Attitudes of Nursing Students Towards Registration and Protection of Personal Health Data and Related Factors*

Hemşirelik Öğrencilerinin Kişisel Sağlık Verilerinin Kaydedilmesine ve Korunmasına Yönelik Tutumları ve İlişkili Faktörler

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Abstract: *This research was carried out to determine the attitudes of nursing students towards the registration and protection of personal health data and related factors. The research was carried out in cross-sectional and descriptive design. The sample consisted of 326 nursing students studying at a university. Data were collected with the "Student Descriptive Information Form" and the "Attitude Scale on Registration and Protection of Personal Health Data for Nursing Students". Descriptive statistics, t-test and one-way analysis of variance were used in the analysis of the data. The mean score of the students' Attitudes scale towards the Registration and Protection of Personal Health Data scale was determined as 3.81±0.86. A statistically significant difference was determined between the total and sub-dimension point averages of the attitude scale regarding registration and protecting personal health data according to the self-evaluation levels of students' academic achievement (p<0.05). This research has shown that nursing students' attitudes towards registration and protecting personal health data are positive.*

Keywords: *Nursing student; personal health data; attitude*

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Özet: *Bu araştırma, hemşirelik öğrencilerinin kişisel sağlık verilerinin kayıt ve korunmasına yönelik tutumlarını ve ilişkili faktörleri belirlemek amacıyla yapılmıştır. Araştırma, kesitsel ve betimsel desende gerçekleştirilmiştir. Örneklemi bir üniversitede öğrenim gören 326 hemşirelik öğrencisi oluşturmuştur. Veriler, "Öğrenci Tanıtıcı Bilgi Formu" ve "Hemşirelik Öğrencilerinin Kişisel Sağlık Verilerinin Kaydedilmesi ve Korunmasına İlişkin Tutum Ölçeği" ile toplanmıştır. Verilerin analizinde tanımlayıcı istatistikler, t-testi ve tek yönlü varyans analizi kullanılmıştır. Öğrencilerin kişisel sağlık verilerinin kaydedilmesi ve korunmasına yönelik tutum ölçeği puan ortalaması 3,81±0,86 olarak belirlenmiştir. Öğrencilerin akademik başarılarını özdeğerlendirme düzeylerine göre kişisel sağlık verilerinin kaydedilmesi ve korunmasına ilişkin tutum ölçeği total ve alt boyut puan ortalamaları arasında istatistiksel açıdan anlamlı fark belirlenmiştir (p<0.05). Bu araştırma, hemşirelik öğrencilerinin kayıt ve kişisel sağlık verilerini korumaya yönelik tutumlarının olumlu olduğunu göstermiştir.*

Anahtar Kelimeler: *Hemşirelik öğrencisi; kişisel sağlık verisi; tutum*

INTRODUCTION

Personal data is defined as "any information relating to an identified or identifiable real person." Any information in the description; the person's name, surname, gender, age, citizenship number, place of birth, family information, physical characteristics, profession, address, phone number, bank information, IP address,

e-mail or social media shares, photos, audio or video records, health status records, data obtained using by biometric methods, and data that makes the person identifiable, such as fingerprints (1-4).

Advances in health information technology make health information systems easy to use and made accessible. Advances in information systems enable the use of computers to manage care by monitoring patient records, thereby reducing errors and improving health quality (5). Information systems and electronic applications in the field of health have brought the lives of individuals to computer environments (6). With the transfer of personal data belonging to the individual to the computer environment, data privacy, security and patient privacy issues have become a serious problem (7). In particular, there is a need for legal regulation regarding the registration and protection of personal health data. As a matter of fact, the Regulation on the Amendment of the Regulation on the Processing of Personal Health Data and Ensuring Privacy was published by the Ministry of Health (8). The protection of health data is closely related to the rights and freedoms of the individual regarding the right to life, the right to health and the prohibition of discrimination (9). Additionally, in the Patient Rights Regulation, it is stated who can keep the medical records, the information should be kept confidential, and the legal and criminal responsibilities of the service providers. The protection of health data is one of the patient's rights (10). As a matter of fact, the expression "I swear to keep all the information given to me about individuals" in the nursing oath shows the importance given to the protection of personal health data in terms of the nursing profession (11). Nursing students prepare a care plan for the patients they care in clinical practice during their education and personal health data about the patient are included in the care plans. In particular, it is important to determine the attitudes of nurse candidates in the education process, to improve their knowledge and awareness levels, not to face criminal sanctions, to ensure patient privacy, and to protect health data about patients. Studies on the privacy of the individual and the patient are increasing. For these reasons, this research was carried out to determine the attitudes of nursing students towards the registration and protection of personal health data and related factors. This study will increase the awareness of nursing students about patient rights and privacy.

