

Registered Nurses' and Nursing Students' Attitudes Towards Scientific Research: A Cross-Sectional Study

Hemşirelerin ve Hemşirelik Öğrencilerinin Bilimsel Araştırmalara Yönelik Tutumlarının İncelenmesi: Kesitsel Bir Çalışma

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ABSTRACT

Objective: The current study evaluated and compared nurses' and nursing students' attitudes towards nursing research and the factors affecting it.

Methods: The study used a cross-sectional, descriptive survey design. Bedside nurses with at least one year of nursing experience and senior nursing students completed the Scale of Attitude towards Scientific Research, which is valid and reliable instrument.

Results: There were no significant differences in the mean of overall score of Attitudes of Scientific Research across groups. However, significant differences were found in the mean scores of unwillingness to help researchers ($P=.002$), positive attitudes towards research ($P=.002$), and positive attitudes towards researchers ($P=.002$) between nurses and nursing students. Additionally, the results showed significant differences in the mean of sub-scales based on nurses' education ($P=.04$), responsibility ($P=.01$), reading articles frequency ($P=.02$), and nursing students' gender ($P=.03$), and reading articles frequency ($P=.04$). Overall, nursing students had significantly higher scores in positive attitudes of research ($M=24.5$, $SD=4.6$) and positive attitudes of researcher ($M=23.6$, $SD=4.3$) compare to nurses ($M=22.5$, $SD=5.3$; $M=21.6$, $SD=5.1$ respectively).

Conclusion: Findings indicated that nursing students had significantly more positive attitudes to nursing research compare to registered nurses. Reading academic article is the only facilitator in each group that is associated with positive attitudes of scientific research. We recommend institutional support to encourage research activities and a revised nursing curriculum. Future studies should examine the relationships between attitudes towards research and the actual conducting of research.

Keywords: Nurses, nursing students, nursing research, attitudes, education

ÖZ

Amaç: Bu çalışma, hemşirelerin ve hemşirelik öğrencilerinin bilimsel araştırmalarına yönelik tutumlarını ve bu tutumlarını etkileyen faktörleri değerlendirmek ve karşılaştırmak amacıyla planlanmıştır.

Yöntemler: Çalışma tanımlayıcı tipte olup, kesitsel yöntem kullanılmıştır. Katılımcılar en az bir yıl hemşirelik deneyime sahip hemşireler ve son sınıf hemşirelik öğrencileri arasından seçilmiş olup, geçerlilik ve güvenilirliği kanıtlanmış Bilimsel Araştırmaya Yönelik Tutum Ölçeği kullanılmıştır.

Bulgular: Hemşireler ve hemşirelik öğrencilerin Bilimsel Araştırma Tutumları genel puan ortalamaları arasında anlamlı bir fark bulunmamıştır. Ancak, araştırmacılara yardım etme isteksizliği ($P=.002$), araştırmaya yönelik olumlu tutumlar ($P=.002$) ve araştırmacılara yönelik olumlu tutumlar ($P=.002$) puan ortalamalarında hemşireler ve hemşirelik öğrencileri arasında anlamlı farklılıklar bulunmuştur. Ayrıca, sonuçlar hemşirelerin eğitim ($P=.04$), sorumluluk ($P=.01$), makale okuma sıklığı ($P=.02$) ve hemşirelik öğrencilerinin cinsiyet ($P=.03$) ve makale okuma sıklığına ($P=.04$) göre alt ölçeklerin ortalamalarında anlamlı farklılıklar olduğunu göstermiştir. Genel olarak, hemşirelik öğrencilerinin araştırmaya yönelik olumlu tutumları ($M=24,5$, $SD=4,6$) ve araştırmacıya yönelik olumlu tutumları ($M=23,6$, $SD=4,3$) hemşirelere kıyasla anlamlı derecede daha yüksektir (sırasıyla $M=22,5$, $SD=5,3$; $M=21,6$, $SD=5,1$).

