowing the Concept of Personal Data		
Yes	185	48.9
No	193	51.1
Knowing the Concept of Personal Health Data		
Yes	182	48.1
No	196	51.9
Total	378	100.0

Table 2. Total and sub-dimension mean scores students received from registration and preservation of personal health data attitude scale (RPPHDAS) and privacy awareness scale (PAS)

Scale and Sub-Dimensions	Median	**Min.-Max.**
Personal Health Data Information	4	2-5
Legal Information	4.4	1.6-5
Sharing of Legal Information	4.4	1-5
Sharing of Personal Health Data	4	2-5
Personal Health Data Record	4	1.3-5
Total Score	4.1	2-5
Privacy Awareness Scale		
Privacy Awareness for the Self	4.75	1-5
Privacy Awareness for Others	4	1.7-5
Behaviors to Maintain the Privacy of Others	3.6	1-5
Total Score	4	1.7-4.6

Table 3. Privacy awareness scale total and sub-dimension mean scores based on sociodemographic characteristics of students

Sociodemographic characteristics	**Privacy awareness scale and sub-dimensions**							
	Total		**Privacy Awareness for the Self**		**Privacy Awareness for Others**		**Behaviors to Maintain the Privacy of Others**	
	Median (Min-Max)	Test	Median (Min-Max)	Test	Median (Min-Max)	Test	Median (Min-Max)	Test
Sex								
Women	4.09 (1.7-4.6)	U=10090.5 z=-3.748 **p=0.000****	4.75 (1-5)	U=10286 z=-3.696 **p=0.000****	4 (2-5)	U=10679.5 z=-3.271 **p=0.001***	3.6 (1-5)	U=13439 z=-0.108 p=0.914
Men	3.90 (2-4.6)		4.5 (1.5-5)		3.75 (1.7-5)		3.6 (1-5)	
Grade								
Freshman	4 (1.7-4.6)	KW=1.157 p= 0.763	4.75 (1-5)	KW=1.815 p= 0.612	4 (1.7-4.2)	KW=0.711 p= 0.871	3.6 (1-5)	KW=3.803 p= 0.284
Sophomore	4 (2.6-4.6)		4.75 (1-5)		4 (2-5)		3.6 (1-5)	
Junior	4 (2-4.6)		4.75 (1-5)		4 (2-5)		3.6 (1-5)	
Senior	4.09 (2.6-4.4)		5 (2-5)		3.75 (2-4.2)		3.6 (1-5)	
Satisfaction with the Department								

Yes	4.09 (1.7-4.6)	U=12943 z=-1.297 p=0.195	4.75 (1-5)	U=12605.5 z=-1.731 p=0.083	4 (1.75-5)	U=13293 z=-0.973 p=0.330	3.66 (1-5)	U=13680.5 z=-0.523 p=0.601
No	4 (2-4.6)		4.75 (1.5-5)		4 (2-4.2)		3.66 (1-5)	
Knowing the Concept of Personal Data								
Yes	4 (1.7-4.6)	U=17085 z=-0.727 p=0.467	4.75 (1-5)	U=15631.5 z=-2.199 **p=0.028***	4 (1.7-5)	U=16516.5 z=-1.332 p=0.183	3.66 (1-5)	U=15764 z=-2.017 **p=0.044***
No	4.09 (1.7-4.6)		4.5 (1-5)		4 (2-5)		3.5 (1-5)	
Knowing the Concept of Personal Health Data								
Yes	4 (1.7-4.6)	U=16789 z=-0.992 p=0.321	5 (1-5)	U=15368.5 z=-1.334 **p=0.015***	4 (2-4.2)	U=16498.5 z=-1.334 p=0.182	3.6 (1-5)	U=14606 z=-3.121 **p=0.002***
No	4 (1.7-4.6)		4.75 (1-5)		4 (1.7-5)		3.5 (1-5)	

Abbreviations: *p<0.05 ; **p<0.01; U, Mann-Whitney U test; KW, Kruskal Wallis analysis

Table 4. Registration and preservation of personal health data attitude scale total and sub-dimension mean scores based on sociodemographic characteristics of students

