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Research Article / Araştırma

An investigation into the relationship between health perception and rational drug use among nursing students*

Hemşirelik öğrencilerinde sağlık algısı ve akıllı ilaç kullanımı arasındaki ilişkinin belirlenmesi

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Key Words:
Attitude to Health, Drug Utilization, Nursing Students

Anahtar Kelimeler:
Sağlık Tutumu, İlaç Kullanma, Hemşirelik Öğrencisi

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ABSTRACT

Aim: Health perception is defined as the ability to self-evaluate one's health. This study aims to determine nursing students' rational drug usage and their perception of their health. **Methods**: This research employed a descriptive and cross-sectional design, involving a total of 341 nursing students who voluntarily participated in the study. All participants were enrolled in the Department of Nursing within the Faculty of Health Sciences at a public university in Türkiye. The data were collected using the personal information form, a 15-item "Health Perception Scale", and a 21-item "Rational Drug Use Scale" in the classroom environment at the time when the students were available. Based on the data characteristics, the One Way ANOVA and t-test were employed for parametric data, while the Mann-Whitney U and Kruskal-Wallis tests were utilized for nonparametric data. Regression analysis was used to ascertain the correlation among the data. **Results**: There was a positive relationship between the total health perception scale score and all its subdimension scores. Moreover, a statistically significant positive correlation was identified between the overall scores on the Health Perception Scale and the Rational Drug Use Scale, as well as between the control center subdimension of the Health Perception Scale and the Rational Drug Use Scale scores. **Conclusion**: The findings indicated that the participating students demonstrated a generally high level of health perception and rational drug use.

ÖZ

Amaç: Sağlık algısı kişinin kendi sağlığını değerlendirebilme kabiliyetidir. Bu çalışmanın amacı hemşirelik öğrencilerinin akılcı ilaç kullanımı ve sağlık algılarının belirlenmesidir. **Yöntem**: Bu tanımlayıcı ve kesitsel araştırmanın örneklemini, Türkiye'de bir üniversitenin Sağlık Bilimleri Fakültesi Hemşirelik Bölümü'nde öğrenim görmekte olan ve çalışmaya katılmayı gönüllü olarak kabul eden 341 hemşirelik öğrencisi oluşturmaktadır. Veriler kişisel bilgi formu, 15 maddelik "Sağlık Algısı Ölçeği" ve 21 maddelik "Akılcı İlaç Kullanımı Ölçeği" kullanılarak öğrencilerin müsait olduğu saatlerde sınıf ortamında toplanmıştır. Verilerin özelliklerine göre parametrik veriler için One Way ANOVA ve t-testi, parametrik olmayan veriler için ise Mann-Whitney U ve Kruskal-Wallis testleri kullanıldı. Veriler arasındaki ilişkinin belirlenmesi amacıyla regresyon analizi yapılmıştır. **Bulgular**: Toplam sağlık algısı ölçeği puanı ile tüm alt boyut puanları arasında da pozitif yönde anlamlı bir ilişki bulunmuştur. Ayrıca, Sağlık Algısı Ölçeği toplam puanı ile Akılcı İlaç Kullanımı Ölçeği toplam puanı arasında ve Sağlık Algısı Ölçeği'nin Kontrol Merkezi alt boyutu ile Akılcı İlaç Kullanımı Ölçeği puanları arasında da pozitif yönlü anlamlı ilişki saptanmıştır. **Sonuç**: Çalışmanın örnekleminde yer alan öğrencilerin sağlık algıları ve akılcı ilaç kullanımı düzeyleri iyi düzeyde bulunmuştur.

INTRODUCTION

University studenthood is a period in which different types of conflicts are experienced in emotional, behavioral, academic, sexual, economic and social areas as well as social changes. In the same period, a process begins in which the individual takes more and more responsibility for some decisions related to his/her health. At the end of this period, the adult identity takes its final shape. These changes are reflected in the health behaviors of the individual (Özdelikara et al., 2018). It is recognized that students' favorable impression of their health state favorably influences their beliefs in regulating their future health status and good lifestyle practices. One of the fundamental objectives of vocational nursing education is to equip students with the knowledge, skills, and professional attitudes required to protect and promote individual and public health, including their own (Özdelikara et al., 2018; Kim and Oh, 2021).