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Sonuç: Bulgular, hemşirelik öğrencilerinin hemşirelere kıyasla bilimsel araştırmalara karşı daha olumlu tutumlara sahip olduğunu göstermiştir. Akademik makale okumak, her iki grupta da bilimsel araştırmanın olumlu tutumlarıyla ilişkilendirilen tek kolaylaştırıcıdır. Çalışmanın sonuçlarına göre yetkili kurumlara uygulama alanında lisans hemşirelik müfredatının gözden geçirilmesini ve hastanelerdeki kurumsal araştırma faaliyetlerinin teşvik edilmesini öneriyoruz. Gelecekte planlanan çalışmaların ise, katılımcıların araştırmaya yönelik tutumları ile aktif araştırma yürütme durumları arasındaki ilişkileri incelemeleri faydalı olacaktır.

Anahtar Kelimeler: Hemşireler, hemşirelik öğrencileri, hemşirelik araştırması, tutumlar, eğitim

INTRODUCTION

In order to cope with current and emerging health problems, it is considerably important to keep up with the fast and constantly changing scientific and technological developments in the field of health. In recent years, it is widely recognized the world over that evidence-based practice (EBP) is the cornerstone and primary determinant of excellent patient care.¹ Most of the best evidence origins from research and one of the feature of EBP is the utilization of research knowledge. Healthcare professionals search for answers to numerous clinical questions every day, so they can easily access the evidence to answer these questions with a utilization of research knowledge.² Nursing research is crucial to the nursing profession and it appears as a key component to establishing and maintaining high standards of care.^{3,4}

It becomes a very prominent responsibility for the nursing profession to conduct research and use the results in their clinical practices for ongoing developments that support the provision of the best nursing care.^{4,5} Polit and Beck⁶ defined nursing research as “the systematic inquiry designed to develop knowledge about the issues of importance to the nursing profession” (p. 3). Nursing care and practice standards are possible through EBP approach.^{3,7} The establishment and achievement of this approach occur with quality clinical nursing research. Transferring research results to clinical practice is indispensable for quality and effective nursing care.^{8,9} Nursing practice must be based on scientific information and evidence rather than traditions, eloquence, intuition, or habits, according to professional nursing research. Without scientific research, tradition, trial-and-error learning, authority, and personal experiences would all inform nursing practice.¹ Nurses utilize research to acquire new knowledge, confirm and improve current knowledge, which can both directly and indirectly influence nursing practice. Conducting research only by academics may lead a belief that the research results remain as theoretical knowledge, thus nurses who work in the hospital may not see those results as necessary and usable. When a research project is carried out by a cooperation of academic-nurse-nursing students, results can support more efficient and superior nursing care.^{10,11} Therefore, the participation in research may

contribute to the awareness of knowledge and competencies, in addition to being users of research results in the nursing field.^{5,9}

A literature review indicated a lack of knowledge, motivation, and experience among nurses in conducting and utilizing research.^{12,13} Moreover, nurses' attitudes and perceptions toward nursing research affected whether or not research is conducted and utilized.^{9,14} According to studies, barriers to putting research findings into practice in the nursing field include a lack of motivation and interest, a lack of time, a lack of knowledge of the literature on the subject, a lack of authority to alter practice, a lack of peer and managerial support, and a poor comprehension of the research process.^{5,12,15}

Utilizing research is essential to educating the next generation of nurses, who will conduct new research, use recent research, and make decision in the clinical field. Consequently, the development of professional nursing discipline depends on the awareness of nurses and nursing students about scientific research. According to studies in the literature,^{14,16,17,18} nurses and nursing students have some positive attitude toward nursing research, such as 46% of nurses from Ethiopia¹⁷ and 60% of nursing students from Philippine¹⁸ showed favorable attitudes towards research from their profession. Despite those results, there are limited studies determine and compare the research attitude and awareness of both nurses and nursing students.

AIM

Thus, the main purpose of this study is to investigate the attitudes of both nurses and nursing students towards research and the factors affecting it.

