

Araştırma Makalesi– Research Paper

POWER FOR NURSING: INDIVIDUAL INNOVATION

HEMŞİRELİK İÇİN GÜÇ: BİREYSEL YENİLİKÇİLİK

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Özet

In this study, nurses working in Turkey was carried out to determine the properties of individual innovation. The universe of the research conducted in the descriptive study is 198.465 nurses working in Turkey. 271 nurses were included in the sample for 90% power with the sample calculation with a known universe. 210 people from this universe, who answered the online questionnaire questions by e-mail between 10-30 January 2021, formed the sample of the study. Personal Information Form and Individual Innovativeness Scale (IIS) were used in data collection. Nurses' total IIS score mean is  $57.60 \pm 13.79$ . The mean scores of the IIS sub-dimension were found to be  $23.01 \pm 4.82$  in the opinion leadership sub-dimension,  $17.98 \pm 4.97$  in the resistance to change sub-dimension, and  $6.78 \pm 1.53$  in the risk-taking sub-dimension. Nurses should be encouraged to participate in innovation-related scientific activities in order to develop and mobilize their innovative ideas, and appropriate opportunities should be developed for this, and they should be encouraged to follow innovative changes in nursing and raise awareness on the subject.

**Anahtar Kelimeler:** Individual Innovation, Innovation, Nursing, Power

Abstract

Bu çalışma, Türkiye’de hemşirelik hizmeti veren hemşirelerin yenilikçilik özelliklerinin belirlenmesi amacıyla yapılmıştır. Tanımlayıcı tipte yürütülen araştırmanın evrenini Türkiye’de çalışan 198.465 hemşire oluşturmaktadır. Evreni bilinen örneklem hesaplaması ile %90 güç için 271 hemşire örnekleme alınmıştır. Bu evrenden araştırma verileri için online anket sorularına 10-30 Ocak 2021 tarihleri arasında elektronik posta yoluyla cevap veren 210 kişi araştırmanın örneklemini oluşturmuştur. Verilerin toplanmasında Kişisel Bilgi Formu ve Bireysel Yenilikçilik Ölçeği (BYÖ) kullanılmıştır. Hemşirelerin BYÖ toplam puan ortalamaları  $57,60 \pm 13,79$ ’dur. BYÖ alt boyut puan ortalamalarında fikir önderliği alt boyutunda  $23,01 \pm 4,82$ , değişime direnç alt boyutunda  $17,98 \pm 4,97$  ve risk alma alt boyutunda  $6,78 \pm 1,53$  olarak bulunmuştur. Hemşirelerin yenilikçilik düşüncelerinin geliştirilmesi ve harekete geçirilmesi için yenilikçilikle ilişkili bilimsel etkinliklere katılımları sağlanmalı ve bunun için uygun imkanlar geliştirilerek hemşirelikte meydana gelen yenilikçi değişimleri takip etmeleri için teşvik edilmeli ve konu ile ilgili farkındalık kazandırılmalıdır.

**Keywords:** Bireysel yenilikçilik, güç, hemşirelik, yenilikçilik

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## 1. INTRODUCTION

Today, it has become an important skill to adapt to our rapidly developing world and follow innovations. In order to sustain this development both socially and individually, organizations and individuals need to renew themselves and accept innovation as a life philosophy (Güngör & Göksu, 2019, pp.1247-1248).

Innovations gain importance and comes to the fore in every field, but innovative initiatives appear at most in the health sector (Bossato et al., 2021, pp.56-58).