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The WHO reports that over 50% of medications are prescribed and utilized incorrectly, with about 50% of patients not using prescribed drugs properly (WHO, 2023). Across numerous nations, drug expenses constitute a significant portion of overall health spending (Hooloway, 2011, Akl et al. 2014). The realm of irrational drug use, recognized as a global health challenge, includes inappropriate prescription practices, over-the-counter medication usage, unnecessary injections, misuse of antibiotics, incorrect medications, improper dosage, inadequate treatment duration, and insufficient patient information (Hooloway, 2011; Akl et al., 2014; WHO, 2023).

The Ministry of Health in Turkey carried out research to encourage the sensible use of medication therapy, which resulted in the creation of the "Turkey Rational Drug Use Bulletin," which is regarded as a trustworthy, fact-based resource. Antibiotic resistance tends to emerge, especially in cases where antibiotics are either unnecessary or misused. Effective management of antibiotic usage can contribute to reducing resistance. The attainment of effective healthcare management relies heavily on the proactive participation of medical professionals, especially those serving in primary healthcare contexts (Turkish Medicines and Medical Devices Agency , 2017).

According to figures reported by the Turkish Statistical Institute, the overall health spending in Türkiye totaled 353.9 billion TL. In 2020, individual health expenditure stood at 2 thousand 997 TL, experiencing a 40.3% surge to 4 thousand 206 TL in 2021. Household out-of-pocket health expenditures, covering treatments, medications, etc., rose by 40.5% in 2021 compared to the former year, reaching 56 billion 342 million TL (Turkish Statistical Institute, 2022). According to the Turkish Pharmaceutical Market Monitoring Report-9 released through the Turkish Agency for Medicines and Medical Devices (TMMDA), the Turkish pharmaceutical market witnessed substantial growth, increasing from 18.08 billion TL in 2015 to 64.85 billion TL in 2021 (Karakan, 2022). This significant increase underscores the challenges arising from the inappropriate and excessive use of drugs. Such practices not only hinder access to essential medications but also deplete drug stocks, escalating drug costs, erode patients' trust in the healthcare system, and result in additional financial burdens (Aslam et al., 2016; Dessie et al., 2020).

The irrational use of drugs not only jeopardizes patient safety but also leads to inefficient resource utilization (Altındiş, 2017). Effective control of drug expenditures relies on robust interactions among pharmacists, healthcare professionals, and patients, ensuring rational drug use (Dessie et al., 2020; Köse, 2022). Beyond the anticipated diagnostic, therapeutic, and protective benefits of drugs, the occurrence of adverse events and their substantial contribution to health expenditures underscore the imperative to approach drug use with rationality (Altındiş, 2017; Kahraman et al., 2021).

Given the interconnectedness of health perception and inappropriate drug use with morbidity and mortality, recognizing and addressing these factors can significantly enhance the delivery of proper healthcare. Moreover, it holds the potential to alleviate the burden of diseases and care, particularly in terms of hospitalization rates and the duration of hospitalization (Cho et al., 2011; Dessie et al., 2020). Understanding pharmaceutical uses is one of a nurse's fundamental responsibilities, and nursing education programs address these applications. Thus, one of the fundamental skills that nurses must learn is pharmaceutical knowledge. The capacity to carry out a complex professional task by combining cognitive, psychomotor, and affective skills is known as competency (Ünver et al., 2013; Özatik et al., 2019). In order to prepare nursing students to provide effective care tailored to each patient, it is essential that they understand the various factors affecting physical and mental health, which can either impede or enhance overall well-being (Skär and Söderberg, 2016).

A number of studies in the literature have assessed health perception and rational drug use among nursing students, usually focusing on one of these two areas (Özdelikara et al., 2018; Yıldırım et al., 2021; Tosunöz, 2021). However, there is a research gap because no study has been found that specifically combines both scales in the context of nursing students. A prominent study conducted by Yıldırım et al. (2021) revealed that nursing students had a moderate extent of engagement in health-related networks and demonstrated a sound understanding of rational drug use. To address this gap in the current literature, the present study was undertaken to investigate the correlation between health perception and rational drug use among nursing students.

Research Questions

- How do nursing students' perceptions of health level?
- Do nursing students have sufficient knowledge about rational drug use?
- Is there a correlation between health perception and rational drug use among nursing students?