METHODS

Design

A cross-sectional descriptive survey was conducted. To understand nurses and nursing students attitudes towards scientific nursing research, the study examined participants attitudes towards unwillingness to help researchers, negative attitude towards research, positive attitude towards research and researchers.

Sample

Senior nursing students and bedside nurses were the study's target population. The data was collected from a city where has one training and education hospital and one university. While nearly 360 nurses are working in this hospital, almost 110 nursing students are studying Bachelor Degree in Nursing at University's Faculty of Health Science. Being a registered nurse who is currently employed in the area and having at least one year of nursing experience were requirements for inclusion. Nurses were excluded if they were not currently practicing or do not provide bedside care (e.g., administrators). Inclusion criteria for nursing students was being a fourth year nursing student in a university. Nursing students were excluded if they were not willing to participate or did not take the course "Research in Nursing." To estimate the required sample size the following parameters were used for power analysis: intended probability level of 0.05, statistical power of 0.8, and projected medium effect size (f^2) of 0.5.¹⁹ The anticipated $n = 140$ final sample size includes 10% attrition.

Measurements and Data Collection

Participants were gathered during the time period from December 2017 to February 2018 from one of the largest public universities and training and research hospital in Turkey using a convenience sample approach. The data was collected online via a Google Forms document. Permissions was obtained from both university and hospital. A descriptive form and Scale of Attitude towards Scientific Research instrument were part of the survey that the participants completed.

Descriptive Form: We created a form based on the literature to collect personal and professional data from each participant in order to identify aspects that are connected to various attitudes toward scientific study. Gender, age, marital status, number of children, level of education, and number of years of nursing experience were all considered *Personal information*. The *Professional information* covered the professional certificate, the frequency of reading academic and professional nursing journals, membership in a professional organization, involvement in a research project, and past attendance at professional conferences and symposiums.

Scale of Attitude towards Scientific Research: The scale was developed by Korkmaz, Sahin and Yesil²⁰ to assess healthcare professionals' attitudes towards scientific research. It is a self-administered 30-items questionnaire that has four subscales: (1) unwillingness to help researchers, (2) negative attitude towards research, (3) positive attitude towards research, and (4) positive attitude

towards researchers. The responses are rated on a five-point Likert-type scale, ranging from '1 not agree at all' to '5 completely agree,' with the range of the overall score between 30 and 150. The increase in the scores indicates an increase in negative attitude for the first (unwillingness to help researchers) and second (negative attitude towards research) factors, and an increase in positive attitude for the third (positive attitude towards research) and fourth (positive attitude towards researchers) factors. The first two factors and the last two factors are inversely proportional to each other. All of the items in the first and second factors are negative statements. The statements in the third and fourth factors are positive. Therefore, high scores obtained from the first two factors express negativity, while high scores in the third and fourth factors express positivity. Due to this inverse proportion, it is not meaningful to calculate a total score for the whole scale, and it is necessary to perform separate operations on the factors. This instrument has demonstrated overall a good internal consistency Cronbach's alpha 0.917. Also, all four sub-scale scores of study variable demonstrated good internal consistency (Cronbach's alphas unwillingness to help researchers 0.87; negative attitudes towards research 0.86; positive attitudes towards research 0.85; positive attitudes towards researchers 0.83).

Statistical Analysis

The Statistical Package for the Social Sciences (SPSS) (IBM, Version 27) was used to examine the data that had been gathered. Outliers and missing data were reviewed after data cleaning. Depending on the type of data, missing points were arbitrarily discovered and replaced with the mean or mode.²¹ The sample characteristics were reported using descriptive statistics. Using the independent t-test and ANOVA were carried out between research variables. As suggested in the book²¹ the data assumptions of normality, linearity, and homogeneity were evaluated and transformed. The results were assessed at the 5% level of significance and within the 95% confidence interval.