Patient care practices and quality have changed as a result of changes in population projections from past to present, aging populations, spread of chronic diseases due to control of infectious diseases, changing life and work conditions, and differentiation of diagnosis and treatment methods (Dall'Ora & Dahlgren, 2020, pp.2-5; Han et al., 2021, pp.63-65). Nurses are health professionals who directly convey and implement these changes in patient care practices (Caputi, 2017, pp.112; Dil et al., 2012, pp.1217-1220). With this power, nurses constitute the primary workforce in health services (Zuber & Moody, 2018, pp.62). It has become inevitable for nurses to follow and make innovations in order to maintain this power and allow nursing services to meet today's healthcare requirements (Gumussoy et al., 2017, pp.759-761). Innovation in nursing includes practices allowing to develop new ideas, methods and tools for meeting patient needs, reducing care costs, and increasing quality of nursing services (Fiedler, Giddens, & North, 2014, pp.387-391; Weng et al., 2016, pp.1951). It also aims to develop and provide improved health policies and systems, to use preventive, therapeutic, rehabilitative or auxiliary care interventions, to utilize improved quality practices, and to make interventions that increase effectiveness, efficiency, safety in health services (Kaya et al., 2015, pp.1674-1675; Planas-Campmany et al., 2020, pp.426-434).

In order for nurses to offer innovations in their workplaces and the society they serve, they need to be able to use innovations in the most effective way by adopting their innovative roles (Anvik et al., 2020, pp.123; Zengin et al., 2019, pp.207-210). Both individual and professional factors affect innovative behaviors in nurses (Sönmez & Yıldırım, 2014, pp.49-59). Studies show that individual factors such as age, gender, education, risk-taking, autonomy and organizational commitment, occupational factors such as heavy workload, role ambiguity and professional experience, and organizational factors such as insufficient management support and organizational structure can hinder innovativeness (Baksi et al., 2020, pp.310-315; Cusson et al., 2020, pp.13-19; Sarıköse & Türkmen, 2020, pp.1128; Walker et al., 2020, pp.1-16; Zuber & Moody, 2018, pp.65). This study was conducted to determine the innovativeness characteristics of nurses.



## 2. METHODS

### 2.1 Study Design

The population of this descriptive study was composed of 198,465 nurses in Turkey. The sample size was calculated to be 271 for 90% power using sampling with known population method. However, the study was conducted with 210 nurses who fully answered the questionnaire.

### 2.2 Data Collection

The data were collected online between 10-30 January 2021, using a nine-item Personal Information Form, prepared by the researchers in line with the literature (Baksi et al., 2020; Dall'Ora & Dahlgren, 2020) and the 18-item Individual Innovativeness Scale (IIS) (Kemer & Altuntaş, 2017, p. 52-61).

The Personal Information Form consists of 9 questions about the nurses' socio-demographic characteristics, including age, gender, and education level. The individual innovativeness scale was first developed by Hurt et al. In 1977 and then it was adapted in nursing profession by Kemer and Altuntas (2017) through a validity and reliability study the cronbach alpha reliability coefficient of the scale was stated as 0.82. (Kemer & Altuntaş, 2017, p.55). This scale consists of 18 items and three subscales, including opinion leadership, resistance to change, and risk-taking. This is a five-point Likert type scale, where items no 1, 2, 3, 4, 7, 8, 10, 11, 14, 16, 17 are scored positive and items no 18, 15, 13, 12, 9, 6, 5 are scored negatively. Total scale score ranges between 18 and 90. This scale divides individual characteristics into five categories as innovators, early adopters, interrogators, skeptics, and traditionalists. Data were analyzed using the International Business Machines, Statistical Package for the Social Sciences Statistics for Macintosh, Version 27.0. (IBM SPSS 27.0.) and evaluated using descriptive statistics (mean, standard deviation, minimum and maximum values) and frequencies (number, percentage) for categorical variables. The Kolmogorov Smirnov test was applied for numerical variables (scale and subscales), whereby the data were observed to not have normal distribution. Therefore, nonparametric statistical methods were used in the study. The Kruskal Wallis analysis was used to examine the differences between more than two independent groups.