METHODS

Type of Study
The research was carried out in cross-sectional and descriptive design.

Sampling and setting
The population of this research consisted of 448 students enrolled in the Nursing Department of the Faculty of Health Sciences at Kahramanmaraş Sütçü İmam University (KSU) in the 2019–2020 Spring term. Sample selection was not made in the study and it was completed with 326 students who agreed to participate in the study and filled out the questionnaire completely. In this research, 72.7% of the universe was reached.

Measures
The data in the study were collected in the first two weeks of the 2019–2020 Spring semester and after the researcher explained the purpose of the study to the students and the verbal and written consent of the students was obtained. The questionnaire form was introduced to the students, distributed in the rest periods after the lesson, and collected again, expected to be completed within 25 minutes on average.

Data collection tools
In this study, data were collected with the "Student Descriptive Information Form" and the "Attitude Scale on Registration and Protection of Personal Health Data for Nursing Students."

Student Descriptive Information Form

Student Descriptive Information Form was prepared in line with the literature (6, 8, 12-15). It includes five questions to determine the age, gender, class, work and success status of the students, and 13 questions about the education status of patients on patient rights and personal health data types of patients.

Attitude Scale for Registration and Protecting Personal Health Data for Nursing Students

The development of this scale, its validity and reliability analysis were performed by Bezirgan Gözmener et al., and it is a five-point Likert form consisting of 31 items. Each statement on the Likert-type scale is scored from one to five, and the items are strongly disagree (1), disagree (2), have no idea (3), agree (4), and strongly agree (5). The cut-off point of the scale was determined as three, and the attitudes of the students who scored below three on average towards the registration and protection of personal data were evaluated as "negative," and the attitudes of the students who scored three and above towards the registration and protection of personal data were evaluated as "positive." The scale consists of five sub-dimensions. The sub-dimensions are legal data sharing, legal information, personal health data information, personal health data sharing and personal health data record. The Cronbach alpha reliability coefficient for the whole scale was reported as 0.94 by Gözmener (2019) et al. (12). In this study, the Cronbach's alpha coefficient of the scale was determined α = 0.97.

Ethical considerations

Ethics committee approval was obtained from KSU Faculty of Medicine Clinical Research Ethics Committee (2019/10/18) before starting the study. After obtaining the ethics committee approval, written institutional permission was obtained from the Faculty of Health Sciences of KSU. Additionally, informed consent was obtained from the nursing students included in the research and ethical principles were followed at every stage of the research.

Data analysis

The SPSS 17.0 package statistics program was used for the analysis of the data collected in the study. In the analysis of the data, descriptive statistical methods were used, t-test was used in the comparison of two groups, and one-way analysis of variance was used in the comparison of more than two independent groups. Reliability analysis The Cronbach's alpha value was calculated in the sample group of the scale.

RESEARCH LIMITATIONS

In the process of recording and protecting personal health data, both nurses and students receiving nursing education have important responsibilities. The most important limitation of this research is that the sample consists of students studying in a faculty. Although the results of the research do not fully reflect the attitudes of nursing students in Turkey regarding the recording and protection of personal health data, it is important that the sample size of the research is sufficient in terms of giving a general idea about this issue.

RESULTS

70.2% of the students participating in the study were female, 31.3% were the third grade, and 89.3% were not working. 53.1% of the students evaluated their academic achievement as medium level. The mean age of the students was 20.88±1.89 (Table 1).

Table 1: Some characteristics of nursing students

Characteristics	n	%
Gender		
Female	229	70.2
Male	97	29.8
Class		
First-year student	82	25.2
Second-rate	65	19.9
The third grade	102	31.3
The fourth grade	77	23.6
Working Status		
Yes	35	10.7
No	291	89.3
How would you rate your success status?		
Excellent	23	7.1
Good	106	32.5
Middle	173	53.1
Bad	24	7.4
	mean±Sd	**Min-Max**
Age	20.88±1.89	18–36

Table 2 shows the students' participation in the questions about personal health data. More than half of the students answered yes to the questions "Is the patient's sociodemographic information personal health data?; Are the examination findings of the patient personal health data?; Are the patient's analysis results of their personal health data?; Are medical interventions applied to the patient personal health data?; Are the patients diagnosed diseases personal health data?; Are the treatment protocols applied to the patient personal health data?; Is the patient's family history a personal health data? and Is the patient's psychiatric history personal health data?". More than half of the students answered no to the questions "Is the patient's anamnesis personal health data?; Is the patient's diagnosis personal health data?; Is the patient's hospitalization history personal health data?; Is the patient's sexual health history as her/his personal health data? and Is the patient's organ transplantation history as her/his personal health data?".