Ethical Considerations

The study protocol was reviewed and approved by the Kastamonu University Institutional Review Board (dated 11.02.2017 and numbered 14). The anonymous survey was administered between December 2017-February 2018. Respondents were initially checked for eligibility before to participation. Prior study participation, a formal informed consent was subsequently obtained. The form included information about the study's objective, methodology, possible risks and benefits, protection of privacy and confidentiality, and the choice to participate or drop out. It was voluntary to participate.

RESULTS

In total, 340 participants volunteered for this study including 247 registered bedside nurses and 93 nursing students completed a survey. Although we calculated 140 participants, response rate of the study was relatively high; 69% for nurses and 85% for nursing students. The data showed in the Table 1 that nursing students sample was mainly female ($n= 69, 74\%$) and chose nursing profession willingly ($n= 64, 69\%$).

Table 1. Descriptive Characteristics of Nursing Students (n = 93)

Individual Characteristics	n	%
Gender		
Female	69	74.2
Male	24	25.8
Willingness to choose nursing		
Yes	64	68.8
No	29	31.2
Reading academic article (monthly)		
Never	53	57.0
1-3	40	43.0
Journal subscription		
Yes	15	16.1
No	78	83.9
Attending congress/symposium		
Yes	50	53.8
No	43	46.2
Belief about positive impact of scientific research on nursing		
Yes	83	89.2
No	10	10.8

The findings of senior nursing students' participation in scientific activities showed that mainly they never read articles ($n=53, 57\%$) and did not have journal subscription ($n=78, 84\%$). More than half of them participated in scholar activities ($n=50, 54\%$) and almost all had belief about positive impact of scientific research on nursing profession ($n=83, 89\%$). Descriptive characteristics of nurses' results are showed at Table 1. The majority of the participants were between 31-40 years old. Professionally, the nurse participants were mostly bachelor's prepared ($n= 98, 40\%$), clinical nurse ($n= 128, 52\%$), and having less than 5 years of nursing experience ($n= 84, 34\%$). As Figure 1 demonstrated, the results of registered nurses' participation in scientific activities showed that mainly they did not read articles ($n=177, 72\%$), did not have certification ($n=189, 77\%$), did not have journal subscription ($n=237, 96\%$), and did not participate in scholar activities ($n=168, 68\%$).

Table 2. Descriptive Characteristics of Nurses (n = 247)

Individual Characteristics	n	%
Age		
18-25	72	29.1
26-30	52	21.1
31-40	86	34.8
>40	37	15.0
Nursing education		
Medical High School	68	27.5
Associate Degree	76	30.8
Bachelor's Degree	98	39.7
Master in Nursing	5	2.0
Responsibility		
Director Nurse	10	4.0
Clinical Nurse	128	51.8
Intensive Care Nurse	19	7.7
Operating Room Nurse	16	6.5
Emergency Nurse	26	10.5
Other	48	19.5
Length of nursing experience (years)		
<5	84	34.0
6-10	58	23.5
11-15	30	12.1
16-20	32	13.0
>20	43	17.4
Reading academic article (monthly)		
Never	177	71.7
1-3	59	23.8
4+	11	4.5

There were no significant differences in mean of Attitudes of Scientific Research (ASR) scores within registered nurses' individual characteristics. Similarly, there were no significant differences in mean Attitudes of Scientific Research (ASR) scores within nursing students' individual characteristics. Comparison of registered nurses and senior nursing students' attitudes of scientific research illustrated in Table 3. Nursing students had significantly higher mean scores based on all sub-scales ($P=.002$) except 'Negative attitudes towards research.' Significant differences in mean sub-scale scores and sample characteristics displayed in Table 4. There were no significant differences in mean 'Unwillingness to help researchers' sub-scale scores within registered nurses except for nursing education with a small eta squared ($M=19.9, P=.04, \eta^2=.03$) and within nursing students except for gender with a small effect size ($M=22.1,$