Sociodemographic characteristics	Record and protection of personal health data attitude scale and sub-dimensions											
	Total		Personal Health Data Information		Legal Information		Sharing of Legal Information		Sharing of Personal Health Data		Personal Health Data Record	
	Median (Min-Max)	Test	Median (Min-Max)	Test	Median (Min-Max)	Test	Median (Min-Max)	Test	Median (Min-Max)	Test	Median (Min-Max)	Test
Sex												
Women	4.1 (2.1-5)	U=10747 z=-3.017 **p=0.003***	4.08 (2-5)	U=10791.5 z=-2.972 **p=0.003***	4.42 (1.57-5)	U=10248 z=-3.583 **p=0.000****	4.4 (1-5)	U=12072.5 z=-1.608 p=0.108	4 (2-5)	U=12949.0 z=-0.640 p=0.522	4 (1.6-5)	U=12159.5 z=-1.504 p=0.132
Men	3.9 (2-5)		3.87 (2-5)		4.28 (2-5)		4.4 (1-5)		4 (2-5)		3.6 (1.3-5)	
Grade												
Freshman	4.09 (2.29-5)	KW=3.530 p=0.317	4 (2.5-5)	KW=4.857 p= 0.183	4.42 (1.57-5)	KW=4.734 p=0.192	4.2 (1-5)	KW=0.639 p= 0.887	4 (2-5)	KW=2.411 p=0.492	4.09 (2.29)	KW=1.948 p= 0.583
Sophomore	3.96 (2.5-5)		3.91 (2.25-5)		4.28 (2.1-5)		4.4 (2-5)		3.75 (2-5)		3.96 (2.52-5)	
Junior	4.06 (2-5)		3.91 (2-5)		4.28 (2-5)		4.4 (1.6-5)		3.75 (2-5)		4.06 (2-5)	
Senior	4.22 (2.7-5)		4.1 (2.25-5)		4.42 (2.7-5)		4.4 (2.2-5)		4 (2.75-5)		4.22 (2.77-5)	

Satisfaction with the Department												
Yes	4.1 (2.8-5)	U=10966 z=-3.381 **p=0.001***	4.08 (2.2-5)	U=12062.5 z=-2.223 **p=0.026***	4.42 (2-5)	U=10872 z=-3.505 **p=0.000****	4.6 (1-5)	U=10990.5 z=-3.408 **p=0.001***	4 (2-5)	U=12687.0 z=-1.573 p=0.116	4 (1.3-5)	U=11947 z=-2.367 **p=0.018***
No	3.87 (2-5)		3.83 (2-5)		4.14 (1.5-5)		4.2 (1.2-5)		3.75 (2-5)		3.6 (1.6-5)	
Knowing the Concept of Personal Data												
Yes	4.12 (2-5)	U=17101 z=-0.708 p=0.479	4 (2-5)	U=17528 z=-0.306 p=0.760	4.4 (2-5)	U=16611.5 z=-1.178 p=0.239	4.4 (1.4-5)	U=17621 z=-0.222 p=0.825	3.7 (2-5)	U=16772.5 z=-1.026 p=0.305	4 (1.6-5)	U=17470 z=-0.364 p=0.716
No	4.06 (2-5)		4 (2-5)		4.4 (1.5-5)		4.4 (1-5)		4 (2-5)		3.6 (1.3-5)	
Knowing the Concept of Personal Health Data												
Yes	4.16 (2-5)	U=15672 z=-2.039	4.08 (2-5)	**U**=16019.5 z=-1.714	4.42 (1.57-5)	U=16601.5 z=-1.172	4.6 (1.4-5)	U=15713.5 z=-2.032	4 (2-5)	U=16890.5 z=-0.898	4 (1.3-5)	U=15088 z=-2.616
No	4.03 (2.1-5)	**p=0.041***	4 (2-5)	p=0.087	4.42 (2.1-5)	p=0.241	4.20 (1-5)	**p=0.042***	4 (2-5)	p=0.369	3.6 (1.6-5)	**p=0,009***

Abbreviations: *p<0.05 ; **p<0.01; U, Mann-Whitney U test; KW, Kruskal Wallis analysis

Table 5. Relationship between registration and preservation of the personal health data attitude scale and privacy awareness scale sub-dimensions mean scores

Scale and sub-dimensions	**Privacy awareness scale and sub-dimensions**							
Registration and preservation of the personal health data attitude scale and sub-dimensions	Total		Privacy Awareness for the Self		Privacy Awareness for Others		Behaviors to Maintain the Privacy of Others	
	r	p	r	p	r	p	r	p
Total	0.321	**0.000****	0.411	**0.000****	0.237	**0.000****	0.083	0.105
Personal Health Data Information	0.293	**0.000****	0.390	**0.000****	0.220	**0.000****	0.050	0.328
Legal Information	0.323	**0.000****	0.405	**0.000****	0.239	**0.000****	0.091	0.076
Sharing of Legal Information	0.349	**0.000****	0.385	**0.000****	0.279	**0.000****	0.139	**0.007****
Sharing of Personal Health Data	0.158	**0.002****	0.237	**0.000****	0.102	**0.049***	0.047	0.366
Personal Health Data Record	0.101	0.051	0.195	**0.000****	0.046	0.370	-0,009	0.866