### 2.3 Ethical considerations

Before starting the study, an ethics committee approval was obtained from the Ethics Committee of Cappadocia University (Decision number: 2021.49, Approval date: 04.01.2021). In addition, the consent of the participants was obtained with a written informed consent form. In this study, permission was not obtained from the institutions because the data were collected online from nurses in Turkey.



### 3. RESULTS

The mean age of the nurses included in the study was  $29.82 \pm 1.3$  years and 34.8% ( $n = 73$ ) of them were between 26-33 years old, 76.7% ( $n = 161$ ) were female, 48.1% ( $n = 101$ ) had bachelor's degree, 11.0% ( $n = 23$ ) worked in internal medicine service units, and 34.8% ( $n = 73$ ) had a professional experience of 3-5 years. Regarding their views on innovativeness, 85.7% ( $n = 180$ ) of the nurses did not participate in a scientific activity related to innovativeness, 71.0% ( $n = 149$ ) reported a lack of innovation in nursing, and 75.2% ( $n = 158$ ) did not make any innovations in nursing (Table 1).

The IIS total mean score of the nurses was  $57.60 \pm 13.79$ , where the lowest and highest scores were 37 and 90, respectively. Their mean scores on IIS subscales were  $23.01 \pm 4.82$  for opinion leadership,  $17.98 \pm 4.97$  for resistance to change, and  $6.78 \pm 1.53$  for risk-taking (Table 2). A statistically significant relationship was found between the nurses' IIS mean scores according to their age and professional experience ( $p > 0.05$ ). (Table 3).

According to their IIS scores, 50.0% of the nurses were traditionalists, 20.5% were skeptics, 18.1% were interrogators, and 5.7% were early adopters and innovators (Table 4).

Some examples of the innovations made by the nurses who reported to make innovations in their profession were as follows: *"I increased patient and employee safety measures in drug applications", "Staff trainings were very insufficient and dysfunctional at the hospital, I changed their content", " Nurses did not make bedside visits at the institution where I worked, I got them be used to doing bedside visits thanks to my efforts ", "Patient trainings were given only as a procedure and in a standard form, there was no patient-specific training at the hospital, I made patient training more effective", "We had serious problems with our service supervisor in the hospital, she did not take our opinions in management issues, I was a pioneer in improving our communication with our service supervisor", "The mask and apparatus in the nebulizer we used in the pediatric service were so poor quality that even though we constantly changed it, it loosened from the connection point and left the machine the moment the machine worked, therefore I had many interviews with the management to replace it, I was always rejected for cost reasons, however, after my long efforts, I convinced them to change it", Doctors had wanted us to administer drugs by verbal order on the phone during the watch, I refused to apply treatments without a written order, I had serious problems with the management, but eventually I won".*

The situations in which the nurses who reported to make innovations in their profession had the most difficulty during their innovations were as follows; *"Our service colleagues do not support, are skeptical about the innovations we put forward", "We do not get enough support from our managers", "Our initiatives are often rejected due to budget and cost problems", "Continuing routine rather than making innovations is supported."*



**Table 1. Nurses' Views on Innovation**

Questions		
<b>Have you ever attended a scientific event on innovation?</b>	<b>(n)</b>	<b>(%)</b>
Yes	30	14.3
No	180	85.7
<b>Do you think there is innovation in nursing?</b>	<b>(n)</b>	<b>(%)</b>
Yes	61	29.0
No	149	71.0
<b>Have you made any innovations regarding your profession?</b>	<b>(n)</b>	<b>(%)</b>
Yes	52	24.8
No	158	75.2
<b>Total</b>	<b>210</b>	<b>%100</b>

**Table 2. Individual Innovation Scale Total and Sub-Dimension Average Scores**

Scale Total and Sub-dimensions	X ±SS	Min-Max
Opinion leadership	23.01±4.82	15-35
Resistance to change	17.98±4.97	11-30
Risk taking	6.78±1.53	5-10
<b>IISC Total</b>	<b>57.60±13.79</b>	<b>37-90</b>