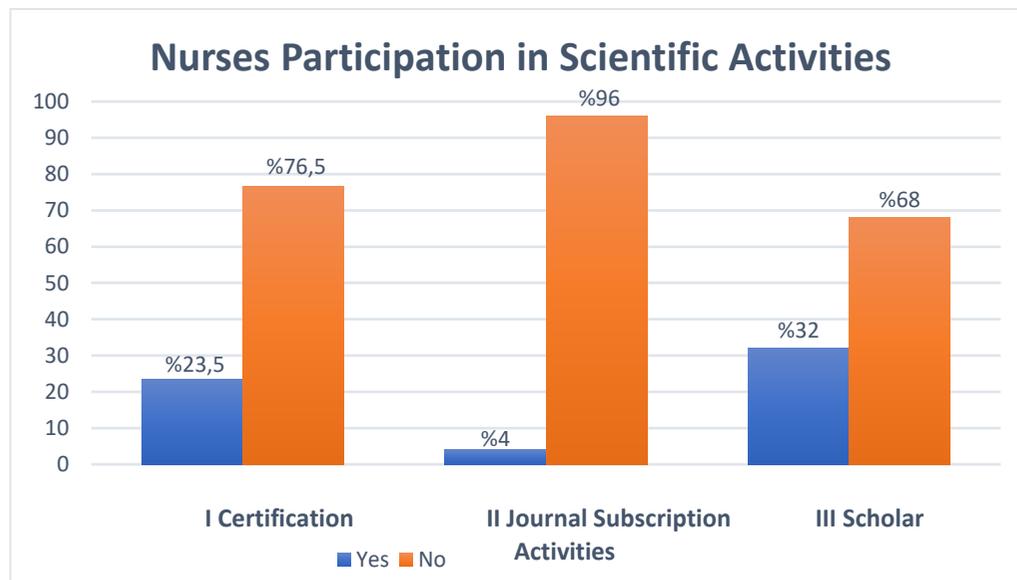
$P=.03$, *Cohen's d*=.44). Similarly, there were no significant differences in mean 'Negative attitudes towards research' sub-scale scores within registered nurses except for responsibility with a medium eta squared ($M=22.6$, $P=.01$, $\eta^2=.06$) and within nursing students except for reading article with a very small effect size ($M=22.1$, $P=.04$, *Cohen's d*=.04). Additionally, there were significant differences in mean 'Positive attitudes towards research' sub-scale scores

only within registered nurses for responsibility with a medium eta squared ($M=26$, $P=.03$, $\eta^2=.05$) and reading monthly academic articles with a small eta squared ($M=24.4$, $P=.02$, $\eta^2=.03$). Finally, the only significant difference in mean 'Positive attitudes towards researchers' sub-scale scores was within registered nurses' responsibility with a medium eta squared ($M=24$, $P=.02$, $\eta^2=.0$

Table 3. Comparison of Nurses and Nursing Students Based on Subscales of ASR

Subscales of Attitudes Towards Scientific Research	Nurses (n = 247)	Nursing students (n = 93)	t-test	P
	Mean (SD)	Mean (SD)		
Unwillingness to help researchers (8-items)	19.2 (5.7)	21.4 (5.9)	3.15	.002*
Negative attitudes towards research (9-items)	20.5 (5.7)	21.2 (5.4)	.92	.35
Positive attitudes towards research (7-items)	22.5 (5.3)	24.5 (4.6)	3.19	.002*
Positive attitudes towards researchers (6-items)	21.6 (5.1)	23.6 (4.3)	3.18	.002*

* $P < .05$; t-test for equality means, SD; Standard deviation



I - Do you have certification about nursing?

II - Do you constantly follow academic publications about nursing?

III - Do you participate in scholar activities like scientific meetings, congresses, symposia, etc.?