Table 2: Nursing students' education on patient rights and their views on personal health data

	n	%
Have you received training on patient rights issues?		
Yes	203	62.3
No	123	37.7
Is the patient's sociodemographic information personal health data?		
Yes	195	59.8
No	131	40.2
Is the patient's anamnesis personal health data?		
Yes	224	31.3
No	102	68.7
Are the examination findings of the patient personal health data?		
Yes	203	62.3
No	123	37.7

Is the patient's diagnosis personal health data?		
Yes	192	41.1
No	134	58.9
Are the patient's analysis results of their personal health data?		
Yes	221	67.8
No	105	32.2
Are medical interventions applied to the patient personal health data?		
Yes	155	52.5
No	171	47.5
Is the patient's hospitalization history personal health data?		
Yes	170	47.9
No	156	52.1
Are the patients diagnosed diseases personal health data?		
Yes	182	55.8
No	144	44.2
Are the treatment protocols applied to the patient personal health data?		
Yes	110	66.3
No	216	33.7
Is the patient's family history a personal health data?		
Yes	227	69.6
No	99	30.4
Is the patient's sexual health history as her/his personal health data?		
Yes	218	33.1
No	108	66.9
Is the patient's organ transplantation history as her/his personal health data?		
Yes	126	38.7
No	200	61.3
Is the patient's psychiatric history personal health data?		
Yes	222	68.1
No	104	31.9

The total and sub-dimension mean scores of the Attitude Scale on Registration and Protection of Personal Health Data of the Students are shown in Table 3. The mean score of the students' Attitudes towards Registration and Protection of Personal Health Data scale was determined as 3.81±0.86.

Table 3: Registration and Protection of Personal Health Data Attitude Scale Total and Sub-Dimension Score Average

	Min±Max	Mean±Sd
Legal Data Sharing	1–5	3.93±1.00
Legal Information	1–5	3.93±0.94
Personal Health Data Information	1–5	3.73±0.87
Personal Health Data Sharing	1–5	3.79±0.91
Personal Health Data Records	1–5	3.63±0.90
Total score on the scale	1–5	3.81±0.86

According to the gender of the students, no statistically significant difference was found between the mean scores of the other sub-dimensions and the total score, except for the Legal Information sub-dimension

(p>0.05). The legal information sub-dimension mean score of female students was statistically significantly higher than that of males (p=0.026). No statistically significant difference was found between the total and sub-dimension mean scores of the Attitude Scale in the Registration and Protection of Personal Health Data, according to the students' working status, their class of education and their education on patient rights (p>0.05). Students' achievement self-assessment levels were determined as an important factor affecting the total and sub-dimension mean scores of the Attitude Scale for the Registration and Protection of Personal Health Data. The total and sub-dimension mean scores of the students who evaluated their achievement levels as good or excellent on the Personal Health Data Registration and Protection Attitude Scale were higher than the other groups, and there was a statistically significant difference between the groups (p<0.05). Is the patient's anamnesis personal health data?; Are the patient's analysis and examination results personal health data?; Is the patient's sexual health history as her/his personal health data? A statistically significant difference was determined between the scale total and sub-dimension mean scores according to their agreement with the question statements in Table 4.

Table 4: Total and sub-dimension mean scores of the Attitude Scale on the Registration and Protection of Personal Health Data of the students according to some variables