**Table 3. IISC and Sub-Dimension Score Averages by Independent Variables**

	IISC SUB DIMENSIONS			IISC TOTAL
	Opinion Leadership ( $\bar{X} \pm Ss$ )	Resistance to Change ( $\bar{X} \pm Ss$ )	Risk Taking ( $\bar{X} \pm Ss$ )	Total Scale ( $\bar{X} \pm Ss$ )
<b>Age</b>				
18-25 (n=52)	127.86±4,826	116.38±4,971	123.05±1.537	130.12±13.79
26-33 (n=73)	108.62±4.921	102.88±4.881	111.68±1.443	106.53±13.65
34-41 (n=58)	97.62±4.821	97.70±4.962	96.04±1.234	98.40±13.68
41 and over (n=27)	70.94±4.745	108.39±4.981	75.30±1.334	70.57±12.79
	$X^2=17.256$ <b>p=0.001</b>	$X^2=2.917$ p=0.405	$X^2=13.901$ <b>p=0.003</b>	$X^2=18.576$ <b>p=0.000</b>
<b>Gender</b>				
Female (n=161)	103.34±4.826	104.28±17.981	103.11±1.537	70.57±0.423
Male (n=49)	112.59±3.537	109.52±4.537	113.36±1.337	68.57±2.079
	$X^2=0.887$ p=0.288	$X^2=0.289$ p=0.591	$X^2=1.128$ p=0.288	$X^2=0.376$ p=0.540
<b>Education</b>				
High school (n=51)	102.90±3.037	108.26±2.531	103.47±4.527	102.18±0.898
Associate degree (n=48)	109.25±4.001	105.64±2.517	110.35±4.032	109.10±0.896
Bachelor's degree (n=101)	105,90±2,437	105,00±3,419	103,53±4,001	106,64±1,793
Postgraduate (n=10)	96,70±3,110	95,75±0,418	112,45±3,937	93,60±2,091
	$X^2=0.499$ p=0,919	$X^2=0.383$ p=0,944	$X^2=0.634$ p=0,889	$X^2=0.753$ p=0,861



Working year				
1-3 year (n=51)	118,18±4,826	108,99±4,971	114,56±1,537	120,44±13,798
3-5 year (n=73)	107,11±4,332	97,73±4,776	107,13±1,564	104,34±12,788
5-7 year (n=44)	108,98±4,201	110,39±4,765	107,93±1,664	107,75±13,432
7-10 year (n=22)	97,91±4,001	111,66±4,554	107,64±1,011	103,39±11,793
10 year and over (n=20)	68,00±3,986	107,43±4,334	68,75±0,987	69,03±7,442
	X <sup>2</sup> =10,570 <b>p=0,032</b>	X <sup>2</sup> =1,956 p=0,744	X <sup>2</sup> =9,077 p=0,059	X <sup>2</sup> =10,580 <b>p=0,002</b>

**Table 4. Categories according to individual innovation score**

Categories	(n)	(%)
Innovator	12	%5,7
Pioneer	12	%5,7
Interrogator	38	%18,1
Skeptical	43	%20,5
Traditionalist	105	%50,0
<b>Total</b>	210	100

## 4. DISCUSSION

This study examined the individual innovativeness characteristics of nurses, and found their IIS mean score as  $57.60 \pm 13.79$ , indicating a moderate level of individual innovativeness. Nurses' IIS mean score was found as  $68.36 \pm 8.32$  by Sarıköse and Türkmen (2020, p1126-1133),  $70.71 \pm 9.79$  by Baksi et al. (2020, 310-315), and  $66.53 \pm 8.024$  by Kemer and Yildiz (2020, 52-61). Dy Bunpin, et al. (2016, pp.122) and Clement, et al., (2011, p.431-438) evaluated nurses' individual innovativeness using different methods, and both reported a moderate level of innovativeness in nurses (Baksi et al., 2020, pp.310-315; Clement-O'Brien et al., 2011, pp.431-438; Dy Bunpin et al., 2016, pp.122; Kemer & Yildiz,





2020, pp.52-61; Sarıköse & Türkmen, 2020, pp.1126-1133). This result of our study reveals the necessity of both encouraging nurses to make innovations and gain an innovative perspective and providing them with an appropriate environment and support.