Figure 1. Participation of Nurses in Scientific Activities

Table 4. Comparison of Scientific Research Attitudes (ASR) Subscale Scores of Nurses (n=247) and Nursing Students (n=93) According to Descriptive Characteristic

Descriptive Characteristics	Unwillingness to help researchers (8-items)			Negative attitudes towards research (9-items)			Positive attitudes towards research (7-items)			Positive attitudes towards researchers (6-items)		
	M (SD)	F/t	P	M (SD)	F/t	P	M (SD)	F/t	P	M (SD)	F/t	P
		[†] η ² /Cohen's d Tukey			[†] η ² /Cohen's d Tukey			[†] η ² /Cohen's d Tukey			[†] η ² /Cohen's d Tukey	
Registered Nurses												
Nursing Education												
Medical High School ¹	17.9 (5.5)	2.70 .03 2>1,3>4	.04*	19.5 (4.8)	1.25 .29	.29	22.6 (6.2)	.57 .63	.63	21.5 (5.5)	.64 .58	.58
Associate Degree ²	19.6 (5.4)			21.2 (6.3)			22.0 (5.0)			21.1 (5.6)		
Bachelor's Degree ³	19.9 (5.8)			20.8 (5.8)			23.0 (4.7)			22.2 (4.5)		
Master in Nursing ⁴	15.2 (6.9)			19.2 (4.1)			21.4 (6.3)			20.6 (6.7)		
Responsibility												
Director Nurse ¹	18.9 (8.1)	1.09 .36	.36	18.3 (2.3)	2.98 .01*	.01*	26.0 (3.8)	2.50 .03*	.03*	24.0 (2.3)	2.56 .02*	.02*
Clinical Nurse ²	19.6 (5.9)			21.5 (6.1)			21.7 (4.5)			20.7 (4.9)		
Intensive Care Nurse ³	17.8 (5.1)			19.5 (5.2)			21.8 (7.7)			21.7 (5.7)		
Operating Room Nurse ⁴	21.3 (5.2)			22.6 (3.4)			21.9 (6.7)			20.9 (6.5)		
Emergency Nurse ⁵	18.2 (4.8)			18.7 (5.4)			23.6 (5.0)			23.6 (4.5)		
Other ⁶	18.4 (5.3)			18.9 (5.2)			23.9 (5.5)			22.8 (5.5)		
Reading Articles (monthly)												
Never ¹	19.0 (5.6)	.37 .68	.68	20.5 (5.7)	.37 .68	.68	21.9 (5.2)	3.91 .02*	.02*	21.2 (5.4)	2.03 .13	.13
1-3 ²	19.3 (5.0)			20.2 (5.3)			23.9 (4.9)			22.7 (4.3)		
4+ ³	20.5 (9.1)			21.8 (6.9)			24.4 (7.0)			22.7 (5.1)		
Nursing Students												
Gender												
Female	22.1 (6.1)	2.11 .03*	.03*	21.3 (5.8)	.51 .60	.60	24.6 (4.3)	.12 .90	.90	23.7 (3.8)	.80 .42	.42
Male	19.5 (4.7)	.44		20.6 (4.4)			24.4 (5.6)			22.9 (5.4)		
Reading Article (monthly)												
Never	21.8 (5.7)	.66 .50	.50	22.1 (6.0)	2.01 .04*	.04*	24.2 (4.3)	.12 .90	.90	23.1 (3.9)	-1.18 .24	.24
1-3	20.9 (6.1)			19.8 (4.3)	25.0 (4.9)	24.2 (4.7)						

* $P < .05$; [†] if significant; t -test and ANOVA (Post-Hoc: Tukey test)

DISCUSSION

Students play a vital role in ensuring clinical research studies in the future, thus identifying the attitude of registered nurses and nursing students toward scientific research is essential. Additionally, registered nurses advance the nursing profession and offer evidence-based care, both of which support positive health outcomes. There are few studies that looked at the average views of nurses and nursing students toward scientific research. Our findings agreed with earlier research from the literature,^{14,17,22} and revealed that overall nurses and nursing students are aware about the importance of research for the nursing profession and have positive attitudes towards scientific research in nursing. That positive attitude bodes well for the uptake of future research about nursing science.