Abbreviations:** Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed). r, Sperman correlation analyzes

Discussion

In this study it was established that students have high privacy awareness and awareness of registration and preservation personal data. In this study assessing the relationship between privacy awareness of nursing students and protection of personal health data attitude, findings are discussed with the relevant literature.

In the study it was found that nursing students have high privacy awareness. In the study conducted by Ozen Cinar and Dagli (2020), the authors found privacy awareness and all sub-dimension mean scores of nursing students to be high. In the study by Buldan and Arslan (2021) total mean score of nursing students on Privacy Awareness Scale was found to be moderate, high at awareness of privacy for oneself sub-dimension, and low at behaviors to maintain privacy for others sub-dimension. Kizilcik Ozkan and colleagues (2020) declared in their study that nursing students had positive perception towards patient privacy. In the study conducted by Er and colleagues (2014) at five nursing schools on patient rights, student believed that there were appropriate attitudes and behaviors in our country such as protecting patient privacy and health records, informing patients and explaining facts.

In the qualitative study by Shafakhah and colleagues (2018) a nursing student mentioned considering disclosure of patient information as betrayal, and another nursing student stated struggling to protect her patient's bodily privacy in the operating room. In study by Lee (2017) it was determined that student nurses care about protection of information confidentiality. Studies on the importance ascribed by nursing students to professional values (Lin et al., 2016; Nelwati et al., 2019; Poorchangizi et al., 2019) determined that the most important issues among nursing students' professional values are ensuring patient privacy and protecting patient confidentiality. In the study conducted by Kim and Kyung (2018) on the perception of patient rights by nursing students, it was found that student nurses have high perceptions of patient privacy and confidentiality. In line with the findings obtained in studies, it could be argued that nursing students generally care about patient privacy and confidentiality.

Levels of privacy awareness, privacy awareness for oneself, and privacy awareness for others of female students participated in the study was found to be higher than that of male students. In a study it was declared that privacy perception of female students was higher than male students (Ozen Cinar & Dagli, 2021). In the study by Buldan and Arslan (2021) level of privacy awareness for oneself and level of total privacy awareness of female students was found to be higher than that of male students. In the literature there are studies that declare privacy perception is not affected by sex factor (Kizilcik Ozkan et al., 2020; Aktan et al., 2019). In the study, the fact that privacy awareness of female students was higher suggests that they were affected by the privacy education given to girls starting from the family, the roles and responsibilities they undertake in the social environment they live in, and the individual values they formed within the framework of cultural values.

Among the students who participated in the study, it was found that those who knew the concept of personal data and personal health data had a significant difference in PAS sub-dimensions of privacy awareness for oneself and behavior of maintaining the privacy of others. This result suggests that the student, who knows the importance of the concept of personal data and personal health data, can perform behaviors that would maintain the awareness of privacy more effectively in nursing care practices.

In the study mean scores of students on Registration and Preservation of personal health data was found to be high. In the study by Buyuk and Baydin (2020) total mean score of RPPHDASNS (130.28 ± 17.38) was found to be high. In studies total mean score students received from "Registration and Preservation of Health Data Attitude Scale for Nursing Students" was found to be above average (Pakis Cetin & Cevik, 2021; Maras & Ceyhan, 2021).

In the study conducted by Yildiz and Atasoy (2016) students were determined to have a high level of information security awareness.

In a study on awareness of students on personal health data, it was stated that sufficient awareness on personal health data was highest at nurses (49%), nurses were responsible for registering (81%) and maintaining (76%) personal health data (Adiguzel & Aydin, 2016). In a study conducted with nurses, one in every five nurses mentioned that privacy of patients on their private life and personal information and health status were violated (Ozturk et al., 2019). In this study it could be noted that students developed positive attitude on Registration and Preservation of personal data and their awareness was high.