	Legal Data Sharing	Legal Information	Personal Health Data Information	Personal Health Data Sharing	Personal Health Data Records	Total score
Gender						
Female	3.95±0.97	4.01±0.89	3.79±0.83	3.85±0.90	3.73±0.88	3.87±0.82
Male	3.87±1.06	3.76±1.03	3.60±0.95	3.66±0.94	3.59±0.95	3.69±0.93
	p=0.522	**p=0.026**	p=0.076	p=0.085	P=0.219	p=0.086
Working status						
Worker	3.62±1.18	3.69±0.98	3.56±0.91	3.63±0.93	3.42±0.96	3.60±0.91
inoperative	3.96±0.97	3.96±0.93	3.75±0.86	3.81±0.91	3.75±0.89	3.84±0.85
	p=0.057	p=0.18	p=0.217	p=0.273	p=0.068	p=0.115
Class						
First-year student	40.6±0.80	3.99±0.86	3.81±0.75	3.87±0.82	3.61±0.87	3.88±0.72
Second-rate	3.96±1.02	3.96±0.92	3.79±0.86	3.86±0.92	3.75±0.94	3.86±0.87
The third grade	3.92±1.07	3.92±0.94	3.65±0.94	3.75±0.96	3.69±0.91	3.75±0.91
The fourth grade	3.92±1.06	3.87±1.04	3.71±0.91	3.70±0.94	3.71±0.91	3.78±0.92
	p=0.372	p=0.864	p=0.621	p=0.602	p=0.796	p=0.735
Success status						
Excellent	4.11±1.07	4.21±1.02	4.05±0.87	4.13±0.99	4.04±0.92	4.10±0.93
Good	4.05±0.87	4.05±0.85	3.82±0.81	3.96±0.84	3.79±0.85	3.93±0.79
Middle	3.9±1.00	3.93±0.90	3.72±0.85	3.71±0.90	3.65±0.92	3.79±0.83
Bad	3.35±1.25	3.22±1.17	3.11±0.97	3.30±0.98	3.19±0.79	3.21±0.86
	p=0.016	**p=0.001**	**p=0.001**	**p=0.002**	**p=0.008**	**p=0.001**
Having education in patient rights						
Yes	3.84±0.90	3.97±0.95	3.78±0.87	3.84±0.90	3.73±0.93	3.85±0.87
No	3.71±0.93	3.88±0.93	3.66±0.87	3.71±0.93	3.93±0.87	3.76±0.84
	p=0.674	p=0.427	p=0.213	p=0.225	p=0.332	p=0.383
Is the patient's anamnesis personal health data?						
Yes	4.03±0.99	4.03±0.94	3.81±0.86	3.84±0.93	3.81±0.88	3.90±0.86
No	3.70±0.98	3.73±0.98	3.57±0.86	3.68±0.87	3.42±0.90	3.60±0.83
	p=0.005	**p=0.007**	**p=0.023**	p=0.143	**p=0.001**	**p=0.008**

Are the patient's analysis and examination results personal health data?						
Yes	4.05±1.00	3.99±0.97	3.81±0.90	3.84±0.95	3.80±0.94	3.89±0.90
No	3.65±0.95	3.82±0.85	3.57±0.78	3.69±0.83	3.46±0.79	3.65±0.74
	p=0.002	p=0.148	**p=0.023**	p=0.169	**p=0.002**	**p=0.019**
Is the patient's hospitalization history personal health data?						
Yes	4.05±0.98	4.03±0.93	3.83±0.87	3.85±0.92	3.82±0.90	3.91±0.86
No	3.79±1.00	3.83±0.94	3.62±0.85	3.73±0.91	3.55±0.89	3.70±0.84
	p=0.020	p=0.060	**p=0.027**	p=0.214	**p=0.008**	**p=0.027**
Is the patient's sexual health history as her/his personal health data?						
Yes	4.05±0.95	4.04±0.93	3.82±0.87	3.89±0.90	3.80±0.87	3.91±0.85
No	3.69±1.05	3.73±0.92	3.55±0.84	3.59±0.92	3.46±0.92	3.61±0.84
	p=0.002	**p=0.005**	**p=0.009**	**p=0.005**	**p=0.001**	**p=0.003**
Is the patient's organ transplantation history as her/his personal health data?						
Yes	4.11±0.99	4.07±0.95	3.85±0.91	3.90±0.96	3.83±0.90	3.95±0.89
No	3.82±0.99	3.85±0.92	3.66±0.84	3.72±0.88	3.60±0.90	3.73±0.82
	p=0.011	**p=0.036**	**p=0.047**	p=0.092	**p=0.030**	**p=0.026**
Is the patient's psychiatric history personal health data?						
Yes	4.10±0.92	4.07±0.90	3.86±0.84	3.92±0.89	3.79±0.88	3.95±0.82
No	3.57±1.07	3.64±0.96	3.46±0.88	3.52±0.90	3.46±0.92	3.53±0.87
	p=0.001	**p=0.001**	**p=0.001**	**p=0.001**	**p=0.002**	**p=0.001**