We found that although majority of the respondents had positive attitudes towards research and more than half of them participated scholar activities; over half of them do not read academic articles and many do not have journal subscription, those rates are similar with previous studies.^{16,23} Our results indicated the importance of academic reading as the nursing students who did not read article had negative attitudes towards research and nurses who read academic articles had positive attitudes towards research. Those findings show that to apply evidence-based strategies in clinical practice, nurses and nursing students need information literacy skills. Additionally, one of the studies showing that there is a difference between genders in nursing students' awareness and attitudes towards research and developments,²³ which is supported with our results. Our findings aligned with Özdil and colleagues²³ that a significant difference in unwillingness to help researcher based on nursing education. Nurses who had a master's degree were less likely to help researchers compare to others. Their results may be explained by research fatigue during master education. On the other hand, similar with Kovacevic and colleagues¹⁵ nurses who had a bachelor's degree had more positive attitudes towards research.

Our study supported the finding of Cleary-Holdforth and colleagues⁷. Similar with their study we identified significant differences in positive attitudes towards research between nursing students and nurses. It is important to emphasize research and provide opportunities for nursing students for research participation. If students, who are future nurses of society, are not aware about nursing research in college and not experiencing evidence-based practice in the clinic, they are highly unlikely to provide evidence-based care or

obtain the knowledge and skills to put it into practice. The low rates of literacy skills among nurses and nursing students perpetuates the cycle of low evidence-based health care. We can break the cycle through providing and promoting positive attitudes towards research.

Limitations

The current study used a cross-sectional design that restricts the ability to infer cause and effect relationships among the study variables. A small convenience sample of nursing students from one hospital and one nursing department at a federal university was employed in this study, so any generalizations to the entire population from that results must be produced with care. By using a reasonably large sample size (n=340), achieving a high response rate (min 69%), and dealing with a limited percentage of missing data, the authors increased the study's reliability.

The current research findings indicated that Turkish nurses and nursing students who participated in this study had somewhat more favorable attitudes toward nursing research, which is consistent with earlier studies. Nevertheless, no significant difference was found between any variables and total score of attitudes towards scientific research scale. Several background factors of nurses and nursing students were significantly associated with some of the subscales scores of attitudes towards scientific research scale.

Study results revealed reading academic article was significantly associated with both nurses and nursing students' positive attitudes towards research. We recommend institutional support for nurses to encourage research activities and revised nursing curriculum to make nursing students more research. Hospitals need to advance research centers specific for nursing. Facilities should provide support for nurses to engage in continuing education programs and encourage for research participation. Also, nursing curriculum should be modified and academic reading should be encouraged by faculty members. In order to cultivate an environment that supports research activities, nurse administrators should emphasis the barriers of staff nurses and work toward eliminating them. Strategies to increase participation in research and improve the way of research attitudes should be developed and evaluated.

We recommend that future research should compare research attitudes of nursing students, nursing faculty, and nurses in the clinic and look at the relationships between research attitudes, research participation and evidence-based practices beliefs and implementations.

Those studies should examine larger aspects that affect the attitudes of scientific research. Furthermore, future research should look at the obstacles and facilitators of nurses' and nursing students' support for research and research utilization. Also, the relationship between attitudes towards research and actual conducting of research should be examined. These findings should be incorporated into more qualitative study to better understand the transition from nursing student to clinic nurse.

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Hakem Değerlendirmesi: Bağımsız dış uzman değerlendirmesi yapılmıştır.

Yazar Katkıları: Konsept ve Tasarım - GUK; Veri Toplama - GUK; Analiz ve/veya Yorumlama - NSK; Literatür Taraması - GUK, NSK; Makale Yazımı - GUK, NSK; Eleştirel İnceleme - GUK, NSK

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Ethics Committee Approval: The study protocol was reviewed and approved by the Kastamonu University Institutional Review Board (dated 11.02.2017 and numbered 14).

Informed Consent: Written informed consent was obtained from the nurses and nursing students who participated in this study.

Peer-review: Externally peer-reviewed.

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