MATERIAL AND METHOD

Type and Place of Research

This descriptive and cross-sectional study was performed from May 15 to June 9, 2023, with participants from the Department of Nursing at a state university in Türkiye.

Variables of the Study

Dependent variables: Scores on the students' rational drug use scale and health perception scale.

Independent variable: Students' sociodemographic attributes who participated in the study.

Population and Sample of the Study

The study included the entire population of 475 students enrolled in a state university's nursing programme in Türkiye. Although the study aimed to include the entire population of nursing students, it was ultimately completed with 341 participants who voluntarily consented to take part. The sample consisted of students registered in the Department of Nursing at the Faculty of Health Sciences of a public university in Türkiye. All participants granted informed consent prior to enrolment in the study. The overall participation rate was 71.8%, reflecting a substantial proportion of the target population.

Data Collection Tool

The researchers utilised the personal information form, "Health Perception Scale (HPS)," and "Rational Drug Use Scale (RDUS)" to collect data in the classroom during student attendance.

The Personal Information Form: The form designed by the researcher comprised 16 items aimed at gathering information on participants' socio-demographic characteristics, knowledge related to drug use, and medication-related behaviors.

HPS: Developed by Diamond et al. (2007), this scale features 15 items rated on a five-point Likert scale and is organized into four distinct subscales: control center, precision, the importance of health, and self-awareness. The scale was subsequently validated for the Turkish population by Kadıoğlu and Yıldız in 2012. Items conveying positive statements (items 1, 5, 9, 10, 11, and 14) are scored on a scale ranging from "strongly agree" (5) to "strongly disagree" (1), while those reflecting negative statements (items 2, 3, 4, 6, 7, 8, 12, 13, and 15) are reverse-scored. The scale's scores vary from 15 at the lowest to 75 at the highest. A high score demonstrates a high perception of health, while a low score indicates a lower perception of health. The Cronbach's alpha value in the original study was 0.77 (Kadıoğlu and Yıldız, 2012), whereas it was calculated as 0.67 in this study.

RDUS: Comprising 21 items with response options scored as Yes (2 points), Don't know (1 point), and No (0 points), this scale was validated for the Turkish population by Demirtaş et al. in 2018. Items 2, 5, 6, 9, 10, 13, 15, 16, 17, 19, and 20 involve reverse propositions, with reverse scoringAn increase in the scale scores corresponds to a higher level of knowledge and awareness regarding rational drug use. The scale's cut-off point is defined as 34, where scores of 35 or above signify proficient knowledge in rational drug use. During its initial validation, the scale achieved a Cronbach's alpha of 0.789 (Demirtaş et al., 2018). The reliability analysis conducted in this research resulted in a Cronbach's alpha value of 0.74.

Data Collection

The data collection process started following institutional permission and approval from the ethics committee. he study included nursing students enrolled in the Department of Nursing at the Faculty of Health Sciences of a state university. After explaining the purpose and scope of the research in detail, data were collected from students who provided informed consent. The data collection tool included a questionnaire composed of a Personal Information Form, the HPS, and the RDUS. Data were obtained via face-to-face interviews, each lasting around 15 minutes.

Data Analysis

The data analysis was performed using the Statistical Package for Social Sciences (SPSS 24.0). Descriptive statistics such as frequencies, percentages, means, standard deviations, and minimum and maximum values were computed to provide a summary of the data. A normality test was conducted on the data; parametric tests (one-way ANOVA, t-test) were employed for data exhibiting a normal distribution, whilst nonparametric tests (Kruskal-Wallis, Mann-Whitney U) were utilized for data without a normal distribution. Relationships between variables were examined through regression analysis. Cronbach's alpha coefficient was used to assess the internal consistency of the scales. A p-value of less than 0.05 was considered statistically significant.

Ethical Aspects of the Research

Students involved in the study provided informed written consent. The consent form explicitly outlined that responses to the questions would remain confidential and not be shared with any third party. Participants were assured that their involvement in the study was entirely voluntary, with no obligation to participate, and they retained the right to withdraw at any point. Permission to use the "Health Perception Scale" and the "Rational Drug Use Scale" was obtained through emails with the respective authors. Ethical approval for the research was received from the Ordu University Scientific Research Ethics Committee (Date: May 12, 2023, Decision Number: 133), and written authorization was attained

from the Ordu University Faculty of Health Sciences, Department of Nursing.