DISCUSSION

In this study, which was conducted to determine the attitudes of nursing students towards the registration and protection of personal health data, the total score average of the students was determined as 3.81±0.86. The cut-off point of this scale is stated as three, and the attitudes of the students who score below three on average towards the registration and protection of personal data are evaluated as "negative," and the attitudes of the students who score three and above towardss the registration and protection of personal data are evaluated as "positive" (12). In this context, it can be said that the students within the scope of the research generally have attitudes towards the registration and protection of personal data. Similarly, in studies conducted with nursing students at various universities in our country, it has been determined that nursing students' attitudes towards the recording and protection of personal health data are positive (13-16). (13). The results of this research and field studies show that nursing students studying in different provinces in our country have a positive attitude towards the Registration and Protection of Personal Health Data. It is considered important for patient psychology that students respect the privacy of patients and ensure the confidentiality of patients' medical records (17). In this context, strategies to improve students' attitudes towards registration and protecting personal health data can contribute significantly to professional ethical values and student nurse-patient relationship.

In the study, it was determined that the gender of the students was not an effective variable on the total score average of the other sub-dimensions and scales, except for the legal information sub-dimension. Similarly, in other studies, gender was not found to be a variable affecting student attitudes towards registration and

protecting personal health data (13, 14). However, in the a few studies gender was reported as a statistically effective variable in all sub-dimensions and in the total mean score of the scale (15, 16). In a study examining the views of nurses and midwives on patient privacy, it was reported that there was no significant difference between male and female gender in the perception of privacy, and the perception of privacy of healthcare professionals was similar (18). In the study by Özata and Özer (2017) to determine the attitudes of healthcare professionals towards patient privacy, it was found that the gender of healthcare personnel did not affect their attitudes towards patient privacy, and that male and female healthcare personnel had similar attitudes (19).

In the study, no statistically significant difference was found between the total and sub-dimension mean scores of the Attitude Scale on the Registration and Protection of Personal Health Data, according to the students' working status, class of education, and receiving education on patient rights (p>0.05). However, students' self-evaluation levels in terms of academic achievement were found to be an important variable affecting attitudes towards registration and protecting personal health data. It was observed that the students who evaluated the level of success as excellent or good had more positive attitudes towards the registration and protection of their personal health data. Studies show that students' attitudes towards the registration and protection of personal health data change according to the class they study (13-16). In their studies, Maraş and Ceyhan reported that there was no difference between the attitudes of nursing students regarding the registration and protection of personal health data according to the general academic grade point average, that is, academic achievement did not affect the attitudes towards personal health data (14). In this study, unlike the studies reported in the literature, class level did not affect attitudes towards personal health data, while student self-evaluation of academic achievement was determined as a variable that affected. The change in students' attitudes towards recording and protection of personal health data according to their self-evaluation of their success can be explained by the effect of self-awareness. In nursing science self-awareness is fundamental for the professional nursing (20).

In the study, the education of the students on patient rights does not affect the attitudes of the students towards the registration and protection of personal health data. However, the students who stated that the patient's anamnesis, examination and examination findings of the patient, hospitalization history, sexual health history, psychiatric and organ transplantation history are the personal health data of the patient are important factors affecting the attitudes towards registration and protecting personal health data in general (p< 0.05). In the regulation published in the Official Gazette dated 24.11.2017 and numbered 30250, which was put into effect by the Ministry of Health, personal health data is defined as "all kinds of information about the physical and mental health of an identified or identifiable natural person, and information about the health service provided to the person" (8). Personal health data included the anamnesis, examination findings, diagnosis, epicrisis, health report, all analysis and examination results, including imaging methods, drugs used in treatment, all kinds of medical interventions and care practices recorded while receiving health care. The main reason why health data is included in special data is that it can cause serious problems if it is not protected. This research has shown that students who know what personal health data are, have higher attitudes towards registration and protecting their personal health data. In this context, legal processes regarding patient rights and the protection and processing of personal health data should be included in nursing education. Before starting their profession, students need to know the scope of personal health data and to know the processes related to how to record and protect it.

CONCLUSION

This research has shown that nursing students' attitudes towards registration and protecting personal health data are positive. It was found that the students' attitudes towards registration and protection of their personal health data were not affected by gender, employment status, the class studied and their education on patient

rights, but the students' achievement self-assessment levels, patient anamnesis, patient's examination and examination findings, hospitalization history, sexual health history were not affected. It was concluded that the students who knew that the history of psychiatry, psychiatry and organ transplantation was the personal health data of the patient exhibited a more positive attitude towards the registration and protection of personal health data. According to the results of this research, legal processes regarding the registration and protection of personal health data should be included in nursing education. It can be suggested to plan strategies to improve students' positive attitudes.

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