In the study it was determined that female students displayed positive attitude on Registration and Preservation of personal health data. In line with our study, in the study by Buyuk and Baydin (2020), the authors determined that female students displayed more positive attitudes to protect personal health data compared to male students. In a study on security and privacy of electronic health records of hospital personnel, in the scope of ensuring information security, organizational security sub-dimension scores of female personnel were found to be higher compared to male personnel (Er et al., 2014). In a study on attitudes of nursing students on vocational values, a statistically significant difference was found between sex and other vocational attitudes of students (Poorchangizi et al., 2019). In another study on information and attitudes of students of medicine on patient privacy, total scale scores of female students were stated to be higher than male students (Hosseini-Ghavam-Abad et al., 2019). However, in some studies, contrary to our research findings, it was found that sex differences among students did not have a significant effect on their attitudes towards registration and preservation of personal health data (Maras & Ceyhan, 2021; Candan & Bilgili, 2018; Ozata & Ozer, 2017).

In the study, it was found that there was a significant difference in the total score of RPPHDASNS, personal health data record and legal data sharing sub-dimensions of students who knew the concept of personal health data compared to students who did not. Maras and Ceyhan found in their study that the students who had heard the phrase “personal health data” before received statistically significantly higher total scores from the RPPHDASNS than the students who had not (Maras & Ceyhan, 2021). In another study, it is stated that education on patient rights increases the sensitivity to privacy (Bilir et al., 2015). In another study conducted with nurses, the knowledge scores about patient rights were found to be moderate in 83.1% and good in only 3.6% of the nurses (Sookhak et al. 2019). As seen in our and other studies, the education and knowledge gains of nursing students on patient rights, privacy, Registration and Preservation of health data would enable them to be more careful and sensitive about personal health data.

In the study, it was determined that 48.9% of the students knew the concept of personal data and 48.1% knew the concept of personal health data. In the study conducted by Pakis Cetin and Cevik (2021) about one third of students (35.2%) mentioned hearing personal data and personal health data concepts for the first time. This situation suggests that a substantial number of students do not have enough knowledge about patient rights. It is seen that the awareness of the students who know the term personal health data beforehand is high. This difference can be argued to be based on having the knowledge of the personal health data expression, increased the level of knowledge with the training received, and the sensitivity developed about the concept as a result of the process.

In the study, it was found that the students who were satisfied with the department had a positive attitude in registration and preservation of personal health data. In a study, it is seen that more than half of the students prefer the nursing department willingly (Pakis Cetin & Cevik, 2021). When preference of the students of the nursing department and the scale sub-dimension and total score averages were compared, it was determined that there was a statistically significant difference between the groups only in terms of the mean score of the “Personal Health Data Record” sub-dimension (Pakis Cetin & Cevik 2021). In

studies conducted by Soysal and Kuscu (2018) and Demir and colleagues (2021) no statistically significant difference was reported between willing preference of the department by the students and their patient rights or privacy scale mean scores. It could be argued that awareness of students regarding Registration and Preservation of personal health data increased with trainings they received in theoretical classes and clinical applications they attended.

A moderate positive correlation was found between PAS mean scores and RPPHDASNS mean scores of students ($p = 0.000$, $r = 0.321$). The Registration and Preservation of personal health information has a special importance in terms of obtaining the right to health and maintaining the responsibility of privacy and confidentiality (Izgi et al., 2013). It has been observed that providing education to students about patient rights and the obligation to defend these rights in nursing education is effective in ensuring that patient privacy is cared for in professional life (Aktan et al., 2019; Ozturk et al., 2014; Paksoy, 2018). It could be argued that these results also affect attitude of students towards registering and keeping of information of persons they care for.

Limitations: The limitations of the study are its coverage of only nursing students studying at a university, its lack of comparisons with different education programs, and its cross-sectional design. Therefore, generalizations cannot be made.

Conclusion: This study was conducted to determine the relationship between privacy awareness of nursing students and their Registration and Preservation of personal health data attitudes. It was found that as the level of privacy consciousness of students increase, their Registration and Preservation of health data attitude also increase. This result demonstrates that increasing privacy awareness levels of students has a positive effect on Registration and Preservation of personal health data attitude. Students must be motivated to ensure privacy in theoretical education and clinical application settings while emphasis must be placed on Registration and Preservation of personal health data. The subject of patient privacy must be kept current in theoretical education and clinical applications to ensure continued positive perception of privacy by students.

Implications for nursing and health policy: The subject of patient privacy must be kept current in theoretical education and clinical applications to ensure continued positive perception of privacy by students. Policies should be determined to protect and store this information and students should be informed about these laws.

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