RESULTS

Table 1 presents the socio-demographic features of the nursing students, the average scores on the HPS and RDUS, and the outcomes of the statistical tests performed on these mean values. The majority of students, 54.0%, fell within the 17–20 age range, with a mean age of 20.53±1.97, 28.4% being first-year students, 27.9% second-year students, 98.2% single, 77.4% female, and 79.5% having social security (Table 1).

The nursing students exhibited a mean score of 51.09±5.72 on the HPS, while the mean score for RDUS was 37.42±4.37 (15-75 points) . Considering the cut-off score of 34 for RDUS, students' level of knowledge on rational drug use is good (Table 2). The mean scores obtained for each subdimension of the HPS are presented as follows: Control Centrer: 16.80±3.49 (min: 6; max: 25); Precision: 12.26±2.45 (min: 4; max: 20); Importance of Health: 11.20±1.72 (min: 6; max: 15); and Self-awareness: 10.82±1.69 (min: 5; max: 15) (Table 2).

Table 3 reveals significant positive relationships among various components of the HPS and the RDUS for nursing students. A statistically significant positive relationship was identified between the Control Center and Precision subdimensions, as well as between the Importance of Health and Self-Awareness subdimensions of the HPS. Furthermore, the overall HPS score showed a positive relationship with all its subdimension scores (p<.000, Table 3).

DISCUSSION

The Health Perception Scale mean score among nursing students was found to be 51.09±5.72 (Table 2). Considering that The scale has a lowest possible score of 15 and a maximum score of 75, it can be said that the health perception level of the students participating in

Table 1. Sociodemographic Characteristics of Students

	n	%
Age		
17-20 age	184	54.0
21-24 age	150	44.0
25 +	7	2.1
Mean age 20.53±1.97		
Gender		
Female	264	77.4
Male	77	22.6
Class		
1. year	97	28.4
2. year	95	27.9
3. year	80	23.5
4. year	69	20.2
Marital Status		
Married	6	1.8
Single	335	98.2
Social Security		
Yes	271	79.5
No	70	20.5
Smoking		
Yes	60	17.6
No	281	82.4
Alcohol		
Yes	40	11.7
No	301	88.3
Family Structure		
Nuclear	284	83.3
Extended	57	16.7
Chronic Disease		
Yes	51	15.0
No	290	85.0

Table 2. Distribution and Cronbach's Alpha Values of the Health Perception Scale and its Sub-Dimensions and Rational Drug Use Scale Mean Scores

Scales	Mean	Standard Deviation	Minimum	Maximum	Cronbach Alfa
HPS Control Center sub-dimension	16.80	3.49	6.00	25.00	.754
HPS Precision sub-dimension	12.26	2.45	4.00	20.00	.586
HPS Importance of Health sub-dimension	11.20	1.72	6.00	15.00	.530
HPS Self-awareness sub-dimension	10.82	1.69	5.00	15.00	.478
Mean Score of Health Perception Scale	51.09	5.72	34.00	71.00	.668
Mean Score of Rational Drug Use Scale	37.42	4.37	16.00	42.00	.736

Table 3. The Relationship between the Health Perception Scale and its sub-dimensions and the Rational Drug Use Scale

Scales		HPS Control Center	HPS Precision	HPS Importance of Health	HPS Self-awareness	The Health Perception Scale	The Health Perception Scale
HPS Control Center	r p	1					
HPS Control Center	r p	.231 **.000**	1				
HPS Control Center	r p	.078 .077	.048 .188	1			
HPS Control Center	r p	.055 .157	.056 .152	.375 **.000**	1		
The Health Perception Scale	r p	.749 **.000**	.601 **.000**	.481 **.000**	.467 **.000**	1	
The Rational Drug Use Scale	r p	.230 **.000**	.109 .022	.060 .136	.007 .447	.208 **.000**	1

R: Spearman's rho correlation, p<0.00 statistically significant

Table 4. Regression Analysis

	Beta	Standard Error	Standard Beta	t	p
Fixed coefficient	30.962	2.220		13.948	**.000**
HPS Control	.268	.068	.215	3.934	**.000**
HPS Precision	.104	.097	.059	1.076	.283
HPS Importance of Health	.127	.145	.050	.878	.380
HPS Self-awareness	-.069	.147	-.027	-.466	.641
The Health Perception Scale	.268	.068	.215	3.934	**.000**