Innovation is often not an easy process as it often creates suspicion or uncertainty among people (Brysiewicz et al., 2015, pp.41-45; Planas-Campmany et al., 2020, pp.426-434). In this process, the presence of an innovation culture, especially in the institutions where nurses work, is an important factor for the emergence of nurses' innovative behaviors (Planas-Campmany et al., 2020, pp.428). In addition, nurses' individual innovativeness characteristics are also determinant for the emergence of nurses' innovative behaviors (Baksi et al., 2020, pp. 310-315; Kemer & Yildiz, 2020, pp.365). The present study determined that 50.0% (n = 105) of the nurses were traditionalists according to their IIS scores. According to nurses' individual innovation scores, 40.7% (n = 61) and 42.1% (n = 112) of nurses were found to be interrogators by Baksi et al. (2020, pp.310-315) and Kemer and Yildiz (2020, pp.365), respectively.

Innovation in nursing is a challenging process, so innovativeness can often involve sacrifice (Baksi et al., 2020, pp.310-315; Dall'Ora & Dahlgren, 2020, pp.1-8; Planas-Campmany et al., 2020, pp.428). Despite this, nurses, who provide patient care by closely interacting with patients, have an extremely convenient position to make and implement innovations (Anvik et al., 2020, pp.126). Therefore, it is very important for nurses to develop their leadership skills and to have the necessary knowledge and equipment about innovativeness (Cusson et al., 2020, pp.13-19; Macduff et al., 2020, pp.189-207). In the present study, 75.2% (n = 158) of the nurses did not make any innovations in their profession. Similarly, Kemer and Yildiz (2020, pp.367) reported that 47.4% (n = 126) of nurses did not make individual innovations. Similarly, studies also report that nurses do not have sufficient courage and strength to make innovations and even sometimes they do not express their innovative ideas (Planas-Campmany et al., 2020, pp.430; Zuber & Moody, 2018, pp.68).

In order to be able to make innovations, it is necessary to follow innovations, do relevant researches, and imagine (Macduff et al., 2020, p.190). Baksi et al. (2020, pp.313) have reported that 65.3% (n = 98) of nurses do not participate in scientific activities related to their profession. In the present study, 85.7% (n = 180) of the nurses did not participate in a scientific activity related to innovation. This result may be because nurses are not sufficiently supported for scientific studies and activities and are not offered relevant opportunities.

There are several individual factors that affect innovativeness, and one of these factors is age (Yılmaz et al., 2014, pp.147-154). In the present study, the nurses' IIS scores statistically significantly decreased by age (p = 0.000). Celik et al. (2020, pp.397-409) evaluated nurses' individual innovativeness characteristics, and also reported that as the age of nurses increased, their IIS total score decreased (Celik et al., 2020, p.397-409). This result of our study may be because nurses are more innovative and entrepreneurial in the first years of their profession and when they are younger.





It is not known how the perceptions of other nurses who were not included in the study might affect the study results and the sample group could not be reached. Therefore, it may be recommended to study with a larger sample group.

## 5. CONCLUSION

Innovativeness is a multi-step process that involves generating, supporting and implementing new ideas. In order to eliminate their deficiencies regarding innovativeness, nurses should be provided with opportunities to take part in scientific studies related to their fields by strengthening the cooperation between academic community and hospitals. In addition, nurses should be stimulated and encouraged to use their innovative imaginations as much as possible, and they should be allowed to develop dialogues in which they can overcome the difficulties they encounter while making innovations. In this regard, it may be suggested to adopt innovativeness as a corporate culture in hospitals.

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