F= 5.233, p=.000, R2= .059

this study is good. The mean score of health perception was located to be 49.61±6.28 in the study of Çaka et al. (2017), 50.57±4.60 in the study of Özdelikara et al. (2018), and 50.04±6.21 in the study of Yılmaz (2019). These results show that the health perception of nursing students is good or close to good (Kadıoğlu and Yıldız, 2012). Among the sub-dimensions of the HPS, the maximum average score was found in the control center subdimension (Table 2). The high level of control center subdimension indicates that students have higher autonomy in protecting their health and do not exhibit a fatalistic approach (Kadıoğlu and Yıldız, 2012). In the study by Özdelikara et al. (2018), nursing students' highest score was on the control centre subdimension. Likewise, in the researches performed by Kolaç et al., (2018), Yıldırım et al. (2021) and Tosunöz and Kolaç et al. (2021), the highest score was reported in the control center subdimension.

In this study, the average score of the RDUS of nursing students was located to be 37.42±4.37 (Table 2). When the cut-off score determined for the scale is stated as 34, we can say that the rational drug use of the students is good. The findings show that the students in this study have a satisfactory degree of rational drug use, as

indicated by the RDUS scores, which range from 0 to 42 (Demirtaş et al., 2018). This interpretation is consistent with a study conducted by Özkan and Aca (2020) in the Faculty of Health Sciences, where the mean RDUS score for students was 38.51±3.04. In another study by Çiftçi et al. (2021) on university employees, the mean score of the RDUS was located to be 35.69±5.30.

The study's remarkable finding is the significant positive relationship between nursing students' rational drug use and the HPS and the control centre sub-dimension (Table 3). This indicates that rational drug use is more controlled in students with a good health perception. People who believe they are well are more inclined to take actions that will protect and enhance their health (Yılmazel et al., 2013). Positive health perceptions among nursing students are crucial, as they serve as an indicator that they are capable of accurately assessing the health of the individuals they will care for in their professional lives and can appropriately practice rational drug use (Skär and Söderberg, 2016; Altındiş, 2017; Tosunöz, 2021). It is suggested that other health-related courses in the nursing curriculum may contribute to the development of high health perceptions among students (Tosunöz, 2021). Similar results were found in studies utilizing the HPS and the RDUS (Çiftçi et al., 2021; Şengül and Akyıl, 2022).

The study found that the control center subdimension and the precision subdimension of the HPS had a positive correlation, as well as between the awareness subdimension and the importance of the health subdimension (Table 3). This aligns with a research performed by Karaoğlu et al. (2020) with sociology and medical students, where a significant relationship was identified between the HPS and all its sub-dimensions. The positive correlation between the total score of the HPS and all its sub-dimensions suggests that the scale and its items are consistent. Additionally, it indicates that students possessing accurate health information exhibit more controlled behavior, and those with higher awareness tend to place more importance on their health.

Additionally, the study discovered a favorable, substantial positive association between the control center subdimension and the mean total score of the RDUS and HPS (Table 3). This correlation suggests that the mean scores of the HPS and the RDUS for pre-nursing students, who are likely to be more conscious and aware due to their nursing curriculum, are at a good level and may be associated to each other.

CONCLUSIONS AND RECOMMENDATION

This study, which examined the association between the HPS and the RDUS among nursing students, revealed a statistically significant positive correlation between the two scales. The average scores on both the HPS and the RDUS were higher for female students than male students. According to the results, there is a substantial correlation between students' RDUS scores and their HPS scores, with greater HPS levels often corresponding to higher RDUS scores. Overall, students were found to perceive their health positively and to engage in rational drug use at a favorable level. Additionally, it was observed that the average score of the RDUS increased progressively with students' advancement to higher academic years. It is crucial to integrate structured educational programmes that address health perception and rational drug use into nursing curricula from the earliest academic years. In order to assist male students who exhibited lower scores in these areas, it is imperative to implement gender-sensitive teaching strategies. It is recommended that nursing educators and pharmacology experts collaborate in order to improve the quality of education and promote interdisciplinary collaboration. Finally, more investigation into the relationship between rational drug use and health perception requires qualitative and longitudinal studies.

Contribution to the Discipline

The Rational Drug Use Scale and the Health Perception Scale among nursing students were found to be significantly correlated.

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